

FUJITSU Software

BS2000 OSD/BC V10.0

Commands

Volume 4: MAIL-FILE – MOVE-TASK-TO-CATEGORY

Valid for

SDF V4.7D

SDF-P-BASYS V2.5E

ASE V1.0B

BLSSERV V2.8A

CONV2PDF V1.0B

DSSM V4.3B

IMON-GPN V3.3A

JV V15.1A

POSIX-BC V10.0A

RFA V19.0A

RSO V3.6A

SECOS V5.4A

SPACEPRO V1.0A

SPOOL V4.9A

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MAIL-FILE

Send file by email

Description status:	BS2000 OSD/BC V10.0A
Functional area:	File processing
Domain:	FILE
Privileges:	STD-PROCESSING HARDWARE-MAINTENANCE SAT-FILE-EVALUATION SAT-FILE-MANAGEMENT SECURITY-ADMINISTRATION TSOS

Function

The MAIL-FILE command sends a file as an attachment to an email. A user ID is specified as the receiver of the email. The sender is the user ID of the calling task. MAIL-FILE takes over the email address entered in the EMAIL-ADDRESS field of these user entries. How you ascertain the receiver and sender addresses, in particular when an address list is used, is described in the section [“Selecting email addresses by means of the job name” on page 4-8](#).

A PLAM library element, a SAM or ISAM file and the contents of the system file SYSLST or SYSOUT can be sent. A PAM file can be sent only if its content is in PDF format. The file attribute CCS name is evaluated in the case of automatic character set conversion. Optionally the caller can specify that the file is to be deleted automatically after it has been sent.

To execute the command the “Mail-Sender” function of the software product interNet-Services must be available, and at least one email address must be entered in the user entry of the TSOS system ID.

The command is rejected if no email address is entered in the receiver’s user entry. If no email address is entered for the caller, the address of the receiver or TSOS is entered instead as the sender.

If the email cannot be delivered (e.g. because the address is invalid), a bounce mail is sent to the email address of TSOS to request systems support to check the incorrect address. If more than one email address is entered for TSOS, the first address is used for the bounce mail.

The MAIL-FILE functionality is also used by other components of BS2000 to send log files:

- At job termination
In the EXIT-JOB (or LOGOFF), CANCEL-JOB and ENTER-PROCEDURE commands, transfer to SYSLST or SYSOUT at job termination can be requested instead of a printout. The default value *STDOUT directs output to the output medium defined in the system parameter SSMOUT (printer or email).
- In the case of errors in the MSCF cluster
In the MSCF configuration systems support can specify that a user ID be notified by email if a critical situation (e.g. loss of connection) occurs.
- In the case of outputs from utility routines
Currently HSMS V9.0 and higher and MAREN V12.0 and higher support the transfer of output information and logs.

Format

MAIL-FILE
<pre>FILE-NAME = <filename 1..54> / *SYSLST(...) / *SYSOUT / *LIBRARY-ELEMENT(...) *SYSLST(...) SYSLST-NUMBER = *STD / <integer 1..99> *LIBRARY-ELEMENT(...) LIBRARY = <filename 1..54 without-vers> ,ELEMENT = <composed-name 1..64 with-under> <composed-name 1..64> with-under(...) VERSION = *HIGHEST-EXISTING / *UPPER-LIMIT / <composed-name 1..24 with-under> ,TYPE = <alphanum-name 1..8> ,TO = *USER(...) *USER(...) USER-IDENTIFICATION = *OWN / <name 1..8> ,SUBJECT = *STD / <c-string 1..256 with-low> ,DELETE-FILE = *NO / *YES / *DESTROY</pre>

Operands

FILE-NAME = <filename 1..54> / *SYSLST(...) / *SYSOUT / *LIBRARY-ELEMENT(...)

Selects the file to be sent.

FILE-NAME = <filename 1..54>

Name of the file to be sent:

- The file is a SAM or ISAM file. A PAM file is sent only if its content is in PDF format.
- The file may not be empty.
- The name may specify a single file generation but not a file generation group.
- It can also be a temporary file.
- The file may not be only accessible via an RFA connection.

FILE-NAME = *SYSLST(...)

Specifies the system file SYSLST.

SYSLST-NUMBER = *STD

Specifies the system file SYSLST. The specification is rejected in the following cases:

- SYSLST is empty.
- The DUMMY file, a temporary file, a PLAM library member or an S variable is assigned.
- The assigned file or file generation is not resident on disk or was not created using the access method SAM.

SYSLST-NUMBER = <integer 1..99>

Specifies a SYSLST file from the set SYSLST01 through SYSLST99. This specification is possible only if the SYSLST file is assigned a file or file generation on disk which was created using the access method SAM. The specification is rejected in the following cases:

- The assigned file is still empty.
- The SYSLST file has the primary allocation.
- The DUMMY file, a temporary file, a PLAM library member or an S variable is assigned.

FILE-NAME = *SYSOUT

Specifies the system file SYSOUT. This specification is possible only if the SYSOUT file is assigned a file or file generation on disk which was created using the access method SAM. The specification is rejected in the following cases:

- The assigned file is still empty.
- The SYSOUT file has the primary allocation.
- The DUMMY file, a temporary file, a PLAM library member or an S variable is assigned.

FILE-NAME = *LIBRARY-ELEMENT(...)

An element of a PLAM library is to be sent. All user record types (1 to 159) are sent.

LIBRARY = <filename 1..54 without-vers>

Name of the PLAM library.

ELEMENT = <composed-name 1..64 with-under>(...)

Name of the element.

VERSION =

Specifies the version number of the element.

VERSION = *HIGHEST-EXISTING

Selects the highest existing version number.

VERSION = *UPPER-LIMIT

Selects the highest possible version number.

VERSION = <composed-name 1..24 with-under>

Selects the specified version number.

TYPE = <alphanum-name 1..8>

Specifies the element type.

Only text elements and PDF files can be sent. Text elements are elements of the types S, M, J, P, D, X and types derived from these provided they contain no block-oriented records. An element containing block-oriented records is sent only if its content is in PDF format.

TO = *USER(...)

Specifies the receiver of the email.

USER-IDENTIFICATION = *OWN / <name 1..8>

User ID whose entry in the user catalog contains the receiver's email address.

The default value is *OWN, i.e. the logon user ID of the calling task. If the user entry contains a list with more than one email address, a receiver address may be selected in accordance with the job name (see "" on page 4-7).

SUBJECT = *STD / <c-string 1..256 with-low>

Specifies the subject of the email.

*STD specifies that the email should have a standardized subject text which, in addition to the information "from BS2000", also contains the sender ID and the file name.

DELETE-FILE = *NO / *YES / *DESTROY

Specifies whether the file or the PLAM library element should be automatically deleted after it has been sent successfully: If the system file SYSLST is to be sent and SYSLST has the primary allocation, DELETE-FILE=*YES applies.

If the system file SYSLST or SYSOUT is to be sent and the system file is assigned to a file or file generation, it is not deleted automatically.

DELETE-FILE = *NO

The file or the PLAM library element is not deleted. The file or the PLAM library element is available again immediately after MAIL-FILE is called.

DELETE-FILE = *YES

The file or the PLAM library element is automatically deleted after it has been sent successfully. The file or the PLAM library element is regarded as having been sent successfully even if it cannot be delivered (e.g. because the email address is unknown).

DELETE-FILE = *DESTROY

This specification has the same effect as DELETE-FILE=*YES. In addition, the file or element content is overwritten with binary zeros when it is deleted.

Return codes

(SC2)	SC1	Maincode	Meaning/Guaranteed messages
		CMD0001	Command executed
	1	CMD0202	Syntactical or semantic error in command
	32	DMS05C7	Unexpected internal error in DMS
	64	DMS0501	Requested catalog not available
	64	DMS0512	Requested catalog not available
	64	DMS051B	Requested user ID not in pubset
	64	DMS051C	User not authorized to access pubset
	64	DMS0535	Specified file not shareable
	64	DMS0585	Error detected when processing catalog or multiprocessor system
	64	DMS05FC	Specified user ID not in HOME pubset
	64	DMS0681	DMS error during execution
	64	DMS0684	File does not exist
	64	DMS068A	Mail sender reported error
	64	DMS068B	ILAM reported error
	64	DMS0694	Not permissible to send file
	64	DMS0695	Email address missing
	64	DMS0696	Email address of TSOS user ID missing
	130	DMS0524	System address space full
	130	DMS0582	File is currently locked or in use and cannot be processed
	130	DMS0585	Error detected when processing catalog or multiprocessor system
	130	DMS0594	Not enough virtual memory available

Selecting email addresses by means of the job name

MAIL-FILE ascertains the email addresses of the receiver and the sender by means of the user entry of each of the user IDs concerned (see the SHOW-USER-ATTRIBUTES command, EMAIL-ADDRESS output field). The entry can also contain an address list, i.e. multiple email addresses separated by a comma. To execute the command at least the user ID of the receiver must contain at least one email address.

When the receiver's user entry contains an address list, MAIL-FILE makes a distinction between whether the caller's user ID (*OWN) or a "foreign" user ID was specified as the receiver. If a foreign user ID is specified, MAIL-FILE sends the email to all addresses. Only if the home user ID is specified does select the addresses by means of the job name of the calling task.

When the sender's user entry contains an address list, MAIL-FILE selects the sender address by means of the job name of the calling task.

In the address list MAIL-FILE searches for an address in which a partial name of the local address part (ahead of the @) begins with the job name (not case-sensitive). Partial names are separated from one another by a period (e.g. first-name.last-name).

For example, the following addresses are selected from the address list

Anna.Huber@xy, Anja.Bauer@xy, Anton.Baumann@xy:

- Anna.Huber@xy with the job names: ANN, HU, HUBER
- Anja.Bauer@xy with the job names: ANJ, ANJA, BAUE, BAUER
- Anton.Baumann@xy with the job names: ANT, BAUM, BAUMAN

Optionally you can also prefix the addresses in the user entry with "address names" in parentheses.

Example: (ANH)Anna.Huber@xy, (ANB)Anja.Bauer@xy, (BMN)Anton.Baumann@xy

The following addresses, for example, are then selected from this address list:

- Anna.Huber@xy with the job names: ANH and ANN, HU, HUBER
- Anja.Bauer@xy with the job names: ANB and ANJ, ANJA, BAUE, BAUER
- Anton.Baumann@xy with the job names: BMN and ANT, BAUM, BAUMAN

If the job name matches more than one address, the address is selected whose partial name which matches the job name is the shortest. For example, the following addresses are selected from the address list

Beate.Pauli@xy, Pauline.Beck@xy, Paul.Becker@xy:

- Beate.Pauli@xy with the job names: PAULI, BEA
- Pauline.Beck@xy with the job names: PAULIN, BE, BECK
- Paul.Becker@xy with the job names: P, PAUL, BECKER

If the partial name which matches the job name is equally short in more than one address, the first of these addresses is selected.

If more than one partial name in an address matches the job name, only the first partial name is taken into account.

If the calling task does not have a job name or the job name does not match any address in the address list, the following procedure applies:

- When the receiver address is ascertained, the entire address list is used, i.e. the email is sent to all addresses.
- When the sender address is ascertained, only the first address in the address list is used.

Example

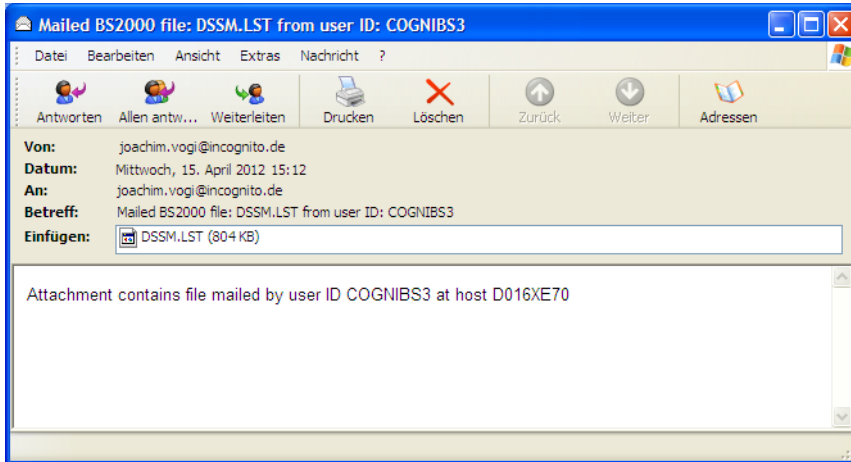
```

/show-job-status _____ (1)
%TSN:      3ZX9          TYPE:    3 DIALOG   NOW:      2012-04-15.150812
%JOBNAME:  VOG          PRI:      0 210
%USERID:   COGNIBS3    JCLASS:  JCDSTD    LOGON:    2012-04-15.1428
%ACCNB:    89001       CPU-MAX:  9999    CPU-USED:000001.0700
%STATION:  $$$06581   PROC:    FIREBALL
%TID:      00090119   UNP/Q#:  00/000
%CMD:      SHOW-JOB-STATUS
%MONJV:    *NONE
/show-user-attr
%SHOW-USER-ATTRIBUTES --- PUBSET TK82 - USER COGNIBS3          2012-04-15 15:09:05
.
%EMAIL-ADDRESS alfred.holli@incognito.de,
%              joachim.vogi@incognito.de, _____ (2)
%              johannes.kuli@incognito.de,
%              mathias.reh@incognito.de
.
%-----
%SHOW-USER-ATTRIBUTES _____ END OF DISPLAY FOR USER COGNIBS3 ON PUBSET TK82
/mail-file dssm.lst _____ (3)

```

- (1) The user has logged in under the user ID *COGNIBS3* with the job name *VOG*.
- (2) 4 email addresses are entered in the user entry (output abbreviated).
- (3) With MAIL-FILE the *DSSM.LST* file is sent to the home user ID. As the job name *VOG* can be assigned unambiguously to the address *joachim.vogi@incognito.de* from the address list of the user entry, MAIL-FILE uses this address as the sender and recipient (see opened email).

After the email arrives, it is opened on the PC:



MESSAGE

Send message to specific user task

Description status:	BS2000 OSD/BC V10.0A
Functional area:	not allocated
Domain:	not allocated
Privileges:	OPERATING
Routing code:	E



The MESSAGE command is being replaced by the INFORM-JOB command. MESSAGE continues to be supported to ensure backwards compatibility, but INFORM-JOB should be used for new applications. All that follows is a brief overview of the command's function, syntax and return codes.

Function

The MESSAGE command enables the operator to send a message to a specific batch or interactive job. The system adds the date and time of day to the operator message. The message is written to SYSOUT.

If the job has already terminated, or has not yet been started, the MESSAGE command will not be executed and the operator will be informed.

Restrictions

The command is available in ISP format only; in other words, there are no SDF functions (such as syntax analysis or help).

The format has been subdivided into two subformats:

- Format 1: Send message to terminal
- Format 2: Send message to batch or interactive task

Note

The precise output format of the message is controlled by the NBMESLG system parameter (applies to both syntax formats).

Format 1

MESSAGE	Alias: MSG
TERM = (<processor 1..8>,<station 1..8> ,<text 1..151>	

Format 2

MESSAGE	Alias: MSG
TSN = <alphanum-name 1..4> ,<text 1..151>	

Return codes

(SC2)	SC1	Maincode	Meaning
	0	CMD0001	No error
2	0	EXC0064	Warning. Specified task has temporarily suppressed message function
1	1	EXC0240	Syntax error
2	64	EXC0080	Specified task does not exist
3	64	EXC0062	Specified task cannot receive message
4	64	EXC0081	Invalid task type
5	64	EXC0109	Semantic error; command ignored
	130	EXC0061	Insufficient class 4 memory; command aborted

Example

Operator input:

```
/MES TSN=0FC3, PLEASE CALL OPERATOR
```

Output on terminal of interactive task 0FC3:

```
%MESS PLEASE CALL OPERATOR :16:23:38 :12-01-26026
```

MODIFY-ACCOUNTING-PARAMETERS

Modify accounting system parameters

Description status:	BS2000 OSD/BC V10.0A
Functional area:	Accounting system control
Domain:	ACCOUNTING
Privileges:	TSOS

Function

This command allows system administration to modify the following accounting system parameters set with the START-ACCOUNTING command:

- accounting records and record extensions to be included in the accounting file
- the list of continuation files in the case of file switching
- the job classes to be monitored
- the monitoring cycle

Neither in the definition of the accounting records and their extensions nor in the definition of the job classes is a logical check of the ACCOUNT function for consistency of the specifications performed. The default value *UNCHANGED in the corresponding operands means that the previously valid definition still applies.

Format

MODIFY-ACCOUNTING-PARAMETERS

```

SET-RECORD-TYPE = *UNCHANGED / *ALL / list-poss(64): <name 1..6>
,ADD-RECORD-TYPE = *NONE / list-poss(64): <name 1..6>
,REMOVE-RECORD-TYPE = *NONE / list-poss(64): <name 1..6>
,ALTERNATE-FILES = *UNCHANGED / *NONE / list-poss(5): <filename 1..54> /
    <partial-filename 2..53>
,ACCOUNTING-PERIOD = *UNCHANGED / <integer 10..1440 minutes> / *STD
,JOB-CLASS = *UNCHANGED / *NONE / *ALL / list-poss(16): <name 1..8>

```

Operands

SET-RECORD-TYPE = *UNCHANGED / *ALL / list-poss(64): <name 1..6>

Defines the accounting records and record extensions to be written to the accounting file.

SET-RECORD-TYPE = *ALL

All accounting records and implicitly active record extensions are written to the accounting file.

SET-RECORD-TYPE = list-poss(64): <name 1..6>

Identifiers of the accounting records or record extensions to be written. Up to 64 accounting records or extensions can be specified (see notes).

ADD-RECORD-TYPE = *NONE / list-poss(64): <name 1..6>

Defines whether the specified accounting records and record extensions, and which ones (maximum 64), are also to be added to the list of accounting records/record extensions to be written (see the notes).

REMOVE-RECORD-TYPE = *NONE / list-poss(64): <name 1..6>

Defines whether the specified accounting records and record extensions (maximum 64) are no longer to be written to the accounting file (see notes).

ALTERNATE-FILES = *UNCHANGED / *NONE / <filename 1..54> / <partial-filename 2..53>

Replaces the list of accounting file names defined by means of the START-ACCOUNTING command.

Specification of a list of continuation files is meaningful only if the name of the current accounting file was not automatically generated.

ALTERNATE-FILES = *NONE

Deletes the list of continuation file names.

ALTERNATE-FILES = list-poss(5): <filename 1..54> / <partial-file-name 2..53>

Names of the continuation files to replace the file names in the list of continuation files. Up to 5 file names may be specified (see the notes).

ACCOUNTING-PERIOD = *UNCHANGED / *STD / <integer 10..1440 *minutes*>

Modifies the cycle of the periodic accounting interval.

Specific records of the accounting system and job classes are periodically monitored to derive average values.

To avoid overloading, the frequency of this periodic monitoring should be oriented towards the lower threshold of the value range only in exceptional cases.

The maximum value corresponds to one day.

ACCOUNTING-PERIOD = *STD

The default value of 20 minutes applies.

ACCOUNTING-PERIOD = <integer 10..1440 minutes>

Value in minutes defining the frequency of the periodic monitoring of accounting records and job classes.

JOB-CLASS = *UNCHANGED / *NONE / *ALL / list-poss(16): <name 1..8>

List of job classes to be subject to periodic monitoring of the accounting system.

JOB-CLASS = *NONE

No job classes are to be monitored any longer.

JOB-CLASS = *ALL

All job classes are to be monitored.

JOB-CLASS = list-poss(16): <name 1..8>

Specification of up to 16 job classes to be monitored within the specified period.

Return codes

(SC2)	SC1	Maincode	Meaning
	0	CMD0001	No error
2	0	NAM3001	Requested action has been carried out, but accompanied by a warning
	1	CMD0202	Syntax error
	32	CMD0221	Internal system error
	64	NAM0012	No authorization for this command
	64	NAM3003	Semantic error
	128	CMD2280	Temporarily unable to execute the command

Notes

- The accounting records are addressed via the record label (field 1 in the record definition). Activation of the accounting record implies that all record extensions are activated. If only specific record extensions are to be activated or suppressed, these must be addressed explicitly. The record extension is identified by adding the extension label to the record label. The deactivation of one or more record extensions means that the accounting record is written with the remaining record extensions. For example, the operand ADD-RECORD-TYPE=(DALC, TASKCA, TASKTI) causes memory allocation record DALC and two record extensions of the task accounting record (TASKCA and TASKTI) to be activated as well.
- The name of the continuation file or the last name in the list of continuation files may be a partially qualified file name. This causes automatic file name generation to be activated following a switch of accounting files.

Example

```
/show-acc-sta inf=*files
ACCOUNTING STATUS INFORMATION
=====
CURRENT ACCOUNTING FILE:                (AUTOMATIC)
-----
:SBZ8:$TSOS.SYS.ACCOUNT.2012-01-26.074.01
OPENED AT : 2012-01-26, 17:02:07-W

ALTERNATE FILENAMES:
-----
** NONE SPECIFIED **

/mod-acc-par alter-files=(account2,account3),
              add=(dalc,jobsjd),remove=splo

/show-acc-sta inf=*all
ACCOUNTING STATUS INFORMATION
=====
CURRENT ACCOUNTING FILE:                (AUTOMATIC)
-----
:SBZ8:$TSOS.SYS.ACCOUNT.2012-01-26.074.01
OPENED AT : 2012-01-26, 17:02:07-W

ALTERNATE FILENAMES:
-----
ACCOUNT2
ACCOUNT3

ACCOUNTING RECORD INFORMATION:
-----
RECORD IDS TURNED OFF:
DRFA  PACC  RCPU  RSRV  SOPA  SPLI  SPLO  TATR

RECORD EXTENSIONS TURNED ON:
UACC:  ID

RECORD EXTENSIONS TURNED OFF:
RECORD IDS TURNED OFF:
DRFA  PACC  RCPU  RSRV  SOPA  SPLI  SPLO  TATR

RECORD EXTENSIONS TURNED ON:
UACC:  ID

RECORD EXTENSIONS TURNED OFF:
JOBS:  JP  JR
PRGS:  CA  ID  PC  TI
PRGT:  CA  ID  PC  TI
TASK:  CA  ID  PC  TI
TDEV:  ID  VU

***** NOT LISTED RECORD IDS ARE TURNED ON *****

ACCOUNTING PROCESSING PARAMETERS:
-----
ACCOUNTING PERIOD : 20

JOB-CLASSES :
** NONE SPECIFIED **
```


MODIFY-ACS-OPTIONS

Modify ACS option settings

Description status:	ACS V19.0A
Functional area:	File processing
Domain:	FILE
Privileges:	STD-PROCESSING ACS-ADMINISTRATION SAT-FILE-EVALUATION SAT-FILE-MANAGEMENT SECURITY-ADMINISTRATION

Function

The MODIFY-ACS-OPTIONS command allows the user to modify the following globally set AC options for the current task:

- output of messages when loading the alias catalog
- logging of alias substitutions and prefix insertions
- permission to use the catalog ID and user ID in aliases (fully qualified)
This ACS option may be restricted by the ACS administrator!
- permission to use user IDs in aliases
This ACS option may be restricted by the ACS administrator!
- range of the substitution (for files or for files and job variables)

The currently applicable settings can be determined by the user from the output of the SHOW-ACS-OPTIONS command.

Privileged functions

The ACS administrator uses SCOPE=*SYSTEM to set AC options for the whole system and can specify that users are not allowed to modify the AC options relating to the use of catalog and user IDs in alias names.

The ACS administrator also globally defines the pubset on which temporary spool files may be created.

The changes to the global options remain in effect until the next MODIFY-ACS-OPTIONS or until shutdown, or until the ACS subsystem is unloaded.

Following the loading of the ACS subsystem, the following preset values apply:

```
SUCCESS-MSG=PAR(USER-FILES=*YES, SYSTEM-FILES=*YES)
LOGGING=*PAR(ALIAS-SUBSTITUTION=*STD, PREFIX-INSERTION=*NO)
COMPLETE-ALIAS-NAMES=*NOT-ALLOWED(USER-MODIFICATION=*NOT-ALLOWED)
ALIAS-USERID=*NOT-ALLOWED(USER-MODIFICATION=*NOT-ALLOWED)
SPOOL-FILE-PUBSET=*STD
STANDARD-RANGE=*FILE
```

Format

MODIFY-ACS-OPTIONS

```
SUCCESS-MSG = *UNCHANGED / *YES / *NO / [*PARAMETERS](...)
  [*PARAMETERS](...)
    |
    | SYSTEM-FILE-MSG = *UNCHANGED / *YES / *NO
    | ,USER-FILE-MSG = *UNCHANGED / *YES / *NO
LOGGING = *UNCHANGED / *YES / *STD / [*PARAMETERS](...)
  [*PARAMETERS](...)
    |
    | ALIAS-SUBSTITUTION = *UNCHANGED / *STD / *YES
    | ,PREFIX-INSERTION = *UNCHANGED / *YES / *NO
COMPLETE-ALIAS-NAMES = *UNCHANGED / *ALLOWED / *NOT-ALLOWED(...)
  *NOT-ALLOWED(...)
    |
    | USER-MODIFICATION = *UNCHANGED / *ALLOWED / *NOT-ALLOWED
ALIAS-USERID = *UNCHANGED / *ALLOWED / *NOT-ALLOWED(...)
  *NOT-ALLOWED(...)
    |
    | USER-MODIFICATION = *UNCHANGED / *ALLOWED / *NOT-ALLOWED
SPOOL-FILE-PUBSET = *UNCHANGED / *STD / <alphanum-name 1..4>
SCOPE = *TASK / *SYSTEM
STANDARD-RANGE = *UNCHANGED / *FILE / *BOTH
```

Operands

SUCCESS-MSG = *UNCHANGED / *YES / *NO / *PARAMETERS(...)

Affects the default setting for the output of message ACS0001 when loading the alias catalog. The specification made here applies as the default value *STD in the SUCCESS-MSG operand of the LOAD-ALIAS-CATALOG command.

SUCCESS-MSG = *UNCHANGED

The default setting is not changed.

SUCCESS-MSG = *YES

The output of message ACS0001 is set as the task-specific default.

SUCCESS-MSG = *NO

Suppression of message ACS0001 is set as the task-specific default.

SUCCESS-MSG = *PARAMETERS(...)

Enables the output of message ACS0001 to be set independently for AC system files and AC files.

SYSTEM-FILE-MSG = *UNCHANGED / *YES / *NO

Defines the default setting for AC system files.

USER-FILE-MSG = *UNCHANGED / *YES / *NO

Defines the default setting for AC files.

LOGGING = *UNCHANGED / *YES / *STD / *PARAMETERS(...)

Specifies whether a message is to be output for each alias substitution and prefix insertion. Note that alias substitutions and prefix insertions are performed whenever the system internally accesses the actual file or job variable name, so a correspondingly large number of messages will be generated.

LOGGING = *UNCHANGED

The default setting is not changes.

LOGGING = *YES

The messages must always be output.

LOGGING = *STD

Messages for alias substitutions are output only if the corresponding AC entry has the LOGGING attribute; no messages are output for the insertion of prefixes.

*STD is equivalent to LOGGING=*PARAMETERS(ALIAS-SUBSTITUTION=*STD, PREFIX-INSERTION=*NO).

LOGGING = *PARAMETERS(...)

Enables the output of messages to be set independently for alias substitutions and the insertion of prefixes.

ALIAS-SUBSTITUTION = *UNCHANGED / *STD / *YES

Specifies whether message ACS0000 or ACS0049 is to be output for each alias substitution, i.e. whenever the actual file or job variable name is substituted for the alias. *YES causes the message to be output for every alias substitution; *STD for aliases with the attribute LOGGING.

PREFIX-INSERTION = *UNCHANGED / *YES / *NO

Specifies whether message ACS0000 or ACS0049 is to be output for each prefix insertion.

COMPLETE-ALIAS-NAMES = *UNCHANGED / *ALLOWED / *NOT-ALLOWED(...)

Defines whether the catalog and user ID may be used in aliases. This modification of the global setting for the local task must be permitted by the ACS administrator.

The ALLOWED setting should only be used when really necessary. Not allowing the catalog ID and user ID in aliases prevents the possibility of duplicate substitutions in cases where the already substituted and completed actual file or job variable name is inadvertently specified instead of the alias. Preventing such file or job variable names from appearing as an alias in the catalog thus ensures that no unwanted file or job variable is referenced.

COMPLETE-ALIAS-NAMES = *NOT-ALLOWED(...)

Catalog and user IDs are not allowed within alias names.

For users with ACS-ADMINISTRATION privilege:

Specifies (in conjunction with SCOPE=*SYSTEM) that the ACS option of COMPLETE-ALIAS-NAMES is by default unavailable to the users. However, in the substructure which follows, a user can be given the right to use this option by explicitly requesting it.

Use of this operand together with SCOPE=*TASK modifies the setting for the current administrator task; in this case, the substructure is ignored.

USER-MODIFICATION =

Makes a system-wide specification of whether a user may utilize the COMPLETE-ALIAS-NAME option of ACS.

USER-MODIFICATION = *UNCHANGED

Preset value: the previous declaration continues to apply.

USER-MODIFICATION = *ALLOWED

Every ACS user is to be allowed to use the COMPLETE-ALIAS-NAME option of ACS, and hence use fully qualified file or job variable names, with catalog ID and user ID, in alias catalogs.

USER-MODIFICATION = *NOT-ALLOWED

The COMPLETE-ALIAS-NAME option of ACS may not be used by nonprivileged users. A corresponding request in the user command, with COMPLETE-ALIAS-NAMES = *ALLOWED, will be rejected with an error message.

This is the preset value which applies following loading of the subsystem.

ALIAS-USERID = *UNCHANGED / *ALLOWED / *NOT-ALLOWED(...)

Defines whether user IDs are permitted within aliases. The right to modify the global setting NOT-ALLOWED for the local task must have been granted by the ACS administrator.

ALIAS-USERID = *ALLOWED

Allows the use of user IDs in aliases. The user ID TSOS and all user IDs beginning with the string *SYS* are not permitted.

ALIAS-USERID = *NOT-ALLOWED(...)

No foreign user IDs other than the system default ID may be used in an alias.

For users with ACS-ADMINISTRATION privilege:

Specifies in conjunction with SCOPE=*SYSTEM that the ACS option of ALIAS-USERID is by default unavailable to the users. However, in the substructure which follows, a user can be given the right to use this option by explicitly requesting it.

USER-MODIFICATION =

Makes a system-wide specification of whether a user may utilize the ALIAS-USERID option of ACS.

USER-MODIFICATION = *UNCHANGED

Preset value: the previous declaration continues to apply.

USER-MODIFICATION = *ALLOWED

Every ACS user is to be allowed to use the ALIAS-USERID option of ACS, and hence use alias names containing any required user IDs (exception: \$SYS*. and \$TSOS.).

USER-MODIFICATION = *NOT-ALLOWED

The ALIAS-USERID option of ACS must not be amended by nonprivileged users. A corresponding request in the user command, with ALIAS-USERID = *ALLOWED/*NOT-ALLOWED will be rejected with an error message.

This is the preset value which applies following loading of the subsystem.

SPOOL-FILE-PUBSET =

Only for users with ACS-ADMINISTRATION privilege:

Specifies the pubset on which temporary spool files (S.OUT., S.LST. files) should be created.

The operand will only be evaluated when the command is called if SCOPE=SYSTEM is also set, i.e. the ACS administration cannot exercise control specifically over its own spool files.

SPOOL-FILE-PUBSET = *UNCHANGED

Preset value: the previous declaration continues to apply.

SPOOL-FILE-PUBSET = *STD

For setting up temporary SPOOL files, use should be made of the default pubset for the task which is creating the file.

This is the preset value which applies following loading of the subsystem.

SPOOL-FILE-PUBSET = <cat-id 1..4>

Catalog ID of the pubset on which all temporary SPOOL files should be created.

If a SPOOL pubset is defined, the system administration must make sure that all the users of the system are entered in the user catalog for this pubset.

SCOPE =

Only for users with ACS-ADMINISTRATION privilege:

Defines the scope of validity of the specified options.

SCOPE = *TASK

Preset value:

The specified options are only to apply task-locally, i.e. to the user's current task.

SCOPE = *SYSTEM

Specifies that the options are to have system-global validity.

STANDARD-RANGE =

Defines the standard range for substituting aliases and inserting a prefix. The range determines whether alias substitution and insertion of a prefix should apply both for files and for job variables.

In the case of alias substitution this range applies for all AC entries which were set up with RANGE=*STD. A range deviating from this can be specified explicitly for each AC entry (see the ADD- and MODIFY-ALIAS-CATALOG-ENTRY commands).

For a prefix specification this range applies with RANGE=*STD (see the SET-FILE-NAME-PREFIX command).

STANDARD-RANGE = *UNCHANGED

Preset value: the previous declaration continues to apply.

STANDARD-RANGE = *FILE

Alias substitution and the prefix specification are effective only for files.

This is the preset value which applies following loading of the subsystem.

STANDARD-RANGE = *BOTH

Alias substitution and the prefix specification are effective for both files and job variables.

Return codes

(SC2)	SC1	Maincode	Meaning/Guaranteed messages
	0	CMD0001	Command executed normally Guaranteed message: ACS0032 if SPOOL-FILE-PUBSET is modified
	64	ACS0029	Command not permitted
	64	ACS0038	Pubset could not be reserved
	128	ACS0018	ACS is not available

Examples

For examples, see the ADD-ALIAS-CATALOG-ENTRY and SET-FILE-NAME-PREFIX commands.

MODIFY-ACS-SYSTEM-FILE

Modify assignment or attributes of ACS system files

Description status:	ACS V19.0A
Functional area:	File processing
Domain:	FILE
Privileges:	ACS-ADMINISTRATION

Function

The command MODIFY-ACS-SYSTEM-FILE permits the ACS administration to modify AC system file definitions which were specified by an ADD-ACS-SYSTEM-FILE command. An AC system file is addressed not by its file name, but instead by its symbolic name, which is its identifier. Using this command, it is possible to redefine both the assignment to a real file name and also the attributes of an AC system file.

Among the changes that are possible by modifying the attributes, the ACS system administration can specify that an identifier which has already been declared is to be used as the default AC system file for all subsequent calls. In this case, the entries from this file will be read whenever the user specifies the identifier "STD" (in the LOAD-ALIAS-CATALOG command).

If there is no AC system file with the specified identifier, the command will be rejected with an error message.

Format

MODIFY-ACS-SYSTEM-FILE

```

ALIAS-CATALOG-ID = <composed-name 1..20>
,FILE-NAME = *UNCHANGED / <filename 1..54>
,ATTRIBUTES = *UNCHANGED / *STD / list-poss(4): *SYSTEM-DEFAULT / *INVISIBLE /
                *SECRET-FILE-NAME / *PRIVILEGED
  
```

Operands

ALIAS-CATALOG-ID = <composed-name 1...20>

The symbolic name under which the AC system file can be addressed by a LOAD-ALIAS-CATALOG command. The user can request a display of the list of all the available AC system files by a SHOW-ACS-SYSTEM-FILES command.

FILE-NAME = *UNCHANGED / <filename 1..54>

The assignment to the fully qualified, real file name of an AC system file, in which the entries are stored, is either to be kept unchanged or modified.

Before the file is inserted into the list of AC system files, the operand FILE-NAME will be supplemented, where appropriate, by the user ID of the calling task and its default pubset.

ATTRIBUTES =

Specifies the attributes which the AC system file is to be given.

ATTRIBUTES = *UNCHANGED

The declarations made by the ADD-ACS-SYSTEM-FILES command are to remain valid.

ATTRIBUTES = *STD

The AC system file is not to be given any of the attributes which follow, although the attribute SYSTEM-DEFAULT cannot be reset by this.

ATTRIBUTES = *SYSTEM-DEFAULT

This AC system file is to act as the default AC system file. The entries in this file will then automatically be loaded into the alias catalog of any user who specifies the value *STD for the ALIAS-CAT-ID operand in a LOAD-ALIAS-CATALOG command.

If the attribute SYSTEM-DEFAULT is given to more than one AC system file, the last assignment which was made will always apply. If there is no AC system file which has been explicitly given this attribute, it is implicitly given to the first of the system files which was declared.

ATTRIBUTES = *INVISIBLE

When the AC system files which are available to the nonprivileged user are being output (SHOW-ACS-SYSTEM-FILES command) the entry for this file will not be shown. The identifier of such an AC system file can only be used by users who have previously been informed of it, or who invoke specially provided procedures.

When the command SHOW-ACS-OPTIONS is used to output details of AC files which are loaded, the character '*' will appear for such files instead of their IDs, unless the caller is the ACS administrator.

ATTRIBUTES = *SECRET-FILE-NAME

When the AC files which are available to the user are being output (SHOW-ACS-SYSTEM-FILES and SHOW-ACS-OPTIONS commands), then instead of the file name for such a file, the string '*SYSTEM' will appear, unless the caller is the ACS administration. The non-privileged user thus has no way of discovering the real file name.

ATTRIBUTES = *PRIVILEGED

When this AC system file is used in the LOAD-ALIAS-CATALOG command, its entries should be copied into the task's virtual alias catalog as **system entries**.

Return codes

(SC2)	SC1	Maincode	Meaning
	0	CMD0001	Command correctly executed
	32	CMD0221	Internal system error
	64	ACS0012	Error: ACSF not found
	130	ACS0036	Resource bottleneck

MODIFY-ALIAS-CATALOG-ENTRY

Modify entry in alias catalog

Description status:	ACS V19.0A
Functional area:	File processing
Domain:	FILE
Privileges:	STD-PROCESSING ACS-ADMINISTRATION SAT-FILE-EVALUATION SAT-FILE-MANAGEMENT SECURITY-ADMINISTRATION

Function

The MODIFY-ALIAS-CATALOG-ENTRY command is used to change an existing entry in the current alias catalog. The following attributes can be redefined by the user for the existing entry:

- actual file or job variable name to be substituted for the alias
- whether the alias substitution is to be logged
- whether the entry is displayed in the output of the SHOW-ALIAS-CATALOG-ENTRY command
- whether the entry is protected against changes or deletion by the MODIFY-ALIAS-CATALOG-ENTRY or REMOVE-ALIAS-CATALOG-ENTRY command
- range of the substitution: the entry applies only for files, only for job variables, or for both (RANGE operand)

The command is rejected if there is no existing entry for the specified alias or if an existing entry is protected against changes by the PROTECTED attribute.

Modified entries are only temporarily present in the task-local alias catalog, which means they are discarded when the alias catalog is deleted (explicitly with the PURGE-ALIAS-CATALOG command or implicitly when the task is terminated). If desired, however, the current entries can be saved in a file by using the STORE-ALIAS-CATALOG command.

Privileged functions

When an individual catalog entry is modified, the ACS administration can convert the entry to a system entry. In this case, the alias name is subjected to a less rigorous check; it is then always permissible to specify a catalog ID and a user ID (other than \$SYS*. or \$TSOS.).

Format

MODIFY-ALIAS-CATALOG-ENTRY

```

ALIAS-FILE-NAME = <filename 1..54>
, FILE-NAME = *UNCHANGED / <filename 1..54> / *SAME
, ATTRIBUTES = *UNCHANGED / *STD / *PARAMETERS(...)
    *PARAMETERS(...)
        |
        | LOGGING = *UNCHANGED / *YES / *NO
        |
        | , VISIBILITY = *UNCHANGED / *YES / *NO
        |
        | , PROTECTION = *UNCHANGED / *YES / *NO
, TYPE = *UNCHANGED / *USER / *SYSTEM
, RANGE = *UNCHANGED / *FILE / *JV / *BOTH

```

Operands

ALIAS-FILE-NAME = <filename 1..54>

Alias for which the actual file or job variable name is to be substituted by ACS.

FILE-NAME = *UNCHANGED

The associated actual file or job variable name is not changed.

FILE-NAME = <filename 1..54>

Actual file or job variable name to be substituted by ACS for the alias. The name of a temporary file or job variable is not allowed.

If the actual name is identical to the alias, the entry is treated as a normal alias definition (in contrast to *SAME). The substitution of the file name is logged as ACS0000. The substitution of the job variable name is logged with ACS0049.

FILE-NAME = *SAME

The original specification can only be changed if the entry does not have the PROTECTED attribute. The actual file or job variable name is the same as the alias, so no substitution takes place in this case; however, the entry prevents the insertion of the defined prefix. The substitution of the file or job variable name is logged.

ATTRIBUTES = *UNCHANGED / *STD / *PARAMETERS(...)

Changes the attributes of the existing entry created in the alias catalog. Several attributes may be specified together in a list.

ATTRIBUTES = *UNCHANGED

No attributes are changed.

ATTRIBUTES = *STD

The entry in the alias catalog is to have none of the attributes below.

ATTRIBUTES = *PARAMETERS(...)

The new entry is to have the following attributes:

LOGGING = *UNCHANGED / *YES / *NO

Substitution of the alias is to be logged. This attribute is independent of the corresponding ACS setting which applies to the task.

VISIBILITY = *UNCHANGED / *YES / *NO

Prevents the entry in the alias catalog from appearing in the output of the SHOW-ALIAS-CATALOG-ENTRY command.

PROTECTION = *UNCHANGED / *YES / *NO

Protects the entry in the alias catalog against modification and deletion with the MODIFY-ALIAS-CATALOG-ENTRY and REMOVE-ALIAS-CATALOG-ENTRY commands respectively.

TYPE = *UNCHANGED / *USER / *SYSTEM

Only for users with ACS-ADMINISTRATION privilege:

Specifies whether the type of the entry which is being modified is to be USER or SYSTEM.

TYPE = *UNCHANGED

Preset value: the previous declaration continues to apply.

TYPE = *USER

The catalog entry in the alias catalog is to be held as a user entry. Such entries are included when the virtual catalog is saved into a file.

TYPE = *SYSTEM

The catalog entry in the alias catalog is to be held as a system entry. When the virtual catalog is saved into the AC file of a nonprivileged user, such entries are not included.

RANGE = *UNCHANGED / *FILE / *JV / *BOTH

Determines the range of the entry. Alias substitution can be defined for files and/or job variables.

RANGE = *UNCHANGED

Preset value: the previous declaration continues to apply.

RANGE = *FILE

Alias substitution is only effective for files.

RANGE = *JV

Alias substitution is only effective for job variables.

RANGE = *BOTH

Alias substitution is effective for both files and job variables.

Return codes

(SC2)	SC1	Maincode	Meaning
	0	CMD0001	Command executed normally
	32	CMD0221	Internal error
	64	ACS0006	Error: ACE entry not found
	64	ACS0017	Error: alias catalog not available
	64	ACS0024	Invalid alias catalog entry
	64	ACS0029	Command not permitted
	128	ACS0018	ACS is not available

Examples

For examples, see the ADD-ALIAS-CATALOG-ENTRY, LOAD-ALIAS-CATALOG and SET-FILE-NAME-PREFIX commands.

MODIFY-ASE-PARAMETERS

Modify global ASE settings

Description status:	ASE V1.0B
Functional area:	Error logging
Domain:	ERROR-LOGGING
Privileges:	TSOS

Function

The MODIFY-ASE-PARAMETERS command modifies global ASE settings. The size of the internal logging buffer in which SERSLOG events are logged is concerned here (ACTION=*INTERNAL-LOGGING). When the ASE subsystem is started, the buffer is created with a size of 4 KB. If the buffer is not large enough, new log records overwrite the oldest entries (“wrap-around”). If this is not desired, the buffer can be enlarged. The SHOW-ASE-STATUS command can be used to determine whether wrap-around is being used.

ASE V1.0 enables up to 127 log records to be saved per 4-KB block.

The SHOW-ASE-PARAMETERS command displays the current buffer size.

Format

MODIFY-ASE-PARAMETERS

BUFFER-SIZE = *UNCHANGED / <integer 1..16 4Kbyte>

Operands

BUFFER-SIZE = *UNCHANGED / <integer 1..16 4Kbyte>

Specifies the new size of the internal logging buffer in 4-KB blocks. When the subsystem starts, ASE creates the internal logging buffer with a size of 4 KB (corresponds to BUFFER-SIZE=1).

Return codes

(SC2)	SC1	Maincode	Meaning/Guaranteed messages
	0	CMD0001	Command executed without errors
	1	ASE0010	Syntax error
	32	CMD0221	System error
	64	ASE0011	Semantic error

MODIFY-CHANGE-DATE

Modify changeover time

Description status:	BS2000 OSD/BC V10.0A
Functional area:	System control and optimization
Domain:	SYSTEM-MANAGEMENT
Privileges:	TSOS

Function

The MODIFY-CHANGE-DATE command changes a future changeover time from standard daylight time to daylight saving time (or vice versa).

The modified changeover time must satisfy the following conditions:

- It must be between the neighboring changeover times like the previous changeover time
- It may not be within the next hour
- It must be 4 to 8 months away from its neighboring changeover times



The MODIFY-CHANGE-DATE command modifies a changeover time for the current session. If required, also modify the changeover time in the GTIME parameter set of the startup parameter file so that it is valid for future sessions.

Format

MODIFY-CHANGE-DATE

DATE = <date>

,**NEW-DATE** = *UNCHANGED / <date>

,**NEW-TIME** = *UNCHANGED / <time>

Operands

DATE = <date>

Selects the changeover time to be modified.

NEW-DATE = *UNCHANGED / <date>

Date of the new changeover time.

NEW-TIME = *UNCHANGED / <time>

Time of day of the new changeover time in the format hh:mm.

No seconds may be specified.

Return codes

(SC2)	SC1	Maincode	Meaning
	0	CMD0001	Command executed
	1	CHD0010	Syntax error in the command
	32	CMD0221	System error
	64	CHD0011	Semantic error in the command

MODIFY-CONSOLE-OPTIONS

Set operator terminal output control options

Description status:	BS2000 OSD/BC V10.0A
Functional area:	Operator terminal control
Domain:	not allocated
Privileges:	OPERATING
Routing code:	@

Function

The MODIFY-CONSOLE-OPTIONS command can be used to set the following operator terminal (console) output control options:

- screen updating on operator terminals (SCREEN-UPDATE operand)
- maximum number of undisplayed (queued) messages (QUEUE-WARNING operand)

Restrictions when using the “Operator LOGON” function

If the “Operator LOGON” function is used (incompatible mode; system parameter NBCONOPI=Y), the command can refer only to the physical operator terminal at which it is issued. That means that:

- with this command the main operator terminal ceases to have a privileged status in relation to the other operator terminals;
- entering the command from authorized user programs is no longer permissible; and
- the only value accepted for the CONSOLE-UNIT operand is the default setting *OWN, so this operand can be left unspecified.

Format

MODIFY-CONSOLE-OPTIONS

```

CONSOLE-UNIT = *OWN / <alphanum-name 2..2>
,SCREEN-UPDATE = *UNCHANGED / *SCROLL / *PERIOD(...)
  *PERIOD(...)
    | UPDATE-INTERVAL = *UNCHANGED / <integer 0..60 seconds>
,QUEUE-WARNING = *UNCHANGED / <integer 10..500>

```

Operands

CONSOLE-UNIT =

Specifies the operator terminal whose parameters are to be modified.

CONSOLE-UNIT = *OWN

The parameters of the operator terminal from which the command was issued are to be modified (default value).

CONSOLE-UNIT = <alphanum-name 2..2>

Not allowed in conjunction with the Operator Logon function.

Specifies the mnemonic device name of the operator terminal whose parameters are to be modified. A different operator terminal may be specified at the main operator terminal or by an authorized user program only in compatible mode (NBCONOPI=N).

SCREEN-UPDATE =

Defines the time intervals at which the screen is to be updated and how many lines are to be affected. There are two screen update modes: roll-up mode and interval mode.

SCREEN-UPDATE = *UNCHANGED

The values set for UPDATE-INTERVAL and MESSAGE-REPLACE-RATE remain unchanged.

SCREEN-UPDATE = *SCROLL

Sets roll-up mode. Screen update takes place at intervals of 255 ms, with one message per output.

SCREEN-UPDATE = *PERIOD(...)

Specifies values for the screen update and replacement of messages.

UPDATE-INTERVAL = *UNCHANGED

The preset value is to remain unchanged.

UPDATE-INTERVAL = <integer 0..60 seconds >

Specifies the minimum time (in seconds) that may elapse between two screen updates. You can specify values in the range of 0 to 60; the default value is 0 (i.e. 255ms).

QUEUE-WARNING =

Specifies the number of queued messages which may accrue at a given operator terminal.

QUEUE-WARNING = *UNCHANGED

The preset value is to remain unchanged.

QUEUE-WARNING = <integer 10..500>

Specifies the number of queued messages which may accrue at a given operator terminal. If the number of such outstanding messages exceeds the specified value, control passes to interval mode with UPDATE-INTERVAL=0 (i.e. 255 ms).

Possible values: $10 \leq \text{int} \leq 500$

The preset value is 50.

Return codes

(SC2)	SC1	Maincode	Meaning
	0	CMD0001	No error
2	0	NBR0927	Command partially executed
	1	CMD0202	Syntax error
1	32	NBR0926	Internal error in command server
	64	CMD0216	Privilege violation
2	64	NBR0898	Input from user task illegal
1	64	NBR0922	Semantic error: command may be issued only from main console or by application
2	64	NBR0923	Semantic error: incorrect MN
3	64	NBR0924	Command not permitted on this console type
4	64	NBR0925	Semantic error; operand not allowed
	64	NBR1043	Authorized user program not allowed to perform this function in incompatible mode (NBCONOPI=Y)
	130	NBR0921	Out of memory

MODIFY-DBL-DEFAULTS

Set defaults for DBL calls

Description status:	BLSSERV V2.8A
Functional area:	Program control
Domain:	PROGRAM
Privileges:	STD-PROCESSING

Function

The MODIFY-DBL-DEFAULTS command sets defaults on a task-local basis for subsequent calls to the DBL using the START- and LOAD-EXECUTABLE-PROGRAM (or START-/LOAD-PROGRAM) commands and the BIND macro. Apart from setting specific values it can configure their scope and priority.

The SHOW-DBL-DEFAULTS command lists the current settings. The RESET-DBL-DEFAULTS command can be used to return all settings to the original defaults.

Format

(Part 1 of 5)

```

MODIFY-DBL-DEFAULTS

PRIORITY = *STD / *FORCED
,SCOPE = *ALL(...) / *CMD-CALLS(...) / *PROGRAM-CALLS(...)
  *ALL(...)
    | LIBRARY = *UNCHANGED / *STD / *OMF / <filename 1..54 without-gen> / *LINK(...)
    | *LINK(...)
    | | LINK = <structured-name 1..8> / <filename 1..8 without-gen-vers>
    | LOADING = *PARAMETERS(...)
    | *PARAMETERS(...)
    | | PROGRAM-MODE = *UNCHANGED / *ANY / 24
    | | ,LOAD-INFORMATION = *UNCHANGED / *DEFINITIONS / *REFERENCES / *MAP /
    | | *NONE
    | | ,REP-FILE = *UNCHANGED / *NONE / <filename 1..54 without-gen>
    | | ,IGNORE-ATTRIBUTES = *UNCHANGED / *NONE / *READ-ONLY
    | | ,AMODE-CHECK = *UNCHANGED / *STD / *ADVANCED

```

```

,RESOLUTION = *PARAMETERS(...)
  *PARAMETERS(...)
    SHARE-SCOPE = *UNCHANGED / *SYSTEM-MEMORY / *NONE / *ALL /
                *MEMORY-POOL(...)
    *MEMORY-POOL(...)
      SCOPE = *ALL / *USER-ID / *USER-GROUP / *HOST-SYSTEM
,PROGRAM-VERSION = *UNCHANGED / *STD / *BLANK /
                  <composed-name 1..24 with-under>
,ALTERNATE-LIBRARIES = *UNCHANGED / *NONE / *YES /
                      list-poss(2): *TASKLIB / *BLSLIB##
,AUTOLINK = *UNCHANGED / *YES / *NO / *ALTERNATE-LIBRARIES

,ERROR-PROCESSING = *PARAMETERS(...)
  *PARAMETERS(...)
    NAME-COLLISION = *UNCHANGED / *STD / *ABORT
,UNRESOLVED-EXTRNS = *UNCHANGED / *STD / *DELAY / *ABORT
,ERROR-EXIT = *UNCHANGED / *NONE / <x-string 1..8>

,REPORTING = *PARAMETERS(...)
  *PARAMETERS(...)
    MESSAGE-CONTROL = *UNCHANGED / *INFORMATION / *WARNING / *ERROR /
                    *NONE
,PROGRAM-MAP = *UNCHANGED / *NO / *SYSLST(...) / *SYSOUT / *BOTH(...)
  *SYSLST(...)
    SYSLST-NUMBER = *STD / <integer 1..99>
  *BOTH(...)
    SYSLST-NUMBER = *STD / <integer 1..99>

,TEST-OPTIONS = *UNCHANGED / *NONE / *AID

*CMD-CALLS(...)
  LIBRARY = *UNCHANGED / *STD / *OMF / <filename 1..54 without-gen> / *LINK(...)
  *LINK(...)
    LINK = <structured-name 1..8> / <filename 1..8 without-gen-vers>

LOADING = *PARAMETERS(...)
  *PARAMETERS(...)
    PROGRAM-MODE = *UNCHANGED / *STD / 24 / *ANY
,LOAD-INFORMATION = *UNCHANGED / *DEFINITIONS / *REFERENCES / *MAP /
                  *NONE
,REP-FILE = *UNCHANGED / *NONE / <filename 1..54 without-gen>

```

```

,IGNORE-ATTRIBUTES = UNCHANGED / *NONE / *READ-ONLY
,AMODE-CHECK = UNCHANGED / *STD / *ADVANCED
,RESOLUTION = *PARAMETERS(...)
*PARAMETERS(...)
  SHARE-SCOPE = *UNCHANGED / *SYSTEM-MEMORY / *NONE / *ALL /
    *MEMORY-POOL(...)
    *MEMORY-POOL(...)
      SCOPE = *ALL / *USER-ID / *USER-GROUP / *HOST-SYSTEM
,PROGRAM-VERSION = *UNCHANGED / *STD / *BLANK /
  <composed-name 1..24 with-under>
,ALTERNATE-LIBRARIES = *UNCHANGED / *NONE / *YES /
  list-poss(2): *TASKLIB / *BLSLIB##
,AUTOLINK = *UNCHANGED / *YES / *NO / *ALTERNATE-LIBRARIES
,ERROR-PROCESSING = *PARAMETERS(...)
*PARAMETERS(...)
  NAME-COLLISION = *UNCHANGED / *STD / *ABORT
,UNRESOLVED-EXTRNS = *UNCHANGED / *STD / *DELAY / *ABORT
,ERROR-EXIT = *UNCHANGED / *NONE / <x-string 1..8>
,REPORTING = *PARAMETERS(...)
*PARAMETERS(...)
  MESSAGE-CONTROL = *UNCHANGED / *INFORMATION / *WARNING / *ERROR /
    *NONE
,PROGRAM-MAP = *UNCHANGED / *NO / *SYSLST(...) / *SYSOUT / *BOTH(...)
  *SYSLST(...)
    SYSLST-NUMBER = *STD / <integer 1..99>
  *BOTH(...)
    SYSLST-NUMBER = *STD / <integer 1..99>
,TEST-OPTIONS = *UNCHANGED / *NONE / *AID
,RUN-MODE = *UNCHANGED / *STD / *ADVANCED
,CISC-COMPILATION = *UNCHANGED / *YES(...) / *NO
*YES(...)
  WORKSPACE = *STD / <integer 1..2048 Mbyte>
,SHOW-MEMORY-USAGE = *UNCHANGED / *NO / *YES

```

***PROGRAM-CALLS(...)**

LIBRARY = *UNCHANGED / *STD / *OMF / <filename 1..54 without-gen> / *LINK(...)

*LINK(...)

LINK = <structured-name 1..8> / <filename 1..8 without-gen-vers>

,**LOADING** = *PARAMETERS(...)

*PARAMETERS(...)

PROGRAM-MODE = *UNCHANGED / *ANY / 24

,**LOAD-INFORMATION** = *UNCHANGED / *DEFINITIONS / *MAP / *NONE /
*REFERENCES

,**REP-FILE** = *UNCHANGED / *NONE / <filename 1..54 without-gen>

,**REP-SCOPE** = *UNCHANGED / *CONTEXT / *UNIT

,**CONTEXT-NAME** = *UNCHANGED / <filename 1..32>

,**CONTEXT-STATE** = *UNCHANGED / *ANY / *NEW / *OLD

,**CLOSE-LIBRARIES** = *UNCHANGED / *ALL / *NONE / *ALTERNATE-LIBRARIES

,**IGNORE-ATTRIBUTES** = *UNCHANGED / *NONE / *READ-ONLY

,**AMODE-CHECK** = *UNCHANGED / *STD / *ADVANCED

,**RESOLUTION** = *PARAMETERS(...)

*PARAMETERS(...)

SHARE-SCOPE = *UNCHANGED / *SYSTEM-MEMORY / *NONE / *ALL /
*MEMORY-POOL(...)

*MEMORY-POOL(...)

SCOPE = *ALL / *USER-ID / *USER-GROUP / *HOST-SYSTEM

,**PROGRAM-VERSION** = *UNCHANGED / *STD / *BLANK /
<composed-name 1..24 with-under>

,**ALTERNATE-LIBRARIES** = *UNCHANGED / *NONE / *YES /
list-poss(2): *TASKLIB / *BLSLIB##

,**AUTOLINK** = *UNCHANGED / *YES / *NO / *ALTERNATE-LIBRARIES

,**RESOL-TYPE** = *UNCHANGED / *STD / *USER(...)

*USER(...)

ORDER = *UNCHANGED / list-poss(4): *LINK-CONTEXT /
*USER-SHARED-CODE / *SYSTEM-SHARED-CODE /
*REFERENCE-CONTEXTS

,**PUBLIC-RESOL-TYPE** = *UNCHANGED / *STD / *USER(...)

*USER(...)

ORDER = *UNCHANGED / list-poss(3): *USER-SHARED-CODE /
*SYSTEM-SHARED-CODE / *LINK-CONTEXT

```

,ERROR-PROCESSING = *PARAMETERS(...)
  *PARAMETERS(...)
    NAME-COLLISION = *UNCHANGED / *STD / *ABORT
    ,UNRESOLVED-EXTRNS = *UNCHANGED / *STD / *DELAY / *DELAY-WARN / *ABORT
    ,ERROR-EXIT = *UNCHANGED / *NONE / <x-string 1..8>
,REPORTING = *PARAMETERS(...)
  *PARAMETERS(...)
    MESSAGE-CONTROL = *UNCHANGED / *INFORMATION / *ERROR / *WARNING /
                      *NONE
    ,PROGRAM-MAP = *UNCHANGED / *NO / *SYSLST(...) / *SYSOUT / *BOTH(...)
      *SYSLST(...)
        | SYSLST-NUMBER = *STD / <integer 1..99>
      *BOTH(...)
        | SYSLST-NUMBER = *STD / <integer 1..99>
,TEST-OPTIONS = *UNCHANGED / *NONE / *AID

```

Operands

A value of *UNCHANGED for an operand means that the previous setting of the associated DBL parameter is left unchanged. If nothing has yet been specified for the operand in a MODIFY-DBL-DEFAULTS command, the value that follows *UNCHANGED in the syntax description applies.

The only operands described below are those which do not appear in LOAD-/START-EXECUTABLE-PROGRAM (or LOAD-/START-PROGRAM). The operands of the DBL macros are listed in [table 56 on page 4-46](#).

PRIORITY =

Defines the priority of DBL parameter settings.

PRIORITY = *STD

The DBL parameters specified in LOAD-/START-EXECUTABLE-PROGRAM (or LOAD-/START-PROGRAM) or in the BIND macro have top priority. Thus the hierarchy is as follows:

1. values specified in LOAD-EXECUTABLE-PROGRAM (or LOAD-/START-PROGRAM) or in a BIND macro call
2. values specified in the MODIFY-DBL-DEFAULTS command
3. default values defined on initialization of an internal DBL parameter table. In the syntax chart these are the values following *UNCHANGED, unless some other value is underscored

PRIORITY = *FORCED

The DBL parameters defined in MODIFY-DBL-DEFAULTS have top priority. The DBL parameters specified in EXECUTABLE-PROGRAM (or LOAD-/START-PROGRAM) or in a BIND macro are ignored by the DBL.



PRIORITY = *FORCED must not be specified together with LIBRARY, PROGRAM-VERSION, CONTEXT-NAME or CONTEXT-STAT.

SCOPE =

Defines the scope of the settings.

SCOPE = *ALL(...)

The default settings apply both to DBL commands ((START-/LOAD-EXECUTABLE-PROGRAM or START-/LOAD-PROGRAM) and to DBL macros (BIND, ASHARE).

SCOPE = *CMD-CALLS(...)

The default settings apply to DBL commands only ((START-/LOAD-EXECUTABLE-PROGRAM or START-/LOAD-PROGRAM).

LOADING = *PARAMETERS(...)**PROGRAM-MODE = *UNCHANGED / *STD / 24 / *ANY**

Defines the part of the address space (above or below 16 MB) in which the load unit modules are to be loaded.

*STD is set by default at task start.

PROGRAM-MODE = *STD

The DBL default depends on the command call:

- In the case of LOAD-/START-EXECUTABLE-PROGRAM with FROM-FILE=*LIBRARY-ELEMENT(...), PROGRAM-MODE=*ANY is assumed as the DBL default value.
- In the case of LOAD-/START-PROGRAM with FROM-FILE=*MODULE(...), PROGRAM-MODE=24 is assumed as the DBL default value.

CISC-COMPILATION = *UNCHANGED / *YES(...) / *NO

Specifies whether CISCFW compilation is permitted. CISCFW is a firmware component on SQ servers as of SQ200 for mapping nonprivileged /390 code to X86-64 code. It supplements X86-64 mode and enables existing /390 code to be executed object-compatibly on SQ servers. CISCFW contains a Just-In-Time /390 code compiler which converts /390 code to X86-64 code at runtime.

A code block is compiled only when it is executed and is stored in a local task CISCFW memory. When the code block is executed again, the code, which has already been compiled and optimized, is executed directly from the CISCFW memory. Further optimization is achieved by making the CISCFW memory resident. CISCFW compilation is enabled by default.

In systems possessing only a small memory extension, programs that require high performance should be executed with CISCFW compilation. In the case of very large programs, a correspondingly larger main memory should be chosen (WORKSPACE operand).

CISC-COMPILATION = *YES(...)

CISCFW compilation is allowed.

WORKSPACE = *STD / <integer 1..2048 Mbyte>

Defines the size of the work area in MBytes available for the CISCFW memory. The default setting is *STD, i.e. the size of the work storage area for CISCFW compilation is defined by the compiler.

SHOW-MEMORY-USAGE = *UNCHANGED / *NO / *YES

Specifies whether or not the main memory that is to be used for the CISCFW memory is defined by the current value of the system parameter JTSTDMEM.

CISC-COMPILATION = *NO

CISCFW compilation is not to be used. /390 code is emulated by the /390 firmware.

SCOPE = *PROGRAM-CALLS(...)

The default settings apply to DBL macros only (BIND, ASHARE).

LOADING = *PARAMETERS(...)

CLOSE-LIBRARIES = *UNCHANGED / *ALL / *NONE / *ALTERNATE-LIBRARIES

Specifies whether the libraries used by DBL are to be closed after processing.

CLOSE-LIBRARIES = *ALL

All libraries used by DBL are closed.

CLOSE-LIBRARIES = *NONE

None of the libraries used by DBL are closed.

CLOSE-LIBRARIES = *ALTERNATE-LIBRARIES

Only the alternate libraries are closed.

REP-SCOPE = *UNCHANGED / *CONTEXT / *UNIT

Specifies whether REP processing is to be performed for all modules in the context or only the modules of the current load unit.

REP-SCOPE = *CONTEXT

REP processing is carried out for all modules in the context.

REP-SCOPE = *UNIT

REP processing is restricted to the modules of the current load unit. All other modules in the context are skipped.

CONTEXT-NAME = *UNCHANGED / <filename 1..32>

Names a context in which the load units are to be loaded. The name must begin with a letter.

CONTEXT-STATE = *UNCHANGED / *ANY / *NEW / *OLD

Determines whether the context specified with CONTEXT-NAME must or can exist.

CONTEXT-STATE = *ANY

If a user context with the specified name (CONTEXT-NAME) exists, this context is used; otherwise, a new context is created.

CONTEXT-STATE = *NEW

A new context with the specified name (CONTEXT-NAME) is created. This context must not be already present.

CONTEXT-STATE = *OLD

The context with the specified name (CONTEXT-NAME) is used. This context must be one that exists.

RESOLUTION = *PARAMETERS(...)**RESOL-TYPE = *UNCHANGED / *STD / *USER(...)**

Specifies the search strategy for resolving external references.

RESOL-TYPE = *STD

The search sequence predefined by DBL applies:

1. link context
2. shared code of the user
3. shared code of the system
4. reference context(s)

RESOL-TYPE = *USER(...)

The search sequence is defined by the user.

**ORDER = *UNCHANGED / list-poss(4): *LINK-CONTEXT /
 *USER-SHARED-CODE / *SYSTEM-SHARED-CODE /
 *REFERENCE-CONTEXTS**

The user-defined search sequence is specified in the form of a list of the following keywords. The order in which the contexts are searched is defined by the sequence of the keywords in the list:

*LINK-CONTEXT	for link context
*USER-SHARED-CODE	for shared code of the user
*SYSTEM-SHARED-CODE	for shared code of the system
*REFERENCE-CONTEXT	for reference context

Each keyword can appear in the list only once. Keywords that are not specified in the list are appended to the end of the list internally by DBL in accordance with the predefined sequence (see *STD).

Example

The specification ORDER=(*SYSTEM-SHARED-CODE , *USER-SHARED-CODE) is extended to ORDER=(*SYSTEM-SHARED-CODE , *USER-SHARED-CODE , *LINK-CONTEXT , *REFERENCE-CONTEXT). When external references are resolved, the search is performed in the following order:

1. in the system's shared code
2. in the user's shared code
3. in the link context
4. and, finally, in the reference context

PUBLIC-RESOL-TYPE = *UNCHANGED / *STD / *USER(...)

Specifies the search strategy for the resolution of external references in PUBLIC parts of LLMs.

PUBLIC-RESOL-TYPE = *STD

The search sequence predefined by the DBL applies:

1. shared code of the user
2. shared code of the system
3. link context

PUBLIC-RESOL-TYPE = *USER(...)

The search sequence is specified by the user.

ORDER = *UNCHANGED / list-poss(3): *USER-SHARED-CODE / *SYSTEM-SHARED-CODE / *LINK-CONTEXT

Specifies the user-defined search sequence in the form of a list of the following keywords. The order in which the contexts are to be searched is defined by the sequence of the keywords in the list:

*USER-SHARED-CODE	for shared user code of the user
*SYSTEM-SHARED-CODE	for shared user code of the system
*LINK-CONTEXT	for link context

Each keyword can appear in the list only once. Keywords that are not specified in the list are appended to the end of the list internally by DBL in accordance with the predefined sequence (see *STD).

Example

The specification ORDER=*SYSTEM-SHARED-CODE is extended to ORDER=(*SYSTEM-SHARED-CODE , *USER-SHARED-CODE , *LINK-CONTEXT). When external references are resolved in PUBLIC parts, the following search order is used:

1. in the system's shared code
2. in the user's shared code
3. and, finally, in the link context

ERROR-PROCESSING = *PARAMETERS(...)

UNRESOLVED-EXTRNS = *UNCHANGED / *STD / *DELAY / *DELAY-WARN / *ABORT

With the exception of the operand value *DELAY-WARN, the operand occurs in LOAD-/START-EXECUTABLE-PROGRAM (or LOAD-/START-PROGRAM).

UNRESOLVED-EXTRNS = *DELAY-WARN

The specification mainly corresponds to the operand value *DELAY. However, when unresolved external symbols are found in the context, a return code is provided as a warning.

Notes

- For compatibility reasons, the priorities indicated above do not apply to the BIND macro parameters NACOL, UNRES, LDINFO, TSTOPT, MSG and AMODCHK. The default settings are always taken from the LOAD-/START-EXECUTABLE-PROGRAM or LOAD-/START-PROGRAM command.
- The command MODIFY-DBL-DEFAULTS PRIORITY=*FORCED is rejected if used with the specification of a library (file name or file link name), context, or program version.
- The default settings are not relevant for the LINK macro described in the appendix.
- The search order specified in the RESOL-TYPE and PUBLIC-RESOL-TYPE operands (ORDER suboperand) has no influence on **which** contexts are searched. **Whether** shared code is searched must be specified with the SHARE-SCOPE operand.

Return codes

(SC2)	SC1	Maincode	Meaning
	0	CMD0001	Command executed
2	0	BLS0150	The command was executed and a warning was issued
1	1	BLS0170	PRIORITY=*FORCED not allowed with specified operands
1	1	BLS0171	Invalid context name
1	32	BLS0002	Internal DBL error

(Part 1 of 2)

(SC2)	SC1	Maincode	Meaning
1	32	BLS0152	System error
	64	CMD0216	User is not authorized to issue the command

(Part 2 of 2)

Operands of the command and corresponding macro operands

Command	Macro			
	ASHARE	BIND	ETABLE / ILEMGT	LDSLICE / UNBIND
ALTERNATE-LIBRARIES	ALTLIB	ALTLIB	-	-
AMODE-CHECK	-	AMODCHK	-	-
AUTOLINK	-	AUTOLNK	-	-
CLOSE-LIBRARIES	-	CLOSE	-	-
CONTEXT-NAME	-	LNKCTX	-	-
CONTEXT-STATE	-	LNKCTXS	CONTEXT-STATE	-
ERROR-EXIT	-	ERREXIT	-	-
IGNORE-ATTRIBUTES	-	IGNATTR	-	-
LIBRARY	-	LIBNAM	-	-
LOAD-INFORMATION	-	LDINFO	-	-
MESSAGE-CONTROL	MSGCTRL	MSG	-	MSG
NAME-COLLISION	-	NACOL	-	-
PROGRAM-MAP	MAP	MAP	-	-
PROGRAM-MODE	-	PROGMOD	-	-
PROGRAM-VERSION	-	PGMVERS	-	-
PUBLIC-RESOL-TYPE	-	PURESTY	-	-
REP-FILE	-	REPFIL	-	-
REP-SCOPE	-	REPSCOP	-	-
RESOL-TYPE	-	RESTYP	-	-
SHARE-SCOPE	-	SHARE	-	-
TEST-OPTIONS	-	TSTOPT	-	-
UNRESOLVED-EXTRNS	-	UNRES	-	-

Table 56: Assignment to the corresponding operands of DBK macros

MODIFY-DEFAULT-ACCOUNT

Modify default account numbers

Description status:	SRPMNUC V19.0A
Functional area:	Job processing User management POSIX administration and application
Domain:	USER-ADMINISTRATION
Privileges:	STD-PROCESSING HARDWARE-MAINTENANCE OPERATING SAT-FILE-EVALUATION SAT-FILE-MANAGEMENT SECURITY-ADMINISTRATION

Function

With the MODIFY-DEFAULT-ACCOUNT command the user modifies the default account numbers which are entered in the user catalog of the home pubset for BS2000 timesharing mode and POSIX access. The particular default account number entered is used in the following cases:

- The default account number for BS2000 timesharing mode is used for interactive or batch access if no account number is specified in the SET-LOGON-PARAMETERS, ENTER-JOB or ENTER-PROCEDURE command (ACCOUNT=*NONE is the default).
- The default account number for POSIX access is always used for POSIX Rlogin and remote access as POSIX access itself does not provide an account number.

Format

MODIFY-DEFAULT-ACCOUNT

LOGON-DEFAULT = *UNCHANGED / *NONE / <alphanum-name 1..8>

, **POSIX-DEFAULT** = *UNCHANGED / *NONE / *SAME / <alphanum-name 1..8>

Operands

LOGON-DEFAULT = *UNCHANGED / *NONE / <alphanumeric-name 1..8>

Specifies which account number is to be used as the default for interactive and batch access in BS2000 timesharing mode.

LOGON-DEFAULT = *UNCHANGED

The definition applicable so far remains unchanged.

LOGON-DEFAULT = *NONE

No default account number is to be used.

LOGON-DEFAULT = <alphanumeric-name 1..8>

The account number specified becomes the default account number.

POSIX-DEFAULT = *UNCHANGED / *NONE / *SAME / <alphanumeric-name 1..8>

Specifies which account number is to be used as the default for POSIX Rlogin and remote access.

POSIX-DEFAULT = *UNCHANGED

The definition applicable so far remains unchanged.

POSIX-DEFAULT = *NONE

No default account number is to be used.

POSIX-DEFAULT = *SAME

The same default account number is to be used as for BS2000 access.

POSIX-DEFAULT = <alphanumeric-name 1..8>

The account number specified becomes the default account number.

Return codes

(SC2)	SC1	Maincode	Meaning
	0	CMD0001	Command executed without error
2	0	SRM6001	Command executed with warning
	32	SRM6020	Command rejected owing to system error
	64	SRM6040	Command rejected with error message
	130	SRM6030	Command rejected owing to lack of resources

MODIFY-FILE-ATTRIBUTES

Modify attributes of file

Description status:	BS2000 OSD/BC V10.0A
Functional area:	File processing
Domain:	FILE
Privileges:	STD-PROCESSING SAT-FILE-EVALUATION SAT-FILE-MANAGEMENT SECURITY-ADMINISTRATION TSOS
Routing code:	\$ (bei NBCONOPI=N) bzw. E (bei NBCONOPI=Y)

Function

The MODIFY-FILE-ATTRIBUTES command changes the attributes for existing catalog entries (see [page 4-54](#)). Only the owner, any co-owners (see “Privileged functions”) and systems support personnel are allowed to modify all of a file’s attributes. Other users, provided they have write permission for the file, are allowed only to allocate extra space or tapes and to modify the CODED-CHARACTER-SET entry.

If a file is write-protected by a password, the password must have been added to the password table for the job (see the ADD-PASSWORD command).

File renaming (NEW-NAME operand) and the operand settings AVAILABILITY=*HIGH (even specified implicitly through allocation of a storage class) and MIGRATE=*FORBIDDEN are rejected if applied to a file which has been migrated from the processing level (S0) to a background level (S1 or S2) using HSMS.

For each of the operands, a value of *UNCHANGED means that the value previously specified will continue to apply. If a permanent file is recataloged as a temporary file (or vice versa), file attributes may change even if *UNCHANGED is specified (see [page 4-50](#)).

Privileged functions

The following functions are available to nonprivileged users only if physical allocation of public space is allowed (see “Privileged functions” in the function description of the CREATE-FILE command):

- explicit specification (values other than the default, *STD) of a volume or volume set in the VOLUME or VOLUME-SET operand in the structure SUPPORT=*PUBLIC-DISK (STORAGE-CLASS=*NONE(...)) when the files are contained on the pubset’s disks
- absolute space reservation using SPACE=*ABSOLUTE(...) in the structure SUPPORT=*PUBLIC-DISK(...)
- intensified migration locking using MIGRATE=*FORBIDDEN

- locking against migration to another volume set in the SM pubset, using
S0-MIGRATION=*FORBIDDEN

Exception: Privileged functions are not available for work files if no authorization for physical allocation is given.

Systems support personnel can supplement the user information in the file catalog with one to eight bytes of information about the file (ADM-INFORMATION operand).

Systems support personnel (TSOS privilege) can have accesses to the file monitored (AUDIT operand). To configure the AUDIT function, nonprivileged users need appropriate authorization in the user entry of the pubset in which the file is to be created (see the *AUDIT* output field of the SHOW-USER-ATTRIBUTES) command.

By default, systems support (TSOS privilege) is a co-owner of all the files (and can therefore modify files under any user ID). When SECOS is used, this co-ownership can be restricted for permanent files.

Temporary files

Temporary files can be accessed only by the task which creates them and by systems support personnel. It is impossible to specify any file protection measures for them, i.e. no passwords can be defined for them, and only the standard protection attributes ACCESS=*WRITE, USER-ACCESS=*OWNER-ONLY, BASIC-ACL=*NONE, GUARDS=*NONE and FREE-FOR-DELETION=*NONE can be assigned. The EXPIRATION-DATE operand may only be specified as *UNCHANGED (the default value in the catalog entry of a file already created with OPEN/CLOSE is \leq current date, otherwise NONE). If a permanent file is recataloged (renamed) as a temporary file or vice versa, the default protection attributes are set automatically, even if the associated operand is specified as *UNCHANGED.

The BACKUP-CLASS and DISK-WRITE attributes may likewise change when a permanent file is recataloged (renamed) as a temporary file or vice versa if the associated operand is assigned the default value *UNCHANGED (see operand description).

A nonprivileged user can only generate temporary files on the default pubset of his user ID.

Verifying command execution

The DIALOG-CONTROL operand governs whether a verification dialog is to be conducted with the user. The OUTPUT operand lets the user specify whether each file name that is processed is to be logged in a guaranteed message to SYSOUT. In conjunction with the chargeable SDF-P subsystem, the processed file names can be viewed in the S variable stream for guaranteed messages (SYSMSG; see also the ASSIGN-STREAM and EXECUTE-CMD commands in the “SDF-P” manual [34]).

Physical allocation in SM pubsets

A user who is allowed to perform physical allocation of public storage space (see “Privileged functions” in the CREATE-FILE command function description) can directly specify a volume or volume set (VOLUME or VOLUME-SET operand) in the structure STORAGE-CLASS= *NONE(...) in order to select a specific volume set of an SM pubset as the storage location for a file.

The WORK-FILE attribute is specified implicitly. In addition, a lock on migration to another volume set of the SM pubset is placed on the file (S0-MIGRATION=*FORBIDDEN; see also the identically named operand in the this command description).

When S0-MIGRATION=*FORBIDDEN is set (explicitly with the identically named operand or implicitly through physical allocation of storage space), the file’s PERFORMANCE and AVAILABILITY attributes are matched to the identically named attributes of the volume set.

These attributes correspond to the levels of PERFORMANCE (STD, HIGH, VERY-HIGH) and AVAILABILITY (STD, HIGH) which are hierarchically arranged in the user catalog. To ensure that there are adequate levels of performance and availability, files with the S0-MIGRATION=*FORBIDDEN attribute are always assigned at least the PERFORMANCE and AVAILABILITY levels defined for the volume set (you can list the attributes of the volume set with the SHOW-PUBSET-DEFINITION-FILE command (and also with SHOW-PUBSET-CONFIGURATION)).

Any explicit specification of the PERFORMANCE and AVAILABILITY operands which selects a lower level in the hierarchy is ignored. The minimum value is recorded in the file’s catalog entry, and the level in the user catalog is set accordingly. Note that a file’s PERFORMANCE attribute may be higher than the maximum permissible value as set in the user entry (*DMS-TUNING-RESOURCES* output field). Then, regardless of the level that has been set, the file will at best be processed using the value which is in the user entry at the time of OPEN processing. The level settings and the value of the DMS-TUNING-RESOURCES attribute can be viewed in the output of the SHOW-USER-ATTRIBUTES command, INFORMATION =*PUBSET-ATTRIBUTES operand.

Example

Together with the operand setting `S0-MIGRATION=*FORBIDDEN` or in conjunction with physical allocation, the user specifies `PERFORMANCE=*HIGH` or `*STD` (or this applies implicitly, since it is the default), but the attribute of the chosen volume set is `PERFORMANCE=*VERY-HIGH`. The file will then automatically be assigned the attribute `PERFORMANCE=*VERY-HIGH`. If the user entry includes `DMS-TUNING-RESOURCES=*NONE`, the file will actually only be processed with a setting of `PERFORMANCE=*STD`.

Work files

A file which is in an SM pubset and does not yet occupy any storage space can be defined as a work file by the user in one of the following ways:

- explicitly by setting the operand value `WORK-FILE=*YES`.
- implicitly by physical allocation in a volume set for work files (`VOLUME-SET` operand)
- implicitly by assignment to a storage class with the attribute `WORK-FILE=*YES`

Work files are created as permanent files in a volume set defined for that purpose. Systems support personnel can delete work files again at times which it defines.

The `WORK-FILE` attribute cannot be changed for files which already occupy storage space, i.e. that a “normal” file cannot be recataloged as a work file and vice versa.

Only a storage class with the attribute `WORK-FILE=*YES` can be assigned to a work file. The only possible setting for the `AVAILABILITY` attribute for work files is `*STD`, i.e. `AVAILABILITY=*HIGH` will be rejected.

Files in SM pubsets

The storage location for a file on an SM pubset can be selected on the basis of a storage class. This simplifies the automatic management of storage space on an SM pubset (for details see the “Introduction to System Administration” [14] or the “System-Managed Storage” manual [45]).

Systems support personnel allocates to a storage class certain file attributes which are implicitly set for all files assigned to that storage class. If a storage class is specified, there is no need to explicitly specify values for the `WORK-FILE`, `VOLUME-SET`, `VOLUME`, `DEVICE-TYPE`, `IO-ATTRIBUTES`, `DISK-WRITE`, `FILE-PREFORMAT` and `AVAILABILITY` operands.

The `SHOW-STORAGE-CLASS` command allows users to find out which storage classes of the SM pubset are available to them and which file attributes are set.

If the requirements for the file’s storage location are changed (explicitly or implicitly by way of the storage class), the storage location may change automatically, with the result that the file is moved to a different volume set.

The change of storage location is a synchronous process involving copying of the file. The file is not accessible to other tasks while copying is in progress.

An automatic change of storage location and the recataloging of a permanent file as a temporary file (or vice versa) cannot be performed at the same time.

Files on tapes and tape cartridges

When the catalog entries for tape files are being accessed or created, the special features associated with this storage medium must be taken into account.

For files with standard labels, the specifications for shareability (USER-ACCESS), access type (ACCESS) and passwords will be transferred from the catalog entry into the file labels at the time the file is created.

Since the file labels on a tape cannot be amended without corrupting the file (hardware restriction), and the contents of the catalog entry for each file must agree with the contents of its file labels, it will not be possible to amend the access rights and expiration date using a MODIFY-FILE-ATTRIBUTES command after the file has once been correctly opened and closed again. This means that the file protection attributes can only be changed before the file is opened for the first time. These attributes will then be transferred unchecked into the labels when the file is created. This allows attributes, e.g. write protection (MODIFY-FILE-ATTRIBUTES...ACCESS=*READ) to be defined for a file which has yet to be created. The file can then be opened as an output file, and created; the write protection will take effect after this.

If password protection is specified for a tape file, then when the file is created, the label processing routines will transfer the passwords from the catalog entry to the HDR3 labels, without checking them (conversely, the passwords will be transferred from the HDR3 label to the catalog entry if the file is imported).

For file processing in batch mode, if ADD-FILE-LINK...PROTECTION-LEVEL=*LOW is specified, the file owner can bypass the checking of the passwords if his user entry includes TAPE-ACCESS=*PRIVILEGED

If systems support specified password encryption using the system parameter ENCRYPT, then the encryption indicator in the HDR3 label will be set to "1".

Overview of functions

	Function / Meaning	Level 1 operands	Level 2/3 operands
4-61	Name of the catalog entry which is to be changed	FILE-NAME	
4-61	New name of the file	NEW-NAME	
	Specify the volume	SUPPORT	
4-63	Volume: pubset and Net-Storage	= *PUBLIC-DISK	
4-63	– Specify storage type		STORAGE-TYPE
4-63	– File type (on Net-Storage)		FILE-TYPE
4-64	– Define storage class		STORAGE-CLASS
4-65	– Define work file attribute		WORK-FILE
4-65	– Performance requirements		IO-ATTRIBUTES
	– Performance attribute		PERFORMANCE
	– type of I/O operations		USAGE
4-67	– Define time when data consistency is required after write operations		DISK-WRITE
4-68	– preferred file format		FILE-PREFORMAT
4-68	– Define availability requirements		AVAILABILITY
4-69	– Specify volume set		VOLUME-SET
4-69	– Specify the volume		VOLUME
4-70	– Specify device type		DEVICE-TYPE
4-70	– Change of volume set allowed		S0-MIGRATION
4-70	– Storage space allocation		SPACE
4-73	– HSMS storage management class		MANAGEMENT-CLASS
4-73	– user information		USER-INFORMATION
4-73	– systems support information		ADM-INFORMATION
4-73	Volume: private disk	= *PRIVATE-DISK	
4-74	– Specify device type		DEVICE-TYPE
4-73	– Request volume(s)		VOLUME
4-74	– Storage space allocation (allocate, change, release)		SPACE
4-75	– Time of disk mounting		VOLUME-ALLOCATION
4-75	– Separate storage of data/index for ISAM files		DATA-SUPPORT

Table 57: Overview of MODIFY-FILE-ATTRIBUTES command functions (Part 1 of 3)

	Function / Meaning	Level 1 operands	Level 2/3 operands
4-77	Volume: pubset or private disk	= *ANY-DISK	
4-77	– Specify device type		DEVICE-TYPE
4-77	– Specify the volume		VOLUME
4-77	– Storage space allocation (allocate, change, release)		SPACE
4-78	Volume: tape	= *TAPE	
4-78	– Request volume(s)		VOLUME
4-78	– Specify device type		DEVICE-TYPE
4-78	– Request tape device		PREMOUNT-LIST
4-79	Define protection attributes	PROTECTION = *PARAMETERS	
4-80	– Import protection attributes from file		PROTECTION-ATTR
4-82	– Access rights		ACCESS
4-82	– Shareability		USER-ACCESS
4-83	– Basic access control list		BASIC-ACL
4-87	– Password protection		PASSWORD
4-88	– Define passwords		WRITE-PASSWORD/ READ-PASSWORD / EXEC-PASSWORD
4-90	– Physical deletion (overwrite with binary zeros)		DESTROY-BY-DELETE
4-90	– Monitoring of DMS accesses via SAT/System Exit Routines		AUDIT
4-91	– Lock to prevent release of reserved storage space (disk files only)		SPACE-RELEASE-LOCK
4-92	– Date when file is freed for updating		EXPIRATION-DATE
4-92	– Date when file is freed for deletion		FREE-FOR-DELETION
4-93	<i>Only for files on disk and Net-Storage:</i> Type and frequency of automatic data backup by ARCHIVE or HSMS	SAVE	
4-93	– Backup frequency		BACKUP-CLASS
4-94	– Scope of backup		SAVED-PAGES

Table 57: Overview of MODIFY-FILE-ATTRIBUTES command functions (Part 2 of 3)

MODIFY-FILE-ATTRIBUTES

	Function / Meaning	Level 1 operands	Level 2/3 operands
4-94	<p><i>Only for files on disk and Net-Storage:</i> Whether migration is possible if the software product HSMS is used (automatic management of public storage space) is used</p> <p>Migration allowed</p> <p>Migration lock</p> <p>Intensified migration lock</p>	<p>MIGRATE</p> <p>= *ALLOWED</p> <p>= *INHIBITED</p> <p>= *FORBIDDEN</p>	
4-95	Code table (XHCS)	CODED-CHARACTER-SET	
	Verification of multiple file specifications		
	File selection dialog	DIALOG-CONTROL	
4-98	– User intervention in command execution not possible (default setting for procedures and batch mode)	=*NO	
4-98	– Dialog when more than one file is referenced if the file name specified is not fully qualified (default setting for interactive mode)	=*MORE-THAN-ONE-FILE	
4-98	– Dialog when an error occurs	=*ERROR	
4-98	– Dialog when catalog ID changes	=*CATALOG-CHANGE	
4-98	– Dialog for each selected file that is to be processed	=*FILE-CHANGE	
4-98	– Dialog when user ID changes	=*USER-ID-CHANGE	
4-98	Guaranteed message for successfully modified catalog entries	OUTPUT	
	– Suppress	=*NO	
	– Output to SYSOUT	=*SYSOUT	

Table 57: Overview of MODIFY-FILE-ATTRIBUTES command functions (Part 3 of 3)

Format

MODIFY-FILE-ATTRIBUTES	Alias: MD / MDFA
<pre> FILE-NAME = <filename 1..54 without-gen with-wild(80)> ,NEW-NAME = *SAME / <filename 1..54 with-wild-constr(80)> ,SUPPORT = *UNCHANGED / *PUBLIC-DISK(...) / *PRIVATE-DISK(...) / *ANY-DISK(...) / *TAPE(...) *PUBLIC-DISK(...) STORAGE-TYPE = *UNCHANGED / *STD / *PUBLIC-SPACE / *NET-STORAGE(...) *NET-STORAGE(...) FILE-TYPE = *UNCHANGED / *STD / *BS2000 / *NODE-FILE ,STORAGE-CLASS = *UNCHANGED / *STD / *UPDATE / <composed-name 1..8> / *NONE(...) *NONE(...) WORK-FILE = *UNCHANGED / *NO / *YES ,IO-ATTRIBUTES = *UNCHANGED / *PARAMETERS(...) *PARAMETERS(...) PERFORMANCE = *UNCHANGED / *STD / *HIGH / *VERY-HIGH / *USER-MAXIMUM ,USAGE = *UNCHANGED / *READ-WRITE / *WRITE / READ ,DISK-WRITE = *UNCHANGED / *IMMEDIATE / *BY-CLOSE ,AVAILABILITY = *UNCHANGED / *STD / *HIGH ,FILE-PREFORMAT = *STD / *K / *NK2 / *NK4 ,VOLUME-SET = *STD / *CONTROL-VOLUME-SET / <cat-id 1..4> ,VOLUME = *UNCHANGED / list-poss(255): <vsn 1..6> ,DEVICE-TYPE = *UNCHANGED / <device> ,S0-MIGRATION = *UNCHANGED / *ALLOWED / *FORBIDDEN ,SPACE = *UNCHANGED / *RELATIVE(...) / *ABSOLUTE(...) / *RELEASE(...) *RELATIVE(...) PRIMARY-ALLOCATION = 0 / <integer 0..2147483647> ,SECONDARY-ALLOCATION = *UNCHANGED / <integer 0..32767> *ABSOLUTE(...) FIRST-PAGE = <integer 1..2147483647> ,SIZE = <integer 1..2147483647> </pre>	

(Part 1 of 5)

```

*RELEASE(...)
    |
    |   NUMBER-OF-PAGES = <integer 1..2147483647> / *ALL-RELEASABLE
    |   ,KEEP-MIN-ALLOCATION = *NO / *YES
    |
    |   ,MANAGEMENT-CLASS = *UNCHANGED / *NONE / <composed-name 1..8>
    |   ,USER-INFORMATION = *UNCHANGED / *NONE / <c-string 1..8 with-low>
    |   ,ADM-INFORMATION = *UNCHANGED / *NONE / <c-string 1..8 with-low>
    
```

***PRIVATE-DISK(...)**

```

VOLUME = *UNCHANGED / [*ANY](...) / list-poss(255): <alphanum-name 1..6>
    [*ANY](...)
        |
        |   NUMBER-OF-DEVICES = 1 / <integer 1..9>
        |
        |   ,DEVICE-TYPE = *UNCHANGED / <device>
        |
        |   ,SPACE = *UNCHANGED / *RELATIVE(...) / *ABSOLUTE(...) / *RELEASE(...)
        |
        |   *RELATIVE(...)
        |       |
        |       |   PRIMARY-ALLOCATION = 0 / <integer 0..2147483647>
        |       |   ,SECONDARY-ALLOCATION = *UNCHANGED / <integer 0..32767>
        |
        |   *ABSOLUTE(...)
        |       |
        |       |   FIRST-PAGE = <integer 1..2147483647>
        |       |   ,SIZE = <integer 1..2147483647>
        |
        |   *RELEASE(...)
        |       |
        |       |   NUMBER-OF-PAGES = <integer 1..2147483647> / *ALL-RELEASABLE
        |
        |   ,VOLUME-ALLOCATION = *IMMEDIATE / *DELAYED
        |
        |   ,DATA-SUPPORT = *UNCHANGED / [*PARAMETERS](...)
        |
        |   [*PARAMETERS](...)
        |       |
        |       |   DATA-DEVICE-TYPE = *UNCHANGED / <device>
        |       |   ,DATA-VOLUME = *UNCHANGED / list-poss(255): <alphanum-name 1..6>
        |       |   ,DATA-SPACE = *RELATIVE(...) / *ABSOLUTE(...)
        |       |
        |       |   *RELATIVE(...)
        |       |       |
        |       |       |   PRIMARY-ALLOCATION = 0 / <integer 0..2147483647>
        |       |       |   ,SECONDARY-ALLOCATION = *UNCHANGED / <integer 0..32767>
        |       |
        |       |   *ABSOLUTE(...)
        |       |       |
        |       |       |   FIRST-PAGE = <integer 1..2147483647>
        |       |       |   ,SIZE = <integer 1..2147483647>
        
```

```

*ANY-DISK(...)
  VOLUME = *UNCHANGED / list-poss(255): <alphanum-name 1..6>
,DEVICE-TYPE = *UNCHANGED / <device>
,SPACE = *UNCHANGED / *RELATIVE(...) / *ABSOLUTE(...) / *RELEASE(...)
  *RELATIVE(...)
    | PRIMARY-ALLOCATION = 0 / <integer 0..2147483647>
    | ,SECONDARY-ALLOCATION = *UNCHANGED / <integer 0..32767>
  *ABSOLUTE(...)
    | FIRST-PAGE = <integer 1..2147483647>
    | ,SIZE = <integer 1..2147483647>
  *RELEASE(...)
    | NUMBER-OF-PAGES = <integer 1..2147483647> / *ALL-RELEASABLE
*TAPE(...)
  VOLUME = *NO / [*ANY](...) / *REMOVE-UNUSED / list-poss(255): <alphanum-name 1..6>
  [*ANY](...)
    | NUMBER-OF-DEVICES = 1 / <integer 1..9>
,DEVICE-TYPE = *UNCHANGED / <device>
,PREMOUNT-LIST = *NONE / list-poss(255): <integer 0..255>
,PROTECTION = *UNCHANGED / [*PARAMETERS](...)
  [*PARAMETERS](...)
    | PROTECTION-ATTR = *UNCHANGED / *BY-DEF-PROT-OR-STD / *STD / *FROM-FILE(...)
    *FROM-FILE(...)
      | FILE-NAME = <filename 1..54 without-gen>
,ACCESS = *BY-PROTECTION-ATTR / *UNCHANGED / *WRITE / *READ
,USER-ACCESS = *BY-PROTECTION-ATTR / *UNCHANGED / *OWNER-ONLY / *ALL-USERS /
  *SPECIAL

```

(Part 3 of 5)

```

,BASIC-ACL = *BY-PROTECTION-ATTR / *UNCHANGED / *NONE / *PREVIOUS / *STD /
  [*PARAMETERS](...) / *OWNER-RX / *OWNER-WRX / *OWNER-ONLY /
  *GROUP-X / *GROUP-RX / *GROUP-WRX / *EXCEPT-OTHERS / *OTHERS-X /
  *OTHERS-RX / *OTHERS-WRX / *ALL-X / *ALL-RX / *ALL-WRX

  [*PARAMETERS](...)
    OWNER = *UNCHANGED / *NO-ACCESS / [*PARAMETERS](...)
      [*PARAMETERS](...)
        READ = *UNCHANGED / *NO / *YES
        ,WRITE = *UNCHANGED / *NO / *YES
        ,EXEC = *UNCHANGED / *NO / *YES
      ,GROUP = *UNCHANGED / *NO-ACCESS / [*PARAMETERS](...)
        [*PARAMETERS](...)
          READ = *UNCHANGED / *NO / *YES
          ,WRITE = *UNCHANGED / *NO / *YES
          ,EXEC = *UNCHANGED / *NO / *YES
        ,OTHERS = *UNCHANGED / *NO-ACCESS / [*PARAMETERS](...)
          [*PARAMETERS](...)
            READ = *UNCHANGED / *NO / *YES
            ,WRITE = *UNCHANGED / *NO / *YES
            ,EXEC = *UNCHANGED / *NO / *YES
    ,GUARDS = *BY-PROTECTION-ATTR / *UNCHANGED / *NONE / [*PARAMETERS](...)
      [*PARAMETERS](...)
        READ = *UNCHANGED / *NONE / <filename 1..18 without-cat-gen-vers>
        ,WRITE = *UNCHANGED / *NONE / <filename 1..18 without-cat-gen-vers>
        ,EXEC = *UNCHANGED / *NONE / <filename 1..18 without-cat-gen-vers>
    ,WRITE-PASSWORD = *BY-PROT-ATTR-OR-UNCH / *UNCHANGED / *NONE / <c-string 1..4> /
      <x-string 1..8> / <integer -2147483648..2147483647> / *SECRET
    ,READ-PASSWORD = *BY-PROT-ATTR-OR-UNCH / *UNCHANGED / *NONE / <c-string 1..4> /
      <x-string 1..8> / <integer -2147483648..2147483647> / *SECRET
    ,EXEC-PASSWORD = *BY-PROT-ATTR-OR-UNCH / *UNCHANGED / *NONE / <c-string 1..4> /
      <x-string 1..8> / <integer -2147483648..2147483647> / *SECRET
    ,DESTROY-BY-DELETE = *BY-PROTECTION-ATTR / *UNCHANGED / *NO / *YES
    ,AUDIT = *UNCHANGED / *NONE / *SUCCESS / *FAILURE / *ALL

```

(Part 4 of 5)

```

,SPACE-RELEASE-LOCK = *BY-PROTECTION-ATTR / *UNCHANGED / *NO / *YES
,EXPIRATION-DATE = *BY-PROTECTION-ATTR / *UNCHANGED / *TODAY / *TOMORROW /
    <date with-comp> / <integer 0..99999 days>
,FREE-FOR-DELETION = *BY-PROTECTION-ATTR / *UNCHANGED / *NONE / <date> /
    <integer 0..99999>
,SAVE = *UNCHANGED / [*PARAMETERS](...)
    [*PARAMETERS](...)
    ,BACKUP-CLASS = *UNCHANGED / *A / *B / *C / *D / *E
    ,SAVED-PAGES = *UNCHANGED / *COMPLETE-FILE / *MODIFIED-PAGES
,MIGRATE = *UNCHANGED / *ALLOWED / *INHIBITED / *FORBIDDEN
,CODED-CHARACTER-SET = *UNCHANGED / *USER-DEFAULT / *NONE / <name 1..8>
,DIALOG-CONTROL = *STD / *NO / *ERROR / *FILE-CHANGE / *MORE-THAN-ONE-FILE /
    *USER-ID-CHANGE / *CATALOG-CHANGE
,OUTPUT = *NO / *SYSOUT

```

(Part 5 of 5)

Operands

FILE-NAME = <filename 1..54 without-gen with-wild(80)>

Name of an existing permanent or temporary file. If the file name includes wildcards, or if the specification is partially qualified, the command is executed for the associated set of files. Processing can be controlled and verified with the aid of the DIALOG-CONTROL and OUTPUT operands. Only systems support is allowed to use wildcards within the user ID. In processing a file set, no distinction is made between files and file generation groups. Changes to group entries are rejected if operands not available for file generation groups are specified in the command. The MODIFY-FILE-GROUP-ATTRIBUTES command should be used to modify group entries.

NEW-NAME = *SAME / <filename 1..54 with-wild-constr(80)>

Specifies whether the file is to be renamed.

NEW-NAME = *SAME

The default value is *SAME, i.e. the current name is retained.

NEW-NAME = <filename 1..54 with-wild-constr(80)>

The file is to be renamed. Either a new file name or the name of a new file generation is specified. The command is rejected if a file or file generation with the specified name already exists. Files which are on HSMS storage level S1 or S2 cannot be renamed (see the STORAGE-LEVEL operand in the SHOW-FILE-ATTRIBUTES command). If a set of files has been specified in the FILE-NAME operand, a constructor can be used to specify how the names of the target files are to be formed. The constructor string should be designed to ensure that the names of the target files are unique. Renaming is rejected for file names which already exist. If, for example, a fully qualified file name is specified as the new name for a set of files, only the first file can be given this name. For the following files, the name will already exist, so renaming will be rejected.

If a permanent file is recataloged as a temporary file (or vice versa), the values in the catalog entry may change even if the default value *UNCHANGED has been specified for the operand in question. A nonprivileged user can only generate temporary files on the default pubset of his user ID.

With tape files, NEW-NAME must differ from FILE-NAME by the addition of, or by a change to, the version identifier.

If a file generation is specified (relatively or absolutely), the absolute number of the new generation must either be LAST-GEN + 1 or, with LAST-GEN=9999, must be equal to 1 (see *BASE-NUM* and *LAST-GEN* output fields, SHOW-FILE-ATTRIBUTES command).

Renaming a file as a file generation: The CODED-CHARACTER-SET specified for the file must be the same as that defined in the file generation's group entry. In an SM pubset, the WORK-FILE attributes of the file and the file generation group must also match. Any further file attribute specifications must be made in the SUPPORT operand. The other file attributes of the original file (such as its protection attributes) are automatically set to the values defined in the group entry.

SUPPORT = *UNCHANGED / *PUBLIC-DISK(...) / *PRIVATE-DISK(...) / *ANY-DISK(...) / *TAPE(...)

Type of volume on which the file is located. This entry must not contradict the specification that was made when the catalog entry was created (CREATE-FILE).

SUPPORT = *PUBLIC-DISK(...)

The file is located on a public disk or Net-Storage.

STORAGE-TYPE = *UNCHANGED / *STD / *PUBLIC-SPACE / *NET-STORAGE

Determines the storage type for the file's storage location.

Files which have already been allocated cannot be moved from public disks to Net-Storage volumes and vice versa.

STORAGE-TYPE = *STD

The file is created on the default storage type for storing files on this pubset.

STORAGE-TYPE = *PUBLIC-SPACE

The file is created on the disks of the pubset.

In addition to the entry in the file catalog, the file is also created physically with the smallest possible amount of storage space (see the SPACE operand on [page 4-70](#)).

STORAGE-TYPE = *NET-STORAGE(...)

The file is created on a Net-Storage volume.

The authorization NET-STORAGE-USAGE=*ALLOWED (default) must be entered in the user entry. Catalog entries are generated both on the local pubset and in the relevant file system of the Net-Server. However, the file is not created physically. If no volume is specified, the file is created on the default Net-Storage volume.



Files with a PAM key, file generation groups, work files and temporary files cannot be stored on Net-Storage.

FILE-TYPE = *UNCHANGED / *STD / *BS2000 / *NODE-FILE

Determines the file type in which the file is created. The file type can no longer be changed for files which have already been allocated.

FILE-TYPE = *STD

The file is created as a BS2000 file on a Net-Storage volume. When the volume of a private disk is specified under STORAGE-CLASS=*NONE(...), the file is created on the private disk.

FILE-TYPE = *BS2000

The file is created as a BS2000 file on a Net-Storage volume. When under STORAGE-CLASS=*NONE(...) specifications regarding the volume or device type are provided which do not permit this, the command is aborted with an error.

FILE-TYPE = *NODE-FILE

The file is created as a node file on a Net-Storage volume. When under STORAGE-CLASS=*NONE(...) specifications regarding the volume or device type are provided which do not permit this, the command is aborted with an error.

STORAGE-CLASS = *UNCHANGED / *STD / *UPDATE/ <composed-name 1..8> / *NONE(...)

Governs the properties of the file's storage location. A storage class is a container set up by systems support to hold a defined combination of file attributes specific to an SM pubset. On the basis of the assigned volume set lists it maps these attributes onto the existing range of pubset services. This mapping may be more detailed than can be described by explicitly specifying the WORK-FILE, IO-ATTRIBUTES, DISK-WRITE, AVAILABILITY, FILE-PREFORMAT, VOLUME-SET, VOLUME, DEVICE-TYPE and S0-MIGRATION operands in the structure STORAGE-CLASS=*NONE.

At the time when the assignment is made, the storage class that is specified (even implicitly using *STD) must exist, and the user must be authorized to use it. The SHOW-STORAGE-CLASS command allows users to find out which storage classes of an SM pubset are available to them and which file attributes are set.

Assigning a storage class simplifies the automatic management of storage space in an SM pubset (for details see the "Introduction to System Administration" [14] or the "System-Managed Storage" manual [45]).

The WORK-FILE attribute of the storage class must be the same as that of the file.

Defining a different storage class (STORAGE-CLASS≠*NONE) can result in the file being relocated (reallocated) from its current volume set to another volume set which is better suited to this storage class. The following cases can occur here:

- If the storage class contains AVAILABILITY=*HIGH and the existing volume set has AVAILABILITY=*STD, the file must be reallocated to a volume set with the attribute AVAILABILITY=*HIGH. If reallocation is not possible, the command is rejected.
- If the storage class contains a volume set list and the file is not located on a volume set of this volume set list, the file is, if possible, reallocated to a volume set from this list. If reallocation is not possible, the command is executed without it.

During reallocation, the file is open. Accesses from other tasks are rejected.

STORAGE-CLASS = *STD

A file in an SM pubset is assigned the default storage class from the user entry for that pubset. If there is no default storage class defined, or if the file is stored in an SF pubset, the file is given the same attributes as with STORAGE-CLASS=*NONE with default values.

STORAGE-CLASS = *UPDATE

The operand is evaluated only for files on SM pubsets to which a storage class has already been assigned.

The attributes are once more read from the storage class catalog and assigned to the file.

STORAGE-CLASS = <composed-name 1..8>

A file in an SM pubset is assigned the specified storage class. This specification is ignored for a file in an SF pubset; the file is then given the same attributes as with STORAGE-CLASS=*NONE with default values.

STORAGE-CLASS = *NONE(...)

The value has the same effect as *UNCHANGED if all the following conditions are fulfilled:

- The file was or is being created on a volume set for permanent data storage.
- A default storage class is assigned to the user ID at the SM pubset in question.
- Physical allocation is not permitted.

Only in this case are the WORK-FILE, PERFORMANCE, USAGE, DISK-WRITE and AVAILIBILITY operands and the SO-MIGRATION=*ALLOWED specification ignored.

In all other cases, the properties of the file's storage location are determined on the basis of the following operands and no storage class is assigned to the file or a storage class which is already assigned is withdrawn.

WORK-FILE = *UNCHANGED / *NO / *YES

The operand is evaluated only for files in SM pubsets. Specifies whether the file is a work file which systems support is allowed to delete at a time which it defines. If the file already occupies storage space, the only value allowed is *UNCHANGED.

WORK-FILE = *NO

The file is not to be a work file.

WORK-FILE = *YES

The file is to be a work file.

IO-ATTRIBUTES = *UNCHANGED / *PARAMETERS(...)

Specifies the performance requirements demanded by the user for input/output operations. Whether such requirements are satisfied and the extent to which they are fulfilled depends on the cache medium that is defined for the associated pubset (see the output of the SHOW-MASTER-CATALOG-ENTRY command).

Read and write access is performed through a fast cache. The number of disk accesses and the access times are reduced. Performance attributes for processing can also be defined in the TFT (see the ADD-FILE-LINK command).

IO-ATTRIBUTES = *PARAMETERS(...)

Performance attributes are determined by the values of the PERFORMANCE and USAGE operands.

PERFORMANCE = *UNCHANGED / *STD / *HIGH / *VERY-HIGH / *USER-MAXIMUM

Specifies the file's performance attribute. It indicates the priority required for the I/O operations selected in the USAGE operand. The highest performance attribute allowed is defined in the user entry (see also the *DMS-TUNING-RESOURCES* output field in the output of the SHOW-USER-ATTRIBUTES command).

PERFORMANCE = *STD

The file has no special performance attribute and is therefore not processed via a cache. The USAGE operand does not affect the processing of the file in this case.

PERFORMANCE = *HIGH

The file is to be processed through a cache (high performance priority). This specification is only possible for users who have the DMS tuning privilege CONCURRENT-USE or EXCLUSIVE-USE for the pubset (see the output field *DMS-TUNING-RESOURCES* in the output of the SHOW-USER-ATTRIBUTES command).

PERFORMANCE = *VERY-HIGH

The file is to be processed through a cache. The referenced data in the file is to be kept permanently in the cache (highest performance priority; only available in GS). The cache data is only evicted from the cache when the file is closed. Only users who have the DMS tuning privilege EXCLUSIVE-USE for the pubset can specify (see the output for the SHOW-USER-ATTRIBUTES command, output field *DMS-TUNING-RESOURCES*).

Note All cache segments used for this file are locked until the file is closed. If there are many files open with this attribute at the same time, the cache memory available for normally cached files may as a result be so greatly restricted that data accesses to such files can no longer be implemented with an adequate level of performance.

PERFORMANCE = *USER-MAXIMUM

The file is assigned the highest performance attribute contained in the user catalog for the user.

USAGE = *UNCHANGED / *READ-WRITE / *WRITE / *READ

Specifies the I/O operations for which enhanced performance (caching) is required. The default setting is *READ-WRITE, i.e. the requirements apply to read and write operations. If the file does not have a particular performance attribute (PERFORMANCE= *STD) and if the cache area for the pubset is not defined in such a way that all existing files are served (see the operand CACHED-FILES=*ALL for the MODIFY-PUBSET-CACHING-ATTRIBUTES command), then the USAGE operand has no effect on processing.

USAGE = *READ-WRITE

The performance requirements apply both to read and to write operations.

USAGE = *WRITE

The performance requirements apply to write operations only.

USAGE = *READ

The performance requirements apply to read operations only.

Note With USAGE=*READ-WRITE or *WRITE, write caching is performed only if the conditions for the DISK-WRITE file attributes are met (see CREATE-FILE or MODIFY-FILE-ATTRIBUTES). In the case of DISK-WRITE= *IMMEDIATE, the cache medium used for write caching has to be fail-safe (see the output for the command SHOW-MASTER-CATALOG-ENTRY INFORMATION=*USER, output field *CACHE-MEDIUM*).

DISK-WRITE = *UNCHANGED / *IMMEDIATE / *BY-CLOSE

Specifies the time at which the data must be on a nonvolatile medium (disk or fail-safe cache medium) after a write operation. If a volatile cache medium is used as the write cache, data in the file will not be in a consistent state until CLOSE processing has been completed because the write data is written out to disk during CLOSE processing. System errors during the processing phase may lead to inconsistencies. Write caching for files containing data which cannot easily be restored should be performed using only fail-safe cache media, i.e. data consistency after each write operation should be requested with DISK-WRITE=*IMMEDIATE.

DISK-WRITE = *UNCHANGED

When a temporary file is recataloged to a permanent file, DISK-WRITE=IMMEDIATE is set. DISK-WRITE=BY-CLOSE is set for the reverse case.

DISK-WRITE = *IMMEDIATE

Data contained in the file must be on a nonvolatile medium immediately after a write operation. Write caching is performed for files marked in this way only if a nonvolatile cache area is active for the pubset (see the *CACHE-MEDIUM=NONVOLATILE* output field of the SHOW-MASTER-CATALOG-ENTRY command with INFORMATION= *USER). If a volatile cache area is active for the pubset (*CACHE-MEDIUM=VOLATILE* output field), only read accesses are buffered for the file; write accesses are performed directly on the disks.

DISK-WRITE = *BY-CLOSE

Data contained in the file needs to be on a nonvolatile medium only after CLOSE processing. Write caching for files marked in this way is performed regardless of whether the cache medium is fail-safe, i.e. even on volatile cache media. Unsaved cached data is written out during CLOSE processing. The data in the file will not be

on a non-volatile medium (disk storage) until that point. This attribute is suitable only for files containing data that can easily be restored (list files generated during compilation, for example), as a system error may cause inconsistencies in the files.

AVAILABILITY = *UNCHANGED / *STD / *HIGH

Specifies availability requirements for the file. Files for which high availability is required must always be created by the system on suitable volumes (such as a disk with DRV mirroring). If no appropriate volume is available, the command is rejected.

AVAILABILITY = *STD

The file is not subject to special availability requirements.

AVAILABILITY = *HIGH

The file is to have high availability. A file for which high availability was not originally required is automatically relocated to a suitable volume. The file cannot be accessed while relocation is in progress. If the volume is not capable of meeting the requirement, or if no suitable volume set is available within the SM pubset, the command is rejected. This specification is not allowed for temporary files or when renaming a permanent file as a temporary file. Furthermore the file must not have been migrated to one of the HSMS background storage levels, S1 and S2 (see the STORAGE-LEVEL operand in the SHOW-FILE-ATTRIBUTES command).

FILE-PREFORMAT = *STD / *K / *NK2 / *NK4

The operand is evaluated only for files which do not yet occupy any storage space and for which storage space on an SM pubset is requested. Governs the preferred file format, which is taken into account in the choice of volume set. As long as the file has not yet been opened (no CREATION-DATE in the catalog entry), the chosen storage location is provisional and may still change in the course of OPEN processing.

FILE-PREFORMAT = *STD

The preferred file format which applies is the format that systems support has defined as the pubset-specific default for the SM pubset using the MODIFY-PUBSET-SPACE-DEFAULTS command. The value set can be determined with the SHOW-PUBSET-SPACE-DEFAULTS command (and also with SHOW-PUBSET-CONFIGURATION).

FILE-PREFORMAT = *K

The file is to be created as a K file (BLOCK-CONTROL-INFO=*PAMKEY).

FILE-PREFORMAT = *NK2

The file is to be created as an NK file in 2K format (BLOCK-CONTROL-INFO=*WITHIN-DATA-2K-BLOCK or *WITHIN-DATA-BLOCK for a SAM file).

FILE-PREFORMAT = *NK4

The file is to be created as an NK file in 4K format (BLOCK-CONTROL-INFO=*WITHIN-DATA-4K-BLOCK or *WITHIN-DATA-BLOCK for a SAM file).

VOLUME-SET = *STD / *CONTROL-VOLUME-SET / <cat-id 1..4>

*The operand is evaluated only for files which do not yet occupy any storage space and for which storage space on an SM pubset is requested. Determines the volume set on which the file is to be stored. Systems support can use *CONTROL-VOLUME-SET or <cat-id 1..4> to specify a volume set explicitly.*

Nonprivileged users cannot specify a volume set explicitly unless they have authorization to perform physical allocation of public storage space (see "Privileged functions" under "Function" in the CREATE-FILE command).

VOLUME-SET = *STD

The file is stored in a suitable volume set of the SM pubset.

VOLUME-SET = *CONTROL-VOLUME-SET

*Subject to restrictions (see general operand description [page 4-69](#)). The file is stored in a control volume set of the SM pubset. S0-MIGRATION= *FORBIDDEN is set implicitly. If the volume set does not match the requested file attributes, the command is rejected.*

VOLUME-SET = <cat-id 1..4>

*Subject to restrictions (see general operand description [page 4-69](#)). The file is stored in the specified volume set of the SM pubset. S0-MIGRATION= *FORBIDDEN is set implicitly. If the volume set does not match the requested file attributes, the command is rejected.*

VOLUME = *UNCHANGED / list-poss(255): <vsn 1..6>

Volume serial numbers of additional public disks or of a Net-Storage volume which may be used for storage space extension.

VOLUME = list-poss(255): <vsn 1..6>

Systems support can specify volume serial numbers explicitly.

Nonprivileged users can specify a VSN for a Net-Storage volume explicitly.

Nonprivileged users can specify VSNs explicitly for a public disk only if they have authorization to perform physical allocation of public storage space (see "Function", section "Privileged functions" on [page 4-49](#)). VSNs can only be specified for public disks of the pubset whose pubset ID matches the catalog ID of the file name. If the specified disk is part of the volume set of an SM pubset, S0-MIGRATION and MIGRATE=*FORBIDDEN are set implicitly.

In the case of files on Net-Storage the specified Net-Storage volume must be assigned to the catalog ID of the file name.

If the file is only cataloged and stored on a specific Net-Storage volume without a default name, the VSN must be specified. Otherwise the file is stored on the default Net-Storage volume or, if this does not exist, the system selects a Net-Storage volume

DEVICE-TYPE = *UNCHANGED / <device>

Type of device to which the required public disks or Net-Storage volumes are assigned. Only device types known within the system are accepted. In interactive mode, the possible device types are displayed with DEVICE-TYPE=?.

The volume type NETSTOR must be specified for Net-Storage volumes.

If at least one volume ID is specified with VOLUME, each specification of a disk device type which is known to the system is handled like the STDDISK specification.

Systems support can specify device types explicitly.

When files are created on public volumes, nonprivileged users cannot specify a device type explicitly unless they have authorization to perform physical allocation (see section [“Privileged functions” on page 4-49](#)).

S0-MIGRATION = *UNCHANGED / *ALLOWED / *FORBIDDEN

The specification is relevant only for a file on an SM pubset. Governs whether the file may be relocated to a different volume set within the SM pubset (storage level S0). Migration can be initiated either explicitly using the HSMS subsystem or implicitly by the system.

S0-MIGRATION = *UNCHANGED

The previous value is left unchanged if the file already occupies storage space. With physical space allocation (explicit specification of a volume set or volume or absolute allocation), S0-MIGRATION=*FORBIDDEN is set for a file not yet occupying storage space. Without physical allocation, S0-MIGRATION=*ALLOWED is set.

S0-MIGRATION = *ALLOWED

Migration of the file within the SM pubset is allowed.

S0-MIGRATION = *FORBIDDEN

Nonprivileged users cannot select this value unless they are authorized to perform physical allocation of public space (see [“Privileged functions” under “Function” in the CREATE-FILE command](#)). Migration of the file within the SM pubset is not allowed. The S0 migration lock affects the allocation of PERFORMANCE and AVAILABILITY attributes to files (see [“Physical allocation in SM pubsets” on page 4-51](#)).

SPACE = *UNCHANGED / *RELATIVE(...) / *ABSOLUTE(...) / *RELEASE(...)

Influences the storage space allocation for the file.

SPACE = *RELATIVE(...)

Here, the user can request additional storage space for the file (as a relative allocation). Note that the storage space ceiling defined for the user in the user entry may be exceeded only if the user is authorized to do so (PUBLIC-SPACE-EXCESS=*YES, see the SHOW-USER-ATTRIBUTES command).

PRIMARY-ALLOCATION = 0 / <integer 0..2147483647>

The number of PAM pages by which the file should immediately be increased. The user should note that, in procedures etc., every call of the MODIFY-FILE-ATTRIBUTES command which has a positive value for the primary allocation will reserve storage space for the file. If the primary allocation is large, this will quickly exhaust the storage space assigned to the user. Since the disk selection mechanism is executed each time, a suitable primary allocation can be used to cause a disk swap when creating large files and only a few segments are free on individual disk. This then avoids excessive fragmentation of the file.

When storage space is actually allocated, the specified number of PAM pages is rounded up to a multiple of **k** if required. At this **k** is the number of PAM pages in the smallest allocation unit in each case:

Pubset/volume set format	Smallest allocation unit in Kbytes	Rounding factor k
K pubset/volume set	6	3
NK2(6K) pubset/volume set	6	3
NK2(8K) pubset/volume set	8	4
NK2(64K) pubset/volume set	64	32
NK4(8K) pubset/volume set	8	4
NK4(64K) pubset/volume set	64	32

Table 58: Smallest allocation unit based on pubset/volume set format

The pubset/volume set format and the smallest allocation unit can also be determined by the user from the output of the SHOW-MASTER-CATALOG-ENTRY command.

SECONDARY-ALLOCATION = *UNCHANGED / <integer 0..32767>

The number of PAM pages for later file extensions.

The number of PAM pages specified here is not immediately reserved. Only if the number of pages initially reserved (primary allocation) is no longer sufficient will the system automatically increase the storage space allocated to the file by the number of PAM pages specified in SECONDARY-ALLOCATION (output field *S-ALLOC* of the SHOW-FILE-ATTRIBUTES command). The value for secondary allocation is doubled after each successful extension. It is no longer doubled when the maximum value set in the system has been reached. When storage space is actually allocated, the specified number of PAM pages is rounded up to a multiple of **k** if required. The rounding factor **k** is dependent on the pubset/volume set format, i.e. on the formatting of the associated disks (see the PRIMARY-ALLOCATION operand). Specifying SECONDARY-ALLOCATION=0 will prevent dynamic extension of the file.

SPACE = *ABSOLUTE(...)

Systems support staff can allocate storage space explicitly. Absolute allocation is allowed only if a disk is specified in the VOLUME operand.

Nonprivileged users are allowed to use an absolute allocation only if they have authorization to perform physical allocation of public storage space (see "Privileged functions" under "Function" in the CREATE-FILE command).

When requesting additional storage space (as an absolute allocation), please note: An absolute allocation will only be made if it is possible to reserve the whole of the specified number of PAM pages (SIZE) on **one** disk. If this is not the case, the command is rejected. If more than one disk was specified in the VOLUME operand, then only the first of the named disks will be used. If no secondary allocation has been defined for the file, the *SECONDARY-ALLOCATION* field in the catalog entry will have the value zero, i.e. if the number of PAM pages specified in SIZE proves insufficient at a later point, there will be no automatic extension of the storage space.

FIRST-PAGE = <integer 1..2147483647>

Number of the first physical block of the file on the first specified disk. The value specified here must be a multiple of the smallest allocation unit **k** plus 1 (see SPACE=*RELATIVE).

SIZE = <integer 1..2147483647>

Number of PAM pages required. This value must be a multiple of the smallest allocation unit **k** (see SPACE=*RELATIVE).

SPACE = *RELEASE(...)

Here, the user can release storage space which has been reserved but not used. The request to release memory space is ignored if SPACE-RELEASE-LOCK=*YES has been defined for the file.

NUMBER-OF-PAGES = <integer 1..2147483647> / *ALL-RELEASABLE

The maximum number of PAM pages which are to be released. *ALL-RELEASABLE means that the maximum possible number of PAM pages will be released.

The release of storage space will start at the end of the file and work toward its beginning, in units of **k** PAM pages, going no further than the PAM page which follows the last occupied one. If DESTROY=YES is recorded in the catalog for the file, then up to the specified number of PAM pages (but not more than the number of unused PAM pages) will be overwritten with binary zeros.

KEEP-MIN-ALLOCATION = *NO / *YES

Specifies whether at least one allocation unit is to be retained for the file when storage space is released.

MANAGEMENT-CLASS = *UNCHANGED / *NONE / <composed-name 1..8>

Specifies whether the HSMS backup, archiving and long-term archiving functions are controlled by a management class defined using HSMS. See the “HSMS, Volume 1” manual [18] for further details. Management class allocations are rejected for files in SF pubsets.

MANAGEMENT-CLASS = *NONE

The file attributes set with the SAVE and MIGRATE operands are evaluated for file backup and migration.

MANAGEMENT-CLASS = <composed-name 1..8>

This specification is permitted only for files on SM pubsets. Name of the management class defined using HSMS. The specified management class must exist, and the file owner must have access authorization.

USER-INFORMATION = *UNCHANGED / *NONE / <c-string 1..8 with-low>

Specifies whether user information is to be added to the catalog entry. This information is not evaluated by the system. Its content and meaning are defined solely by the user. This specification is ignored for files on private disks. If *NONE is specified, any existing user information is deleted.

ADM-INFORMATION = *UNCHANGED / *NONE / <c-string 1..8 with-low>

This operand is available only to privileged users (TSOS privilege). Specifies whether a text is to be added to the catalog entry as information for systems support. This information is not evaluated by the system. Its content and meaning are defined solely by systems support. This specification is ignored for files on private disks. If *NONE is specified, any existing user information is deleted.

SUPPORT = *PRIVATE-DISK(...)

The file is held on private disk.

VOLUME = *UNCHANGED / *ANY(...) / list-poss(255): <alphanum-name 1..6>

The VSNs of the required disks (additional disks can be requested here; the operand is only effective if additional storage space is requested).

VOLUME = *ANY(...)

Any private disks may be mounted (no particular VSNs are required).

NUMBER-OF-DEVICES = 1 / <integer 1..9>

Number of disks required.

DEVICE-TYPE = *UNCHANGED / <device>

The device type to which the required private disks are assigned. Only device types known within the system are accepted. In interactive mode, the possible device types are displayed with DEVICE-TYPE=?. The permissible specifications for DEVICE-TYPE can also be found in the device table in [section "Device type table" on page 1-82](#) (device type column)). The devices available on the system can be listed with the SHOW-DEVICE-CONFIGURATION command.

If at least one volume ID is specified with VOLUME, each specification of a disk device type which is known to the system is handled like the STDDISK specification.

SPACE = *UNCHANGED / *RELATIVE(...) / *ABSOLUTE(...) / *RELEASE(...)

Type of storage space allocation.

SPACE = *UNCHANGED

The previous specification for this operand will continue to apply.

SPACE = *RELATIVE(...)

Here, the user can request additional storage space for the file (as a relative allocation).

PRIMARY-ALLOCATION = 0 / <integer 0..2147483647>

The number of PAM pages by which the file is to be immediately extended (if additional disks are requested, the allocation is made at that point).

The user should note that, in procedures etc., every call of the MODIFY-FILE-ATTRIBUTES command which has a positive value for the primary allocation will reserve storage space for the file. If the primary allocation is large, this will quickly exhaust the storage space assigned to the user. Since the disk selection mechanism is executed each time, a suitable primary allocation can be used to cause a disk swap when creating large files and only a few segments are free on individual disk. This then avoids excessive fragmentation of the file.

SECONDARY-ALLOCATION = *UNCHANGED / <integer 0..32767>

The number of PAM pages for later file extensions.

The number of PAM pages specified here is not immediately reserved. Only if the number of pages initially reserved (primary allocation) is no longer sufficient will the system automatically increase the storage space allocated to the file by the number of PAM pages specified in SECONDARY-ALLOCATION (*S-ALLOC* output field of the SHOW-FILE-ATTRIBUTES command). The value for secondary allocation is doubled after each successful extension. It is no longer doubled when the maximum value set in the system has been reached. If required, the defined number of PAM pages is rounded up to a multiple of 3 when allocating space.

Specifying SECONDARY-ALLOCATION=0 will prevent dynamic extension of the file.

SPACE = *ABSOLUTE(...)

Here, the user can request additional storage space (as an absolute allocation). When doing so, the following should be noted: An absolute allocation will only be made if it is possible to reserve the whole of the specified number of PAM pages (SIZE) on **one** single disk. If more than one disk was specified in the VOLUME operand, then only the first of the named disks will be used.

FIRST-PAGE = <integer 1..2147483647>

The number of the first physical block of the file on the first specified disk (the specified number must be 1 more than a multiple of 3, i.e. 1 / 4 / 7 / 10 etc.).

SIZE = <integer 1..2147483647>

The number of PAM pages required (this must be a multiple of 3).

SPACE = *RELEASE(...)

Here, the user can release storage space which has been reserved but not used. If this operand is specified, any VOLUME operand value will be ignored.

NUMBER-OF-PAGES = <integer 1..2147483647> / *ALL-RELEASABLE

The maximum number of PAM pages which are to be released. *ALL-RELEASABLE means that the maximum possible number of PAM pages will be released.

The release of storage space will start at the end of the file and work towards its beginning, in units of three PAM pages, going no further than the PAM page which follows the last occupied one. If DESTROY=*YES is recorded in the catalog for the file, then up to the specified number of PAM pages (but not more than the number of unused PAM pages) will be overwritten with binary zeros. All the private disks which hold any part of the file must be mounted.

VOLUME-ALLOCATION = *IMMEDIATE / *DELAYED

Specifies when the required private disk is to be mounted.

VOLUME-ALLOCATION = *IMMEDIATE

The required private disk is to be mounted immediately.

VOLUME-ALLOCATION = *DELAYED

The required private disk is to be mounted when the file is opened.

DATA-SUPPORT = *UNCHANGED / *PARAMETERS(...)

Only allowed for ISAM files: where the data section is stored.

This operand is only meaningful if it is required to change the storage location for the data section of an ISAM file whose data and index blocks are held on separate disks. For such files, the details specified in the VOLUME and SPACE operands refer only to the index section.

DATA-SUPPORT = *PARAMETERS(...)**DATA-DEVICE-TYPE = *UNCHANGED / <device>**

The type of device to which the required disks are allocated. Only device types known within the system are accepted. In interactive mode, DATA-DEVICE-TYPE=? calls up a list of the available device types. The permissible specifications for DEVICE-TYPE can also be found in the device table in [section "Device type table" on page 1-82](#) (device type column). If at least one volume ID is specified with DATA- VOLUME, each specification of a disk device type which is known to the system is handled like the STDDISK specification.

DATA-VOLUME = *UNCHANGED / list-poss(255): <alphanum-name 1..6>

The VSNs of the required disks (additional disks can be requested here; the operand is only effective if additional storage space is requested).

DATA-SPACE = *RELATIVE(...) / *ABSOLUTE(...)

Type of storage space allocation.

DATA-SPACE = *RELATIVE(...)

Here, the user can request additional storage space for the data section of the ISAM file (as a relative allocation).

PRIMARY-ALLOCATION = 0 / <integer 0..2147483647>

The number of PAM pages by which the file is to be immediately extended. If additional disks are requested, the allocation is made at that point.

SECONDARY-ALLOCATION = *UNCHANGED / <integer 0..32767>

The number of PAM pages for later file extensions. The number of PAM pages specified here is not immediately reserved. Only if the number of pages initially reserved (primary allocation) is no longer sufficient will the system automatically increase the storage space allocated to the data section of the ISAM file by the number of PAM pages specified in the *S-ALLOC* (output field). This allocation is made dynamically, i.e. each time that additional storage space is required. If it is not already a multiple of 3, the extra space requested will be rounded to one.

DATA-SPACE = *ABSOLUTE(...)

Here, the user can request additional storage space (as an absolute allocation). When doing so, the following should be noted: An absolute allocation will only be made if it is possible to reserve the whole of the specified number of PAM pages (SIZE) on **one** single disk. If more than one disk was specified in the DATA-VOLUME operand, then only the first of the named disks will be used.

FIRST-PAGE = <integer 1..2147483647>

The number of the first physical block of the file on the first specified disk (the specified number must be 1 more than a multiple of 3, i.e. 1 / 4 / 7 / 10 etc.).

SIZE = <integer 1..2147483647>

The number of PAM pages required (this must be a multiple of 3).

SUPPORT = *ANY-DISK(...)

The file may be held on public or private disks. A detailed description can be found with the corresponding operands under SUPPORT=PUBLIC-DISK(...) or SUPPORT=PRIVATE-DISK(...).

VOLUME = *UNCHANGED / list-poss(255): <vsn 1..6>

VSNs of additional disks to be used for storage space extension.

DEVICE-TYPE = *UNCHANGED / <device>

Type of device to which the specified disks are assigned. Only device types known within the system are accepted. In interactive mode, the possible device types are displayed with DEVICE-TYPE=?. If at least one volume ID is specified with VOLUME, each specification of a disk device type which is known to the system is handled like the STDDISK specification.

SPACE = *UNCHANGED / *RELATIVE(...) / *ABSOLUTE(...) / *RELEASE(...)

Type of storage space allocation.

SPACE = *RELATIVE(...)

Reserves additional storage space for the file (a relative allocation).

PRIMARY-ALLOCATION = 0 / <integer 0..2147483647>

The number of PAM pages by which the file is to be immediately extended.

SECONDARY-ALLOCATION = *UNCHANGED / <integer 0..32767>

The number of PAM pages for later file extensions.

SPACE = *ABSOLUTE(...)

Here, the user can request additional storage space (as an absolute allocation).

FIRST-PAGE = <integer 1..2147483647>

Number of the first physical block of the file on the first specified disk.

SIZE = <integer 1..2147483647>

Number of PAM pages required.

SPACE = *RELEASE(...)

Here, the user can release storage space which has been reserved but not used.

NUMBER-OF-PAGES = <integer 1..2147483647> / *ALL-RELEASABLE

The maximum number of PAM pages which are to be released. *ALL-RELEASABLE means that the maximum possible number of PAM pages will be released.

The release of storage space will start at the end of the file and work towards its beginning, in units of **three** PAM pages, going no further than the PAM page which follows the last occupied one. With files on private volumes, at least one allocation unit will be reserved for the file. If DESTROY=*YES is recorded in the catalog for

the file, then up to the specified number of PAM pages (but not more than the number of unused PAM pages) will be overwritten with binary zeros. If the file is held on private disks, they must be mounted.

SUPPORT = *TAPE(...)

The file is stored on tape. This operand can only be meaningfully specified if additional tapes are to be requested.

VOLUME = *NO / *ANY(...) / *REMOVE-UNUSED /

list-poss(255): <alphanum-name 1..6>

The VSNs of the required tapes (additional tapes can be requested at this point). The volume list in the VOLUME operand represents an extension to the volume list in the catalog entry; the former must therefore not contain any VSNs which are already recorded in the catalog entry.

VOLUME = *NO

No extra tapes are to be added to the volume list in the catalog entry.

VOLUME = *ANY(...)

Any tapes may be provided and added to the volume list in the catalog entry (no particular VSN required).

NUMBER-OF-DEVICES = 1 / <integer 1..9>

The number of tapes which is required.

VOLUME = *REMOVE-UNUSED

Any tapes on which none of the file's data is located are to be removed from the volume list in the catalog entry.

DEVICE-TYPE = *UNCHANGED / <device>

Device type for the required tapes. Only device types or volume types known within the system are accepted. In interactive mode, the possible device and volume types are displayed with DEVICE-TYPE=?.

PREMOUNT-LIST = *NONE / list-poss(255): <integer 0..255>

Tape sequence number of the required tape.

Issues a MOUNT message on the console (operator) requesting the mounting of tapes or suppresses the request.

PREMOUNT-LIST = *NONE

The first volume containing the file will be requested.

PREMOUNT-LIST = list-poss(255): <integer 0..255>

Issues a MOUNT message on the console (operator) requesting the mounting of tapes or suppresses the request. The tape sequence numbers specified here refer to the VSNs recorded in the catalog entry, followed by those listed in the VOLUME operand. Specifying PREMOUNT-LIST=0 has the effect that no tapes will be requested. Otherwise, PREMOUNT-LIST=(n[,n+1][,n+2]...) applies with n=1

PROTECTION = *UNCHANGED / *PARAMETERS(...)

The protection attributes for the file.

The default value *UNCHANGED means in each case that the previous specification continues to apply.

With regard to temporary files, see also [“Temporary files” on page 4-50](#).

PROTECTION = *PARAMETERS(...)

The file is to be given the specified protection attributes. When the file is accessed, the highest activated protection level applies. The following table shows the method used for access control, the protection attributes, and the job variable protection hierarchy (protection levels):

Access control	Protection attribute	Prot. level
Standard access control	ACCESS and USER-ACCESS	0
Basic access control list	BASIC-ACL	1
Access control via guards	PASSWORD	2

Table 59: Hierarchy of access control methods

All other protection attributes of the file (e.g. passwords) are evaluated independently, without regard to the implemented protection level.

If the file's date of release for deletion has been reached (see the FREE-FOR-DELETION operand), the file owner can delete the file regardless of its access protection.

With temporary files, the only attributes that can be given values other than the default protection attributes specified in table 60 are AUDIT, SPACE-RELEASE-LOCK and DESTROY-BY-DELETE.

PROTECTION-ATTR = *UNCHANGED / *BY-DEF-PROT-OR-STD / *STD / *FROM-FILE(...)

Specifies whether the protection attributes with the values *BY-PROTECTION-ATTR or *BY-PROT-ATTR-OR-UNCH are to be copied.

PROTECTION-ATTR=	*UNCH	*FROM-FILE	*STD	*BY-DEF-PROT-OR-STD	Default protection active
			(System default values)		
ACCESS	UNCHANGED	value from reference file	WRITE		values from default protection
USER-ACCESS			OWNER-ONLY		
BASIC-ACL			NONE		
DESTROY-BY-DELETE			NO		
PASSWORD			NONE		
SPACE-RELEASE-LOCK			NO		
EXPIRATION-DATE *)			TODAY		
READ-PASSWORD				NONE	
WRITE-PASSWORD					
EXEC-PASSWORD					
FREE-FOR-DELETION					
AUDIT					

Table 60: Effects of PROTECTION-ATTR on the protection attributes of the MODIFY commands

*) The protection terms is only entered for permanent files with a creation date or for file generation groups. If the reference file does not have a protected period, then *TODAY is entered.

If a value other than *UNCHANGED is entered for this operand in the guided dialog of the EDIT-FILE-ATTRIBUTES command, only the protection attributes will be copied for which the default values was replaced with *BY-PROTECTION-ATTR or *BY-PROT-ATTR-OR-UNCH.

PROTECTION-ATTR = *UNCHANGED

The values of protection attributes with *BY-PROTECTION-ATTR or *BY-PROT-ATTR-OR-UNCH remain unchanged.

PROTECTION-ATTR = *BY-DEF-PROT-OR-STD

Operands with *BY-PROTECTION-ATTR or *BY-PROT-ATTR-OR-UNCH are supplied with the default protection values. If default protection has not been activated, the system standard values apply.

Note

A modification made with the SPACE, VOLUME or DEVICE-TYPE operand is executed immediately after the protection attributes are entered. Exception: When renaming at the same time, a modification made with SPACE, VOLUME or DEVICE-TYPE is performed before the protection attributes are entered.

PROTECTION-ATTR = *STD

Operands for which the default value *BY-PROTECTION-ATTR is specified (either explicitly or implicitly) are assigned default protection attributes. Operands with the value *BY-PROT-ATTR-OR-UNCH remain unchanged.

PROTECTION-ATTR = *FROM-FILE(...)

Operands for which *BY-PROTECTION-ATTR is specified are assigned the operand value which they are assigned in the reference file named next. If the reference file has no EXPIRATION-DATE, but the original file has a creation date, then EXPIRATION-DATE=*TODAY is entered. Operands with the value *BY-PROT-ATTR-OR-UNCH remain unchanged.

If the protection attributes are to be copied for a temporary file, either the operands ACCESS=*WRITE, USER-ACCESS=*OWNER-ONLY, BASIC-ACL=*NONE and GUARDS=*NONE must be specified explicitly or the specified file must have been cataloged with these attributes. ACCESS and USER-ACCESS can have any value in the case of temporary tape files.

FILE-NAME = <filename 1..54 without-gen>

The name of the reference file.

Note

A modification made with the SPACE, VOLUME or DEVICE-TYPE operands is only executed after the protection status requested with *FROM-FILE has been established. The modification may be rejected by the new protection status. In this case the command is only partially executed or cancelled (with a return code).

ACCESS = *BY-PROTECTION-ATTR / *UNCHANGED / *WRITE / *READ

The ACCESS operand enables a file to be protected against overwriting; it specifies whether write access to the file is permitted (implicitly allowing read access) or only read access. This protection attribute is used by the standard access control procedure, and will only be evaluated if no higher-level access protection is active (see [table 59 on page 4-79](#)).

Tape files: When the file is first opened, DMS copies the ACCESS type identifier into the HDR3 label. During subsequent accesses to the file, the file owner can bypass the checks on access type by using the command ADD-FILE-LINK... PROTECTION-LEVEL=*LOW.

ACCESS = *BY-PROTECTION-ATTR

The value defined for the file specified in the PROTECTION-ATTR operand is used. If PROTECTION-ATTR is set to *UNCHANGED, the value set previously is retained. If PROTECTION-ATTR is set to *STD, ACCESS defaults to *WRITE.

ACCESS = *UNCHANGED

The ACCESS value recorded in the catalog entry is not to be changed.

ACCESS = *WRITE

All types of access to the file are permitted.

Tape files: HDR3 label: access type indicator = 0

ACCESS = *READ

The file may only be accessed to read it.

Temporary files: Write access cannot be prevented, ACCESS=*READ will be rejected.

Tape files: HDR3 label: access type indicator = 1

USER-ACCESS = *BY-PROTECTION-ATTR / *UNCHANGED / *OWNER-ONLY / *ALL-USERS / *SPECIAL

Specifies whether the file may be processed under user IDs other than the file owner's ID. The type of access permitted in this case is defined by the other protection attributes (see the operands ACCESS, WRITE-PASSWORD, etc.).

This protection attribute is part of the standard access control mechanism. It is evaluated for users without HARDWARE-MAINTENANCE privileges only if no higher access protection is defined for the file (see [table 59 on page 4-79](#)).

Tape files: When the file is first opened, DMS copies the USER-ACCESS indicator into the HDR1 label (access type indicator = 1).

The file may be accessed by any user ID, i.e. the file is shareable.

USER-ACCESS = *BY-PROTECTION-ATTR

The value defined for the file specified in the PROTECTION-ATTR operand is used. If PROTECTION-ATTR is set to *UNCHANGED, the value set previously is retained.

USER-ACCESS = *OWNER-ONLY

The file is not shareable. It may only be accessed under its owner's ID, but this may be under any catalog identifier under which a user with the same name is recorded (i.e. not only under the catalog ID under which the file was created).

USER-ACCESS = *ALL-USERS

The file may be accessed under IDs other than the user's. The file may be accessed by any user ID, i.e. such files are shareable.

Temporary files: USER-ACCESS=ALL-USERS is not permitted.

Tape files: HDR1 label: access indicator = (X'40') ◡

USER-ACCESS = *SPECIAL

File access is allowed for maintenance IDs (i.e. user IDs with HARDWARE-MAINTENANCE privileges). USER-ACCESS= *ALL-USERS applies implicitly.

BASIC-ACL = *BY-PROTECTION-ATTR / *UNCHANGED / *NONE / *PREVIOUS / *STD / *PARAMETERS(...) / *OWNER-RX / *OWNER-WRX / *OWNER-ONLY / *GROUP-X / *GROUP-RX / *GROUP-WRX / *EXCEPT-OTHERS / *OTHERS-X / *OTHERS-RX / *OTHERS-WRX / *ALL-X / *ALL-RX / *ALL-WRX

Specifies whether a BASIC-ACL entry is to be created, changed, or deleted for the file. A BASIC-ACL entry will only be evaluated if no higher protection level has been activated for the file (see also [table 59 on page 4-79](#)). Temporary files and tape files cannot be protected with BASIC-ACL. The following operand values correspond to common BASIC-ACL settings:

Operand value	BASIC-ACL protection								
	OWNER			GROUP			OTHERS		
	R	W	X	R	W	X	R	W	X
*STD	Y	Y	Y	N	N	N	N	N	N
*OWNER-RX	Y	N	Y	U	N	U	U	N	U
*OWNER-WRX	Y	Y	Y	U	U	U	U	U	U
*OWNER-ONLY	U	U	U	N	N	N	N	N	N
*GROUP-X	U	U	Y	N	N	Y	N	N	U
*GROUP-RX	Y	U	Y	Y	U	Y	U	N	U
*GROUP-WRX	Y	Y	Y	Y	Y	Y	U	U	U
*EXCEPT-OTHERS	U	U	U	U	U	U	N	N	N
*OTHERS-X	U	U	Y	U	U	Y	N	N	Y
*OTHERS-RX	Y	U	Y	Y	U	Y	Y	N	Y
*OTHERS-WRX	Y	Y	Y	Y	Y	Y	Y	Y	Y
*ALL-X	U	U	Y	N	N	Y	N	N	Y

Table 61: Operand values for common BASIC-ACL settings (Part 1 of 2)

Operand value	BASIC-ACL protection								
	OWNER			GROUP			OTHERS		
	R	W	X	R	W	X	R	W	X
*ALL-RX	Y	U	Y	Y	N	Y	Y	N	Y
*ALL-WRX	Y	Y	Y	Y	Y	Y	Y	Y	Y

Table 61: Operand values for common BASIC-ACL settings (Part 2 of 2)

Y: access granted
 N: access denied
 U: access unchanged

Note

On initial activation of BASIC-ACL, U is treated as if it were N! That is why it is usually best to activate it with BASIC-ACL=*PREVIOUS.

BASIC-ACL = *BY-PROTECTION-ATTR

The value defined for the file specified in the PROTECTION-ATTR operand is used. If PROTECTION-ATTR is set to *UNCHANGED, the value set previously is retained. If PROTECTION-ATTR is set to *STD, BASIC-ACL defaults to *NONE.

BASIC-ACL = *UNCHANGED

The previous setting is to remain unchanged.

BASIC-ACL = *NONE

Any existing BASIC-ACL entry for the file will be deleted. Access control will then be in accordance with the values of USER-ACCESS and ACCESS (standard access control), provided no higher protection level has been activated.

BASIC-ACL = *PREVIOUS

A BASIC-ACL entry will be created for the file, if there is not already one. In doing this, the values for USER-ACCESS and ACCESS will be converted to a BASIC-ACL according to the following table:

Standard access control		BASIC-ACL protection								
USER-ACCESS	ACCESS	OWNER			GROUP			OTHERS		
		R	W	X	R	W	X	R	W	X
OWNER-ONLY	WRITE	Y	Y	Y	N	N	N	N	N	N
OWNER-ONLY	READ	Y	N	Y	N	N	N	N	N	N
ALL-USERS	WRITE	Y	Y	Y	Y	Y	Y	Y	Y	Y
ALL-USERS	READ	Y	N	Y	Y	N	Y	Y	N	Y

Table 62: Standard access control/BASIC-ACL

Standard access control		BASIC-ACL protection								
USER-ACCESS	ACCESS	OWNER			GROUP			OTHERS		
		R	W	X	R	W	X	R	W	X
SPECIAL	WRITE	Y	Y	Y	Y	Y	Y	Y	Y	Y
SPECIAL	READ	Y	N	Y	Y	N	Y	Y	N	Y

Table 62: Standard access control/BASIC-ACL

If a BASIC-ACL entry already exists, all the values it contains will be unchanged.

BASIC-ACL = *PARAMETERS(...)

A BASIC-ACL entry will not be generated for a file which was previously not protected by BASIC-ACL unless a value other than *UNCHANGED is specified for at least one of the OWNER, GROUP and OTHERS operands. Authorization to make read, write and execute accesses must be explicitly granted or denied for each user ID which has any rights. Those with access rights are:

- OWNER, i.e. the user ID of the file owner, any co-owners and systems support.
- GROUP, i.e. all user IDs which are in the same group as the file owner (i.e. not the owner and not systems support). Definition of user groups is possible only when the software product SECOS is used. To allow for possible later installation of the software product SECOS, GROUP should be given the same access rights as for OTHERS.
- OTHERS, i.e. all user IDs which belong to a different group from the file owner (i.e. not the owner and not systems support).

If the value *UNCHANGED is specified for any of the operands OWNER, GROUP, OTHERS, READ, WRITE and EXEC when a BASIC-ACL entry is created, the associated access permissions will be set to “no access” (equivalent to *NO-ACCESS or *NO). An ungranted access permission is indicated by “-”.

OWNER = *UNCHANGED / *NO-ACCESS / *PARAMETERS(...)

Specifies which access rights are to be set for the owner. When BASIC-ACL is first activated, *UNCHANGED is treated like *NO-ACCESS.

OWNER = *PARAMETERS(...)

The owner’s access rights are entered as specified:

READ = *UNCHANGED / *NO / *YES

Specifies whether read authorization is set.

When BASIC-ACL is first activated, *UNCHANGED is treated like *NO.

WRITE = *UNCHANGED / *NO / *YES

Specifies whether write authorization is specified.

Write permission does not imply read permission.

When BASIC-ACL is first activated, *UNCHANGED is treated like *NO.

EXEC = *UNCHANGED / *NO / *YES

Indicates whether read access is permitted or not.

When BASIC-ACL is first activated, *UNCHANGED is treated like *NO.

GROUP = *UNCHANGED / *NO-ACCESS / *PARAMETERS(...)

Specifies which access rights are to be set for all user IDs from the group of the owner. When BASIC-ACL is first activated, *UNCHANGED is treated like *NO-ACCESS.

GROUP = *PARAMETERS(...)

The access rights are to be set for the group as specified:

READ = *UNCHANGED / *NO / *YES

Specifies whether read authorization is set.

When BASIC-ACL is first activated, *UNCHANGED is treated like *NO.

WRITE = *UNCHANGED / *NO / *YES

Specifies whether write authorization is specified.

When BASIC-ACL is first activated, *UNCHANGED is treated like *NO.

EXEC = *UNCHANGED / *NO / *YES

Indicates whether read access is permitted or not.

When BASIC-ACL is first activated, *UNCHANGED is treated like *NO.

OTHERS = *UNCHANGED / *NO-ACCESS / *PARAMETERS(...)

Specifies what access rights are to be given to all other user IDs. To allow for possible later installation of the software product SECOS, GROUP should be given the same access rights as for OTHERS. When BASIC-ACL is first activated, *UNCHANGED is treated like *NO-ACCESS.

OTHERS = *PARAMETERS(...)

The access rights for other users will be set as specified:

READ = *UNCHANGED / *NO / *YES

Specifies whether read authorization is set.

When BASIC-ACL is first activated, *UNCHANGED is treated like *NO.

WRITE = *UNCHANGED / *NO / *YES

Specifies whether write authorization is specified.

When BASIC-ACL is first activated, *UNCHANGED is treated like *NO.

EXEC = *UNCHANGED / *NO / *YES

Indicates whether read access is permitted or not.

When BASIC-ACL is first activated, *UNCHANGED is treated like *NO.

GUARDS = *BY-PROTECTION-ATTR / *UNCHANGED / *NONE / *PARAMETERS(...)

Specifies whether access control using GUARDS is to be activated or modified.

Temporary files and files on private volume (tape and disk) cannot be protected with GUARDS.

GUARDS = *BY-PROTECTION-ATTR

The value defined for the file specified in the PROTECTION-ATTR operand is used. If PROTECTION-ATTR is set to *UNCHANGED, the value set previously is retained. If PROTECTION-ATTR is set to *STD, GUARDS defaults to *NONE.

GUARDS = *NONE

Access to the JV is not (is no longer) to be controlled via GUARDS.

GUARDS = *PARAMETERS(...)

Any existing access control via GUARDS for the JV is to be modified as specified. If the file in question was not protected by GUARDS, access control with GUARDS will be activated for it, provided at least one of the operands READ, WRITE or EXEC has an operand value other than *UNCHANGED.

Access to the file is controlled via a guard, i.e. a specific object identifying all the conditions subject to which access will be granted: such as date, time and user ID. The GUARDS function unit of the chargeable software product SECOS (see the "SECOS" manual [35]) must be installed in order to create and maintain a guard. Each guard is uniquely identified by its name. The guard name resembles a file name: it can contain a user ID and consists of a name part which is up to 8 characters in length. If no user ID is specified explicitly, the user's own ID is added implicitly. Each access mode can be controlled by a separate guard. If no guard is assigned for an access mode (*NONE), access control will refuse any corresponding access (e.g. WRITE=*NONE prevents all write access). Specifying GUARDS=*PARAMETERS defines access control using GUARDS, with the default value *NONE for all access modes, which means that the file cannot be read, updated or executed.

The GUARDS subsystem is not required in order to define access control via GUARDS. The appropriate checks by GUARDS are not performed until the the time file access takes place: If a guard has been defined but is not available, all access of the type controlled by that guard is prohibited. No access at all is possible if the GUARDS subsystem is not available at the time of access.

READ = *UNCHANGED / *NONE / <filename 1..18 without-cat-gen-vers>

Name of a guard controlling read access (up to 8 characters if no user ID is specified). The default setting is *NONE, i.e. no read access is allowed.

WRITE = *UNCHANGED / *NONE / <filename 1..18 without-cat-gen-vers>

Name of a guard controlling write access (up to 8 characters if no user ID is specified). The default setting is *NONE, i.e. no write access is allowed.

EXEC = *UNCHANGED / *NONE / <filename 1..18 without-cat-gen-vers>

Name of a guard for execute protection (up to 8 characters when no user ID is specified). The default setting is *NONE, i.e. the file cannot be executed.

WRITE-PASSWORD = *BY-PROT-ATTR-OR-UNCH / *UNCHANGED / *NONE / <c-string 1..4> / <x-string 1..8> / <integer -2147483648..2147483647> / *SECRET

Write or read password for the JV to be modified. The defined password must be specified in the ADD-PASSWORD command in order to enable write access to the file or to modify or delete a defined password.

The WRITE-PASSWORD operand has the following special characteristics:

- The password entered is not logged.
- The input field is automatically blanked out in the guided dialog.
- In unguided dialog and foreground procedures, the entry *SECRET or ^, SDF provides a blanked out input field for inputting the password .

Temporary files: cannot be password-protected.

Tape files: the password protection is noted in the HDR3 label.

WRITE-PASSWORD = *BY-PROT-ATTR-OR-UNCH

The write password is defined through the value of the PROTECTION-ATTR operand. If PROTECTION-ATTR=*BY-DEF-PROT-OR-STD is set, the values supplied by default protection or - if default protection is not activated - *NONE is entered. Otherwise the write password remains unchanged.

WRITE-PASSWORD = *NONE

Any existing write protection password will be deleted.

WRITE-PASSWORD = <c-string 1..4> / <x-string 1..8> / <integer -2147483648..2147483647>

Defines a password that is required for write accesses.

READ-PASSWORD = *BY-PROT-ATTR-OR-UNCH / *UNCHANGED / *NONE / <c-string 1..4> / <x-string 1..8> / <integer -2147483648..2147483647> / *SECRET

*For encrypted files all values specified are handled like *UNCHANGED.*

Password for protection against unauthorized reading. The defined password must be specified in the ADD-PASSWORD command in order to enable read access to the file or to modify or delete a defined password.

The READ-PASSWORD operand has the following special characteristics:

- The password entered is not logged.
- The input field is automatically blanked out in the guided dialog.
- In unguided dialog and foreground procedures, the entry *SECRET or ^, SDF provides a blanked out input field for inputting the password .

Temporary files: cannot be password-protected.

Tape files: the password protection is noted in the HDR3 label.

READ-PASSWORD = *BY-PROT-ATTR-OR-UNCH

The read password is defined through the value of the PROTECTION-ATTR operand. If PROTECTION-ATTR=*BY-DEF-PROT-OR-STD is set, the values supplied by default protection or - if default protection is not activated - *NONE is entered. Otherwise the read password remains unchanged.

READ-PASSWORD = *NONE

Any existing read protection password will be deleted.

**READ-PASSWORD = <c-string 1..4> / x-string 1..8> /
<integer -2147483648..2147483647>**

Defines a password which protects against unauthorized read accesses to the file. This protection against unauthorized read accesses also provides protection against unauthorized write accesses; however, it does not protect against the unauthorized execution of an object or load module stored in the file, or a command sequence. In the case of an object or load module, both the file itself and the phase held in main memory are protected against unauthorized read accesses (the LOAD-PROGRAM command and the AID commands %DISPLAY und %IN will be rejected if access is not authorized). A source program which is protected by a read password cannot be compiled.

**EXEC-PASSWORD = *BY-PROT-ATTR-OR-UNCH / *UNCHANGED / *NONE /
<c-string 1..4> / <x-string 1..8> / <integer -2147483648..2147483647> / *SECRET**

*For encrypted files all values specified are handled like *UNCHANGED.*

The password used to protect against unauthorized execution of the file. This type of password is specified for procedures and load modules. The specified password must be entered into the job-specific password table by using the ADD-PASSWORD command before the procedure or program can be run or a defined password can be changed or deleted.

The operand has the following special characteristics:

- The password entered is not logged.
- The input field is automatically blanked out in the guided dialog.
- In unguided dialog and foreground procedures, the entry *SECRET or ^, SDF provides a blanked out input field for inputting the password .

The “execute” protection applies to a program or a procedure/ENTER file call, i.e. the file specified in the used command under FILE-NAME must contain an executable program or a procedure.

Temporary files: cannot be password-protected.

Tape files: the password protection is noted in the HDR3 label.

EXEC-PASSWORD = *BY-PROT-ATTR-OR-UNCH

The execution password is defined through the value of the PROTECTION-ATTR operand. If PROTECTION-ATTR=*BY-DEF-PROT-OR-STD is set, the values supplied by default protection or - if default protection is not activated - *NONE is entered. Otherwise the execution password remains unchanged.

EXEC-PASSWORD = *NONE

Any existing execute protection password will be deleted.

**EXEC-PASSWORD = <c-string 1..4> / <x-string 1..8> /
<integer -2147483648..2147483647>**

Defines a password which is required to call a program/procedure file.

DESTROY-BY-DELETE = *BY-PROTECTION-ATTR / *UNCHANGED / *NO / *YES

To increase the level of protection of data, the user can specify in the catalog entry that any data no longer required is overwritten by X'00' (binary zero). For disk files, the specification DESTROY-BY-DELETE takes effect when deletions are carried out or storage space is released; for tape files, any data remaining on the tape when EOF or EOY processing is carried out will be overwritten (see also the ADD-FILE-LINK command, DESTROY-OLD-CONTENTS operand).

DESTROY-BY-DELETE = *BY-PROTECTION-ATTR

The value defined for the file specified in the PROTECTION-ATTR operand is used. If PROTECTION-ATTR is set to *UNCHANGED, the value set previously is retained. If PROTECTION-ATTR is set to *STD, DESTROY-BY-DELETE defaults to *NO.

DESTROY-BY-DELETE = *UNCHANGED

The value set previously will be retained.

DESTROY-BY-DELETE = *NO

If this operand is set to NO, the action specified in the DELETE-FILE command (OPTION operand) will be carried out.

Disk files: the storage space released will be left unchanged if the operand OPTION=DESTROY-ALL is not specified in the DELETE-FILE command. *Tape files:* Any data which follows on the tape will not be overwritten if DESTROY-OLD-CONTENTS=*YES is not specified in the ADD-FILE-LINK command for the current processing run.

DESTROY-BY-DELETE = *YES

When the file is deleted, its storage space will be overwritten with binary zeros. When storage space is released, the specified number of reserved PAM pages will be overwritten with binary zeros, unless they are occupied by data.

Disk files: when the storage space is released or deleted, it will be automatically overwritten with binary zeros (X'00').

Tape files: the tape content after the end of the file will be overwritten with binary zeros; it is not necessary to explicitly set the ADD-FILE-LINK command to delete residual data for the current processing run (DESTROY-OLD-CONTENTS operand).

AUDIT = *UNCHANGED / *NONE / *SUCCESS / *FAILURE / *ALL

This operand specifies whether accesses to the file are to be monitored. This monitoring may also be made dependent on the result of the access (see the operand values). Systems support staff (TSOS privilege) can use this function unrestrictedly. Nonprivileged users require the appropriate authorization in the user entry of the pubset in which the file is to be created (see the *FILE-AUDIT* output field of the SHOW-USER-ATTRIBUTES command). Without this authorization the command will be rejected if auditing is requested.

It is possible to monitor the following DMS actions:

- the creation, amendment (protection attributes), reading and deletion of a catalog entry
- the opening and closing of files
- the renaming, importing and exporting of files

The monitoring is performed by system exit routines or, if the software product SECOS is being used, by the SAT function unit.

In order to use system exit routines for monitoring, they must be activated (this is the responsibility of systems support, privilege TSOS). In order to use SAT for monitoring, SAT logging must have been started, and events for the FILE to be monitored must not be excluded from the logging procedure (this is the responsibility of the security officer, under the user ID SYSPRIV). The user cannot alter any explicit settings of SAT made by the security officer. The SAT log files can be analyzed by the SAT file administrator, under the user ID SYSAUDIT.

AUDIT = *NONE

No monitoring.

AUDIT = *SUCCESS

All successful DMS operations on the file will be monitored.

AUDIT = *FAILURE

All erroneous/unsuccessful DMS operations on the file will be monitored.

AUDIT = *ALL

All DMS operations on the file will be monitored.

SPACE-RELEASE-LOCK = *BY-PROTECTION-ATTR / *UNCHANGED / *NO / *YES

Specifies whether the specification to release unused memory space in the MODIFY-FILE-ATTRIBUTES command (SPACE=RELEASE operand) is to be ignored. The existence of a space release lock can be determined by the user from the output field *SP-REL-LOCK* of the SHOW-FILE-ATTRIBUTES command.

SPACE-RELEASE-LOCK = *BY-PROTECTION-ATTR

The value defined for the file specified in the PROTECTION-ATTR operand is used. If PROTECTION-ATTR is set to *UNCHANGED, the value set previously is retained. If PROTECTION-ATTR is set to *STD, SPACE-RELEASE-LOCK defaults to *NO.

SPACE-RELEASE-LOCK = *NO

Removes an existing lock to prevent the release of unused storage space.

SPACE-RELEASE-LOCK = *YES

Sets an existing lock to prevent the release of unused storage space.

EXPIRATION-DATE = *BY-PROTECTION-ATTR / *UNCHANGED / *TODAY / *TOMORROW / <date> / <integer 0..99999>

Specifies a protected period, during which the file may be neither amended nor deleted; i.e. it can only be read ("read only").

The MODIFY-FILE-ATTRIBUTES command can be run again specifying EXPIRATION-DATE in order to cancel or change the expiration date. Once the specified date has arrived, write access is allowed again, but the file is not automatically deleted.

A protected period can only be assigned if the file has already been opened and consequently has a CREATION-DATE.

If the end of the protected period is before the current date, the current date is entered.

Temporary files: cannot be given an expiration date.

Tape files: maximum possible EXPIRATION-DATE is 2155-12-31.

EXPIRATION-DATE = *BY-PROTECTION-ATTR

The value defined for the file specified in the PROTECTION-ATTR operand is used. If PROTECTION-ATTR is set to *UNCHANGED, the value set previously is retained.

EXPIRATION-DATE = *UNCHANGED

The expiration date will remain unchanged.

EXPIRATION-DATE = *TODAY

The file can updated or deleted immediately. Today's date is added to the catalog entry as the EXPIRATION-DATE.

EXPIRATION-DATE = *TOMORROW

The file cannot be updated or deleted until the following day. The following day's date is added to the catalog entry as the EXPIRATION-DATE.

EXPIRATION-DATE = <date with-compl>

The file can be updated or deleted starting on the specified date. The specified date is added to the catalog entry as the EXPIRATION-DATE. The date is specified in the form [yy]yy-mm-dd. 20 is automatically prefixed to two-digit year specifications < 60, 19 to two-digit year specifications ≥ 60.

EXPIRATION-DATE = <integer 0..99999 days>

The file can be updated or deleted after the specified number of days. The value must be specified in the form +n (days). The date calculated internally is added to the catalog entry as the EXPIRATION-DATE.

A retention period can only be specified for an existing file, i.e. the *CRE-DATE* and *FILE-STRUC* output fields must indicate a value other than NONE.

FREE-FOR-DELETION = *BY-PROT-ATTR-OR-UNCH / *UNCHANGED / *NONE / <date> / <integer 0..99999>

Specifies as of when the file can be deleted, regardless of its ACCESS, BASIC-ACL, GUARDS, EXPIRATION-DATE protection attributes and its password protection or when its storage space can be released (free-for-deletion date).

A free-for-deletion date cannot be assigned to temporary files or to files on private volumes.

FREE-FOR-DELETION = *BY-PROT-ATTR-OR-UNCH

The free-for-deletion date is defined by means of the PROTECTION-ATTR operand value. If PROTECTION-ATTR=*BY-DEF-PROT-OR-STD is set, the values supplied by default protection or - if default protection is not activated - *NONE is entered. Otherwise, the free-for-deletion date remains unchanged.

FREE-FOR-DELETION = *NONE

No free-for-deletion date is defined. The protection attributes are taken into account with regard to file deletion.

FREE-FOR-DELETION = <date>

Once the specified date is reached, the file can be deleted regardless of its protection attributes listed above. The date is specified in the form [yy]yy-mm-dd. 20 is automatically prefixed to two-digit year specifications < 60, 19 to two-digit year specifications ≥ 60.

FREE-FOR-DELETION = <integer 0..99999>

After the specified number of days, the file can be deleted regardless of the protection attributes listed above. The date must be specified in the form +n.

SAVE = *UNCHANGED

Only for files on disks and Net-Storage volume: BACKUP-CLASS relates to the automatic file backup by the ARCHIVE backup system; it determines which runs of the ARCHIVE or HSMS system are to back up the files.

SAVE = *PARAMETERS(...)

Parameters governing the type and frequency of backups.

BACKUP-CLASS = *UNCHANGED / *A / *B / *C / *D / *E

Backup frequency, where *A represents the most frequent backup.

BACKUP-CLASS = *A

The most frequent backup. Files with this setting will be backed up by every backup run.

BACKUP-CLASS = *B

Files with this setting will be backed up every time a backup run is performed for files with BACKUP-CLASS=*B or *C or *D.

BACKUP-CLASS = *C

Files with this setting will be backed up every time a backup run is performed for files with BACKUP-CLASS=*C or *D.

BACKUP-CLASS = *D

The least frequent backup.

Files with this setting will only be backed up when a backup run is performed for files with `BACKUP-CLASS=*D`.

BACKUP-CLASS = *E

Not backed up by ARCHIVE or HSMS (This is appropriate for work files, for example.)

SAVED-PAGES = *UNCHANGED / *COMPLETE-FILE / *MODIFIED-PAGES

Only for disk files: like `BACKUP-CLASS`, refers to the backup with ARCHIVE or HSMS and defines whether the entire file is to be backed up completely during automatic backup runs, or whether only those blocks that have changed since the last backup are to be saved.

SAVED-PAGES = *COMPLETE-FILE

The complete file is backed up.

SAVED-PAGES = *MODIFIED-PAGES

Incremental saving: only the modified blocks are saved. This specification is useful for extremely large files.

MIGRATE = *UNCHANGED / *ALLOWED / *INHIBITED / *FORBIDDEN

Only relevant for files on public disks - evaluated by the software product HSMS (Hierarchical Storage Management System). It allows a user to specify whether or not files that have not been accessed for a long time (by the user) may be migrated to a storage medium with slower access. The files will be migrated from the online processing level S0 to the background level S1, which is available online, or to background level S2 (e.g. tape storage) which is available offline (for further details see the “HSMS, Volume 1” manual [18]).

MIGRATE = *ALLOWED

If HSMS is being used, the file may be migrated from the processing level to the background level (S1), or to the archive level (S2). This operand value may only be specified for permanent files.

MIGRATE = *INHIBITED

The file may only be migrated for a brief period, e.g. for reorganization purposes (migration lock).

MIGRATE = *FORBIDDEN

This specification is allowed only in conjunction with authorization to perform physical allocation of public storage space (see “Privileged functions” under “Function” above). The file must not be migrated, typically because it is intended to stay in its current physical storage location (intensified migration lock). The command is rejected if the file has been migrated to a background storage level (S1 or S2) using HSMS (see the `STORAGE-LEVEL` operand in the `SHOW-FILE-ATTRIBUTES` command).

CODED-CHARACTER-SET = *UNCHANGED / *USER-DEFAULT / *NONE / <name 1..8>

This operand is ignored with regard to files on private disks. Determines the code of the file. This defines how the characters of a national character set are to be stored in binary form. The specified character set has an effect on the representation of characters on the screen, the collating sequence, etc. (see the "XHCS" manual [51]).

CODED-CHARACTER-SET = *USER-DEFAULT

The code is taken over from the file owner's user ID if a code other than EDF03IRV is entered there, otherwise *NONE applies.

CODED-CHARACTER-SET = *NONE

No coded character set is specified for the file.

CODED-CHARACTER-SET = <name 1..8>

Specifies the coded character set for the file.

DIALOG-CONTROL = *STD / *NO / *ERROR / *FILE-CHANGE / *MORE-THAN-ONE-FILE / *CATALOG-CHANGE / *USER-ID-CHANGE

Specifies whether and under what conditions a verification dialog is to be conducted with the user during command execution. The verification dialog allows you to monitor the progress of the command and to take action if necessary. A control dialog is only possible in dialog mode but, in this mode, may also be used in procedures. In batch mode, all operand values have the same effect as *NO.

If one of the events (apart from *ERROR) specified in the DIALOG-CONTROL operand occurs, a verification dialog is initiated. Message DMS0810 is issued, asking you whether you want the command to be executed for the shown file or file set. The SDF abbreviation rules apply to the entered response. To display the possible responses, enter a question mark.

Syntax of replies to message DMS0810 (verification dialog)

```
mögliche Antworten: *YES(...) / *NO(...) / *TERMINATE

*YES(...)
  DIALOG-CONTROL = *UNCHANGED / *NO / *ERROR / *MORE-THAN-ONE-FILE /
                    *FILE-CHANGE / *CATALOG-CHANGE / *USER-ID-CHANGE
  ,OUTPUT = *UNCHANGED / *NO / *SYSOUT

*NO(...)
  DIALOG-CONTROL = *UNCHANGED / *NO / *ERROR / *MORE-THAN-ONE-FILE /
                    *FILE-CHANGE / *CATALOG-CHANGE / *USER-ID-CHANGE
  ,OUTPUT = *UNCHANGED / *NO / *SYSOUT
```

Meaning of the operands

The meaning of the DIALOG-CONTROL and OUTPUT suboperands is the same as that of the corresponding main command operands. The operand value *UNCHANGED leaves the previous setting unchanged.

Antwort *YES(...)

The set of files listed in the message is processed. If you specify a new value in the DIALOG-CONTROL suboperand which calls for a reduction in the size of the set of files listed in the message (e.g. changing *CATALOG-CHANGE to *FILE-CHANGE), the file set is first slimmed down to reflect the new value, and then a second verification dialog is conducted for the reduced set of files. The meaning of the DIALOG-CONTROL and OUTPUT suboperands is the same as that of the corresponding main command operands.

Antwort *NO(...)

The set of files listed in the message is not processed. If you change the DIALOG-CONTROL operand, the verification check is not repeated until the next time the associated event occurs. If there are other files to process before the event occurs, they will be processed without verification.

Antwort *TERMINATE

The set of files listed in the message is not processed and processing of the command terminates. In a non-S procedure, spin-off is initiated; in an S procedure, SDF-P error handling is initiated.

If an error occurs while one of the selected files is being processed and DIALOG-CONTROL has a setting other than *NO, an error verification dialog is initiated. Guaranteed message DMS0811 or DMS0812 shows you the file name(s) and the DMS error code. You are then asked by message DMS0813 whether and if so how command execution is to continue. The SDF abbreviation rules apply to the entered response. To display the possible responses, enter a question mark.

Syntax of replies to message DMS0813 (error verification dialog)

<i>mögliche Antworten: *YES(...) / *RETRY(...) / *NO / *SKIP-CATALOG(...) / *SKIP-USER-ID(...)</i>	
*YES(...)	DIALOG-CONTROL = <u>*UNCHANGED</u> / *NO / *ERROR / *MORE-THAN-ONE-FILE / *FILE-CHANGE / *CATALOG-CHANGE / *USER-ID-CHANGE ,OUTPUT = <u>*UNCHANGED</u> / *NO / *SYSOUT
*RETRY(...)	DIALOG-CONTROL = <u>*UNCHANGED</u> / *NO / *ERROR / *MORE-THAN-ONE-FILE / *FILE-CHANGE / *CATALOG-CHANGE / *USER-ID-CHANGE ,OUTPUT = <u>*UNCHANGED</u> / *NO / *SYSOUT
*SKIP-CATALOG(...)	DIALOG-CONTROL = <u>*UNCHANGED</u> / *NO / *ERROR / *MORE-THAN-ONE-FILE / *FILE-CHANGE / *CATALOG-CHANGE / *USER-ID-CHANGE ,OUTPUT = <u>*UNCHANGED</u> / *NO / *SYSOUT
*SKIP-USER-ID(...)	DIALOG-CONTROL = <u>*UNCHANGED</u> / *NO / *ERROR / *MORE-THAN-ONE-FILE / *FILE-CHANGE / *CATALOG-CHANGE / *USER-ID-CHANGE ,OUTPUT = <u>*UNCHANGED</u> / *NO / *SYSOUT

Meaning of the operands

The meaning of the DIALOG-CONTROL and OUTPUT suboperands is the same as that of the corresponding main command operands. The operand value *UNCHANGED leaves the previous setting unchanged.

Antwort *YES(...)

Processing is to continue with the next file name.

Antwort *RETRY(...)

Processing is to be retried for the same file name.

Antwort *SKIP-CATALOG(...)

Processing is to continue with the file names from the next selected catalog. This selection only makes sense if wildcards were used in the catalog ID.

Antwort *SKIP-USER-ID(...)

Processing is to continue with the file names from the next selected user ID or, if files of a user ID which are on various pubsets were selected, with the next catalog ID. This selection only makes sense if wildcards were used in the user or catalog ID.

DIALOG-CONTROL = *STD

The default *STD setting is equivalent to *MORE-THAN-ONE-FILE in an interactive dialog (when SYSCMD is connected to the terminal) and to *NO in procedures and in batch mode.

DIALOG-CONTROL = *NO

All the selected files are processed without an opportunity for the user to intervene.

DIALOG-CONTROL = *MORE-THAN-ONE-FILE

A verification dialog is initiated if more than one file has been selected. The verification query is issued for each of the selected files. If the catalog and/or user ID contains wildcards, the query is issued for each catalog and/or user ID. DIALOG-CONTROL=*ERROR also applies implicitly.

DIALOG-CONTROL = *ERROR

An error verification dialog is initiated if an error occurs while one of the selected file names is being processed.

DIALOG-CONTROL = *FILE-CHANGE

A verification dialog is initiated for each selected file name. DIALOG-CONTROL=*ERROR also applies implicitly.

DIALOG-CONTROL = *CATALOG-CHANGE

The verification query is issued for all the selected file names in a catalog. DIALOG-CONTROL=*ERROR also applies implicitly.

DIALOG-CONTROL = *USER-ID-CHANGE

The verification query is issued for all the selected file names of a user ID within a catalog. DIALOG-CONTROL=*ERROR also applies implicitly.

OUTPUT = *STD / *NO / *SYSOUT

Specifies whether the names of processed files are to be logged on SYSOUT.

OUTPUT = *NO

Only any errors that occur are logged on SYSOUT.

OUTPUT = *SYSOUT

The names of processed files and any errors that occur are logged on SYSOUT (guaranteed message DMS0815 or DMS0816, or DMS0811 or DMS0812 in the event of an error).

Return codes

(SC2)	SC1	Maincode	Meaning/Guaranteed messages
	0	CMD0001	Command executed
2	0	DMS051E	Inconsistency in private disk pool or operand error detected
2	0	DMS0546	Catalog entry for specified file has reached maximum size
2	0	DMS054A	Insufficient disk space or access to disk not possible
2	0	DMS06A9	Some generations of this FGG are missing
	1	CMD0202	Syntax or semantic error in command
	32	DMS0584	A state that does not allow the function to continue was reported during processing
	32	DMS05C7	Unexpected internal error in DMS
	64	CMD0102	Wildcard selection action: processing interrupted by *TERMINATE or by K2 key in verification dialog
	64	CMD0216	Privilege errors
	64	DMS0501	Requested catalog not available
	64	DMS0512	Requested catalog not found
	64	DMS051B	Requested user ID not in pubset Guaranteed messages: DMS051B, DMS0681
	64	DMS051C	User not authorized to access pubset Guaranteed messages: DMS051C, DMS0681
	64	DMS0535	Specified file not shareable
	64	DMS053E	File already cataloged on private volume
	64	DMS0557	Invalid volume specification
	64	DMS055C	The catalog entry could not be found on the assigned volume
	64	DMS057A	Invalid combination of file attributes and storage class
	64	DMS057B	Invalid operand for migrated file
	64	DMS057C	Processing not possible due to HSMS error
	64	DMS057E	File has been migrated, and HSMS is not available
	64	DMS057F	Renaming of migrated file not permitted
	64	DMS0585	Error detected when processing catalog or multiprocessor system
	64	DMS0586	It is not possible to access or reserve a volume at present
	64	DMS0587	Use of the specified command has been restricted by the system administrator
	64	DMS0588	The disk storage assignment could not be executed
	64	DMS05A0	Attribute modification not possible - data still in write cache
	64	DMS05A5	Allocation change not allowed when renaming permanent file as temporary file (or vice versa)
	64	DMS05AD	Renaming in conjunction with a change of storage location: the attributes have been modified, but renaming failed owing to a system malfunction
	64	DMS05B5	Guard not available
	64	DMS05BD	Invalid combination of file and volume set attributes
	64	DMS05CC	File name already cataloged
	64	DMS05FC	Specified user ID not in HOME pubset
	64	DMS0609	No access to system file

(Part 1 of 2)

MODIFY-FILE-ATTRIBUTES

(SC2)	SC1	Maincode	Meaning/Guaranteed messages
	64	DMS060D	Invalid file name for reference file (PROTECTION-ATTR)
	64	DMS0610	Action with selection specification (wildcards): command execution failed for at least one of the selected files
	64	DMS0613	Unknown management class
	64	DMS0618	Unknown storage class
	64	DMS061A	Storage class catalog could not be read
	64	DMS0640	Access to Net-Storage is rejected by the ONETSTOR subsystem because of communication problems with the net client
	64	DMS0643	Net client reports access error
	64	DMS0644	Net client reports internal error
	64	DMS0645	File does not exist on Net-Storage
	64	DMS0646	FGG does not exist on Net-Storage
	64	DMS0649	Net server reports POSIX-ACL error
	64	DMS064A	Net client reports that access to files is forbidden on the Net-Storage volume
	64	DMS064B	Access to node files not supported by the net client
	64	DMS0684	File does not exist Guaranteed message: DMS0684
	64	DMS0685	File not yet allocated storage space
	64	DMS0689	Operands only allowed for files not yet occupying storage space have been specified
	64	DMS06B5	File already open or catalog entry not updated after system error
	64	DMS06B6	File attributes not compatible with file generation group
	64	DMS06FF	BCAM connection severed
	128	DMS0506	Function not executed due to change in master
	130	DMS0524	System address space exhausted
	130	DMS053C	No space in pubset catalog file
	130	DMS0582	File is currently locked or being used and cannot be processed
	130	DMS0585	Error detected when processing catalog or multiprocessor system Guaranteed message: DMS053C
	130	DMS0586	It is not possible to access or reserve a volume at present
	130	DMS0586	It is not possible to access or reserve a volume at present
	130	DMS0588	The disk storage assignment could not be executed
	130	DMS0588	The disk storage assignment could not be executed
	130	DMS0594	Not enough virtual memory available
	130	DMS05C8	Maximum permitted number of files reached

(Part 2 of 2)

Examples

Example 1: Changing file attributes (releasing storage space)

```

/show-file-attr d.9,inf=(alloc=*yes) ----- (1)
%0000000093 :20SG:$USER1.D.9
% ----- ALLOCATION -----
% SUPPORT = PUB S-ALLOC = 24 HIGH-US-PA = 1
% EXTENTS VOLUME DEVICE-TYPE EXTENTS VOLUME DEVICE-TYPE
% 2 GVS2.0 D3435
% NUM-OF-EXT = 2
%:20SG: PUBLIC: 1 FILE RES= 93 FRE= 92 REL= 90 PAGES
/mod-file-attr d.9,sup=*pub(space=*release(90)) ----- (2)

/show-file-attr d.9,inf=(alloc=*yes,security=*yes) ----- (3)
%0000000093 :20SG:$USER1.D.9
% ----- SECURITY -----
% READ-PASS = NONE WRITE-PASS = NONE EXEC-PASS = NONE
% USER-ACC = OWNER-ONLY ACCESS = WRITE ACL = NO
% AUDIT = NONE FREE-DEL-D = *NONE EXPIR-DATE = 2012-11-09
% DESTROY = NO FREE-DEL-T = *NONE EXPIR-TIME = 00:00:00
% SP-REL-LOCK= YES ENCRYPTION = *NONE
% ----- ALLOCATION -----
% SUPPORT = PUB S-ALLOC = 24 HIGH-US-PA = 1
% EXTENTS VOLUME DEVICE-TYPE EXTENTS VOLUME DEVICE-TYPE
% 2 GVS2.0 D3435
% NUM-OF-EXT = 2
%:20SG: PUBLIC: 1 FILE RES= 93 FRE= 92 REL= 90 PAGES
/mod-file-attr d.9,sup=*pub(space=*release(90)),prot=(space-release-lock=*no) ----- (4)

/show-file-attr d.9,inf=(alloc=*yes) ----- (5)
%0000000003 :20SG:$USER1.D.9
% ----- ALLOCATION -----
% SUPPORT = PUB S-ALLOC = 24 HIGH-US-PA = 1
% EXTENTS VOLUME DEVICE-TYPE EXTENTS VOLUME DEVICE-TYPE
% 1 GVS2.0 D3435
% NUM-OF-EXT = 1
%:20SG: PUBLIC: 1 FILE RES= 3 FRE= 2 REL= 0 PAGES
%00000003 :20S2:$USER1.D.9
    
```

- (1) Shows the storage space allocation attributes for the file *D.9*. The file occupies 93 PAM pages, of which only one is used. No more than 90 of the unused PAM pages may be released.
- (2) The MODIFY-FILE-ATTRIBUTES command is used to release 90 PAM pages.
- (3) Shows the storage space allocation and protection attributes for the file *D.9*: the request to release storage space was ignored due to the SPACE-RELEASE-LOCK protection attribute.
- (4) The MODIFY-FILE-ATTRIBUTES command is now entered again. Additionally the space release lock is also removed.
- (5) The output of the SHOW-FILE-ATTRIBUTES command shows that storage space has been released.

Example 2: Renaming a permanent file to a temporary file

```

/show-file-attr d.10,inf=(security=*yes) ----- (1)
%0000000003 :20SG:$USER1.D.10
% ----- SECURITY -----
% READ-PASS = YES          WRITE-PASS = NONE          EXEC-PASS = NONE
% USER-ACC  = OWNER-ONLY  ACCESS      = WRITE          ACL        = NO
% AUDIT     = NONE        FREE-DEL-D  = *NONE        EXPIR-DATE = 2012-11-09
% DESTROY   = NO          FREE-DEL-T  = *NONE        EXPIR-TIME = 00:00:00
% SP-REL-LOCK= NO        ENCRYPTION  = *NONE
%:20SG: PUBLIC:          1 FILE RES=          3 FRE=          2 REL=          0 PAGES
/mod-file-attr d.10,new-name=#file.1 ----- (2)
% DMS0681 DMS ERROR '05CF' WHEN ACCESSING FILE ':20SG:$USER1.D.10'. FOR FURTHER
INFORMATION: /HELP-MSG DMS05CF ----- (3)
/add-pass 'paul' ----- (4)
/mod-file-attr d.10,new-name=#file.1 ----- (5)

/show-file-attr #file.1,inf=(security=*yes) ----- (6)
%0000000003 :20SG:$USER1.S.313.3ZAA.FILE.1
% ----- SECURITY -----
% READ-PASS = NONE        WRITE-PASS = NONE          EXEC-PASS = NONE
% USER-ACC  = OWNER-ONLY  ACCESS      = WRITE          ACL        = NO
% AUDIT     = NONE        FREE-DEL-D  = *NONE        EXPIR-DATE = 2012-11-09
% DESTROY   = NO          FREE-DEL-T  = *NONE        EXPIR-TIME = 00:00:00
% SP-REL-LOCK= NO        ENCRYPTION  = *NONE
%:20SG: PUBLIC:          1 FILE RES=          3 FRE=          2 REL=          0 PAGES

```

- (1) The file *D.10* is protected by a read password.
- (2) Renames the permanent file *D.10* to the temporary file *#FILE.1* (the tempfile character is #).
- (3) The command was rejected, since the password is not contained in the password table of the task.
- (4) The read password *PAUL* is entered into the password table of the task.
- (5) A new attempt is made to rename the permanent file *D.10* to the temporary file *#FILE.1* (see also Point 2).
- (6) Shows the protection attributes of the temporary file *#FILE.1*. The tempfile character is replaced in the output by the internal name component for temporary files (here: *S.313.3ZAA.*). When a permanent file is renamed to a temporary file, some of the file attributes are changed. For example, temporary files cannot be protected by passwords. In this case, the read password was canceled (READ-PASS=*NONE).

Example 3: Assigning BASIC-ACL protection to a group of files

```

/sh syssdf.group.,inf=*min _____ (1)
%I NNN YR          72 :20SG:$USER1.SYSSDF.GROUP.PROG-1.140
%I NNN YR          192 :20SG:$USER1.SYSSDF.GROUP.PROG-1.140.BINDER
%I NNN YR          33 :20SG:$USER1.SYSSDF.GROUP.PROG-1.140.USER
/md syssdf.group.,prot=(basic-acl=*all-rx) _____ (2)
% DMS0810 EXECUTE JOB FOR FILE(S) ':20SG:$USER1.SYSSDF.GROUP.' (Y=YES; N=NO; T=
TERMINATE; ?=HELP/FURTHER OPTIONS)?y(output=*sysout)
% DMS0815 JOB FOR THE FILE NAME ':20SG:$USER1.SYSSDF.GROUP.PROG-1.140' SUCCESSF
ULLY EXECUTED
% DMS0815 JOB FOR THE FILE NAME ':20SG:$USER1.SYSSDF.GROUP.PROG-1.140.BINDER' S
UCCESSFULLY EXECUTED
% DMS0815 JOB FOR THE FILE NAME ':20SG:$USER1.SYSSDF.GROUP.PROG-1.140.USER' SUC
CESSFULLY EXECUTED
/sh syssdf.group.,inf=*min
%I NNN --X--X--X   72 :20SG:$USER1.SYSSDF.GROUP.PROG-1.140
%I NNN --X--X--X   192 :20SG:$USER1.SYSSDF.GROUP.PROG-1.140.BINDER
%I NNN --X--X--X   33 :20SG:$USER1.SYSSDF.GROUP.PROG-1.140.USER
/md syssdf.group.,prot=(basic-acl=*all-rx) _____ (3)
% DMS0810 EXECUTE JOB FOR FILE(S) ':20SG:$USER1.SYSSDF.GROUP.' (Y=YES; N=NO; T=
TERMINATE; ?=HELP/FURTHER OPTIONS)?y
/sh syssdf.group.,inf=*min
%I NNN R-XR-XR-X   72 :20SG:$USER1.SYSSDF.GROUP.PROG-1.140
%I NNN R-XR-XR-X   192 :20SG:$USER1.SYSSDF.GROUP.PROG-1.140.BINDER
%I NNN R-XR-XR-X   33 :20SG:$USER1.SYSSDF.GROUP.PROG-1.140.USER
/md syssdf.group.,prot=(basic-acl=*owner-wrx) _____ (4)
% DMS0810 EXECUTE JOB FOR FILE(S) ':20SG:$USER1.SYSSDF.GROUP.' (Y=YES; N=NO; T=
TERMINATE; ?=HELP/FURTHER OPTIONS)?y
/sh syssdf.group.,inf=*min
%I NNN RWXR-XR-X   72 :20SG:$USER1.SYSSDF.GROUP.PROG-1.140
%I NNN RWXR-XR-X   192 :20SG:$USER1.SYSSDF.GROUP.PROG-1.140.BINDER
%I NNN RWXR-XR-X   33 :20SG:$USER1.SYSSDF.GROUP.PROG-1.140.USER
/md syssdf.group.,prot=(basic-acl=*owner-rx) _____ (5)
% DMS0810 EXECUTE JOB FOR FILE(S) ':20SG:$USER1.SYSSDF.GROUP.' (Y=YES; N=NO; T=
TERMINATE; ?=HELP/FURTHER OPTIONS)?y
/sh syssdf.group.,inf=*min
%I NNN R-XR-XR-X   72 :20SG:$USER1.SYSSDF.GROUP.PROG-1.140
%I NNN R-XR-XR-X   192 :20SG:$USER1.SYSSDF.GROUP.PROG-1.140.BINDER
%I NNN R-XR-XR-X   33 :20SG:$USER1.SYSSDF.GROUP.PROG-1.140.USER

```

- (1) All files with names beginning with *SYSSDF.GROUP.* are to have their access permissions modified. SHOW-FILE-ATTRIBUTES (alias = SH) is used to show the currently set permissions in abbreviated form (INFORMATION=*MINIMUM). Only the default permissions are set (all users have read access).
- (2) Using MODIFY-FILE-ATTRIBUTES (alias = MD), BASIC-ACL protection is applied to the chosen files. *ALL-X assigns execute permission to all users. Command execution is confirmed with “Y(OUTPUT=*SYSOUT)”. This causes the names of processed files to be displayed.
- (3) Read and execute permission is to be granted to all users. This is achieved with BASIC-ACL=*ALL-RX.
- (4) *OWNER-WRX grants the owner all access permissions.
- (5) *OWNER-RX lets the owner protect the file against inadvertent overwriting.

MODIFY-FILE-GENERATION-SUPPORT

Modify device assignment and space allocation of file generations

Description status:	BS2000 OSD/BC V10.0A
Functional area:	File processing
Domain:	FILE-GENERATION-GROUP
Privileges:	STD-PROCESSING TSOS
Routing code:	\$ (with NBCONOPI=N) or E (with NBCONOPI=Y)

Function

The MODIFY-FILE-GENERATION-SUPPORT command amends the device assignment and storage space allocation for an existing file generation. Only the owner, any co-owners (see “Privileged functions”) and systems support personnel are allowed to modify all of a file generation’s attributes. Other users, provided they have write permission for the file generation, are allowed only to allocate extra space or tapes.

The file protection and data backup attributes are defined once only for the entire file generation group using the CREATE-FILE-GROUP command and modified using the MODIFY-FILE-GROUP-ATTRIBUTES command. User and systems support information (see the USER-INFORMATION and ADM-INFORMATION operands) is not copied from the group entry but can be defined separately for each file generation.

The default value *UNCHANGED in the corresponding operands means that the previously valid definition still applies.

Privileged functions

The following functions are available to nonprivileged users only if physical allocation of public space is allowed (see “Privileged functions” in the function description of the CREATE-FILE command):

- explicit specification (values other than the default, *STD) of a volume or volume set in the VOLUME and VOLUME-SET operands in the structure SUPPORT=*PUBLIC-DISK (STORAGE-CLASS=*NONE(...))
- absolute space reservation using SPACE=*ABSOLUTE(...) in the structure SUPPORT=*PUBLIC-DISK(...)

Exception: Privileged functions are not available for work files if no authorization for physical allocation is given.

Systems support personnel can supplement the user information in the file catalog with one to eight bytes of information about the file generation (ADM-INFORMATION operand).

By default, systems support (TSOS privilege) is a co-owner of all the files and file generations (and can therefore modify their catalog entries). When SECOS is used, this co-ownership can be restricted for permanent files.

Verifying command execution

The DIALOG-CONTROL operand governs whether a verification dialog is to be conducted with the user. The OUTPUT operand lets the user specify whether each file name that is processed is to be logged in a guaranteed message to SYSOUT. In conjunction with the chargeable SDF-P subsystem, the processed file names can be viewed in the S variable stream for guaranteed messages (SYSMMSG; see also the ASSIGN-STREAM and EXECUTE-CMD commands in the “SDF-P” manual [34]).

File generations in SM pubsets

The storage location for a file generation on an SM pubset can be selected on the basis of a storage class. This simplifies the automatic management of storage space on an SM pubset (for details see the “Introduction to System Administration” [14] or the “System-Managed Storage” manual [45]). Systems support personnel allocates to a storage class certain file attributes which are implicitly set for all files assigned to that storage class. If a storage class is specified, there is no need to explicitly specify values for the WORK-FILE, VOLUME-SET, VOLUME, DEVICE-TYPE, IO-ATTRIBUTES, DISK-WRITE, FILE-PREFORMAT and AVAILABILITY operands. The SHOW-STORAGE-CLASS command allows users to find out which storage classes of the SM pubset are available to them and which file attributes are set.

If the requirements for the file generation’s storage location are changed (explicitly or implicitly by way of the storage class), the storage location may change automatically, with the result that the file is moved to a different volume set. The change of storage location is a synchronous process involving copying of the file generation. The file generation is not accessible to other tasks while copying is in progress.

Overview of functions

Function / Meaning	Level 1 operands	Level 2/3 operands
The name of the file generation concerned	GENERATION-NAME	
Specify the volume	SUPPORT	
Volume: pubset – Specify storage class – Performance requirements – performance attribute – type of I/O operations – Define time when data consistency is required after write operations – Define availability requirements – preferred file format – Specify volume set – Specify the volume – Specify device type – Change of volume set allowed – user information – systems support information	= *PUBLIC-DISK	STORAGE-CLASS IO-ATTRIBUTES PERFORMANCE USAGE DISK-WRITE AVAILABILITY FILE-PREFORMAT VOLUME-SET VOLUME DEVICE-TYPE S0-MIGRATION USER-INFORMATION ADM-INFORMATION
Volume: private disk – Specify device type – Request volume(s) – Storage space allocation (allocate, change, release) – Time of disk mounting – Separate storage of data/index for ISAM files	= *PRIVATE-DISK	DEVICE-TYPE VOLUME SPACE VOLUME-ALLOCATION DATA-SUPPORT
Volume: pubset or private disk – Specify device type – Specify the volume – Storage space allocation (allocate, change, release)	= *ANY-DISK	DEVICE-TYPE VOLUME SPACE

Table 63: Overview of MODIFY-FILE-GENERATION-SUPPORT command functions (Part 1 of 2)

Function / Meaning	Level 1 operands	Level 2/3 operands
Volume: tape – Specify device type – Request volume(s) – Request tape device	= *TAPE	DEVICE-TYPE VOLUME PREMOUNT-LIST
Verification of multiple file specifications – File selection dialog – User intervention in command execution not possible (default setting for procedures and batch mode) – Dialog when more than one file is referenced if the file name specified is not fully qualified (default setting for interactive mode) – Dialog when an error occurs – Dialog when catalog ID changes – Dialog for each selected file that is to be processed – Dialog when user ID changes – Message for successfully modified catalog entries – Suppress – Output to SYSOUT	DIALOG-CONTROL =*NO =*MORE-THAN-ONE-FILE =*ERROR =*CATALOG-CHANGE =*FILE-CHANGE =*USER-ID-CHANGE OUTPUT =*NO =*SYSOUT	

Table 63: Overview of MODIFY-FILE-GENERATION-SUPPORT command functions (Part 2 of 2)

Format

(Part 1 of 3)

MODIFY-FILE-GENERATION-SUPPORT	Alias: MDFGNS
<p>GENERATION-NAME = <filename 1..54 without-vers with-wild(80)></p> <p>SUPPORT = <u>*UNCHANGED</u> / *PUBLIC-DISK(...) / *PRIVATE-DISK(...) / *ANY-DISK(...) / *TAPE(...)</p> <p> PUBLIC-DISK(...)</p> <p> STORAGE-CLASS = <u>*UNCHANGED</u> / *STD / *UPDATE / <composed-name 1..8> / *NONE(...)</p> <p> NONE(...)</p> <p> IO-ATTRIBUTES = <u>UNCHANGED</u> / *PARAMETERS(...)</p> <p> PARAMETERS(...)</p> <p> PERFORMANCE = <u>*UNCHANGED</u> / *STD / *HIGH / *VERY-HIGH / *USER-MAXIMUM</p> <p> USAGE = <u>*UNCHANGED</u> / *READ-WRITE / *WRITE / READ</p> <p> DISK-WRITE = <u>*UNCHANGED</u> / *IMMEDIATE / *BY-CLOSE</p> <p> AVAILABILITY = <u>*UNCHANGED</u> / *STD / *HIGH</p> <p> FILE-PREFORMAT = *STD / *K / *NK2 / *NK4</p> <p> VOLUME-SET = *STD / *CONTROL-VOLUME-SET / <cat-id 1..4></p> <p> VOLUME = <u>*UNCHANGED</u> / list-poss(255): <vsn 1..6></p> <p> DEVICE-TYPE = <u>*UNCHANGED</u> / <device></p> <p> S0-MIGRATION = <u>*UNCHANGED</u> / *ALLOWED / *FORBIDDEN</p> <p> SPACE = <u>*UNCHANGED</u> / *RELATIVE(...) / *ABSOLUTE(...) / *RELEASE(...)</p> <p> RELATIVE(...)</p> <p> PRIMARY-ALLOCATION = <u>0</u> / <integer 0..2147483647></p> <p> SECONDARY-ALLOCATION = <u>*UNCHANGED</u> / <integer 0..32767></p> <p> ABSOLUTE(...)</p> <p> FIRST-PAGE = <integer 1..2147483647></p> <p> SIZE = <integer 1..2147483647></p> <p> RELEASE(...)</p> <p> NUMBER-OF-PAGES = <integer 1..2147483647> / *ALL-RELEASABLE</p> <p> KEEP-MIN-ALLOCATION = *NO / *YES</p> <p> USER-INFORMATION = <u>*UNCHANGED</u> / *NONE / <c-string 1..8 with-low></p> <p> ADM-INFORMATION = <u>*UNCHANGED</u> / *NONE / <c-string 1..8 with-low></p>	

***PRIVATE-DISK(...)**

VOLUME = *UNCHANGED / [***ANY**](...) / list-poss(255): <alphanum-name 1..6>

[***ANY**](...)

| **NUMBER-OF-DEVICES** = 1 / <integer 1..9>

,**DEVICE-TYPE** = *UNCHANGED / <device>

,**SPACE** = *UNCHANGED / ***RELATIVE**(...) / ***RELEASE**(...) / ***ABSOLUTE**(...)

***RELATIVE**(...)

| **PRIMARY-ALLOCATION** = 0 / <integer 0..2147483647>

| ,**SECONDARY-ALLOCATION** = *UNCHANGED / <integer 0..32767>

***RELEASE**(...)

| **NUMBER-OF-PAGES** = <integer 1..2147483647> / ***ALL-RELEASABLE**

***ABSOLUTE**(...)

| **FIRST-PAGE** = <integer 1..2147483647>

| ,**SIZE** = <integer 1..2147483647>

,**VOLUME-ALLOCATION** = *IMMEDIATE / ***DELAYED**

,**DATA-SUPPORT** = *UNCHANGED / [***PARAMETERS**](...)

[***PARAMETERS**](...)

| **DATA-DEVICE-TYPE** = *UNCHANGED / <device>

| ,**DATA-VOLUME** = *UNCHANGED / list-poss(255): <alphanum-name 1..6>

| ,**DATA-SPACE** = ***RELATIVE**(...) / ***ABSOLUTE**(...)

| ***RELATIVE**(...)

| | **PRIMARY-ALLOCATION** = 0 / <integer 0..2147483647>

| | ,**SECONDARY-ALLOCATION** = *UNCHANGED / <integer 0..32767>

| ***ABSOLUTE**(...)

| | **FIRST-PAGE** = <integer 1..2147483647>

| | ,**SIZE** = <integer 1..2147483647>

```

*ANY-DISK(...)
  VOLUME = *UNCHANGED / [*ANY](...) / list-poss(255): <alphanum-name 1..6>
    [*ANY](...)
      | NUMBER-OF-DEVICES = 1 / <integer 1..9>
    ,DEVICE-TYPE = *UNCHANGED / <device>
    ,SPACE = *UNCHANGED / *RELATIVE(...) / *ABSOLUTE(...) / *RELEASE(...)
      *RELATIVE(...)
        | PRIMARY-ALLOCATION = 0 / <integer 0..2147483647>
        | ,SECONDARY-ALLOCATION = *UNCHANGED / <integer 0..32767>
      *ABSOLUTE(...)
        | FIRST-PAGE = <integer 1..2147483647>
        | ,SIZE = <integer 1..2147483647>
      *RELEASE(...)
        | NUMBER-OF-PAGES = <integer 1..2147483647> / *ALL-RELEASABLE
*TAPE(...)
  VOLUME = [*ANY] (...) / *NO / *REMOVE-UNUSED / list-poss(255): <alphanum-name 1..6>
    [*ANY](...)
      | NUMBER-OF-DEVICE = 1 / <integer 1..9>
    ,DEVICE-TYPE = *UNCHANGED / <device>
    ,PREMOUNT-LIST = *NONE / list-poss(255): <integer 0..255>
,DIALOG-CONTROL = *STD / *NO / *ERROR / *FILE-CHANGE / *MORE-THAN-ONE-FILE /
  *USER-ID-CHANGE / *CATALOG-CHANGE
,OUTPUT = *NO / *SYSOUT

```

Operands

GENERATION-NAME = <filename 1..54 without-vers with-wild(80)>

Name of an existing file generation. If the generation name includes wildcards, or if the specification is partially qualified, the command is executed for the associated set of files. Processing can be controlled and verified with the aid of the DIALOG-CONTROL and OUTPUT operands. Only systems support personnel (TSOS privilege) is allowed to use wildcards within the user ID.

SUPPORT = *UNCHANGED / *PUBLIC-DISK(...) / *PRIVATE-DISK(...) / *ANY-DISK(...) / *TAPE(...)

Type of volume on which the file generation is located. This entry must not contradict the specification that was made when the catalog entry was created (CREATE-FILE-GENERATION).

SUPPORT = *PUBLIC-DISK(...)

The file generation is located on a public disk.

STORAGE-CLASS = *UNCHANGED / *STD / *UPDATE/ <composed-name 1..8> / *NONE(...)

Governs the properties of the file generation's storage location. A storage class is a container set up by systems support to hold a defined combination of file attributes specific to an SM pubset. On the basis of the assigned volume set lists it maps these attributes onto the existing range of pubset services. This mapping may be more detailed than can be described by explicitly specifying the IO-ATTRIBUTES, DISK-WRITE, AVAILABILITY, FILE-PREFORMAT, VOLUME-SET, VOLUME, DEVICE-TYPE and S0-MIGRATION operands in the STORAGE-CLASS=*NONE structure.

Assigning a storage class simplifies the automatic management of storage space in an SM pubset (for details see the "Introduction to System Administration" [14] or the "System-Managed Storage" manual [45]).

At the time when the assignment is made, the storage class that is specified (even implicitly using *STD) must exist, and the user must be authorized to use it. The SHOW-STORAGE-CLASS command allows users to find out which storage classes of an SM pubset are available to them and which file attributes are set.

The WORK-FILE attribute of the storage class must be the same as that of the file generation group.

Defining a different storage class (STORAGE-CLASS≠*NONE) can result in the file generation being relocated (reallocated) from its current volume set to another volume set which is better suited to this storage class. The following cases can occur here:

- If the storage class contains AVAILABILITY=*HIGH and the existing volume set has AVAILABILITY=*STD, the file generation must be reallocated to a volume set with the attribute AVAILABILITY=*HIGH. If reallocation is not possible, the command is rejected.
- If the storage class contains a volume set list and the file generation is not located on a volume set of this volume set list, the file generation is, if possible, reallocated to a volume set from this list. If reallocation is not possible, the command is executed without it.

During reallocation, the file generation is open. Accesses from other tasks are rejected.

STORAGE-CLASS = *STD

If the file generation is stored in an SM pubset, it is assigned the default storage class from the group entry of the FGG. The default storage class is governed by the `STORAGE-CLASS-DEFAULT` operand of the `CREATE-FILE-GROUP` or `MODIFY-FILE-GROUP-ATTRIBUTES` command. If there is no default storage class defined, or if the file generation is stored in an SF pubset, the file generation is given the same attributes as with `STORAGE-CLASS= *NONE` with default values.

STORAGE-CLASS = *UPDATE

The operand is evaluated only for files in SM pubsets to which a storage class has already been assigned. The attributes are once more read from the storage class catalog and assigned to the file.

The attributes are once more read from the storage class catalog and assigned to the file.

STORAGE-CLASS = <composed-name 1..8>

A file generation in an SM pubset is assigned the specified storage class. If the file generation has already been assigned the specified storage class, the attributes are not updated, so any changes made to the storage class in the intervening period do not come into effect. `*UPDATE` can be used to ensure that the attributes are updated. For a file generation in an SF pubset this value has the same effect as `STORAGE-CLASS=*NONE` with default values.

STORAGE-CLASS = *NONE(...)

The value has the same effect as `*UNCHANGED` if all the following conditions are fulfilled:

- The file generation was or is being created on a volume set for permanent data storage.
- A default storage class is assigned to the user ID at the SM pubset in question.
- Physical allocation is not permitted.

Only in this case are the `PERFORMANCE`, `USAGE`, `DISK-WRITE` and `AVAILABILITY` operands and the `S0-MIGRATION=*ALLOWED` specification ignored.

In all other cases, the properties of the file generation's storage location are determined on the basis of the following operands and no storage class is assigned to the file generation or a storage class which is already assigned is withdrawn.

The properties of the file generation's storage location are governed by the following operands. The file generation is not assigned a storage class, and any storage class already assigned is disregarded.

See the `MODIFY-FILE-ATTRIBUTES` command for descriptions of the suboperands

See the `MODIFY-FILE-ATTRIBUTES` command for descriptions of the other operands.

Return codes

(SC2)	SC1	Maincode	Meaning/Guaranteed messages
	0	CMD0001	Command executed
2	0	DMS051E	Inconsistency in private disk pool or operand error detected
2	0	DMS0546	Catalog entry for specified file has reached maximum size
2	0	DMS054A	Insufficient disk space or access to disk not possible
2	0	DMS06A9	Some generations of this FGG are missing
	1	CMD0202	Syntactical or semantic error in command
	32	DMS05C7	Unexpected internal error in DMS
	32	DMS0584	A state that does not allow the function to continue was reported during processing
	64	CMD0102	Wildcard selection action: processing interrupted by *TERMINATE or by K2 key in verification dialog
	64	CMD0216	Privileges error
	64	DMS0501	Requested catalog not available
	64	DMS0512	Requested catalog not available
	64	DMS051B	Requested user ID not in pubset Guaranteed messages: DMS051B, DMS0681
	64	DMS051C	User not authorized to access pubset Guaranteed messages: DMS051C, DMS0681
	64	DMS0535	Specified file not shareable
	64	DMS0557	Invalid volume specification
	64	DMS055C	Catalog entry not found on specified private disk
	64	DMS057A	Specified storage class not compatible with FGG in terms of WORK-FILE attribute
	64	DMS057B	Invalid operand for migrated file
	64	DMS057C	Processing not possible due to HSMS error
	64	DMS057E	File has been migrated, and HSMS is not available
	64	DMS057F	Renaming of migrated file not permitted
	64	DMS0585	Error detected when processing catalog or multiprocessor system
	64	DMS0586	Currently not possible to access or reserve volume
	64	DMS0587	Use of specified command restricted by system administrator
	64	DMS0588	It was not possible to allocate disk space
	64	DMS05A0	Attribute modification not possible - data still in write cache
	64	DMS05BD	Invalid combination of file and volume set attributes
	64	DMS05CC	File name already cataloged
	64	DMS05FC	Specified user ID not in HOME pubset
	64	DMS0681	DMS error on accessing file
	64	DMS0684	File does not exist Guaranteed message: DMS0684
	64	DMS0610	Wildcard selection action: command execution defective for at least one of the selected files
	64	DMS0618	Unknown storage class
	64	DMS061A	Storage class catalog could not be read
	64	DMS0685	File not yet allocated storage space

(Part 1 of 2)

MODIFY-FILE-GENERATION-SUPPORT

(SC2)	SC1	Maincode	Meaning/Guaranteed messages
	64	DMS0689	Operands only allowed for files not yet occupying storage space have been specified
	64	DMS06B5	File already open or catalog entry not updated after system error
	64	DMS06C4	File generation group not yet cataloged
	64	DMS06FF	BCAM connection severed
	128	DMS0506	Function not executed due to change in master
	130	DMS0524	System address space full
	130	DMS053C	No space in pubset catalog file
	130	DMS0582	File is currently locked or in use and cannot be processed
	130	DMS0585	Error detected during catalog processing or multihost processing Guaranteed messages: DMS053C
	130	DMS0586	Currently not possible to access or reserve volume
	130	DMS0588	It was not possible to allocate disk space
	130	DMS0594	Not enough virtual memory available
	130	DMS05C8	Maximum permitted number of files reached

(Part 2 of 2)

Example

Changing the file attributes of a file generation (storage space / primary and secondary allocations)

```

/show-file-attr max.group.2(*4),inf=(alloc=*yes) ----- (1)
%0000000003 :20SG:$USER1.MAX.GROUP.2(*0004)
% ----- ALLOCATION -----
% SUPPORT = PUB S-ALLOC = 9 HIGH-US-PA = 0
% EXTENTS VOLUME DEVICE-TYPE EXTENTS VOLUME DEVICE-TYPE
% 1 GVS2.2 D3435
% NUM-OF-EXT = 1
%:20SG: PUBLIC: 1 FILE RES= 3 FRE= 3 REL= 3 PAGES

/mod-file-gen max.group.2(*12),
sup=*pub(space=*relative(prim-alloc=90,sec-alloc=30)) ----- (2)

/show-file-attr max.group.2(*4),inf=(alloc=*yes) ----- (3)
%0000000093 :20SG:$USER1.MAX.GROUP.2(*0004)
% ----- ALLOCATION -----
% SUPPORT = PUB S-ALLOC = 30 HIGH-US-PA = 0
% EXTENTS VOLUME DEVICE-TYPE EXTENTS VOLUME DEVICE-TYPE
% 2 GVS2.2 D3435
% NUM-OF-EXT = 2
%:20SG: PUBLIC: 1 FILE RES= 93 FRE= 93 REL= 93 PAGES
    
```

- (1) The SHOW-FILE-ATTRIBUTES command indicates that three PAM pages are reserved (initial allocation) for the file *MAX.GROUP.2(*4)*.
- (2) The MODIFY-FILE-GENERATION-SUPPORT command raises the primary space allocation by 90 PAM pages and sets the secondary space allocation to 30 PAM pages (for subsequent storage space extensions).
- (3) The SHOW-FILE-ATTRIBUTES command indicates the new number of reserved pages (93) and the new secondary allocation (30).

MODIFY-FILE-GROUP-ATTRIBUTES

Modify catalog entry of file generation group

Description status:	BS2000 OSD/BC V10.0A
Functional area:	File processing
Domain:	FILE-GENERATION-GROUP
Privileges:	STD-PROCESSING TSOS
Routing code:	\$ (with NBCONOPI=N) or E (with NBCONOPI=Y)

Function

The MODIFY-FILE-GROUP-ATTRIBUTES command amends the attributes of a file generation group. Only the owner, any co-owners (see the CREATE-FILE command, “Privileged functions”) and systems support personnel are allowed to modify all of the attributes of a file generation group (FGG). Other users, provided they have write permission for the file, are allowed only to modify the CODED-CHARACTER-SET entry.

If the FGG is write-protected by a password, the password must have been added to the password table for the job (see the ADD-PASSWORD command).

The default value *UNCHANGED in the corresponding operands means that the previously valid definition still applies.

Privileged functions

Systems support personnel can supplement the user information in the file catalog with one to eight bytes of information about the file generation group (ADM-INFORMATION operand).

By default, systems support (TSOS privilege) is a co-owner of all the files and file generation groups (and can therefore modify their catalog entries). When SECOS is used, this co-ownership can be restricted for permanent files.

Verifying command execution

The DIALOG-CONTROL operand governs whether a verification dialog is to be conducted with the user. The OUTPUT operand lets the user specify whether each file name that is processed is to be logged in a guaranteed message to SYSOUT. In conjunction with the chargeable SDF-P subsystem, the processed file names can be viewed in the S variable stream for guaranteed messages (SYSMSG; see also the ASSIGN-STREAM and EXECUTE-CMD commands in the “SDF-P” manual [34]).

Overview of functions

Function / Meaning	Level 1 operands	Level 2/3 operands
The name of the file generation group (FGG) to be amended	GROUP-NAME	
New name of the FGG	NEW-NAME	
Define the general attributes of the FGG <ul style="list-style-type: none"> - Maximum permitted number of generations - Action when this number exceeded - Base number <ul style="list-style-type: none"> - absolute - relative to last file generation 	GENERATION-PARAMETER	MAXIMUM OVERFLOW-OPTION BASE-NUMBER ABSOLUTE RELATIVE-TO-LAST-GEN
Define protection attributes <ul style="list-style-type: none"> - Import protection attributes from file - File access rights - Shareability - Basic access control list - Password protection - Define passwords - Physical deletion (overwrite with binary zeros) - Monitoring of DMS accesses via SAT/System Exit Routines - Lock to prevent release of reserved storage space (disk files only) - Date when file is freed for updating - Date when file is freed for deletion 	PROTECTION = *PARAMETERS	PROTECTION-ATTR ACCESS USER-ACCESS BASIC-ACL PASSWORD WRITE-PASSWORD/ READ-PASSWORD DESTROY-BY-DELETE AUDIT SPACE-RELEASE-LOCK EXPIRATION-DATE FREE-FOR-DELETION

Table 64: Overview of MODIFY-FILE-GROUP-ATTRIBUTES command functions (Part 1 of 2)

MODIFY-FILE-GROUP-ATTRIBUTES

Function / Meaning	Level 1 operands	Level 2/3 operands
<i>For disk files only:</i> Type and frequency of automatic data backup by ARCHIVE or HSMS <ul style="list-style-type: none"> – Backup frequency – Scope of backup 	SAVE	BACKUP-CLASS SAVED-PAGES
HSMS storage management class	MANAGEMENT-CLASS	
Code table (XHCS)	CODED-CHARACTER-SET	
user information	USER-INFORMATION	
systems support information	ADM-INFORMATION	
File selection dialog <ul style="list-style-type: none"> – User intervention in command execution not possible (default setting for procedures and batch mode) – Dialog when more than one file is referenced if the file name specified is not fully qualified (default setting for interactive mode) – Dialog when an error occurs – Dialog when catalog ID changes – Dialog for each selected file that is to be processed – Dialog when user ID changes 	DIALOG-CONTROL =*NO =*MORE-THAN-ONE-FILE =*ERROR =*CATALOG-CHANGE =*FILE-CHANGE =*USER-ID-CHANGE	
Guaranteed message for successfully modified catalog entries <ul style="list-style-type: none"> – Suppress – Output to SYSOUT 	OUTPUT =*NO =*SYSOUT	

Table 64: Overview of MODIFY-FILE-GROUP-ATTRIBUTES command functions (Part 2 of 2)

Format

(Part 1 of 3)

MODIFY-FILE-GROUP-ATTRIBUTES	Alias: MDFGPA
<p>GROUP-NAME = <filename 1..47 without-gen-vers with-wild(80)></p> <p>,NEW-NAME = *SAME / <filename 1..47 without-gen-vers with-wild-constr(80)></p> <p>,GENERATION-PARAMETER = *UNCHANGED / [*GENERATION-PARAMETER](...)</p> <p> [*GENERATION-PARAMETER](...)</p> <p> MAXIMUM = *UNCHANGED / <integer 1..255></p> <p> ,OVERFLOW-OPTION = *UNCHANGED / *CYCLIC-REPLACE / *REUSE-VOLUME / *DELETE-ALL / *KEEP-GENERATION</p> <p> ,BASE-NUMBER = *UNCHANGED / *ABSOLUTE(...) / *RELATIVE-TO-LAST-GENERATION(...)</p> <p> *ABSOLUTE(...)</p> <p> NUMBER = <integer 0..9999></p> <p> *RELATIVE-TO-LAST-GENERATION(...)</p> <p> NUMBER = <integer -99..0></p> <p>,PROTECTION = *UNCHANGED / [*PARAMETERS](...)</p> <p> [*PARAMETERS](...)</p> <p> PROTECTION-ATTR = *UNCHANGED / *BY-DEF-PROT-OR-STD / *STD / *FROM-FILE(...)</p> <p> *FROM-FILE(...)</p> <p> FILE-NAME = <filename 1..54 without-gen></p> <p> ,ACCESS = *BY-PROTECTION-ATTR / *UNCHANGED / *WRITE / *READ</p> <p> ,USER-ACCESS = *BY-PROTECTION-ATTR / *UNCHANGED / *OWNER-ONLY / *ALL-USERS</p> <p> ,BASIC-ACL = *BY-PROTECTION-ATTR / *UNCHANGED / *NONE / *PREVIOUS / *STD / [*PARAMETERS](...) / *OWNER-R / *OWNER-WR / *OWNER-ONLY / *GROUP-R / *GROUP-WR / *EXCEPT-OTHERS / *OTHERS-R / *OTHERS-WR / *ALL-R / *ALL-WR</p> <p> [*PARAMETERS](...)</p> <p> OWNER = *UNCHANGED / *NO-ACCESS / [*PARAMETERS](...)</p> <p> [*PARAMETERS](...)</p> <p> READ = *UNCHANGED / *NO / *YES</p> <p> ,WRITE = *UNCHANGED / *NO / *YES</p>	

```

,GROUP = *UNCHANGED / *NO-ACCESS / [*PARAMETERS](...)
    [*PARAMETERS](...)
        |
        | READ = *UNCHANGED / *NO / *YES
        | ,WRITE = *UNCHANGED / *NO / *YES
,OTHERS = *UNCHANGED / *NO-ACCESS / [*PARAMETERS](...)
    [*PARAMETERS](...)
        |
        | READ = *UNCHANGED / *NO / *YES
        | ,WRITE = *UNCHANGED / *NO / *YES
,GUARDS = *BY-PROTECTION-ATTR / *UNCHANGED / *NONE / [*PARAMETERS](...)
    [*PARAMETERS](...)
        |
        | READ = *UNCHANGED / *NONE / <filename 1..18 without-cat-gen-vers>
        | ,WRITE = *UNCHANGED / *NONE / <filename 1..18 without-cat-gen-vers>
,WRITE-PASSWORD = *BY-PROT-ATTR-OR-UNCH / *UNCHANGED / *NONE / <c-string 1..4> /
    <x-string 1..8> / <integer -2147483648..2147483647> / *SECRET
,READ-PASSWORD = *BY-PROT-ATTR-OR-UNCH / *UNCHANGED / *NONE / <c-string 1..4> /
    <x-string 1..8> / <integer -2147483648..2147483647> / *SECRET
,DESTROY-BY-DELETE = *BY-PROTECTION-ATTR / *UNCHANGED / *NO / *YES
,AUDIT = *UNCHANGED / *NONE / *FAILURE / *ALL / *SUCCESS
,SPACE-RELEASE-LOCK = *UNCHANGED / *NO / *YES
,EXPIRATION-DATE = *BY-PROTECTION-ATTR / *UNCHANGED / *TODAY / *TOMORROW /
    <date with-compl> / <integer 0..99999 days>
,FREE-FOR-DELETION = *BY-PROT-ATTR-OR-UNCH / *UNCHANGED / <date> /
    <integer 0..99999>
,SAVE = *UNCHANGED / [*PARAMETERS](...)
    [*PARAMETERS](...)
        |
        | BACKUP-CLASS = *UNCHANGED / *A / *B / *C / *D / *E
        | ,SAVED-PAGES = *UNCHANGED / *COMPLETE-FILE / *MODIFIED-PAGES
,MANAGEMENT-CLASS = *UNCHANGED / *NONE / <composed-name 1..8>
,CODED-CHARACTER-SET = *UNCHANGED / *USER-DEFAULT / *NONE / <name 1..8>
,USER-INFORMATION = *UNCHANGED / *NONE / <c-string 1..8 with-low>
,ADM-INFORMATION = *UNCHANGED / *NONE / <c-string 1..8 with-low>

```



```
,STOR-CLASS-DEFAULT = *UNCHANGED / *STD / <composed-name 1..8> / *NONE
,DIALOG-CONTROL = *STD / *NO / *ERROR / *FILE-CHANGE / *MORE-THAN-ONE-FILE /
                  *USER-ID-CHANGE / *CATALOG-CHANGE
,OUTPUT = *NO / *SYSOUT
```

Operands

GROUP-NAME = <filename 1..47 without-gen-vers with-wild(80)>

Name of an existing file generation group. If the name includes wildcards, or if the specification is partially qualified, the command is executed for the associated set of file generation groups. Processing can be controlled and verified with the aid of the DIALOG-CONTROL and OUTPUT operands. Only systems support personnel (TSOS privilege) is allowed to use wildcards within the user ID.

NEW-NAME = *SAME / <filename 1..47 without-gen-vers with-wild-constr(80)>

Specifies whether the file is to be renamed.

NEW-NAME = *SAME

The current name of the FGG is retained.

NEW-NAME = <filename 1..47 without-gen-vers with-wild-constr(80)>

The FGG is to be renamed. The command is rejected if a catalog entry with the specified name already exists. It is also rejected for FGGs whose generations are on HSMS storage level S1 or S2 (see the STORAGE-LEVEL operand in the SHOW-FILE-ATTRIBUTES command).

If wildcards or a partially qualified name have been specified in the GROUP-NAME operand, a constructor can be used to specify how the new names of the selected FGGs are to be formed. The constructor string should be designed to ensure that the new names are unique; in other words, multiple renames must not produce the same name more than once.

File generations on tape: If some or all of the file generations are stored on tape, their names will be changed only in the catalog entry, not in the tape labels. These file generations can no longer be accessed.

GENERATION-PARAMETER = *UNCHANGED / *GENERATION-PARAMETER(...)

Specifies the attributes of the file generation group.

GENERATION-PARAMETER = *GENERATION-PARAMETER(...)

Attributes of the file generation group.

MAXIMUM = *UNCHANGED / <integer 1..255>

Defines how many file generations may be cataloged at the same time (see the OVERFLOW-OPTION operand).

OVERFLOW-OPTION = *UNCHANGED / *CYCLIC-REPLACE / *REUSE-VOLUME / *DELETE-ALL / *KEEP-GENERATION

Specifies what action is to be taken if the maximum permitted number of file generations is exceeded (see the MAXIMUM operand). When the maximum permitted number is reached, the surplus file generations are deleted regardless of password protection, retention period (EXPIRATION-DATE) and the permitted mode of access (ACCESS).

OVERFLOW-OPTION = *CYCLIC-REPLACE

The current oldest generation is deleted and its storage space, or the tapes it occupies, are released. In the catalog, the entries in the *LAST-GEN* and *FIRST-GEN* output fields (most recent/oldest existing generations) are updated.

OVERFLOW-OPTION = *REUSE-VOLUME

The effect of OVERFLOW-OPTION=*REUSE-VOLUME depends on the storage medium:

For FGGs on public disks: the oldest generation is deleted and its storage space returned to the system; the group entry is updated (see OVERFLOW-OPTION= *CYCLIC-REPLACE).

For FGGs on private disks: the new generation is created and the oldest generation deleted, the volume being used for storage of the new generation. If the generation which is being deleted extends over several disks, the new generation is cataloged only on the first of these disks. The group entry is updated accordingly. Since the old generation is not deleted until the new generation has been created, lack of storage space on the disk may mean that it is impossible to create the new generation, even though OVERFLOW-OPTION=*REUSE-VOLUME is specified.

For FGGs on tape: the oldest generation is deleted from the catalog, and the new generation is created on the tape thus released. The group entry is updated accordingly. OVERFLOW-OPTION=*REUSE-VOLUME is not permitted for file generation groups on multifile tapes (file sets).

OVERFLOW-OPTION = *DELETE-ALL

All generations of the FGG are deleted, and the new generation becomes the oldest one in the new series. The group entry is updated accordingly.

OVERFLOW-OPTION = *KEEP-GENERATION

The file generations are not automatically deleted. The oldest file generations which overshoot the maximum are not deleted until OVERFLOW-OPTION or BASE-NUMBER is modified.

BASE-NUMBER = *UNCHANGED / *ABSOLUTE(...) / *RELATIVE-TO-LAST-GENERATION(...)

Defines a reference point/a base generation to which all relative generation numbers refer. The names of the file generations can be specified with absolute (*n) or relative (±n) generation numbers.

BASE-NUMBER = *ABSOLUTE(...)

Specifies the base value as an absolute value.

NUMBER = <integer 0..9999>

The generation number which represents the base value in absolute terms. Only the number of an existing, non-surplus file generation may be specified.

BASE-NUMBER = *RELATIVE-TO-LAST-GENERATION(...)

Specifies the base value indirectly:

NUMBER = <integer -99..0>

The value whose magnitude is to be subtracted from the last file generation number to give the absolute base value. The absolute base value calculated in this way must be the number of an existing, non-surplus generation.

PROTECTION = *UNCHANGED / *PARAMETERS(...)

The protection attributes for the FGG.

PROTECTION = *PARAMETERS(...)

The file generation group is given the specified protection attributes. For descriptions of the PROTECTION-ATTR, ACCESS, USER-ACCESS, BASIC-ACL, GUARDS, WRITE-PASSWORD, READ-PASSWORD, DESTROY-BY-DELETE, AUDIT, SPACE-RELEASE-LOCK, EXPIRATION-DATE and FREE-FOR-DELETION operands, see the corresponding operand descriptions for the MODIFY-FILE-ATTRIBUTES command.

Notes

- Since file generations are not executable (program or procedure), they cannot be protected with an execute password (EXEC-PASSWORD). Likewise for the same reason no execute permission can be set within BASIC-ACL or GUARDS.
- The protection attribute EXPIRATION-DATE is of no effect for file generations that have not been opened yet (CRE-DATE=NONE).

STOR-CLASS-DEFAULT = *UNCHANGED / *STD / <composed-name 1..8> / *NONE

The operand is evaluated only for file generation groups in SM pubsets. Governs the properties of the storage location if no explicit specification is made when the file generation is created.

Assigning a storage class simplifies the automatic management of storage space in an SM pubset (for details see the “Introduction to System Administration” [14]). The SHOW-STORAGE-CLASS command allows users to find out which storage classes of an SM pubset are available to them and which file attributes are set.

A file generation group for work files cannot be converted to a file generation group for normal files and vice versa.

The only specification allowed for a file generation group in an SF pubset is STOR-CLASS-DEFAULT=*NONE.

STOR-CLASS-DEFAULT = *STD

The pubset-specific default storage class from the user entry is used as the default storage class for the file generation group. If the file generation group is to be created in an SF pubset or if there is no default storage class defined in the user entry, the file generation group is given the same attributes as with STOR-CLASS-DEFAULT=*NONE.

STOR-CLASS-DEFAULT = <composed-name 1..8>

The file generation group is assigned the specified storage class. The storage class must exist and be accessible to the user at the time when the assignment is made. This specification is ignored for a file generation group in an SF pubset; the FGG is then given the same attributes as with STOR-CLASS-DEFAULT=*NONE.

STOR-CLASS-DEFAULT = *NONE

The value has the same effect as *UNCHANGED if all the following conditions are fulfilled:

- The file generation group is located on a volume set for permanent data storage.
- A default storage class is assigned to the user ID at the SM pubset in question.
- Physical allocation is not permitted.

In all other cases, the properties of the file generation group’s storage location are determined on the basis of the *NONE(...) structure and no storage class is assigned to the file generation group or an already assigned storage class is withdrawn.

The properties of the storage location for the file generations are governed by the specifications in the CREATE-FILE-GENERATION or MODIFY-FILE-GENERATION-SUPPORT command.

For descriptions of the SAVE, MANAGEMENT-CLASS, CODED-CHARACTER-SET, USER-INFORMATION, ADM-INFORMATION, DIALOG-CONTROL and OUTPUT operands, see the corresponding operand descriptions for the MODIFY-FILE-ATTRIBUTES command.

Return codes

(SC2)	SC1	Maincode	Meaning/Guaranteed messages
	0	CMD0001	Command executed
2	0	DMS051E	Inconsistency in private disk pool or operand error detected
2	0	DMS0546	Catalog entry for specified file has reached maximum size
2	0	DMS054A	Insufficient disk space or access to disk not possible
2	0	DMS06A9	Some generations of this FGG are missing
2	0	DMS06CA	Command executed, but invalid specification in BASE-NUMBER operand ignored
	1	CMD0202	Syntactical or semantic error in command
	32	DMS0584	A state that does not allow the function to continue was reported during processing
	32	DMS05C7	Unexpected internal error in DMS
	64	CMD0102	Wildcard selection action: processing interrupted by *TERMINATE or by K2 key in verification dialog
	64	CMD0216	Privileges error
	64	DMS0501	Requested catalog not available
	64	DMS0512	Requested catalog not available
	64	DMS051B	Requested user ID not in pubset
	64	DMS051C	Guaranteed messages: DMS051B, DMS0681 User not authorized to access pubset Guaranteed messages: DMS051C, DMS0681
	64	DMS0535	Specified file not shareable
	64	DMS053E	File already cataloged on private volume
	64	DMS055C	Catalog entry not found on specified private disk
	64	DMS057A	Specified storage class not compatible with WORK-FILE attribute
	64	DMS057B	Invalid operand for migrated file
	64	DMS057C	Processing not possible due to HSMS error
	64	DMS057E	File has been migrated, and HSMS is not available
	64	DMS057F	Renaming of migrated file not permitted
	64	DMS0585	Error detected during catalog processing or multihost processing
	64	DMS0586	Currently not possible to access or reserve volume
	64	DMS0587	Use of specified command restricted by system administrator
	64	DMS05B5	Guard not available
	64	DMS05CC	File name already cataloged
	64	DMS05CE	First file name not cataloged
	64	DMS05FC	Specified user ID not in HOME pubset
	64	DMS0609	No access to system file
	64	DMS060D	Invalid file name for reference file (PROTECTION-ATTR)
	64	DMS0610	Wildcard selection action: command execution defective for at least one of the selected FGGs
	64	DMS0613	Unknown management class
	64	DMS0618	Unknown storage class
	64	DMS061A	Storage class catalog could not be read
	64	DMS06FF	BCAM connection severed

(Part 1 of 2)

(SC2)	SC1	Maincode	Meaning/Guaranteed messages
	128	DMS0506	Function not executed due to change in master
	130	DMS0586	Currently not possible to access or reserve volume
	130	DMS0588	It was not possible to allocate disk space
	130	DMS0524	System address space full
	130	DMS053C	No space in pubset catalog file
	130	DMS0582	File is currently locked or being used and cannot be processed
	130	DMS0585	Error detected during catalog processing or multihost processing Guaranteed messages: DMS053C
	130	DMS0594	Not enough virtual memory available
	130	DMS05C8	Maximum permitted number of files reached

(Part 2 of 2)

Examples

Example 1: Changing the file attributes of a file generation group (OVERFLOW-OPTION)

```

/show-file-attr max.group.2,inf=(org=*yes) _____ (1)
%0000000000 :20SG:$USER1.MAX.GROUP.2 (FGG)
% ----- GENERATION-INFO -----
% MAXIMUM = 3 BASE-NUM = 0 OVERFL-OPT = CYCL-REPL
% FIRST-GEN = 7 LAST-GEN = 9
%:20SG: PUBLIC: 1 FILE RES= 0 FRE= 0 REL= 0 PAGES
/show-file-attr max.group.2,select=(generation=*yes) _____ (2)
% 0 :20SG:$USER1.MAX.GROUP.2 (FGG)
% 3 :20SG:$USER1.MAX.GROUP.2(*0007)
% 3 :20SG:$USER1.MAX.GROUP.2(*0008)
% 3 :20SG:$USER1.MAX.GROUP.2(*0009)
%:20SG: PUBLIC: 4 FILES RES= 9 FRE= 9 REL= 9 PAGES
/mod-file-gr max.group.2,gen-par=(overflow-option=*keep-gen) _____ (3)
/cre-file-gen max.group.2(*10)
/cre-file-gen max.group.2(*11)
/show-file-attr max.group.2,inf=(org=*yes) _____ (4)
%0000000000 :20SG:$USER1.MAX.GROUP.2 (FGG)
% ----- GENERATION-INFO -----
% MAXIMUM = 3 BASE-NUM = 0 OVERFL-OPT = KEEP-GEN
% FIRST-GEN = 7 LAST-GEN = 11
%:20SG: PUBLIC: 1 FILE RES= 0 FRE= 0 REL= 0 PAGES
    
```

```

/show-file-attr max.group.2,select=(generation=*yes) _____ (5)
%      0 :20SG:$USER1.MAX.GROUP.2 (FGG)
%      3 :20SG:$USER1.MAX.GROUP.2(*0007)
%      3 :20SG:$USER1.MAX.GROUP.2(*0008)
%      3 :20SG:$USER1.MAX.GROUP.2(*0009)
%      3 :20SG:$USER1.MAX.GROUP.2(*0010)
%      3 :20SG:$USER1.MAX.GROUP.2(*0011)
%:20SG: PUBLIC:      6 FILES RES=      15 FRE=      15 REL=      15 PAGES
/mod-file-gr max.group.2,gen-par=(overflow-option=*cyclic-replace) _____ (6)

/show-file-attr max.group.2,inf=(org=*yes) _____ (7)
%      0 :20SG:$USER1.MAX.GROUP.2 (FGG)
%      3 :20SG:$USER1.MAX.GROUP.2(*0009)
%      3 :20SG:$USER1.MAX.GROUP.2(*0010)
%      3 :20SG:$USER1.MAX.GROUP.2(*0011)
%:20SG: PUBLIC:      4 FILES RES=      9 FRE=      9 REL=      9 PAGES
/show-file-attr max.group.2,select=(generation=yes)
%      0 :20SG:$USERXY01.MAX.GROUP.2 (FGG)
%      9 :20SG:$USERXY01.MAX.GROUP.2(*0009)
%      9 :20SG:$USERXY01.MAX.GROUP.2(*0010)
%      9 :20SG:$USERXY01.MAX.GROUP.2(*0011)
%:20SG: PUBLIC:      4 FILES RES=      27 FRE=      27 REL=      27 PAGES

```

- (1) Shows the file attributes of the file generation group *MAX.GROUP.2* (group entry). A maximum of 3 generations can exist. Every additional generation would replace the oldest existing generation at the time (OVERFLOW-OPTION= *CYCLIC-REPLACE).
- (2) Shows the file generation group *MAX.GROUP.2* along with the associated generations. Generations *0007 to *0009 exist.
- (3) The OVERFLOW-OPTION specification is modified to KEEP-GENERATION. Generations *0010 and *0011 are then created.
- (4) Output of the modified group entry.
- (5) Shows the group entry and all associated generations. There are now five existing generations. The generations *0007 and *0008 were not deleted when creating generations *0010 and *0011!
- (6) The OVERFLOW-OPTION specification now changed to CYCLIC-REPLACE.
- (7) Shows the modified group entry and the associated file generations. The “excess” generations *0007 and *0008 were deleted.

Example 2: Changing the file attributes of a file generation group (BASE-NUMBER)

```

/show-file-attr max.group.2,inf=(org=*yes) _____ (1)
%000000000 :20SG:$USER1.MAX.GROUP.2 (FGG)
% ----- GENERATION-INFO -----
% MAXIMUM = 3 BASE-NUM = 0 OVERFL-OPT = CYCL-REPL
% FIRST-GEN = 9 LAST-GEN = 11
%:20SG: PUBLIC: 1 FILE RES= 0 FRE= 0 REL= 0 PAGES
%000000000 :20S2:$USER1.MAX.GROUP.2 (FGG)
/show-file-attr max.group.2,select=(generation=yes) _____ (2)
% 0 :20SG:$USERXY01.MAX.GROUP.2 (FGG)
% 9 :20SG:$USERXY01.MAX.GROUP.2(*0009)
% 9 :20SG:$USERXY01.MAX.GROUP.2(*0010)
% 9 :20SG:$USERXY01.MAX.GROUP.2(*0011)
%:20SG: PUBLIC: 4 FILES RES= 27 FRE= 27 REL= 27 PAGES
/cre-file-gen max.group.2(+1) _____ (3)
% CMD0051 INVALID OPERAND 'GENERATION-NAME' _____ (4)
% DMS0681 DMS ERROR '06C7' WHEN ACCESSING FILE ':20SG:$USER1.MAX.GROUP.2(+01)'.
% FOR FURTHER INFORMATION: /HELP-MSG DMS06C7
/mod-file-gr max.group.2,gen-par=(base-number=absolut(11)) _____ (5)
/cre-file-gen max.group.2(+1) _____ (6)
/cre-file-gen max.group.2(+2) _____ (7)
/show-file-attr max.group.2,inf=(org=*yes) _____
%000000000 :20SG:$USER1.MAX.GROUP.2 (FGG)
% ----- GENERATION-INFO -----
% MAXIMUM = 3 BASE-NUM = 11 OVERFL-OPT = CYCL-REPL
% FIRST-GEN = 11 LAST-GEN = 13
%:20SG: PUBLIC: 1 FILE RES= 0 FRE= 0 REL= 0 PAGES
/show-file-attr max.group.2,select=(generation=yes)
% 0 :20SG:$USER1.MAX.GROUP.2 (FGG)
% 3 :20SG:$USER1.MAX.GROUP.2(*0011)
% 3 :20SG:$USER1.MAX.GROUP.2(*0012)
% 3 :20SG:$USER1.MAX.GROUP.2(*0013)
%:20SG: PUBLIC: 4 FILES RES= 9 FRE= 9 REL= 9 PAGES

```

- (1) Shows the group entry for the file generation group *MAX.GROUP.2*. The value entered as the base number for relative generation numbers is zero.
- (2) Shows all associated generations. The existing generations are *0009 to *0011.
- (3) The relative generation number +1 is specified in an attempt to create a new generation.
- (4) The CREATE-FILE-GENERATION command is rejected, since the +1 specification in relation to the base number zero would produce generation *0001, and the last created generation is *0011.
- (5) The base number in the group entry is set to the number of the last generation created (*0011). This makes it possible to begin relative specifications with +1 again (instead of +12).
- (6) Generation *0012 and *0013 are created by specifying the relative generation numbers +1 and +2.
- (7) Shows the group entry and all associated generations.

MODIFY-GS-COMPLEX

Modify the configuration of a GS complex

Description status:	GSMAN V19.0A
Functional area:	Global storage administration
Domain:	DEVICE
Privileges:	TSOS

Function

Systems support can use the MODIFY-GS-COMPLEX command to modify the configuration of a GS complex. It is possible to add or remove GS servers or GS units.

With one exception, the command always modifies the GS complex to which the local host belongs. If the local host is offline, it can be added to an existing GS complex (operand GS-SERVER=*OWN(...)).

For more detailed information on administering global storage, see the “Introductory Guide to Systems Storage” [14].

Systems support can use the SHOW-GS-COMPLEX-CONFIGURATION command to obtain information about the configuration of GS complexes.

Format

MODIFY-GS-COMPLEX

```

ACTION = *ADD-GS-UNIT(...) / *ADD-GS-SERVER(...) /
          *REMOVE-GS-UNIT(...) / *REMOVE-GS-SERVER(...)

*ADD-GS-UNIT(...)
  | GS-UNIT = <integer 1..2>

*ADD-GS-SERVER(...)
  | GS-SERVER = <integer 1..16> / *OWN(...)
  |   *OWN(...)
  |     | GS-COMPLEX = *UNIQUE-GS-COMPLEX / *GSU1-COMPLEX / *GSU2-COMPLEX

*REMOVE-GS-UNIT(...)
  | GS-UNIT = <integer 1..2>

*REMOVE-GS-SERVER(...)
  | GS-SERVER = <integer 1..16> / *OWN

```

Operands

ACTION = *ADD-GS-UNIT(...) / *ADD-GS-SERVER(...) / *REMOVE-GS-UNIT(...) / *REMOVE-GS-SERVER(...)

Specifies what changes are to be made to the configuration of the GS complex.

ACTION = *ADD-GS-UNIT(...)

A GS unit is added.

GS-UNIT = <integer 1..2>

Number of the GS unit.

ACTION = *ADD-GS-SERVER(...)

The GS server specified in the GS-SERVER operand is added to the GS complex.

GS-SERVER = <integer 1..16> / *OWN(...)

Number of the GS server that is to be added where *OWN designates the local host.

GS-SERVER = *OWN(...)

The local host is to be added to the GS complex specified in the GS-COMPLEX operand.

GS-COMPLEX = *UNIQUE-GS-COMPLEX / *GSU1-COMPLEX / *GSU2-COMPLEX

Designates the GS complex

GS-COMPLEX = *UNIQUE-GS-COMPLEX

Designates the only GS complex present.

GS-COMPLEX = *GSU1-COMPLEX

Designates the GS complex to which GS unit 1 belongs.

GS-COMPLEX = *GSU2-COMPLEX

Designates the GS complex to which GS unit 2 belongs.

ACTION = *REMOVE-GS-UNIT(...)

A GS unit is removed from the GS complex. The GS unit must be DETACHED within the GS complex.

GS-UNIT = <integer 1..2>

Number of the GS unit.

ACTION = *REMOVE-GS-SERVER(...)

The GS server specified in the GS-SERVER operand is removed from the GS complex. The GS server must be DISCONNECTED in the GS complex.

GS-SERVER = <integer 1..16> / *OWN

Number of the GS server that is to be added where *OWN designates the local host.

Return codes

(SC2)	SC1	Maincode	Meaning
	0	CMD0001	No error
	1	CMD0202	Syntax error
	32	CMD0221	Internal error
	64	CMD0216	Privileges error
	64	EGC3101	GS server/unit already belongs to another GS complex
	64	EGC3102	GS server/unit already belongs to the local GS complex
	64	EGC3103	GS server/unit not online
	64	EGC3104	GS server/unit not connected
	64	EGC3105	GS server/unit not available
	64	EGC3219	GS complex specified incorrectly
	64	EGC3220	GS complex not specified
	128	EGC2050	GS function not available
	128	EGC2051	SVP function not available
	128	EGC2052	Internal SVP error
	128	EGC2210	GS server not in GS complex

MODIFY-GSMAN-PARAMETER

Modify GSUSAGE subsystem parameter

Description status:	GSMAN V19.0A
Functional area:	Global storage administration
Domain:	DEVICE
Privileges:	TSOS

Function

Systems support can use the MODIFY-GSMAN-PARAMETER command to modify the setting of the subsystem parameter GSUSAGE for the duration of the current system run. The setting stored in the subsystem information file SYSSSI.GSMAN.150 continues to be evaluated until the first modification is performed within the running system (e.g. even after a system restart).

The GSUSAGE subsystem parameter is evaluated when the GSMAN subsystem is started and determines the GS operating mode in a HIPLEX-MSCF cluster:

- GS-USAGE=*GLOBAL:
In a cluster with shared GS, the nodes use the GS as a “shared” resource (global GS mode).
- GS-USAGE=*LOCAL:
In a cluster without shared GS, the nodes can use their GS locally (local GS mode).

The command is only accepted if the BS2000 system is XCS-compatible (system parameter MCXSPXCS=Y) and the GS is not used by the system. If XCS is already started then the XCS cluster must currently consist of only one node.

Systems support can use the SHOW-GS-STATUS command to obtain information on the current setting of the GSUSAGE subsystem parameter.

Use of GS volumes

If GS volumes are used or are to be used at a later point in time, the GSVOL subsystem must be terminated and then restarted after the subsystem parameter GSUSAGE has been modified. Before the GSVOL subsystem is terminated any GS volumes which are attached must be detached (/DETACH-DEVICE).

Format

MODIFY-GSMAN-PARAMETER
GS-USAGE = * <u>UNCHANGED</u> / *LOCAL / *GLOBAL

Operands

GS-USAGE = *UNCHANGED / *LOCAL / *GLOBAL

New value of the GSUSAGE subsystem parameter.

Return codes

(SC2)	SC1	Maincode	Meaning
	0	CMD0001	No error
	1	CMD0202	Syntax error
	32	CMD0221	Internal error
	64	CMD0216	Privileges error
	64	EGC2050	GS function not available
	64	EGC0602	GS already used locally
	64	EGC0603	GS already used globally
	64	EGC0607	Other system in the XCS
	64	EGC0608	GS still in use
	64	EGC0120	Internal error

MODIFY-HEL-CHECK

Control HEL record threshold monitoring

Description status:	BS2000 OSD/BC V10.0A
Functional area:	Error logging
Domain:	ERROR-LOGGING
Privileges:	HARDWARE-MAINTENANCE

Function

The MODIFY-HEL-CHECK command controls threshold monitoring for hardware errors (HEL records). Once an error threshold has been reached, the message “CALL TELESERVICE” is displayed on the operator terminal (console) the next time the error occurs. However, the message is displayed only if the Teleservice alarm function has been enabled (see the MODIFY-HEL-TELESERVICE-ALARM command).

The following mechanisms are available for threshold monitoring control:

- Enabling/disabling the monitoring of all records of a monitoring class (control ID)
- Enabling/disabling the monitoring of all records for a device, which can be identified by its device mnemonic or its device address
- Enabling/disabling the monitoring of specific records or of a group of records with specific attributes (monitoring class, error type and error priority)
- The threshold can be set separately for each control mechanism
- The current threshold counter of a specific monitor setting can be reset

Each MODIFY-HEL-CHECK command with at least one non-default value generates an additional threshold monitoring control record. No more than 50 control records are allowed. During threshold monitoring, all the control records are scanned in the order in which they were generated. Only the last control record found for the error which has occurred is evaluated. For that reason, control records which describe an error in detail should not be generated until after “general” control records (e.g. only for a monitoring class).

MODIFY-HEL-CHECK CHECK=*STD with no other arguments causes all modifications made earlier to be reversed, with the result that any control records that have been added are deleted and only the default set of records remains (as at system startup).

MODIFY-HEL-CHECK CHECK=*STD and other specifications (e.g. monitoring class, error type, device, etc.) only the control records that correspond to all the specifications made are deleted.

The command is rejected if HEL logging is disabled or the maximum allowable number of control records (message HEL0108) has been reached.

If logging is disabled and restarted with START-HEL-LOGGING during a system session, the number of HEL records being monitored remains unchanged.

The SHOW-HEL-CHECK command lists the active threshold monitoring control records.

Format

MODIFY-HEL-CHECK

```

CHECK = *STD / *ON / *OFF
, CONTROL-IDENTIFIER = *ANY / *MCK / *CCK / *CRW / *DISK / *TAPE / *SPOOL / *BCAM / *NINT / *STAT
, ATTRIBUTE = *ANY / *HARDWARE-ERROR / *UNCORRECTABLE / *CORRECTABLE /
               *DALTA-RESPONSIBLE / *TAPE-ERROR / *OVERRUN
, PRIORITY = *ANY / *HIGH / *MEDIUM / *LOW
, DEVICE = *ANY / <alphanum-name 2..4> / *UNIT(...)
    *UNIT(...)
      | PATH = <alphanum-name 1..6>
, MAXIMUM = *STD / <integer 1..255>
, RESET-COUNT = *OFF / *ON

```

Operands

CHECK = *STD / *ON / *OFF

Specifies the HEL records for which threshold monitoring is to be enabled or disabled. The HEL records to be monitored can be identified more precisely with the selection operands CONTROL-IDENTIFIER, ATTRIBUTE, PRIORITY and DEVICE, where a value of *ANY means that the operand is not to be used as a selection criterion. If more than one selection operand is used, the arguments are logically ANDed.

CHECK = *STD

The CHECK setting defined by the system is applied to all the HEL records matching the specified selection criteria.

If no selection criteria are defined, or if the selection operands are explicitly set to *ANY, threshold monitoring is restored to the condition it was in at system startup (reset function). In this case a threshold specification in the MAXIMUM operand is ignored.

When selection attributes are specified, only the control records that correspond to all the specifications made are deleted.

CHECK = *ON

Thresholds are monitored for all HEL records matching the specified selection criteria.

CHECK = *OFF

Threshold monitoring is disabled for all HEL records matching the specified selection criteria.

CONTROL-IDENTIFIER = *ANY / *MCK / *CCK / *CRW / *DISK / *TAPE / *SPOOL / *BCAM / *NINT / *STAT

The selection criterion is the monitoring class to which the error reported in the HEL record is allocated.

Operand value	Monitoring class
*ANY	Not used as selection criterion
*MCK	M (machine check)
*CCK	C (channel check)
*CRW	R (channel report words)
*DISK	D (disk device error)
*TAPE	T (tape device error)
*SPOOL	S (spool device error)
*BCAM	B (error detected by BCAM)
*NINT	N (no interrupt)
*STAT	Z (device statistics)

ATTRIBUTE = *ANY / *HARDWARE-ERROR / *UNCORRECTABLE / *CORRECTABLE / *DALTA-RESPONSIBLE / *TAPE-ERROR / *OVERRUN

The selection criterion is the error type to which the error reported in the HEL record is allocated.

Operand value	Error type identification
*ANY	Not used as selection criterion
*HARDWARE-ERROR	Attribute H: True hardware error
*UNCORRECTABLE	Attribute U: Uncorrectable error; only affects devices of the "older" generation
*CORRECTABLE	Attribute C: Software-correctable error; only affects devices of the "older" generation
*DALTA-RESPONSIBLE	Attribute D: Disk error which can be corrected with the DALTA utility (e.g. alternate track allocation for bad tracks)
*TAPE-ERROR	Attribute T: Logical tape error
*OVERRUN	Attribute O: Channel capacity exceeded (queued data cannot all be transferred); only affects devices which operate without an I/O buffer

PRIORITY = *ANY / *HIGH / *MEDIUM / *LOW

The selection criterion is the error priority assigned to the error reported in the HEL record.

PRIORITY = *ANY

The error priority is not used as a selection criterion.

PRIORITY = *HIGH

Selects HEL records assigned priority H (high-priority errors).

PRIORITY = *MEDIUM

Selects HEL records assigned priority M (medium-priority errors).

PRIORITY = *LOW

Selects HEL records assigned priority L (low-priority errors).

DEVICE = *ANY / <alphanum-name 2..4> / *UNIT(...)

The selection criterion is the hardware unit in which the error reported in the HEL record occurred.

DEVICE = *ANY

The hardware unit affected by the error is not used as a selection criterion.

DEVICE = <alphanum-name 2..4>

Device mnemonic of a hardware unit.

Selects HEL records reporting errors affecting this hardware unit.

DEVICE = *UNIT(...)

Selects HEL records reporting errors affecting this hardware unit. The hardware unit is identified by its device address in the associated PATH operand.

PATH = <alphanum-name 1..6>

Device address in the form ccccuu.

MAXIMUM = *STD / <integer 1..255>

Sets the threshold which is to apply to the selected HEL records.

This operand is ignored if combined with CHECK=*STD with no further selection criteria (reset function).

MAXIMUM = *STD

Sets the threshold to 10.

MAXIMUM = <integer 1..255>

Threshold specification for the selected HEL records.

RESET-COUNT = *OFF / *ON

Governs whether the current threshold counter of a threshold monitoring mechanism is to be reset. The monitoring mechanism must be precisely defined in the CONTROL-IDENTIFIER, ATTRIBUTE, PRIORITY and/or DEVICE operands.

RESET-COUNT = *OFF

The current threshold counter is not reset.

RESET-COUNT = *ON

The current threshold counter is reset.

Return codes

(SC2)	SC1	Maincode	Meaning
	0	CMD0001	Command successfully executed
	32	HEL0100	Internal error
	32	HEL0105	Bourse problems
	32	HEL0108	Too many control commands
	64	HEL0010	Hardware error logging not active
	64	HEL0110	Privilege error

Example

See SHOW-HEL-CHECK.

MODIFY-HEL-LOGGING

Control HEL record logging

Description status:	BS2000 OSD/BC V10.0A
Functional area:	Error logging
Domain:	ERROR-LOGGING
Privileges:	HARDWARE-MAINTENANCE

Function

The MODIFY-HEL-LOGGING command controls the scope of hardware error logging (HEL records). The command is rejected if HEL logging is disabled. The following control mechanisms are available:

- Enabling/disabling the monitoring of all records of a monitoring class (control ID)
- Enabling/disabling the monitoring of all records for a device, which can be identified by its device mnemonic or its device address
- Enabling/disabling the monitoring of specific records or of a group of records with specific attributes (monitoring class, error type and error priority)
- Enabling/disabling the monitoring of records which are excluded from logging

Each MODIFY-HEL-LOGGING command with at least one non-default value generates an additional logging control record. No more than 50 control records are allowed.

The command is rejected if HEL logging is disabled or the maximum allowable number of control records (message HEL0108) has been reached.

MODIFY-HEL-LOGGING LOGGING=*STD with no other arguments causes all modifications made earlier to be reversed, with the result that the default setting applies again (as at system startup).

If logging is disabled and restarted with START-HEL-LOGGING during a system session, the number of HEL records being logged remains unchanged.

The SHOW-HEL-LOGGING command lists the current settings.

Format

MODIFY-HEL-LOGGING

```
LOGGING = *STD / *ON / *OFF
,CONTROL-IDENTIFIER = *ANY / *MCK / *CCK / *CRW / *DISK / *TAPE / *SPOOL / *BCAM / *NINT / *STAT
,ATTRIBUTE = *ANY / *HARDWARE-ERROR / *UNCORRECTABLE / *CORRECTABLE /
             *DALTA-RESPONSIBLE / *TAPE-ERROR / *OVERRUN
,PRIORITY = *ANY / *HIGH / *MEDIUM / *LOW
,DEVICE = *ANY / <alphanum-name 2..4> / *UNIT(...)
    *UNIT(...)
        |   PATH = <alphanum-name 1..6>
```

Operands

LOGGING = *STD / *ON / *OFF

Specifies the HEL records which are to be written to the log file. The HEL records to be logged can be identified more precisely with the selection operands CONTROL-IDENTIFIER, ATTRIBUTE, PRIORITY and DEVICE, where a value of *ANY means that the operand is not to be used as a selection criterion. If more than one selection operand is used, the arguments are logically ANDed.

LOGGING = *STD

The LOGGING setting defined by the system is applied to all the HEL records matching the specified selection criteria (i.e. the submitter of the record determines the logging setting). If no selection criteria are defined, or if the selection operands are explicitly set to *ANY, the scope of logging is restored to the condition it was in at system startup (reset function).

LOGGING = *ON

All HEL records matching the specified selection criteria are written to the log file.

LOGGING = *OFF

Logging is disabled for all HEL records matching the specified selection criteria.

CONTROL-IDENTIFIER = *ANY / *MCK / *CCK / *CRW / *DISK / *TAPE / *SPOOL / *BCAM / *NINT / *STAT

The selection criterion is the monitoring class to which the error reported in the HEL record is allocated.

Operand value	Monitoring class
*ANY	Not used as selection criterion
*MCK	M (machine check)
*CCK	C (channel check)
*CRW	R (channel report words)
*DISK	D (disk device error)
*TAPE	T (tape device error)
*SPOOL	S (spool device error)
*BCAM	B (error detected by BCAM)
*NINT	N (no interrupt)
*STAT	Z (device statistics)

ATTRIBUTE = *ANY / *HARDWARE-ERROR / *UNCORRECTABLE / *CORRECTABLE / *DALTA-RESPONSIBLE / *TAPE-ERROR / *OVERRUN

The selection criterion is the error type to which the error reported in the HEL record is allocated.

Operand value	Error type identification
*ANY	Not used as selection criterion
*HARDWARE-ERROR	Attribute H: True hardware error
*UNCORRECTABLE	Attribute U: Uncorrectable error; only affects devices of the "older" generation
*CORRECTABLE	Attribute C: Software-correctable error; only affects devices of the "older" generation
*DALTA-RESPONSIBLE	Attribute D Disk error which can be corrected with the DALTA utility (e.g. alternate track allocation for bad tracks)
*TAPE-ERROR	Attribute T Logical tape error
*OVERRUN	Attribute O Channel capacity exceeded (queued data cannot all be transferred); only affects devices which operate without an I/O buffer

PRIORITY = *ANY / *HIGH / *MEDIUM / *LOW

The selection criterion is the error priority assigned to the error reported in the HEL record.

PRIORITY = *ANY

The error priority is not used as a selection criterion.

PRIORITY = *HIGH

Selects HEL records assigned priority H (high-priority errors).

PRIORITY = *MEDIUM

Selects HEL records assigned priority M (medium-priority errors).

PRIORITY = *LOW

Selects HEL records assigned priority L (low-priority errors).

DEVICE = *ANY / <alphanum-name 2..4> / *UNIT(...)

The selection criterion is the hardware unit in which the error reported in the HEL record occurred.

DEVICE = *ANY

The hardware unit affected by the error is not used as a selection criterion.

DEVICE = <alphanum-name 2..4>

Device mnemonic of a hardware unit.

Selects HEL records reporting errors affecting this hardware unit.

DEVICE = *UNIT(...)

Selects HEL records reporting errors affecting this hardware unit. The hardware unit is identified by its device address in the associated PATH operand.

PATH = <alphanum-name 1..6>

Device address in the form ccccuu.

Return codes

(SC2)	SC1	Maincode	Meaning
	0	CMD0001	Command successfully executed
	32	HEL0100	Internal error
	32	HEL0105	Bourse problems
	32	HEL0108	Too many control commands
	64	HEL0010	Hardware error logging not active
	64	HEL0110	Privilege error

Example

See SHOW-HEL-LOGGING.

MODIFY-HEL-TELESERVICE-ALARM

Set Teleservice alarm

Description status:	BS2000 OSD/BC V10.0A
Functional area:	Error logging
Domain:	ERROR-LOGGING
Privileges:	HARDWARE-MAINTENANCE

Function

The MODIFY-HEL-TELESERVICE-ALARM command enables and disables the Teleservice alarm function. If the Teleservice alarm is on, the message “CALL TELESERVICE” is displayed on the operator terminal (console) when an error threshold is reached (see the MODIFY-HEL-CHECK command). When enabling the alarm function it is also possible to specify a period during which the message will be displayed, typically so that the alarm message will be issued during normal working hours only.

The command is rejected if HEL logging is disabled.

The SHOW-HEL-TELESERVICE-ALARM shows the current setting of the alarm function.

Format

MODIFY-HEL-TELESERVICE-ALARM

ALARM = *STD / *OFF / *ON(...)

*ON(...)

FROM = *UNCHANGED / <time> / *STD

,TO = *UNCHANGED / <time> / *STD

Operands

ALARM = STD / *OFF / *ON(...)

Governs whether the alarm message will be issued when an error threshold is reached. If the alarm function is enabled (ALARM=*ON), it is possible to specify a period during which alarm messages are to be issued.

ALARM = *STD

The value defined by the system is applied:

ALARM=*ON(FROM=*STD,TO=*STD)

ALARM = *OFF

Disables the alarm function. No messages are issued if error thresholds are reached

ALARM = *ON(...)

Enables the alarm function. Messages are issued when error thresholds are reached. Messages will be issued during the period indicated by the associated FROM and TO operands.

FROM = *UNCHANGED / <time> / *STD

Identifies the start of the period in which alarm messages are to be issued.

FROM = *UNCHANGED

The current setting is left unchanged.

FROM = <time>

Time at which the period begins.

FROM = *STD

The system default time is used (FROM=00:00:00).

TO = *UNCHANGED / <time> / *STD

Identifies the end of the period in which alarm messages are to be issued.

TO = *UNCHANGED

The current setting is left unchanged.

TO = <time>

Time at which the period ends.

TO = *STD

The system default time is used (TO=24:00:00).

Return codes

(SC2)	SC1	Maincode	Meaning
	0	CMD0001	Command successfully executed
	32	HEL0100	Internal error
	32	HEL0105	Bourse problems
	64	HEL0010	Hardware error logging not active
	64	HEL0110	Privilege error

Example

```

/mod-hel-tele-alarm alarm=*std _____ (1)
/show-hel-tele-alarm
% HELO005 TELESERVICE-ALARM BY HEL IS ACTIVE. MONITORING-INTERVALL FROM
00:00:00 TO 24:00:00
/mod-hel-tele-alarm *on(from=8:15,to=16:45) _____ (2)
/mod-hel-tele-alarm *off _____ (3)
/show-hel-tele-alarm
% HELO006 TELESERVICE-ALARM BY HEL IS DEACTIVATED.
/mod-hel-tele-alarm *on _____ (4)
/show-hel-tele-alarm
% HELO005 TELESERVICE-ALARM BY HEL IS ACTIVE. MONITORING-INTERVALL FROM
08:15:00 TO 16:45:00
/show-hel-tele-alarm
% HELO005 TELESERVICE-ALARM BY HEL IS ACTIVE. MONITORING-INTERVALL FROM
08:15:00 TO 16:45:00
/mod-hel-tele-alarm *on(from=*std) _____ (5)
/show-hel-tele-alarm
% HELO005 TELESERVICE-ALARM BY HEL IS ACTIVE. MONITORING-INTERVALL FROM
00:00:00 TO 16:45:00

```

- (1) The MODIFY-HEL-TELESERVICE-ALARM command with ALARM=*STD selects the default setting of the alarm function. The SHOW-HEL-TELESERVICE-ALARM command which follows it shows how the alarm is set:
The alarm function is enabled, and alarms will be issued at all times.
- (2) Changes the period in which alarm messages are issued: messages will be displayed between 8:15 and 17:45.
- (3) Disables the alarm function, as indicated by the SHOW-HEL-TELESERVICE-ALARM command which follows.
- (4) MODIFY-HEL-TELESERVICE-ALARM with ALARM=*ON switches the alarm function back on, and SHOW-HEL-TELESERVICE-ALARM shows that the modified alarm period setting has been retained (see Point 2).
- (5) MODIFY-HEL-TELESERVICE-ALARM with ALARM=*ON(FROM=*STD) sets the start of the alarm period to the system default value. The SHOW-HEL-TELESERVICE-ALARM command which follows shows the starting time is midnight.

MODIFY-IMON-SCI

Modify IMON SCI

Description status:	IMON-GPN V3.3A
Functional area:	System control and optimization
Domain:	SYSTEM-MANAGEMENT
Privileges:	SUBSYSTEM-MANAGEMENT

Function

Systems support can use the MODIFY-IMON-SCI command to incorporate path name modifications in the SCI (System Configuration Inventory) of IMON and IMON-GPN. A catalog ID (e.g. modification of the pubset with PVSREN), a user ID or a prefix can be modified. Systems support can also prepare the SCI for a new pubset.

Format

MODIFY-IMON-SCI
<pre> SCI-NAME = *STD / <filename 1..50 without-gen-vers> ,REFERRED-PUBSET = *UNCHANGED / *PARAMETERS(...) *PARAMETERS(...) OLD-NAME = <cat-id 1..4> ,NEW-NAME = <cat-id 1..4> ,REFERRED-USER-ID = *UNCHANGED / *PARAMETERS(...) *PARAMETERS(...) OLD-NAME = <name 1..8> ,NEW-NAME = <name 1..8> ,REFERRED-PREFIX = *UNCHANGED / *PARAMETERS(...) *PARAMETERS(...) OLD-NAME = *NONE / <partial-filename 2..7 without-cat-user> ,NEW-NAME = *NONE / <partial-filename 2..7 without-cat-user> </pre>

Operands

SCI-NAME =
Name of the SCI.

SCI-NAME = *STD

The default SCI is used (\$TSOS.SYS.IMON.SCI and \$TSOS.SYS.IMON.SCI.GPN).

SCI-NAME = <filename 1..50 without-gen-vers>

Specification of the foreign SCI, e.g. the SCI on an imported pubset (<filename 1..50 without-gen-vers> and <filename 1..50 without-gen-vers>.GPN).

REFERRED-PUBSET = *UNCHANGED / *PARAMETERS(...)

Specifies the pubset whose modified name is to be registered in the SCI.

REFERRED-PUBSET = *PARAMETERS(...)

Specifications concerning the modified pubset name:

OLD-NAME = <cat-id 1..4>

Old catalog ID.

NEW-NAME = <cat-id 1..4>

New catalog ID.

REFERRED-USER-ID = *UNCHANGED / *PARAMETERS(...)

Specifies the user ID for which the name change is to be included in the SCI.

REFERRED-USER-ID = *PARAMETERS(...)

Specifications concerning the modified user ID name:

OLD-NAME = <name 1..8>

Old name of user ID.

NEW-NAME = <name 1..8>

New name of user ID.

REFERRED-PREFIX = *UNCHANGED / *PARAMETERS(...)

Specifies the prefix for which the change of name is to be included in the SCI.

REFERRED-PREFIX = *PARAMETERS(...)

Specifications concerning the modified prefix name:

OLD-NAME = *NONE / <partial-filename 2..7 without-cat-user>

Old prefix name. *NONE indicates that a prefix is not considered in the existing path names in the SCI (see Notes).

NEW-NAME = *NONE / <partial-filename 2..7 without-cat-user>

New prefix name. *NONE indicates that a prefix is not added to the existing path names in the SCI (see Notes).

Notes

1. The three types of changes that can be made (pubset, user ID, prefix) are added, i.e. with the command

```

/MODIFY-IMON-SCI REFERRED-PVS=*PAR(OLD-NAME=R,NEW-NAME=N)
                    ,REFERRED-USER-ID=*PAR(OLD-NAME=TSOSWRK,NEW-NAME=TSOS)
                    ,REFERRED-PREFIX=*PAR(OLD-NAME=PREF1.,NEW-NAME=PREF2.)
    
```

all strings “:R:\$TSOSWRK.PREF1.” in existing path names are replaced by “:N:\$TSOS.PREF2.”

2. If *NONE is specified for the old prefix and a value other than *NONE for the new prefix, then a new prefix is added to the path name and an existing prefix is ignored.
3. If a value other than *NONE is specified for the old prefix and *NONE is specified for the new prefix, then the old prefix is removed from the path name.

Return codes

(SC2)	SC1	Maincode	Meaning
	0	CMD0001	Command processed without errors
2	0	IMO9103	Partially modified
	32	IMO9101	Command terminated abnormally (system error in external call; internal error in IMON-GPN)
	64	CMD0216	Privilege error
	64	IMO9100	SCI not available, SCI version or format in IMON-GPN invalid, or problem when renaming IMON-SCI

MODIFY-IO-UNIT

Modify configuration attributes of input/output unit

Description status:	BS2000 OSD/BC V10.0A
Functional area:	Device management
Domain:	DEVICE
Privileges:	OPERATING
Routing code:	G

Function

Systems support can modify the configuration attributes of controllers or of devices dynamically using the MODIFY-IO-UNIT command. The path names can be modified for a controller or, for a device, the preferred input/output path. A controller with at least two channel links can be relinked without having to interrupt normal operation.

The timeout setting for devices can also be modified using this command.

The command is only accepted, when changing configuration attributes, if dynamic reconfiguration was initiated successfully (see the START-CONFIGURATION-UPDATE command).

If only the timeout settings for devices (TIMEOUT operand) or the PAV settings (operand PAV-PREFERRED-DEVICE) are to be modified, the command may also be entered outside of a dynamic I/O configuration change (i.e. without START-CONFIGURATION-UPDATE command and regardless of the system type).

Format

(Part 1 of 2)

MODIFY-IO-UNIT

```
UNIT = *CONTROLLER(...) / *DEVICE(...)
```

```
*CONTROLLER(...)
```

```
  NAME = <alphanum-name 2..2> / <x-text 4..4>
```

```
,PATH = *NO / list-poss(8): *CHANNEL(...)
```

```
  *CHANNEL(...)
```

```
    CHANNEL-PATH-ID = <x-text 2..3>
```

```
    ,CONTROLLER-ADDRESS = <x-text 1..2>
```

```
    ,PATH-STATE = *INCLUDED / *REMOVED
```

```
    ,PORT-ID = *NONE / <x-text 2..16>
```

```

*DEVICE(...)
  NAME = <alphanum-name 2..2> / <x-text 4..4> / *RANGE(...)
    *RANGE(...)
      FIRST-NAME = <alphanum-name 2..2> / <x-text 4..4>
      ,NUMBER-OF-DEVICES = <integer 2..256>
    ,STATE = *UNCHANGED / *PREFERRED-PATH(...) / *PAV-PREFERRED-DEVICE(...)
      *PREFERRED-PATH(...)
        ,PREFERRED-PATH = *NO / *YES(...)
          *YES(...)
            CHANNEL-PATH-ID = <x-text 2..3>
      *PAV-PREFERRED-DEVICE(...)
        ,PAV-PREFERRED-DEVICE = *UNCHANGED / *NO / *YES
    ,TIMEOUT = *UNCHANGED / *DEFAULT / <integer 16..86400 seconds>

```

Operands

UNIT = *CONTROLLER(...) / *DEVICE(...)

Specifies whether the configuration attributes of a controller or of a device are to be modified.

UNIT = *CONTROLLER(...)

The configuration attributes of a controller are to be modifies.

NAME = <alphanum-name 2..2> / <x-text 4..4>

Mnemonic device code of the controller.

PATH = *NO / list-poss(8): *CHANNEL(...)

Specifies whether the input/output paths of the controller are to be modified. The default is *NO, i.e. the paths are not modified.

PATH = list-poss(8): *CHANNEL(...)

As many as eight input/output paths via which the controller is to be accessible in the future can be specified in a list. All paths have to be specified, i.e. even if only one path is being added, modified or removed, all the other paths that are to remain unchanged also have to be included in the list.

CHANNEL-PATH-ID = <x-text 2..3>

Specifies the number of the channel to which the controller is linked.

CONTROLLER-ADDRESS = <x-text 1..2>

Specifies the physical controller address.

PATH-STATE = *INCLUDED / *REMOVED

Specifies whether the link between the channel and the controller is available. The default is *INCLUDED, i.e. the connection is available.

PORT-ID = *NONE / <x-text 2..16>

Specifies whether the controller is connected to a channel type FC. The default is *NONE, i.e. the controller is not connected to a channel type FC.

PORT-ID = <x-text 2..16>

When a controller is connected to a channel type FC the WWPN (World Wide Port Name) of the controller port (16 hexadecimal characters) must be specified. The /SHOW-DEVICE-CONFIGURATION INF=*INNER command for the controller can then be used to output the WWPN.

UNIT = *DEVICE(...)

The configuration attributes of a device are to be modified.

NAME = <alphanum-name 2..2> / <x-text 4..4> / *RANGE(...)

Mnemonic device code. A group of devices can be addressed using the *RANGE operand value.

NAME = *RANGE(...)

The modifications of the configuration attributes refer to a group of devices. Based on the mnemonics of the first device (FIRST-NAME operand), the mnemonics of the following devices are determined by adding 1 until the maximum number of devices defined in the NUMBER-OF-DEVICES operand is reached. The group can comprise as many as 256 devices. The maximum number has to be chosen so as not to exceed the value FFFF when the mnemonics are calculated.

FIRST-NAME = <alphanum-name 2..2> / <x-text 4..4>

Mnemonic device code of the first device.

NUMBER-OF-DEVICES = <integer 2..256>

Number of devices for which the modification is to be made.

STATE = *UNCHANGED / *PREFERRED-PATH(...) / *PAV-PREFERRED-DEVICE(...)

Specifies whether a particular path should be preferred on input to or output from a device.

STATE = *PREFERRED-PATH(...)

Specifies whether a path is to preferred on input/output if the device can be accessed via different paths.

PREFERRED-PATH = *NO

No path is preferred on input/output.

PREFERRED-PATH = *YES(...)

The path specified in the CHANNEL-PATH-ID operand should be preferred on input/output.

CHANNEL-PATH-ID = <x-text 2..3>

Designates the preferred path (Channel Path Identifier).

STATE = *PAV-PREFERRED-DEVICE(...)

Specifies whether the PAV device is to be preferred on input/output under VM2000.

PAV-PREFERRED-DEVICE = *UNCHANGED

The current setting remains unchanged.

PAV-PREFERRED-DEVICE = *YES

The PAV device is preferred on input/output under VM2000.

PAV-PREFERRED-DEVICE = *NO

The PAV device is no longer preferred.

TIMEOUT = *UNCHANGED / *DEFAULT / <integer 16..86400 seconds>

Specifies whether the standard timeout value for the devices named in the UNIT operand is to be modified.

When a controller is specified (UNIT=*CONTROLLER), the settings apply to all devices linked to that controller. The timeout value only refers to devices and is independent of the input/output paths. If a device is connected through several controllers and if the timeout values are modified for several of the controllers, then it is always the most recent setting that takes effect for the device.

Changes to timeout values should only be effective for a limited time and for specific actions (e.g. during the online update of RAID system's firmware). The default timeout values should then be restored using TIMEOUT= *DEFAULT.

TIMEOUT = *DEFAULT

The system default timeout value is set. The value depends on the device type.

TIMEOUT = <integer 16..86400 seconds>

The new timeout value in seconds.

Return codes

(SC2)	SC1	Maincode	Meaning
	0	CMD0001	Command processed without errors
	1	NKR0006	Syntax error
	64	CMD0216	Privilege error
1	64	NKR0169	System error
2	64	NKR0169	Wrong parameter
3	64	NKR0169	Dynamic I/O configuration change was rejected
4	64	NKR0169	Dynamic I/O configuration change is not supported
6	64	NKR0169	Internal input/output unit not defined
9	64	NKR0169	Input/output unit not defined
11	64	NKR0169	Path to input/output unit not removed
12	64	NKR0169	Dynamic I/O configuration change was not started
14	64	NKR0169	Configuration change was not performed in the guest system
19	64	NKR0169	Device is not a PAV device
16	128	NKR0169	Another guest system is currently being started
17	128	NKR0169	Another guest system is currently being terminated
18	128	NKR0169	Dynamic I/O configuration change is not supported by one or several guest systems

MODIFY-ISAM-CACHING

Change number of data spaces for ISAM cache areas

Description status:	BS2000 OSD/BC V10.0A
Functional area:	System control and optimization
Domain:	FILE
Privileges:	TSOS

Function

The MODIFY-ISAM-CACHING command enables systems support to change the maximum number of data spaces for ISAM cache areas dynamically. ISAM creates these cache areas to add and manage cross-task ISAM pools.

The maximum number of usable data spaces can be increased only if the paging area is large enough. It may be necessary to enlarge the paging area up front.

Information on the maximum number of data spaces for ISAM cache areas and how they are used can be inquired using the SHOW-ISAM-CACHING command.

Format

MODIFY-ISAM-CACHING	Alias: MDISAMC
CACHE-SIZE = <u>*UNCHANGED</u> / <integer 1..127>	

Operands

CACHE-SIZE = *UNCHANGED / <integer 1..127>

Specifies the maximum number of data spaces for ISAM cache areas.

CACHE-SIZE = *UNCHANGED

The maximum number of data spaces for ISAM cache areas remains unchanged.

CACHE-SIZE = <integer 1..127>

Specifies the new maximum number of data spaces for ISAM cache areas. The existing value can be increased only if the paging area is large enough.

Return codes

(SC2)	SC1	Maincode	Meaning/Guaranteed messages
	0	CMD0001	Command executed without errors
	32	DMS0A66	Internal error while executing the command
	64	CMD0216	Privileges error
	64	DMS0A67	ISAM cache cannot be extended/reduced
	129	DMS0A68	ISAM cache cannot be reduced at present

MODIFY-JOB

Modify job attributes of a batch job

Description status:	BS2000 OSD/BC V10.0A
Functional area:	Job processing
Domain:	JOB
Privileges:	STD-PROCESSING OPERATING SAT-FILE-EVALUATION SAT-FILE-MANAGEMENT SECURITY-ADMINISTRATION
Routing code:	J

Function

The MODIFY-JOB command is used to change certain attributes of a batch job. The batch job must have been initiated from the user ID of the user issuing the command, and generally it must be running under that user ID. In addition, the command may be used to address jobs on the local system which were generated under the issuing user ID but are running under a different user ID (extended access on the local system).

The following attributes can be modified:

- job class (JOB-CLASS operand)
- priority (JOB-PRIORITY operand)
- action to be taken following a system error (RERUN-AFTER-CRASH operand)
- scheduling attributes for ordinary jobs, scheduled jobs and repeat jobs (SCHEDULING-TIME=*STD / *PARAMETERS(...))
 - start time (START operand)
 - repeat time (REPEAT-JOB operand)
- scheduling attributes for calendar jobs (SCHEDULING-TIME=*CALENDAR(...) operand)
 - calendar file (CALENDAR-NAME operand)
 - symbolic date (SYMBOLIC-DATE operand)
- limit on job repeats for a calendar job (LIMIT operand)
- additional attributes defined by the system administrator (JOB-PARAMETER operand).
- behavior after shutdown (FLUSH-AFTER-SHUTDOWN operand)
- logging to SYSLST (LOGGING operand)
- job name (JOB-NAME operand)
- protection against unintentional termination (PROTECTION operand)
- values for run priority, CPU time and maximum number of SYSLST records (RESOURCES operand)

Values given for job class, priority, logging and maximum number of SYSLST records as well as start time and additional attributes may be changed only if the batch job has not yet been started, i.e. if it is still in the TYPE 1 job queue. This can be checked with the SHOW-JOB-STATUS command. The job status of a monitoring job variable is logged as "\$S".

Wait states can be released for TYPE 1 user jobs (see [page 4-177](#)).

In the case of a calendar job, the MODIFY-JOB command applies to the entire calendar job, i.e. including any future repeats.

Only those attributes may be defined that are permitted by the job class definition. A check on the specified job class can be made using the SHOW-JOB-CLASS command. Note also that the combination of some job attributes may produce differing results and that modifying certain attributes also causes the batch job type to change. For details see "[Notes](#)" on [page 4-174ff](#).

The default value *UNCHANGED mean that the existing specification continues to apply.

Privileged functions

Privileged users (OPERATING or TSOS privilege) can modify the attributes of any batch job.

Format

MODIFY-JOB	Alias: MDJ
<p>JOB-IDENTIFICATION = *TSN(...) / *MONJV(...) / <alphanum-name 1..4></p> <p> *TSN(...)</p> <p> TSN = <alphanum-name 1..4></p> <p> *MONJV(...)</p> <p> MONJV = <filename 1..54 without-gen-vers></p> <p>JOB-CLASS = *<u>UNCHANGED</u> (...) / *STD(...) / <name 1..8>(...</p> <p> *<u>UNCHANGED</u>(...)</p> <p> JOB-PRIORITY = *<u>UNCHANGED</u> / *STD / <integer 1..9></p> <p> SCHEDULING-TIME = *<u>UNCHANGED</u> / *STD / *PARAMETERS(...) / *BY-CALENDAR(...)</p> <p> *PARAMETERS(...)</p> <p> START = *<u>UNCHANGED</u> / *STD / *SOON / *IMMEDIATELY / *AT-STREAM-STARTUP /</p> <p> *<u>WITHIN</u>(...) / *AT(...) / *EARLIEST(...) / *LATEST(...)</p> <p> *<u>WITHIN</u>(...)</p> <p> HOURS = <u>0</u> / <integer 0..23 hours></p> <p> MINUTES = <u>0</u> / <integer 0..59 minutes></p> <p> *AT(...)</p> <p> DATE = *<u>TODAY</u> / <date></p> <p> TIME = <time></p> <p> *EARLIEST(...)</p> <p> DATE = *<u>TODAY</u> / <date></p> <p> TIME = <time></p> <p> *LATEST(...)</p> <p> DATE = *<u>TODAY</u> / <date></p> <p> TIME = <time></p> <p> REPEAT-JOB = *<u>UNCHANGED</u> / *NO / *STD / *DAILY / *WEEKLY /</p> <p> *AT-STREAM-STARTUP / *PERIOD(...)</p> <p> *PERIOD(...)</p> <p> HOURS = <u>0</u> / <integer 0..23 hours></p> <p> MINUTES = <u>0</u> / <integer 0..59 minutes></p>	

(Part 1 of 4)

```

*BY-CALENDAR(...)
    CALENDAR-NAME = *UNCHANGED / <filename 1..54 without-gen-vers>
    ,SYMBOLIC-DATE = *UNCHANGED / <filename 1..20 without-cat-user-vers> /
        <partial-filename 2..20 without-cat-user>
,LIMIT = *UNCHANGED / *STD / <integer 1..32767> / *BY-DATE(...)

*BY-DATE(...)
    DATE = <date>
    ,TIME = <time>

,RESOURCES = *UNCHANGED / *PARAMETERS (...) / *STD

*PARAMETERS(...)
    RUN-PRIORITY = *UNCHANGED / *STD / <integer 30..255>
    ,CPU-LIMIT = *UNCHANGED / *STD / *NO / <integer 1..32767 seconds>
    ,SYSLSST-LIMIT = *UNCHANGED / *STD / *NO / <integer 0..999999>

*STD(...)
    JOB-PRIORITY = *STD / *UNCHANGED / <integer 1..9>
, SCHEDULING-TIME = *STD / *UNCHANGED / *PARAMETERS(...) / *BY-CALENDAR(...)
*PARAMETERS(...)
    START = *STD / *UNCHANGED / *SOON / *IMMEDIATELY / *AT-STREAM-STARTUP /
        *WITHIN(...) / *AT(...) / *EARLIEST(...) / *LATEST(...)

    *WITHIN(...)
        HOURS = 0 / <integer 0..23 hours>
        ,MINUTES = 0 / <integer 0..59 minutes>

    *AT(...)
        DATE = *TODAY / <date>
        ,TIME = <time>

    *EARLIEST(...)
        DATE = *TODAY / <date>
        ,TIME = <time>

    *LATEST(...)
        DATE = *TODAY / <date>
        ,TIME = <time>

, REPEAT-JOB = *STD / *UNCHANGED / *NO / *DAILY / *WEEKLY /
    *AT-STREAM-STARTUP / *PERIOD(...)

*PERIOD(...)
    HOURS = 0 / <integer 0..23 hours>
    ,MINUTES = 0 / <integer 0..59 minutes>

```

(Part 2 of 4)

```

*BY-CALENDAR(...)
    CALENDAR-NAME = *UNCHANGED / <filename 1..54 without-gen-vers>
    ,SYMBOLIC-DATE = *UNCHANGED / <filename 1..20 without-cat-user-vers> /
        <partial-filename 2..20 without-cat-user>
,LIMIT = *STD / *UNCHANGED / <integer 1..32767> / *BY-DATE(...)
*BY-DATE(...)
    DATE = <date!>
    ,TIME = <time>
,RESOURCES = *STD / *UNCHANGED / *PARAMETERS(...)
*PARAMETERS(...)
    RUN-PRIORITY = *STD / *UNCHANGED / <integer 30..255>
    ,CPU-LIMIT = *STD / *UNCHANGED / *NO / <integer 1..32767 seconds>
    ,SYSLST-LIMIT = *STD / *UNCHANGED / *NO / <integer 0..999999>
<name1..8>(...)
    JOB-PRIORITY = *STD / *UNCHANGED / <integer 1..9>
,SCHEDULING-TIME = *STD / *UNCHANGED / *PARAMETERS(...) / *BY-CALENDAR(...)
*PARAMETERS(...)
    START = *STD / *UNCHANGED / *SOON / *IMMEDIATELY / *AT-STREAM-STARTUP /
        *WITHIN(...) / *AT(...) / *EARLIEST(...) / *LATEST(...)
    *WITHIN(...)
        HOURS = 0 / <integer 0..23 hours>
        ,MINUTES = 0 / <integer 0..59 minutes>
    *AT(...)
        DATE = TODAY / <date>
        ,TIME = <time>
    *EARLIEST(...)
        DATE = TODAY / <date>
        ,TIME = <time>
    *LATEST(...)
        DATE = TODAY / <date>
        ,TIME = <time>
,REPEAT-JOB = *STD / *UNCHANGED / *NO / *DAILY / *WEEKLY /
    *AT-STREAM-STARTUP / *PERIOD(...)
*PERIOD(...)
    HOURS = 0 / <integer 0..23 hours>
    ,MINUTES = 0 / <integer 0..59 minutes>

```



```

*BY-CALENDAR(...)
  |
  | CALENDAR-NAME = *UNCHANGED / <filename 1..54 without-gen-vers>
  | ,SYMBOLIC-DATE = *UNCHANGED / <filename 1..20 without-cat-user-vers> /
  | <partial-filename 2..20 without-cat-user>
  |
  | ,LIMIT = *STD / *UNCHANGED / <integer 1..32767> / *BY-DATE(...)
  |
  | *BY-DATE(...)
  | |
  | | DATE = <date>
  | | ,TIME = <time>
  | |
  | | ,RESOURCES = *STD / *UNCHANGED / *PARAMETERS(...)
  | |
  | | *PARAMETERS(...)
  | | |
  | | | RUN-PRIORITY = *STD / *UNCHANGED / <integer 30..255>
  | | | ,CPU-LIMIT = *STD / *UNCHANGED / *NO / <integer 1..32767 seconds>
  | | | ,SYSLST-LIMIT = *STD / *UNCHANGED / *NO / <integer 0..999999>
  | |
  | | ,RERUN-AFTER-CRASH = *UNCHANGED / *NO / *YES
  | |
  | | ,JOB-PARAMETER = *UNCHANGED / *NO / <c-string 1..127>
  | |
  | | ,FLUSH-AFTER-SHUTDOWN = *UNCHANGED / *NO / *YES
  | |
  | | ,LOGGING = *UNCHANGED / *PARAMETERS(...)
  | | |
  | | | *PARAMETERS(...)
  | | | |
  | | | | LISTING = *UNCHANGED / *NO / *YES
  | | |
  | | | ,PROTECTION = *UNCHANGED / *NONE / *CANCEL
  | | |
  | | | ,JOB-NAME = *UNCHANGED / *NO / <name 1..8>

```

(Part 4 of 4)

Operands

JOB-IDENTIFICATION =

Type of job identification. Jobs may be identified by TSN or by monitoring JV.

JOB-IDENTIFICATION = *TSN(...)

TSN = <alphanumeric 1..4>

Task sequence number of the required job.

JOB-IDENTIFICATION = *MONJV(...)

MONJV = <filename 1..54 without-gen-vers>

Name of the JV monitoring the desired job.

JOB-IDENTIFICATION = <alphanumeric 1..4>

This operand value cannot be specified in guided dialog. Direct specification of the task sequence number of the desired job.

JOB-CLASS = *UNCHANGED(...) / *STD(...) / <name 1..8>(…)

Job class into which the job is to be placed. Authorization for starting jobs in the various job classes is indicated by the user entry, which can be queried by means of the SHOW-USER-ATTRIBUTES command. The attributes of the permissible job classes can be queried using the SHOW-JOB-CLASS command.

JOB-CLASS = *UNCHANGED(…)

The job class remains unchanged. The JOB-PRIORITY, SCHEDULING-TIME (with scheduling attributes for scheduled, repeat and calendar jobs), LIMIT and RESCOUCES attributes of the batch job are changed only if values other than *UNCHANGED are explicitly specified:

JOB-PRIORITY = *UNCHANGED / *STD / <integer 1..9>

Job priority to be given to the batch job. The lower the value, the higher the priority. The values can be queried with the SHOW-USER-ATTRIBUTES and SHOW-JOB-CLASS commands. Specifying *STD sets the preset value (default) of the job class definition for JOB-PRIORITY.

SCHEDULING-TIME = *UNCHANGED / *STD / *PARAMETERS(...)/ *BY-CALENDAR(...)

Defines how scheduling times are specified for the batch job. Changing the existing setting may cause the batch job type to change (see [“Changing the batch job type” on page 4-176](#)).

SCHEDULING-TIME = *STD

The default settings for START and REPEAT-JOB scheduling time specifications for the selected job class apply (see the operands of the SCHEDULING-TIME=*PARAMETERS(...) structure).

SCHEDULING-TIME = *PARAMETERS(...)

Defines a scheduling time (start time) for the batch job (ordinary job or scheduled job). It is also possible to define job repeats (repeat job). See also the note on [“Combinations of the START and REPEAT-JOB operands” on page 4-174](#).

START =

Starting time for the batch job. Values other than UNCHANGED are appropriate only if they are permitted in accordance with the definition of the job class (see the SHOW-JOB-CLASS command). The date may be given in the form “yymmdd” or “yyyy-mm-dd”.

START = *UNCHANGED

The specification valid previously remains in effect.

START = *STD

The default value for the chosen job class applies.

START = *SOON

The job is to be started as soon as possible, in accordance with its priority.

START = *IMMEDIATELY

The job is to be started immediately.

START = *AT-STREAM-STARTUP

The job is to be started upon startup of the job scheduler.

START = *WITHIN(...)

The job is to be started within the specified time period.

HOURS = 0 / <integer 0..23 hours>

Number of hours.

MINUTES = 0 / <integer 0..59 minutes>

Number of minutes.

START = *AT(...)

The job is to be started exactly at the time specified in the following.

DATE = *TODAY / <date>

Date. This can be specified in the form [yy]yy-mm-dd. Only the last two digits of the year are evaluated, which means that the century is ignored in four-digit year specifications. 20 is automatically prefixed to two-digit year specifications < 80, 19 to two-digit year specifications ≥ 80.

TIME = <time>

Time of day in the format hh:mm, where hh = hours and mm = minutes. Seconds are not interpreted.

START = *EARLIEST(...)

The job is to be started no earlier than the time specified.

DATE = *TODAY / <date>

Date. This can be specified in the form [yy]yy-mm-dd. Only the last two digits of the year are evaluated, which means that the century is ignored in four-digit year specifications. 20 is automatically prefixed to two-digit year specifications < 80, 19 to two-digit year specifications ≥ 80.

TIME = <time>

Time of day in the format hh:mm, where hh = hours and mm = minutes. Seconds are not interpreted.

START = *LATEST(...)

The job is to be started no later than the time specified.

DATE = *TODAY / <date>

Date. This can be specified in the form [yy]yy-mm-dd. Only the last two digits of the year are evaluated, which means that the century is ignored in four-digit year specifications. 20 is automatically prefixed to two-digit year specifications < 80, 19 to two-digit year specifications ≥ 80.

TIME = <time>

Time of day in the format hh:mm, where hh = hours and mm = minutes. Seconds are not interpreted.

REPEAT-JOB =

Time interval at which the batch job is to be repeated. Values other than the default are appropriate only if permitted in accordance with the job class definition (see the SHOW-JOB-CLASS command). The time interval for the repetitions depends on the specification in the START operand; see the note on [“Combinations of the START and REPEAT-JOB operands” on page 4-174](#). For the repetitions, the following applies:

- The i-th repetition ($i \geq 1$) of a job is not started until the (i1)th repetition has ended.
- Cancellation of the currently executing job (i) has no effect on the start of (i+1); ($i \geq 0$).
- Cancellation of the entire job: Both the currently executing job (i) and the subsequent job (i+1) must be canceled, ($i \geq 0$); (CANCEL-JOB command, or make job (i) the last job in the series using the MODIFY-JOB... command, REPEAT-JOB=*NO).

REPEAT-JOB = *UNCHANGED

The specification valid previously remains in effect.

REPEAT-JOB = *NO

The batch job is not repeated.

REPEAT-JOB = *STD

The default value for the chosen job class applies.

REPEAT-JOB = *DAILY

Daily repetition at the time specified with START.

REPEAT-JOB = *WEEKLY

Weekly repetition at the time specified with START.

REPEAT-JOB = *AT-STREAM-STARTUP

Repetition following each startup of the job scheduler.

REPEAT-JOB = *PERIOD(...)

Repetition after the specified time interval.

HOURS = 0 / <integer 0..23 hours>

Number of hours.

MINUTES = 0 / <integer 0..59 minutes>

Number of minutes.

SCHEDULING-TIME = *BY-CALENDAR(...)

The batch job scheduling time and any repeat jobs are specified in the form of a symbolic date defined in a calendar file (calendar job). The entries in a calendar file can be listed with the SHOW-CALENDAR command. Creation of calendar files with the CALENDAR-EDITOR utility is described in the "Calendar" manual [4].

CALENDAR-NAME = *UNCHANGED / <filename 1..54 without-gen-vers>

Name of the calendar file.

SYMBOLIC-DATE = *UNCHANGED / <filename 1..20 without-cat-user-vers> / <partial-filename 2..20 without-cat-user>

Symbolic date which defines the scheduling time and any repetition cycles within the calendar file.

LIMIT = *UNCHANGED / *STD / <integer 1..32767> / *BY-DATE(...)

Governs how long a calendar job remains in existence. This limit applies in addition to the limits set by the calendar.

LIMIT = *STD

The duration of the calendar job depends entirely on the symbolic date entry in the calendar. The specification is not evaluated for other batch job types.

LIMIT = <integer 1..32767>

This specification is only permitted for calendar jobs. Maximum number of repetitions of the calendar job. Whenever a job run is completed, a check is performed to determine whether the run counter has reached or exceeded the maximum number. If this is the case, the entire calendar job is terminated. Otherwise the run counter is incremented by 1.

LIMIT = *BY-DATE(...)

This specification is only permitted for calendar jobs. After the specified date has been reached, no repeat jobs for the calendar job are started. A repeat which is currently in progress will abort when the date arrives. The specified date relates only to the calculated starting date for repeat jobs. Overshoots due to rescheduling of postponed repeats or to delays in the job scheduler are allowed.

The date specification consists of the day and the time:

DATE = <date>

Date. This can be specified in the form [yy]yy-mm-dd. Only the last two digits of the year are evaluated, which means that the century is ignored in four-digit year specifications. 20 is automatically prefixed to two-digit year specifications < 80, 19 to two-digit year specifications ≥ 80.

TIME = <time>

Time of day.

RESOURCES = *UNCHANGED / *STD / *PARAMETERS(...)

Values for run priority, CPU time and maximum number of SYSLST records.

RESOURCES = *UNCHANGED

Values for run priority, CPU time and maximum number of SYSLST records remain unchanged.

RESOURCES = *STD

Values for run priority, CPU time and maximum number of SYSLST records remain unchanged.

RESOURCES = *PARAMETERS(...)

The run priority, CPU time and maximum number of SYSLST records can be changed within the limits permitted for the job class. The operand value *UNCHANGED means that the relevant attribute is not changed.

RUN-PRIORITY = *UNCHANGED / *STD / <integer 30..255>

Run priority which the job is to be assigned. The lower the value, the higher the priority. The maximum permissible priority value is the lesser of the two values (i.e. the more favorable of the values) from the user catalog and the job class definition. If no maximum value is defined for the job class, the default run priority applies. The values can be queried with the SHOW-USER-ATTRIBUTES and SHOW-JOB-CLASS commands.

RUN-PRIORITY = *STD

The standard run priority specified for the job class applies.

CPU-LIMIT = *UNCHANGED / *STD / <integer 1..32767 seconds>

Maximum CPU time, in seconds, that the batch job may consume. The maximum time permitted depends on the job class specified. See also [section "Time limits in BS2000" on page 1-103](#).

CPU-LIMIT = *STD

The default value for the chosen job class applies.

SYSLST-LIMIT = *UNCHANGED / *STD / <integer 0..999999>

Designates the maximum number of records output by the job to the system files SYSLST, SYSLST01, SYSLST02, ..., SYSLST99. Data records in the system file SYSOUT that are simultaneously written to SYSLST are not counted. This value must not be above the limit set in the job class definition. This limit may be queried using the SHOW-JOB-CLASS command.

If the specified number is exceeded:

- in batch mode, the job is terminated abnormally
- in interactive mode, the user may specify whether the job is to be continued or terminated. If continued, output is repeated up to the maximum number of records.

SYSLST-LIMIT = *STD

The default value for the chosen job class applies.

JOB-CLASS = *STD(...)

The batch job is to run in the default job class. If no values other than *STD are explicitly specified for the attributes LIMIT, JOB-PRIORITY, SCHEDULING-TIME and RESOURCES, these attributes are set in accordance with the default settings of the job class definition. These values are changed even if the job was already queued in the specified job class. The job class definition can be queried with the SHOW-JOB-CLASS command. In nonprivileged job classes, up to 32767 waiting jobs are permissible.

JOB-PRIORITY = *STD / *UNCHANGED / <integer 1..9>

Job priority which the job is to receive.

The default is *STD, i.e. the preset value of the job class definition (otherwise corresponds to PRIORITY under JOB-CLASS=*UNCHANGED(...)).

JOB-PRIORITY = *UNCHANGED

The current job priority is to remain unchanged. If that priority is higher than the current maximum for the job class, the command is rejected.

SCHEDULING-TIME = *STD / *UNCHANGED / *PARAMETERS(...) / *BY-CALENDAR(...)

Defines how scheduling times are specified for the batch job. If the specifications applying until now are changed, this may lead to a change of the batch job type (see [page 4-176](#)).

SCHEDULING-TIME = *STD

The default settings for START and REPEAT-JOB scheduling time specifications for the selected job class apply (see the operands of the SCHEDULING-TIME=*PARAMETERS(...) structure).

SCHEDULING-TIME = *UNCHANGED

The current scheduling time remains unchanged, provided that it is valid according to the job class definition. Scheduled and repeat jobs retain their START-JOB and REPEAT-JOB attribute values, and the values for the CALENDAR and SYMBOLIC-DATE and the relevant starting times and repeat cycles of calendar jobs.

SCHEDULING-TIME = *PARAMETERS(...)

Defines a scheduling time (start time) for the batch job. It is also possible to define job repeats (repeat job).

START = *STD / *UNCHANGED / *SOON / *IMMEDIATELY /

***AT-STREAM-STARTUP / *WITHIN(...) / *AT(...) / *EARLIEST(...) / *LATEST(...)**

Time when the job is to be started. The default value is *STD, i.e. the value preset in the job class definition (otherwise corresponds to START under JOB-CLASS=*UNCHANGED(...)).

START = *UNCHANGED

Specification permitted only for simple batch jobs, scheduled jobs and repeat jobs. The current start attribute remains unchanged, provided that it is valid according to the job class definition.

REPEAT-JOB = *STD / *UNCHANGED / *NO / *DAILY / *WEEKLY /

***AT-STREAM-STARTUP / *PERIOD(...)**

Time interval during which the job is to be repeated. The default value is *STD, i.e. the value preset in the job class definition (otherwise corresponds to REPEAT-JOB under JOB-CLASS=*UNCHANGED(...)).

REPEAT-JOB = *UNCHANGED

*Specification only permitted for simple batch jobs, scheduled job and repeat jobs together with START=*UNCHANGED.* The current repeat cycle remains unchanged, provided that it is valid according to the job class definition.

SCHEDULING-TIME = *BY-CALENDAR(...)

The batch job scheduling time and any repeat jobs are specified in the form of a symbolic date defined in a calendar file (calendar job). The entries in a calendar file can be listed with the SHOW-CALENDAR command. Creation of calendar files with the CALENDAR utility is described in the "Calendar" manual [4].

CALENDAR-NAME = *UNCHANGED / <filename 1..54 without-gen-vers>

Name of the calendar file.

SYMBOLIC-DATE = *UNCHANGED / <filename 1..20 without-cat-user-vers> / <partial-filename 2..20 without-cat-user>

Symbolic date which defines the scheduling time and any repetition cycles within the calendar file.

LIMIT = *STD / *UNCHANGED / <integer 1..32767> / *BY-DATE(...)

Governs how long a calendar job remains in existence. This limit applies in addition to the limits set by the calendar. The default is *STD, i.e. the calendar job remains in existence for the duration resulting from the symbolic date in the calendar file (or else the LIMIT setting in JOB-CLASS=*UNCHANGED(...)). Values other than *STD are allowed only for calendar jobs.

RESOURCES = *STD / *UNCHANGED / *PARAMETERS(...)

Values for run priority, CPU time and maximum number of SYSLST records.

RESOURCES = *STD

Values for run priority, CPU time and maximum number of SYSLST records remain unchanged.

RESOURCES = *UNCHANGED

Values for run priority, CPU time and maximum number of SYSLST records remain unchanged.

RESOURCES = *PARAMETERS(...)

The run priority, CPU time and maximum number of SYSLST records can be changed within the limits permitted for the job class. The operand value *UNCHANGED means that the relevant attribute is not changed.

RUN-PRIORITY = *STD / *UNCHANGED / <integer 30..255>

Run priority which the job is to be assigned. The lower the value, the higher the priority. The values can be queried with the SHOW-USER-ATTRIBUTES and SHOW-JOB-CLASS commands.

RUN-PRIORITY = *STD

The standard run priority specified for the job class applies.

CPU-LIMIT = *STD / *UNCHANGED / <integer 1..32767 seconds>

Maximum CPU time, in seconds, that the batch job may consume. The maximum time permitted depends on the job class specified. See also [section "Time limits in BS2000" on page 1-103](#).

CPU-LIMIT = *STD

The default value for the chosen job class applies.

SYSLST-LIMIT = *STD / *UNCHANGED / <integer 0..999999>

Designates the maximum number of records output by the job to the system files SYSLST, SYSLST01, SYSLST02, ..., SYSLST99. Data records in the system file SYSOUT that are simultaneously written to SYSLST are not counted. This value must not be above the limit set in the job class definition. This limit may be queried using the SHOW-JOB-CLASS command. If the specified number is exceeded:

- in batch mode, the job is terminated abnormally

- in interactive mode, the user may specify whether the job is to be continued or terminated. If continued, output is repeated up to the maximum number of records.

SYSLST-LIMIT = *STD

The default value for the chosen job class applies.

JOB-CLASS = <name 1..8>(…)

The batch job is to run in the specified job class. If no values other than *STD are explicitly specified for the attributes LIMIT, JOB-PRIORITY, SCHEDULING-TIME and RESOURCES, these attributes are set in accordance with the default settings of the job class definition. These values are changed even if the job was already queued in the specified job class. The job class definition can be queried with the SHOW-JOB-CLASS command. In nonprivileged job classes, up to 32767 waiting jobs are permissible.

JOB-PRIORITY = *STD / *UNCHANGED / <integer 1..9>

Job priority which the job is to receive.

The default value is *STD, i.e. the preset value of the job class definition (otherwise corresponds to PRIORITY under JOB-CLASS=*UNCHANGED(...)).

JOB-PRIORITY = *UNCHANGED

The current job priority is to remain unchanged. If that priority is higher than the current maximum for the job class, the command is rejected.

SCHEDULING-TIME = *STD / *UNCHANGED / *PARAMETERS(...)/ *BY-CALENDAR(...)

Defines how scheduling times are specified for the batch job. If the specifications applying until now are changed, this may lead to a change of the batch job type (see [page 4-176](#)).

SCHEDULING-TIME = *STD

The default settings for START and REPEAT-JOB scheduling time specifications for the selected job class apply (see the operands of the SCHEDULING-TIME=*PARAMETERS(...) structure).

SCHEDULING-TIME = *UNCHANGED

The current scheduling time remains unchanged, provided that it is valid according to the job class definition. Scheduled and repeat jobs retain their START-JOB and REPEAT-JOB attribute values, and the values for the CALENDAR and SYMBOLIC-DATE and the relevant starting times and repeat cycles of calendar jobs.

SCHEDULING-TIME = *PARAMETERS(...)

Defines a scheduling time (start time) for the batch job. It is also possible to define job repeats (repeat job).

START = *STD / *UNCHANGED / *SOON / *IMMEDIATELY / *AT-STREAM-STARTUP / *WITHIN(...) / *AT(...) / *EARLIEST(...) / *LATEST(...)
Time when the job is to be started. The default value is *STD, i.e. the value preset in the job class definition (otherwise corresponds to START under JOB-CLASS=*UNCHANGED(...)).

START = *UNCHANGED

Specification permitted only for simple batch jobs, scheduled jobs and repeat jobs. The current start attribute remains unchanged, provided that it is valid according to the job class definition.

REPEAT-JOB = *STD / *UNCHANGED / *NO / *DAILY / *WEEKLY / *AT-STREAM-STARTUP / *PERIOD(...)

Time interval during which the job is to be repeated. The default value is *STD, i.e. the value preset in the job class definition (otherwise corresponds to REPEAT-JOB under JOB-CLASS=*UNCHANGED(...)).

REPEAT-JOB = *UNCHANGED

*Specification permitted only for simple batch jobs, scheduled jobs and repeat jobs together with START=*UNCHANGED.* The current repeat cycle remains unchanged, provided that it is valid according to the job class definition.

SCHEDULING-TIME = *BY-CALENDAR(...)

The batch job scheduling time and any repeat jobs are specified in the form of a symbolic date defined in a calendar file (calendar job). The entries in a calendar file can be listed with the SHOW-CALENDAR command. Creation of calendar files with the CALENDAR utility is described in the “Calendar” manual [4].

CALENDAR-NAME = *UNCHANGED / <filename 1..54 without-gen-vers>

Name of the calendar file.

SYMBOLIC-DATE = *UNCHANGED / <filename 1..20 without-cat-user-vers> / <partial-filename 2..20 without-cat-user>

Symbolic date which defines the scheduling time and any repetition cycles within the calendar file.

LIMIT = *STD / *UNCHANGED / <integer 1..32767> / *BY-DATE(...)

Governs how long a calendar job remains in existence. This limit applies in addition to the limits set by the calendar. The default is *STD, i.e. the calendar job remains in existence for the duration resulting from the symbolic date in the calendar file (or else the LIMIT setting in JOB-CLASS=*UNCHANGED)). Values other than *STD are allowed only for calendar jobs.

RESOURCES = *STD / *UNCHANGED / *PARAMETERS(...)

Values for run priority, CPU time and maximum number of SYSLST records.

RESOURCES = *STD

Values for run priority, CPU time and maximum number of SYSLST records remain unchanged.

RESOURCES = *UNCHANGED

The job is assigned the default values for run priority, CPU time and maximum number of SYSLST records for its job class.

RESOURCES = *PARAMETERS(...)

The run priority, CPU time and maximum number of SYSLST records can be changed within the limits permitted for the job class. The operand value *UNCHANGED means that the relevant attribute is not changed.

RUN-PRIORITY = *STD / *UNCHANGED / <integer 30..255>

Run priority which the job is to be assigned. The lower the value, the higher the priority. The values can be queried with the SHOW-USER-ATTRIBUTES and SHOW-JOB-CLASS commands.

RUN-PRIORITY = *STD

The standard run priority specified for the job class applies.

CPU-LIMIT = *STD / *UNCHANGED / <integer 1..32767 seconds>

Maximum CPU time, in seconds, that the batch job may consume. The maximum time permitted depends on the job class specified. See also [section "Time limits in BS2000" on page 1-103](#).

CPU-LIMIT = *STD

The default value for the chosen job class applies.

SYSLST-LIMIT = *STD / *UNCHANGED / <integer 0..999999>

Designates the maximum number of records output by the job to the system files SYSLST, SYSLST01, SYSLST02, ..., SYSLST99. Data records in the system file SYSOUT that are simultaneously written to SYSLST are not counted. This value must not be above the limit set in the job class definition. This limit may be queried using the SHOW-JOB-CLASS command.

If the specified number is exceeded:

- in batch mode, the job is terminated abnormally
- in interactive mode, the user may specify whether the job is to be continued or terminated. If continued, output is repeated up to the maximum number of records.

SYSLST-LIMIT = *STD

The default value for the chosen job class applies.

RERUN-AFTER-CRASH = *UNCHANGED / *NO / *YES

The operand is not evaluated for repeat jobs. Specifies whether the batch job is to be restarted during the next system session if processing has been aborted as the result of a system error or termination of the system session.

JOB-PARAMETER = *UNCHANGED / *NO / <c-string 1..127>

Specifies additional attributes for the selected job class - assuming that systems support has defined some and made them known.

JOB-PARAMETER = *NO

No additional attributes.

JOB-PARAMETER = <c-string 1..127>

String of freely-selectable characters issued by the system administrator to identify further job class attributes.

FLUSH-AFTER-SHUTDOWN = *UNCHANGED / *NO / *YES

This operand is ignored for calendar jobs. Specifies whether the batch job is to be removed from the job queue if it has not been processed by the end of the session.

LOGGING = *UNCHANGED / *PARAMETERS(...)

Controls the logging of the job progress.

LOGGING = *PARAMETERS(...)

LISTING = *UNCHANGED / *NO / *YES

Specifies whether the job run is also to be logged on SYSLST.

PROTECTION = *UNCHANGED / *NONE / *CANCEL

Specifies whether a job is to be protected against being canceled unintentionally with the CANCEL-JOB command.

PROTECTION = *NONE

The job is not protected against unintentional cancelation.

PROTECTION = *CANCEL

The job is protected against unintentional cancelation. When an interactive job is terminated with the CANCEL-JOB command, the system demands an additional confirmation from the user. This is to avoid unintentional cancelation of a job, for instance through incorrect entry of the job number.

JOB-NAME = *UNCHANGED / *NO / <name 1..8>

The name of the job. The job can be accessed using this name (e.g. using SHOW-JOB-STATUS). Jobs that are started without a name being specified are also given this name.

Return codes

(SC2)	SC1	Maincode	Meaning
	0	CMD0001	No error
2	0	CMD0002	Warning: job in wait state due to lack of resources
	1	CMD0202	Syntax error
	32	CMD0221	system error
	64	JMS0630	Semantic error (see SYSOUT message)
	64	JMS0640	MONJV error, illegal access or invalid time of call
	130	JMS0620	Memory saturation

Notes

Combinations of the START and REPEAT-JOB operands

START=	REPEAT-JOB=		
	*AT-STREAM-STARTUP	*DAILY or *WEEKLY	*PERIOD
*IMMEDIATELY or *SOON	a)	c)	c)
*AT or *EARLIEST	a)	d)	f)
*LATEST or *WITHIN	a)	c)	g)
*AT-STREAM-STARTUP	b)	e)	e)

Table 65: START and REPEAT-JOB operand combinations in the MODIFY-JOB command

- a) The first and all subsequent starts of the job take place as specified.
- b) The first start of the job is made with START=*AT-STREAM-STARTUP. All further starts take place after the startup of the job scheduler with START=*SOON.
- c) The base time for the repetition cycle is the time the job is accepted.
- d) The specified point in time (START=..., TIME=...) is the base time for the repetition cycle.
- e) The first start of the job follows startup of the job scheduler. This point in time is the base time for the repetition cycle. Further starts take place with START=*SOON.
- f) The specified point in time (START=..., TIME=...) is the base time for the repetition cycle. The second and all further starts take place with START=*SOON.

- g) The base time for the repetition cycle is the time the job is accepted. All further starts take place with START=*SOON.

Validity of operand combinations depending on job status and batch job type

Regardless of batch job type, all job attributes can be modified for TYPE 1 queued jobs (job status = waiting), with the following exceptions:

- The START and RERUN-AFTER-CRASH attributes must not be modified for repeat jobs.
- Modification of the LIMIT attribute is allowed for calendar jobs only.

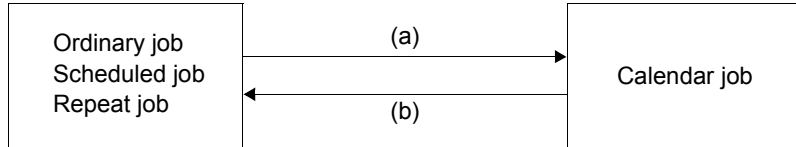
With running jobs (TYPE 2; job status = running), the valid job attribute combinations depend on the batch job type. The following table shows which combinations are allowed:

Job attribute	Batch job type		
	Ordinary job/ scheduled job	Repeat job	Calendar job
JOB-CLASS	-	-	-
JOB-PRIORITY	-	-	X
JOB-PARAMETER	-	-	X
SCHEDULING-TIME=*PARAMETERS(...)			
START	-	-	-
REPEAT	X	X	-
SCHEDULING-TIME=*BY-CALENDAR(...)	X	-	X
RERUN-AFTER-CRASH	X		X
LIMIT			X
RESOURCES=*PARAMETERS(...)			
RUN-PRIORITY	X	X	X
CPU-LIMIT	X	X	X
SYSLST-LIMIT	-	-	-
FLUSH-AFTER-SHUTDOWN	X	X	
LOGGING=*PARAMETERS(...)			
LISTING	-	-	-
PROTECTION	X	X	X
JOB-NAME	X	X	X
X allowed ignored - rejected with error message			

Table 66: Valid changes to job attributes using MODIFY-JOB depending on batch job type

Changing the batch job type

Modifying job attributes with the MODIFY-JOB command may also cause the batch job type to change:



- a) Specifying SCHEDULING-TIME=*BY-CALENDAR(...) turns the job into a calendar job.
- b) A calendar job is turned into an ordinary job, a scheduled job or a repeat job by one of the following specifications:
 - SCHEDULING-TIME=*PARAMETERS(...), with the new batch job type being governed by the START and REPEAT operands
 - JOB-CLASS=*STD or <name>, but without SCHEDULING-TIME=*CALENDAR(...); the new batch job type then depends on the default values for the START and REPEAT job attributes as defined in the job class

As there are interrelationships between individual job attributes, changing the batch job type may also have consequences for job attributes which are not explicitly modified with the MODIFY-JOB command. The following job attributes lose their significance for the new batch job type and are reset to the associated default value, accompanied by a message to that effect:

New batch job type	Implicitly modified job attributes
Calendar job	FLUSH-AFTER-SHUTDOWN=*NO
Repeat job	RERUN-AFTER-CRASH=*NO LIMIT=*STD
scheduled job	LIMIT=*STD
Ordinary job	LIMIT=*STD

Table 67: Job attributes modified implicitly when the batch job type is changed with MODIFY-JOB

Releasing wait states

The following wait states applying to TYPE 1 user jobs can be released using the MODIFY-JOB command:

- HELD-BY-COMMAND (see the HOLD-JOB command)
This wait state can be released by changing the start attributes to START=*IMMEDIATELY. Any wait state that applies simultaneously due to a lack of resources (waiting for pubset import or TSN release) is retained and a corresponding warning is issued.
- HELD-BY-CALENDAR
This wait state can be released by specifying a new calendar file (CALENDAR-NAME) which is located on an accessible pubset. The wait state is also released if the calendar job is converted into a different batch job type by specifying SCHEDULING-TIME=*PARAMETERS(START=*IMMEDIATE, ...) (see also [page 4-176](#)).
- HELD-BY-PUBSET and HELD-BY-TSN
These wait states are released by changing the start attributes to START=*AT(...) or *EARLIEST(...) and specifying a start time in the future. The availability of the resources is not checked until the currently set start time is reached.

MODIFY-JOB-CLASS

Modify limits and weight of job classes

Description status:	BS2000 OSD/BC V10.0A
Functional area:	Job processing
Domain:	JOB
Privileges:	TSOS OPERATING
Routing code:	J

Function

The MODIFY-JOB-CLASS command allows systems support to alter the limits and weights of job classes. The job limits and weight of job classes are defined by means of the JMU statement DEFINE-JOB-CLASS. The modifications, which are valid until the next MODIFY-JOB-CLASS command or until the end of the session, apply only to those jobs that have not yet been released for starting.

CLASS-LIMIT=0 should only be declared briefly, if at all, after startup in order to prevent any jobs being started that could hinder the activation of the job schedulers at this stage. A message is output on the console if the command is executed successfully.

The modified values can be displayed using the SHOW-SYSTEM-STATUS command.

The default value *UNCHANGED in the corresponding operands means that the previously valid definition still applies.

Format

MODIFY-JOB-CLASS	Alias: MDJCL
CLASS-NAME = <name 1..8> CLASS-LIMIT = * <u>UNCHANGED</u> / <integer 0..4095> CLASS-WEIGHT = * <u>UNCHANGED</u> / <integer 1..9> CLASS-OPTIMUM = * <u>UNCHANGED</u> / <integer 0..4095>	

Operands

CLASS-NAME = <name 1..8>

Name of the job class whose attributes are to be modified.

CLASS-LIMIT = *UNCHANGED / <integer 0..4095>

Defines the maximum number of jobs which may run at any given time in the specified job class.

A job transferred to the class scheduler for starting will be rejected if the CLASS-LIMIT has already been reached.

As soon as the value has fallen below the CLASS-LIMIT again, the scheduler managing the job classes is informed of this.

The only exceptions to this are express jobs, which can be started even when the class limit is reached.

CLASS-WEIGHT = *UNCHANGED / <integer 1..9>

Defines the weight of the job classes relative to each other.

This operand affects the selection of the job class from which a job is to be started. The higher the value for CLASS-WEIGHT, the greater is the weight and the urgency to start a job from the selected class.

CLASS-OPTIMUM = *UNCHANGED / <integer 0..4095>

Defines the ideal number of jobs in the job class which should be executed in order to reach a specific job mix in the system.

Return codes

(SC2)	SC1	Maincode	Meaning
	0	CMD0001	No error
	1	CMD0202	Syntax error
	32	CMD0221	System error
	64	JMS0630	Semantic error
	64	JMS0640	Command cannot be executed

Example

```

/show-job-class jcb00050
%NAME.....:JCB00050
%CLASS LIMIT...:20
%CLASS OPTIMUM.:0
%WEIGHT.....:6
%JOB PRIORITY..:DEFAULT=9           MAXIMUM= 9
%JOB ATTRIBUTES:JOBTYPE=BATCH      ST-ATTR= BATCH
%BATCH ALLOWED.:YES
%DIALOG ALLOWED:NO
%TP ALLOWED....:YES
%RUN PRIORITY..:DEFAULT=210        MAXIMUM= 209
%NO CPU LIMIT..:NO
%CPU LIMIT.....:DEFAULT=50         MAXIMUM= 50
%SYSLST LIMIT..:DEFAULT=NO-LIMIT   MAXIMUM= NO-LIMIT
%SYSOPT LIMIT..:DEFAULT=NO-LIMIT   MAXIMUM= NO-LIMIT
%START.....:DEFAULT=SOON           ALLOWED= SOON EARLY AT LATE IN STUP
%REPEAT JOB....:DEFAULT=NO         ALLOWED= NO STUP DAILY WEEKLY PERIOD
%JOB PARAMETER.:UNDEFINED
JCB00050 IS AVAILABLE TO:
ALL USERS

```

```

/mod-job-class jcb00050,class-limit=100,class-weight=5
% JMS0022 '/MODIFY-JOB-CLASS' COMMAND PROCESSED

```

```

/show-job-class jcd00050
%NAME.....:JCB00050
%CLASS LIMIT...:100
%CLASS OPTIMUM.:0
%WEIGHT.....:5
%JOB PRIORITY..:DEFAULT=9           MAXIMUM= 9
%JOB ATTRIBUTES:JOBTYPE=BATCH      ST-ATTR= BATCH
%BATCH ALLOWED.:YES
%DIALOG ALLOWED:NO
%TP ALLOWED....:YES
%RUN PRIORITY..:DEFAULT=210        MAXIMUM= 209
%NO CPU LIMIT..:NO
%CPU LIMIT.....:DEFAULT=50         MAXIMUM= 50
%SYSLST LIMIT..:DEFAULT=NO-LIMIT   MAXIMUM= NO-LIMIT
%SYSOPT LIMIT..:DEFAULT=NO-LIMIT   MAXIMUM= NO-LIMIT
%START.....:DEFAULT=SOON           ALLOWED= SOON EARLY AT LATE IN STUP
%REPEAT JOB....:DEFAULT=NO         ALLOWED= NO STUP DAILY WEEKLY PERIOD
%JOB PARAMETER.:UNDEFINED
JCB00050 IS AVAILABLE TO:
ALL USERS

```

MODIFY-JOB-OPTIONS

Modify job logging parameters

Description status:	BS2000 OSD/BC V10.0A
Functional area:	Job processing
Domain:	JOB
Privileges:	STD-PROCESSING HARDWARE-MAINTENANCE OPERATING SAT-FILE-EVALUATION SAT-FILE-MANAGEMENT SECURITY-ADMINISTRATION TSOS

Function

The MODIFY-JOB-OPTIONS command controls the following for the user's own job:

- the form in which system messages are output (INFORMATION-LEVEL operand)
- the output of console messages (OPERATOR-INTERACTION operand)
- the maximum number of output records in SYSLST (SYSLST-LIMIT operand)
- the logging of the current job (LOGGING operand).

The SHOW-JOB-OPTIONS command lists the current settings.

Privileged functions

The privileged user (TSOS privilege) can change job monitoring for an ongoing job, i.e. start or stop job monitoring or assign another job variable for job monitoring (JOB-IDENTIFICATION and MONJV operands). The SHOW-JOB-STATUS command provides information about the current job monitoring for a task.

Format

MODIFY-JOB-OPTIONS	Alias: MDJO
<pre> INFORMATION-LEVEL = *<u>UNCHANGED</u> / *STD / *MEDIUM / *MINIMUM , OPERATOR-INTERACTION = *<u>UNCHANGED</u> / *STD / *NO / *YES , SYSLST-LIMIT = *<u>UNCHANGED</u> / *STD / *NO-LIMIT / <integer 0..999999> , LOGGING = *<u>PARAMETERS</u> (...) *PARAMETERS(...) LISTING = *<u>UNCHANGED</u> / *STD / *NO / *YES HARDCOPY = *<u>UNCHANGED</u> / *STD / *NO / *YES , JOB-IDENTIFICATION = *<u>OWN</u> / *TSN(...) / *MONJV(...) *TSN(...) TSN = <alphanumeric-name 1..4> *MONJV(...) MONJV = <filename 1..54 without-gen-vers> , MONJV = *<u>UNCHANGED</u> / *NO / <filename 1..54 without-gen-vers> </pre>	

Operands

INFORMATION-LEVEL =

Format in which system messages are output.

INFORMATION-LEVEL = *UNCHANGED

The value last defined in a MODIFY-JOB-OPTIONS command in the course of the current job applies (current assignment). If no value has been defined, *MEDIUM applies.

INFORMATION-LEVEL = *STD

Equivalent to specifying *MEDIUM.

INFORMATION-LEVEL = *MEDIUM

System messages are output in abbreviated form.

INFORMATION-LEVEL = *MINIMUM

System messages are output in coded form.

OPERATOR-INTERACTION =

Specifies whether console messages and operator replies are to be output. Operator commands for controlling the current job (e.g. a change in priority), as well as general warning and error messages for the operator are not considered here.

OPERATOR-INTERACTION = *UNCHANGED

The value last defined in a MODIFY-JOB-OPTIONS command in the course of the current job applies (current assignment). If a value is not yet defined, *NO applies.

OPERATOR-INTERACTION = *STD / *NO

No console message or operator responses are output.

OPERATOR-INTERACTION = *YES

Console message and operator responses are output.

SYSLST-LIMIT =

Maximum number of records that may be spooled out to SYSLST during the currently executing job.

Output records for SYSOUT are not taken into account, even if the setting LISTING=*YES has been made to ensure that they are also written to SYSLST.

This specification must not exceed the limit specified in the job class definition (this limit can be checked with the SHOW-JOB-CLASS command).

In batch mode, if the specified value is reached during logging, the job is terminated abnormally. In interactive mode, the system asks whether the job is to be ended or continued; if the job is continued, the counter is set to zero and the specified value again applies.

SYSLST-LIMIT = *UNCHANGED

The value last defined in the course of the current job remains valid (specified at job start or last defined a MODIFY-JOB-OPTIONS command).

SYSLST-LIMIT = *STD

The value specified in the job class definition applies.

SYSLST-LIMIT = *NO-LIMIT

There is no limit on the number of records that can be output to SYSLST in the course of the current job.

If there is a lower value specified in the job class definition, *NO-LIMIT is rejected.

SYSLST-LIMIT = <integer 0..999999>

Specifies the maximum number of records that can be output to SYSLST in the course of the current job. This value must not be above the limit set in the job class definition.

LOGGING = *PARAMETERS(...)

Information on logging of the job run.

LISTING =

Specifies whether the job run is also to be logged on SYSLST.

Console messages and operator replies (OPERATOR-INTERACTION operand) are supplemented with the time of day when logged on SYSLST.

System messages requiring an answer from the user, and the message ABNORMAL PROGRAM TERMINATION, are not logged.

In line mode, logging proceeds by lines, i.e. NL control characters are interpreted.

In format mode (menu), logging takes place continuously, i.e. in the log the format is destroyed, NL control characters are not interpreted.

LISTING = *UNCHANGED

The value last defined in the course of the current job applies (defined when the job was started or last set with the MODIFY-JOB-OPTIONS command).

LISTING = *STD / *NO

The job run is not to be logged on SYSLST.

LISTING = *YES

The job run is also to be logged on SYSLST.

HARDCOPY =

This operand is ignored in batch mode.

Specifies whether the job run is also to be logged on a hardcopy printer.

Formats (menus) cannot be logged.

HARDCOPY = *UNCHANGED

The value last defined in the course of the current job applies (defined when the job was started or last set with the MODIFY-JOB-OPTIONS command).

HARDCOPY = *STD / *NO

The job run is not to be logged on a hardcopy printer.

HARDCOPY = *YES

The job run is also to be logged on a hardcopy printer.

JOB-IDENTIFICATION =

This operand is only available to the privileged user.

Specifies the job for which job monitoring is to be changed. The job can be identified by means of the TSN or the job variable monitoring it.

JOB-IDENTIFICATION = *OWN

Job monitoring is to be changed for the user's own task. The settings for INFORMATION-LEVEL, OPERATOR-INTERACTION, SYSLST-LIMIT and LOGGING can only be changed for the user's own task.

JOB-IDENTIFICATION = *TSN(...)

Identifies the job by means of its TSN.

TSN = <alphanum-name 1..4>

Task sequence number of the required job.

JOB-IDENTIFICATION = *MONJV(...)

Identifies the job by means of its monitoring job variable.

MONJV = <filename 1..54 without-gen-vers>

Name of the job variable which is monitoring the required job. The job variable's catalog ID must match the catalog ID of the computer on which the command is issued.

MONJV = *UNCHANGED / *NO / <filename 1..54 without-gen-vers>

This operand is only available to the privileged user.

Specifies whether job monitoring should be changed for the job specified in the operand.

MONJV = *NO

The job is not to be monitored. If it is being monitored, job monitoring is terminated.

MONJV = <filename 1..54 without-gen-vers>

Specifies the job variable which is to monitor the required job . If the job was already being monitored by a job variable, job monitoring is passed on to the new job variable.

Return codes

(SC2)	SC1	Maincode	Meaning
	0	CMD0001	Command executed
	1	CMD0202	Syntax error
	32	CMD0221	System error
	64	JMS0630	Semantic error (see SYSOUT message)

Examples

Example 1

```

/mod-job-opt inf-level=*min,oper-interact=*yes,log=*par(list=*yes) ----- (1)
/show-job-opt
%
% INFORMATION-LEVEL = MINIMUM OPERATOR-INTERACTION = YES
% SYSLST-LIMIT = NO-LIMIT SYSOPT-LIMIT = NO-LIMIT
% LOGGING : LISTING = YES HARDCOPY = NO
/xxx
% CMD0186 XXX
/mod-job-opt inf-level=*med ----- (2)
/xxx
% CMD0186 OPERATION NAME 'XXX' UNKNOWN
/mod-job-opt log=*par(list=*no) ----- (3)

```

- (1) The following specifications are in effect:
 - coded form of messages on SYSOUT
 - logging of console messages and operator answers on SYSOUT
 - logging on SYSLST
- (2) The specifications are modified to:
 - unabbreviated message output on SYSOUT
- (3) Logging on SYSLST is deactivated.

Example 2

```

/mod-job-opt syslst-limit=100
/show-job-opt
%
% INFORMATION-LEVEL = MEDIUM OPERATOR-INTERACTION = YES
% SYSLST-LIMIT = 100 SYSOPT-LIMIT = NO-LIMIT
% LOGGING : LISTING = NO HARDCOPY = NO
/show-file-attr output=*syslst
% SSM2222 SPECIFIED MAXLST LIMIT REACHED. CONTINUE? REPLY (Y=YES; N=NO)?n
GROUP: :20SG:$USERXY01.MAX.GROUP.2
BASE: 0011 FIRST: 0011 CURRENT: 0013
%(MSG) % % EXC0736 ABNORMAL TASK TERMINATION. ERROR CODE 'SSM2223': /HELP-MSG SSM2223
%(MSG) % % EXC0420 /LOGOFF PROCESSED. CPU TIME USED: 4.2455 SEC, USER ID: USERXY01,
TASK ID: 004C01F3

```

A limit of 100 records is specified for output to SYSLST. The SHOW-FILE-ATTRIBUTES output is directed to SYSLST, the record limit being reached. Message *SSM2222* is answered with *N* (NO). The task is terminated abnormally.

Example 3

```

/ass-syslst lst.file _____ (1)
/mod-job-opt syslst-limit=10,log=*par(list=*yes) _____ (2)
/show-file-attr alt.lst.,output=*syslst _____ (3)
% SSM2222 SPECIFIED MAXLST LIMIT REACHED. CONTINUE? REPLY (Y=YES; N=NO)?y
% SSM2222 SPECIFIED MAXLST LIMIT REACHED. CONTINUE? REPLY (Y=YES; N=NO)?y
% SSM2222 SPECIFIED MAXLST LIMIT REACHED. CONTINUE? REPLY (Y=YES; N=NO)?y
%:20SG: PUBLIC:      12 FILES RES=      462 FRE=      187 REL=      177 PAGES
%:20SG: PUB/S2:      3 FILES RES=      570 FRE=          3 REL=          3 PAGES
/ass-syslst *primary _____ (4)
/show-file lst.file _____ (5)

```

```

(IN) /mod-job-opt syslst-limit=10,log=*par(list=*yes)
(IN) /show-file-attr alt.lst.,output=*syslst
AFILE STATUS
-----
FILENAME                                PAM-    FREE-
                                         PAGES  PAGES
-----
(OUT) % SSM2222 SPECIFIED MAXLST LIMIT REACHED. CONTINUE? REPLY (Y=
(IN)  Y
-----
:20SG:$USER1.ALT.LST.BIND                6      1
#:20SG:$USER1.ALT.LST.CMD                90     1
#:20SG:$USER1.ALT.LST.CMDIMPL           381    2
:20SG:$USER1.ALT.LST.CMP.040-041         30     16
:20SG:$USER1.ALT.LST.CMP.040-042         18     0
:20SG:$USER1.ALT.LST.CMP.040-043         21     1
:20SG:$USER1.ALT.LST.CMP.040-044         6      6
(OUT) % SSM2222 SPECIFIED MAXLST LIMIT REACHED. CONTINUE? REPLY (Y=
(IN)  Y
+                                     S*SOF+          1( 1)

```

```

#:20SG:$USER1.ALT.LST.DOMAIN              99     0
:20SG:$USER1.ALT.LST.RECALL              24     21
:20SG:$USER1.ALT.LST.SPOOL043            6      6
:20SG:$USER1.ALT.LST.START-CMD           30     24
:20SG:$USER1.ALT.LST.START-CMD.SYN       75     21
:20SG:$USER1.ALT.LST.START-KDO.DOMAIN    174    70
:20SG:$USER1.ALT.LST.SYNTAXVERSION       42     0
:20SG:$USER1.ALT.LST.SYSSII              30     21
(OUT) % SSM2222 SPECIFIED MAXLST LIMIT REACHED. CONTINUE? REPLY (Y=
(IN)  Y
-----
PUBLIC SPACE:      12 FILES      462
PUB/S2 SPACE:      3 FILES      570
-----
(OUT) :20SG: PUBLIC:      12 FILES RES=      462 FRE=      187 REL=
(NL)  :20SG: PUB/S2:      3 FILES RES=      570 FRE=          3 REL=
(IN)  ass-syslst *p
% SH00301 WARNING: END OF FILE REACHED
-                                     S*SOF+          24( 1)

```

MODIFY-JOB-OPTIONS

- (1) The system file SYSLST is assigned file *LST.FILE*.
- (2) Logging to SYSLST is activated and a limit of 10 records specified.
- (3) Output from SHOW-FILE-ATTRIBUTES for all files starting with *LST.* is effected to SYSLST.
The record limit is executed twice (message *SSM2222* is answered with *Y* (YES)).
- (4) The system file SYSLST receives the primary assignment again.
- (5) The SHOW-FILE command displays the contents of logging file *LST.FILE*.

MODIFY-JOB-STREAM

Modify execution priority of stream task

Description status:	BS2000 OSD/BC V10.0A
Functional area:	Job processing
Domain:	JOB
Privileges:	TSOS OPERATING
Routing code:	J

Function

The MODIFY-JOB-STREAM command allows system administrators to change the task scheduling priority defined with the JMU DEFINE-JOB-STREAM statement and to modify stream-specific parameters.

The modifications are valid until the next MODIFY-JOB-STREAM command or until the end of the session.

The default value *UNCHANGED in the corresponding operands means that the previously valid definition still applies.

Format

MODIFY-JOB-STREAM	Alias: MDJSR
STREAM-NAME = <name 1..8> RUN-PRIORITY = * <u>UNCHANGED</u> / <integer 30..255> STREAM-PARAMETER = * <u>UNCHANGED</u> / * NO / <c-string 1..127>	

Operands

STREAM-NAME = <name 1..8>

Name of the job stream whose attributes are to be modified.

RUN-PRIORITY = *UNCHANGED / <integer 30..255>

Increases or decreases the program priority of the stream task.

STREAM-PARAMETER = *UNCHANGED / **NO** / <c-string 1..127>

Defines whether stream-specific parameters are to be interpreted.

In addition to the standard scheduler and individual job scheduler can also interpret this operand.

Return codes

(SC2)	SC1	Maincode	Meaning
	0	CMD0001	No error
	32	CMD0221	System error
	64	JMS0630	Semantic error
	64	JMS0640	Command cannot be executed
	132	JMS0620	Saturation reached

Example

```

/show-job-stream jsstd1
REQUESTED DETAILS OF JOB STREAM: JSSTD1
NAME.....:JSSTD1
FILE.....:SYSENT.JOBSCHED.170
RUN PRIORITY...:130
DEFAULT.....:YES
START.....:AT-LOAD
STOP.....:AT-SHUTDOWN
STREAMPARAM   :JOB-PRIORITY=Y,CPU-TIME=Y,WAIT-TIME=Y,JOB-QUOTA=30,      LOGG
ING=NO
/mod-job-stream jsstd1,run-prio=100
%  JMS0022 '/MODIFY-JOB-STREAM' COMMAND PROCESSED

/show-job-stream jsstd1
REQUESTED DETAILS OF JOB STREAM: JSSTD1
NAME.....:JSSTD1
FILE.....:SYSENT.JOBSCHED.170
RUN PRIORITY...:100
DEFAULT.....:YES
START.....:AT-LOAD
STOP.....:AT-SHUTDOWN
STREAMPARAM   :JOB-PRIORITY=Y,CPU-TIME=Y,WAIT-TIME=Y,JOB-QUOTA=30,      LOGG
ING=NO

```

MODIFY-JOB-SWITCHES

Toggle job switches

Description status:	BS2000 OSD/BC V10.0A
Functional area:	Job processing
Domain:	JOB
Privileges:	STD-PROCESSING HARDWARE-MAINTENANCE SAT-FILE-EVALUATION SAT-FILE-MANAGEMENT SECURITY-ADMINISTRATION

Function

With the MODIFY-JOB-SWITCHES command, users can set (ON), clear (OFF) or invert (INVERT) their job switches.

For every job there are 32 job switches available (numbered 0 to 31). At the beginning of the job they are cleared and can be changed while the job is running:

- explicitly, with the MODIFY-JOB-SWITCHES command,
- implicitly, with the SET-JOB-STEP command (clears switches 16 to 31), or by means of utility routines (see [section “Job switches” on page 1-78](#)).

At the end of a job, all job switches are again cleared.

The current settings of the job switches can be queried using SHOW-JOB-SWITCHES.

Format

MODIFY-JOB-SWITCHES	Alias: MDJSW
ON = <u>*UNCHANGED</u> / list-poss(32): <integer 0..31> ,OFF = <u>*UNCHANGED</u> / <u>*ALL</u> / list-poss(32): <integer 0..31> ,INVERT = <u>*UNCHANGED</u> / list-poss(32): <integer 0..31>	

Operands

ON = *UNCHANGED / list-poss(32): <integer 0..31>

Job switches to be set to ON.

OFF = *UNCHANGED / *ALL / list-poss(32): <integer 0..31>

Job switches to be set to OFF. Specifying OFF=*ALL sets all job switches to OFF.

INVERT = *UNCHANGED / list-poss(32): <integer 0..31>

Job switches to be inverted.

The job switches specified are set from ON to OFF, or from OFF to ON.

Note

In one MODIFY-JOB-SWITCHES command, a job switch cannot be explicitly modified, i.e. switched on or off or inverted, more than once.

Return codes

(SC2)	SC1	Maincode	Meaning
	0	CMD0001	Command executed
	1	CMD0202	Contradictory entries
	32	EXC0041	System error

Examples

```

/show-job-sw
  ALL TASK SWITCHES SET OFF
/mod-job-sw on=(4,5) ----- (1)
/show-job-sw
  TASK SWITCHES ON EQUAL-
  4, 5
/mod-job-sw on=10,off=4,invert=1 ----- (2)
/show-job-sw
  TASK SWITCHES ON EQUAL-
  1, 5, 10
    
```

- (1) Job switches 4 and 5 are set to one.
- (2) Job switch 10 is set to one, 4 is cleared, and 1 is inverted, i.e. changed from OFF to ON.

MODIFY-JV

Modify contents of job variable

Description status:	JV V15.1A
Functional area:	Job variables
Domain:	JOB-VARIABLES
Privileges:	STD-PROCESSING HARDWARE-MAINTENANCE OPERATING SAT-FILE-EVALUATION SAT-FILE-MANAGEMENT SECURITY-ADMINISTRATION
Routing code:	J

This function is only available to the user if the chargeable software product JV has been loaded as a subsystem.

Function

The MODIFY-JV command modifies the contents of a job variable. All or part of the JV is given a new value (SET-VALUE operand). The value being set may be specified directly as a character string or derived from another JV.

Privileged functions

Privileged users (OPERATING privilege and the TSOS user ID) can modify the contents of any user job variable.

By default, systems support (TSOS privilege) is a co-owner of all the job variables (and therefore possesses the same access rights). When SECOS is used, this co-ownership can be restricted for permanent job variables.

Format

MODIFY-JV	Alias: MDJV
<p>JV-CONTENTS = <filename 1..54 without-gen-vers> / [*SUBSTRING](...) / *LINK(...)</p> <p>[*SUBSTRING](...)</p> <ul style="list-style-type: none"> JV-NAME = <filename 1..54 without-gen-vers> ,POSITION = <u>1</u> / <integer 1..256> ,LENGTH = *REST / <integer 1..256> <p>*LINK(...)</p> <ul style="list-style-type: none"> LINK-NAME = <alphanum-name 1..7> ,POSITION = <u>1</u> / <integer 1..256> ,LENGTH = *REST / <integer 1..256> <p>,SET-VALUE = <c-string 1..254 with-low> / <x-string 1..508> / <filename 1..54 without-gen-vers> / [*SUBSTRING](...) / *LINK(...)</p> <p>[*SUBSTRING](...)</p> <ul style="list-style-type: none"> JV-NAME = <filename 1..54 without-gen-vers> ,POSITION = <u>1</u> / <integer 1..256> ,LENGTH = *REST / <integer 1..256> <p>*LINK(...)</p> <ul style="list-style-type: none"> LINK-NAME = <alphanum-name 1..7> ,POSITION = <u>1</u> / <integer 1..256> ,LENGTH = *REST / <integer 1..256> <p>,PASSWORD = *NONE / <c-string 1..4> / <x-string 1..8> / <integer -2147483648..2147483647> / *SECRET</p>	

Operands

JV-CONTENTS = <filename 1..54 without-gen-vers> / *SUBSTRING(...) / *LINK(...)

Specifies the job variable contents which are to be changed.

A JV can be identified by its name or by its link name. Optionally, a subarea may be specified. The contents of the JV, or the specified subarea, are changed to the value specified in the SET-VALUE operand.

JV-CONTENTS = <filename 1..54 without-gen-vers>

Name of the JV. The contents of the entire JV are modified.

JV-CONTENTS = *SUBSTRING(...)

The contents of the subarea identified by POSITION and LENGTH are modified. If POSITION and LENGTH are not specified, the contents of the entire JV are modified.

JV-NAME = <filename 1..54 without-gen-vers>

Name of the JV.

POSITION = 1 / <integer 1..256>

Position within the JV from which the change is to begin. An undefined area ahead of this position is filled with blanks.

LENGTH = *REST / <integer 1..256>

Number of characters to be changed.

The sum of the numeric values specified in the POSITION and LENGTH operands must not exceed 257.

LENGTH = *REST

The length of the JV value starting from the position specified in the POSITION operand up to position 256 applies. If the number of characters transferred is less than the number specified by the *REST operand, no blank padding is performed; the subsequent area is (again) undefined.

JV-CONTENTS = *LINK(...)

The JV is identified by a link name. If POSITION and LENGTH are not specified, the contents of the entire JV are modified; if they are, the contents of the specified subarea are modified.

LINK-NAME = <alphanum-name 1..7>

Link name of the JV.

POSITION = 1 / <integer 1..256>

Position within the JV from which the change is to begin. An undefined area ahead of this position is filled with blanks.

LENGTH = *REST / <integer 1..256>

Number of characters to be changed.

The sum of the numeric values specified in the POSITION and LENGTH operands must not exceed 257.

LENGTH = *REST

The length of the JV value starting from the position specified in the POSITION operand up to position 256 applies. If the number of characters transferred is less than the number specified by the *REST operand, no blank padding is performed; the subsequent area is (again) undefined.

**SET-VALUE = <c-string 1..254 with-low> / <x-string 1..508> /
<filename 1..54 without-gen-vers> / *SUBSTRING(...) / *LINK(...)**

New value for the JV contents specified in the JV-CONTENTS operand. The value to be set may be

- It may be entered directly as a string (<c-string> or <x-string>); in the case of a C string the uppercase/lowercase distinction is significant.
- It may be derived from a JV identified by its name or its link name; a subarea may be specified.

If the value being supplied is longer than the value being changed, it is truncated; if it is shorter, it is padded with blanks.

The command is rejected if

- the JV specified does not exist
- the JV specified is not set (has no value)
- there is no access right for the specified JV
- the subarea of the JV indicated by POSITION and LENGTH is not fully defined.

SET-VALUE = <filename 1..54 without-gen-vers>

Name of the JV. The entire value of this JV is taken as the new value.

SET-VALUE = *SUBSTRING(...)

The contents of the subarea identified by POSITION and LENGTH are taken as the new value. If no subarea is specified, the contents of the entire JV are taken.

JV-NAME = <filename 1..54 without-gen-vers>

Name of the JV.

POSITION = 1 / <integer 1..256>

Position within the JV from which the transfer is to be made.

LENGTH = *REST / <integer 1..256>

Number of characters to be transferred.

The sum of the numeric values specified in the POSITION and LENGTH operands must not exceed 257.

LENGTH = *REST

The length of the current JV value starting from the position specified in the POSITION operand applies.

SET-VALUE = *LINK(...)

The contents of a JV identified by its link name are taken as the new value. If no subarea is specified, the contents of the entire JV are taken; if a subarea is specified, the contents of the specified subarea are used

LINK-NAME = <alphanum-name 1..7>

Link name of the JV.

POSITION = 1 / <integer 1..256>

Position within the JV from which the transfer is to be made.

LENGTH = *REST / <integer 1..256>

Number of characters to be transferred.

The sum of the numeric values specified in the POSITION and LENGTH operands must not exceed 257.

LENGTH = *REST

The length of the current JV value starting from the position specified in the POSITION operand applies.

PASSWORD = *NONE / <c-string 1..4> / <x-string 1..8> / <integer -2147483648..2147483648> / *SECRET

Write or read password for the JV to be changed.

The PASSWORD operand has the following special characteristics:

- The input field is automatically blanked out in the guided dialog.
- In unguided dialog and foreground procedures, the entry *SECRET or ^, SDF provides a blanked out input field for inputting the password .
- The password entered is not logged.

Return codes

(SC2)	SC1	Maincode	Meaning
	0	CMD0001	Command executed
1	0	CMD0001	No action necessary
2	0	CMD0001	Command executed with a warning
	1	CMD0202	Syntax error
	32	CMD0221	System error
	64	JVS04E0	Command not executable in the call environment; if possible, remove cause of error (see SYSOUT message JVS04xx)
	130	JVS04E1	Command cannot be executed at this time; for cause see SYSOUT message JVS04xx
	130	CMD2282	Subsystem JV not available for indefinite time

Example

```
/mod-jv jv=hugo, set-val='I like SDF' _____ (1)
/show-jv hugo
%I like SDF
```

```
/mod-jv jv=*link(lina),set-val=hugo _____ (2)
/show-jv *link(lina)
%I like SDF
```

```
/mod-jv jv=(hugo,8,4),set-val=*link(lora,128,4) _____ (3)
/show-jv hugo
%I like milk
```

```
/mod-jv jv=*link(lina,8,6),set-val=x'839686868585' _____ (4)
/show-jv *link(lina)
%I like coffee
```

- (1) The job variable HUGO is set to the value 'I like SDF'.
- (2) The contents of the job variable HUGO are transferred to the job variable identified by the link name LINA.
- (3) The contents of bytes 128 - 131 of the job variable identified by the link name LORA are transferred to bytes 8 - 11 of the job variable HUGO.
- (4) Bytes 8 - 13 of the job variable identified by the link name LINA are set to the value X'839686868585'.

MODIFY-JV-ATTRIBUTES

Modify job variable attributes

Description status:	JV V15.1A
Functional area:	Job variables
Domain:	JOB-VARIABLES
Privileges:	STD-PROCESSING HARDWARE-MAINTENANCE SAT-FILE-EVALUATION SAT-FILE-MANAGEMENT SECURITY-ADMINISTRATION
Routing code:	\$ (with NBCONOPI=N) or J (with NBCONOPI=Y)

This function is only available to the user if the chargeable software product JV has been loaded as a subsystem.

Function

The MODIFY-JV-ATTRIBUTES command modifies the catalog entry of a JV. The user can change the name of the JV (NEW-NAME), as well as redefine the protection attributes of a permanent JV:

- read/write access to the JV (ACCESS), component of standard access control,
- access by other user IDs (USER-ACCESS), part of standard access control,
- access rights which are assigned with the protection attribute BASIC-ACL, extended access control,
- protection by guards (GUARDS operand)
- passwords for the JV (WRITE-PASSWORD/READ-PASSWORD),
- retention period for the JV (RETENTION-PERIOD),
- release of the lock imposed on a monitoring JV (MONJV-PROTECTION).
- HSMS management class (MANAGEMENT-CLASS operand)

The catalog entry of a JV which is monitoring an executing job can only be modified if the lock is released. The catalog entry of a JV which is used in CJC commands and macros can likewise not be modified (information can be obtained via the SHOW-CJC-STATUS command).

Privileged functions

By default, systems support (TSOS privilege) is a co-owner of all the job variables (and can therefore also modify their catalog entries). When SECOS is used, this co-ownership can be restricted for permanent job variables.

Format

(Part 1 of 2)

MODIFY-JV-ATTRIBUTES	Alias: MDJVA
<pre> JV-NAME = <filename 1..54 without-gen-vers> , NEW-NAME = <u>*SAME</u> / <filename 1..54 without-gen-vers> , PROTECTION = <u>*UNCHANGED</u> / [*PARAMETERS](...) [*PARAMETERS](...) ACCESS = <u>*UNCHANGED</u> / *WRITE / *READ , USER-ACCESS = <u>*UNCHANGED</u> / *OWNER-ONLY / *ALL-USERS , BASIC-ACL = <u>*UNCHANGED</u> / *NONE / *PREVIOUS / [*PARAMETERS](...) [*PARAMETERS](...) OWNER = <u>*UNCHANGED</u> / *NO-ACCESS / [*PARAMETERS](...) [*PARAMETERS](...) READ = <u>*UNCHANGED</u> / *NO / *YES , WRITE = <u>*UNCHANGED</u> / *NO / *YES , GROUP = <u>*UNCHANGED</u> / *NO-ACCESS / [*PARAMETERS](...) [*PARAMETERS](...) READ = <u>*UNCHANGED</u> / *NO / *YES , WRITE = <u>*UNCHANGED</u> / *NO / *YES , OTHERS = <u>*UNCHANGED</u> / *NO-ACCESS / [*PARAMETERS](...) [*PARAMETERS](...) READ = <u>*UNCHANGED</u> / *NO / *YES , WRITE = <u>*UNCHANGED</u> / *NO / *YES , GUARDS = <u>*UNCHANGED</u> / *NONE / [*PARAMETERS](...) [*PARAMETERS](...) READ = <u>*UNCHANGED</u> / *NONE / <filename 1..18 without-cat-gen-vers> , WRITE = <u>*UNCHANGED</u> / *NONE / <filename 1..18 without-cat-gen-vers> </pre>	


```

,WRITE-PASSWORD = *UNCHANGED / *NONE / <c-string 1..4> / <x-string 1..8> /
<integer -2147483648..2147483647> / *SECRET
,READ-PASSWORD = *UNCHANGED / *NONE / <c-string 1..4> / <x-string 1..8> /
<integer -2147483648..2147483647> / *SECRET
,RETENTION-PERIOD = *UNCHANGED / <integer 0..32767 days>
,MONJV-PROTECTION = *UNCHANGED / *NO
,MANAGEMENT-CLASS = *UNCHANGED / *NONE / <composed-name 1..8>

```

Operands

JV-NAME = <filename 1..54 without-gen-vers>

Existing name of the JV.

Nonprivileged users may specify their own user ID only.

NEW-NAME = *SAME / <filename 1..54 without-gen-vers>

New name for the JV. Default value SAME, i.e. no new name for the JV.

A new name can be specified explicitly with catalog ID and user ID, but any attempt to change the previous catalog or user IDs is rejected as an error.

When renaming a permanent JV to a temporary JV, the protection attributes must be left at their default values (see the CREATE-JV command) or be set explicitly to the default values in the PROTECTION operand. Default settings for the protection attributes:

ACCESS=*WRITE, USER-ACCESS=*OWNER-ONLY, BASIC-ACL=*NONE, WRITE-PASSWORD=*NONE, READ-PASSWORD=*NONE, RETENTION-PERIOD=0

PROTECTION =

Protection attributes of the JV.

PROTECTION = *UNCHANGED

The protection attributes remain unchanged.

A change in the protection attributes is not permissible for temporary JVs.

PROTECTION = *PARAMETERS(...)

Specifies which protection attributes are to be changed.

*UNCHANGED is the default value for all protection attributes: A protection attribute is only changed if the desired value is explicitly specified.

For temporary JVs, only the default values are permitted. Since only the creating job can access temporary JVs, no protection is required against foreign access.

If more than one access control mechanism is specified for a JV, the strongest mechanism activated applies. The table below lists the types of access control that exist, the corresponding protection attributes and their hierarchy (protection levels):

Access control method	Protection attribute	Prot. level
Standard access control	ACCESS and USER-ACCESS	0
Basic access control list	BASIC-ACL	1
Access control via guards	PASSWORD	2

Table 68: Hierarchy of access control methods

All other protection attributes of the file (e.g. passwords) are evaluated independently, without regard to the implemented protection level.

ACCESS = *UNCHANGED / *WRITE / *READ

Write access (implicit read access) or only read access to the JV.

USER-ACCESS = *UNCHANGED / *OWNER-ONLY / *ALL-USERS

Specifies whether external user IDs may access the JV.

BASIC-ACL = *UNCHANGED / *NONE / *PREVIOUS / *PARAMETERS(...)

Specifies whether a BACL is to be activated, changed or turned off for the job variable.

BASIC-ACL = *NONE

An activated basic ACL is turned off for the JV. The access control is thereby effected in accordance with the values of USER-ACCESS and ACCESS (standard access control).

BASIC-ACL = *PREVIOUS

An already existing BASIC-ACL entry is not changed.

If the JV is not protected by a basic ACL, a BASIC-ACL entry is created. Thereby the values of the standard access control (ACCESS and USER-ACCESS) are taken over into the BASIC-ACL entry in accordance with the following table:

Standard access control		BASIC-ACL protection					
USER-ACCESS	ACCESS	OWNER		GROUP		OTHERS	
		R	W	R	W	R	W
OWNER-ONLY	WRITE	Y	Y	N	N	N	N
OWNER-ONLY	READ	Y	N	N	N	N	N
ALL-USERS	WRITE	Y	Y	Y	Y	Y	Y
ALL-USERS	READ	Y	N	Y	N	Y	N

Table 69: Standard access control/BASIC-ACL

BASIC-ACL = *PARAMETERS(...)

The BASIC-ACL is activated for the job variable or individual access rights of an existing BASIC-ACL are changed. The read and write access rights can be explicitly set or denied for each user class. User classes are:

- OWNER, i.e. user ID of the owner and systems support
- GROUP, i.e. all user IDs which belong to the group of the owner (except the owner and systems support). Definition of user groups is possible only when the software product SECOS is used. With regard to the possible use of SECOS, the same rights should be allocated for GROUP as for OTHERS.
- OTHERS, i.e. all user IDs which do not belong to the group of the owner.

BASIC-ACL is activated if the value *NO-ACCESS or *PARAMETERS is specified for at least one authorized user. In this case, the corresponding access authorization is set to “no access right” for those authorized users for whom the value *UNCHANGED was not changed (corresponds to specifying *NO-ACCESS).

OWNER = *UNCHANGED / *NO-ACCESS / *PARAMETERS(...)

Specifies which access rights are to be set for the owner. For a newly activated BASIC-ACL, *UNCHANGED is treated in the same way as *NO-ACCESS. With *NO-ACCESS, the owner has no access rights.

OWNER = *PARAMETERS(...)

The owner’s access rights are entered as specified:

READ = *UNCHANGED / *NO / *YES

Specifies whether read authorization is set.

*UNCHANGED is the default value, i.e. no read authorization (corresponds to *NO) when BASIC-ACL is reactivated.

WRITE = *UNCHANGED / *NO / *YES

Specifies whether write authorization is specified.

Write authorization does *not* imply read authorization. *UNCHANGED is the default value, i.e. no read authorization (corresponds to *NO) when BASIC-ACL is reactivated.

GROUP = *UNCHANGED / *NO-ACCESS / *PARAMETERS(...)

Specifies which access rights are to be set for all user IDs from the group of the owner. Without SECOS, that is all user IDs which do not belong to a group other than that of the owner. For a newly activated BASIC-ACL, *UNCHANGED is treated in the same way as *NO-ACCESS. With *NO-ACCESS, GROUP has no access rights.

GROUP = *PARAMETERS(...)

Access rights are to be set as specified:

READ = *UNCHANGED / *NO / *YES

Specifies whether read authorization is set.

*UNCHANGED is the default value, i.e. no read authorization (corresponds to *NO) when BASIC-ACL is reactivated.

WRITE = *UNCHANGED / *NO / *YES

Specifies whether write authorization is specified.

Write authorization does *not* imply read authorization. *UNCHANGED is the default value, i.e. no read authorization (corresponds to *NO) when BASIC-ACL is reactivated.

OTHERS = *UNCHANGED / *NO-ACCESS / *PARAMETERS(...)

Specifies which access rights are to be set for user IDs which do not belong to the group of the owner. If SECOS is not used, access rights should be set as for GROUP with regard to an analysis for future use of SECOS. For a newly activated BASIC-ACL, *UNCHANGED is treated in the same way as *NO-ACCESS. With *NO-ACCESS, OTHERS has no access rights.

OTHERS = *PARAMETERS(...)

Access rights are to be set as specified:

READ = *UNCHANGED / *NO / *YES

Specifies whether read authorization is set.

*UNCHANGED is the default value, i.e. no read authorization (corresponds to *NO) when BASIC-ACL is reactivated.

WRITE = *UNCHANGED / *NO / *YES

Specifies whether write authorization is specified.

Write authorization does *not* imply read authorization. *UNCHANGED is the default value, i.e. no read authorization (corresponds to *NO) when BASIC-ACL is reactivated.

GUARDS = *UNCHANGED / *NONE / *PARAMETERS(...)

Specifies whether access control via GUARDS is to be activated or modified for the JV.

GUARDS = *NONE

Access to the JV is not (is no longer) to be controlled via GUARDS.

GUARDS = *PARAMETERS(...)

Any existing access control via GUARDS for the JV is to be modified as specified. If no protection by guards has been defined for the JV, access control via GUARDS is activated only if a value other than *UNCHANGED is specified for at least one of the READ or WRITE operands.

Access to the file is controlled via a guard, i.e. a specific object identifying all the conditions subject to which access will be granted: such as date, time and user ID. The GUARDS function unit of the chargeable software product SECOS (see the "SECOS" manual [35]) must be installed in order to create and maintain a guard. Each guard is uniquely identified by its name. Guard names resemble JV names: they are made up of two parts, the user ID (optional) and the name part (up to 8 characters). If no user ID is specified explicitly, the user's own ID is added implicitly. Each access mode can be controlled by a separate guard. If no guard is assigned for an access mode (*NONE), access control will refuse any corresponding access (e.g. WRITE=*NONE prevents all write access). Specifying GUARDS=*PARAMETERS defines access control via GUARDS with all access modes being set to the default value *NONE, i.e. neither read access to the JV nor write or execute access is allowed.

The GUARDS subsystem is not required in order to define access control via GUARDS. The appropriate checks by GUARDS are not performed until the JV is actually accessed: If a guard has been defined but is not available, all access of the type controlled by that guard is prohibited. No access at all is possible if the GUARDS subsystem is not available at the time of access.

READ = *UNCHANGED / *NONE / <filename 1..18 without-cat-gen-vers>

Name of a guard controlling read access (up to 8 characters if no user ID is specified). The default value is *NONE, i.e. no read access is granted.

WRITE = *UNCHANGED / *NONE / <filename 1..18 without-cat-gen-vers>

Name of a guard controlling write access (up to 8 characters if no user ID is specified). The default value is *NONE, i.e. no write access is granted.

WRITE-PASSWORD = *UNCHANGED / *NONE / <c-string 1..4> / <x-string 1..8> / <integer -2147483648..2147483647> / *SECRET

Write or read password for the JV to be modified. The WRITE-PASSWORD operand has the following special characteristics:

- The input field is automatically blanked out in the guided dialog.
- In unguided dialog and foreground procedures, the entry *SECRET or ^, SDF provides a blanked out input field for inputting the password .
- The password entered is not logged.

WRITE-PASSWORD = *NONE

No password for the JV. Any write password that may have been defined is removed.

READ-PASSWORD = *UNCHANGED / *NONE / <c-string 1..4> / <x-string 1..8> / <integer -2147483648..2147483647> / *SECRET

Password for protection against unauthorized reading. The READ-PASSWORD operand has the following special characteristics:

- The input field is automatically blanked out in the guided dialog.
- In unguided dialog and foreground procedures, the entry *SECRET or ^, SDF provides a blanked out input field for inputting the password .
- The password entered is not logged.

password:change (job variable)READ-PASSWORD = *NONE

No password for the JV. Any read password that may have been defined is removed.

RETENTION-PERIOD = *UNCHANGED / <integer 0..32767 days>

Retention period in days. In the catalog entry, the date in output field *EXPIR-DATE* is set to a value computed from the current date and the specified number of days. The JV is protected against being modified or deleted up to this date. The time for the defined expiration date is currently entered as 00:00:00 hours in the catalog. Specifying RETENTION-PERIOD=0 causes the expiration date to be set to the current date, thereby canceling any retention period set.

MONJV-PROTECTION = *UNCHANGED / *NO

Specifies whether the lock on the specified monitoring JV is to be retained. The system automatically locks monitoring job variables against write access until the job being monitored is ended.

MONJV-PROTECTION = *NO

Any lock present is to be removed. The user should ensure that the monitored job has already been removed from the job queue (SHOW-JOB-STATUS).

MANAGEMENT-CLASS = *UNCHANGED / *NONE / <composed-name 1..8>

Only for job variables on SM pubsets Specifies whether the HSMS functions JV backup and (long-term) archival are to be controlled via a management class defined via HSMS. See the "HSMS, Volume 1" manual [18] for further details. Assignment of a management class is rejected in the following cases:

- the JV is to be created on an SF pubset
- the specified management class has not been defined for the SM pubset

Return codes

(SC2)	SC1	Maincode	Meaning
	0	CMD0001	Command executed
1	0	CMD0001	No action necessary
2	0	CMD0001	Command executed with a warning
	1	CMD0202	Syntax error
	32	CMD0221	System error
	64	JVS04E0	Command not executable in the call environment; if possible, remove cause of error (see SYSOUT message JVS04xx)
	130	JVS04E1	Command cannot be executed at this time; for cause see SYSOUT message JVS04xx
	130	CMD2282	Subsystem JV not available for indefinite time

Example

```

/create-jv jv=test
/show-jv-attr jv=test,inf=*all-attr
%0000000 :LEO:$USER1.TEST
% USER-ACC   = OWNER-ONLY   ACCESS       = WRITE
% CRE-DATE   = 2012-01-09   EXPIR-DATE = 2012-01-09
% CRE-TIME   = 16:09:36    EXPIR-TIME = 00:00:00
% READ-PASS  = NONE
% WRITE-PASS = NONE
%SUM 000001 JV'S; JV-VALUE = 00000000 BYTES

/mod-jv-attr jv=test,new-name=probe _____ (1)

/mod-jv-attr jv=probe,prot=(user-access=*all-users,write-pass=c'feh1',
ret-per=10) _____ (2)
/show-jv-attr jv=probe,inf=*all-attr
%0000000 :LEO:$USER1.PROBE
% USER-ACC   = ALL-USERS   ACCESS       = WRITE
% CRE-DATE   = 2012-01-09   EXPIR-DATE = 2012-01-19
% CRE-TIME   = 16:09:36    EXPIR-TIME = 00:00:00
% READ-PASS  = NONE
% WRITE-PASS = YES
%SUM 000001 JV'S; JV-VALUE = 00000000 BYTES

/add-pass pass=c'feh1' _____ (3)

/del-jv jv=probe _____ (4)
% JVS04A3 ERROR WHEN DELETING JOB VARIABLE ':LEO:$USER1.PROBE'
% JVS04B6 EXPIRATION DATE FOR JOB VARIABLE NOT YET REACHED. COMMAND REJECTED
/

```

- (1) The job variable TEST is renamed PROBE.
- (2) The JV PROBE is made accessible to all users and receives a write password. It also cannot be modified or deleted for a period of 10 days.
- (3) The write password is added to the password table.
- (4) Because of the retention period of 10 days, the DELETE-JV command is rejected.

MODIFY-JV-CONDITIONALLY

Conditionally modify JV contents and branch to label

Description status:	JV V15.1A
Functional area:	Job variables
Domain:	JOB-VARIABLES
Privileges:	STD-PROCESSING HARDWARE-MAINTENANCE SAT-FILE-EVALUATION SAT-FILE-MANAGEMENT SECURITY-ADMINISTRATION

This function is only available to the user if the chargeable software product JV has been loaded as a subsystem.

Function

The MODIFY-JV-CONDITIONALLY command checks the contents of the entire JV or of a subarea of it against a reference value (IF-VALUE operand). If it finds a match, it assigns the tested area a new value (SET-VALUE operand) and branches to the specified destination (LABEL operand). The value set in the event of a match may be specified directly as a character string or derived from another JV. If there is no match, the JV value remains unchanged and processing continues with the command following the MODIFY-JV-CONDITIONALLY command.

This command is permitted only in ENTER files and in procedures. In interactive mode it is rejected, and is therefore not offered as a menu option.

Note

During processing by MODIFY-JV-CONDITIONALLY (interval between comparing and modifying) the JV to be modified is protected against access by other jobs.

Format

MODIFY-JV-CONDITIONALLY	Alias: MDJVC
<pre> JV-CONTENTS = <filename 1..54 without-gen-vers> / [*SUBSTRING](...) / *LINK(...) [*SUBSTRING](...) JV-NAME = <filename 1..54 without-gen-vers> ,POSITION = <u>1</u> / <integer 1..256> ,LENGTH = <u>*REST</u> / <integer 1..256> *LINK(...) LINK-NAME = <alphanum-name 1..7> ,POSITION = <u>1</u> / <integer 1..256> ,LENGTH = <u>*REST</u> / <integer 1..256> ,IF-VALUE = <c-string 1..254 with-low> / <x-string 1..508> ,SET-VALUE = <c-string 1..254 with-low> / <x-string 1..508> / <filename 1..54 without-gen-vers> / *LINK(...) *LINK(...) LINK-NAME = <alphanum-name 1..7> ,LABEL = <u>*NONE</u> / <name 1..8> ,PASSWORD = <u>*NONE</u> / <c-string 1..4> / <x-string 1..8> / <integer -2147483648..2147483647> / *SECRET </pre>	

Operands

JV-CONTENTS = <filename 1..54 without-gen-vers> / *SUBSTRING(...) / *LINK(...)

Specifies the job variable contents which are to be checked and where appropriate changed.

A JV can be identified by its name or by its link name, and optionally a particular part of the contents can be specified.

The contents of the JV, or the specified subarea, are checked against the reference value specified in the IF-VALUE operand. If there is a match, the tested area is changed to the value specified in the SET-VALUE operand. If there is no match, the JV contents remain unchanged.

JV-CONTENTS = <filename 1..54 without-gen-vers>

Name of the JV. The contents of the entire JV are checked and where appropriate changed.

JV-CONTENTS = *SUBSTRING(...)

The contents of the subarea identified by POSITION and LENGTH are checked and where appropriate changed. If no subarea is specified, the contents of the entire JV are changed.

JV-NAME = <filename 1..54 without-gen-vers>

Name of the JV.

POSITION = 1 / <integer 1..256>

Position within the JV at which checking and where appropriate changing is to begin.

LENGTH = *REST / <integer 1..256>

Number of characters to be checked and where appropriate changed.

The sum of the numeric values specified in the POSITION and LENGTH operands must not exceed 257.

LENGTH = *REST

For the comparison, the length of the reference value applies; for the modification, the length of the JV value starting from the position specified in the POSITION operand up to position 256. If the value to be transferred is shorter, no blanks are appended but instead the area following is (again) undefined.

JV-CONTENTS = *LINK(...)

The JV is identified by a link name. If POSITION and LENGTH are not specified, the contents of the entire JV are checked and, if necessary, modified; if they are, the contents of the specified subarea are modified.

LINK-NAME = <alphanum-name 1..7>

Link name of the JV.

POSITION = 1 / <integer 1..256>

Position within the JV at which checking and where appropriate changing is to begin.

LENGTH = *REST / <integer 1..256>

Number of characters to be checked and where appropriate changed. The sum of the numeric values specified in the POSITION and LENGTH operands must not exceed 257.

LENGTH = *REST

For the comparison, the length of the reference value applies; for the modification, the length of the JV value starting from the position specified in the POSITION operand up to position 256. If the value to be transferred is shorter, no blanks are appended but instead the area following is (again) undefined.

IF-VALUE = <c-string 1..254 with-low> / <x-string 1..508>

Reference value against which the JV contents specified in the JV-CONTENTS operand are to be checked. The reference value must be specified as a string (<c-string> or <x-string>); in the case of a C string the uppercase/lowercase distinction is significant. If the comparison value is longer than the number of characters to be compared, it is truncated; if it is shorter, it is padded with blanks.

SET-VALUE = <c-string 1..254 with-low> / <x-string 1..508> / <filename 1..54 without-gen-vers> / *LINK(...)

New value that the JV contents specified in the JV-CONTENTS operand will be given if the existing value matches the reference value (IF-VALUE). The value to be set may be

- specified directly as a character string (<c-string> or <x-string>); C strings are case-sensitive
- derived from a JV identified by name or link name.

If the value to be transferred is longer than the number of characters to be set, it is truncated; if it is shorter, it is padded with blanks.

The command is rejected if

- the JV specified does not exist
- the JV specified is not set (has no value)
- there is no access right for the specified JV.

SET-VALUE = <filename 1..54 without-gen-vers>

Name of the JV. The entire contents of this JV are taken as the new value.

SET-VALUE = *LINK(...)

The contents of a JV identified by its link name are taken as the new value.

LINK-NAME = <alphanum-name 1..7>

Link name of the JV.

LABEL = *NONE / <name 1..8>

(Non-S) label that identifies the command line (branch destination) at which processing is to be continued if the current JV value matches the reference value (IF-VALUE). If there is no match, processing continues with the next command. The default value is *NONE, i.e. processing resumes with the next command. In this case, the command result (condition satisfied or not satisfied) in S procedures or dialog blocks can be derived from the command return code. For evaluation purposes, the next command must be SAVE-RETURNCODE since no error condition is present.

PASSWORD = *NONE / <c-string 1..4> / <x-string 1..8> / <integer -2147483648..2147483647> / *SECRET

Write or read password for the JV to be modified. The PASSWORD operand has the following special characteristics:

- The input field is automatically blanked out in the guided dialog.
- In unguided dialog and foreground procedures, the entry *SECRET or ^, SDF provides a blanked out input field for inputting the password .
- The password entered is not logged.

Return codes

(SC2)	SC1	Maincode	Meaning
	0	CMD0001	Command executed because condition was satisfied
1	0	CMD0001	No action necessary as condition was not satisfied
2	0	CMD0001	Command executed with a warning
	1	CMD0202	Syntax error
	32	CMD0221	System error
	64	JVS04E0	Command not executable in the call environment; if possible, remove cause of error (see SYSOUT message JVS04xx)
	130	JVS04E1	Command cannot be executed at this time; for cause see SYSOUT message JVS04xx
	130	CMD2282	Subsystem JV not available for indefinite time

Example

```

.....
.....
/ .RESRV  MOD-JV-COND  JV=*LINK(LOCK,8,4),IF-VAL='FREE',-
/                               SET-VAL=$SYSJV.TSN,LABEL=RESRVD _____ (1)
/                               WAIT-EVENT  UNTIL=*JV(TIME-LIMIT=10,TIMEOUT-LABEL=RESRV) _____ (2)
/ .RESRVD  REMARK      'Reservation successful'
.....
.....

```

- (1) In bytes 8 -11 of the job variable identified by the link name LOCK the TSN of the user's own task is entered, provided the old contents have the value 'FREE'. In this case, command processing is resumed at the label RESRVD.
- (2) If the contents are checked and found not to be equal to the value 'FREE', the MODIFY-JV-CONDITIONALLY command is called again after a wait time of 10 seconds.

MODIFY-MASTER-CATALOG-ENTRY

Delete entry from MRSCAT of home pubset

Description status:	BS2000 OSD/BC V10.0A
Functional area:	Pubset and MRSCAT management
Domain:	MULTI-CATALOG-AND-PUBSET-MGMT
Privileges:	TSOS
Routing code:	\$

Function

The values for a catalog entry in the MRSCAT of the home pubset which are preset with the ADD-MASTER-CATALOG-ENTRY command can be modified using this command, both for single-feature pubsets (SF pubsets) and for system-managed pubsets (SM pubsets).

Note that this command cannot be used to change the pubset type or a volume set entry. Any changes that are made do not take effect until the next time the pubset is imported (IMPORT-PUBSET command).

The availability of the catalog can be governed with the IMPORT-PUBSET command.

The default value *UNCHANGED in the relevant operands indicates that the previous specification remains valid.

Format

MODIFY-MASTER-CATALOG-ENTRY

ENTRY-NAME = <cat-id 1..4>

,PUBSET-TYPE = *BY-PUBSET / *SINGLE-FEATURE(...) / *SYSTEM-MANAGED(...)

*SINGLE-FEATURE(...)

START-SPEEDCAT = *UNCHANGED / *NO / *SPEEDCAT-TASK / *OWN-TASK

,PHYSICAL-ALLOCATION = *UNCHANGED / *ADMINISTRATOR-ONLY / *USER-ALLOWED

,NEXT-CATALOG-EXPORT = *UNCHANGED / *NO-CONVERSION / *V10-COMPATIBLE

(Part 1 of 2)

```

,ALLOCATION = *UNCHANGED / *PARAMETERS(...)
  *PARAMETERS(...)
    ,SATURATION-LEVEL4 = *UNCHANGED / *STD / <integer 66..2147483647 2Kbyte>
    ,PRIMARY-ALLOCATION = *UNCHANGED / *STD / <integer 1..16777215 2Kbyte>
    ,SECONDARY-ALLOCATION = *UNCHANGED / *STD / <integer 1..32767 2Kbyte>
    ,MAXIMAL-ALLOCATION = *UNCHANGED / *STD / <integer 1..32767 2Kbyte>
  *SYSTEM-MANAGED(...)
    ,CONTROL-VOLUME-SET = *UNCHANGED / <cat-id 1..4>
  ,PARTNER-NAME = *UNCHANGED / <alphanum-name 1..8>
  ,ACCESS-FAILURE = *UNCHANGED / *HOLD-JOBS / *CANCEL-JOBS
  ,RESIDENT-BUFFERS = *UNCHANGED / *NO / *YES
  ,NUMBER-OF-BUFFERS = *UNCHANGED / <integer 1..255>
  ,BATCH-WAIT-TIME = *UNCHANGED / <integer 0..2147483647 seconds>
  ,DIALOG-WAIT-TIME = *UNCHANGED / <integer 0..2147483647 seconds>
  ,SHARED-PUBSET = *UNCHANGED / *YES / *NO
  ,ACCESS-CONTROLLED = *UNCHANGED / *NO / *YES(...)
    *YES(...)
      ,USER-IDENTIFICATION = *UNCHANGED / <alphanum-name 1..8> / *TSOS
  ,EAM = *UNCHANGED / *PARAMETERS(...)
    *PARAMETERS(...)
      ,MAXIMAL-SIZE = *UNCHANGED / *STD / <integer 12..193536 2Kbyte>
      ,MINIMAL-SIZE = *UNCHANGED / *STD / <integer 12..193536 2Kbyte>
      ,SECONDARY-ALLOCATION = *UNCHANGED / *STD / <integer 1..193536 2Kbyte>
      ,VIRTUAL-MEMORY = *UNCHANGED / *STD / <integer 0..8192 2Kbyte>
  ,REMOTE-IMPORT = *UNCHANGED / *BY-CONNECTION / *BY-COMMAND-ONLY
  ,XCS-CONFIGURATION = *UNCHANGED / *NO / *YES
  ,PUBRES-UNIT = *UNCHANGED / <alphanum-name 2..2> / <x-text 4..4>

```

(Part 2 of 2)

Operands

ENTRY-NAME = <cat-id 1..4>

Catalog ID of the subset for which the MRSCAT entry is to be modified.

PUBSET-TYPE = *BY-PUBSET / *SINGLE-FEATURE(...) / *SYSTEM-MANAGED(...)

Defines the type of pubset for which the MRSCAT entry is to be modified. The pubset type itself cannot be changed. The attributes specific to a pubset type cannot be modified unless the pubset type is specified explicitly.

PUBSET-TYPE = *BY-PUBSET

The pubset type is read from the MRSCAT entry.

PUBSET-TYPE = *SINGLE-FEATURE(...)

The pubset for which the MRSCAT entry is to be modified is an SF pubset.

START-SPEEDCAT = *UNCHANGED / *NO / *SPEEDCAT-TASK / *OWN-TASK

Specifies whether or not SCA should be started when this pubset is imported.

START-SPEEDCAT = *NO

SCA should not be started when this pubset is imported.

START-SPEEDCAT = *SPEEDCAT-TASK

SCA should be available and should run under a separate task, the SPEEDCAT task.

START-SPEEDCAT = *OWN-TASK

SCA should be available and should run under the user's task.

PHYSICAL-ALLOCATION = *UNCHANGED / *ADMINISTRATOR-ONLY / *USER-ALLOWED

Specifies whether users are allowed to make direct allocations to specific volumes of the pubset.

PHYSICAL-ALLOCATION = *ADMINISTRATOR-ONLY

Users may not directly allocate the volumes of the pubset. This right is reserved for the privileged caller under TSOS.

PHYSICAL-ALLOCATION = *USER-ALLOWED

On this pubset, nonprivileged users should also be permitted to allocate individual volumes directly.

NEXT-CATALOG-EXPORT = *UNCHANGED / *NO-CONVERSION / *V10-COMPATIBLE

This operand is only still available for reasons of compatibility.

ALLOCATION = *UNCHANGED / *PARAMETERS(...)

Specifies whether or not particular allocation parameters should be set for file processing on the pubset.

ALLOCATION = *PARAMETERS(...)

Specifies allocation parameters for the pubset, with the values which follow.

SATURATION-LEVEL4 = *UNCHANGED / *STD /
<integer 66..2147483647 2Kbyte>

The allocation parameter is to be set for memory saturation level 4. If saturation levels have already been defined with the MODIFY-SPACE-SATURATION-LEVELS command, they should not be changed with the MODIFY-MASTER-CATALOG-ENTRY command because in that case there would be no checking of the saturation levels.

SATURATION-LEVEL4 = *STD

The value defined in the system parameter L4SPDEF is to apply.

SATURATION-LEVEL4 = <integer 66..2147483647 2Kbyte>

Value of memory saturation level 4 which is to apply to this pubset.

PRIMARY-ALLOCATION = *UNCHANGED / *STD /
<integer 1..16777215 2Kbyte>

The allocation parameter, for the primary allocation when a storage space request is made (file processing), is to be set.

PRIMARY-ALLOCATION = *STD

The value defined in the system parameter DMPRALL is to apply.

PRIMARY-ALLOCATION = <integer 1..16777215 2Kbyte>

The value to be applied for this pubset, for primary storage space allocations during file processing. This value will apply as the default value for any user who does not specify a value for an initial allocation in a storage space request.

SECONDARY-ALLOCATION = *UNCHANGED / *STD /
<integer 1..32767 2Kbyte>

The allocation parameter, for secondary allocations when a storage space request is made (file processing), is to be set.

SECONDARY-ALLOCATION = *STD

The value defined in the system parameter DMSCALL is to apply.

SECONDARY-ALLOCATION = <integer 1..32767 2Kbyte>

The value to be applied for this pubset, for secondary storage space allocations during file processing. This value will apply as the default value for any user who does not specify a value for another allocation in a storage space request.

MAXIMAL-ALLOCATION = *UNCHANGED / *STD / <integer 1..32767 2Kbyte>

The allocation parameter, for doubling the secondary allocation when a storage space request is made (file processing), is to be set.

MAXIMAL-ALLOCATION = *STD

The value defined in the system parameter DMMAXSC is to apply.

MAXIMAL-ALLOCATION = <integer 1..32767 2Kbyte>

The value to be applied for this pubset, for doubling of the secondary storage space allocation during file processing. This value will be the maximum value for any user, for whom the space remains inadequate even after a secondary allocation has been made. The value for the secondary allocation will be repeatedly doubled until the maximum value specified here is reached.

PUBSET-TYPE = *SYSTEM-MANAGED(...)

The pubset for which the MRSCAT entry is to be modified is an SM pubset.

CONTROL-VOLUME-SET = *UNCHANGED / <cat-id 1..4>

Specifies which volume set is to be used as the control volume set when the SM pubset is imported.

CONTROL-VOLUME-SET = <cat-id 1..4>

Indicates the catalog ID of the volume set which is to be used as the control volume set when the SM pubset is imported. The specified volume set must also be recorded as a control volume set in the SM pubset's configuration file.

PARTNER-NAME = *UNCHANGED / <alphanum-name 1..8>

BCAM name of the processor for remote file access (RFA). A processor may only be specified if no MSCF connection exists, but remote file access is required.

ACCESS-FAILURE = *UNCHANGED / *HOLD-JOBS / *CANCEL-JOBS

The specification is still accepted for reasons of compatibility and also stored in the MRSCAT. However, the system no longer evaluates this setting.

The system behavior when a connection to a pubset is lost is selected using the BATCH-WAIT-TIME or DIALOG-WAIT-TIME operand.

RESIDENT-BUFFERS = *UNCHANGED / *NO / *YES

Specifies whether resident or nonresident buffers are to be created.

RESIDENT-BUFFERS = *NO

Nonresident buffers are created.

RESIDENT-BUFFERS = *YES

Resident buffers are created.

NUMBER-OF-BUFFERS = *UNCHANGED / <integer 1..255>

Defines the number of buffers. The buffer specification is evaluated - according to the following hierarchy - only when the pubset is imported:

1. Explicit parameter specification in the IMPORT-PUBLIC-VOLUME-SET command
2. Specifications via the ADD- or MODIFY-MASTER-CATALOG-ENTRY command.

If only one of the operands RESIDENT-BUFFERS or NUMBER-OF-BUFFERS is specified, the default value applies to the other operand (RESIDENT-BUFFERS=*NO, NUMBER-OF-BUFFERS=32).

3. Specification according to system parameters CATBUFR and BMTNUM.

BATCH-WAIT-TIME = *UNCHANGED / <integer 0..2147483647 seconds>

Time in seconds that batch jobs are to wait for the availability of pubsets that cannot be accessed due to a connection failure. If the time specified is exceeded, command processing is aborted with an error code and the spin-off mechanism is triggered.

DIALOG-WAIT-TIME = *UNCHANGED / <integer 0..2147483647 seconds>

As with batch jobs, defines the wait time spread in the event of interactive accesses to pubsets in the QUIET status. If the time specified is exceeded, the interactive job receives a message and is resumed. The default value here is 30 seconds.

SHARED-PUBSET = *UNCHANGED / *NO / *YES

Determines the shareability of the pubset for local processors.

ACCESS-CONTROLLED = *UNCHANGED / *NO / *YES(...)

Specifies whether access to the pubset is to be restricted to one user ID.

ACCESS-CONTROLLED = *NO

Access to the pubset is not subject to any restrictions.

ACCESS-CONTROLLED = *YES(...)

Access to the pubset is to be restricted to one user ID. The IMPORT-PUBSET command is rejected with an error in the case of a shared pubset flagged as ACCESS-CONTROLLED=*YES.

USER-IDENTIFICATION = *UNCHANGED / <alphanum-name 1..8> / TSOS

Specifies the user ID which is to have access to the pubset.

USER-IDENTIFICATION = <alphanum-name 1..8>

Specifies a user ID, in addition to the TSOS user ID, which is to be permitted access to the pubset.

EAM = *UNCHANGED / *PARAMETERS(...)

Specifies the SYSEAM file parameters specific to this pubset.

EAM = *PARAMETERS(...)

Specifies the SYSEAM parameters which follow for the pubset.

MAXIMAL-SIZE = *UNCHANGED / *STD / <integer 12..193536 2Kbyte>

This operand is only supported for reasons of compatibility and is no longer evaluated.

MINIMAL-SIZE = *UNCHANGED / *STD / <integer 12..193536 2Kbyte>

Specifies the minimum size (number of half pages) that the SYSEAM file may occupy in the specified pubset.

MINIMAL-SIZE = *STD

The value specified in the system parameter EAMMIN is to apply.

MINIMAL-SIZE = <integer 12..193536>

Minimum size (number of half pages) that the SYSEAM file may occupy in the pubset.

SECONDARY-ALLOCATION = *UNCHANGED / *STD / <integer 1..193536 2Kbyte>
Specifies the secondary allocation for the SYSEAM file, for this pubset.

SECONDARY-ALLOCATION = *STD
The value specified in the system parameter EAMSEC is to apply.

SECONDARY-ALLOCATION = <integer 1..193536 2Kbyte>
Value of the secondary allocation for the SYSEAM file (number of half pages). This value should be a multiple of 24.

VIRTUAL-MEMORY = *UNCHANGED / *STD / <integer 0..8192 2Kbyte>
Specifies the number of half pages to be used in determining the size of the EAM cache area in class 4 memory. A cache area can only be created for the SYSEAM file of the home pubset. The parameter has no effect for any other pubsets.

VIRTUAL-MEMORY = *STD
The size of the EAM cache area will be determined from the value of the system parameter EAMMEM.

VIRTUAL-MEMORY = <integer 0..8192 2Kbyte>
The number of half pages specified here determines the size of the EAM cache area.

REMOTE-IMPORT = *UNCHANGED / *BY-CONNECTION / *BY-COMMAND-ONLY
Defines how the remote import status can be changed.

REMOTE-IMPORT = *BY-CONNECTION
The change is made on connection setup.

REMOTE-IMPORT = *BY-COMMAND-ONLY
The remote import status can only be changed by a command.

XCS-CONFIGURATION = *UNCHANGED / *NO / *YES
For shared pubset only: Defines whether the pubset may be automatically imported as an XCS pubset when a new XCS network is established.

XCS-CONFIGURATION = *NO
The pubset must not be imported automatically as an XCS pubset. (The pubset may nonetheless be used as an XCS pubset using the SET-XCS-PUBSET command.)

XCS-CONFIGURATION = *YES
The pubset is to be imported automatically as an XCS pubset by the MSCF subsystem when a new XCS network is established.

PUBRES-UNIT = *UNCHANGED / <alphanum-name 2..2> / <x-text 4..4>
Mnemonic device name (MN) of the pubres of the SF pubset or of the volres of the SM pubset. VM2000 requires this entry when the pubset is specified by means of its catalog ID.

Return codes

(SC2)	SC1	Maincode	Meaning
	0	CMD0001	Command executed without error
2	0	CMS0002	Disk error
	1	CMS0011	Syntax error
	1	CMS0314	Syntax error in entry name or error in wildcard specification
	32	CMD0221	Internal system error
	32	CMS031F	MRSCAT parameter error
	32	CMS0310	Error during privilege checking
	32	CMS0317	MRSCAT is locked
	32	CMS0318	Synchronization error
	64	CMS0010	No authorization for command
	64	CMS0312	MRSCAT entry not found
	64	CMS0319	Pubset type conflict

Note

For handling of the buffer specifications, see the notes under the IMPORT-PUBSET command.

Example

Locally modifying catalog entries and importing pubsets (MPVS)

A, BAD and DAT are pubsets which are to be accessed locally via a single host. A is the home pubset.

The following commands must be issued:

```

/MOD-MAST ENTRY=   BAD,SHARE-PUB = *YES,
                   DIALOG-WAIT = 30, BATCH-WAIT = 28800

/MOD-MAST ENTRY=   DAT

/IMP-PUB PUBSET =  BAD,USE=*SHARE

/IMP-PUB PUBSET =  DAT
    
```

The MRSCAT catalog directory in the home pubset contains the following lines:

```

PUBSET   A:LOCAL-HOME
PUBSET   BAD:LOCAL-IMPORTED,SHARED,MASTER-HOST=OWN-HOST
PUBSET   DAT:LOCAL-IMPORTED
    
```

MODIFY-MEMORY-PARAMETERS

Modify settings for managing the big page memory

Description status:	BS2000 OSD/BC V10.0A
Functional area:	System control and optimization
Domain:	SYSTEM-MANAGEMENT SYSTEM-TUNING
Privileges:	OPERATING TSOS
Routing code:	R

This command is rejected on S servers with the message EMM2350.

Function

On SQ servers (as of SQ200) part of the main memory is made available as a big page memory for CISC FW compilation (1 big page is 4 Mbytes in size and contains 512 frames, each of 8 Kbytes). When the system starts, `BIG-PAGE-QUOTA` in the `MEMORY` parameter set is used as a planned value for defining the percentage of the total main memory which is used as big page memory. The actual size of the big page memory is dependent on other factors, such as the possible number of logical machines (CPUs) and the minimum main memory.

No configurable big page memory exists on SQ servers of the type SQ 100. However, the future model series of the SQ servers will support big pages in the same way as the SX160 (see the relevant Release Notice).

The `MODIFY-MEMORY-PARAMETERS` command enables systems support to specify, while the system is operating, the management parameters of the big page memory from which the actual size of the big page memory is derived.

The following two management parameters can be modified using this command:

1. The percentage of main memory used for big pages is modified (`BIG-PAGE-QUOTA` operand). This specification is a should-be value. When the value is modified the following must be taken into account:
 - Increasing this percentage during command execution does not result in the big page memory being increased; this only happens the next time the minimum size of the real main memory is increased (`MINIMAL-MEMORY-SIZE`) on SX150 or when the main memory is increased (`MEMORY-SIZE`) on SX160. Explicit specification or modification of a minimum main memory is only possible for VM2000 guest systems. In the case of BS2000 systems operated in native mode, the minimum size is always equal to the size of the main memory. The size can therefore only be increased implicitly by means of dynamic reconfiguration.

- A reduction of this percentage can only lead to a reduction of the big page memory during command execution if REDUCE-BIG-PAGES=*ON-QUOTA-EXCESS is specified and unused big pages exist.
2. The specification of whether and in which situation big page memory can be reduced is modified (REDUCE-BIG-PAGES operand). The following settings must be distinguished:
- The big page memory may never be reduced.
 - The big page memory may only be reduced when there is a threat of core saturation.
 - The big page memory may only be reduced if its size exceeds the BIG-PAGE-QUOTA set. In this case big pages can be reduced within the command, in a subsequent command call with a lower percentage specification, or in the event of a memory reduction.

The settings “threatened core saturation” and “BIG-PAGE-QUOTA exceeded” can also be combined. Used big pages can also be requested back by CISC FW and then reduced.

If big pages are reduced during command execution, the message EMM2309 shows the new size of the big page memory.

Information on the configuration of the main memory, including the use of big pages, is provided by the SHOW-MEMORY-CONFIGURATION command.

Details of managing big pages are described in the context of main memory administration in the “Introduction to System Administration” [14].

Format

MODIFY-MEMORY-PARAMETERS
BIG-PAGE-QUOTA = <u>*UNCHANGED</u> / <integer 0..99> REDUCE-BIG-PAGES = <u>*UNCHANGED</u> / *NO / list-poss(2): *ON-QUOTA-EXCESS / *ON-CORE-SATURATION

Operands

BIG-PAGE-QUOTA = *UNCHANGED / <integer 0..99>

Specifies the percentage of main memory which is to be used for big pages.

BIG-PAGE-QUOTA = *UNCHANGED

The percentage defined at system startup using the MEMORY parameter or using a preceding MODIFY-MEMORY-PARAMETERS command is not modified.

BIG-PAGE-QUOTA = <integer 0..99>

New percentage of main memory which is to be used for big pages.

REDUCE-BIG-PAGES = *UNCHANGED / *NO / list-poss(2): *ON-QUOTA-EXCESS / *ON-CORE-SATURATION

Specifies whether and in which situation big pages may be reduced and become available as normal main memory. The default is *UNCHANGED, i.e. the setting is not modified.

REDUCE-BIG-PAGES = *NO

Big pages are never reduced.

REDUCE-BIG-PAGES = *ON-QUOTA-EXCESS

Big pages are to be reduced if the existing size of the big page memory exceeds the percentage assigned (see BIG-PAGE-QUOTA).

REDUCE-BIG-PAGES = *ON-CORE-SATURATION

Big pages are to be reduced only if there is a threat of CORE saturation but this can be prevented by canceling a big page in the normal main memory. This value is also set at system startup.

The two reduction situations *ON-QUOTA-EXCESS and *ON-CORE-SATURATION can be combined by being specified in a list.

Return codes

(SC2)	SC1	Maincode	Meaning/Guaranteed messages
1	0	CMD0001	Command executed
	0	CMD0001	Warning: Operation has already taken place for object or no action was required
2	0	CMD0001	Warning: Operation has already taken place for object but could have negative consequences
	1	CMD2201	Interface error between SDF and command server
	3	CMD2203	SDF version not supported
	32	EMM2800	Internal error Garanteed message: EMM2828
	64	CMD0216	Privileges error
	130	EMM2807	Operation cannot be executed due to lack of resources Garanteed message: EMM2829

MODIFY-MIP-OPTIONS

Modify the MIP diagnostic settings

Description status:	MIP V19.0A
Functional area:	Message processing
Domain:	MESSAGE-PROCESSING
Privileges:	TSOS

Function

The MODIFY-MIP-OPTIONS command enables you to modify the diagnostic settings for message processing. In MIP you can specify that a dump should be taken for diagnostic purposes when a particular message is issued. The following settings are possible:

- Activate/deactivate dump
- Specify triggering message code
- Specify maximum number of dumps
- Take user or system dump
- Continue or terminate triggering task

Format

MODIFY-MIP-OPTIONS

```

DUMP = *UNCHANGED / *NO / *YES
,DUMP-MSG = *UNCHANGED / <alphanum-name 7..7>
,DUMP-LIMIT = *UNCHANGED / *NO-LIMIT / <integer 1..100>
,DUMP-TYPE = *UNCHANGED / *USER / *SYSTEM
,TASK-STOP = *UNCHANGED / *YES / *NO

```

Operands

DUMP = *UNCHANGED / *NO / *YES

Specifies whether a dump should be taken if a particular message is issued (specified in the DUMP-MSG operand). DUMP=*NO is preset for message processing at system startup.

DUMP-MSG = *UNCHANGED / <alphanum-name 7..7>

Determines, via the message code, the message which is to trigger a dump when DUMP=*YES is specified.

At system startup no message key for triggering a dump is specified.

DUMP-LIMIT = *UNCHANGED / *NO-LIMIT / <integer 1..100>

Specifies the maximum number of dumps which may be taken. No dump limit is specified at system startup (*NO-LIMIT).

DUMP-LIMIT = *NO-LIMIT

The number of dumps is unlimited.

DUMP-LIMIT = <integer 1..100>

Maximum number of dumps which can be taken.

DUMP-TYPE = *UNCHANGED / *USER / *SYSTEM

Determines whether a user or system dump is taken. User dumps are preset at system startup.

TASK-STOP = *UNCHANGED / *YES / *NO

Specifies whether the triggering task should be terminated. TASK-STOP=*NO is preset at system startup.

Return codes

(SC2)	SC1	Maincode	Meaning/Guaranteed messages
	0	CMD0001	Command executed without error Garanteed message: NMH1102
	64	CMD0216	Semantic error
	64	NMH1121	Internal error Garanteed message: NMH1121

MODIFY-MIP-PARAMETERS

Create/modify MIP parameter file, add/remove message files

Description status:	MIP V19.0A
Functional area:	Message processing
Domain:	MESSAGE-PROCESSING
Privileges:	TSOS

Function

The MODIFY-MIP-PARAMETERS command is used to modify the message file allocation table and the MIP parameter file and to create a new MIP parameter file. It can also add message files to the system and remove them from it. Any changes that are made apply throughout the system.

The SHOW-MIP-PARAMETERS command supplies information on the current settings of the MIP parameter file.

Note

The command will be processed even if a message file specified for removal is not in the message file allocation table.

Format

MODIFY-MIP-PARAMETERS

```

SCOPE = *TEMPORARY / *PERMANENT / *NEXT-SESSION(...)
          *NEXT-SESSION(...)
          | PARAMETER-FILE = *CURRENT / <filename 1..54 without-gen>
,ADD-MSG-FILE = *NONE / <filename 1..54 without-gen>
,REMOVE-MSG-FILE = *NONE / <filename 1..54 without-gen>

```

Operands

SCOPE = *TEMPORARY / *PERMANENT / *NEXT-SESSION(...)

Defines how long the modification will remain in effect.

SCOPE = *TEMPORARY

Only the *message file allocation table* which applies in the current system session is modified. That means that any changes that are made apply system-wide to the current system session only and have no effect on future sessions.

SCOPE = *PERMANENT

Both the message file allocation table and the default MIP parameter file are modified. That means that the changes apply system-wide both to the current session and to future sessions.

If it is not possible to modify the MIP parameter file owing to an error (e.g. MIP parameter file locked, not enough space on the disk, DMS error), only the message file allocation table will be modified. In this case the cause of the error must be eliminated, and then the command must be issued again.

SCOPE = *NEXT-SESSION(...)

The specified MIP parameter file is modified. The name of the message file is stored in the MIP parameter file. No check is made to ensure that the message file actually exists and is in the correct format.

If it is not possible to modify the MIP parameter file owing to an error (e.g. MIP parameter file locked, not enough space on the disk, DMS error), the cause of the error must be eliminated, and then the command must be issued again.

PARAMETER-FILE = *CURRENT / <filename 1..54 without-gen>

Identifies the MIP parameter file that is to be modified.

PARAMETER-FILE = *CURRENT

The default MIP parameter file SYSPAR.MIP.vvv (vvv = current version) is to be modified.

PARAMETER-FILE = <filename 1..54 without-gen>

Name of the MIP parameter file that is to be modified. If there is no MIP parameter file by this name, a new file will be created.

ADD-MSG-FILE = *NONE / <filename 1..54 without-gen>

Specifies the name of the message file which is to be activated or added to a parameter file. If the command is issued for a message file which is already active or included in a MIP parameter file, the message file is activated again or assigned top priority in the MIP parameter file (first position in the message file allocation table or MIP parameter file).

ADD-MSG-FILE = <filename 1..54 without-gen>

A file name alias defined using ACS is expanded to the full file name (including catalog and user ID) and stored in that form in the message file allocation table or MIP parameter file. If the name is not an alias, the specified file name is stored in the MIP parameter file "as is" (i.e. without the catalog and user IDs if these have not been specified).

REMOVE-MSG-FILE = *NONE / <filename 1..54 without-gen>

Specifies the name of the message file which is to be deactivated.

Return codes

(SC2)	SC1	Maincode	Meaning
	0	CMD0001	Command executed without error
2	0	NMH1129	Warning
	32	NMH1121	Internal error
	32	NMH1125	System error
	32	NMH1181	System error
	64	CMD0216	Semantic error
	64	NMH1133	Semantic error

MODIFY-MONJV

Modify job monitoring JV

Description status:	JV V15.1A
Functional area:	Job variables
Domain:	JOB-VARIABLES
Privileges:	STD-PROCESSING HARDWARE-MAINTENANCE SAT-FILE-EVALUATION SAT-FILE-MANAGEMENT SECURITY-ADMINISTRATION

This function is available to the user only if the chargeable software product JV has been loaded as a subsystem.

Function

The following elements in the system section of a job monitoring job variable can be modified with the MODIFY-MONJV command:

- Time stamp (operand `TIMESTAMP`)
- Name of the job to be monitored (operand `DESCRIPTOR`)
- Job specific information (operand `USER-INFORMATION`)

The format and position of the elements in the system section are described in the “JV” manual [20].

The caller must have write privileges.

When no job variable is specified, the command affects the monitoring job variable of the job from which the command was issued.

The command is only executed when the job variable monitors a job.

Format

MODIFY-MONJV	Alias: MDMJV
<p>MONJV = *SMONJVJ / <filename 1..54 without-gen-vers> ,TIMESTAMP = *UNCHANGED / *SET ,DESCRIPTOR = *UNCHANGED / <c-string 1..8 with-low> ,USER-INFORMATION = *UNCHANGED / <c-string 1..58 with-low> ,PASSWORD = *NONE / <c-string 1..4> / <x-string 1..8> / <integer -2147483648..2147483647> / *SECRET</p>	

Operands

MONJV = ***SMONJVJ** / <filename 1..54 without-gen-vers>

Name of the monitoring job variable. The default value is *SMONJVJ, i.e. the job variable that monitors its own job (it was linked to the *SMONJVJ link name when the job was started, i.e. when the status was set to "\$R").

TIMESTAMP = ***UNCHANGED** / ***SET**

Specifies if a time stamp (in GMT time) is to be set for job monitoring (format: yyyy-mm-ddhhmmss). The default value is *UNCHANGED, i.e. a new time stamp is not set.

DESCRIPTOR = ***UNCHANGED** / <c-string 1..8 with-low>

Specifies if the name of the application to be monitored is to be set. The default value is *UNCHANGED, i.e. no change is made. Right-justified input containing less than eight characters is padded with spaces.

USER-INFORMATION = ***UNCHANGED** / <c-string 1..58 with-low>

Specifies if application-specific information is to be set. The default value is *UNCHANGED, i.e. no change is made. Right-justified input containing less than 58 characters is padded with spaces.

PASSWORD = ***NONE** / <c-string 1..4> / <x-string 1..8> / <integer -2147483648..2147483647> / ***SECRET**

Password that may be required for write access to the job variable. The default value is *NONE, i.e. no password.

The PASSWORD operand has the following special characteristics:

- The input field is automatically blanked out in an interactive dialog.
- In unguided dialog and foreground procedures, the entry *SECRET or ^ permits concealed input of the password.
- The password entered is not logged.

Return codes

(SC2)	SC1	Maincode	Meaning
	0	CMD0001	Command executed
1	0	CMD0001	No action necessary
2	0	CMD0001	Command executed with a warning
	1	CMD0202	Syntax error
	32	CMD0221	System error
	64	JVS04E0	Command not executable in the call environment; if possible, remove cause of error (see SYSOUT message JVS04xx)
	130	JVS04E1	Command cannot be executed at this time; for cause see SYSOUT message JVS04xx
	130	CMD2282	Subsystem JV not available for indefinite time

Example

```

/set-logon-par user,12345678,'PASSWORD',monjv=test
/show-jv test
%$R 09WXU10SH      J0312012-01-27102849
/mod-monjv test,timestamp=*set,desc='APPLICTN',user-inf='User Info' —— (1)
/show-jv test      _____ (2)
%$R 09WXU10SH      J0312012-01-271028492012-01-27103438APPLICTN      User
Info

```

- (1) A time stamp is set in the job variable TEST, the DESCRIPTOR and USER-INFORMATION fields are supplied with any value you choose.
- (2) The job variable TEST now contains the following values:
 - TIMESTAMP: 2012-01-27103438
 - DESCRIPTOR: 'APPLICTN'
 - USER-INFORMATION='User Info'

MODIFY-MOUNT-PARAMETER

Set default values for mounting and dismounting

Description status:	BS2000 OSD/BC V10.0A
Functional area:	Device management
Domain:	DEVICE
Privileges:	OPERATING
Routing code:	G

Function

This command enables the operator to specify default values for mounting and dismounting tapes and disks.

The operator can use the SHOW-MOUNT-PARAMETER command to find out which values are currently set.

Format

MODIFY-MOUNT-PARAMETER

```

DISK-MOUNT = *UNCHANGED / *YES / *NO
,TAPE-MOUNT = *UNCHANGED / *YES / *NO
,ALLOCATE-TAPE = *UNCHANGED / *YES / *NO
,UNLOAD-RELEASED-TAPE = *UNCHANGED / *ACCORDING-TO-USER-REQUEST /
                        *REGARDLESS-OF-USER-REQUEST(...) / *IGNORE-USER-REQUEST
                        *REGARDLESS-OF-USER-REQUEST(...)
    | TAPE-FAMILY = *ALL / *MBK
,NEXT-TAPE-MOUNT = *UNCHANGED / *BEST-GENERATED-DEVICE /
                  *LEAST-RECENTLY-USED-DEVICE / *BY-CONTROLLER
,PREMOUNT-MSG = *UNCHANGED / *ACCORDING-TO-USER-REQUEST / *IGNORE-USER-REQUEST /
                *PROCESS-USER-REQUEST-ASYNCH
,LOCATION = *ALL / *NONE / <alphanum-name 1..8>

```

Operands

DISK-MOUNT =

Specifies whether the operator is ready to carry out disk mounting.
The system default is *YES.

DISK-MOUNT = *UNCHANGED

The value valid up to now (previous MOD-MOUNT-PAR or presetting) remains unchanged (default value).

DISK-MOUNT = *YES

The operator is ready to carry out disk mounting, i.e. allocation requests for unmounted private disks result in a MOUNT message.

DISK-MOUNT = *NO

The operator is not ready to carry out disk mounting. Allocation requests for private disks which are to be mounted are automatically rejected by the system. REMOUNT and INOP messages are still output and require appropriate responses.

TAPE-MOUNT =

Specifies whether the operator is ready to carry out tape mounting. The system default is *YES.

TAPE-MOUNT = *UNCHANGED

The value valid up to now (previous MOD-MOUNT-PAR or presetting) remains unchanged (default value).

TAPE-MOUNT = *YES

The operator is ready to carry out tape mounting, i.e. allocation requests for unmounted tapes result in a MOUNT message.

TAPE-MOUNT = *NO

The operator is not ready to carry out tape mounting. Allocation requests for tapes which are to be mounted are automatically rejected by the system. REMOUNT, INOP and WP-MISSING messages are still output and require appropriate responses.

ALLOCATE-TAPE =

Specifies whether the system can allocate tapes which are already online without operator support (without a MOUNT message). The system default is *YES.

ALLOCATE-TAPE = *UNCHANGED

The value valid up to now (previous MOD-MOUNT-PAR or presetting) remains unchanged (default value).

ALLOCATE-TAPE = *YES

The system responds automatically to PREMOUNT, MOUNT and REMOUNT messages if the tape is recognized as being online.

ALLOCATE-TAPE = *NO

The system does not respond to PREMOUNT, MOUNT and REMOUNT messages even if the appropriate tape is recognized as being online. The appropriate response must be entered by the operator.

UNLOAD-RELEASED-TAPE =

Specifies whether tapes are to be unloaded after their release if they have not already been unloaded by the user. The system default is *ACCORDING-TO-USER-REQUEST. Note that tapes are unloaded only if they have actually been used (the value of VOLUME-PHASE was IN-USE).

UNLOAD-RELEASED-TAPE = *UNCHANGED

The value valid up to now (previous MOD-MOUNT-PAR or presetting) remains unchanged (default value).

UNLOAD-RELEASED-TAPE = *ACCORDING-TO-USER-REQUEST

When tapes are released, they are unloaded according to user request.

UNLOAD-RELEASED-TAPE = *REGARDLESS-OF-USER-REQUEST(...)

Tapes (streamer tapes and/or cartridges) are unloaded after their release if they were in use (PHASE = IN-USE).

TAPE-FAMILY = *ALL

All tapes (streamer tapes and cartridges) are unloaded after their release.

TAPE-FAMILY = *MBK

Only cartridges are unloaded after their release. Streamer tapes are unloaded after their release according to user request.

UNLOAD-RELEASED-TAPE = *IGNORE-USER-REQUEST

A request to unload a tape volume after its release is ignored. Unload requests for streamer tape devices are always ignored by NDM. Unload requests for tape cartridge devices are only ignored if the device is being used in the "manual" operating mode. This enables cartridges to be changed during unmanned operation if the stackers involved have a supply of cartridges for this purpose.

NEXT-TAPE-MOUNT =

Specifies the device selection mode to be used by NDM to select the free device during tape allocation.

The system default is *BEST-GENERATED-DEVICE.

NEXT-TAPE-MOUNT = *UNCHANGED

The device selection mode valid up to now remains unchanged.

NEXT-TAPE-MOUNT = *BEST-GENERATED-DEVICE

NDM searches through the device table from the beginning, i.e. in the order predefined at system generation, and selects the first suitable free device.

NEXT-TAPE-MOUNT = *LEAST-RECENTLY-USED-DEVICE

NDM searches through the device table and selects the least recently used device from the set of suitable free devices. This “wraparound” allocation enables tape devices to be used more evenly.

NEXT-TAPE-MOUNT = *BY-CONTROLLER

From the suitable free devices, NDM selects a device which is connected to a controller on which the fewest devices are in use. This ensures that the devices used are distributed evenly over the available controllers and channel paths. The device selection in NDM only takes the local device assignments into account. In conjunction with the DDAL function of the IORM subsystem (I/O Resource Manager, see the “Utility Routines” manual [9]), optimization is extended to all guest systems of a BS2000 server.

PREMOUNT-MSG =

Controls the output of PREMOUNT messages (NKVT012).

PREMOUNT-MSG = *UNCHANGED

The existing setting is left unchanged.

PREMOUNT-MSG = *ACCORDING-TO-USER-REQUEST

Output of PREMOUNT messages is as for versions up to and including BS2000/OSD-BC V2.0.

PREMOUNT-MSG = *IGNORE-USER-REQUEST

PREMOUNT messages are suppressed.

PREMOUNT-MSG = *PROCESS-USER-REQUEST-ASYNCH

PREMOUNT messages are output as “normal” messages which do not require a response.

LOCATION =

Specifies whether the settings made or tapes are to depend on the storage location.

LOCATION = *ALL

The settings do not depend on the storage location.

LOCATION = *NONE

The settings only apply for devices which are not assigned to any storage location.

LOCATION = <alphanum-name 1..8>

The settings only apply for devices which are assigned to the specified storage location. The storage location must already be configured (see /ADD-DEVICE-DEPOT). After a storage location has been deleted, the storage-location-specific parameters are reset. In the case of devices which are assigned to multiple storage locations with different parameters, the last specification made applies.

Return codes

(SC2)	SC1	Maincode	Meaning
	0	CMD0001	No error
	1	NKV0001	Syntax error
	130	NKVD002	Disk monitor not available
	130	NKVT002	Tape monitor not available

Note

If spoolout to tape is being used in the current session, UNLOAD-RELEASED-TAPE=*ACCORDING-TO-USER-REQUEST should always be set. This means that the spoolout tape will not be unloaded and have to be remounted every time a file is spooled out.

MODIFY-MSG-ATTRIBUTES

Define language for message output

Description status:	MIP V19.0A
Functional area:	Message processing
Domain:	MESSAGE-PROCESSING
Privileges:	STD-PROCESSING TSOS SAT-FILE-EVALUATION SAT-FILE-MANAGEMENT SECURITY-ADMINISTRATION

Function

The MODIFY-MSG-ATTRIBUTES command is used to specify the language in which messages for his task are to be output. The user specifies which message files are to be searched for the message text in the required language. If these message texts are not found in the specified message files (activated system and/or task message files), messages will be output in the language defined in the MSGLPRI system parameter. SDF output (such as data types and help texts) also takes the language code into account (see the “Introductory Guide to the SDF Dialog Interface” [15]). The SHOW-MSG-FILE-ASSIGNMENT command displays the names of the activated system and task message files.

Format

MODIFY-MSG-ATTRIBUTES
TASK-LANGUAGE = <u>*UNCHANGED</u> / *STD / *NO / <name 1..1>

Operands

TASK-LANGUAGE = *UNCHANGED / *STD / *NO / <name 1..1>

Specifies the language in which the messages are to be output.

TASK-LANGUAGE = *STD

Message output takes place in the language defined in the user entry (see output field *DEFAULT-MSG-LANGUAGE*, SHOW-USER-ATTRIBUTES command). If the user entry contains no corresponding value, the language defined by the class 2 system parameter MSGLPRI is assumed.

e.g. E = English, D = German.

TASK-LANGUAGE = *NO

Message output takes place in the language defined in the MSGLPRI system parameter.

TASK-LANGUAGE = <name 1..1>

Message output takes place in the language selected by the language code (e.g. TASK-LANGUAGE=E for English).

Return codes

(SC2)	SC1	Maincode	Meaning
	0	CMD0001	Command executed
	1	NHM1174	Syntax error
	64	CMD0216	Semantic error

MODIFY-MSG-FILE-ASSIGNMENT

Define message files for task

Description status:	MIP V19.0A
Functional area:	Message processing
Domain:	MESSAGE-PROCESSING
Privileges:	STD-PROCESSING OPERATING SAT-FILE-EVALUATION SAT-FILE-MANAGEMENT SECURITY-ADMINISTRATION TSOS
Routing code:	E

Function

The MODIFY-MSG-FILE-ASSIGNMENT command enables the user to activate and deactivate additional message files (task message files) for his task. The SHOW-MSG-FILE-ASSIGNMENT command displays the activated message files. The user can set the language for message output task-specifically by means of the MODIFY-MSG-ATTRIBUTES command.

Privileged functions

Systems support (TSOS or OPERATING privilege) can use SCOPE=*SYSTEM to activate and deactivate message files on a system-global basis. Changes apply only to the current session (equivalent to the MODIFY-MIP-PARAMETERS command with SCOPE= *TEMPORARY). Systems support can use the MODIFY-MIP-PARAMETERS command to make permanent changes.

Format

MODIFY-MSG-FILE-ASSIGNMENT

ADD-FILE = ***NO** / list-poss(8): <filename 1..54 without-gen>

REMOVE-FILE = ***NO** / list-poss(8): <filename 1..54 without-gen>

SCOPE = ***STD** / ***SYSTEM** / ***TASK**

Operands

ADD-FILE = *NO / list-poss(8): <filename 1..54 without-gen>

Names of the message files to be activated. Up to 8 files may be specified. The message files activated in this way can be displayed via the SHOW-MSG-FILE-ASSIGNMENT command.

Message files are created by using the MSGMAKER utility routine (see the "Utility Routines" manual [9]).

REMOVE-FILE = *NO / list-poss(8): <filename 1..54 without-gen>

Names of the message files to be deactivated. Up to 8 files may be specified. Only files that are activated as message files can be deactivated.

SCOPE = *STD / *SYSTEM / *TASK

Applicability of the command.

SCOPE = *STD

The applicability of the command is *TASK for nonprivileged users and *SYSTEM for privileged users.

SCOPE = *TASK

The changes apply only to the calling task.

SCOPE = *SYSTEM

This value can only be specified by privileged users.

Specifies that the modifications made in the range assignment list are to have a global system effect and are not restricted to the calling task. The changes apply only to the current session. Systems support can use the MODIFY-MIP-PARAMETERS command to make permanent changes.

Return codes

(SC2)	SC1	Maincode	Meaning/Guaranteed messages
	0	CMD0001	No error Guaranteed messages: NMH1102, NMH1109, NMH1180, NMH1183
	1	NMH1174	Syntax error
	32	NMH1121	Internal error
	32	NMH1181	Error in file processing Guaranteed messages: NMH1103, NMH1104, NMH1105, NMH1106, NMH1108, NMH1181
	64	CMD0216	Semantic error
	64	NMH1150	No authorization for command

MODIFY-MSG-OPTIONS

Control reception of unsolicited messages

Description status:	BS2000 OSD/BC V10.0A
Functional area:	Job processing
Domain:	JOB
Privileges:	STD-PROCESSING HARDWARE-MAINTENANCE SAT-FILE-EVALUATION SAT-FILE-MANAGEMENT SECURITY-ADMINISTRATION

Function

With the MODIFY-MSG-OPTIONS command, users can control the reception of unsolicited messages for their jobs. The messages in question are asynchronous messages and messages from systems support or a system task, capable of reaching the user but not necessarily directly related to command processing.

It is possible for a user to receive the following messages:

- job-related messages sent to that user by systems support using the INFORM-JOB command
- messages sent to all users by systems support using the INFORM-ALL-JOBS command (broadcasts)
- messages from system tasks (e.g. on completion of a file transfer)

Users can configure their message reception requirements separately for three types of message:

- for job-related messages in the OPERATOR-MSG operand
- for messages to all users in the OPERATOR-BROADCAST operand
- for messages from system tasks in the SYSTEM-MSG operand

Urgent messages, e.g. messages at system shutdown, are always output.

At the start of a task, the following settings apply:

Operand	Setting at start of task
OPERATOR-BROADCAST	*YES
OPERATOR-MSG	*YES
SYSTEM-MSG	*NO
INFO-OUTPUT	*STD

Table 70: Base settings for reception of unsolicited messages

The INFO-OUTPUT operand further allows the user to control exactly where on the terminal the messages are output.

The current settings can be displayed with the SHOW-MSG-OPTIONS command.

Accessing suppressed messages

While the MODIFY-MSG-OPTIONS command allows you to suppress the output of unsolicited messages if you find them irritating, the drawback is that you may fail to receive a message which is important to you.

You have the option of using the ASSIGN-SYSEVENT command to create an event stream to collect all the asynchronous messages sent to your interactive task, and then using the SHOW-SYSEVENT-LOG command to view its contents online. You can also page through the event stream.

A task with the OPERATING privilege can access the event stream directly (i.e. without assignment). However, in order also to receive the three message categories that can be suppressed with MODIFY-MSG-OPTIONS, the task must explicitly assign the system event stream using ASSIGN-SYSEVENT.

Format

MODIFY-MSG-OPTIONS
OPERATOR-BROADCAST = <u>*UNCHANGED</u> / *YES / *NO
, OPERATOR-MSG = <u>*UNCHANGED</u> / *YES / *NO
, SYSTEM-MSG = <u>*UNCHANGED</u> / *YES / *NO
, INFO-OUTPUT = <u>*UNCHANGED</u> / list-poss(2): *STD / *SYSTEMLINE

Operands

OPERATOR-BROADCAST = *UNCHANGED / *YES / *NO

Specifies whether the user wants to receive messages sent to all users by systems support using the INFORM-ALL-JOBS command.

OPERATOR-MSG = *UNCHANGED / *YES / *NO

Specifies whether the user wants to receive messages sent to him by systems support using the INFORM-JOB command.

SYSTEM-MSG = *UNCHANGED / *YES / *NO

Specifies whether the user wants to receive messages sent to him by a system task. Example: notification of file transfer completion.

INFO-OUTPUT = *UNCHANGED / list-poss(2): *STD / *SYSTEMLINE

Specifies how messages sent by systems support are to be output on the terminal.

If *STD is specified, the messages are output in the current screen line.

If *SYSTEMLINE is specified, the messages are output in the display line, i.e. the bottom line of the screen.

If both values are specified, the messages are output in both the current screen line and the display line.

Return codes

(SC2)	SC1	Maincode	Meaning
	0	CMD0001	Command executed without error
1	32	NBR0940	Command not executed because no entry in the TCB was possible

MODIFY-MSG-SUBSCRIPTION

Initiate or cancel message subscription

Description status:	BS2000 OSD/BC V10.0A
Functional area:	Operator terminal control Message processing
Domain:	CONSOLE-MANAGEMENT
Privileges:	OPERATING
Routing code:	E

Function

Logical BS2000 operator terminals (consoles) in particular may be required to respond to certain system messages. The MODIFY-MSG-SUBSCRIPTION command instructs the UCON message distribution mechanism to deliver certain system messages to a specific operator terminal (message subscription) or to cancel an existing subscription. A message subscription is not a request for messages to be output exclusively on a given operator terminal.

The command applies only to the operator terminal on which it is issued. It has no effect on other operator terminals.

The SHOW-MSG-SUBSCRIPTION command provides details of the current message subscription arrangements.

Format

(Part 1 of 2)

MODIFY-MSG-SUBSCRIPTION

```

ADD-MSG-ID = *NONE / list-poss (32): <name 1..7>
REMOVE-MSG-ID = *NONE / *ALL / list-poss (32): <name 1..7>
ADD-SENDER = *NONE / *USER-ID(...) / *TSN(...) / *CONSOLE(...)
  *USER-ID(...)
    | USER-ID = *NONE / list-poss (32): <name 1..8>
  *TSN(...)
    | TSN = *NONE / *SYSTEM-TASKS / list-poss (32): <alphanum-name 1..4>
  *CONSOLE(...)
    | CONSOLE = *NONE / list-poss (32): <name 2..2> / <name 4..4>

```

```
,REMOVE-SENDER = *NONE / *ALL / *USER-ID(...) / *TSN(...) / *CONSOLE(...)
  *USER-ID(...)
  |   USER-ID = *ALL / list-poss (32): <name 1..8>
  *TSN(...)
  |   TSN = *ALL / *SYSTEM-TASKS / list-poss (32): <alphanum-name 1..4>
  *CONSOLE(...)
  |   CONSOLE = *ALL / list-poss (32): <name 2..2> / <name 4..4>
,DELIVER-OTHER-MSG = *UNCHANGED / *YES / *NO
```

Operands

ADD-MSG-ID = *NONE / list-poss(32): <name 1..7>

Specifies whether a message subscription is required for the operator terminal.

Note

A message subscription can be suppressed in full or in part with the SET-MSG-SUPPRESSION command.

ADD-MSG-ID = list-poss(32): <name 1..7>

Specifies the name (ID) of the message which is to be delivered to the operator terminal under the message subscription mechanism. One message subscription is added for each name specified. A 7-character name matches exactly one message ID; a shorter name (1 to 6 characters) matches a group of message IDs all beginning with the specified string. It is not possible to subscribe to messages which required a response.

REMOVE-MSG-ID = *NONE / *ALL / list-poss(32): <name 1..7>

Specifies whether message subscriptions are to be canceled for the operator terminal.

REMOVE-MSG-ID = *ALL

All message subscriptions ordered for the operator terminal are canceled.

REMOVE-MSG-ID = list-poss(32): <name 1..7>

Specifies the names (message IDs) of the message subscriptions which are to be canceled. One message subscription is canceled for each name specified, provided the subscription actually exists.

To cancel a message subscription you must specify the same name as was used when the subscription was ordered. For example, a subscription to all messages beginning with the string ABC123 (corresponding to ADD-MSG-ID=ABC123) cannot be canceled with REMOVE-MSG-ID=ABC1.

Similarly, it is not possible to reduce the number of messages in a subscription by canceling a specific message, e.g. using REMOVE-MSG-ID=ABC1234. The SET-MSG-SUPPRESSION command is provided for this purpose.

ADD-SENDER = *NONE / *USER-ID(...) / *TSN(...) / *CONSOLE(...)

Messages from the users specified are to be routed to the console.

The operand is only allowed when input at a physical or logical operator terminal. Input from an interactive task with the OPERATING privilege is not allowed.

ADD-SENDER = *NONE

Default value.

No messages are added on the basis of sender attributes.

ADD-SENDER = *USER-ID(...)

Messages that are sent by user tasks or system tasks with the specified user ID (via MSG7[X] or TYPIO macro calls) are delivered.

USER-ID = *NONE / list-poss(32): <name 1..8>

One or several user IDs can be specified.

The default value is *NONE, i.e. messages are not delivered.

ADD-SENDER = *TSN(...)

Messages that are sent by user tasks or system tasks with the specified TSNs (via MSG7[X] or TYPIO macro calls) are delivered.

TSN = *NONE

Default value. Messages are not delivered.

TSN = *SYSTEM-TASKS

All console messages generated by system tasks are delivered.

TSN = list-poss(32): <alphanum-name 1..4>

Messages that are sent by user tasks or system tasks with the specified TSNs are delivered.

Leading zeroes do not have to be entered for the TSNs; TSN=AB is interpreted as '...AB' and not as '00AB'.

ADD-SENDER = *CONSOLE(...)

Messages sent by the specified physical or logical consoles are delivered.

CONSOLE = *NONE / list-poss(32): <name 2..2> / <name 4..4>

One or more consoles can be specified.

Physical consoles are specified through a two-position mnemonic name and logical consoles by means of a four-position authorization name.

The default value is *NONE, i.e. messages are not delivered.

REMOVE-SENDER = *NONE / *ALL / *USER-ID(...) / *TSN(...) / *CONSOLE(...)

Message subscriptions previously defined through the sender attributes with MODIFY-MSG-SUBSCRIPTION (ADD-SENDER operand) are removed.

The operand is only allowed when entered from a physical or logical console. Input from an interactive task with the OPERATING privilege is not allowed.

REMOVE-SENDER = *NONE

Default value. No message subscriptions are removed.

REMOVE-SENDER = *ALL

All message subscriptions that were previously defined via sender attributes (ADD-SENDER operand) are removed.

REMOVE-SENDER = *USER-ID(...)

Messages from specific user IDs that were previously defined via ADD-SENDER=*USER-ID(...) are removed.

USER-ID = *ALL / list-poss (32): <name 1..8>

One or several user IDs for which message subscription is to be removed can be specified.

The default value is *ALL, i.e. messages from all user IDs are removed.

REMOVE-SENDER = *TSN(...)

Messages from specific TSNs that were previously specified with ADD-SENDER=*TSN(...) are removed.

TSN = *ALL / *SYSTEM-TASKS / list-poss (32): <alphanum-name 1..4>

One or several TSNs for which message subscription is to be removed can be specified.

The default value is *ALL, i.e. messages from all TSNs are removed.

REMOVE-SENDER = *CONSOLE(...)

Messages from specific consoles that were previously specified with ADD-SENDER=*CONSOLE(...) are removed.

CONSOLE = *ALL / list-poss (32): <name 2..2> / <name 4..4>

One or several consoles for which message subscription is to be removed can be specified.

The default value is *ALL, i.e. messages from all consoles are removed.

DELIVER-OTHER-MSG = *UNCHANGED / *YES / *NO

Governs whether the delivery of other (non-subscription) messages to the operator terminal is to be affected.

This operand is allowed only if the command is entered at a physical or logical operator terminal.

DELIVER-OTHER-MSG = *UNCHANGED

The delivery of other (non-subscription) messages to the operator terminal is unchanged.

DELIVER-OTHER-MSG = *YES

Any previously imposed suppression of non-subscription messages is canceled.

DELIVER-OTHER-MSG = *NO

Any non-subscription messages are not delivered to the operator terminal, with the exception of messages requiring a response and messages directed explicitly to the operator terminal.

Notes

- The command can be issued at all operator terminals, which means at physical and logical operator terminals (\$CONSOLE applications) and in interactive tasks with the OPERATING privilege. At physical and logical operator terminals the command affects the delivery of messages to the operator terminal from which the command was issued. In interactive tasks with the OPERATING privilege the command has consequences for the viewing of a system event stream (see the command SHOW-SYSEVENT-LOG TYPE=*SYSTEM). For that reason the DELIVER-OTHER-MSG operand is not available in an interactive task, as suppressing the display of undirected messages (value *NO) would in effect be identical with relinquishing all the operator roles for that task (see the RELEASE-OPERATOR-ROLE command).
- Suppression of the delivery of individual messages with the aid of the SET-MSG-SUPPRESSION command takes precedence over a message subscription initiated with the MODIFY-MSG-SUBSCRIPTION command. That means that it is possible to subscribe to a group of messages (e.g. all those with a message ID beginning with the string ABC) at an operator terminal and to exclude individual message IDs (e.g. message ABC1234) from the subscription set with the aid of the SET-MSG-SUPPRESSION command.
- The messages subscriptions specified with the REMOVE-MSG-ID and REMOVE-SENDER operands are always the first to be removed when the command is executed. The message subscriptions specified with the ADD-MSG-ID and ADD-SENDER operands are added to the subscription set.

Return codes

(SC2)	SC1	Maincode	Meaning
	0	CMD0001	Command executed without error
2	0	NBR0091	Some message IDs ignored
	1	CMD0202	Syntax error
	32	NBR0034	Error in command execution
	64	CMD0216	Required authorization not available

MODIFY-OPERATOR-ATTRIBUTES

Change assignment of operator roles to user IDs

Description status:	SRPMNUC V19.0A
Functional area:	Operator function control
Domain:	SECURITY-ADMINISTRATION
Privileges:	SECURITY-ADMINISTRATION

Function

This command is used to assign one or more operator roles to an operator identification, which is recorded in the user catalog for a pubset as a user ID. After this assignment has been made, an authorized application which is connected under this operator identification may then accept the specified operator role, and thus undertake a particular area of work within the operating function. The authorizations (work areas) which are linked to the operator role must have been specified beforehand by systems support, using a CREATE-OPERATOR-ROLE command.

It should be noted that when a MODIFY-OPERATOR-ATTRIBUTES command is executed both the user ID and the operator role must be recorded in the user catalog of the same pubset.

Systems support can obtain an overview of the roles which have been defined, and of their assignment to user IDs, by means of the commands SHOW-OPERATOR-ATTRIBUTES and SHOW-OPERATOR-ROLE.

Format

MODIFY-OPERATOR-ATTRIBUTES

USER-IDENTIFICATION = <name 1..8>

,**PUBSET** = ***HOME** / <cat-id 1..4>

,**REMOVE-OPERATOR-ROLE** = ***NONE** / ***ALL** / list-poss(48): <name 1..8>

,**ADD-OPERATOR-ROLE** = ***NONE** / list-poss(48): <name 1..8>

Operands

USER-IDENTIFICATION = <name 1..8>

The user ID (name of the authorized application) for which an assignment to an operator role is to be specified or amended on the pubset concerned.

PUBSET =

Specifies the pubset in whose user catalog the user ID and the operator role are recorded.

PUBSET = *HOME

The assignment is to apply for the home pubset in the current session.

PUBSET = <cat-id 1..4>

Precise specification of the pubset to which the assignment is to apply.

REMOVE-OPERATOR-ROLE =

Specifies the operator roles which are to be withdrawn from the user ID on the specified pubset.

REMOVE-OPERATOR-ROLE = *NONE

Preset value: no operator roles are to be withdrawn from the user ID.

REMOVE-OPERATOR-ROLE = *ALL

All the operator roles previously assigned to the user ID on the nominated pubset are to be withdrawn.

REMOVE-OPERATOR-ROLE = list-poss(48): <name 1..8>

The exact specification of up to 48 operator roles which are to be withdrawn from the user ID.

ADD-OPERATOR-ROLE =

Specifies additional operator roles which are to be assigned to the user ID nominated, on the pubset.

ADD-OPERATOR-ROLE = *NONE

Preset value: no additional operator roles are to be assigned to the user ID.

ADD-OPERATOR-ROLE = list-poss(48): <name 1..8>

The exact specification of up to 48 additional operator roles which are to be assigned to the user ID.

Return codes

(SC2)	SC1	Maincode	Meaning
	0	CMD0001	No error
2	0	SRM6001	Command executed with a warning
	32	SRM6020	System error during command processing
	64	SRM6040	Semantic error
	130	SRM6030	Command cannot temporarily be executed

MODIFY-OPERATOR-ROLE

Change assignment of routing codes to operator role

Description status:	SRPMNUC V19.0A
Functional area:	Operator function control
Domain:	SECURITY-ADMINISTRATION
Privileges:	SECURITY-ADMINISTRATION

Function

This command is used to modify a list of routing (authorization) codes which have been assembled to form an “operator role”, and of which the specified pubset is aware. A modification involves either adding further routing codes to the existing operator role, from the list of up to 40 available codes, or withdrawing particular routing codes from the role.

Format

MODIFY-OPERATOR-ROLE

```
OPERATOR-ROLE = <name 1..8>  
,PUBSET = *HOME / <cat-id 1..4>  
,REMOVE-ROUTING-CODES = *NONE / *ALL / list-poss(40): * / <alphanum-name 1..1>  
,ADD-ROUTING-CODES = *NONE / *ALL / list-poss(40): * / <alphanum-name 1..1>
```

Operands

OPERATOR-ROLE = <name 1..8>

Specifies the name of the operator role which is to be amended. This is the name that an authorized user program must use whenever it wishes to undertake tasks (= routing codes) which are linked with this role.

PUBSET =

Specifies the pubset whose user catalog contains an entry for the role which is to be modified.

PUBSET = *HOME

The operator role is recorded in the user catalog of the home pubset.

PUBSET = <cat-id 1..4>

Precise specification of the pubset in whose user catalog the operator role is recorded.

REMOVE-ROUTING-CODES =

Specifies the routing codes, and hence the areas of work, which are to be withdrawn from the existing operator role.

REMOVE-ROUTING-CODES = *NONE

Preset value: no routing codes are to be withdrawn from the existing operator role.

REMOVE-ROUTING-CODES = *ALL

All the routing codes previously assigned to the role are to be withdrawn.

REMOVE-ROUTING-CODES = list-poss(40): * / <alphanum-name 1..1>

Precise specification of up to 40 routing codes which are to be withdrawn from the existing operator role. There is a table of the routing codes in the “Introduction to System Administration” [14].

ADD-ROUTING-CODES =

Specifies the additional routing codes, and hence the areas of work, which are to be assigned to the existing operator role.

ADD-ROUTING-CODES = *NONE

Preset value: no additional routing codes are to be assigned to the existing operator role.

ADD-ROUTING-CODES = *ALL

All the routing codes known to the system are to be assigned to the existing role.

ADD-ROUTING-CODES = list-poss(40): * / <alphanum-name 1..1>

Precise specification of up to 40 additional routing codes which are to be assigned to the existing operator role. There is a table of the routing codes in the “Introduction to System Administration” [14].

Return codes

(SC2)	SC1	Maincode	Meaning
	0	CMD0001	No error
2	0	SRM6001	Command executed with a warning
	32	SRM6020	System error during command processing
	64	SRM6040	Semantic error
	130	SRM6030	Command cannot temporarily be executed

MODIFY-PAGING-AREA-ATTRIBUTES

Modify attributes of paging subareas

Description status:	BS2000 OSD/BC V10.0A
Functional area:	System control and optimization
Domain:	SYSTEM-TUNING SYSTEM-MANAGEMENT
Privileges:	TSOS OPERATING
Routing code:	R

Function

The MODIFY-PAGING-AREA-ATTRIBUTES command is used to modify the attributes of one or more paging areas.

Format

MODIFY-PAGING-AREA-ATTRIBUTES
VOLUME = <u>*NONE</u> / list-poss(256): <vsn 1..6> ,UTILIZATION = <u>*LOW</u> / *MEDIUM / *HIGH

Operands

VOLUME = *NONE / list-poss(256): <vsn 1..6>

Identifies by volume serial number (VSN) one or more disks on which the paging files being modified are located. Up to 256 disks can be specified.

UTILIZATION = *LOW / *MEDIUM / *HIGH

Specifies how a paging file is to be utilized. This affects both use of the paging file and the duration and I/O rate of a reduction of the paging files.

Paging management takes this specification into account as far as possible, but it cannot guarantee that a paging file will be utilized in the desired manner. This ultimately depends on the actual paging rate and on the behavior of the paging load over time.

UTILIZATION = *LOW

The paging file is to be utilized less intensively than envisaged in the paging strategy (the paging file will hold pages less frequently). This setting is particularly advisable if the paging file is intended to be removed from the paging area (paging file reduction) or if frequent DMS I/O is to be expected on the paging disk in addition to the paging I/O (typically applies to paging files in the home pubset).

UTILIZATION = *MEDIUM

The paging file is to be used in accordance with the paging strategy, which means that paging files will be utilized evenly in proportion with their size.

UTILIZATION = *HIGH

The paging file is to be utilized more intensively than envisaged in the paging strategy (the paging file will hold pages more frequently). This is typically helpful with small files, as it is a way to reduce the load on disks with large files, allowing the paging files to be utilized evenly, irrespective of size. It is also possible to cut the time required for the reduction of large paging files.

Notes

- Before the attributes can be redefined, the paging file must already have been added to the paging area. The pubset of the paging file which is having its attributes redefined need not have been imported.
- If a paging file which is being released is relatively heavily utilized, you must anticipate the command taking a long time to relocate the virtual pages to other paging files, heavy I/O traffic and a high CPU load. To lessen these loads and to simplify the reduction process, it is advisable not to start reduction immediately, but first to minimize the paging utilization of the paging file in question (UTILIZATION operand, value *LOW). From then on the paging file in question will (as far as possible) no longer be used to hold virtual pages. Thereafter, through page access and release, the contents of the associated paging file will be diminished in size, with the result that less I/O is needed to swap the pages out in the actual reduction process. There is, however, a chance that it will not be possible to get by without swapping pages into the paging file because the paging rate is too high, or conversely that the pages in the paging file will not be accessed. In these cases the command will have no effect.
You can use the SHOW-PAGING-CONFIGURATION command to find out whether changing the paging utilization level to *LOW is having the desired effect. If the free size of the relevant paging file increases, the modification was successful. The SHOW-PAGING-CONFIGURATION command also indicates the time when the actual reduction process is to start. This may be after a few minutes, but periods of an hour or more are also conceivable.

Return codes

(SC2)	SC1	Maincode	Meaning/Guaranteed messages
	0	CMD0001	Command executed without error
	32	EMM2800	Function cannot be executed owing to an internal error. Guaranteed messages: EMM2818, EM2828
	64	EMM2804	The paging file on the specified volume is not in use Guaranteed messages: EMM2851
	128	EMM2807	The function cannot be implemented because there are not enough resources available Guaranteed messages: EMM2819, EM2829



When lists are specified, command processing is aborted in the event of an error with a return code of EMM2800 or EMM2807. In all other cases processing continues.

Examples

The paging file on disk 2OSW.0 is to be utilized less intensively because reduction of the paging area is planned:

```
/MODIFY-PAGING-AREA-ATTRIBUTES VOLUME=2OSW.0, UTILIZATION=*LOW
```


MODIFY-POSIX-USER-ATTRIBUTES

Modify POSIX user attributes

Description status:	SRPMNUC V19.0A
Functional area:	User management POSIX administration and application
Domain:	USER-ADMINISTRATION
Privileges:	STD-PROCESSING POSIX-ADMINISTRATION USER-ADMINISTRATION

Function

The MODIFY-POSIX-USER-ATTRIBUTES command modifies the POSIX user attributes of a BS2000 user ID in the user catalog of the specified pubset.

Each time a new BS2000 user ID is set up (with the ADD-USER command), its POSIX user attributes are automatically set to the POSIX defaults (as defined with the MODIFY-POSIX-USER-DEFAULTS command). Where necessary, these POSIX user attributes can be changed.

Systems support can enter a BS2000 user ID as a new POSIX user with the ADD-POSIX-USER command.

The following users are authorized to do so:

- holders of the POSIX-ADMINISTRATION or USER-ADMINISTRATION privilege, for all BS2000 user IDs on all pubsets.
- group administrators, for the group and subgroup members they are in charge of on the pubset they manage. However, the following restrictions apply to group administrators:
 - A group administrator's ADM-AUTHORITY authorization governs the POSIX user attributes which that administrator is allowed to modify.
 - The range of values a group administrator is allowed to assign to POSIX user attributes is limited.

Details are given in the relevant operand descriptions.

The current POSIX default values can be displayed by means of the SHOW-POSIX-USER-ATTRIBUTES.

Format

MODIFY-POSIX-USER-ATTRIBUTES
<p>USER-IDENTIFICATION = <name 1..8></p> <p>PUBSET = *HOME / <cat-id 1..4></p> <p>USER-NUMBER = *UNCHANGED / *BY-POSIX-USER-DEFAULTS / *HOME / <integer 0..60002></p> <p>GROUP-NUMBER = *UNCHANGED / *BY-POSIX-USER-DEFAULTS / *GROUP-ADMINISTRATOR / <integer 0..60002></p> <p>COMMENT = *UNCHANGED / *BY-POSIX-USER-DEFAULTS / *NONE / <c-string 1..255 with-low></p> <p>DIRECTORY = *UNCHANGED / *BY-POSIX-USER-DEFAULTS / *ROOT / <posix-pathname 1..1023 without-wild></p> <p>PROGRAM = *UNCHANGED / *BY-POSIX-USER-DEFAULTS / *SHELL / <posix-pathname 1..1023 without-wild></p>

Operands

USER-IDENTIFICATION = <name 1..8>

BS2000 user ID for which the POSIX user attributes are to be changed.

PUBSET =

Pubset for which the POSIX user attributes in the user catalog are to be changed.

PUBSET = *HOME

The change affects the home pubset.

PUBSET = <cat-id 1..4>

The change affects the pubset with the specified catalog ID.

USER-NUMBER =

The user number which is automatically allocated when a BS2000 user ID is set up can be changed.

The USER-NUMBER attribute is a security issue, as the user number governs the associated privileges and determines who is the owner of a file. Group administrators cannot change the user number unless they have at least the group administrator privilege **MANAGE-MEMBERS**; and the range of values they can assign is restricted:

- They cannot allocate a user number of 0, which is the root privilege.
- They can only change the default user number.
- They can only allocate user numbers which are greater than the default user number.
- They cannot allocate duplicate user numbers.
- On a data pubset they can only assign the user number of the BS2000 user ID of the same name on the home pubset.

USER-NUMBER = *UNCHANGED

The user number is not changed.

USER-NUMBER = *BY-POSIX-USER-DEFAULTS

The user number is given the value of the corresponding POSIX default attribute as recorded in the user catalog of the specified pubset.

USER-NUMBER = *HOME

The user number of the BS2000 user ID of the same name on the home pubset is used. This value is meaningful only if the user number is being changed on a data pubset. It is redundant on the home pubset.

USER-NUMBER = <integer 0..60002>

The user number is given the specified value.

GROUP-NUMBER =

The group number which is automatically allocated when a BS2000 user ID is set up can be changed.

The GROUP-NUMBER attribute is a security issue, as POSIX does not check the admissibility of the BS2000 user/group combination against the POSIX group catalog when a user logs in.

Group administrators cannot change the group number unless they have at least the group administrator privilege MANAGE-MEMBERS; and the range of values they can assign is restricted:

- They can allocate only the default group number or the group number of the group administrator for the BS2000 user group to which the BS2000 user ID belongs.
- They cannot allocate a different group number for their own BS2000 user ID.

GROUP-NUMBER = *UNCHANGED

The group number is not changed.

GROUP-NUMBER = *BY-POSIX-USER-DEFAULTS

The group number is given the value of the corresponding POSIX default attribute as recorded in the user catalog of the specified pubset.

GROUP-NUMBER = *GROUP-ADMINISTRATOR

Allocates the group number owned by the group administrator of the BS2000 user group to which the BS2000 user ID belongs.

GROUP-NUMBER = <integer 0..60002>

The group number is given the specified value.

COMMENT =

The comment can be changed. Further information relating to the owner of the BS2000 user ID can be added as appropriate.

Note

This comment is used, for example, by mail programs to describe the sender.

COMMENT = *UNCHANGED

The comment is not changed.

COMMENT = *BY-POSIX-USER-DEFAULTS

The value is taken from the corresponding POSIX default attribute as recorded in the user catalog of the specified pubset.

COMMENT = *NONE

No comment is added.

COMMENT = <c-string 1..255 with-low>

The specified comment is added.

DIRECTORY =

The absolute path name of the user's login directory can be changed. This attribute is not a security issue, as it governs only the value of the HOME shell variable and the initial value of the working directory. It cannot be used to bypass file and directory protection attributes.

DIRECTORY = *UNCHANGED

The absolute path name is not changed.

DIRECTORY = *BY-POSIX-USER-DEFAULTS

The value is taken from the corresponding POSIX default attribute as recorded in the user catalog of the specified pubset.

DIRECTORY = *ROOT

The root directory "/" is allocated.

DIRECTORY = <posix-pathname 1..1023 without-wild>

The specified path name is allocated.

PROGRAM =

The program which is run after a remote login or after the START-POSIX-SHELL command can be changed.

This attribute is not a security issue, as only such programs as the user is allowed to execute can be run.

PROGRAM = *UNCHANGED

The program is not changed.

PROGRAM = *BY-POSIX-USER-DEFAULTS

The value is taken from the corresponding POSIX default attribute as recorded in the user catalog of the specified pubset.

PROGRAM = *SHELL

The default POSIX shell is started up.

PROGRAM = <posix-pathname 1..1023 without-wild>

The specified program is run.

Return codes

(SC2)	SC1	Maincode	Meaning
	0	CMD0001	Command executed without error
2	0	SRM6001	Command executed with warning
	32	SRM6020	Command rejected owing to system error
	64	SRM6040	Command rejected with error message
	130	SRM6030	Command rejected owing to insufficient resources

Examples

The POSIXTST user ID is to be allocated a user number of 55 and a group number of 66. The login directory (home directory) is to be */home/posixtst*. Following a POSIX login, the Bourne shell is to be started up.

There is to be a comment reading: "posix-user@posix-server.com".

```
/MODIFY-POSIX-USER-ATTRIBUTES USER-ID=POSIXTST, -
/ USER-NUMBER=55, -
/ GROUP-NUMBER=66, -
/ DIRECTORY=/home/posixtst, -
/ PROGRAM=*SHELL, -
/ COMMENT='posix-user@posix-server.com'
```

The PSXROOT user ID is to have root privileges. Its home directory is to be */home/psxroot*.

```
/MODIFY-POSIX-USER-ATTRIBUTES USER-ID=PSXROOT, -
/ USER-NUMBER=0, -
/ GROUP-NUMBER=0, -
/ DIRECTORY=/home/psxroot,
```

MODIFY-POSIX-USER-DEFAULTS

Modify POSIX default attributes

Description status:	SRPMNUC V19.0A
Functional area:	User management POSIX administration and application
Domain:	USER-ADMINISTRATION
Privileges:	STD-PROCESSING POSIX-ADMINISTRATION USER-ADMINISTRATION

Function

The MODIFY-POSIX-USER-DEFAULTS command modifies the POSIX default attributes in the user catalog of the specified pubset. It is available to the following users:

- holders of the POSIX-ADMINISTRATION or USER-ADMINISTRATION privilege, for all pubsets.
- group administrators of the *UNIVERSAL group on the pubset which they manage.

The POSIX default attributes are applied when a new user entry is created (with the ADD-USER command).

The current POSIX default values can be displayed by means of the SHOW-POSIX-USER-DEFAULTS command

Format

MODIFY-POSIX-USER-DEFAULTS

```
PUBSET = *HOME / <cat-id 1..4>  
,USER-NUMBER = *UNCHANGED / <integer 0..60002>  
,GROUP-NUMBER = *UNCHANGED / <integer 0..60002>  
,COMMENT = *UNCHANGED / *NONE / <c-string 1..255 with-low>  
,DIRECTORY = *UNCHANGED / *ROOT / <posix-pathname 1..1023 without-wild>  
,PROGRAM = *UNCHANGED / *SHELL / <posix-pathname 1..1023 without-wild>
```

Operands**PUBSET =**

Pubset for which the POSIX default attributes in the user catalog are to be changed.

PUBSET = *HOME

The POSIX default attributes are changed in the user catalog of the home pubset.

PUBSET = <cat-id 1..4>

The POSIX default attributes are changed in the user catalog of the specified pubset.

USER-NUMBER =

The user number can be changed.

USER-NUMBER = *UNCHANGED

The user number is not changed.

USER-NUMBER = <integer 0..60002>

The user number is given the specified value.

GROUP-NUMBER =

The group number can be changed.

GROUP-NUMBER = *UNCHANGED

The group number is not changed.

GROUP-NUMBER = <integer 0..60002>

The group number is given the specified value.

COMMENT =

The comment can be changed.

Note

This comment is used, for example, by mail programs to describe the sender.

COMMENT = *UNCHANGED

The comment is not changed.

COMMENT = *NONE

No comment is added.

COMMENT = <c-string 1..255 with-low>

The specified comment is added.

DIRECTORY =

The absolute path name of the user's login directory can be changed.

DIRECTORY = *UNCHANGED

The absolute path name is not changed.

DIRECTORY = *ROOT

The root directory / is allocated.

DIRECTORY = <posix-pathname 1..1023 without-wild>

The specified path name is allocated.

PROGRAM =

The program started up after the user logs in can be changed.

PROGRAM = *UNCHANGED

The program is not changed.

PROGRAM = *SHELL

The default POSIX shell is started up.

PROGRAM = <posix-pathname 1..1023 without-wild>

The specified program is run.

Return codes

(SC2)	SC1	Maincode	Meaning
	0	CMD0001	Command executed without error
2	0	SRM6001	Command executed with warning
	32	SRM6020	Command rejected owing to system error
	64	SRM6040	Command rejected with error message
	130	SRM6030	Command rejected owing to insufficient resources

MODIFY-PRINT-JOB-ATTRIBUTES

Modify parameters for print job

Description status:	SPOOL V4.9A
Functional area:	Controlling spoolout jobs
Domain:	SPOOL-PRINT-ADMINISTRATION
Privileges:	STD-PROCESSING OPERATING SAT-FILE-EVALUATION SAT-FILE-MANAGEMENT SECURITY-ADMINISTRATION PRINT-SERVICE-ADMINISTRATION

Function

The MODIFY-PRINT-JOB-ATTRIBUTES command modifies the parameters of the PRINT-DOCUMENT command for a print job after the command has been accepted. The effect of this command is the same as issuing a new PRINT-DOCUMENT command with modified operands. However, some operands of the PRINT-DOCUMENT command cannot be modified. This depends on the status of the print job. For details see [“Notes” on page 4-317ff.](#)

If the default value *UNCHANGED is specified then no changes are made to the initial value of the parameter in question.

Note that print jobs that have the status PREPROCESSING or ACTIVE cannot be modified. There are also constraints on other statuses (see the [“Notes” on page 4-317](#)).

Privileged functions

RSO device administrators and spool and cluster administrators can modify the attributes of any print job scheduled for printing on any device that they manage. For more information on these user groups see the manuals “RSO” [32], “SPOOL” [43] and “Dprint” [10].

Format

MODIFY-PRINT-JOB-ATTRIBUTES	
JOB-IDENTIFICATION = *TSN(...) / *MONJV(...) / *SERVER-TSN(...) / *CLIENT-TSN(...)	
*TSN(...)	<ul style="list-style-type: none"> TSN = <alphanum-name 1..4> ,CLUSTER-NAME = *<u>LOCAL-CLUSTER</u> / <alphanum-name 1..8>
*MONJV(...)	<ul style="list-style-type: none"> MONJV = <filename 1..54 without-gen-vers>
*SERVER-TSN(...)	<ul style="list-style-type: none"> TSN = <alphanum-name 1..4> ,SERVER-NAME = *<u>HOME</u> / <alphanum-name 1..8>
*CLIENT-TSN(...)	<ul style="list-style-type: none"> TSN = <alphanum-name 1..4> ,CLIENT-HOST = <alphanum-name 1..8>
,DOCUMENT-PART = * <u>UNCHANGED</u> / *PARAMETERS(...)	
*PARAMETERS(...)	<ul style="list-style-type: none"> INPUT-SECTION = *<u>UNCHANGED</u> / *<u>WHOLE-FILE</u> / *PARAMETERS(...) *PARAMETERS(...) <ul style="list-style-type: none"> SECTION-IDENTIFIER = *<u>UNCHANGED</u> / <c-string 1..60 with-low> / <x-string 1..120> ,POSITION = *<u>UNCHANGED</u> / *<u>STD</u> / <integer 1..2047> ,INPUT-PART = *<u>UNCHANGED</u> / *<u>ALL</u> / *PARAMETERS(...) *PARAMETERS(...) <ul style="list-style-type: none"> FIRST-RECORD = *<u>UNCHANGED</u> / *<u>BEGIN-OF-FILE</u> / <integer 1..2147483647> / *<u>BY-STRING-ID</u>(...) *<u>BY-STRING-ID</u>(...) <ul style="list-style-type: none"> STRING = *<u>UNCHANGED</u> / <c-string 1..60 with-low> / <x-string 1..120> ,POSITION = *<u>UNCHANGED</u> / *<u>STD</u> / <integer 1..2047> ,OCCURRENCE = *<u>UNCHANGED</u> / <integer 1..32767>

(Part 1 of 6)

```

, LAST-RECORD = *UNCHANGED / *END-OF-FILE / <integer 1..2147483647> /
    *BY-STRING-ID(...)
    *BY-STRING-ID(...)
        STRING = *UNCHANGED / <c-string 1..60 with-low> / <x-string 1..120>
    , POSITION = *UNCHANGED / *STD / <integer 1..2047>
    , OCCURRENCE = *UNCHANGED / <integer 1..32767>

, RECORD-PART = *UNCHANGED / *ALL / *PARAMETERS(...)
    *PARAMETERS(...)
        FIRST-CHARACTER = *UNCHANGED / <integer 1..32767>
        , LAST-CHARACTER = *UNCHANGED / *STD / <integer 1..32767>

, OUTPUT-PART = *UNCHANGED / *ALL / *RANGE(...) / *LAST(...)
    *RANGE(...)
        FROM = *UNCHANGED / *BEGIN-OF-FILE / <integer 1..2147483647>
        , TO = *UNCHANGED / *END-OF-FILE / <integer 1..2147483647>
        , DIMENSION = *UNCHANGED / *PAGES / *LINES

    *LAST(...)
        LAST = *UNCHANGED / <integer 1..2147483647>
        , DIMENSION = *UNCHANGED / *PAGES / *LINES

, DOCUMENT-FORMAT = *UNCHANGED / *TEXT(...) / *PAGE-FORMAT(...) / *SPECIAL-FORMAT(...)
    *TEXT(...)
        LINE-PER-PAGE = *UNCHANGED / *STD / <integer 1..32767>
    , LINE-SPACING = *UNCHANGED / 1 / 2 / 3 / *BY-EBCDIC-CONTROL(...) / *BY-IBM-CONTROL(...) /
        *BY-ASA-CONTROL(...)
        *BY-EBCDIC-CONTROL(...)
            CONTROL-CHAR-POS = *UNCHANGED / *STD / <integer 1..2040>
        *BY-IBM-CONTROL(...)
            CONTROL-CHAR-POS = *UNCHANGED / *STD / <integer 1..2040>
        *BY-ASA-CONTROL(...)
            CONTROL-CHAR-POS = *UNCHANGED / *STD / <integer 1..2040>
    , HEADER-LINE = *UNCHANGED / *NO / *STD / list-poss(3): *DATE / *FIRST-RECORD /
        *PAGE-NUMBER
    , OUTPUT-FORMAT = *UNCHANGED / *CHARACTER / *HEXADECIMAL

```

(Part 2 of 6)

***PAGE-FORMAT(...)**

FORMAT-NAME = *UNCHANGED / *STD / <c-string 1..63 with-low>

CONTROL-MODE = *UNCHANGED / *LINE-MODE / *PAGE-MODE(...) / *LOGICAL(...) /
*PHYSICAL(...) / *APA(...)

***PAGE-MODE(...)**

PAGE-CONTROL-CHAR = *UNCHANGED / *YES / *NO

CONTROL-TYPE = *UNCHANGED / *HP / *COMPATIBLE

LINE-SPACING = *UNCHANGED / *BY-EBCDIC-CONTROL / *BY-IBM-CONTROL /
*BY-ASA-CONTROL

***LOGICAL(...)**

LINE-PER-PAGE = *UNCHANGED / *STD / <integer 1..32767>

LINE-SPACING = *UNCHANGED / 1 / 2 / 3 / *BY-EBCDIC-CONTROL(...) /
*BY-IBM-CONTROL(...) / *BY-ASA-CONTROL(...)

***BY-EBCDIC-CONTROL(...)**

CONTROL-CHAR-POS = *UNCHANGED / *STD / <integer 1..2040>

***BY-IBM-CONTROL(...)**

CONTROL-CHAR-POS = *UNCHANGED / *STD / <integer 1..2040>

***BY-ASA-CONTROL(...)**

CONTROL-CHAR-POS = *UNCHANGED / *STD / <integer 1..2040>

***PHYSICAL(...)**

LINE-SPACING = *UNCHANGED / *NO / 1 / 2 / 3 / *BY-EBCDIC-CONTROL /
*BY-IBM-CONTROL / *BY-ASA-CONTROL

***APA(...)**

LINE-SPACING = *UNCHANGED / *BY-EBCDIC-CONTROL / *BY-IBM-CONTROL /
*BY-ASA-CONTROL

***SPECIAL-FORMAT(...)**

FORMAT-NAME = *UNCHANGED / *NONE / *PCL / <c-string 1..63 with-low>

LINE-SPACING = *UNCHANGED / *NO / 1 / 2 / 3 / *BY-EBCDIC-CONTROL / *BY-IBM-CONTROL /
*BY-ASA-CONTROL

(Part 3 of 6)

```

,PRINT-JOB-CONTROL = *UNCHANGED / *PARAMETERS (...)
    *PARAMETERS(...)
        CHECKPOINT = *UNCHANGED / *ON-PAGES / *ON-SECTION-RECORDS
        ,PRINT-JOB-NAME = *UNCHANGED / <alphanum-name 1..8> / <c-string 1..8 with-low>
        ,PRINT-JOB-PRIORITY = *UNCHANGED / <integer 30..255>
        ,PRINT-JOB-CLASS = *UNCHANGED / <integer 1..255>
        ,FAILURE-PROCESSING = *UNCHANGED / *PARAMETERS(...)
            *PARAMETERS(...)
                MSG-PAGE = *UNCHANGED / *YES / *NO
            ,SCHEDULING-TIME = *UNCHANGED / *STD / *EARLIEST(...)
                *EARLIEST(...)
                    DATE = *UNCHANGED / *TODAY / <date with-comp>
                    ,TIME = *UNCHANGED / <time>
            ,ENCRYPTION = *UNCHANGED / *YES / *NO
,LAYOUT-CONTROL = *UNCHANGED / *PARAMETERS(...)
    *PARAMETERS(...)
        PAGE-COPIES = *UNCHANGED / *STD / <integer 0..255>
        ,LEFT-MARGIN = *UNCHANGED / *STD / <integer 0..31>
        ,TWO-SIDED = *UNCHANGED / *STD / *NO / *YES / *TUMBLE
        ,ROTATION = *UNCHANGED / *NO / *BY-CONTROL-CODES / 90 / 180 / 270 / 0-180 / 180-0 /
            90-270 / 270-90
        ,COVER-PAGES = *UNCHANGED / *PARAMETERS(...)
            *PARAMETERS(...)
                HEADER-PAGE-TEXT = *UNCHANGED / *NONE / <c-string 1..32>
                ,HEADER-EXIT-NUMBER = *UNCHANGED / *NO / <integer 0..2147483639>
                ,TRAILER-EXIT-NUMBER = *UNCHANGED / *NO / <integer 0..2147483639>
            ,TABLE-REFERENCE-CHAR = *UNCHANGED / *NO / *YES
            ,LANGUAGE-EXTENSION = *UNCHANGED / *NONE / *PARAMETERS(...)
                *PARAMETERS(...)
                    LANGUAGE-NAME = *UNCHANGED / *ARABIC / *FARSI
                    ,LANGUAGE-MODE = *UNCHANGED / *RIGHT-TO-LEFT / *LEFT-TO-RIGHT

```

(Part 4 of 6)

```

,INPUT-TRAY-NUMBER = UNCHANGED / *STD / *IGNORE / <integer 1..99> / *BY-FORMAT(...)
  *BY-FORMAT(...)
    INPUT-TRAY-FORMAT = UNCHANGED / *A3 / *A4 / *A5 / *B4 / *B5 / *FOLIO / *INVOICE /
      *EXEC / *LEGAL / *LETTER / *DOUBLE-LETTER /
      *MONARCH / *COMMERCIAL-10 / *DL / *C5 / *MANUAL /
      *A3-UNCUT / *A4-UNCUT / LEDGER
,OUTPUT-TRAY-NUMBER = UNCHANGED / *STD / *IGNORE / *SORTER(...) / <integer 1..99>
  *SORTER(...)
    SORT-MODE = UNCHANGED / *NO / *GROUP / *COLLATE / *STACKER / *AUTOMATIC
,TOP-OFFSET = UNCHANGED / *IGNORE / <integer -255..255>
,LEFT-OFFSET = UNCHANGED / *IGNORE / <integer -255..255>
,RESOURCE-DESCRIPTION = UNCHANGED / *PARAMETERS(...)
  *PARAMETERS(...)
    FORM-NAME = UNCHANGED / *STD / <alphanum-name 1..6>
  ,LOOP-NAME = UNCHANGED / *STD / <alphanum-name 1..3>
  ,ROTATION-LOOP-NAME = UNCHANGED / *STD / <alphanum-name 1..3>
  ,CHARACTER-SETS = UNCHANGED / *STD / *POOL(...) / *BY-EXTENDED-NAME(...) /
    list-poss(16): <alphanum-name 1..3>
    *POOL(...)
      POOL-NAME = UNCHANGED / <alphanum-name 1..4>
      ,POOL-INDEX = UNCHANGED / <integer 0..64>
    *BY-EXTENDED-NAME(...)
      NAME = UNCHANGED / list-poss(4): <alphanum-name 1..8>
  ,CHAR-SET-ATTRIBUTES = UNCHANGED / *ALL / *RESTRICTED
  ,OVERLAY-RESOURCES = UNCHANGED / *PARAMETERS(...)
    *PARAMETERS(...)
      ELECTRONIC-OVERLAY = UNCHANGED / *NONE / <alphanum-name 2..2>
      ,OVERLAY = UNCHANGED / *STD / *NONE / *PARAMETERS(...)
        *PARAMETERS(...)
          FACE-SIDE = UNCHANGED / *NONE / <integer 1..127>
          ,REVERSE-SIDE = UNCHANGED / *NONE / <integer 1..127>
        ,FORMS-OVERLAY-BUFFER = UNCHANGED / *NONE / <alphanum-name 1..4>
      ,PAGE-DEFINITION = UNCHANGED / *STD / <integer 1..50000> / <alphanum-name 1..8>
      ,FORM-DEFINITION = UNCHANGED / *STD / <alphanum-name 1..8>
      ,USER-RESOURCES-FILE = UNCHANGED / *STD / <filename 1..44 without-gen-vers>

```

```

,TRANSLATION-TABLE = *UNCHANGED / *NONE / *PARAMETERS(...)
    *PARAMETERS(...)
        |
        |   NAME = *UNCHANGED / <alphanum-name 1..8>
        |   ,FILE = *UNCHANGED / *SYSTEM / <filename 1..44 without-gen-vers>
        |
    ,RESOURCES-LOCATION = *UNCHANGED / *STD / *HOME / *SERVER
,TO-PRINTER = *UNCHANGED / *PARAMETERS(...)
    *PARAMETERS(...)
        |
        |   PRINTER-NAME = *UNCHANGED / *STD / <alphanum-name 1..8> / *IPP(...)
        |   *IPP(...)
        |   |
        |   |   URL = *UNCHANGED / <c-string 1..1023 with-low>
        |   |   ,FQDN = *UNCHANGED / *NONE / <c-string 1..1023 with-low>
        |   |
        |   ,PRINTER-TYPE = *UNCHANGED / *ANY / *HP-PRINTER / *LP65-PRINTER / *APA-PRINTER
        |   ,REDIRECTION-ALLOWED = *UNCHANGED / *STD / *NO / *YES
        |   ,CLUSTER-NAME = *UNCHANGED / <alphanum-name 1..8>
        |   ,OUTPUT-FORMAT = *UNCHANGED / *NONE / <c-string 1..63 with-low>
        |   ,VIRTUAL-PRINTER = *UNCHANGED / *STD / *ALLOWED / *NOT-ALLOWED / *MUST(...)
        |   *MUST(...)
        |   |
        |   |   NAME = *UNCHANGED / <alphanum-name 1..8>
        |   |   ,STRING = *UNCHANGED / *NONE / <c-string 1..32>
        |
    ,ADDITIONAL-COPIES = *UNCHANGED / <integer 0..255>
,LOCK-FILE = *UNCHANGED / *YES / *NO
,DELETE-AFTER-PRINT = *UNCHANGED / *NO / *YES(...) / *DESTROY(...)
    *YES(...)
        |
        |   LINE-TRUNCATION = *UNCHANGED / *STD / *DELETE-FILE / *KEEP-FILE
    *DESTROY(...)
        |
        |   LINE-TRUNCATION = *UNCHANGED / *STD / *DELETE-FILE / *KEEP-FILE

```

(Part 6 of 6)

Operands

JOB-IDENTIFICATION = *TSN(...) / *MONJV(...) / *SERVER-TSN(...) / *CLIENT-TSN(...)

Specifies how the job is identified.

JOB-IDENTIFICATION = *TSN(...)

The print job is identified by its local task sequence number (TSN).

TSN = <alphanum-name 1..4>

TSN of the job to be modified.

CLUSTER-NAME = *LOCAL-CLUSTER / <name 1..8>

Name of the cluster in which the print job is processed. If you specify a cluster name, the specified TSN is the TSN on the gateway host in the specified remote cluster. Only BS2000 clusters can be specified.

JOB-IDENTIFICATION = *MONJV(...)

The print job is identified by its monitoring job variable.

MONJV = <filename 1..54 without-gen-vers>

This operand allows a print job to be addressed by means of its MONJV, provided the specified MONJV is accessible on the host at which the command is issued. Only print jobs in the local cluster can be addressed in this way.

JOB-IDENTIFICATION = *SERVER-TSN(...)

The print job is identified by its TSN (task sequence number) on the server. Only print jobs in the local cluster can be addressed in this way.

TSN = <alphanum-name 1..4>

Task sequence number of the job to be modified on the server.

SERVER-NAME = *HOME / <alphanum-name 1..8>

Name of the server on which the print job is being processed.

JOB-IDENTIFICATION = *CLIENT-TSN(...)

Only for the cluster administrator. The print job is identified by its TSN on the client. Only print jobs in the local cluster can be addressed in this way.

TSN = <alphanum-name 1..4>

Task sequence number of the job to be modified on the client.

CLIENT-HOST = <alphanum-name 1..8>

Name of the client on which the print job is being processed.

DOCUMENT-PART = *UNCHANGED / *PARAMETERS(...)

Allows you to limit processing of the print file to only a part of it and thus change what was specified in the PRINT-DOCUMENT command.

The file to be printed (the input file) consists of a sequence of records, each of which can be identified by SPOOL by means of its record number or a string it contains. SPOOL also allows you to structure the print file by using strings as file marks. These file marks divide the file up into sections. SPOOL takes into account all the options set by the user and converts the input file into a file edited for printing (an output file). This file consists of logical lines and pages. The delimitation of part or parts of a file can apply to either the input file or the output file. The following alternatives for defining parts of a file are available in the substructures of this operand:

- INPUT-SECTION: the input file can be subdivided into sections on the basis of a specified string, or the whole file can be processed.
- INPUT-PART: only a certain number of the input file's records are processed. You can specify the first and last record by means of a record number, a section number or a string.
- RECORD-PART: of the records selected by means of the above operands, only a specified part of each record is processed.
- OUTPUT-PART: the whole input file is edited for printing, but output is limited to a subset of all logical print pages.

DOCUMENT-PART = *PARAMETERS(...)

The part of the file to be processed can be specified in the following substructure.

INPUT-SECTION = *UNCHANGED / *WHOLE-FILE / *PARAMETERS(...)

Specifies whether the file is to be structured by means of file marks, and thus allows you to change what was specified in PRINT-DOCUMENT.

INPUT-SECTION = *WHOLE-FILE

The file is not structured. The whole input file is a single logical section.

INPUT-SECTION = *PARAMETERS(...)

The file is structured by means of file marks that can be specified in the following substructure. You use the INPUT-PART operand to specify which sections of the structured print file are to be output.

SECTION-IDENTIFIER = *UNCHANGED / <c-string 1..60 with-low> / <x-string 1..120>

Specifies the file marks by means of which the input file is to be structured. Any strings in the records can be used as file marks. These strings can be either in SECTION records, which are not printed, or in the print file's normal records, which are printed. A string can be specified in the form of printable characters or hexadecimal characters. You use the INPUT-PART operand to specify which sections of the structured print file are to be output. The search for the start of the section to be printed is executed in a separate "pseudo controller" task. Neither the user task nor the printer is locked while this is being done. A pseudo controller

writes the address of the first record in the section to the SPOOL control block; the spoolout job can then be processed (PREPROCESSING). If the desired section is not found in the file, an error message appears on the trailer page (for the layout of this page see the "SPOOL" manual [43]).

POSITION = *UNCHANGED / *STD / <integer 1..2047>

Specifies the position at which the specified string begins in the SECTION record.

POSITION = *STD

The relevant string begins by default at the start of the record, i.e.:

- in a SAM file: at the first byte after the record length field
- in an ISAM file with KEY-POS=5: at the first byte after the key
- in an ISAM file with KEY-POS > 5: at the first byte after the record length field.

POSITION = <integer 1..2047>

The relevant string begins at the specified byte (after the record length field).

INPUT-PART = *UNCHANGED / *ALL / *PARAMETERS(...)

Specifies whether only a certain number of the input file's records are to be processed, and thus allows you to change what was specified in PRINT-DOCUMENT. You can specify the first and last record by means of a record number, a section number or a string.

INPUT-PART = *ALL

All the file's records are to be processed.

INPUT-PART = *PARAMETERS(...)

Only a certain number of the input file's records are to be processed. You can specify the first and last records.

**FIRST-RECORD = *UNCHANGED / *BEGIN-OF-FILE /
<integer 1..2147483647> / *BY-STRING-ID(...)**

Specifies the record as of which the file is to be processed. You can specify the first record in the file, the number of a record or file mark, or a string in a record.

FIRST-RECORD = *BEGIN-OF-FILE

Output begins with the file's first record, even if SECTION records are specified.

FIRST-RECORD = <integer 1..2147483647>

Number of the SECTION record or normal record as of which a section of the file is to be output.

FIRST-RECORD = *BY-STRING-ID(...)

The record in which a specified string occurs is the first record to be output.

STRING = *UNCHANGED / <c-string 1..60 with-low> / <x-string 1..120>

Output begins with the record in which the specified string of printable or hexadecimal characters is found at a specific position.

POSITION = *UNCHANGED / STD / <integer 1..2047>

Position within the record at which the specified string of hexadecimal characters begins. By default (STD), the FIRST-RECORD string begins at the start of the record, i.e.:

- in a SAM file: at the first byte after the record length field
- in an ISAM file with KEY-POS=5: at the first byte after the key
- in an ISAM file with KEY-POS > 5: at the first byte after the record length field.

OCCURRENCE = *UNCHANGED / <integer 1..32767>

Specifies the record (containing the FIRST-RECORD string) as of which output is to start.

LAST-RECORD = *UNCHANGED / *END-OF-FILE / <integer 1..2147483647> / *BY-STRING-ID(...)

Specifies the last record in the part of the file to be output. You can specify the last record in the file, the number of a record or file mark, or any string in a record.

Note

If the LAST-RECORD record is found before the FIRST-RECORD record, the PRINT-DOCUMENT command aborts.

LAST-RECORD = *END-OF-FILE

Output continues until the end of the file, even if SECTION records are specified.

LAST-RECORD = <integer 1..2147483647>

Number of the last record (SECTION record or normal record) in the part of the file to be output.

LAST-RECORD = *BY-STRING-ID(...)

Specifies that the last record is to contain a specified string.

STRING = *UNCHANGED / <c-string 1..60 with-low> / <x-string 1..120>

Output ends with the record in which the specified string of printable or hexadecimal characters is found at a specific position in the file.

POSITION = *UNCHANGED / STD / <integer 1..2047>

Position within the record at which the specified string of hexadecimal characters begins. By default (STD), the LAST-RECORD string begins at the start of the record, i.e.:

- in a SAM file: at the first byte after the record length field
- in an ISAM file with KEY-POS=5: at the first byte after the key
- in an ISAM file with KEY-POS > 5: at the first byte after the record length field.

OCCURRENCE = *UNCHANGED / <integer 1..32767>

Specifies the occurrence of the record containing the LAST-RECORD string at which output is to stop.

RECORD-PART = *UNCHANGED / *ALL / *PARAMETERS(...)

Specifies whether only a specific part of each of the records selected by means of the above operands is to be processed.

RECORD-PART = *ALL

All of each selected record is to be processed.

RECORD-PART = *PARAMETERS(...)

Only a specific part of each record is to be processed.

FIRST-CHARACTER = *UNCHANGED / <integer 2..32767>

Allows a byte number (record column) to be specified indicating the point as of which the records of a file are to be output. (The bytes of a record are numbered consecutively from left to right starting with 1; ISAM keys and control characters are components of a record.) What happens depends on whether or not one of the values *BY-EBCDIC-CONTROL, *BY-IBM-CONTROL or *BY-ASA-CONTROL is specified in the LINE-SPACING operand.

If one of these values is specified:

Output starts with the data byte following the specified byte number. The feed control character is interpreted irrespective of the entry for FIRST-CHARACTER, provided the value for FIRST-CHARACTER is less than the length of the record. If the specified value is greater than the length of the record, it is ignored (i.e. printing does not take place, nor does line feed).

If none of these values is specified:

Output starts with the data byte corresponding to the specified byte number. If the records are longer than the form definition allows, printing continues on the next line. If CONTROL-MODE=*PAGE-MODE is specified, an entry for FIRST-CHARACTER is problematical because SPOOL takes no account of the number of control characters in a record.

LAST-CHARACTER = *UNCHANGED / *STD / <integer 1..32767>

Specifies the byte indicating the point at which printing of each record is to stop. What happens depends on whether or not one of the values *BY-EBCDIC-CONTROL, *BY-IBM-CONTROL or *BY-ASA-CONTROL is specified in the LINE-SPACING operand.

If one of these values is specified:

Output ends with the data byte following the specified byte number (unless FIRST-CHARACTER is specified for an ISAM file with KEY-POSITION=5, in which case output ends with the data byte corresponding to the specified byte number).

If none of these values is specified:

Output ends with the data byte corresponding to the specified byte number.

If the records are longer than the form definition allows, printing continues on the next line. If CONTROL-MODE=*PHYSICAL is specified, an entry for LAST-CHARACTER is problematical because SPOOL takes no account of the number of control characters in a record.

Default (*STD):

- end of print line (136)
- 2048 for an EAM file, SYSLST or SYSOUT.

OUTPUT-PART = *UNCHANGED / *ALL / *RANGE(...) / *LAST(...)

Specifies that the whole input file is to be edited for printing but that output is to be limited to a subset of all logical print pages, and thus allows you to change what was specified in PRINT-DOCUMENT.

OUTPUT-PART = *ALL

All logical print pages of the edited file are to be output.

OUTPUT-PART = *RANGE(...)

Part of the file is to be output.

FROM = *UNCHANGED / *BEGIN-OF-FILE / <integer 1..2147483647>

Allows a page or line number in the print file to be specified as of which output is to start, as specified by the DIMENSION operand. By default, output commences at the beginning of the file. The pages in a print file are defined as described for the LINE-PER-PAGE operand (unless a control character produces a premature page feed).

TO = *UNCHANGED / *END-OF-FILE / <integer 1..2147483647>

Allows a page or line number in the print file to be specified at which output is to end, as specified by the DIMENSION operand.

By default, output terminates at the end of the file. Pages in a print file are defined by the LINE-PER-PAGE operand (unless a control character produces a premature page feed). The value specified here must be greater than that specified in the FROM operand.

DIMENSION = *UNCHANGED / *PAGES / *LINES

Specifies whether the values in the FROM and TO operands are to be interpreted as page or line numbers.

OUTPUT-PART = *LAST(...)

Only the last so many pages or lines of the print file are to be output.

LAST = *UNCHANGED / <integer 1..2147483647>

Number of pages or lines to be output, calculated from the end of the file. The DIMENSION operand indicates whether the value is to be interpreted as a page or line number. Pages in a print file are defined by the LINE-PER-PAGE operand (unless a control character produces a premature page feed).

DIMENSION = *UNCHANGED / *PAGES / *LINES

Specifies whether the value in the LAST operand is to be interpreted as a page or line number.

Example of SECTION processing:

The following sections of an ISAM file are to be output.

```
01000000      Line 0
02000000    *SECTION0001
03000000      Line 1
04000000    *SECTION0002
05000000      Line 2
06000000    *SECTION0003
07000000      Line 4
```

Case: SECTION records in default positions.

```
PRINT-DOCUMENT datei, DOCUMENT-PART=*PAR(INPUT-SECTION = -
  *PAR(SECT-ID=C'*SECTION',POS=*STD), INPUT-PART= *PAR( -
    FIRST-RECORD=1, LAST-RECORD=3))
```

The following part of the file is printed:

```
03000000      Line 1
05000000      Line 2
```

DOCUMENT-FORMAT = *UNCHANGED / *TEXT(...) / *PAGE-FORMAT(...) / *SPECIAL-FORMAT(...)

Specifies the type of the document contents, i.e. the format of the file to be printed as regards the interpretation of feed control characters, printer control characters, font identifiers, RENO commands and/or VTSU codes. You can specify the following operands and the corresponding substructures here:

- *TEXT: the file has no printer-specific control characters except for feed control characters.
- *PAGE-FORMAT: the file has laser printer-specific control characters.
- *SPECIAL-FORMAT: the file has special printer-specific control characters.

DOCUMENT-FORMAT = *TEXT(...)

Except for feed control characters, the file has no printer-specific control characters. The position of the feed control character in the record can be specified in the substructure of the LINE-SPACING operand.

The data is sent to the printer unchanged. Since only the data to be printed is sent to the printer, records can be truncated.

The following applies to HP and HP90 printers:

When the operand TO-PRINTER=*PAR(PRINTER-TYPE=*ANY) is specified, the character X'FF' is replaced by the character X'1F' in order to be compatible with the PRM statement CONVERT-PRINT-RESOURCES.

The following applies to LP65 printers:

Spoolout jobs for which DOCUMENT-FORMAT=*TEXT is specified can contain any LP65 control characters and printer control characters. Only records longer than 8192 characters are truncated.

The following applies to RSO:

Records of type A-1 or A-2 are to be printed (no control characters in the data stream); in other words, except for feed control characters in the first column of the records, no control characters are interpreted. This is also the reason why a font change is not possible. The form's default font or the first font specified for CHARACTER-SETS, if specified, is used. Nonprinting characters, i.e. characters with a hexadecimal value less than X'40', are output as blanks. If the record length exceeds the maximum line length, the record is truncated in the printout. The maximum line length depends on the character spacing, which is defined by means of the font used (see the CHARACTER-SETS operand).

Note

RSO printers: If a list of fonts is specified in conjunction with DOCUMENT-FORMAT=*TEXT (CHARACTER-SETS=... operand), the command interprets only the first element in the list.

LINE-PER-PAGE = *UNCHANGED / *STD / <integer 1..32767>

Specifies how many lines (including header and blank lines) are to be printed on a page.

LINE-PER-PAGE = *STD

If the operand is omitted, the number of lines per print page is calculated using the following formula, regardless of what has been specified for the HEADER-LINE operand: $\text{Number of lines} = P * L - N - 6$

The name sections have the following meanings:

P = paper size in inches

L = line density

N = number of line before the first channel 1

Printers with a loadable vertical format buffer

- The vertical tab “channel 1” controls the line on which printing is to start. Unless otherwise specified, 2 blank lines are set before printing starts; i.e. channel 1 (CHANNEL 01) is in the third line of the loop.
- If the value specified for the LINE-PER-PAGE operand is greater than the specified number of lines in the loop, the value in the loop is used.
- A value specified here must be at least three times as large as the line feed specified for LINE-SPACING=1/2/3 if the LINE-PER-PAGE operand is specified together with the HEADER-LINE and LINE-SPACING operands.

LINE-SPACING = *UNCHANGED / 1 / 2 / 3 / *BY-EBCDIC-CONTROL(...) / *BY-IBM-CONTROL(...) / *BY-ASA-CONTROL(...)

Specifies the number of line feeds and the way in which control characters are interpreted.

LINE-SPACING = 1 / 2 / 3

The records are to be printed out with 1-, 2- or 3-line spacing.

LINE-SPACING = *BY-EBCDIC-CONTROL(...)

The contents of the first byte of each record are to be interpreted as an EBCDIC feed control character.

CONTROL-CHAR-POS = *UNCHANGED / *STD / <integer 1..2040>

Number of the data byte in which SPOOL finds the feed control character. In the case of records of variable length, the fields containing the length information are not counted as data.

LINE-SPACING = *BY-IBM-CONTROL(...)

The contents of the first byte of each record are to be interpreted as an IBM feed control character.

CONTROL-CHAR-POS = *UNCHANGED / *STD / <integer 1..2040>

Number of the data byte in which SPOOL finds the feed control character. In the case of records of variable length, the fields containing the length information are not counted as data.

LINE-SPACING = *BY-ASA-CONTROL(...)

The contents of the first byte of each record are to be interpreted as an ASA feed control character.

CONTROL-CHAR-POS = *UNCHANGED / *STD / <integer 1..2040>

Number of the data byte in which SPOOL finds the feed control character. In the case of records of variable length, the fields containing the length information are not counted as data.

HEADER-LINE = *UNCHANGED / *NO / *STD /

list-poss(3): *DATE / *FIRST-RECORD / *PAGE-NUMBER

Specifies whether a header line is to be printed on every page (except the header and trailer pages).

HEADER-LINE = *NO

No header line is printed.

HEADER-LINE = *STD

The header has the following format:

Header	DATE yyyy-mm-dd	First record	nnnn	PAGE nnnn
Column	1	41(11,11)	60(21,67)	124 (77)

The first value in parentheses applies in the case of a form definition with a line length < 132 and ≥ 80 characters (with differing values). The second value in parentheses applies in the case of a form definition with a line length < 80 and ≥ 70 characters (with differing values).

yyyy-mm-dd Year-Month-Day

First record user ID

nnnn file name

nnnn Page number

Unless otherwise specified, the header line is followed by a blank line. The header is shifted in accordance with the LEFT-MARGIN operand, but the header line will be truncated at column 132.

DATE and PAGE are only present in the header line if the line size ≥ 032 .

HEADER-LINE = list-poss(3): *DATE / *FIRST-RECORD / *PAGE-NUMBER

The header has the following format:

HEADER-LINE=	DATE	FIRST-RECORD	PAGE-NUMBER
Header	DATE yyyy-mm-dd (yyyy-mm-dd)	First record	PAGE nnnn (nnnn, nnnn)
Column	1	21	124 (77.67)

***DATE:**

The value in parentheses applies in the case of a form definition with a line length < 132 and ≥ 70 characters (with differing values). ***PAGE-NUMBER:** The first value in parentheses applies in the case of a form definition with a line length < 132 and ≥ 80 characters (with differing values). The second value in parentheses applies in the case of a form definition with a line length < 80 and ≥ 70 characters (with differing values).

yyyy-mm-dd Year-Month-Day
 First record First logical record of the file
 nnnn Page number

If *DATE, *FIRST-RECORD or *PAGE-NUMBER is omitted, the appropriate section is filled with blanks.

Unless otherwise specified, the header line is followed by a blank line.

The header is shifted in accordance with the LEFT-MARGIN operand, but the header line will be truncated at column 132.

*DATE and *PAGE are only present in the header line if the line size \geq 032.

If *FIRST-RECORD is specified, the first record is regarded as not belonging to the date.

OUTPUT-FORMAT = *UNCHANGED / *CHARACTER / *HEXADECIMAL

Indicates whether the output format is character format only or character format and hexadecimal format.

OUTPUT-FORMAT = *CHARACTER

Outputs in character format only. Records which exceed the length of a print line are truncated.

OUTPUT-FORMAT = *HEXADECIMAL

Outputs the data records in character format and in hexadecimal format.

Output format

Each output line starts with an 8-byte prefix followed by data 50 bytes in length. Each output line is first printed using the appropriate font and then repeated in hexadecimal format.

Format of the output line

Column	Contents
1-4	Column number from which the data of the output record should begin
5-8	blank
From 9	Characters of the input record according to font; the individual characters are separated by a blank. The characters are repeated in hexadecimal format in the next line.

DOCUMENT-FORMAT = *PAGE-FORMAT(...)

The file contains specific control characters for laser printers, and thus changes what was originally specified in PRINT-DOCUMENT.

FORMAT-NAME = *UNCHANGED / *STD / <c-string 1..63 with-low>

Name of the format in which the output data is transferred to the printer. If no value was entered for FORMAT-NAME, a default value is automatically deducted from the value of the CONTROL-MODE operand. This leads to the following results:

CONTROL-MODE = *PAGE-MODE(...)

FORMAT-NAME = *HP

CONTROL-MODE = *APA(...)

FORMAT-NAME = *SPDS

CONTROL-MODE = *LOGICAL / *PHYSICAL / *LINEMODE

FORMAT-NAME = *STD

The value FORMAT-NAME = *STD means that the contents of the file to be printed out is irrelevant.

CONTROL-MODE = *UNCHANGED / *PAGE-MODE(...) / *LINE-MODE / *LOGICAL(...) / *PHYSICAL(...) / *APA(...)

Specifies how the control characters are to be interpreted.

CONTROL-MODE = *PAGE-MODE(...)

The control characters are suitable for processing on page printers.

PAGE-CONTROL-CHAR = *UNCHANGED / *YES / *NO

Specifies whether the control character list must be at the beginning of each page (i.e. always after branching to the vertical tab "channel 1" in the loop).

PAGE-CONTROL-CHAR = *YES

The control character list must be there.

PAGE-CONTROL-CHAR = *NO

No control character list at the beginning of the page. However, this means that the following functions cannot be controlled in the case of output to HP printers:

- Film overlays on individual pages in the file; specified in the MODIFY-PRINT-JOB-ATTRIBUTES command, a film overlay is used on each page of the print file of the spoolout job.
- Page copies for individual pages in the file; all the pages of the print file are output with as many copies as specified in the MODIFY-PRINT-JOB-ATTRIBUTES command.
- Column-oriented indentation on individual pages; the value specified in the MODIFY-PRINT-JOB-ATTRIBUTES command is valid for all the pages in the print file.
- FOB data overlay on individual pages in the file; specified in the MODIFY-PRINT-JOB-ATTRIBUTES command, an FOB data overlay is used on each page in the print file of the spoolout job.
- A copy reference number cannot be specified.

- Page rotation control for individual pages in the print file; all the pages are output in either portrait or landscape format, as specified in the MODIFY-PRINT-JOB-ATTRIBUTES command.

CONTROL-TYPE = *UNCHANGED / *HP / *COMPATIBLE

Specifies whether the control characters are suitable for processing on HP or HP90 printers or whether they have to be converted.

CONTROL-TYPE = *HP

The file contains HP or HP90 printer-specific control characters that can only be processed by these printers.

CONTROL-TYPE = *COMPATIBLE

The file does not contain HP or HP90 printer-specific control characters. SPOOL must convert the control characters.

LINE-SPACING = *UNCHANGED / *BY-EBCDIC-CONTROL / *BY-IBM-CONTROL / *BY-ASA-CONTROL

Specifies the number of line feeds and the way in which control characters are interpreted.

LINE-SPACING = *BY-EBCDIC-CONTROL

The contents of the first byte of each record are to be interpreted as an EBCDIC feed control character.

LINE-SPACING = *BY-IBM-CONTROL

The contents of the first byte of each record are to be interpreted as an IBM feed control character.

LINE-SPACING = *BY-ASA-CONTROL

The contents of the first byte of each record are to be interpreted as an ASA feed control character.

CONTROL-MODE = *LINE-MODE

Only for RSO.

Records of type C (see the “SPOOL” manual [43]) are printed out. The records may contain data mixed with LINE-MODE control characters. LINE-MODE control characters are (in any combination):

- printer control characters (i.e. physical control character beginning with X'27' or X'3C')
- RENO commands
- VTSU codes

Control over record and file formats (including page and line feed with LINE-MODE control characters) rests solely with the user. With the 9025/9026 RENO page printer, users must also ensure that the printer is set to the correct start position on the paper. A loop is not interpreted. Nonprinting characters, i.e. characters with a hexadecimal value less than X'40', are output as blanks.

The spoolout job is executed with the default font of the form used until you change the font in the file with the aid of LINE-MODE control characters.

CONTROL-MODE = *LOGICAL(...)

Only for RSO printers.

Specifies that records of type B-1 or B-2 are to be printed out, i.e. records which, in addition to a feed control character in the first byte, may contain data mixed with font identifiers, printer control characters, RENO commands and VTSU codes (see the "RSO" manual [32], record type B-1/B-2).

With the exception of the VTSU codes VPA, NP, VT, NL and CR, which are output as blanks, the above-mentioned control characters are interpreted. A font identifier, a VTSU code or a RENO command remains valid until a new control character is specified.

If the font identifier is omitted, the default font for the form is used.

Since page feed is implemented via a loop or constant line feed when CONTROL-MODE=LOGICAL is specified, the file should not contain the RENO commands \LF, \FF and \CR. Setting the form height is likewise not permitted.

LINE-PER-PAGE = *UNCHANGED / *STD / <integer 1..32767>

Specifies how many lines (including header and blank lines) are to be printed on a page.

LINE-PER-PAGE = *STD

If no value is specified, the number of lines per print page is calculated according to the following formula, regardless of the value in the HEADER-LINE operand:

$$\text{Number of lines} = P * L - N - 6$$

The name sections have the following meanings:

P = paper size in inches

L = line density

N = number of line before the first channel 1

If the value specified for the LINE-PER-PAGE operand is greater than the specified number of lines in the loop, the value in the loop is used. A value specified here must be at least three times as large as the line feed specified for LINE-SPACING=1/2/3 if the LINE-PER-PAGE operand is specified together with the HEADER-LINE and LINE-SPACING operands.

LINE-SPACING = *UNCHANGED / 1 / 2 / 3 / *BY-EBCDIC-CONTROL / *BY-IBM-CONTROL / *BY-ASA-CONTROL

Specifies the number of line feeds and the way in which control characters are interpreted.

LINE-SPACING = 1 / 2 / 3

The records are to be printed out with 1-, 2- or 3-line spacing.

LINE-SPACING = *BY-EBCDIC-CONTROL(...)

The contents of the first byte of each record are to be interpreted as an EBCDIC feed control character.

CONTROL-CHAR-POS = *UNCHANGED / *STD / <integer 1..2040>

Number of the data byte in which SPOOL finds the feed control character. In the case of records of variable length, the fields containing the length information are not counted as data.

LINE-SPACING = *BY-IBM-CONTROL(...)

The contents of the first byte of each record are to be interpreted as an IBM feed control character.

CONTROL-CHAR-POS = *UNCHANGED / *STD / <integer 1..2040>

Number of the data byte in which SPOOL finds the feed control character. In the case of records of variable length, the fields containing the length information are not counted as data.

LINE-SPACING = *BY-ASA-CONTROL(...)

The contents of the first byte of each record are to be interpreted as an ASA feed control character.

CONTROL-CHAR-POS = *UNCHANGED / *STD / <integer 1..2040>

Number of the data byte in which SPOOL finds the feed control character. In the case of records of variable length, the fields containing the length information are not counted as data.

CONTROL-MODE = *PHYSICAL(...)

Only for RSO.

Specifies that contrary to an original definition in the PRINT-DOCUMENT command

- laser printer-specific control characters (local SPOOL) or
- records of type D-1 / D-2 (RSO) - i.e. data mixed with VTSU codes, printer control characters and RENO commands - are to be interpreted.

Control characters contained in the print data are interpreted. In the case of HP printers, a record for a 13.6-inch form may be up to 700 bytes long (including control characters and the escape character X'FF'). If the number of characters to be printed per record exceeds the physical capacity of the laser printer, the spoolout job is terminated abnor-

mally. The maximum line length depends on the character pitch (see table of valid character spacings). The interpretation of control characters must be activated in the first record of each print page.

Output to local SPOOL devices:

When CONTROL-MODE = *PAGE-MODE and CONTROL-TYPE = *COMPATIBLE are specified, the X'FF' characters are converted to X'1F'. Laser printer-specific control characters in the records are interpreted. The first character in each record is interpreted as a feed control character. For ISAM files the key must be at the start of each record.

The file can be printed out using more than one font. The appropriate control characters can occur in any position in the text. The LEFT-MARGIN, PAGE-COPIES and LINE-PER-PAGE operands are ignored if they are specified together with CONTROL-MODE=*PHYSICAL.

Output to RSO devices:

LINE-SPACING=*NO is set automatically, which means that you must implement page and line feeds with LINE-MODE control characters (i.e. VTSU codes, printer control characters and RENO commands) in the file itself. If you specify LINE-SPACING=*BY-EBCDIC-CONTROL for records of type D-2, the feed control character in the first byte is interpreted as a line or page feed control character. Nonprinting characters are also transferred to the printer (in contrast to CONTROL-MODE=*LINE-MODE). The user is responsible for inserting the correct control characters in the file (including line spacing characters).

LINE-SPACING = *UNCHANGED / *NO / 1 / 2 / 3 / *BY-EBCDIC-CONTROL / *BY-IBM-CONTROL / *BY-ASA-CONTROL

Specifies the number of line feeds and the way in which control characters are interpreted.

LINE-SPACING = *NO

The contents of the first byte of each record are not interpreted as a control character.

LINE-SPACING = 1 / 2 / 3

Permitted only for RSO.

The records are to be printed out with 1-, 2- or 3-line spacing.

LINE-SPACING = *BY-EBCDIC-CONTROL

The contents of the first byte of each record are to be interpreted as an EBCDIC feed control character.

LINE-SPACING = *BY-IBM-CONTROL

The contents of the first byte of each record are to be interpreted as an IBM feed control character.

LINE-SPACING = *BY-ASA-CONTROL

The contents of the first byte of each record are to be interpreted as an ASA feed control character.

CONTROL-MODE = *APA(...)

Specifies that the file to be printed contains APA printer control characters that are to be interpreted, and thus changes what was specified in PRINT-DOCUMENT.

LINE-SPACING = *UNCHANGED / *BY-EBCDIC-CONTROL / *BY-IBM-CONTROL / *BY-ASA-CONTROL

Specifies the type of the printer control characters (E, I or A).

DOCUMENT-FORMAT = *SPECIAL-FORMAT(...)

Specifies that a printer-specific language is to be used in the document, and thus changes what was specified in PRINT-DOCUMENT. In this case, the SPOOL subsystem provides transparent control for the document. In other words, the file is transferred without interpretation.

FORMAT-NAME = *UNCHANGED / *NONE / *PCL / <c-string 1..63 with-low>

Specification of the format to be processed. The document is processed in transparent mode.

FORMAT-NAME = *NONE

The document is either processed by RSO in transparent mode or it is transferred to UNIX-based system without a specific format.

Data records of the types E-1 or E-2 are printed out by RSO (see the "RSO" manual [32]). With the exception of VTSU codes for RSO, the data records can contain optional characters. All characters of a data record are transferred by RSO to the printer without interpretation, with the exception of the line spacing control character in the first byte of the type E-2 data record.

The user is responsible for inserting the correct control characters in the file (including line spacing characters). If the LINE-SPACING operand is not specified, the default setting LINE-SPACING=*NO applies and you have to include page feeds and line feeds in the file yourself using LINE-MODE control characters. If LINE-SPACING=*BY-EBCDIC-CONTROL is specified for type E-2 data records, the feed control character in the first byte is interpreted as a line feed or a page feed control character. If the LEFT-MARGIN operand is specified at the same time, blanks are included at the beginning of each data record and these indent the text by the desired number of columns when it is printed.

FORMAT-NAME = *PCL

This value is only still available for reasons of compatibility.

FORMAT-NAME = <c-string 1..63 with-low>

This operand specifies that the contents of the document to be processed are of a specific type (e.g. HP LASERJET).

In the case of jobs which are directed to a cluster, the operand value is determined by the document format attribute which is transferred to the cluster. It is interpreted by Xprint or the foreign print system as the "content type" attribute of the print job (xpadd-job -ct...). This document content type fulfills part of the relevant requirements of ISO DPA class 1, which is required for interoperability between the BS2000 Spool & Print subsystems and foreign spool and print subsystems.

Jobs to RSO are printed by an RSO printer if it supports the format name specified or if a filter is available which will convert the format name into a format name supported by the printer.

If the value of CLUSTER-NAME refers to a BS2000 cluster or if none was specified, the length of the format name may not exceed 8 characters. If the FORMAT-NAME value is longer, the command is rejected. The file is printed by a printer that supports the specified format name.

In all cases the printer must have been defined together with the format name in the SPOOL parameter file.

LINE-SPACING = *UNCHANGED / *NO / 1 / 2 / 3 / *BY-EBCDIC-CONTROL / *BY-IBM-CONTROL / *BY-ASA-CONTROL

Specifies the number of line feeds and the way in which control characters are interpreted.

LINE-SPACING = *NO

The contents of the first byte of each record are not interpreted as a control character.

LINE-SPACING = 1 / 2 / 3

Permitted only for RSO.

The records are to be printed out with 1-, 2- or 3-line spacing.

LINE-SPACING = *BY-EBCDIC-CONTROL

Only for RSO.

The contents of the first byte of each record are to be interpreted as an EBCDIC feed control character.

LINE-SPACING = *BY-IBM-CONTROL

Only for RSO.

The contents of the first byte of each record are to be interpreted as an IBM feed control character.

LINE-SPACING = *BY-ASA-CONTROL

Only for RSO.

The contents of the first byte of each record are to be interpreted as an ASA feed control character.

PRINT-JOB-CONTROL = *UNCHANGED / *PARAMETERS(...)

Determines whether parameters for controlling print job management which were originally assigned for this print job in the PRINT-DOCUMENT command are to be modified.

PRINT-JOB-CONTROL = *PARAMETERS(...)**CHECKPOINT = *UNCHANGED / *ON-PAGES / *ON-SECTION-RECORDS**

Specifies whether checkpoint processing is to be performed by the controller on the basis of pages or SECTIONS.

CHECKPOINT = *ON-PAGES

Default restart mechanism.

When an interrupted job is restarted, processing is resumed from a point a given number of pages back.

CHECKPOINT = *ON-SECTION-RECORDS

The operand value can be specified for all printer types but offers advantages particularly in the case of output to HP90 printers using the TWO-UP procedure and LP65 printers. With these types of printer, a physical page can comprise a number of logical pages without SPOOL detecting it (the information is in the PCL file); in other words, the default restart mechanism, which is geared to logical pages, is highly prone to errors with this type of printer. SECTION records are used here as restart markers. You divide your files into sections with the aid of SECTION records. These SECTION records must contain the printer commands needed to ensure correct data processing. If a physical page contains a number of logical pages, the start of a physical page must also be clearly indicated in the SECTION record. If an error occurs, processing is resumed with HOLD-PRINT-JOB and RESUME-PRINT-JOB a given number of sections further on in the file; i.e. RESTART-POSITION = PAGE(...) or BACK(...) refers to sections rather than pages. Similarly, the values shown in error messages are not pages but sections. To arrive at a correct result, a section must correspond to at least one physical page (ideally to precisely one page). If the operand value CONTROL-MODE=*PAGE-MODE is specified together with CHECKPOINT=*ON-SECTION-RECORDS, in the case of output to a laser printer, you must ensure that the SECTION records are located immediately ahead of records which contain the control character line at the start of the print page. As soon as repositioning takes place (PRINT-DOCUMENT or restart of an interrupted job), the first record that SPOOL prints must contain the control character line.

PRINT-JOB-NAME = *UNCHANGED / <alphanum-name 1..8> / <c-string 1..8 with-low>

Job name for the spoolout job.

The job name can be formed from a maximum of 8 characters from the set (A,...Z,0,...9,@,#,\$,..,-) but must not start with a hyphen or end with a period. It may only start with a period if this is followed by an alpha character; in this case, the period itself as part of the job name is not printed on the header page. The special character string period and hyphen (.-) may only be specified in quotes.

The job name is printed on the header page in the third uppercase line and also appears in the output of the SHOW-PRINT-JOB-STATUS command. If this operand is omitted the job name from the SET-LOGON-PARAMETERS command is used instead.

PRINT-JOB-NAME = <alphanum-name 1..8> / <c-string 1..8 with-low>

Job name which is to be assigned to the spoolout job (and which will overwrite any job name already assigned to the job issuing the command).

PRINT-JOB-PRIORITY = *UNCHANGED / <integer 30..255>

Defines the urgency with which this spoolout job is started relative to other spoolout jobs.

PRINT-JOB-PRIORITY = <integer 30..255>

Priority to be assigned to the spoolout job. The highest priority you can assign is defined in the user catalog and can be displayed by means of the SHOW-USER-ATTRIBUTES command. If an invalid priority is entered (or no priority at all), the spoolout job is given the same priority as the job issuing the command.

PRINT-JOB-CLASS =

Defines the job class for the spoolout job.

PRINT-JOB-CLASS = *UNCHANGED

The value for the print job class is retained.

PRINT-JOB-CLASS = <integer 1..255>

Only the SPOOL administrator is allowed to select this value.

The specified job class is assigned to the spoolout job.

FAILURE-PROCESSING = *UNCHANGED / *PARAMETERS(...)

Specifies whether a specific message page is to be created when an error occurs during current processing on an APA printer.

FAILURE-PROCESSING = *PARAMETERS(...)

Specifies what happens in the event of an error.

MSG-PAGE = *UNCHANGED / *YES / *NO

Specifies whether or not the APA message page is to be printed. The APA message page contains error messages and warnings. If an APA printer is not being used, this parameter is ignored.

SCHEDULING-TIME = *UNCHANGED / *STD / *EARLIEST(...)

Determines the scheduling time, i.e. the start time of the print job. When *STD is specified, the print job is started on the basis of printer availability and the processing rules for print jobs.

SCHEDULING-TIME = *EARLIEST(...)

The job is started at the earliest at the specified time on the specified date.

DATE = *UNCHANGED / *TODAY / <date with-compl>

Day on which the print job is started.

TIME = *UNCHANGED / <time>

Time at which the print job is started.

ENCRYPTION = *UNCHANGED / *YES / *NO

Only for RSO V3.5B or higher: Specifies whether the print file is to be encrypted.

LAYOUT-CONTROL = *UNCHANGED / *PARAMETERS(...)

Contrary to original declarations, defines all parameters for describing the page layout in the PRINT-DOCUMENT command.

LAYOUT-CONTROL = *PARAMETERS(...)

PAGE-COPIES = *UNCHANGED / *STD / <integer 0..255>

In local SPOOL mode, only for the printer types HP, HP90 and LP65.

Number of page copies.

This specifies how many times each individual page is to be repeated. The ADDITIONAL-COPIES operand allows additional printouts of the whole file to be requested.

A PRINT-DOCUMENT command with the PAGE-COPIES operand is rejected if the line number specified in the LINE-PER-PAGE operand is greater than the number of lines in the loop record minus the number of lines before the line on which the vertical tab "channel 1" is defined.

On an HP or HP90 printer a maximum of 255 copies of a page can be printed in succession. PAGE-COPIES=255 has the same effect as PAGE-COPIES=254: one original and 254 copies are printed.

PAGE-COPIES = *STD

For LP65 printers:

the number of page copies is as specified in the PCL file.

For all other printer types:

PAGE-COPIES=0.

LEFT-MARGIN = *UNCHANGED / *STD / <integer 0..31>

Number of columns by which output is to be indented.

LEFT-MARGIN = *STD

For all printers with the exception of RSO printers: The output text is to be indented by the specified number of columns.

For all RSO printers: The output text is to be indented by the specified number * 1/10 inch. The default value can be displayed by means of the SHOW-SPOOL-PARAMETERS command or SPSEERVE statement; the information is given in the PRINT-CMD-DEFAULTS:...LEFT-MARGIN = ... output field. The LEFT-MARGIN operand is ignored if the operand CONTROL-MODE=*PHYSICAL is specified at the same time.

TWO-SIDED = *UNCHANGED / *STD / *NO / *YES / *TUMBLE

Specifies whether the LP65 printer is to print the paper on one side or two.

TWO-SIDED = *STD

The paper is printed on one side (simplex mode) or two (duplex mode), as defined in the PCL file.

TWO-SIDED = *NO

The paper is printed on one side (simplex mode).

TWO-SIDED = *YES

The paper is printed on two sides (duplex mode).

TWO-SIDED = *TUMBLE

The paper is printed on two sides (duplex mode), and the pages are turned over from top to bottom rather than left to right.

Note

The TWO-SIDED, ELECTRONIC-OVERLAY and PAGE-COPIES functions are linked and part of the same printer command. If only one of the operands is defined, default values will be generated for the others.

ROTATION = *UNCHANGED / *NO / *BY-CONTROL-CODES / list-poss(2): 0 / 90 / 180 / 270 / 0-180 / 180-0 / 90-270 / 270-90

Specifies whether the pages to be printed from the spoolout job are to be rotated, and if so by how many degrees. The print page set up in the printer is rotated (clockwise) by a certain number of degrees and printed on the form; for example, paper inserted in the printer in portrait format can be printed in landscape format. A separate loop is needed for pages rotated through 90⁰/270⁰ (see the LOOP-NAME operand). Unless ROTATION=NO is specified, output is directed (automatically) to HP and HP90 printers. SHOW-SPOOL-PARAMETERS indicates whether or not an HP or HP90 printer with a page rotation module is available in the current SPOOL configuration: output field DEVICE-TYPE:..., ROT=YES/NO.

Spoolout jobs with page rotation are displayed in the outputs for the commands SHOW-USER-STATUS and SHOW-PRINT-JOB-STATUS JOB-ID=*TSN(TSN=...).

The feed for rotated pages is always controlled via a separate loop (ROTATION-LOOP). If you have specified neither a ROTATION-LOOP for PRINT-DOCUMENT nor a form with a defined ROTATION-LOOP (see ADD-SPOOL-FORM), the default rotation loop R06 in the default form takes on feed control for the rotated pages. Header and trailer pages are not printed out in rotated format.

ROTATION = *NO

Page rotation is not performed. Any control characters for page rotation in the file are not interpreted.

ROTATION = *BY-CONTROL-CODES

Control characters for page rotation in the file are interpreted.

ROTATION = 0 / 90 / 180 / 270

Each print page is rotated by 90⁰ / 180⁰ / 270⁰ (clockwise) and printed out. Control characters for page rotation contained in the file are not interpreted. A separate loop is needed for pages rotated through 90⁰ / 270⁰. You must check that output with the specified loop does not lead to errors. If an error occurs, the job is rejected.

ROTATION = 0-180 / 180-0 / 90-270 / 270-90

The odd pages (number before the hyphen) and even pages (number after the hyphen) are to be printed at different angles.

COVER-PAGES = *UNCHANGED / *PARAMETERS(...)

Parameters for system exit routines relating to the printing of header and trailer pages.

HEADER-PAGE-TEXT = *UNCHANGED / *NONE / <c-string 1..32>

The specified information (maximum of 32 characters) is stored in the SCB for processing the system exits. The first 8 characters are printed on the header page as an uppercase line under the mailing box. Only alpha characters, digits and a number of special characters are printed on the header page (in outsize type). All other character codes are automatically replaced by the printable character '?'.
Format of the header page:

Format of the header page:

1. User ID in outsize letters (10 lines + 2 blank lines)
2. Account number in outsize letters (10 lines + 2 blank lines)
3. Job name in outsize letters (10 lines + 2 blank lines)
4. Mailing box (address and identification field: 12 lines + 2 blank lines)
5. 'text' in outsize letters (10 lines + 2 blank lines)

Priority sequence:

1. Mailing box (address and identification field: 12 lines + 2 blank lines)
2. 'text' in outsize letters (10 lines + 2 blank lines)
3. Job name in outsize letters (10 lines + 2 blank lines)
4. User ID in outsize letters (10 lines + 2 blank lines)
5. Account number in outsize letters (10 lines + 2 blank lines)

HEADER-EXIT-NUMBER = *UNCHANGED / *NO / <integer 1..2147483639>

Number of header pages required.

The precise significance of this operand depends on the definitions made for the computer center. The default value is NO = 0.

TRAILER-EXIT-NUMBER = *UNCHANGED / *NO / <integer 1..2147483639>

Number of trailer pages required.

The precise significance of this operand depends on the definitions made for the computer center. The default value is NO = 0.

Note

The layout of the trailer page for local SPOOL is illustrated in the “SPOOL” manual [43].

TABLE-REFERENCE-CHAR = *UNCHANGED / *NO / *YES

Specifies whether users select fonts for print page layout by means of control characters in the text. The selection can be made with the aid of TRCs (table reference characters), which reference a list of fonts from within the records. The list can either be part of the page definition (PAGEDEF) or can be declared by means of the CHARACTER-SETS operand. For a detailed explanation of how to use the TRC, see the “SPOOL” manual [43].

TABLE-REFERENCE-CHAR = *NO

No font selection control characters (TRCs) are stored in the print file, or these characters are not to be evaluated.

TABLE-REFERENCE-CHAR = *YES

The print file contains font selection control characters (TRCs) that are to be evaluated by SPS. Each TRC value represents a specific font that is to be used to print out the relevant record. The individual values (from X'00' to X'0F') must either be linked to the entries in the font list in PAGE-DEFINITION, in the order in which they occur, or must be explicitly linked to the fonts specified in the CHARACTER-SETS operand in the order in which they occur. Regardless of the number of different TRC values in the file, up to four fonts, specified in the form of a list, can be used to print the records. TRC values greater than X'03' (corresponding to the fourth value in the list) automatically reference the first font in the list.

LANGUAGE-EXTENSION = *UNCHANGED / *NONE / *PARAMETERS(...)

Relevant only when the optional product DSEM is available. Specifies whether a text with a language extension (i.e. containing two languages) is to be printed out.

LANGUAGE-EXTENSION = *NONE

The document does not contain a language extension.

LANGUAGE-EXTENSION = *PARAMETERS(...)

The document contains language extensions. These are specified in the substructure.

LANGUAGE-NAME = *UNCHANGED / *ARABIC / *FARSI

Language (Arabic or Farsi) contained in the document.

LANGUAGE-MODE = *UNCHANGED / *RIGHT-TO-LEFT / *LEFT-TO-RIGHT

Specifies whether the characters in the selected language are to be printed from right to left or left to right.

INPUT-TRAY-NUMBER = *UNCHANGED / *STD / *IGNORE / <integer 1..99> / *BY-FORMAT(...)

Defines the paper input tray for the printer type LP65 or for the RSO printers 2030-PCL, 4011, 4812, 4813, 4818-PCL, 4821-PCL, 4822-PCL, 4824-PCL, 4825-PCL, 9000-EPLQ, 9000-EPSQ, 9000-PCL, 9004, 9011, 9012, 9013, 9014, 9015, 9021, 9022, 9022-200, 9025, 9026-PCL, 9026-RENO, 9097 and DJET. In the case of LP65 printers, the tray numbers 1 to 3 can be specified, whereas for RSO printers the tray numbers 1 to 99 can be specified.

Only for LP65 printers:

The paper input tray is to be selected by means of a PCL file or an entry at the printer control console. The PCL file can in turn select an input tray.

The order of priority for selecting an input tray is as follows:

1. the number of the input tray specified in PRINT-DOCUMENT
2. any selection via the PCL file specified in the PRINT-DOCUMENT command
3. any selection via the PCL file specified in the form definition in the SPOOL parameter file
4. the default values defined in the device record.

The following applies to all printers listed above:

- If a paper input tray is specified here, but is not applicable for the particular printer, the result is a printer error on most printer types.
- The PRINT-DOCUMENT command is rejected if the selected paper size is not available on the particular printer or if the paper size in the standard forms entries is larger than that for the selected paper.
- Printer resources such as prolog, epilog, DIA, member and font character files are sent before the paper input tray is selected.

INPUT-TRAY-NUMBER = *STD

Paper is taken from the input tray defined in the device record of the printer in the SPOOL parameter file (DEFAULT-TRAY-NUMBER operand of the ADD-SPOOL-DEVICE statement. It is not possible to specify the paper size in this statement operand). The input tray selection is valid for the entire spoolout process, i.e. including processing of the header and trailer pages. If a standard paper size is specified, the printer selects the first input tray that contains this paper size. If this paper is not available, the printer switches to offline and the operator is prompted in the printer channel to insert the selected paper.

INPUT-TRAY-NUMBER = *IGNORE

Only for RSO printers: Once this operand value is specified, RSO sends no further commands for input tray selection to the printer. The default setting of the printer is used.

INPUT-TRAY-NUMBER = <integer 1..99>

Number of the input tray from which the paper is taken for printing the file itself as well as the header page (HEADER-PAGE) and trailer page (TRAILER-PAGE). RSO does not check the specified value. Possible values: 1...99.

The following table shows the printer types and the corresponding maximum number of input trays (column headed "max.").

printer	Max.	printer	Max.	printer	Max.	printer	Max.
2030-PCL	2	9000	0	9002	0	9022	2
4011	2	9000-PCL	2	9003	0	9022-200	2
4812	2	9000-PRO	0	9004	3	9025	2
4813	2	9000-PS	0	9011	2	9026-PCL	4
4818-PCL	2	9000-EPFX	0	9012	2	9026-RENO	4
4821-PCL	2	9000-EPLQ	2	9013	3	9045-ANSI	0
4822-PCL	3	9000-EPSQ	2	9014	3	9046	0
4824-PCL	2	9001	0	9015	2	9645	0
4825-PCL	3	9001-31	0	9021	2	DJET	1
8121	0						

Table 71: Printer types and the corresponding maximum number of input trays

The table below specifies how RSO processes specific operand values depending on the device definition:

- INPUT-TRAY-NUMBER operand of the PRINT-DOCUMENT command specified
- Device definition of the ADD-SPOOL-DEVICE statement with the operand FORM-FEED = *SINGLE-SHEET(DEFAULT-TRAY-NUMBER = ...)

Default in the device definition	Value of the INPUT-TRAY-NUMBER operand		
	*STD	1..99	*IGNORE
1..99	Sets default value (1) or value *LISTING (2)	Sets value (1) or value *LISTING (2)	Last tray specified is used
*IGNORE	Last tray specified is used	Sets value (1) or value *LISTING (2)	Last tray specified is used

- (1) on single-sheet printers and printer type 9015 (list printer)

(2) on list printers other than printer type 9015

INPUT-TRAY-NUMBER = *BY-FORMAT(...)

Defines the input tray by specifying the paper format.

INPUT-TRAY-FORMAT = *UNCHANGED / *A3 / *A4 / *A5 / *B4 / *B5 / *FOLIO / *INVOICE / *EXEC / *LEGAL / *LETTER / *DOUBLE-LETTER / *MONARCH / *COMMERCIAL-10 / *DL / *C5 / *MANUAL / *A3-UNCUT / *A4-UNCUT / *LEDGER

Apart from *MANUAL, each operand value corresponds to a paper format. To ensure that the values for PAGE-SIZE and LINE-SIZE specified in the FORM operand do not exceed the permissible maximum values for the selected paper format, the values of the FORM operand are compared with the permissible maximum values for the paper format. The table below contains the maximum permissible values for PAGE-SIZE and LINE-SIZE for each paper format and indicates which printers support the paper format. With all paper formats the sheets are taken from the first input tray which contains sheets in the given format.

Papierformat	max. PAGE-SIZE	max. LINE-SIZE	anwendbar bei Druckern des Typs
A3	165	116	9026-PCL und 9026-RENO
A4	116	82	9021, 9000-PCL, 9026-PCL, 9026-RENO, 2030-PCL, 4818-PCL, 4821-PCL, 4822-PCL, 4824-PCL und 4825-PCL
A5	82	58	4818-PCL, 4822-PCL, 4825-PCL, 9026-PCL und 9026-RENO
B4	143	101	2030-PCL, 4818-PCL, 4821-PCL, 4822-PCL, 4825-PCL, 9000-PCL, 9026-RENO
B5	101	71	9026-PCL und 9026-RENO
FOLIO	129	85	9026-RENO
INVOICE	85	55	9026-PCL und 9026-RENO
EXEC	105	72	9021, 9000-PCL, 9026-PCL, 2030-PCL, 4821-PCL, 4822-PCL, 4824-PCL und 4825-PCL
LEGAL	140	85	9021, 9000-PCL, 9026-PCL, 9026-RENO, 2030-PCL, 4821-PCL, 4822-PCL, 4824-PCL und 4825-PCL

Table 72: Papierformate (Part 1 of 2)

Papierformat	max. PAGE-SIZE	max. LINE-SIZE	anwendbar bei Druckern des Typs
LETTER	110	85	9021, 9000-PCL, 9026-PCL, 9026-RENO, 2030-PCL, 4821-PCL, 4822-PCL, 4824-PCL und 4825-PCL
DOUBLE-LETTER	150	117	9026-RENO
MONARCH	75	38	9021, 9000-PCL, 2030-PCL, 4821-PCL, 4822-PCL, 4824-PCL und 4825-PCL
COMMERCIAL-10	95	41	9021, 9000-PCL, 2030-PCL, 4821-PCL, 4822-PCL, 4824-PCL und 4825-PCL
DL	86	43	9021, 9000-PCL, 2030-PCL, 4821-PCL, 4822-PCL, 4824-PCL und 4825-PCL
C5	90	63	9021, 9000-PCL, 2030-PCL, 4821-PCL, 4822-PCL, 4824-PCL und 4825-PCL

Table 72: Papierformate (Part 2 of 2)

INPUT-TRAY-FORMAT = *MANUAL

Form feed is manual. You should therefore insert a new sheet each time a new page is to be printed or the printer prompts you to do so.

The following printers support manual feed: 9004, 9014, 9015, 9021, 9022, 9022-200, 9026-Reno, 9026-PCL, 2030-PCL, 4812, DJET, 4814-PCL, 4818-PCL, 4821-PCL, 4822-PCL, 4824-PCL, 4825-PCL and 9000-PCL.

OUTPUT-TRAY-NUMBER = *UNCHANGED / *STD / *IGNORE / *SORTER(...) / <integer 1..99>

Specifies the paper output tray for LP65 printers and for the RSO printers 2030-PCL, 4818-PCL, 4821-PCL, 4822-PCL, 4824-PCL, 4825-PCL, 9000-PCL, 9014, 9015, 9026-PCL and 9026-RENO.

OUTPUT-TRAY-NUMBER = *STD

Paper is output to the default tray defined in the device record (SPOOL parameter file). The output tray selection is valid for the entire spoolout process, i.e. including processing of header and trailer pages.

Only for LP65 printers:

Selection of the output tray by BS2000 can be prevented by a PCL file or by making an appropriate entry at the printer control console. In these cases, the entries for OUTPUT-TRAY-NUMBER have no effect. An output tray can also be defined in the PCL file.

The order of priority for selecting an output tray is as follows:

1. the output tray number specified in PRINT-DOCUMENT, provided this is not prevented by a PCL file or an entry at the printer console.
2. any selection via the PCL file specified in the PRINT-DOCUMENT command.

- 3. any selection via the PCL file specified in the form definition in the SPOOL parameter file.
- 4. the default values defined in the device record.

OUTPUT-TRAY-NUMBER = *IGNORE

Only for RSO printers.

If this value is specified, the printer controller does not send an output tray selection code to the printer. This allows you to define the output tray in the prolog file.

OUTPUT-TRAY-NUMBER = <integer 1..99>

Specifies the output tray to be used for the current job. Only the values 1..3 are valid for LP65 printers.

RSO printer types	Output tray number	Output tray selection
2030-PCL, 4818-PCL, 4821-PCL, 4822-PCL, 4824-PCL, 4825-PCL, 9000-PCL	1 2	Top output tray Bottom output tray
9014	1 2	Stacker Front output tray
9015	1 2 3 4	Uncut in rear output tray Cut in rear output tray Uncut in front output tray Cut in front output tray
9026-RENO	1..20	Appropriate output tray of the sort mechanism

OUTPUT-TRAY-NUMBER = *SORTER(...)

Only for RSO printers:

Specifies that the sort mechanism is to be used for the current job. OUTPUT-TRAY-NUMBER = *SORTER(...) is permissible for 9026-RENO, 4822-PCL and 4825-PCL printers. This sort mechanism can be used for up to 20 output trays. It cannot be controlled by the default values defined in the device record.

SORT-MODE = *UNCHANGED

The sorting mechanism is left unchanged.

SORT-MODE = *NO

All pages in the document are output to the sort trays from bottom to top. Exception 9026-RENO: here the pages are output to an output tray to provide optimum access.

SORT-MODE = *GROUP

Each copy of a particular page - if multiple copies are specified in PAGE-COPIES - is output to a separate sort tray. The printer does not return to the first sort tray until it is ready to start outputting the next page in sequence. When the print job is completed, each sort tray used contains a complete copy of the printed document.

Example

There are three pages in the file, and PAGE-COPIES=1 is specified:

Page 3	Page 3	
Page 2	Page 2	
Page 1	Page 1	
Tray 1	Tray 2	Tray 3

SORT-MODE = *COLLATE

All copies of a page - if multiple copies are specified in PAGE-COPIES - are collected in one sort tray. The copies of the next page are placed in the next sort tray. The sort trays are used from bottom to top.

Example

There are three pages in the file, and PAGE-COPIES=2 is specified:

Page 1	Page 2	Page 3
Page 1	Page 2	Page 3
Page 1	Page 2	Page 3
Tray 1	Tray 2	Tray 3

SORT-MODE = *STACKER

Cannot be used for the 9026 Printer.

All printed pages are output to the stacker of the sort mechanism, to a maximum of 500 pages. This mode is suitable if a single copy of a very long document is to be printed.

SORT-MODE = *AUTOMATIC

Applicable to the 9026 only. The sort mode is selected automatically depending on the number of copies per page requested in PAGE-COPIES and the number of sort trays available. The printed pages are output unsorted, as with *NO, if the number of copies specified in PAGE-COPIES is the same as the number of sort trays; they are grouped by document, as with *GROUP, if the number of copies specified in PAGE-COPIES is less than the number of sort trays; and they are collected a page at a time, as with *COLLATE, if the number of copies specified in PAGE-COPIES is greater than the number of sort trays.

Note

Header and trailer pages are printer resources such as prolog, epilog, DIA, member and font character file are sent before output tray selection and are therefore not included in sorting.

TOP-OFFSET = *UNCHANGED / *IGNORE / <integer -255..255>

Defines in millimeters the margin between the top of the physical sheet and the top of the print page. First the print page is positioned on the paper and only then is the lettering within the page rotated and positioned. This means that when the print page is moved with respect to the paper page the orientation of the text within the print page is ignored.

This operand is permissible only for 4818-PCL, 4821-PCL, 4822-PCL, 4824-PCL, 4825-PCL, 9000-PCL, 9021, 9022-200 and 2030-PCL printers.

Note

Only TOP-OFFSET=*IGNORE can be specified in conjunction with DOCUMENT-FORMAT=*SPECIAL-FORMAT.

TOP-OFFSET = *IGNORE

The printer controller does not set a margin between the first line and the top edge of the sheet. The preset printer value or the setting in the prolog file defines the margin that is effective when the document is printed.

TOP-OFFSET = <integer -255..255>

The permissible range of values is -255 to +255. Positive values move the first line down. Negative values move it up.

LEFT-OFFSET = *UNCHANGED / *IGNORE / <integer -255..255>

Defines in millimeters the margin between the left edge of the physical sheet and the left edge of the print page. First the print page is positioned on the paper and only then is the lettering within the page rotated and positioned. This means that when the print page is moved with respect to the paper page the orientation of the text within the print page is ignored.

This operand is permissible only for 4818-PCL, 4821-PCL, 4822-PCL, 4824-PCL, 4825-PCL, 9000-PCL, 9021, 9022-200, 9026-PCL and 2030-PCL printers.

Note

Only LEFT-OFFSET=*IGNORE can be specified in conjunction with DOCUMENT-FORMAT=*SPECIAL-FORMAT.

LEFT-OFFSET = *IGNORE

The printer controller does not set a margin between the print page and the left edge of the sheet. The preset printer value or the setting in the prolog file defines the margin that is effective when the document is printed.

LEFT-OFFSET = <integer -255..255>

The permissible range of values is -255 to +255. Positive values move the print page to the right. Negative values move it to the left.

RESOURCE-DESCRIPTION = *UNCHANGED / *PARAMETERS(...)

Contrary to original declarations, defines all print resources to be used for the printout in the PRINT-DOCUMENT command.

RESOURCE-DESCRIPTION = *PARAMETERS(...)**FORM-NAME = *UNCHANGED / *STD / <alphanum-name 1..6>**

Specifies the paper (form) to be used for output (e.g. STD, STDSF1, STDWA4). Default forms must be defined in the SPOOL parameter file for all printer types. With SHOW-SPOOL-FORMS you can output the entries to SYSOUT. The SPOOL parameter file also specifies whether header and trailer pages are to be printed.

FORM-NAME = *STD

Default form.

FORM-NAME = <alphanum-name 1..6>

Name of the form with which the spoolout job is to be processed. A loop (or a page and format definition for APA printers) is implicitly named when the form is specified. The associated loop (or the PAGEDEF and FORMATDEF) must be in a particular printer control file. The following table shows which printer control file must contain this loop (or the PAGEDEF and FORMDEF) for the relevant printer type:

Output device	Printer control file with loop for specified form
Printers 3337, 3338, 3339, 3348, 3349, 3365, LP-EMULATED	\$SYSSPOOL.PRFILE
Printers: 3351, 3353, 2090, 2140, 2240	\$SYSSPOOL.PRFILE or the PRFILE user specified in the USER-RESOURCES-FILE operand
APA printer	\$SYSSPOOL.SYSPRT.SPS.021 or the SPSLIB user specified in the USER-RESOURCES-FILE operand

The loop named implicitly via the FORM-NAME operand is ignored if the LOOP-NAME operand is specified at the same time. If the FORM-NAME and LOOP-NAME operands are omitted, the file is printed out using the default form entered for the printer type.

A loop explicitly specified in the LOOP-NAME operand must have the same length as the loop record assigned to the form used.

No loops can be specified for APA printers. If page and format specifications are made in the FORM-NAME operand, these are used for printing header, trailer and message pages, even if the PAGE-DEFINITION and FORM-DEFINITION operands are explicitly assigned.

LOOP-NAME = *UNCHANGED / *STD / <alphanum-name 1..3>

Name of the loop to be loaded into the feed information buffer (VFB/FCB). The loop name must not include the characters '\$', '&' or '@'.

LOOP-NAME = *STD

Feed control for the spoolout job is to be implemented with the default loop of the form used.

LOOP-NAME = <alphanum-name 1..3>

Name of the loop which is to control line feed. The length of the specified loop must match the length of the default loop of the form used.

A loop for feed control is needed for the HP and HP90 printers (3351, 3353, 2090, 2140) and printers of types 3337, 3338, 3339, 3348, 3349 and 3365. Loops are stored in the PRFILE resource library. If no loop is specified, the implicit entries in the FORM-NAME operand are used. If the FORM-NAME or LOOP-NAME operand is omitted, default values apply.

ROTATION-LOOP-NAME = *UNCHANGED / *STD / <alphanum-name 1..3>

Only for HP and HP90 printers with a page rotation module.

Specifies the loop to control output in landscape format.

The loop name must not include the characters '\$', '&' or '@'.

ROTATION-LOOP-NAME = *STD

Output of rotated pages is to be controlled by the default rotation loop of the specified form or the default rotation loop R06 of the default form (if no form was specified in the PRINT-DOCUMENT command).

ROTATION-LOOP-NAME = <alphanum-name 1..3>

Name of the loop with which line feed for the rotated pages is to be controlled.

CHARACTER-SETS = *UNCHANGED / *STD / *POOL(...) /***BY-EXTENDED-NAME(...) / list-poss(16): <alphanum-name 1..3>**

Names of the fonts or font pools (only for HP and HP90 printers) to be used for output. Up to 4 fonts may be specified in the list for local SPOOL, up to 16 for RSO. For local SPOOL, the fonts must be contained in the \$SYSSPOOL.PRFILE resource library or in a user PRFILE (specified by means of the USER-RESOURCES-FILE operand).

If more than four fonts are to be used, a font pool must be specified.

If more than one font is to be used in a spoolout job, CONTROL-MODE=*PAGE-MODE must be specified. For DOCUMENT-FORMAT=*TEXT, only the first specified font is used for printing the (entire) file. The name of the first font and the number of specified fonts are shown in the output for the command SHOW-PRINT-JOB-STATUS JOB-IDENTIFICATION=TSN(TSN=...).

If the HEADER-LINE operand is specified, the first font specified or the font pool specified with an index for CHARACTER-SETS=*POOL is used for the header line. The default value for CHARACTER-SETS for the form used can be displayed using SHOW-SPOOL-FORMS; the information is given in the C-S output field. With HP printers the following must be borne in mind: Systems support can specify whether the header page is printed with the default font or with the font specified in CHARACTER-SETS. This default value can be displayed by means of the command or SPSEVERE statement SHOW-SPOOL-PARAMETERS; the information is given in the HEADER-PAGE: CHARACTER-SET=... output field.

CHARACTER-SETS = *STD

The default font is selected for this printer type from the desired form. It can be displayed by means of SHOW-SPOOL-FORMS.

CHARACTER-SETS = *POOL(...)

Only PRFILES may contain descriptions of font pools. If a font pool is specified, the spoolout job will be processed on an HP or HP90 printer.

POOL-NAME = *UNCHANGED / <alphanum-name 1..4>

Specifies a font pool (with a maximum of 64 fonts for an HP printer or 46 fonts for an HP90 printer) from which one or more fonts are to be used for output. All the fonts of this font pool are loaded into the font buffer when the spoolout job is executed.

POOL-INDEX = *UNCHANGED / <integer 0..64>

Number of the font from the font pool with which the spoolout job is to be processed. The number of the font is determined by its position in the definition of the font pool. The specified font is used if POOL-INDEX is specified together with CONTROL-MODE= *PAGE-MODE.

CHARACTER-SETS = *BY-EXTENDED-NAME(...)

Specifies the fonts to be interpreted by SPS when the TABLE-REFERENCE-CHAR operand is used.

NAME = *UNCHANGED / <alphanum-name 1..8>

Names of the fonts to be linked with the TRC value in the print file (each TRC value represents a specific font). Regardless of the number of different TRC values in the file, up to four fonts, specified in the form of a list, can be used to print the records. TRC values greater than X'03' (corresponding to the fourth value in the list) automatically reference the first font in the list.

CHARACTER-SETS = list-poss(16): <alphanum-name 1..3>

Names of the fonts with which the spoolout job is to be processed. For DOCUMENT-FORMAT=*TEXT (default), only the first specified font is used for printing. For laser printers in local SPOOL mode, a maximum of four fonts may be specified. The printer control characters for changing fonts are only interpreted if CONTROL-MODE=*PAGE-MODE is also specified. In the case of RSO printers, a maximum of 16 fonts may be specified. Font identifiers (CSIs) in the text are only interpreted if CONTROL-MODE=*LOGICAL is specified at the same time. The command is rejected if a list of fonts is specified in conjunction with DOCUMENT-FORMAT=*TEXT.

CHAR-SET-ATTRIBUTES = *UNCHANGED / *ALL / *RESTRICTED

Only for RSO.

Specifies whether all or only selected font attributes are supported for the spoolout job. Such attributes are, for instance, character type, near letter quality (NLQ), color, etc. (see command or SPSEVE statement SHOW-SPOOL-CHARACTER-SETS). This operand does not apply to header and trailer pages.

CHAR-SET-ATTRIBUTES = *ALL

All the attributes of the fonts used for printout are supported for the current spoolout job.

CHAR-SET-ATTRIBUTES = *RESTRICTED

Only the following three attributes are supported:

- character type
- language

– NLQ (NEAR-LETTER-QUALITY)

OVERLAY-RESOURCES = *UNCHANGED / *PARAMETERS(...)

Specifies whether a film overlay - in the case of HP90 and 3365 printers an EFO data overlay - or an FOB data overlay is to be used for processing a spoolout job.

ELECTRONIC-OVERLAY = *UNCHANGED / *NONE / <alphanum-name 2..2>

Specifies whether a film overlay - in the case of HP90 and 3365 printers an EFO data overlay - is to be used for processing a spoolout job.

ELECTRONIC-OVERLAY = *NONE

No film overlay (HP90 and 3365: no EFO data overlay) is used for output.

ELECTRONIC-OVERLAY = <alphanum-name 2..2>

Name of the film overlay (HP90 and 3365: EFO data overlay) to be used for processing the spoolout job (the name must be agreed with systems support).

OVERLAY = *UNCHANGED / *STD / *NONE / *PARAMETERS(...)

Specifies for LP65 printers whether EFO data overlays are to be used on the recto and/or verso.

They must be stored in the printer memory. The OVERLAY, TWO-SIDED and PAGE-COPIES operands are part of one and the same LP65 printer command and are consequently linked to one another. If only the OVERLAY operand is specified, SPOOL will generate default values for the other two operands. These default values are overwritten by each value specified in a PCL file or at the printer control console.

For a summary of the possible combinations of these three linked functions, see the description of the LP65 printer type in the “SPOOL” manual [43].

OVERLAY = *STD

The EFO data overlays defined in the PCL file are used.

OVERLAY = *NONE

No EFO data overlays are used for output.

OVERLAY = *PARAMETERS(...)

The specified EFO data overlays are used for output.

FACE-SIDE = *UNCHANGED / *NONE / <integer 1..127>

Identification number of the overlay to be used on the recto.

REVERSE-SIDE = *UNCHANGED / *NONE / <integer 1..127>

Identification number of the overlay to be used on the verso.

FORMS-OVERLAY-BUFFER = *UNCHANGED / *NONE / <alphanum-name 1..4>

Specifies whether an FOB data overlay is to be used for processing the spoolout job (see the “SPOOL” manual [43] for a description of an overlay).

FORMS-OVERLAY-BUFFER = *NONE

No FOB data overlay is used for output.

FORMS-OVERLAY-BUFFER = <alphanumeric 1..4>

Name of the overlay to be used for processing the spoolout job.

If an overlay is specified, the file is printed out on an HP or HP90 printer.

Use of an overlay for the spoolout job is indicated in the output of the command SHOW-PRINT-JOB-STATUS JOB-IDENTIFICATION=TSN(TSN=...).

PAGE-DEFINITION = *UNCHANGED / *STD / <integer 1..50000> / <alphanumeric 1..8>

Specifies which page definition is to be used for output on LP65 or APA printers.

PAGE-DEFINITION = *STD

For APA printers: The standard definition specified in the SPSLIB is to be used (see the table of SPSLIB standard definitions in the „SPOOL“ [43] manual).

For LP65 printers:

Number of the PCL file with which the print file is to be output. Only the print file itself is output with this PCL file. The header and trailer pages are controlled by the PCL file defined in the SPOOL parameter file form.

Notes

- A PCL file that makes it impossible to select another PCL file by means of a channel command must not be used.
- After the specified PCL file has started, the operating mode of the printer is checked. If EXCCW mode is active, and an error occurs during the print process, the restart point is the last SECTION record; if no value was entered under the SECTION operand in the PRINT-DOCUMENT command, the file is printed out again from the start.

PAGE-DEFINITION = <integer 1..50000>

Only for LP65 printers:

Number of the PCL file with which the print file is to be output.

PAGE-DEFINITION = <alphanumeric 1..8>

Only for APA printers: The page definition with the specified name is to be used. This must be in the SPSLIB.



The first two characters of the specified name must be “P1”. If they are not, the command is rejected.

FORM-DEFINITION = *UNCHANGED / *STD / <alphanumeric 1..8>

Specifies which format definition is to be used for output on APA printers.

FORM-DEFINITION = *STD

The default definition specified in the SPSLIB is to be used.

FORM-DEFINITION = <alphanum-name 1..8>

The format definition with the specified name is to be used. This must be in the SPSLIB.



The first two characters of the specified name must be "F1". If they are not, the command is rejected.

**USER-RESOURCES-FILE = *UNCHANGED / *STD /
 <filename 1..44 without-gen-vers>**

Specifies a user file containing all the resources required for output on different printer types: user-defined loops, fonts, overlays, font pools, code translation tables and SPS data stream definitions. The following can be specified:

- a user PRFILE containing loops, fonts, overlay entries (FORMS-OVERLAY-BUFFER operand) and font pool entries (CHARACTER-SETS operand)
- a user SPSLIB containing the PAGEDEFs (PAGE-DEFINITION operand), FORMDEFs (FORM-DEFINITION operand), fonts, page segments, overlays and raster image data
- a user RSOFILE (only for RSO) containing loops

If no user PRFILE, SPSLIB or RSOFILE is specified, the information is taken from the following files: \$SYSSPOOL.PRFILE, \$SYSSPOOL.SYSPRT.SPS.021 or \$SYSSPOOL.RSOFILE, respectively.

USER-RESOURCES-FILE = *STD

The required resources are taken from \$SYSSPOOL.PRFILE, \$SYSSPOOL.SYSPRT.SPS.021 or \$SYSSPOOL.RSOFILE.

USER-RESOURCES-FILE = <filename 1..44 without-gen-vers>

Name of a user PRFILE, SPSLIB or RSOFILE, which may contain a catalog ID and a user ID. SPOOL uses this file name with the suffix .PRFILE, .SPSLIB or .RSOFILE. The string can contain up to 28 characters without the catalog ID and user ID, to ensure that this user file can be called from any ID.

If the file name is specified without a user ID, the file is searched for under the user ID of the caller first, then under SYSSPOOL. If it is not found, the command is rejected.

If a user ID is specified, the file is searched for under this ID only.

Example 1

```
PRINT-DOCUMENT DATEI ,USER-RESOURCES-FILE=$XX.XX
```

A search is carried out for the \$XX.XX.PRFILE file. If the file is not found, the command is rejected.

Example 2

If the catalog ID is specified, the search is limited to the specified subset:

```
PRINT-DOCUMENT DATEI , USER-RESOURCES-FILE=:A:XXXXX
```

The file :A:\$userid.XXXXX.PRFILE is searched for. If the relevant file is not found, the search for the file :A:\$SYSSPOOL.XXXXX.PRFILE is continued. If this file is not found, the command is rejected.

Example 3

```
PRINT-DOCUMENT DATEI, USER-RESOURCES-FILE=:A:$XX.XXXXX
```

The file :A:\$XX.XXXXX.PRFILE is searched for. If it is not found, the command is rejected.

If the file is on an exported PVS (EXPORT-PUBSET command), all spoolout jobs that require this PVS are placed in the KEEP queue. When the PVS becomes available again (IMPORT-PUBSET command), the spoolout jobs are restarted.

TRANSLATION-TABLE = *UNCHANGED / *NONE / *PARAMETERS(...)

Specifies whether a code translation table is to be used for processing the spoolout job. The code translation table is necessary if the default escape character 'FF' is to be replaced by a random character.

TRANSLATION-TABLE = *NONE

No code translation table is used.

TRANSLATION-TABLE = *PARAMETERS(...)

A code translation table is used.

NAME = *UNCHANGED / <alphanum-name 1..8>

Name of the code translation table to be used for processing the spoolout job.

FILE = *UNCHANGED / *SYSTEM / <filename 1..44 without-gen-vers>

The specified code translation table is by default taken from the \$SYSSPOOL.PRFILE (*SYSTEM) file; for RSO printers a user RSOFIL can also be specified.

RESOURCES-LOCATION = *UNCHANGED / *STD / *HOME / *SERVER

Only for Dprint. Specifies, when the optional Distributed Print Services subsystem (Dprint) is used, whether the resources of the client or those of the server are to be used for printing the document.

RESOURCES-LOCATION = *STD

The value from the GEN record of the SPOOL parameter file is to be used.

RESOURCES-LOCATION = *HOME

The print job is to be executed using the print resources defined on the client system. In this case, an extract containing all the required print resources is taken from the resource file (i.e. a print resources container is created) and transferred to the selected server.

RESOURCES-LOCATION = *SERVER

The print job is to be executed using the print resources defined on the server system. In this case, no print resources container is created and transferred.

TO-PRINTER = *UNCHANGED / *PARAMETERS(...)

Modifying the original declarations, specifies the requested target devices for the print output in the PRINT-DOCUMENT command.

TO-PRINTER = *PARAMETERS(...)**PRINTER-NAME = *UNCHANGED / *STD / <alphanum-name 1..8> / *IPP(...)**

Specifies the requested target printer of the print job. You can specify a distributed local printer pool, a nondistributed local printer pool, an RSO printer pool or an RSO printer.

If you specify a printer pool:

The job is output on any printer in the specified device pool. The pool must be defined in the SPOOL parameter file and can contain up to 16 RSO devices or 16 local SPOOL devices, but not both at the same time.

Device pools are managed by means of the SPSEIVE statements ADD-, MODIFY-, REMOVE-, and SHOW-PRINTER-POOL (see the “SPSERVE” manual [44]).

The spoolout job is rejected if:

- no printer type from the device pool is assigned in the PRINT-DOCUMENT command (see the SHOW-SPOOL-FORMS command or SPSEIVE statement)
- the ELECTRONIC-OVERLAY operand is specified.

Please bear in mind that the pool can contain various types of devices: if the file to be printed contains control characters that are only interpreted by a certain printer type, a printer of this type should be specified (implicitly) in the MODIFY-PRINT-JOB-ATTRIBUTES command.

PRINTER-NAME = *STD

The spoolout job is to be processed on the default device type specified in the SPOOL parameters (PRINT-CMD-DEFAULTS).

PRINTER-NAME = <alphanum-name 1..8>

Only for RSO.

Symbolic name of the RSO device on which the spoolout job is to be processed.

PRINTER-NAME = *IPP(...)

Only for RSO.

The spoolout job is to be processed on an IPP printer.

URL = *UNCHANGED / <c-string 1..1023 with-low>

Specifies the Web address of the IPP printer.

FQDN = *UNCHANGED / *NONE / <c-string 1..1023 with-low>

Fully-qualified name of the domain to which the IPP printer is assigned.

PRINTER-TYPE = *UNCHANGED / *ANY / *HP-PRINTER / *LP65-PRINTER / *APA-PRINTER

Specifies which printer type is to process the print job. Only local printer types may be specified.

PRINTER-TYPE = *ANY

A specific printer type is not requested. In this case, the SPOOL subsystem automatically determines the permitted printer types that can process the user request. *ANY must be specified for output on RSO printers.

PRINTER-TYPE = *HP-PRINTER

The spoolout job is to be processed on an HP or HP90 printer.
 *HP-PRINTER includes the following printer types: 2090/2140/2240(HP90). The control characters for HP and HP90 laser printers are identical; a spoolout job for an HP printer can be processed on an HP90 printer and vice versa.
 Selection of the printer type is affected by whether or not the CONTROL-MODE operand is specified at the same time:

Printer selection	CONTROL-MODE = *PAGE-MODE (default)	CONTROL-MODE =*PAGE-MODE (CONTROL-TYPE=*HP)
PRINTER-TYPE = <u>*ANY</u>	Output can take place to all printer types	Output can take place to HP or HP90 printers. Other control characters are converted to HP/HP90 control characters.
	The following also applies for HP-/HP90 printers: Conversion of the OVERPRINT functions to the LINE-MERGE function.	
PRINTER-TYPE = *HP-PRINTER	Output can only be processed on HP and HP90 printers. The OVERPRINT function is converted to the LINE-MERGE function.	
	Restrictions for PRFILE: The file may not contain the character X'FF'.	Support of the HP-specific control characters. Restriction: The file may only contain the character X'FF' as an escape character when control character evaluation is enabled (CHAR-SET-ATTRIBUTES = *ALL)

Note for HP/HP90 printers

If the entries in MODIFY-PRINT-JOB-ATTRIBUTES specify output to an HP or HP90 laser printer, a PRFILE must be available. If they are not, the command is rejected. If there is no HP/HP90 available in an installation, or only devices with insufficient configurations (not enough fonts, no graphics buffer for FOBs or no page

rotation module, for example), the jobs can only be output to replay tape. Systems support can run the SHOW-SPOOL-JOB-STATUS command to obtain information on these jobs.

PRINTER-TYPE = *LP65-PRINTER

The spoolout job is to be processed on an LP65 printer.

PRINTER-TYPE = *APA-PRINTER

The spoolout job is to be processed on a 2050-APA-PRINTER, 2090-APA-PRINTER or 2090-TWIN-PRINTER.

REDIRECTION-ALLOWED = *UNCHANGED / *STD / *YES / *NO

Specifies whether a device administrator can redirect the spoolout job to a different printer. This does not affect the redirection of jobs by the user or by systems support.

REDIRECTION-ALLOWED = *STD

Means YES for RSO print jobs. SPOOL print jobs are ignored.

REDIRECTION-ALLOWED = *YES / *NO

Can only be specified for RSO print jobs, not for SPOOL print jobs.

CLUSTER-NAME = *UNCHANGED / <alphanum-name 1..8>

Specifies the cluster to which the print job is to be transferred.

Only for Dprint: To transfer the print job to a UNIX-based system, a cluster name defined in the Dprint configuration file must be specified. The remote clusters defined in the Dprint configuration file can be displayed by means of the SHOW-DPRINT-REMOTE-CLUSTERS command (for a detailed explanation, see the “Dprint” manual [10]).

Use of the CLUSTER-NAME operand is restricted to one print job from the local cluster or from the local SPOOL to a remote cluster. As soon as the remote cluster has accepted the print job, the resources of the remote cluster become effective. From this time the CLUSTER-NAME operand can no longer be applied to the redirected print job.

OUTPUT-FORMAT = *UNCHANGED / *NONE / <c-string 1..63 with-low>

Specifies which printer language is to be used for the print job.

OUTPUT-FORMAT = *NONE

No output format was specified. The format of the document is compatible with the printer language of the printer selected. If a cluster was specified in the CLUSTER-NAME operand, the value of the DOCUMENT-FORMAT operand is forwarded to the UNIX-based system.

OUTPUT-FORMAT = <c-string 1..63 with-low>

Specifies a specific content type (e.g. HP_LASERJET) for the document to be printed. The document format is incompatible with the format which is supported by the printer. Only when a cluster is supported in the CLUSTER-NAME operand is it permissible to specify OUTPUT-FORMAT=<c-string 1..63 with-low>. In this case the value of the OUTPUT-FORMAT operand is transferred to the UNIX-based system.

VIRTUAL-PRINTER = *UNCHANGED / *STD / *ALLOWED / *NOT-ALLOWED / MUST(...)

This operand enables the print job to be forwarded for processing to an application via a virtual printer.

VIRTUAL-PRINTER = *STD

The virtual printer which is to receive the print job is determined through the SPOOL parameter file.

Assignment of the print job to a virtual printer is given precedence. If no virtual printer is active when the print job is added to the list of print jobs, the print job is assigned to a real printer.

VIRTUAL-PRINTER = *ALLOWED

This print job may be forwarded to an application program via a virtual printer. Which virtual printer receives the print job is only determined when the job is assigned.

Assignment of the print job to a virtual printer is given precedence. If no virtual printer is active when the print job is added to the list of print jobs, the print job is assigned to a real printer.

VIRTUAL-PRINTER = *NOT-ALLOWED

This print job should not be transferred to an application program via a virtual device.

VIRTUAL-PRINTER = *MUST(...)

This print job is transferred to the virtual printer specified by the parameters in the brackets. If the printer's supervisor task is inactive, the print job waits.

NAME = <alphanum-name 1..8>

Specifies the device name which is linked to the supervisor. This device name appears in the device entry of the SPOOL parameter file.

STRING = *NONE / <c-string 1..32>

Passes a character string on to the application program.

ADDITIONAL-COPIES = *UNCHANGED / <integer 0..255>

Specifies how many additional times the file is to be printed.

The entry can also be made in parentheses. Each additional printout has its own header page. Default: 0 (no additional printouts).

LOCK-FILE = *UNCHANGED / *YES / *NO

Specifies whether the file is to be protected as long as the spoolout job is in the wait state (TYPE 4, see output of the SHOW-PRINT-JOB-STATUS command). During this time the file can only be read. As a rule, tape files are never locked. During processing of the spoolout job (TYPE 5, see output of the SHOW-PRINT-JOB-STATUS command), the file is protected irrespective of the setting of this operand.

A spoolout job is created even if the file to be output is reserved by a SECURE-RESOURCE-ALLOCATION command. This reservation must, however, be canceled by the time the spoolout job is processed; otherwise the job is not executed. The file to be output is locked until the end of the session if the LOCK-FILE=*YES operand is specified in the PRINT-DOCUMENT command and the job cannot be executed owing to reservation.

LOCK-FILE = *YES

The file is protected while the spoolout job is in the wait state. LOCK-FILE=*YES is ignored if one of the values *OMF, *SYSLST or *SYSOUT is specified for the operand at the same time. A PRINT-DOCUMENT command for a library element with LOCK=*YES is rejected. File protection offered by LOCK-FILE=*YES remains in force even if the spoolout job is not processed until the next system run.

LOCK-FILE = *NO

The file is not protected while the spoolout job is in the wait state. The file can be deleted or modified before processing of the spoolout job commences. LOCK-FILE=*NO is ignored for temporary files.

DELETE-AFTER-PRINT = *UNCHANGED / *NO / *YES(...) / *DESTROY(...)

Specifies whether the file is to be deleted after output has terminated and, if so, whether its catalog entry and the data are to be overwritten with X'00..0'. Default: the file is not deleted after printing and not overwritten with binary zeros. The user must have write access to the file. If the file to be output belongs to a file generation group (see the FROM-FILE operand), the DELETE-AFTER-PRINT operand is ignored. If a spoolout job is used to print several elements of a PLAM library with INPUT-SECTION(...), the DELETE-AFTER-PRINT operand is set to *NO (i.e. suppressed). This operand may not be specified in conjunction with *SYSLST, SYSLSTnn or *SYSOUT.

DELETE-AFTER-PRINT = *NO

The file is not to be deleted after printing (unless it is an EAM or system file).

DELETE-AFTER-PRINT = *YES(...)

The file is to be deleted as soon as output has been completed.

LINE-TRUNCATION = *UNCHANGED / *STD / *DELETE-FILE / *KEEP-FILE

Specifies what happens if lines are truncated.

LINE-TRUNCATION = *STD

The default value from the SPOOL parameter is valid. You can display this value by means of the SHOW-SPOOL-PARAMETERS command or SPSEIVE statement (field: ERROR-PR=(TRUNC=)).

LINE-TRUNCATION = *DELETE-FILE

Processing of the spoolout job continues (i.e. DELETE-AFTER-PRINT=*YES is executed). An appropriate warning is printed on the trailer page.

LINE-TRUNCATION = *KEEP-FILE

Processing of the spoolout job is continued, but the file is not subsequently deleted.

DELETE-AFTER-PRINT = *DESTROY(...)

Not for EAM and cataloged system files.

Specifies that once the file has been printed both its catalog entry and the data itself are to be overwritten with binary zeros.

LINE-TRUNCATION = *UNCHANGED / *STD / *DELETE-FILE / *KEEP-FILE

Specifies what happens if lines are truncated.

LINE-TRUNCATION = *STD

The default value from the SPOOL parameter is valid. You can display this value by means of the SHOW-SPOOL-PARAMETERS command or SPSEIVE statement (field: ERROR-PR=(TRUNC=)).

LINE-TRUNCATION = *DELETE-FILE

Processing of the spoolout job continues (i.e. DELETE-AFTER-PRINT=*DESTROY is executed). An appropriate warning is printed on the trailer page.

LINE-TRUNCATION = *KEEP-FILE

Processing of the spoolout job is continued, but neither the catalog entry nor the data of the file itself is overwritten with binary zeros.

Return codes

(SC2)	SC1	Maincode	Meaning/Guaranteed messages
	0	CMD0001	No error Guaranteed messages: SCP0894, SCP1032, SCP1031
2	0	SCP0897	TSN not found
2	0	SCP0930	PRFILE not available
2	0	SCP1000	JV processing error. MONJV ignored Guaranteed message: SCP1000
2	0	SCP1056	Error releasing the file
2	0	SCP1058	DELETE-FILE entry not permitted
2	0	SCP1061	Error during server access
2	0	SCP1069	Output restart from the beginning
2	0	SCP1070	Job cannot be released
2	0	SCP1076	No information available on this job
2	0	SPS0455	JVS error in SPOOL MONJV Guaranteed message: SPS0455
2	0	SPS0469	JV is already being used or has been destroyed Guaranteed message: SPS0469
2	0	SPS0464	JV subsystem not loaded
2	0	SPS0870	SLOT/SCB inconsistency
	1	CMD0202	Syntax error
	1	SCP0973	Semantic error
	32	SCP0974	System error. Command rejected
	64	SCP0975	No authorization for command Guaranteed message: SCP0972
	64	SCP0976	Invalid operand value Guaranteed messages: SCP0858, SCP0995, SCP0997, SCP1030, SCP1028, SCP1029
	128	SCP0896	DPRINTCL not loaded Guaranteed message: SCP0896
	128	SCP0996	JV subsystem not available Guaranteed message: SCP0996
	128	SCP1049	RSO not loaded
	128	SPS0266	SPOOL subsystem in the wait state

Notes

1. If a value of an operand originally specified in the PRINT-DOCUMENT command is modified, this modification has an effect not only on the operand itself, but also on the structures which are subordinate to this operand: All suboperands within the structure are preset with default values.

2. Jobs which were issued in an earlier SPOOL run < V3.0 and were taken over by means of a replay tape or warm startup, and print jobs which were initiated by the WRITE-SPOOL-TAPE command cannot be modified.
3. In the event of a command error (syntax, semantics or inadmissible modifications), the requested modifications are ignored.
4. The table below shows which operand modifications can be performed depending on the status of the print job, where the symbols used have the following meaning:
 - x Modification permitted for the operand and all suboperands (operands which are included in substructures).
 - Modification not permitted
 - (*) If the job is active on a synchronous virtual device, the application running under control of this virtual device can modify the job.

Operands of MOD-PRINT-JOB-ATTR	Print job statuses						
	WFT	FT	WP	PRE	WT	ACT	KP
DOCUMENT-FORMAT	x	x	x	-	x	(*)	x
PRINT-JOB-CONTROL	x	x	x	-	x	(*)	x
LAYOUT-CONTROL	x	x	x	-	x	(*)	x
RESOURCE-DESCRIPTION	x	x	x	-	x	(*)	x
TO-PRINTER	x	x	x	-	x	(*)	x

Table 73: Changes with MODIFY-PRINT-JOB-ATTRIBUTES contingent upon the job status

5. The file attributes must remain unchanged between acceptance of the print job (PRINT-DOCUMENT command) and termination of the output (actual output on the device). The MODIFY-PRINT-JOB-ATTRIBUTES command consequently ignores any change to the file attributes.
6. When at least one member of the FAMILY is active in the case of FAMILY processing, any modification of the print job is rejected.
7. Print jobs in the KEEP status remain in the KEEP status after being modified even if they have been redirected to another server by means of automatic server selection.
8. When a document has been partially printed and the corresponding print job is interrupted, any modification which includes a modification to the layout results in the print job being repeated from the start of the document.
9. Please refer to the "Dprint" manual [10] for Dprint-specific information for Dprint jobs.

MODIFY-PRINTER-OUTPUT-STATUS

Change administration parameters for printers

Description status:	SPOOL V4.9A
Functional area:	Controlling spoolout job
Domain:	SPOOL-PRINT-ADMINISTRATION
Privileges:	STD-PROCESSING OPERATING PRINT-SERVICE-ADMINISTRATION SAT-FILE-EVALUATION SAT-FILE-MANAGEMENT SECURITY-ADMINISTRATION

Function

The MODIFY-PRINTER-OUTPUT-STATUS command modifies the administration parameters for the specified printer.

If the default value *UNCHANGED is specified then no changes are made to the initial value of the parameter in question.

Restrictions for APA printers

The following operands must not be specified for APA printers:

FORMS-OVERLAY
PRINT-SAMPLE
ROTATION
TWO-UP-PROCESSING
FORMS-OVERLAY-BUFFER
CHARACTER-SET-NUMBER

Privileged functions

RSO device administrators and spool and cluster administrators can modify the administration parameters of printers that they manage.

For more information on these user groups see the manuals “RSO” [32], “SPOOL” [43] and “Dprint” [10].

The following operands can only be used with the privilege TSOS or OPERATING:

DEVICE-NAME=*ANY-LOCAL-PRINTER(...)
ROTATION
TWO-UP-PROCESSING
FORMS-OVERLAY-BUFFER
CHARACTER-SET-NUMBER

Format

(Part 1 of 4)

```

MODIFY-PRINTER-OUTPUT-STATUS

DEVICE-NAME = *ANY-LOCAL-PRINTER(...) / *RSO-PRINTER(...)

  *ANY-LOCAL-PRINTER(...)
    NAME = list-poss(8): <alphanum-name 1..8>
    ,DESTINATION = *UNCHANGED / *NONE / *STD / *ADD(...) / *REMOVE(...) /
      list-poss(16): *CENTRAL / <alphanum-name 1..8>

      *ADD(...)
        | DESTINATION-LIST = list-poss(16): *CENTRAL / <alphanum-name 1..8>

      *REMOVE(...)
        | DESTINATION-LIST = list-poss(16): *CENTRAL / <alphanum-name 1..8>

    ,FORM-NAME = *UNCHANGED / *ALL / *STD / *EQUIVALENT(...) / *EXCEPT(...) /
      *EQUIVALENT-EXCEPT(...) / *ADD(...) / *REMOVE(...) /
      list-poss(16): <alphanum-name 1..6>

      *EQUIVALENT(...)
        | EQUIVALENT-FORMS = *ALL / list-poss(16): <alphanum-name 1..6>

      *EXCEPT(...)
        | FORMS-LIST = list-poss(16): <alphanum-name 1..6>

      *EQUIVALENT-EXCEPT(...)
        | FORMS-LIST = list-poss(16): <alphanum-name 1..6>

      *ADD(...)
        | FORMS-LIST = list-poss(16): <alphanum-name 1..6>

      *REMOVE(...)
        | FORMS-LIST = list-poss(15): <alphanum-name 1..6>

    ,FORMS-OVERLAY = *UNCHANGED / *ALL / *NONE / *ONLY / *EXCEPT(...) / *ADD(...) /
      *REMOVE(...) / list-poss(16): <alphanum-name 2..2>

      *EXCEPT(...)
        | FORMS-OVERLAY-LIST = list-poss(16): <alphanum-name 2..2>

```



```

*ADD(...)
  |   FORMS-OVERLAY-LIST = list-poss(16): <alphanum-name 2..2>
*REMOVE(...)
  |   FORMS-OVERLAY-LIST = list-poss(15): <alphanum-name 2..2>
,HOST-NAME = *UNCHANGED / *ALL-CLUSTERS / *LOCAL-CLUSTER / *HOME / *EXCEPT(...) /
  *ADD / *REMOVE(...) / list-poss(16): <alphanum-name 1..8> / <c-string 1..8 with-low>
*EXCEPT(...)
  |   HOST-LIST = list-poss(16): <alphanum-name 1..8> / <c-string 1..8 with-low>
*ADD(...)
  |   HOST-LIST = list-poss(16): <alphanum-name 1..8> / <c-string 1..8 with-low>
*REMOVE(...)
  |   HOST-LIST = list-poss(15): <alphanum-name 1..8> / <c-string 1..8 with-low>
,PRINT-SAMPLE = *UNCHANGED / *NO / *YES
,TRACE = *UNCHANGED / *NO / *YES(...)
*YES(...)
  |   LEVEL = *COMPLETE / *STATUS / *BLOCK-CONTROL
*RSO-PRINTER(...)
  |   NAME = list-poss(8): <alphanum-name 1..8>
,DESTINATION = *UNCHANGED / *NONE / *STD / *ADD(...) / *REMOVE(...) /
  list-poss(16): <alphanum-name 1..8>
*ADD(...)
  |   DESTINATION-LIST = list-poss(16): <alphanum-name 1..8>
*REMOVE(...)
  |   DESTINATION-LIST = list-poss(15): <alphanum-name 1..8>
,FORM-NAME = *UNCHANGED / *STD / *EQUIVALENT(...) / *EQUIVALENT-EXCEPT(...) /
  <alphanum-name 1..6> / *ADD(...) / *REMOVE(...)

```

```

*EQUIVALENT(...)
  |   EQUIVALENT-FORMS = *ALL / list-poss(16): <alphanum-name 1..6>
*EQUIVALENT-EXCEPT(...)
  |   FORMS-LIST = list-poss(16): <alphanum-name 1..6>
*ADD(...)
  |   FORMS-LIST = list-poss(16): <alphanum-name 1..6>
*REMOVE(...)
  |   FORMS-LIST = list-poss(16): <alphanum-name 1..6>
,PRINT-SAMPLE = *UNCHANGED / *NO / *YES
,TRACE = *UNCHANGED / *NO / *YES
,ALLOWED-ACCESSES = *UNCHANGED / list-poss(4): <-c-string 1..4>
,USER-IDENTIFICATION = *UNCHANGED / *ALL / *EXCEPT(...) / *ADD(...) / *REMOVE(...) /
                      list-poss(16): <name 1..8> / <c-string 1..8 with-low>
*EXCEPT(...)
  |   USER-IDENT-LIST = list-poss(16): <name 1..8> / <c-string 1..8 with-low>
*ADD(...)
  |   USER-IDENT-LIST = list-poss(16): <name 1..8> / <c-string 1..8 with-low>
*REMOVE(...)
  |   USER-IDENT-LIST = list-poss(15): <name 1..8> / <c-string 1..8 with-low>
,SPOOLOUT-CLASS = *UNCHANGED / *ALL / *EXCEPT(...) / *ADD(...) / *REMOVE(...) /
                 list-poss(16): <integer 1..255>
*EXCEPT(...)
  |   SPOOLOUT-CLASS-LIST = list-poss(16): <integer 1..255>
*ADD(...)
  |   SPOOLOUT-CLASS-LIST = list-poss(16): <integer 1..255>
*REMOVE(...)
  |   SPOOLOUT-CLASS-LIST = list-poss(15): <integer 1..255>

```

```
,SPOOLOUT-NAME = *UNCHANGED / *ALL / *EXCEPT(...) / *ADD(...) / *REMOVE(...) /
list-poss(16): <alphanum-name 1..8> / <c-string 1..8 with-low>

*EXCEPT(...)
|   SPOOLOUT-NAME-LIST = list-poss(16): <alphanum-name 1..8> / <c-string 1..8 with-low>
*ADD(...)
|   SPOOLOUT-NAME-LIST = list-poss(16): <alphanum-name 1..8> / <c-string 1..8 with-low>
*REMOVE(...)
|   SPOOLOUT-NAME-LIST = list-poss(15): <alphanum-name 1..8> / <c-string 1..8 with-low>
,ACCOUNT = *UNCHANGED / *ALL / *EXCEPT(...) / *ADD(...) / *REMOVE(...) /
list-poss(16): <alphanum-name 1..8>

*EXCEPT(...)
|   ACCOUNT-LIST = list-poss(16): <alphanum-name 1..8>
*ADD(...)
|   ACCOUNT-LIST = list-poss(16): <alphanum-name 1..8>
*REMOVE(...)
|   ACCOUNT-LIST = list-poss(15): <alphanum-name 1..8>
,EXIT-ROUTINES = *UNCHANGED / *NOT-ACTIVE / *ACTIVE
,ROTATION = *UNCHANGED / *ANY / *YES / *NO / *MANUAL
,TWO-UP-PROCESSING = *UNCHANGED / *ANY / *YES / *NO / *MODE-1 / *MODE-2
,FORMS-OVERLAY-BUFFER = *UNCHANGED / *ANY / *ONLY / *NO / *RANGE(...)

*RANGE(...)
|   LOW = *UNCHANGED / <integer 0..32767>
|   ,HIGH = *UNCHANGED / <integer 0..32767>
,PRIORITY = *UNCHANGED / *ALL / *RANGE(...)

*RANGE(...)
|   FROM = *UNCHANGED / <integer 30..255>
|   ,TO = *UNCHANGED / <integer 30..255>
,CHARACTER-SET-NUMBER = *UNCHANGED / *ALL / *ONE / RANGE(...)

*RANGE(...)
|   LOW = *UNCHANGED / <integer 1..32767>
|   ,HIGH = *UNCHANGED / <integer 1..32767>
,REVISION-NUMBER = *ANY / <integer 1..255>
```

Operands

DEVICE-NAME =

Output devices for which administration parameters are to be modified.

DEVICE-NAME = *ANY-LOCAL-PRINTER(...)

Administration parameters are to be modified for local printers which will be defined in greater detail below.

NAME = list-poss(8): <alphanum-name1..8>

Mnemonic or logical device names of the printers whose assignment parameters are to be modified for waiting spoolout jobs. A maximum of eight device names may be specified.

DESTINATION = *UNCHANGED / *NONE / *STD / *ADD(...) / *REMOVE(...) / list-poss(16): *CENTRAL / <alphanum-name 1..8>

Indicates whether and how the assignment of the specified local printers to a pool is modified.

DESTINATION = *NONE

The list of local pools for the specified printers is cleared, i.e. spoolout jobs for these pools are no longer processed.

DESTINATION = *STD

Standard pools for local printers.

The list of assigned pools for local printers is replaced by a list of standard pools containing the specified local printers (SPOOL parameter file).

DESTINATION = *ADD(...)

Pools for local printers which are to be added to an existing list of local pools to which spoolout jobs for the specified printers can be directed.

DESTINATION-LIST = list-poss(16): *CENTRAL / <alphanum-name 1..8>

List of pools for local printers to be added.

DESTINATION = *REMOVE(...)

Pools for local printers to be removed from an existing list of local pools to which spoolout jobs for the specified printers can be directed.

DESTINATION-LIST = list-poss(16): *CENTRAL / <alphanum-name 1..8>

List of pools for local printers to be removed.

DESTINATION = list-poss(16): *CENTRAL / <alphanum-name 1..8>

List of local pools to which spoolout jobs for the specified printers can be directed.

FORM-NAME = *UNCHANGED / *ALL / *STD / *EQUIVALENT(...) / *EXCEPT(...) / *EQUIVALENT-EXCEPT(...) / *ADD(...) / *REMOVE(...) /

list-poss(16): <alphanum-name 1..6>

Names of the forms with which spoolout jobs can be processed on the specified printers.

FORM-NAME = *ALL

Spoolout jobs can be processed on the specified printers irrespective of the form used.

FORM-NAME = *STD

Spoolout jobs can be processed on the specified printers with all the equivalent forms permitted in the SPOOL parameter file for the specified printers.

FORM-NAME = *EXCEPT(...)

Forms with which spoolout jobs cannot be processed on the specified printers.

FORMS-LIST = list-poss(16): <alphanum-name 1..6>

List of excluded forms.

FORM-NAME = *EQUIVALENT(...)

Spoolout jobs can be processed on the specified printers with equivalent forms. Printout is not interrupted when the form changes.

EQUIVALENT-FORMS = *ALL / list-poss(16): <alphanum-name 1..6>

List of equivalent forms.

FORM-NAME = *EQUIVALENT-EXCEPT(...)

Equivalent forms with which spoolout jobs cannot be processed on the specified printers.

FORMS-LIST = list-poss(16): <alphanum-name 1..6>

List of excluded equivalent forms.

FORM-NAME = *ADD(...)

Forms to be added to an existing list of forms with which spoolout jobs can be processed on the specified printers.

FORMS-LIST = list-poss(16): <alphanum-name 1..6>

List of forms to be added.

FORM-NAME = *REMOVE(...)

Forms which are to be removed from an existing list of forms with which spoolout jobs can be processed on the specified printers.

FORMS-LIST = list-poss(15): <alphanum-name 1..6>

List of forms to be removed.

FORM-NAME = list-poss(16): <alphanum-name 1..6>

List of forms with which spoolout jobs can be processed on the specified printers. If there is already a (positive) list of forms for the specified printers it is replaced by this new list. Each time the form changes printout is interrupted and a message is displayed at the console.

FORMS-OVERLAY = *UNCHANGED / *ALL / *NONE / *ONLY / *EXCEPT(...) / *ADD(...) / *REMOVE(...) / list-poss(16): <alphanum-name 2..2>

Film overlays with or without which spoolout jobs can be processed on the specified laser printers.

FORMS-OVERLAY = *ALL

Spoolout jobs can be processed on the specified laser printers irrespective of the film overlays specified.

FORMS-OVERLAY = *NONE

Only spoolout jobs which do not use film overlays can be processed on the specified printers.

FORMS-OVERLAY = *ONLY

Only spoolout jobs which use a film overlay (any) can be processed on the specified printers.

FORMS-OVERLAY = *EXCEPT(...)

Film overlays with which spoolout jobs cannot be processed on the specified laser printers.

FORMS-OVERLAY-LIST = list-poss(16): <alphanum-name 2..2>

List of excluded film overlays.

FORMS-OVERLAY = *ADD(...)

Film overlays to be added to an existing list of overlays with which spoolout jobs can be processed on the specified laser printers.

FORMS-OVERLAY-LIST = list-poss(16): <alphanum-name 2..2>

List of film overlays to be added.

FORMS-OVERLAY = *REMOVE(...)

Film overlays which are to be removed from an existing list of film overlays with which spoolout jobs can be processed on the specified laser printers.

FORMS-OVERLAY-LIST = list-poss(15): <alphanum-name 2..2>

List of film overlays to be removed.

FORMS-OVERLAY = list-poss(16): <alphanum-name 2..2>

List of film overlays with which spoolout jobs can be processed on the specified laser printers.

If there is already a (positive) list of film overlays for the specified printers, it is replaced by this new list.

HOST-NAME = *UNCHANGED / *ALL-CLUSTERS / *LOCAL-CLUSTER / *HOME / *EXCEPT(...) / *ADD(...) / *REMOVE(...) / list-poss(16): <name 1..8> / <c-string 1..8 with-low>

Specifies for a local printer the hosts from which print jobs are processed.

HOST-NAME = *ALL-CLUSTERS

Print jobs from all hosts are processed on the specified printer.

HOST-NAME = *LOCAL-CLUSTER

Print jobs from all hosts in the local cluster are processed on the specified printer.

HOST-NAME = *HOME

Only print jobs from the local host are processed on the specified printer.

HOST-NAME = *EXCEPT(...)

Print jobs from all hosts except those specified in the EXCEPT list are processed on the specified printer.

HOST-LIST = list-poss(16): <alphanum-name 1..8> / <c-string 1..8 with-low>

BCAM names of the hosts whose jobs are not to be processed.

HOST-NAME = *ADD(...)

The specified hosts are added to the printer's existing ACCEPT list of hosts from which print jobs are processed.

HOST-LIST = list-poss(16): <alphanum-name 1..8> / <c-string 1..8 with-low>

BCAM names of the hosts to be added.

HOST-NAME = *REMOVE(...)

The specified hosts are removed from the printer's existing ACCEPT list of hosts from which print jobs are processed.

HOST-LIST = list-poss(15): <alphanum-name 1..8> / <c-string 1..8 with-low>

BCAM names of the hosts to be removed.

HOST-NAME = list-poss(16): <alphanum-name 1..8> / <c-string 1..8 with-low>

Only print jobs from hosts in this ACCEPT list are processed on the specified printer.

PRINT-SAMPLE = *UNCHANGED / *NO / *YES

Indicates whether a print sample is to be produced for the first spoolout job to arrive for printout with modified assignment parameters. For printers of type LP65 (page printers) PRINT-SAMPLE=*YES is rejected.

TRACE = *UNCHANGED / *NO / *YES (...)

For APA printers only; switches trace on or off.

TRACE = *YES (...)

LEVEL = *COMPLETE / *STATUS / *BLOCK-CONTROL

Specifies which files should be written to the trace file.

LEVEL = *COMPLETE

Default value for local SPOOL devices. The trace should be logged in full, the trace file is \$SYSSPOOL.SYSTRC.SPOOL.<dev-name>.yyy-mm-dd.hh-mm (see also the description of the trace data in the "SPOOL" manual [43]).

LEVEL = *STATUS

For APA jobs only: trace and status data should be logged.

LEVEL = *BLOCK-CONTROL

For APA jobs only: trace, status and block control data should be logged.

DEVICE-NAME = *RSO-PRINTER(...)

Administration parameters are to be modified for RSO printers to be defined in detail below.

NAME = list-poss(8): <alphanum-name 1..8>

Names of active RSO printers whose assignment parameters are to be modified for waiting spoolout jobs.

A maximum of eight names may be specified.

DESTINATION = *UNCHANGED / *NONE / *STD / *ADD(...) / *REMOVE(...) /

list-poss(16): <alphanum-name 1..8>

Indicates whether and how the assignment of the specified RSO printers to a pool is modified.

DESTINATION = *NONE

The list of RSO pools for the specified printers is cleared, i.e. spoolout jobs for these RSO pools are no longer processed.

DESTINATION = *STD

Standard RSO pools.

The list of assigned pools is replaced by a list of standard pools containing the specified RSO printers (SPOOL parameter file).

DESTINATION = *ADD(...)

RSO pools which are to be added to an existing list of RSO pools to which spoolout jobs for the specified printers can be directed.

DESTINATION-LIST = list-poss(16): <alphanum-name 1..8>

List of RSO pools to be added.

DESTINATION = *REMOVE(...)

RSO pools to be removed from an existing list of RSO pools to which spoolout jobs for the specified printers can be directed.

DESTINATION-LIST = list-poss(16): <alphanum-name 1..8>

List of RSO device pools to be removed.

DESTINATION = list-poss(16): <alphanum-name 1..8>

List of RSO pools to which spoolout jobs for the specified printers can be directed.

FORM-NAME = *UNCHANGED / *STD / *EQUIVALENT(...)

***EQUIVALENT-EXCEPT(...)** / <alphanum-name 1..6> / ***ADD(...)** / ***REMOVE(...)**

Defines the forms with which spoolout jobs can be processed on the specified printers.

FORM-NAME = *STD

Spoolout jobs can be processed with all the equivalent forms permitted in the SPOOL parameter file for the relevant RSO printers.

FORM-NAME = *EQUIVALENT(...)

Spoolout jobs can be processed on the specified printers with equivalent forms.

EQUIVALENT-FORMS = *ALL / list-poss(16): <alphanum-name 1..6>

Spoolout jobs can be processed on the specified printers with all the equivalent forms or with one of the equivalent forms contained in the list.

FORM-NAME = *EQUIVALENT-EXCEPT(...)

Equivalent forms with which spoolout jobs cannot be processed on the specified printers.

FORMS-LIST = list-poss(16): <alphanum-name 1..6>

List of excluded equivalent forms.

FORM-NAME = list-poss(16): <alphanum-name 1..6>

Forms with which spoolout jobs can be processed on the specified printers.

FORM-NAME = *ADD(...)

Forms to be added to an existing list of forms with which spoolout jobs can be processed on the specified printers.

FORMS-LIST = list-poss(16): <alphanum-name 1..6>

List of forms to be added.

FORM-NAME = *REMOVE(...)

Forms which are to be removed from an existing list of forms with which spoolout jobs can be processed on the specified printers.

FORMS-LIST = list-poss(15): <alphanum-name 1..6>

List of forms to be removed.

PRINT-SAMPLE = *UNCHANGED / *NO / *YES

Indicates whether a print sample is to be produced.

In RSO mode a print sample can be requested for public devices which print on continuous paper (not page printers).

TRACE = *UNCHANGED / *NO / *YES

Indicates whether a TRACE file is to be created.

ALLOWED-ACCESSES = *UNCHANGED / list-poss(4): <c-string 1..4>

This operand defines which accesses are allowed. It is permitted for any RSO printer.

ALLOWED-ACCESSES = *UNCHANGED

The current access mechanism is left unchanged.

ALLOWED-ACCESSES = list-poss(4): <c-string 1..4>

List of allowed accesses. The following values are possible:

C *RSO* RSO print jobs can be assigned to the active printer.

C *UTM* UTM print jobs can be assigned to the active printer.

USER-IDENTIFICATION = *UNCHANGED / *ALL / *EXCEPT(...) / *ADD(...) / *REMOVE(...) / list-poss(16): <name 1..8> / <c-string 1..8 with-low>

User IDs under which spoolout jobs can be processed on the specified printers.

USER-IDENTIFICATION = *ALL

Spoolout jobs can be processed on the specified printers under all user IDs.

USER-IDENTIFICATION = *EXCEPT(...)

User IDs under which spoolout jobs cannot be processed on the specified printers.

USER-IDENT-LIST = list-poss(16): <name 1..8> / <c-string 1..8 with-low>

List of excluded user IDs.

USER-IDENTIFICATION = *ADD(...)

User IDs to be added to an existing list of user IDs under which spoolout jobs can be processed on the specified printers.

USER-IDENT-LIST = list-poss(16): <name 1..8> / <c-string 1..8 with-low>

List of user IDs to be added.

USER-IDENTIFICATION = *REMOVE(...)

User IDs which are to be removed from an existing list of user IDs under which spoolout jobs can be processed on the specified printers.

USER-IDENT-LIST = list-poss(15): <name 1..8> / <c-string 1..8 with-low>

List of user IDs to be removed.

USER-IDENTIFICATION = list-poss(16): <name 1..8> / <c-string 1..8 with-low>

List of user IDs under which spoolout jobs can be processed on the specified printers. If there is already a (positive) list of user IDs for the specified printers, it is replaced by this new list.

SPOOLOUT-CLASS = *UNCHANGED / *ALL / *EXCEPT(...) / *ADD(...) / *REMOVE(...) / list-poss(16): <integer 1..255>

Spoolout classes from which spoolout jobs can be processed on the specified printers.

SPOOLOUT-CLASS = *ALL

Spoolout jobs from all spoolout classes can be processed on the specified printers.

SPOOLOUT-CLASS = *EXCEPT(...)

Spoolout classes from which spoolout jobs cannot be processed on the specified printers.

SPOOLOUT-CLASS-LIST = list-poss(16): <integer 1..255>

List of excluded spoolout classes.

SPOOLOUT-CLASS = *ADD(...)

Spoolout classes to be added to an existing list of spoolout classes from which spoolout jobs can be processed on the specified printers.

SPOOLOUT-CLASS-LIST = list-poss(16): <integer 1..255>

List of spoolout classes to be added.

SPOOLOUT-CLASS = *REMOVE(...)

Spoolout classes to be removed from an existing list of spoolout classes from which spoolout jobs can be processed on the specified printers.

SPOOLOUT-CLASS-LIST = list-poss(15): <integer 1..255>

List of spoolout classes to be removed.

SPOOLOUT-CLASS = list-poss(16): <integer 1..255>

List of spoolout classes from which spoolout jobs can be processed on the specified printers.

If there is already a (positive) list of spoolout classes for the specified printers, it is replaced by this new list.

SPOOLOUT-NAME = *UNCHANGED / *ALL / *EXCEPT(...) / *ADD(...) / *REMOVE(...) / list-poss(16): <alphanum-name 1..8> / <c-string 1..8 with-low>

Job names under which spoolout jobs can be processed on the specified printers.

SPOOLOUT-NAME = *ALL

Spoolout jobs can be processed on the specified printers irrespective of the job name.

SPOOLOUT-NAME = *EXCEPT(...)

Job names under which spoolout jobs cannot be processed on the specified printers.

SPOOLOUT-NAME-LIST = list-poss(16): <alphanum-name 1..8> / <c-string 1..8 with-low>

List of excluded job names.

SPOOLOUT-NAME = *ADD(...)

Job names to be added to an existing list of job names under which spoolout jobs can be processed on the specified printers.

SPOOLOUT-NAME-LIST = list-poss(16): <alphanum-name 1..8> / <c-string 1..8 with-low>

List of job names to be added.

SPOOLOUT-NAME = *REMOVE(...)

Job names which are to be removed from an existing list of job names under which spoolout jobs can be processed on the specified printers.

SPOOLOUT-NAME-LIST = list-poss(15): <alphanum-name 1..8> / <c-string 1..8 with-low>

List of job names to be removed.

SPOOLOUT-NAME = list-poss(16): <alphanum-name 1..8> / <c-string 1..8 with-low>

List of job names under which spoolout jobs can be processed on the specified printers. If there is already a (positive) list of job names for the specified printers, it is replaced by this new list.

ACCOUNT = *UNCHANGED / *ALL / *EXCEPT(...) / *ADD(...) / *REMOVE(...) / list-poss(16): <alphanum-name 1..8>

Account numbers with which spoolout jobs can be processed on the specified printers.

ACCOUNT = *ALL

Spoolout jobs can be processed on the specified printers irrespective of the account number.

ACCOUNT = *EXCEPT(...)

Account numbers under which spoolout jobs cannot be processed on the specified printers.

ACCOUNT-LIST = list-poss(16): <alphanum-name 1..8>

List of excluded account numbers.

ACCOUNT = *ADD(...)

Account numbers to be added to an existing list of account numbers under which spoolout jobs can be processed on the specified printers.

ACCOUNT-LIST = list-poss(16): <alphanum-name 1..8>

List of account numbers to be added.

ACCOUNT = *REMOVE(...)

Account numbers which are to be removed from an existing list of account numbers under which spoolout jobs can be processed on the specified printers.

ACCOUNT-LIST = list-poss(15): <alphanum-name 1..8>

List of account numbers to be removed.

ACCOUNT = list-poss(16): <alphanum-name 1..8>

List of account numbers under which spoolout jobs can be processed on the specified printers.

If there is already a (positive) list of account numbers for the specified printers it is replaced by this new list.

EXIT-ROUTINES = *UNCHANGED / *NOT-ACTIVE / *ACTIVE

Indicates whether EXIT routines are to be called for spoolout to the specified printers.

ROTATION = *UNCHANGED / *ANY / *YES / *NO / *MANUAL

Indicates whether spoolout jobs which require the page rotation module can be processed on the specified printers.

ROTATION = *ANY

Spoolout jobs can be processed on the specified printers whether they require the page rotation module or not.

ROTATION = *NO

Only spoolout jobs which do not require the page rotation module can be processed on the specified printers.

ROTATION = *YES

Only spoolout jobs which require the page rotation module can be processed on the specified printers.

ROTATION = *MANUAL

In contrast to the value *NO, the operator can access the page rotation module manually via hardware switches. In this case all the pages are printed out in rotated form.

TWO-UP-PROCESSING = *UNCHANGED / *ANY / *YES / *NO / *MODE-1 / *MODE-2

Specifies 'TWO-UP' processing for the specified HP90 printers (2090, 2140) (see the "SPOOL" manual [43]).

FORMS-OVERLAY-BUFFER = *UNCHANGED / *ANY / *ONLY / *NO / *RANGE(...)

Indicates whether spoolout jobs which use an FOB data overlay can be processed on the specified printers.

FORMS-OVERLAY-BUFFER = *ANY

Spoolout jobs with and without FOB data overlays can be processed on the specified printers. The maximum possible FORMS-OVERLAY-BUFFER value is taken from the corresponding default device entry.

FORMS-OVERLAY-BUFFER = *ONLY

Only spoolout jobs which require an FOB data overlay can be processed on the specified printers. The maximum possible FORMS-OVERLAY-BUFFER value is taken from the corresponding default device entry.

FORMS-OVERLAY-BUFFER = *RANGE(...)

Only spoolout jobs with FOB data overlays which lie within the specified size range (in sublines) can be processed on the specified printers.

LOW = *UNCHANGED / <integer 0..32767>

Lower limit of the range.

HIGH = *UNCHANGED / <integer 0..32767>

Upper limit of the range.

PRIORITY = *UNCHANGED / *ALL / *RANGE(...)

Priorities with which spoolout jobs can be processed on the specified printers.

PRIORITY = *ALL

Spoolout jobs can be processed on the specified printers irrespective of their priority.

PRIORITY = *RANGE(...)

Spoolout jobs with priorities within this range can be processed on the specified printers.

FROM = *UNCHANGED / <integer 30..255>

Lower limit of the range.

TO = *UNCHANGED / <integer 30..255>

Upper limit of the range.

CHARACTER-SET-NUMBER = *UNCHANGED / *ALL / *ONE / RANGE(...)

Spoolout jobs can be processed on the specified printers according to the number of character sets required.

CHARACTER-SET-NUMBER = *ALL

Spoolout jobs can be processed on the specified printers irrespective of the number of character sets required. The maximum possible number of required character sets is taken from the corresponding default device entry

CHARACTER-SET-NUMBER = *ONE

Only spoolout jobs which require no more than one character set can be processed on the specified printers.

CHARACTER-SET-NUMBER = *RANGE(...)

Spoolout jobs with a number of required character sets which falls within the range can be processed on the specified printers.

LOW = *UNCHANGED / <integer 1..32767>

Minimum number of required character sets.

HIGH = *UNCHANGED / <integer 1..32767>

Maximum number of required character sets.

REVISION-NUMBER = *ANY / <integer 1..255>

Number of the revision.

The number given must match the current revision number.

Return codes

(SC2)	SC1	Maincode	Meaning/Guaranteed messages
	0	CMD0001	No error Guaranteed message: SPS0B06
2	0	SCP0915	Element to be deleted not found
2	0	SCP0954	Only first 100 pools activated for the device
	1	CMD0202	Syntax error
	1	SCP0973	Semantic error
	32	SCP0974	System error. Command rejected
	64	SCP0975	No authorization for command
	64	SCP0976	Invalid operand value Guaranteed messages: SCP0907, SCP0944, SCP0951, SCP0957, SCP0967, SPS0168
	128	SPS0896	Subsystem not loaded/ready Guaranteed message: SCP0896
	128	SCP0911	RSO subsystem in dump creation or restart phase
	128	SCP0992	APA subsystem not loaded or not supported

MODIFY-PROCEDURE-OPTIONS

Modify procedure attributes during procedure execution

Description status:	SDF-P-BASYS V2.5E
Functional area:	Procedures
Domain:	PROCEDURE
Privileges:	STD-PROCESSING OPERATING HARDWARE-MAINTENANCE SAT-FILE-EVALUATION SAT-FILE-MANAGEMENT SECURITY-ADMINISTRATION

Function

The MODIFY-PROCEDURE-OPTIONS command allows most of the procedure attributes defined with SET-PROCEDURE-OPTIONS at the start of a procedure to be modified during procedure execution. The attributes that it cannot be used to modify are CALLER (permissible procedure call), INPUT-FORMAT (input record format) and SYSTEM-FILE-CONTEXT.

MODIFY-PROCEDURE-OPTIONS must not be called when the procedure is on hold (i.e. execution has been interrupted).

If MODIFY-PROCEDURE-OPTIONS is called from within an include procedure, its scope is restricted to that include procedure; in other words, modifications are not applied to the calling procedure.

The IMPLICIT-DECLARATION (implicit variable declaration) and JV-REPLACEMENT (job variable replacement) settings can also be modified interactively. At the start of the task the following settings apply in interactive mode:

```
IMPLICIT-DECLARATION = *YES
JV-REPLACEMENT = *AFTER-BUILTIN-FUNCTION
```

The default values (*UNCHANGED) mean that the existing setting is retained. The effects of the various settings are described in detail in the operand description section of the SET-PROCEDURE-OPTIONS command.

Restrictions

The SUPPRESS-SDP-MSG setting (SDF-P message suppression) can be modified at any time. The other settings can only be modified if the chargeable SDF-P subsystem is in use.

Users with SECURITY-ADMINISTRATION, SAT-FILE-EVALUATION or SAT-FILE-MANAGEMENT privilege can use the command in procedures only.

Format

```

MODIFY-PROCEDURE-OPTIONS

IMPLICIT-DECLARATION = *UNCHANGED / *YES / *NO
LOGGING-ALLOWED = *PARAMETERS(...) / *NO / *YES
    *PARAMETERS(...)
        | CMD = *UNCHANGED / *YES / *NO
        | DATA = *UNCHANGED / *YES / *NO
INTERRUPT-ALLOWED = *UNCHANGED / *YES / *NO
DATA-ESCAPE-CHAR = *UNCHANGED / *NONE / '&&' / '#' / '*' / '@' / '$' / *STD
DATA-ERROR-HANDLING = *UNCHANGED / *YES / *NO
JV-REPLACEMENT = *UNCHANGED / *NONE / *AFTER-BUILTIN-FUNCTION
ERROR-MECHANISM = *UNCHANGED / *SPIN-OFF-COMPATIBLE / *BY-RETURNCODE
SUPPRESS-SDP-MSG = *UNCHANGED / *NONE / *ADD(...) / *REMOVE(...)
    *ADD(...)
        | MSG-ID = list-poss(2000): <alphanum-name 7..7>
    *REMOVE(...)
        | MSG-ID = list-poss(2000): <alphanum-name 7..7>
    
```

Operands

IMPLICIT-DECLARATION = *UNCHANGED / *YES / *NO

This setting can only be modified in conjunction with SDF-P.

Specifies whether implicit declarations are allowed. Can also be specified interactively.

LOGGING-ALLOWED = *PARAMETERS(...) / *YES / *NO

This setting can only be modified in conjunction with SDF-P.

Governs whether procedure logging is allowed.

LOGGING-ALLOWED = *PARAMETERS(...)

The user can configure logging separately for commands and data records.

CMD = *UNCHANGED / *YES / *NO

This setting can only be modified in conjunction with SDF-P.

Specifies whether command logging is allowed.

DATA = *UNCHANGED / *YES / *NO

This setting can only be modified in conjunction with SDF-P.

Specifies whether data record logging is allowed.

INTERRUPT-ALLOWED = *UNCHANGED / *YES / *NO

This setting can only be modified in conjunction with SDF-P.

Specifies whether the procedure may be interrupted by means of the K2 key or the HOLD-PROCEDURE command.

DATA-ESCAPE-CHAR = *UNCHANGED / *NONE / '&&' / '#' / '*' / '@' / '\$' / *STD

This setting can only be modified in conjunction with SDF-P.

Specifies whether variables are to be replaced and expressions evaluated in data records and defines the character with which the relevant variables or expressions begin.

Permissible characters are &, #, *, @ and \$. Specifying & is equivalent to specifying *STD (as on command level). If the character & is to be specified explicitly, it must be entered twice.

DATA-ERROR-HANDLING = *UNCHANGED / *YES *NO

This setting can only be modified in conjunction with SDF-P.

Specifies whether SDF-P error recovery is to be triggered in the following cases:

- data (without a leading slash or with a leading double slash) is found at a point where commands are expected
- &<variable> or & on its own occurs within data, and <variable> is not known either as an S variable or as a builtin function.

JV-REPLACEMENT = *UNCHANGED / *NONE / *AFTER-BUILTIN-FUNCTION

This setting can only be modified in conjunction with SDF-P.

Specifies whether job variable replacement is to be carried out.

ERROR-MECHANISM = *UNCHANGED / *SPIN-OFF-COMPATIBLE / *BY-RETURNCODE

This setting can only be modified in conjunction with SDF-P.

Specifies whether the error handling mechanism is to be compatible with spin-off for non-S procedures or whether nonzero subcode1 values are to be taken into account. This setting has no effect on error handling for statements.

SUPPRESS-SDP-MSG = *UNCHANGED / *NONE / *ADD(...) / *REMOVE(...)

Determines whether the setting governing the suppression of certain SDF-P messages (message class SDP) is to be modified. The option applies only to the calling procedure (it is not propagated).

SUPPRESS-SDP-MSG = *NONE

All SDF-P messages are output.

SUPPRESS-SDP-MSG = *ADD(...)

Set of SDF-P messages to be added to those which are not output.

MSG-ID=list-poss(2000): <alphanum-name 7..7>

List of message ID numbers (message class SDP).

SUPPRESS-SDP-MSG = *REMOVE(...)

Set of (suppressed) SDF-P messages which are now to be output again.

MSG-ID=list-poss(2000): <alphanum-name 7..7>

List of message ID numbers (message class SDP).

Return codes

(SC2)	SC1	Maincode	Meaning
	0	CMD0001	No error
	1	CMD0202	Syntax error
	1	SDP0118	Command in incorrect context
	3	CMD2203	Incorrect syntax file
	32	CMD0221	System error (internal error)
	130	SDP0099	No further address space available

Example

```
/SET-PROCEDURE-OPTIONS, LOGGING-ALLOWED=*NO
...
/MODIFY-PROCEDURE-OPTIONS, LOGGING-ALLOWED=*YES
...
```

At the start of the procedure, logging is not allowed, as defined in the SET-PROCEDURE-OPTIONS command. Once the MODIFY-PROCEDURE-OPTIONS command has been issued, command and data record logging is allowed.

MODIFY-PUBSET-CACHE-ATTRIBUTES

Modify PFA cache configuration for pubset

Description status:	BS2000 OSD/BC V10.0A
Functional area:	Caching media control Pubset and MRSCAT management
Domain:	MULTI-CATALOG-AND-PUBSET-MGMT
Privileges:	TSOS

Function

The MODIFY-PUBSET-CACHE-ATTRIBUTES command enables systems support to define or modify the configuration of a PFA cache, for use as a fast buffer for the data in an SF pubset or in a volume set of an SM pubset.

In addition, the system can be instructed how to behave in the following circumstances:

- On pubset startup or cache activation, the desired cache configuration cannot be made available at all or not with the required size (SIZE-TOLERANCE operand).
- On pubset startup, the SF pubset or the volume set of an SM pubset can no longer be linked to the cache area assigned in the previous pubset session (FORCE-IMPORT operand).

If the command refers to an SF pubset, there must already be an MRSCAT entry for the pubset. The pubset need not have been imported. The values specified in the command are stored in the pubset's MRSCAT entry. When the MRSCAT entry is created, the values are assigned default settings.

If the command refers to an SM pubset, there are two different situations to consider:

- Modifying the cache configuration of a volume set: The SM pubset to which the volume set belongs must be online. In addition, the status of the volume set must be either "normal use" or "defined only". The values are stored in the SM pubset's configuration file. When the SM pubset is generated (or when a volume set is logically added with the MODIFY-PUBSET-DEFINITION-FILE command), the values are initialized with default settings.
- Modifying the control information for pubset startup: The SM pubset need not have been imported. The defined values are stored in the pubset's MRSCAT entry, as they relate to the pubset as a whole and not just to specific volume sets.

The attributes configured with the MODIFY-PUBSET-CACHE-ATTRIBUTES command can be checked with the SHOW-PUBSET-CACHE-ATTRIBUTES command. This information is also contained in the output of the SHOW-PUBSET-PARAMETERS command.

A detailed description of the cache media main memory (*MAIN-MEMORY) and the global storage medium expanded storage (*GLOBAL-STORAGE) will be found in the “DAB” manual [5]. In addition, the global storage medium is described in the “Introduction to System Administration” [14].

Format

```

MODIFY-PUBSET-CACHE-ATTRIBUTES

PUBSET = <cat-id 1..4>
,PUBSET-TYPE = *SINGLE-FEATURE / *SYSTEM-MANAGED(...)
    *SYSTEM-MANAGED(...)
        | VOLUME-SET = *UNCHANGED / <cat-id 1..4>
,CACHE-MEDIUM = *UNCHANGED / *NO-CACHE / *MAIN-MEMORY(...) / *GLOBAL-STORAGE(...)
    *MAIN-MEMORY(...)
        | CACHE-SEGMENT-SIZE = *UNCHANGED / *4KB / *8KB / *16KB / *32KB
        | ,FORCE-OUT = *UNCHANGED / *NO / *AT-LOW-FILLING / *AT-HIGH-FILLING
        | ,CACHED-FILES = *UNCHANGED / *BY-USER-SELECTED / *BY-SYSTEM / *ALL
    *GLOBAL-STORAGE(...)
        | VOLATILITY = *UNCHANGED / *YES / *NO
        | ,GLOBAL-STORAGE-UNIT = *UNCHANGED / *STD / *DUAL / *MONO(...)
            *MONO(...)
                | UNIT = 1 / <integer 1..2>
        | ,CACHE-SEGMENT-SIZE = *UNCHANGED / *4KB / *8KB / *16KB / *32KB
        | ,FORCE-OUT = *UNCHANGED / *NO / *AT-LOW-FILLING / *AT-HIGH-FILLING
        | ,CACHED-FILES = *UNCHANGED / *BY-USER-SELECTED / *BY-SYSTEM / *ALL
,FORCE-IMPORT = *UNCHANGED / *NO / *BY-OPERATOR
,CACHE-SIZE = *UNCHANGED / <integer 1..32767>(…)
    <integer 1..32767>(…)
        | DIMENSION = *UNCHANGED / *KILOBYTE / *MEGABYTE
,SIZE-TOLERANCE = *UNCHANGED / *YES / *NO
    
```

Operands**PUBSET = <cat-id 1..4>**

ID of the pubset for which a cache configuration is to be defined or modified.

PUBSET-TYPE = *SINGLE-FEATURE / *SYSTEM-MANAGED(...)

Specifies the type of pubset for which a new entry is to be created in the MRSCAT.

PUBSET-TYPE = *SINGLE-FEATURE

The pubset is an SF pubset.

PUBSET-TYPE = *SYSTEM-MANAGED(...)

The pubset is an SM pubset. The PFA cache configuration is defined or modified for the volume set specified next.

VOLUME-SET = *UNCHANGED / <cat-id 1..4>

Identifies the volume set.

CACHE-MEDIUM = *UNCHANGED / *NO-CACHE / *MAIN-MEMORY(...) / *GLOBAL-STORAGE(...)

Identifies the cache medium in which the cache area is to be created. The first prerequisite for this is that the hardware requirements are satisfied, and the second is that a cache handler (DAB), required to serve the cache, is available and is active.

CACHE-MEDIUM = *NO-CACHE

No cache medium is to be used for the specified pubset or volume set. This value is the default in the following cases:

- A new MRSCAT entry is created for an SF pubset (ADD-MASTER-CATALOG-ENTRY command).
- The initial values are defined for individual volume sets when an SM pubset is generated.
- A new volume set entry is generated in the course of dynamic pubset reconfiguration for an SM pubset (MODIFY-PUBSET-DEFINITION-FILE command).

CACHE-MEDIUM = *MAIN-MEMORY(...)

Main memory is to be used as the caching medium.

If there is a system failure, data inconsistencies can arise if the cache medium has also been used as a write cache.

CACHE-SEGMENT-SIZE = *UNCHANGED / *4KB / *8KB / *16KB / *32KB

Governs the size of a cache segment, i.e. the maximum size of the data areas swapped in by DAB in the event of a read miss in the cache. In automated caching (operand CACHED-FILES=*BY-SYSTEM), DAB performs the most favorable prefetch for the file and the current application (regardless of the segment size). In the case of non-automated caching the following applies: large segments are particularly suitable for sequential processing and for applications with highly localized cache utilization.

Small segments are preferable for applications with a random pattern of access. CACHE-SEGMENT-SIZE=*32KB is the default in the following cases:

- A new MRSCAT entry is created for an SF pubset (ADD-MASTER-CATALOG-ENTRY command).
- The initial values are defined for individual volume sets when an SM pubset is generated.
- A new volume set entry is generated in the course of dynamic pubset reconfiguration for an SM pubset (MODIFY-PUBSET-DEFINITION-FILE command).

FORCE-OUT = *UNCHANGED / *NO / *AT-LOW-FILLING / *AT-HIGH-FILLING

Defines the intervals at which the contents of the cache are written out to disk.

FORCE-OUT = *NO

The data in the cache is not written out to disk until the file is closed. If no further data can be forced from the cache, subsequent I/O operations can no longer be handled by the cache.

FORCE-OUT = *AT-LOW-FILLING

DAB uses a threshold value to control when the data in the cache is written out to disk. The threshold is when the cache is 25% full. This value is the default in the following cases:

- A new MRSCAT entry is created for an SF pubset (ADD-MASTER-CATALOG-ENTRY command).
- The initial values are defined for individual volume sets when an SM pubset is generated.
- A new volume set entry is generated in the course of dynamic pubset reconfiguration for an SM pubset (MODIFY-PUBSET-DEFINITION-FILE command).

FORCE-OUT = *AT-HIGH-FILLING

DAB uses a threshold value to control when the data in the cache is written out to disk. The threshold is when the cache is 75% full.

CACHED-FILES = *UNCHANGED / *BY-USER-SELECTED / *BY-SYSTEM / *ALL

Governs which files are earmarked for caching.

CACHED-FILES = *BY-USER-SELECTED

The user utilizes performance attributes to specify which files will use the cache. This value is the default in the following cases:

- A new MRSCAT entry is created for an SF pubset (ADD-MASTER-CATALOG-ENTRY command).
- The initial values are defined for individual volume sets when an SM pubset is generated.
- A new volume set entry is generated in the course of dynamic pubset reconfiguration for an SM pubset (MODIFY-PUBSET-DEFINITION-FILE command).

CACHED-FILES = *BY-SYSTEM

The automated, intelligent caching determines which DAB files have an impact on performance. The prefetch factor matching the access profile of the selected files is set and the files are monitored at regular intervals, in order to ensure optimum cache performance.

CACHED-FILES = *ALL

Except for a few system files (file catalog, user catalog, etc.), all the files in the pubset use the cache, which means that files with the performance attribute STD are treated like files with the performance attribute HIGH. The default caching mode is read/write. This form of “blanket caching” should be used only if it can be assumed to have a positive impact on overall performance.

CACHE-MEDIUM = *GLOBAL-STORAGE(...)

Global storage (GS) is to be used as the caching medium.

VOLATILITY = *UNCHANGED / *YES / *NO

Governs whether global storage ensures data consistency after a power failure (non-volatile cache medium). This is the case if the global storage which is used has its own power supply (battery) or is connected to an uninterruptible power supply (UPS).

Note

The system does not check the validity of this specification.

VOLATILITY = *YES

Global storage does not have its own power supply and is not connected to a UPS. It can only provide volatile storage. In the event of a power failure, data inconsistency may arise if the cache medium has also been used as a write cache. Data consistency is always maintained in the case of a system failure.

This value is the default in the following cases:

- A new MRSCAT entry is created for an SF pubset (ADD-MASTER-CATALOG-ENTRY command).
- The initial values are defined for individual volume sets when an SM pubset is generated.
- A new volume set entry is generated in the course of dynamic pubset reconfiguration for an SM pubset (MODIFY-PUBSET-DEFINITION-FILE command).

VOLATILITY = *NO

The GS medium has its own power supply or is connected to a UPS. Full data consistency is guaranteed in the event of a power failure in the data center. Full data consistency is also guaranteed if there is a system failure.

GLOBAL-STORAGE-UNIT = *UNCHANGED / *STD / *DUAL / *MONO(...)

Specifies the storage unit in global storage (GS unit 1 or 2) in which the cache area for this pubset is to be set up, depending on the chosen operating mode (mono or dual).

GLOBAL-STORAGE-UNIT = *STD

The system is to make the decision - depending on the availability of the medium - about the storage unit in which to set up the cache area. In the case of a pubset which is a DRV pubset, dual recording by buffers (DRB) will also be supported. This value is the default in the following cases:

- A new MRSCAT entry is created for an SF pubset (ADD-MASTER-CATALOG-ENTRY command).
- The initial values are defined for individual volume sets when an SM pubset is generated.
- A new volume set entry is generated in the course of dynamic pubset reconfiguration for an SM pubset (MODIFY-PUBSET-DEFINITION-FILE command).

GLOBAL-STORAGE-UNIT = *DUAL

The GS unit is requested to run in dual mode, with the data held in duplicate in global storage. This mode supports the caching of DRV pubsets.

GLOBAL-STORAGE-UNIT = *MONO(...)

The GS unit is selected to run in mono mode.

UNIT = 1 / <integer 1..2>

Indicates the number of the GS unit (1 for GS unit 1, 2 for GS unit 2) in which the cache is to be set up.

CACHE-SEGMENT-SIZE = *UNCHANGED / *4KB / *8KB / *16KB / *32KB

Governs the size of a cache segment, i.e. the maximum size of the data areas swapped in by DAB in the event of a read miss in the cache. In automated caching (operand CACHED-FILES=*BY-SYSTEM), DAB performs the most favorable prefetch for the file and the current application (regardless of the segment size). In the case of non-automated caching the following applies: large segments are particularly suitable for sequential processing and for applications with highly localized cache utilization. Small segments are preferable for applications with a random pattern of access.

CACHE-SEGMENT-SIZE=*32KB is the default in the following cases:

- A new MRSCAT entry is created for an SF pubset (ADD-MASTER-CATALOG-ENTRY command).
- The initial values are defined for individual volume sets when an SM pubset is generated.
- A new volume set entry is generated in the course of dynamic pubset reconfiguration for an SM pubset (MODIFY-PUBSET-DEFINITION-FILE command).

FORCE-OUT = *UNCHANGED / *NO / *AT-LOW-FILLING / *AT-HIGH-FILLING

Defines the intervals at which the contents of the cache are written out to disk.

FORCE-OUT = *NO

The data in the cache is not written out to disk until the file is closed. If no further data can be forced from the cache, subsequent I/O operations can no longer be handled by the cache.

FORCE-OUT = *AT-LOW-FILLING

DAB uses a threshold value to control when the data in the cache is written out to disk. The threshold is when the cache is 25% full. This value is the default in the following cases:

- A new MRSCAT entry is created for an SF pubset (ADD-MASTER-CATALOG-ENTRY command).
- The initial values are defined for individual volume sets when an SM pubset is generated.
- A new volume set entry is generated in the course of dynamic pubset reconfiguration for an SM pubset (MODIFY-PUBSET-DEFINITION-FILE command).

FORCE-OUT = *AT-HIGH-FILLING

DAB uses a threshold value to control when the data in the cache is written out to disk. The threshold is when the cache is 75% full.

CACHED-FILES = *UNCHANGED / *BY-USER-SELECTED / *BY-SYSTEM / *ALL

Governs which files are earmarked for caching.

CACHED-FILES = *BY-USER-SELECTED

The user utilizes performance attributes to specify which files will use the cache. This value is the default in the following cases:

- A new MRSCAT entry is created for an SF pubset (ADD-MASTER-CATALOG-ENTRY command).
- The initial values are defined for individual volume sets when an SM pubset is generated.
- A new volume set entry is generated in the course of dynamic pubset reconfiguration for an SM pubset (MODIFY-PUBSET-DEFINITION-FILE command).

CACHED-FILES = *BY-SYSTEM

The automated, intelligent caching determines which DAB files have an impact on performance. The prefetch factor matching the access profile of the selected files is set and the files are monitored at regular intervals, in order to ensure optimum cache performance.

CACHED-FILES = *ALL

Except for a few system files (file catalog, user catalog, etc.), all the files in the pubset use the cache, which means that files with the performance attribute STD are treated like files with the performance attribute HIGH. The default caching mode is read/write. This form of “blanket caching” should be used only if it can be assumed to have a positive impact on overall performance.

FORCE-IMPORT = *UNCHANGED / *NO / *BY-OPERATOR

Specifies what the system is to do after a system crash, at the next IMPORT-PUBSET, if it is impossible to recreate the link to the cache area which was being used before the crash.

Note

Specifying this operand only makes sense if a nonvolatile cache medium (CACHE-MEDIUM=*GLOBAL-STORAGE) is used.

FORCE-IMPORT = *NO

If the link to the cache area is defective, import processing will be terminated. This value is the default setting when a new MRSCAT entry is added with the ADD-MASTER-CATALOG-ENTRY command.

FORCE-IMPORT = *BY-OPERATOR

If the link to the cache area is defective, either import processing will - if allowed by the operator - be continued without accessing the cache storage, or it will be terminated. If it is continued, it should be noted that data inconsistencies can occur in the pubset, and the old cache area will be cleared. Any files which are subject to data inconsistencies are appropriately marked, and can no longer be opened.

CACHE-SIZE = *UNCHANGED / <integer 1..32767>(…)

Indicates the number of storage units to be provided for the cache area in the selected medium.

CACHE-SIZE = <integer 1..32767>(…)

Specifies the number of storage units in kilobytes or megabytes which are to be provided for the cache area in the selected medium. Whether this number is in kilobytes or megabytes is indicated in the substructure below.

DIMENSION = *UNCHANGED / *KILOBYTE / *MEGABYTE

Indicates the dimension of the specified cache size. DIMENSION=*MEGABYTE applies for newly-created entries.

DIMENSION = *KILOBYTE

The value specified for CACHE-SIZE is given in kilobytes. A cache size of less than 32 KB is rounded up to 32 KB. Main memory is the only cache medium which can be sized in KB. For all the other media, if the cache size is specified in KB, the system will round this to Mbyte units.

DIMENSION = *MEGABYTE

The value specified for CACHE-SIZE is given in megabytes.

SIZE-TOLERANCE = *UNCHANGED / *YES / *NO

Indicates whether the system is to tolerate a shortage of storage space in the cache when the cache area is created, so that there is less than the amount actually requested by the CACHE-SIZE operand.

SIZE-TOLERANCE = *YES

If the requested size of cache is unavailable (even if there is no cache available), a smaller size should be accepted. This value is the default setting when a new MRSCAT entry is added with the ADD-MASTER-CATALOG-ENTRY command.

SIZE-TOLERANCE = *NO

If the requested size of cache is unavailable, the import processing for this pubset should be terminated.

Return codes

(SC2)	SC1	Maincode	Meaning
	0	CMD0001	No errors
2	0	CMS0002	Disk error
	1	CMS0011	Syntax error
	1	CMS0314	Syntax error for <cat-id>
	32	CMD0221	Internal system error
	32	CMS031F	MRS parameter error
	32	CMS0310	Error during privilege checking
	32	CMS0317	MRSCAT is locked
	32	CMS0318	Synchronization error
	64	CMS0010	No authorization for command
	64	CMS0312	MRSCAT entry not found
	64	CMS0319	Pubset type conflict

MODIFY-PUBSET-DEFINITION-FILE

Modify SM pubset definitions

Description status:	BS2000 OSD/BC V10.0A
Functional area:	Pubset and MRSCAT management
Domain:	MULTI-CATALOG-AND-PUBSET-MGMT
Privileges:	TSOS

Function

The MODIFY-PUBSET-DEFINITION-FILE command enables systems support to modify the configuration of a system-managed pubset (SM pubset) while the pubset is online. An entry in the pubset configuration file can be created, modified or deleted for each volume set in an SM pubset. When creating or modifying an entry, systems support can specify the following attributes of a volume set:

- usage mode as a file storage location for normal files or work files or as the S1 storage level of the HSMS subsystem (USAGE operand)
- level of file availability in terms of the availability of the volume set (AVAILABILITY operand)
- performance attributes of the volume set relative to file access (PERFORMANCE-ATTR attribute)

To modify the composition of pubsets and volume sets (to add a volume set, for example) you have to use the MODIFY-PUBSET-PROCESSING command.

The SHOW-PUBSET-DEFINITION-FILE command lists information on the current configuration. This information is also contained in the output of the SHOW-PUBSET-CONFIGURATION command.

The MODIFY-PUBSET-DEFINITION-FILE command is also supported for shared pubsets. In a shared-pubset network the command can be issued on the master system or on a slave system. A system message refers to the system issuing the command, unless preceded by message DMS136D. The latter includes the name of the system (master or slave) on which the error has occurred. If the command is entered on a slave system, the system name may also be the local system name.

Format

MODIFY-PUBSET-DEFINITION-FILE	
PUBSET	= <cat-id 1..4>
VOLUME-SET-ENTRY	= <u>*UNCHANGED</u> / *ADD(...) / *MODIFY(...) / *REMOVE(...)
*ADD(...)	<ul style="list-style-type: none"> VOLUME-SET = <cat-id 1..4> ,USAGE = <u>*STD</u> / *WORK / *HSMS-CONTROLLED ,AVAILABILITY = <u>*STD</u> / *HIGH ,PERFORMANCE-ATTR = <u>*STD</u> / *PARAMETERS(...) *PARAMETERS(...) PERFORMANCE = list-poss (3): <u>*STD</u> / *HIGH / *VERY-HIGH ,WRITE-CONSISTENCY = <u>*BY-CLOSE</u> / *IMMEDIATE
*MODIFY(...)	<ul style="list-style-type: none"> VOLUME-SET = <cat-id 1..4> ,USAGE = <u>*UNCHANGED</u> / *STD / *WORK / *HSMS-CONTROLLED ,AVAILABILITY = <u>*UNCHANGED</u> / *STD / *HIGH ,PERFORMANCE-ATTR = <u>*UNCHANGED</u> / *PARAMETERS(...) *PARAMETERS(...) PERFORMANCE = <u>*UNCHANGED</u> / -list-poss (3): *STD / *HIGH / *VERY-HIGH ,WRITE-CONSISTENCY = <u>*UNCHANGED</u> / *BY-CLOSE / *IMMEDIATE
*REMOVE(...)	<ul style="list-style-type: none"> VOLUME-SET = <cat-id 1..4>

Operands

PUBSET = <cat-id 1..4>

Catalog ID of the pubset which is to have its configuration modified.

VOLUME-SET-ENTRY = *UNCHANGED / *ADD(...) / *MODIFY(...) / *REMOVE(...)

Specifies which operation is involved: defining the attributes of a new volume set, modifying those of an existing volume set, or deleting a volume set entry. The attributes of a volume set are stored in the form of an entry in the pubset configuration file.

VOLUME-SET-ENTRY = *ADD(...)

A new volume set is defined for the pubset. A new entry with the following attributes is added to the configuration file:

VOLUME-SET = <cat-id 1..4>

Identifies the volume set and hence the entry for it in the configuration file.

USAGE = *STD / *WORK / *HSMS-CONTROLLED

Specifies a usage mode for the volume set.

USAGE = *STD

The volume set is to be used as a storage location for normal files. Work files (file attribute WORK) must not be stored there.

USAGE = *WORK

The volume set is to be used as a storage location for work files only (file attribute WORK). These files may be deleted by systems support at freely selectable times. That makes it easier to remove the volume set from the pubset.

USAGE = *HSMS-CONTROLLED

The volume set is used by the HSMS subsystem to implement storage level S1 and the backup volume set of an SM pubset. Users are not allowed to store files there.

AVAILABILITY = *STD / *HIGH

Governs the level of availability for files, in terms of the availability of the volume set.

AVAILABILITY = *STD

The volume set does not offer enhanced availability.

AVAILABILITY = *HIGH

The volume set offers enhanced availability.

PERFORMANCE-ATTR = *STD / *PARAMETERS(...)

Governs the performance attributes of the volume set relative to file access. These are logical attributes which are taken into account in the allocation of storage space. The hardware (e.g. cache) which is being used is not taken into account.

PERFORMANCE-ATTR = *STD

No enhanced performance attributes are defined for the volume set.

PERFORMANCE-ATTR = *PARAMETERS(...)

The following enhanced performance attributes are defined for the volume set:

PERFORMANCE = list-poss(3): *STD / *HIGH / *VERY-HIGH

Determines the performance profile of the volume set with regard to I/O operations. Up to three values can be listed.

PERFORMANCE = *STD

The volume set does not offer enhanced performance.

PERFORMANCE = *HIGH

The volume set offers enhanced performance.

PERFORMANCE = *VERY-HIGH

The volume set offers very high performance.

WRITE-CONSISTENCY = *BY-CLOSE / *IMMEDIATE

Governs the point at which data consistency is required after write operations.

WRITE-CONSISTENCY = *BY-CLOSE

Data consistency is not required until after completion of CLOSE processing.

WRITE-CONSISTENCY = *IMMEDIATE

Data consistency is required immediately upon completion of the write operation.

VOLUME-SET-ENTRY = *MODIFY(...)

The attributes of an existing volume set are to be modified. The attributes specified next are modified in the entry in the configuration file. The default value of *UNCHANGED means that the existing setting is retained.

VOLUME-SET = <cat-id 1..4>

Identifies the volume set and hence the entry which is to be modified in the configuration file.

USAGE = *UNCHANGED / *STD / *WORK / *HSMS-CONTROLLED

Specifies a usage mode for the volume set. In order for the usage mode to be modified, the volume set must be in DEFINED-ONLY status.

USAGE = *STD

The volume set is to be used as a storage location for normal files. Work files (file attribute WORK) must not be stored there.

USAGE = *WORK

The volume set is to be used as a storage location for work files only (file attribute WORK). These files may be deleted by systems support at freely selectable times. That makes it easier to remove the volume set from the pubset.

USAGE = *HSMS-CONTROLLED

The volume set is used by the HSMS subsystem to implement storage level S1 and the backup volume set of an SM pubset. Users are not allowed to store files there.

AVAILABILITY = *UNCHANGED / *STD / *HIGH

Governs the level of availability for files, in terms of the availability of the volume set.

AVAILABILITY = *STD

The volume set does not offer enhanced availability. Changing *HIGH to *STD is possible only if the volume set is in DEFINED-ONLY status or does not contain any files which require high availability.

AVAILABILITY = *HIGH

The volume set offers enhanced availability. It is always possible to change *STD to *HIGH. The files, however, are **not** implicitly relocated to a volume set offering enhanced availability.

PERFORMANCE-ATTR = *UNCHANGED / *PARAMETERS(...)

Governs the performance attributes of the volume set relative to file access. These are logical attributes which are taken into account in the allocation of storage space. The hardware (e.g. cache) which is being used is not taken into account.

PERFORMANCE-ATTR = *PARAMETERS(...)

The following enhanced performance attributes are modified for the volume set:

PERFORMANCE = *UNCHANGED / list-poss(3): *STD / *HIGH / *VERY-HIGH

Determines the performance profile of the volume set with regard to I/O operations. Up to three values can be listed.

PERFORMANCE = *STD

The volume set does not offer enhanced performance.

PERFORMANCE = *HIGH

The volume set offers enhanced performance.

PERFORMANCE = *VERY-HIGH

The volume set offers very high performance.

WRITE-CONSISTENCY = *UNCHANGED / *BY-CLOSE / *IMMEDIATE

Governs the point at which data consistency is required after write operations.

WRITE-CONSISTENCY = *BY-CLOSE

Data consistency is not required until after completion of CLOSE processing.

WRITE-CONSISTENCY = *IMMEDIATE

Data consistency is required immediately upon completion of the write operation.

VOLUME-SET-ENTRY = *REMOVE(...)

The entry for a volume set is to be removed from the configuration file. The volume set must at the time be in DEFINED-ONLY status.

VOLUME-SET = <cat-id 1..4>

Identifies the volume set and hence the entry which is to be removed.

Return codes

(SC2)	SC1	Maincode	Meaning
	0	CMD0001	No errors
	32	CMD0221	Internal system error
	32	DMS138A	Internal parameter error
	32	DMS1398	Reconfiguration no longer possible
	64	CMD0216	No authorization to issue command
	64	DMS1381	Volume set conflict
	64	DMS1384	Operand not modifiable
	64	DMS1385	Control volume set cannot be removed
	64	DMS138B	Pubset does not exist
	64	DMS138C	Pubset not accessible
	64	DMS138D	Pubset type conflict
	64	DMS138E	Volume set not defined
	64	DMS1390	Earlier reconfiguration job not yet completed
	64	DMS1395	Maximum number of volume sets exceeded
	64	DMS1397	Reconfiguration of partner system not supported
	64	DMS1399	Maximum number of MRSCAT entries reached
	64	DMS139D	Volume not accessible
	128	DMS1386	Not enough class 4/5 memory
	128	DMS1389	Error in transmission to partner system
	128	DMS139A	Another pubset reconfiguration job is still in progress
	128	DMS139C	Pubset configuration file still locked

MODIFY-PUBSET-PROCESSING

Modify pubset composition

Description status:	BS2000 OSD/BC V10.0A
Functional area:	Pubset and MRSCAT management
Domain:	MULTI-CATALOG-AND-PUBSET-MGMT
Privileges:	TSOS

Function

The MODIFY-PUBSET-PROCESSING command enables systems support to modify the composition of pubsets:

- Individual disks (volumes) can be added to or removed from a single-feature pubset (SF pubset).
- Individual volume sets can be added to or removed from a system-managed pubset (SM pubset).
- Individual disks (volumes) can be added to or removed from a volume set which forms part of an SM pubset.

When individual volumes are added to a pubset or a volume set, they can at the same time be supplied with an allocation lock. Systems support can use the MODIFY-PUBSET-RESTRICTIONS command (q.v) to define other usage restrictions for volumes in an SF pubset or for volumes in a volume set which is part of an SM pubset.

The command is also supported for shared pubsets. In a shared-pubset network the command can be issued on the master system or on a slave system. A system message refers to the system issuing the command, unless preceded by message DMS136D. The latter includes the name of the system (master or slave) on which the error has occurred. If the command is entered on a slave system, the system name may also be the local system name.

Pubset extension with homogeneity check

The homogeneity check for a pubset which is to be extended is executed by specifying the CHECK-PUBSET-MIRRORS = *YES operand.

The homogeneity check is performed for additional mirror units (SRDF and TimeFinder/Mirror functions on Symmetrix disk storage systems) and for clones (EC-Clone functions on ETERNUS DX, TimeFinder/Clone on Symmetrix and Snapview clone on CLARiiON disk storage systems).

If in the course of pubset extension a volume is detected which has different mirroring properties from volumes which have already been processed, the answerable message DMS1369 is output to SYSOUT. Depending on the caller's answer, one of the following procedures is selected:

- Extension of the pubset is aborted.
- Extension of the pubset is continued despite the fact that the volume which has just been processed was recognized as inhomogeneous. Here the message DMS136B is output on the console for every further volume with different mirroring properties.

Format

MODIFY-PUBSET-PROCESSING	
PUBSET	= <cat-id 1..4>
,PUBSET-TYPE	= *SINGLE-FEATURE (...) / *SYSTEM-MANAGED (...)
*SINGLE-FEATURE (...)	
VOLUME-ASSIGNMENT	= *UNCHANGED / *ADD (...) / *REMOVE (...)
*ADD (...)	
VOLUME	= <vsn 1..6>
,ALLOCATION-ON-VOLUME	= *NOT-RESTRICTED / *NOT-ALLOWED
,CHECK-PUBSET-MIRRORS	= *NO / *YES
*REMOVE (...)	
VOLUME	= <vsn 1..6>
*SYSTEM-MANAGED (...)	
VOLUME-SET-SUPPORT	= *UNCHANGED / *ADD (...) / *REMOVE (...) / *MODIFY (...)
*ADD (...)	
VOLUME-SET	= <cat-id 1..4>
,CHECK-PUBSET-MIRRORS	= *NO / *YES
*REMOVE (...)	
VOLUME-SET	= <cat-id 1..4>
,CONDITION	= *EMPTY-VOLUME-SET / *VOLUME-SET-DEFECTS
,TERMINATE-JOBS	= *NO / *YES
*MODIFY (...)	
VOLUME-SET	= <cat-id 1..4>
,VOLUME-ASSIGNMENT	= *UNCHANGED / *ADD (...) / *REMOVE (...)
*ADD (...)	
VOLUME	= <vsn 1..6>
,ALLOCATION-ON-VOLUME	= *NOT-RESTRICTED / *NOT-ALLOWED
,CHECK-PUBSET-MIRRORS	= *NO / *YES
*REMOVE (...)	
VOLUME	= <vsn 1..6>

Operands

PUBSET = <cat-id 1..4>

Identifies the pubset which is to have its composition modified.

PUBSET-TYPE = *SINGLE-FEATURE(...) / *SYSTEM-MANAGED(...)

Specifies whether the pubset is an SF or SM pubset.

PUBSET-TYPE = *SINGLE-FEATURE(...)

The pubset is an SF pubset. Only individual volumes can be added or removed. An allocation lock can be imposed on volumes which are added.

VOLUME-ASSIGNMENT = *UNCHANGED / *ADD(...) / *REMOVE(...)

Specifies whether a volume is to be added or removed. The default is *UNCHANGED, i.e. the composition of the pubset is left unchanged.

VOLUME-ASSIGNMENT = *ADD(...)

A volume is to be added to the pubset. The volume serial number (VOLUME operand) must comply with the naming conventions for public volumes.

VOLUME = <vsn 1..6>

Identifies the volume by its volume serial number.

ALLOCATION-ON-VOLUME = *NOT-RESTRICTED / *NOT-ALLOWED

Governs the allocation options on the volume being added.

ALLOCATION-ON-VOLUME = *NOT-RESTRICTED

Storage space may be allocated on the volume being added.

ALLOCATION-ON-VOLUME = *NOT-ALLOWED

Storage space allocation on the volume being added is not allowed.

CHECK-PUBSET-MIRRORS = *NO / *YES

Determines whether the homogeneity of the pubset with regard to SRDF and TimeFinder/Mirror mirroring is to be checked. A pubset is homogeneous when all volumes of the pubset have the same mirroring properties.

CHECK-PUBSET-MIRRORS = *NO

No homogeneity check is performed.

CHECK-PUBSET-MIRRORS = *YES

A homogeneity check is performed when the volume is added.

VOLUME-ASSIGNMENT = *REMOVE(...)

A volume is to be removed from the pubset. The volume in question must be completely empty.

VOLUME = <vsn 1..6>

Identifies the volume by its volume serial number.

PUBSET-TYPE = *SYSTEM-MANAGED(...)

The pubset is an SM pubset. Entire volume sets can be added or removed. Individual volumes can be added to or removed from assigned volume sets.

VOLUME-SET-SUPPORT = *UNCHANGED / *ADD(...) / *REMOVE(...) / *MODIFY(...)

Specifies whether a volume set is to be added or removed or whether the composition of a volume set which is already available is to be modified.

VOLUME-SET-SUPPORT = *ADD(...)

A volume set which has been entered in the pubset configuration file (see the MODIFY-PUBSET-DEFINITION-FILE command) is to be added to the pubset and thereby made available.

VOLUME-SET = <cat-id 1..4>

Identifies the volume set.

CHECK-PUBSET-MIRRORS = *NO / *YES

Determines whether the homogeneity of the pubset is to be checked. A pubset is homogeneous when all volumes of the pubset have the same mirroring properties.

CHECK-PUBSET-MIRRORS = *NO

No homogeneity check is performed.

CHECK-PUBSET-MIRRORS = *YES

A homogeneity check is performed when the volume set is added.

VOLUME-SET-SUPPORT = *REMOVE(...)

A volume set which is available to the pubset is to be removed and thereby taken out of service. One of the following conditions must be met for this to be done:

- a) The volume set must be in NORMAL-USE status and must be empty, which means that it must contain no files other than the TSOSCAT file catalog. In addition, the volume set may not be the only one which supports the default file format. The NEW-FILE-ALLOCATION restriction must be set to *NOT-ALLOWED (see the MODIFY-PUBSET-RESTRICTIONS command).
- b) The volume set is defective, which means that it must be in IN-HOLD or DEFECT status. It can be put into this status either by a system component (such as CMS) or by systems support using the MODIFY-PUBSET-RESTRICTIONS command (PROCESSING-STATE operand).

VOLUME-SET = <cat-id 1..4>

Identifies the volume set.

CONDITION = *EMPTY-VOLUME-SET / *VOLUME-SET-DEFECTS

Specifies which of the above conditions for volume set removal must be met.

CONDITION = *EMPTY-VOLUME-SET

The volume set cannot be removed unless condition a) is met. If this is not the case, processing terminates abnormally.

CONDITION = *VOLUME-SET-DEFECTS

The volume set cannot be removed unless condition b) is met. If this is not the case, processing terminates abnormally.



Processing is performed even for non-empty volume sets. Any files which are still in them are lost. A volume set in IN-HOLD status switches to DEFECT status and cannot be made available again. To allow for selective restoration of lost files, their names are stored in a file that can be used for reconstruction with HSMS: :<pubset-id>:\$TSOS.SYS.PUBSET.DEFECT.<volset-id>.<date>.<time>

TERMINATE-JOBS = *NO / *YES

Governs whether processing is to continue if reservations for the volume set are still in existence.

TERMINATE-JOBS = *NO

Processing terminates abnormally if reservations for the volume set are still in existence.

TERMINATE-JOBS = *YES

If reservations for the volume set are still in existence, the jobs which hold the reservations are terminated by the system and processing continues.

VOLUME-SET-SUPPORT = *MODIFY(...)

A volume is to be added to or removed from a volume set which is already available in the SM pubset.

VOLUME-SET = <cat-id 1..4>

Identifies the volume set.

VOLUME-ASSIGNMENT = *UNCHANGED / *ADD(...) / *REMOVE(...)

Specifies whether a volume is to be added or removed. The default is *UNCHANGED, which means that the volume set stays as it is.

VOLUME-ASSIGNMENT = *ADD(...)

A volume is to be added to the volume set.

VOLUME = <vsn 1..6>

Volume serial number of the volume which is to be added.

ALLOCATION-ON-VOLUME = *NOT-RESTRICTED / *NOT-ALLOWED

Governs the allocation options on the volume being added.

ALLOCATION-ON-VOLUME = *NOT-RESTRICTED

Storage space may be allocated on the volume being added.

ALLOCATION-ON-VOLUME = *NOT-ALLOWED

Storage space allocation on the volume being added is not allowed.

CHECK-PUBSET-MIRRORS = *NO / *YES

Determines whether the homogeneity of the pubset is to be checked. A pubset is homogeneous when all volumes of the pubset have the same mirroring properties.

CHECK-PUBSET-MIRRORS = *NO

No homogeneity check is performed.

CHECK-PUBSET-MIRRORS = *YES

A homogeneity check is performed when the volume is added.

VOLUME-ASSIGNMENT = *REMOVE(...)

A volume is to be removed from the volume set.

VOLUME = <vsn 1..6>

Volume serial number of the volume which is to be removed.

Return codes

(SC2)	SC1	Maincode	Meaning
	0	CMD0001	No errors
	32	CMD0221	Internal system error
	32	DMS138A	Internal parameter error
	32	DMS1398	Reconfiguration no longer possible
	64	CMD0216	No authorization to issue command
	64	DMS1355	Cache configuration invalid
	64	DMS1358	Disks already being cached through ADM PFA interfaces
	64	DMS135B	No more space on cache medium
	64	DMS135E	Cache management subsystem no longer available
	64	DMS1380	Pubset or volume set inconsistent
	64	DMS1381	Volume set conflict
	64	DMS1383	Volume inconsistent
	64	DMS1385	Volume set or volume cannot be removed
	64	DMS1387	Volume cannot be reserved
	64	DMS1388	Volume cannot be allocated to cache area
	64	DMS1389	Error in transmission to partner system
	64	DMS138B	Pubset does not exist
	64	DMS138C	Pubset not accessible
	64	DMS138D	Pubset type conflict
	64	DMS138E	Volume set not defined
	64	DMS138F	Volume set not accessible
	64	DMS1390	Earlier reconfiguration job not yet completed
	64	DMS1392	Invalid VSN
	64	DMS1395	Maximum number of volume sets exceeded or inhomogeneity of the pubset mirror detected
	64	DMS1397	Reconfiguration of partner system not supported
	64	DMS139D	Volume not accessible
	128	DMS1386	Not enough class 4/5 memory
	128	DMS139A	Another pubset reconfiguration job is still in progress
	128	DMS139B	Volume or volume set is reserved
	128	DMS139C	Pubset configuration file still locked

MODIFY-PUBSET-RESTRICTIONS

Modify usage restrictions for pubset

Description status:	BS2000 OSD/BC V10.0A
Functional area:	Pubset and MRSCAT management
Domain:	MULTI-CATALOG-AND-PUBSET-MGMT
Privileges:	TSOS

Function

The MODIFY-PUBSET-RESTRICTIONS command enables systems support to impose and lift usage restrictions on single-feature pubsets (SF pubsets) and on system-managed pubsets (SM pubsets).

Only volume-specific restrictions can be imposed on SF pubsets. Restrictions on SM pubset may also relate to volume sets.

Volume-specific restrictions can be modified only if the associated volume set of the SM pubset or the associated SF pubset is available.

Restrictions on volume sets relating to new file allocation (*NEW-FILE-ALLOCATION) and volume set access (*VOLUME-SET-ACCESS) can be modified even if the associated volume set is merely defined in the pubset configuration file (DEFINED-ONLY status).

The SHOW-PUBSET-RESTRICTIONS command lists information on the current configuration. This information is also contained in the output of the SHOW-PUBSET-CONFIGURATION command.

The command MODIFY-PUBSET-RESTRICTIONS is also supported for shared pubsets. In a shared-pubset network the command can be issued on the master system or on a slave system. A system message refers to the system issuing the command, unless preceded by message DMS136D. The latter includes the name of the system (master or slave) on which the error has occurred. If the command is entered on a slave system, the system name may also be the local system name.

Format

```

MODIFY-PUBSET-RESTRICTIONS

PUBSET = <cat-id 1..4>
,PUBSET-TYPE = *SINGLE-FEATURE (...) / *SYSTEM-MANAGED(...)
  *SINGLE-FEATURE(...)
    ALLOCATION-ON-VOLUME = *UNCHANGED / *NOT-ALLOWED(...) / *PHYSICAL-ONLY(...) /
      *NOT-RESTRICTED(...)
      *NOT-ALLOWED(...)
        | VOLUME = <vsn 1..6>
      *PHYSICAL-ONLY(...)
        | VOLUME = <vsn 1..6>
      *NOT-RESTRICTED(...)
        | VOLUME = *ALL / <vsn 1..6>
  *SYSTEM-MANAGED(...)
    VOLUME-SET = <cat-id 1..4>
    ,RESTRICTION = *UNCHANGED / *NEW-FILE-ALLOCATION(...) / *VOLUME-SET-ACCESS(...) /
      *PROCESSING-STATE(...) / *ALLOCATION-ON-VOLUME(...)
      *NEW-FILE-ALLOCATION(...)
        | MODE = *UNCHANGED / *NOT-ALLOWED / *PHYSICAL-ONLY / *NOT-RESTRICTED
      *VOLUME-SET-ACCESS(...)
        | MODE = *UNCHANGED / *ADMINISTRATOR-ONLY / *NOT-RESTRICTED
      *PROCESSING-STATE(...)
        | MODE = *UNCHANGED / *HOLD / *RESTART
      *ALLOCATION-ON-VOLUME(...)
        MODE = *UNCHANGED / *NOT-ALLOWED(...) / *PHYSICAL-ONLY(...) /
          *NOT-RESTRICTED(...)
          *NOT-ALLOWED(...)
            | VOLUME = <vsn 1..6>
          *PHYSICAL-ONLY(...)
            | VOLUME = <vsn 1..6>
          *NOT-RESTRICTED(...)
            | VOLUME = *ALL / <vsn 1..6>

```

Operands**PUBSET = <cat-id 1..4>**

Identifies the pubset which is to have its usage restrictions modified.

PUBSET-TYPE = *SINGLE-FEATURE(...) / *SYSTEM-MANAGED(...)

Specifies whether the pubset is an SF or SM pubset.

PUBSET-TYPE = *SINGLE-FEATURE(...)

The pubset is an SF pubset. Only usage restrictions on individual volumes can be modified.

ALLOCATION-ON-VOLUME = *UNCHANGED / *NOT-ALLOWED(...)***PHYSICAL-ONLY(...) / *NOT-RESTRICTED(...)**

Governs whether storage space can be allocated on a volume.

ALLOCATION-ON-VOLUME = *NOT-ALLOWED(...)

Storage space allocation on the volume specified next is not allowed.

VOLUME = <vsn 1..6>

Identifies the volume by its volume serial number.

ALLOCATION-ON-VOLUME = *PHYSICAL-ONLY(...)

Space allocation on the volume specified next is allowed only if the volume was specified explicitly when initially requested (see the VOLUME operand of the CREATE-FILE command, for example).

VOLUME = <vsn 1..6>

Identifies the volume by its volume serial number.

ALLOCATION-ON-VOLUME = *NOT-RESTRICTED(...)

The volume-specific restrictions are lifted for all volumes (default setting) or for the volume specified next.

VOLUME = *ALL / <vsn 1..6>

Identifies the volume by its volume serial number. The default is *ALL, which means the restrictions on all volumes are lifted.

PUBSET-TYPE = *SYSTEM-MANAGED(...)

The pubset is an SM pubset. Usage restrictions on entire volume sets and on individual volumes can be modified.

VOLUME-SET = <cat-id 1..4>

Identifies the volume set.

RESTRICTION = *UNCHANGED / *NEW-FILE-ALLOCATION(...) /***VOLUME-SET-ACCESS(...) / *PROCESSING-STATE(...) /*****ALLOCATION-ON-VOLUME(...)**

Defines the type of usage restriction. Restrictions may relate to the creation of new files on the volume set, access to the volume set, or the operating mode of the volume set, or they may be volume-specific restrictions.

RESTRICTION = *NEW-FILE-ALLOCATION(...)

Governs whether the creation of new files is allowed on the volume set.

MODE = *UNCHANGED / *NOT-ALLOWED / *PHYSICAL-ONLY / *NOT-RESTRICTED

Determines the scope of restrictions on new file allocation. The default is *UNCHANGED, which means that the existing setting is left unchanged.

MODE = *NOT-ALLOWED

New file allocation is not allowed on the volume set.



Changing to *NOT-ALLOWED is not permitted if the volume set is the only one which supports the default file format.

MODE = *PHYSICAL-ONLY

New file allocation on the volume set is allowed only if the volume was specified explicitly when storage space was initially requested (see the VOLUME operand of the CREATE-FILE command).

MODE = *NOT-RESTRICTED

New files may also be created implicitly by the system on the volume set.



Changing *NOT-ALLOWED to *PHYSICAL-ONLY or *NOT-RESTRICTED is allowed only if there is no restriction on access to the volume set (see RESTRICTION=*VOLUME-SET-ACCESS).

RESTRICTION = *VOLUME-SET-ACCESS(...)

Governs whether access to the volume set is possible.

MODE = *UNCHANGED / *ADMINISTRATOR-ONLY / *NOT-RESTRICTED

Defines who is to have access to the volume set.

MODE = *ADMINISTRATOR-ONLY

Only systems support has access to the volume set.

MODE = *NOT-RESTRICTED

Access to the volume set is unrestricted.



Changing *NOT-RESTRICTED to *ADMINISTRATOR-ONLY is allowed only if there are restrictions on new file allocation on the volume set (see RESTRICTION=*NEW-FILE-ALLOCATION).

RESTRICTION = *PROCESSING-STATE(...)

Governs whether the volume set is operable and therefore available.

MODE = *UNCHANGED / *HOLD / *RESTART

Governs the operating mode of the volume set. The default is *UNCHANGED, i.e. the operating mode does not change.

MODE = *HOLD

The volume set is marked as temporarily inoperable (IN-HOLD status). This may be necessary if access to the volume set is no longer possible, typically due to channel errors, and the volume set needs to be removed from the SM pubset (see VOLUME-SET-SUPPORT=*REMOVE in the MODIFY-PUBSET-PROCESSING command). If errors occur, the volume set may also be switched to the comparable DEFECT status by a system component.

MODE = *RESTART

A temporarily inoperable volume set is to be made operable again.

RESTRICTION = *ALLOCATION-ON-VOLUME(...)

Governs whether space allocation is restricted on individual volumes of a volume set.

MODE = *UNCHANGED / *NOT-ALLOWED(...) / *PHYSICAL-ONLY(...) / *NOT-RESTRICTED(...)

Determines the scope of restrictions on space allocation on an individual volume. The default is *UNCHANGED, which means that the existing setting is left unchanged.

MODE = *NOT-ALLOWED(...)

Storage space allocation on the volume specified next is not allowed.

VOLUME = <vsn 1..6>

Identifies the volume by its volume serial number.

MODE = *PHYSICAL-ONLY(...)

Space allocation on the volume specified next is allowed only if the volume was specified explicitly when initially requested (see the VOLUME operand of the CREATE-FILE command, for example).

VOLUME = <vsn 1..6>

Identifies the volume by its volume serial number.

MODE = *NOT-RESTRICTED(...)

The volume-specific restrictions are lifted for all volumes (default setting) or for the volume specified next.

VOLUME = *ALL / <vsn 1..6>

Identifies the volume by its volume serial number. The default is *ALL, which means the restrictions on all volumes are lifted.

Return codes

(SC2)	SC1	Maincode	Meaning
	0	CMD0001	No errors
	32	CMD0221	Internal system error
	32	DMS138A	Internal parameter error
	32	DMS1398	Reconfiguration no longer possible
	64	CMD0216	No authorization to issue command
	64	DMS1381	Volume set conflict
	64	DMS1382	Volume not present
	64	DMS1384	Operand not modifiable
	64	DMS1389	Error in transmission to partner system
	64	DMS138B	Pubset does not exist
	64	DMS138C	Pubset not accessible
	64	DMS138D	Pubset type conflict
	64	DMS138E	Volume set not defined
	64	DMS1390	Earlier reconfiguration job not yet completed
	64	DMS1392	Invalid VSN
	64	DMS1397	Reconfiguration of partner system not supported
	64	DMS139D	Volume not accessible
	128	DMS1386	Not enough class 4/5 memory
	128	DMS139A	Another pubset reconfiguration job is still in progress
	128	DMS139C	Pubset configuration file still locked

MODIFY-PUBSET-SPACE-DEFAULTS

Modify disk space management defaults

Description status:	BS2000 OSD/BC V10.0A
Functional area:	Pubset and MRSCAT management System control and optimization
Domain:	MULTI-CATALOG-AND-PUBSET-MGMT
Privileges:	TSOS

Function

The MODIFY-PUBSET-SPACE-DEFAULTS command enables systems support to modify pubset-specific defaults for disk space management. The defaults that are set are for primary and secondary allocation, the maximum value for secondary allocation doubling, and the default file format for SM pubsets.

The pubset for which the defaults are to be modified generally has to be in service. In the case of SF pubsets, though, changes to values which are not to come into effect until the next startup can also be made when the pubset is not in service.

The SCOPE operand governs when modifications take effect and how long the effect lasts. With SF pubsets, a permanent change applies only to the system on which it was made. An exception is made when the change is requested from a slave system, in which case it applies only to the current master system.

In the case of a pubset which does not yet have any permanently configured values, suitable values are established when the pubset is taken into service. The settings of the DMPRALL, DMSCALL and DMMAXSC system parameters are taken into account. Permanent settings of these values for an SF pubset can also be defined with the ADD-MASTER-CATALOG-ENTRY command.

Systems support can use the SHOW-PUBSET-SPACE-DEFAULTS command to find out which pubset-specific space management defaults are set. This information is also contained in the output of the SHOW-PUBSET-PARAMETERS command.

Format

MODIFY-PUBSET-SPACE-DEFAULTS
<p>PUBSET = <cat-id 1..4></p> <p>,PUBSET-TYPE = *ANY / *SYSTEM-MANAGED(...)</p> <p> *SYSTEM-MANAGED(...)</p> <p> FILE-FORMAT = *UNCHANGED / *K / *NK2 / *NK4</p> <p>,PRIMARY-ALLOCATION = *UNCHANGED / *STD / <integer 1..16777215 2Kbyte></p> <p>,SECONDARY-ALLOCATION = *UNCHANGED / *STD / <integer 1..32767 2Kbyte></p> <p>,MAXIMAL-ALLOCATION = *UNCHANGED / *STD / <integer 1..32767 2Kbyte></p> <p>,SCOPE = *PERMANENT / *TEMPORARY / *NEXT-PUBSET-SESSION</p>

Operands

PUBSET = <cat-id 1..4>

Identifies the pubset which is to have its space management defaults modified.

PUBSET-TYPE = *ANY / *SYSTEM-MANAGED(...)

Specifies the pubset type. The default is ***ANY**, which means that the pubset type is irrelevant because only the defaults governing the size of the space allocation are to be changed.

PUBSET-TYPE = *SYSTEM-MANAGED(...)

The pubset is explicitly an SM pubset. This is the only case in which the default file format can also be changed.

FILE-FORMAT = *UNCHANGED / *K / *NK2 / *NK4

Governs the default file format. The system uses this value if the user does not explicitly specify a file format or specifies ***BY-PUBSET-DEFAULT** (see the **FILE-PREFORMAT** operand in the **CREATE-FILE** command). The default is ***UNCHANGED**, which means that the existing setting is left unchanged.

FILE-FORMAT = *K

If no file format is specified, files are created as K files.

FILE-FORMAT = *NK2

If no file format is specified, files are created as NK files in 2K format.

FILE-FORMAT = *NK4

If no file format is specified, files are created as NK files in 4K format.

PRIMARY-ALLOCATION = *UNCHANGED / *STD / <integer 1..16777215 2Kbyte>

Governs the default primary allocation for storage space requests. The system uses this value if the user does not specify a value explicitly or specifies *STD (see the operand SPACE=*STD in the CREATE-FILE command). The default is *UNCHANGED, which means that the existing setting is left unchanged.

PRIMARY-ALLOCATION = *STD

The value of the DMPRALL system parameter is used as the primary allocation default.

PRIMARY-ALLOCATION = <integer 1..16777215 2Kbyte>

Number of PAM pages to be set as the primary allocation default.

SECONDARY-ALLOCATION = *UNCHANGED / *STD / <integer 1..32767 2Kbyte>

Governs the default secondary allocation for storage space requests. The system uses this value if the user does not specify a value explicitly or specifies *STD (see the SPACE=*STD or SECONDARY-ALLOCATION=*STD operand in the CREATE-FILE or MODIFY-FILE-ATTRIBUTES command). The default is *UNCHANGED, which means that the existing setting is left unchanged.

SECONDARY-ALLOCATION = *STD

The value of the DMSCALL system parameter is used as the secondary allocation default.

SECONDARY-ALLOCATION = <integer 1..32767 2Kbyte>

Number of PAM pages to be set as the secondary allocation default.

MAXIMAL-ALLOCATION = *UNCHANGED / *STD / <integer 1..32767 2Kbyte>

Governs the maximum value for secondary allocation doubling. The value of the secondary allocation for a file is doubled each time the reserved space is extended until the maximum value specified here is reached. The default is *UNCHANGED, which means that the existing setting is left unchanged.

MAXIMAL-ALLOCATION = *STD

The value of the DMMAXSC system parameter is used as the maximum allocation default.

MAXIMAL-ALLOCATION = <integer 1..327672 2Kbyte>

Number of PAM pages to be set as the maximum allocation default.

SCOPE = *PERMANENT / *TEMPORARY / *NEXT-PUBSET-SESSION

Defines how long the setting applies and when it comes into effect.

SCOPE = *PERMANENT

The setting takes immediate effect and applies until the next modification.

SCOPE = *TEMPORARY

The setting takes immediate effect and applies only for the duration of the current pubset session, i.e. until the pubset is taken out of service.

SCOPE = *NEXT-PUBSET-SESSION

The setting applies until the next permanent modification. However, the setting does not take effect until the start of the next pubset session.

Return codes

(SC2)	SC1	Maincode	Meaning
	0	CMD0001	No errors
2	0	DMS1402	Action only partly successful
	1	CMD0202	Syntax error
	32	CMD0221	Internal system error
	64	CMD0216	Required authorization not available
	64	DMS1401	File format not supported
	64	DMS140B	Pubset not available
	64	DMS140C	Pubset type conflict
	130	DMS140F	Not enough class 4/5 memory

MODIFY-PUBSET-SPACEPRO-OPTIONS

Modify the SPACEPRO options

Description status:	SPACEPRO V1.0A
Functional area:	Pubset and MRSCAT management
Domain:	MULTI-CATALOG-AND-PUBSET-MGMT
Privileges:	TSOS

Function

The MODIFY-PUBSET-SPACEPRO-OPTIONS command modifies the SPACEPRO options of a pubset. The SPACEPRO monitor evaluates the options set in the course of pubset monitoring. The following options can be defined or modified:

- Assignment of a pool pubset (POOL-PUBSET operand)
- Saturation level as a trigger criterion for automatic extension of the pubset (SATURATION-LEVEL operand)
- Minimum time between two automatic extensions as a prerequisite for implementing the next automatic extension (BLOCKING-TIME operand)
- Specification for the homogeneity check in the event of pubset extension (CHECK-PUBSET-MIRRORS operand)
- Descriptive text for the SPACEPRO options (REMARK operand)

The following SPACEPRO options are preset for a newly created pubset:

- No pool pubset is assigned (POOL-PUBSET=*NONE). Automatic extension is therefore initially disabled.
- The settings for the saturation level, the minimum time between two automatic extensions and the homogeneity check in the case of pubset extension should be taken from the SPACEPRO parameters (SATURATION-LEVEL, BLOCKING-TIME and CHECK-PUBSET-MIRRORS each with the value *BY-PARAMETER).
- No descriptive text is provided as yet (REMARK=*NONE).

Information on the SPACEPRO options currently set for a pubset is provided by the SHOW-PUBSET-SPACEPRO-OPTIONS command.

Note

If pubset monitoring is performed using the INSPECTOR component of openSM2, all SPACEPRO options are taken into consideration except the saturation level (separate setting options in openSM2). For details, see the “openSM2” manual [39] and the “Introduction to System Administration” [14].

Format

<p>MODIFY-PUBSET-SPACEPRO-OPTIONS</p> <p>PUBSET = <cat-id 1..4></p> <p>,POOL-PUBSET = <u>*UNCHANGED</u> / *NONE / <cat-id 1..4>(…)</p> <p style="padding-left: 2em;"><cat-id 1..4>(…)</p> <p style="padding-left: 4em;"> VOLUME-SET = <u>*ALL</u> / <cat-id 1..4></p> <p>,SATURATION-LEVEL = <u>*UNCHANGED</u> / *BY-PARAMETER / <integer 1..5></p> <p>,BLOCKING-TIME = <u>*UNCHANGED</u> / *BY-PARAMETER / <integer 0..999 hours> / <time> / *UNLIMITED</p> <p>,CHECK-PUBSET-MIRRORS = <u>*UNCHANGED</u> / *BY-PARAMETER / *NO / *YES</p> <p>,REMARK = <u>*UNCHANGED</u> / *NONE / <text 1..255></p>
--

Operands

PUBSET = <cat-id 1..4>

Pubset for which the SPACEPRO options are to be modified. The pubset must be imported.

POOL-PUBSET = *UNCHANGED / *NONE / <cat-id 1..4>(…)

Specifies which SF pubset or volume set of an SM pubset is assigned for automatic extension of the SPACEPRO pubset.

POOL-PUBSET = *NONE

No pubset/volume set is assigned. This setting temporarily disables automatic extension, but the other settings are retained.

POOL-PUBSET = <cat-id 1..4>(…)

The catalog ID specified may not identify a SPACEPRO pubset.

Catalog ID of a pubset which is to be assigned for automatic extension. When an SM pubset is assigned, the subsequent operand determines whether all volume sets or only one particular volume set is/are to be assigned for automatic extension.

If no assignment existed (see POOL-PUBSET=*NONE), this setting enables automatic extension.

The specified pool pubset need not be imported. However, a complete entry for it must exist in the master catalog at the time automatic extension is performed.

VOLUME-SET = *ALL / <cat-id 1..4>

Volume set which is to be assigned for automatic extension. The default value is *ALL, i.e. all volume sets of the SM pubset are assigned.

In the case of an SF pubset, no value other than *ALL may be specified.

SATURATION-LEVEL = *UNCHANGED / *BY-PARAMETER / <integer 1..5>

Determines the saturation level from which the SPACEPRO pubset is to be extended automatically. The SPACEPRO monitor reacts to the console message events. In the case of an SM pubset, the saturation level reached is displayed in insert 3 of the message DMS1400. In the case of an SF pubset, the message EXC044n where n=0..5 is output in accordance with the saturation level reached.

BLOCKING-TIME = *UNCHANGED / *BY-PARAMETER / <integer 0..999 hours> / <time> / *UNLIMITED

Determines a minimum time which must have elapsed before the next extension may take place.

BLOCKING-TIME = *BY-PARAMETER

Accepts the setting for the minimum time from the SPACEPRO parameters.

BLOCKING-TIME = <integer 0..999 hours>

Specifies the minimum time in hours relative to the time of the last extension.

BLOCKING-TIME = <time>

Specifies the minimum time relative to the time of the last extension in the format hh:mm:ss.

BLOCKING-TIME = *UNLIMITED

The SPACEPRO pubset can only be automatically extended once. Subsequently extension can only be performed manually (e.g. by modifying the SPACEPRO option).

CHECK-PUBSET-MIRRORS = *UNCHANGED / *BY-PARAMETER / *NO / *YES

Determines whether a homogeneity check is to be performed with regard to SRDF and/or BCV mirroring (the operand specification is used in the MODIFY-PUBSET-PROCESSING command which must be performed internally).

CHECK-PUBSET-MIRRORS = *BY-PARAMETER

Accepts the setting from the SPACEPRO parameters.

CHECK-PUBSET-MIRRORS = *NO

No homogeneity check is performed when a pubset is extended.

CHECK-PUBSET-MIRRORS = *YES

A homogeneity check is performed when a pubset is extended.

The homogeneity check is performed for additional mirror units (SRDF and TimeFinder/Mirror functions on Symmetrix disk storage systems) and for clones (EC-Clone functions on ETERNUS DX, TimeFinder/Clone on Symmetrix and Snapview clone on CLARiiON disk storage systems).

The value *YES is ignored when a pubset extension is executed if the SHC-OSD subsystem is not available. If required, the POSIX and SHC-OSD subsystems are started at execution time.

REMARK = *UNCHANGED / *NONE / <text 1..255>

Determines whether a descriptive text is to be stored for the SPACEPRO options. The text is displayed in the SHOW-SPACEPRO-OPTIONS command output.

REMARK = *NONE

No descriptive text is stored.

REMARK = <text 1..255>

Free text which is stored to describe the SPACEPRO options.

Return codes

(SC2)	SC1	Maincode	Meaning
	0	CMD0001	Command executed without error
	1	CMD0202	Syntax error
	32	CMD0221	System error
	64	SPP0101	Lock not received
	64	SPP0202	No information found for the input
	64	SPP0305	JV subsystem not available
	64	SPP0306	Wrong version of the SDF-P-BASYS subsystem
	64	SPP0601	SPACEPRO pubset not available
	130	SDP0099	Shortage of memory space

MODIFY-RESOURCE-COLLECTION

Control secure queue and collector task selection

Description status:	BS2000 OSD/BC V10.0A
Functional area:	Device management
Domain:	DEVICE
Privileges:	OPERATING
Routing code:	J

Function

The MODIFY-RESOURCE-COLLECTION command can be used by systems support to control the secure queue and selection of the collector task.

Format

MODIFY-RESOURCE-COLLECTION

ACTION = *ADD-COLLECTOR / *REMOVE-COLLECTOR / *SET-COLLECTOR

,**TSN** = <alphanumeric 1..4>

Operands

ACTION =

Determines whether the specified job is taken into account when selecting the collector task.

ACTION = *ADD-COLLECTOR

The specified job is taken into account when selecting the collector task within the system. This state corresponds to the presetting at the time the job enters the secure queue. This command has no effect unless a MODIFY-RESOURCE-COLLECTION command specifying ACTION=*REMOVE-COLLECTOR has been issued for the same job.

ACTION = *REMOVE-COLLECTOR

The specified job is not taken into account when the collector task is selected by the system. If the specified job is the collector, it loses this collector attribute. However, this does not prevent the job in question from reserving resources; it merely cannot collect them one after the other, and instead must wait until all its requests can be met at once.

ACTION = *SET-COLLECTOR

The specified job becomes the collector task. If it is already the collector task, the command has no effect. If another job is the collector, it loses its collector attribute. The setting of the collector task has priority over its selection by the system.

TSN = <alphanum-name 1..4>

Specifies the task sequence number of the job for which the MOD-RES command has been issued.

Return codes

(SC2)	SC1	Maincode	Meaning/Guaranteed messages
	0	CMD0001	No error
	64	NKS0023	Command not executed Task not in secure queue
	64	NKS0024	Command not executed with ACTION=*SET-COLL Establishment not confirmed by task
	64	NKS0026	Command not executed with ACTION=*REM-COLL Task currently being established as collector
	64	NKS0027	Command not executed with ACTION=*SET-COLL Collector currently being set up
	64	NKS0028	Command not executed with ACTION=*SET-COLL Task is already collector
	64	NKS0029	Command not executed with ACTION=*SET-COLL Task no longer in secure queue
	64	NKS0041	Control task for secure queue not active with TSN=NKS. Command not executed.
	64	NKS0043	Internal error in NKRRORQH module

Notes

- If a job loses its collector attribute, all existing reservations are canceled. The job waits in the secure queue until all reservation requests can be met at once.
- The collector attributes can be modified for each job in the secure queue as often as required. These attributes (collector, non-collector, to be taken into account at selection, not to be taken into account) are, however, only valid as long as the job is contained in the secure queue. When a job leaves (or re-enters) the secure queue the default attributes apply (non-collector, to be taken into account at selection).
- Mount requests are only issued at the operator terminal (console) when all the resources required for the job have been reserved. The mounting of volumes takes place in a subsidiary phase of secure processing. The MODIFY-RESOURCE-COLLECTION command therefore has no effect on jobs waiting for a reply to a MOUNT message.
- The MODIFY-RESOURCE-COLLECTION command with the REMOVE or SET operand is rejected if at the time of command input a job is turned into a collector task.

MODIFY-SDF-OPTIONS

Activate user syntax file and change SDF option settings

Description status:	SDF V4.7D
Functional area:	SDF control
Domain:	SDF
Privileges:	STD-PROCESSING TSOS HARDWARE-MAINTENANCE SAT-FILE-EVALUATION SAT-FILE-MANAGEMENT SECURITY-ADMINISTRATION

Function

With the MODIFY-SDF-OPTIONS command, the user can

- activate or deactivate user syntax files (user syntax files are generated using the SDF-A utility routine; see the “SDF-A” manual [33])
- change the settings of SDF options for specific tasks:
 - type of dialog guidance (GUIDANCE operand)
 - extent of logging (LOGGING)
 - input interface for utilities (UTILITY-INTERFACE operand)
 - syntax error dialog in procedures (PROCEDURE-DIALOGUE operand)
 - position of the continuation character (CONTINUATION operand)
 - syntax checking of commands (MODE operand)
 - syntax checking of statements (DEFAULT-PROGRAM-NAME operand)
 - selection of function key assignment (FUNCTION-KEYS operand)
 - storage of input (INPUT-HISTORY operand)

The settings of SDF options are taken from the global information of the activated system or group syntax file at the beginning of the task. If the user activates a user syntax file, the settings of SDF options are modified according to the global information contained in that file. When the OMNIS utility routine is used, however, the GUIDANCE=*EXPERT mode is set at the beginning of the task and if the user syntax file is switched.

In (temporarily) guided dialog the operand form of the MODIFY-SDF-OPTIONS command contains as preset values the current settings, which can also be queried using the SHOW-SDF-OPTIONS command. The *UNCHANGED operand states that the current setting is not to be modified.

In programs with an SDF interface, MODIFY-SDF-OPTIONS is available as a standard statement with the same syntax and functionality but without the MODE, DEFAULT-PROGRAM-NAME and COMMAND-STATISTICS operands.

Privileged functions

Systems support (privilege TSOS) can use the CMD-STATISTICS operand to activate and deactivate the statistical recording of all commands issued in the system. All commands contained in the system or subsystem syntax files are taken into account.

The statistics are recorded in the SYS.SDF.CMD.STATISTICS file. If the statistics routine is active (CMD-STATISTICS=*YES), SDF counts every command issued by running a counter for each command and each alias.

If the statistics routine is deactivated (CMD-STATISTICS=*NO), SDF evaluates the count and writes the edited statistics to the above-named file. Any existing statistics file is overwritten. SDF then resets the command counter to zero.

The edited statistics file contains:

- a header showing the date and time when the statistics routine was activated and deactivated.
- for each subsystem a title containing the name of the subsystem
- for each command of a subsystem the command name and the count.

Format

MODIFY-SDF-OPTIONS	Alias: MDSDFO
SYNTAX-FILE = <u>*UNCHANGED</u> / *ADD(...) / *REMOVE(...) / *NONE *ADD(...) ADD-NAME = <u>*STD</u> / list-poss(2000): *STD / <filename 1..54> *REMOVE(...) REMOVE-NAME = <u>*LAST</u> / *ALL / *BY-SELECTION / list-poss(2000): <filename 1..54> / *STD ,GUIDANCE = <u>*UNCHANGED</u> / *EXPERT / *NO / *MAXIMUM / *MEDIUM / *MINIMUM ,LOGGING = <u>*UNCHANGED</u> / *INPUT-FORM / *ACCEPTED-FORM / *INVARIANT-FORM ,UTILITY-INTERFACE = <u>*UNCHANGED</u> / *OLD-MODE / *NEW-MODE ,PROCEDURE-DIALOGUE = <u>*UNCHANGED</u> / *YES / *NO ,CONTINUATION = <u>*UNCHANGED</u> / *OLD-MODE / *NEW-MODE ,MENU-LOGGING = <u>*UNCHANGED</u> / *NO / *YES ,CMD-STATISTICS = <u>*UNCHANGED</u> / *NO / *YES ,MODE = <u>*UNCHANGED</u> / *EXECUTION / *TEST(...) *TEST(...) CHECK-PRIVILEGES = <u>*UNCHANGED</u> / *NO / *YES ,DEFAULT-PROGRAM-NAME = <u>*UNCHANGED</u> / *NONE / <structured-name 1..30> ,FUNCTION-KEYS = <u>*UNCHANGED</u> / *STYLE-GUIDE-MODE / *BY-TERMINAL-TYPE / *OLD-MODE ,INPUT-HISTORY = <u>*UNCHANGED</u> / *ON(...) / *OFF / *RESET *ON(...) NUMBER-OF-INPUTS = <u>*UNCHANGED</u> / <integer 1..100> ,PASSWORD-PROTECTION = <u>*UNCHANGED</u> / *YES / *NO	

Operands

SYNTAX-FILE = *UNCHANGED / *ADD(...) / *REMOVE(...)

Indicates whether a user syntax file is to be activated or deactivated. Two or more user syntax files can be active at the same time.

A user syntax file to be activated must be accessible and shareable (if the job submitter is not the owner of the syntax file). If the syntax file is protected by basic ACL or GUARDS, the job submitter must have at least execute authorization (see the USER-ACCESS, BASIC-ACL and GUARDS operands in the CREATE-FILE and MODIFY-FILE-ATTRIBUTES commands respectively).

If the file is protected by an execute password, the password must be contained in the password table for the job (see ADD-PASSWORD command).

Note

For performance reasons, user syntax files which were created in an SDF version < V2.0A should be converted to the new syntax file format. This is done either while processing with SDF-A or by means of the SDF-I utility routine (CONVERT-SYNTAX-FILE statement).

SYNTAX-FILE = *UNCHANGED

The previous declaration continued to apply.

SYNTAX-FILE = *ADD(...)

One or more additional user syntax files are to be activated.

ADD-NAME = list-poss(2000): *STD / <filename 1..54>

Specifies the user syntax file to be activated.

A list of two or more syntax files can also be specified.

ADD-NAME = *STD

The user syntax file with the standard file name **SDF.USER.SYNTAX** is activated if it exists in the user ID.

ADD-NAME = <filename 1..54>

The specified user syntax file is activated.

SYNTAX-FILE = *REMOVE(...)

One or more user syntax files are to be deactivated.

REMOVE-NAME = *LAST / *ALL / list-poss(2000): <filename 1..54> / *STD

Specifies the user syntax file to be deactivated.

A list of two or more syntax files can also be specified.

REMOVE-NAME = *LAST

The last user syntax file activated is deactivated.

REMOVE-NAME = *ALL

All activated user syntax files are deactivated.

REMOVE-NAME = *BY-SELECTION

All activated user syntax files are displayed in a selection mask. Those which are to be deactivated can be marked in a mark column.

REMOVE-NAME = <filename 1..54>

The specified user syntax file is deactivated.

REMOVE-NAME = *STD

The user syntax file with the standard file name **SDF.USER.SYNTAX** is deactivated.

SYNTAX-FILE = *NONE

No user syntax file has been activated for the job.
Currently active user syntax files are deactivated.

GUIDANCE =

Specifies the type of dialog guidance.

GUIDANCE = *UNCHANGED

The previous declaration still applies.

GUIDANCE = *EXPERT

The EXPERT form of unguided dialog is set:

The system requests command input with “/” and statement input with “//”. No syntax error dialog is carried out. Blocked input of commands/statements is possible, i.e. several commands/statements, separated by logical end-of-line characters, can be issued at the same time.

GUIDANCE = *NO

The NO form of unguided dialog is set:

Depending on the language set (English (E) or German (D)), the system requests command input with “%CMD:” or “%KDO:” and statement input with “%STMT:” or “%ANW:”. A syntax error dialog allows input errors to be corrected without having to repeat the entire command/ statement. Blocked input of commands/statements is possible, i.e. several commands/statements, separated by logical-end-of-line characters, can be issued at the same time.

GUIDANCE = *MAXIMUM

Guided dialog, maximum help level, is set:

All alternative operand values with suffixes, and all help texts for the displayed application domains, commands, statements and operands are displayed.

GUIDANCE = *MEDIUM

Guided dialog, medium help level, is set:

All alternative operand values without suffixes, and all help texts for the displayed application domains, commands and statements are displayed.

GUIDANCE = *MINIMUM

Guided dialog, minimum help level, is set:

Only default values for operands without suffixes are displayed.

LOGGING =

Specifies how inputs are to be logged. Input for operands defined as “secret” (attribute SECRET=*YES) is never listed in a log.

LOGGING = *UNCHANGED

The previous declaration still applies.

LOGGING = *INPUT-FORM

In unguided dialog, input strings are logged exactly as entered. In guided dialog or following an error dialog, logging is performed as with *ACCEPTED-FORM.

LOGGING = *ACCEPTED-FORM

The following is logged:

- all names in their extended form
 - all specified operands, each with its name and the specified value
 - the final representation resulting from a correction dialog, if any.
- Inputs of the guided dialog are concatenated to form a single string.

LOGGING = *INVARIANT-FORM

The following is logged:

- all names with the default names defined in the syntax file
 - all specified operands, each with its name and the specified value
 - all optional operands implicitly contained in the input, each with its name and its default value
 - the final representation resulting from a correction dialog, if any.
- Inputs of the guided dialog are concatenated to form a single string.

UTILITY-INTERFACE = *UNCHANGED / *OLD-MODE / *NEW-MODE

Controls the input interface of utility routines which offer an old and a new (SDF) interface in parallel.

PROCEDURE-DIALOGUE = *UNCHANGED / *YES / *NO

Specifies whether the user is to be requested to correct errored procedure commands during the execution of a procedure (syntax error dialog in procedures). At the same time the operand controls the help request (“?” in the input) within procedures.

CONTINUATION = *UNCHANGED / *OLD-MODE / *NEW-MODE

Determines the column in which the command continuation character is to be specified in procedure and ENTER files. If *OLD-MODE is set, the continuation character must be in column 72 precisely. If *NEW-MODE is set, it may be entered in any column from column 2 through 72.

MENU-LOGGING = *UNCHANGED / *NO / *YES

Specifies whether menus of the guided dialog are to be logged in their entirety. This operand is restricted to diagnostic purposes.

CMD-STATISTICS = *UNCHANGED / *NO / *YES

Only systems support can specify this operand (privilege TSOS):

Determines whether statistics on the issued commands are to be created from the system syntax file.

MODE = *UNCHANGED / *EXECUTION / *TEST(...)

Specifies whether test mode is activated or deactivated.

MODE = *EXECUTION

Test mode is deactivated.

MODE = *TEST(...)

Test mode is activated. Commands issued after the MODIFY-SDF-OPTIONS command are subjected to a syntax check but not executed. The MODIFY-SDF-OPTIONS and SHOW-SDF-OPTIONS commands are *always* executed.

The lower-ranking CHECK-PRIVILEGES operand determines whether the user has the privileges necessary for the input.

The treatment of statements in test mode can be defined in the DEFAULT-PROGRAM-NAME operand.

In *S procedures*, SDF-P control flow commands are executed also. This may cause errors, since commands declaring or setting S variables are not executed in test mode. The chargeable SDF-P subsystem offers a special debugger for S procedures (see the section dealing with debugging aids in the “SDF-P” manual [34]).

CHECK-PRIVILEGES = *UNCHANGED / *NO / *YES

Specifies whether the user’s privileges are checked in addition to the syntax check.

CHECK-PRIVILEGES = *NO

The user’s privileges are not checked. This setting may be necessary, for example, if the procedure to be tested is created for other users.

CHECK-PRIVILEGES = *YES

As well as the syntax check, SDF checks whether the user has the necessary privileges for the input.

DEFAULT-PROGRAM-NAME = *UNCHANGED / *NONE / <structured-name 1..30>

Determines whether in test mode (see MODE operand) SDF program statements (beginning with //) are to undergo a syntax check.

This check is performed on the basis of the syntax of the statements defined in the syntax file for the specified program name. The check is independent of the program call, since START-/LOAD-EXECUTABLE-PROGRAM commands (or START-/LOAD-PROGRAM) are not executed in test mode.

FUNCTION-KEYS = *UNCHANGED / *STYLE-GUIDE-MODE / *BY-TERMINAL-TYPE / *OLD-MODE

Determines the assignment of the function keys.

FUNCTION-KEYS = *STYLE-GUIDE-MODE

The function keys are assigned according to the Fujitsu Technology Solutions Styleguide.

- K2** Interrupt function
- F1** Help function
- F3** Exit function
- F5** Refresh function (only in guided dialog)
- F6** Exit-all function
- F7** Scroll backward (only in guided dialog)
- F8** Scroll forward (only in guided dialog)
- F9** Execute RESTORE-SDF-INPUT INPUT=*LAST
- F11** Execute function (only in guided dialog)
- F12** Cancel function

FUNCTION-KEYS = *BY-TERMINAL-TYPE

The function key assignment depends on the terminal type. If the terminal type supports the wider-ranging functionality of the Styleguide, SDF chooses the setting *STYLE-GUIDE-MODE. Otherwise, SDF chooses the setting *OLD-MODE.

Note

To choose a setting, SDF analyzes the type with which the terminal was generated in the system. If the generated terminal type is different from the actual terminal type, there is no guarantee that the setting will match the functional scope actually supported. In the case of a terminal emulation, the recognized terminal type can depend on both the generation and the value of an environment variable. For more detailed information, see the description of the emulation program used.

FUNCTION-KEYS = *OLD-MODE

The function keys are assigned in Old mode, which is supported by all terminal types.

- K1** Exit function
- K2** Interrupt function
- K3** Refresh function (only in guided dialog)
- F1** Exit-all function
- F2** Test function (only in guided dialog)
- F3** Execute function (only in guided dialog)

INPUT-HISTORY = *UNCHANGED / *ON(...) / *OFF / *RESET

Determines whether the input buffer is activated, deactivated or reset.

INPUT-HISTORY = *ON(...)

The input buffer is activated. SDF saves all syntactically correct inputs (commands and statements) to the input buffer. The commands or standard statements RESTORE-SDF-INPUT and SHOW-INPUT-HISTORY are not saved. Whether or not ISP commands are saved depends on what is specified in the PASSWORD-PROTECTION operand.

The SHOW-INPUT-HISTORY command (or standard statement) enables the user to display the saved inputs, while the RESTORE-SDF-INPUT command can be used to redisplay a specific input for entering again, either as it is or in modified form.

Note

Values specified for “secret” operands which match neither the default value nor a value defined via SECRET=*NO are stored in the input buffer with “^” or in plaintext, depending on the PASSWORD-PROTECTION operand.

Values specified for operands which are not “secret” are always stored in the input buffer in plain text. In individual cases these inputs can contain sensitive information (e.g. procedure parameters). The following steps will prevent such inputs from being displayed again via SHOW-INPUT-HISTORY or RESTORE-SDF-INPUT:

Before entering sensitive input, the input buffer must be deactivated and then activated again. If the inputs have already been saved, the input buffer can be reset with *RESET, but it must be remembered that this will delete all saved inputs.

NUMBER-OF-INPUTS = *UNCHANGED / <integer 1..100>

Maximum number of inputs to be saved.

PASSWORD-PROTECTION = *UNCHANGED / *YES / *NO

This operand is not permitted in procedure mode.

Defines whether values specified for “secret” operands and ISP commands are stored in the input buffer.

PASSWORD-PROTECTION = *YES

Values specified for “secret” operands are saved with “^” (equivalent to the operand value *SECRET). ISP commands are not stored in the input buffer.

PASSWORD-PROTECTION = *NO

Values specified for “secret” operands are stored in plaintext. ISP commands are also stored in the input buffer.

Note

Under this setting, passwords are displayed on the screen in plaintext with the SHOW-INPUT-HISTORY or RESTORE-SDF-INPUT command, and so may be seen by unauthorized users. You should therefore ensure that whenever you leave your terminal no unauthorized users can output the contents of the input buffer. If your terminal does not possess any appropriate security mechanisms (e.g. chipcard terminal), you should at least delete the input buffer before you leave.

INPUT-HISTORY = *OFF

The input buffer is deactivated. Subsequent inputs are not saved, but all previously saved inputs can still be accessed.

INPUT-HISTORY = *RESET

The input buffer is reset. The stored inputs are deleted and can no longer be accessed, while subsequent inputs are saved.

Return codes

(SC2)	SC1	Maincode	Meaning/Guaranteed messages
	0	CMD0001	Command terminated without errors
1	32	CMD0500	Syntax description in current syntax file invalid. Guaranteed message: CMD0500
	64	CMD0554	Command execution not successful. Guaranteed messages: CMD0300, CMD0302, CMD0490, CMD0508, CMD0509, CMD0552, CMD0554, CMD0555, CMD0579

Example

```

/show-sdf-opt _____ (1)
%SYNTAX FILES CURRENTLY ACTIVATED :
% SYSTEM      : :10SH:$TSOS.SYSSDF.SDF.047
%              VERSION : SESD04.7C10
% SUBSYSTEM   : :10SH:$TSOS.SYSSDF.ACS.180
%              VERSION : SESD18.0A000
%
%
% SUBSYSTEM   : :10SH:$TSOS.SYSSDF.SDF-A.041
%              VERSION : SESD04.1G100
% SUBSYSTEM   : :10SH:$TSOS.SYSSDF.TASKDATE.180
%              VERSION : SESD18.0A000
% GROUP       : *NONE
% USER       : :20SG:$USER1.SDF.USER.SYNTAX
%              VERSION : 13.01.2012
%CURRENT SDF OPTIONS :
% GUIDANCE    : *EXPERT
% LOGGING     : *INPUT-FORM
% CONTINUATION : *NEW-MODE
% UTILITY-INTERFACE : *NEW-MODE
% PROCEDURE-DIALOGUE : *NO
% MENU-LOGGING : *NO
% MODE        : *EXECUTION
    
```

```

% CHECK-PRIVILEGES : *YES
% DEFAULT-PROGRAM-NAME : *NONE
% FUNCTION-KEYS : *STYLE-GUIDE-MODE
% INPUT-HISTORY : *ON
% NUMBER-OF-INPUTS : 20
% PASSWORD-PROTECTION: *YES
/modify-sdf-opt syntax-file=*add(syssdf.example.03) _____ (2)
/show-sdf-opt information=*user _____ (3)
% USER : :20SG:$USER1.SDF.USER.SYNTAX
% VERSION : 13.01.2012
% USER : :20SG:$USER1.SYSSDF.EXAMPLE.03
% VERSION : 16.01.2012
%CURRENT SDF OPTIONS :
% GUIDANCE : *EXPERT
% LOGGING : *INPUT-FORM
% CONTINUATION : *NEW-MODE
% UTILITY-INTERFACE : *NEW-MODE
% PROCEDURE-DIALOGUE : *NO
% MENU-LOGGING : *NO
% MODE : *EXECUTION
% CHECK-PRIVILEGES : *YES
% DEFAULT-PROGRAM-NAME : *NONE
% FUNCTION-KEYS : *STYLE-GUIDE-MODE
% INPUT-HISTORY : *ON
% NUMBER-OF-INPUTS : 20
% PASSWORD-PROTECTION: *YES
/modify-sdf-opt guid=*max _____ (4)
. (in guided dialog:)
. NEXT = mod-sdf-opt synt-file=*remove,guid=*expert _____ (5)
.
/show-sdf-opt information=*user _____ (6)
% USER : :20SG:$USER1.SDF.USER.SYNTAX
% VERSION : 13.01.2012
%CURRENT SDF OPTIONS :
% GUIDANCE : *EXPERT
% LOGGING : *INPUT-FORM
% CONTINUATION : *NEW-MODE
% UTILITY-INTERFACE : *NEW-MODE
% PROCEDURE-DIALOGUE : *NO
% MENU-LOGGING : *NO
% MODE : *EXECUTION
% CHECK-PRIVILEGES : *YES
% DEFAULT-PROGRAM-NAME : *NONE
% FUNCTION-KEYS : *STYLE-GUIDE-MODE
% INPUT-HISTORY : *ON
% NUMBER-OF-INPUTS : 20
% PASSWORD-PROTECTION: *YES

```

- (1) The SHOW-SDF-OPTIONS command provides information on all activated syntax files and the SDF options that are set. The output of the subsystem syntax files can be very extensive, depending on the number of activated subsystems. This example shows only an excerpt.
- (2) A user syntax file SYSSDF.EXAMPLE.03 is additionally activated.
- (3) The user-specific information is displayed. The old user syntax file SDF.USER.SYNTAX remains active and the user syntax file SYSSDF.EXAMPLE.03 is additionally activated. The command definitions from SYSSDF.EXAMPLE.03 are used for commands defined in both user syntax files, as these are activated last.
- (4) The system switches to guided dialog mode.
- (5) The most recently activated user syntax file is deactivated and the system switches back to unguided dialog mode.
- (6) The repeated output of the user-specific SDF options shows that only the user syntax file SYSSDF.EXAMPLE.03 was deactivated.

MODIFY-SDF-PARAMETERS

Modify SDF parameters

Description status:	SDF V4.7D
Functional area:	SDF control
Domain:	SDF
Privileges:	TSOS
Routing code:	*

Function

The MODIFY-SDF-PARAMETERS command enables systems support to exchange the system syntax file or subsystem syntax files, to allocate group syntax files to users and to define system-wide LOGON or LOGOFF procedures (each consisting of a call procedure and an include procedure).

Systems support can also define when and for how long these declarations are to take effect:

- effective immediately for the current session only
- effective immediately for an unlimited time
- effective as of the next session for an unlimited time.

The definitions are entered in the SDF parameter file. The name of the SDF parameter file is defined in the DSSM catalog for SDF. If no SDF parameter file was entered there, the SDF parameter file with the default name \$TSOS.SYSPAR.SDF is cataloged. If no SDF parameter file exists, it is created with the name from the DSSM catalog or with the default name.

A user is assigned a group syntax file regardless of the entry in the user catalog. A profile ID (PROFILE-ID operand in the ADD-USER/MODIFY-USER-ATTRIBUTES command; output in *PROFILE-ID* field via SHOW-USER-ATTRIBUTES) may be entered in the user catalog. The SDF parameter file contains the allocations of profile IDs to group syntax files, which are assigned to a user or user group with the corresponding profile ID.

Since an assigned group syntax file is activated during LOGON processing, any modification in the SDF parameter file or in the user catalog is effective only for tasks whose LOGON is issued afterwards. An exchange of the system syntax file, however, also affects running tasks.

An SDF parameter file can be created or modified off-line using the SDF-PAR utility routine. This utility is described in the “SDF Dialog Interface” manual [15].

Format

```

MODIFY-SDF-PARAMETERS

SCOPE = *TEMPORARY / *PERMANENT / *NEXT-SESSION(...)
    *NEXT-SESSION(...)
        |   PARAMETER-FILE-NAME = *CURRENT / <filename 1..54>
,SYNTAX-FILE-TYPE = *UNCHANGED / *SYSTEM(...) / *GROUP(...) / *SUBSYSTEM(...)
    *SYSTEM(...)
        |   NAME = <filename 1..54>
    *GROUP(...)
        |   NAME = *NONE / <filename 1..54>
        |   ,PROFILE-ID = <structured-name 1..30>
        |   ,HIERARCHY = *YES / *NO
    *SUBSYSTEM(...)
        |   NAME = *NONE / <filename 1..54>
        |   ,SUBSYSTEM-NAME = <structured-name 1..8>
,SYSTEM-LOGON-PROC = *UNCHANGED / *NO / *STD / <filename 1..54>
,SYSTEM-LOGON-INCL = *UNCHANGED / *NO / *STD / <filename 1..54>
,SYSTEM-LOGOFF-PROC = *UNCHANGED / *NO / *STD / <filename 1..54>
,SYSTEM-LOGOFF-INCL = *UNCHANGED / *NO / *STD / <filename 1..54>

```

Operands

SCOPE =

Specifies the scope of the activation which is being made.

For SCOPE = *TEMPORARY or *PERMANENT, it is not possible to deactivate the group syntax file, which belongs to the systems support profile ID. For SCOPE=*PERMANENT or *NEXT-SESSION, an SDF parameter file is created if it does not already exist.

SCOPE = *TEMPORARY

For a system syntax file:

The specified subsystem syntax file is activated or deactivated system-wide for all user jobs. However, it is not entered in the SDF parameter file and is ignored for the subsequent session.

For a subsystem syntax file:

The specified subsystem syntax file is activated or deactivated system-wide for all user jobs. However, it is not entered in the SDF parameter file and is ignored for the subsequent session.

For a group syntax file:

The specified group syntax file is assigned to the specified profile ID. This assignment only takes effect for subsequent user jobs (from the next LOGON in the current session). User jobs which are already in progress are not affected by the change.

The specified group syntax file is not entered in the SDF parameter file and is therefore ignored for the subsequent session. In the case of a deactivation (*NONE), the existing profile ID and its associated group syntax file name are *not* deleted from the SDF parameter file.

*With SYSTEM-LOGON-PROC or SYSTEM-LOGON-INCL = *NO:*

Deactivates the system-wide LOGON procedure (call or include procedure) for the next LOGON processing activities in the current session. The SDF parameter file is not modified.

With SYSTEM-LOGON-PROC or SYSTEM-LOGON-INCL = <filename 1..54>:

Activates the specified system-wide LOGON procedure (call or include procedure) for the all subsequent LOGON processing activities in the current session. As the SDF parameter file is not modified, this specification will apply only for the current session.

*With SYSTEM-LOGOFF-PROC or SYSTEM-LOGOFF-INCL = *NO:*

The system-wide LOGOFF procedure is deactivated for all subsequent LOGOFF processing in the current session. The SDF parameter file is not changed.

*With SYSTEM-LOGOFF-PROC or SYSTEM-LOGOFF-INCL = <filename 1..54> or *STD:*

The specified system-wide LOGOFF procedure is activated for all subsequent LOGOFF processing in the current session. Since the SDF parameter file is not modified, the specification applies only to the current session.

SCOPE = *PERMANENT

For a system syntax file:

The specified system syntax file is activated system-wide for all user jobs. In addition, the system syntax file name is entered in the SDF parameter file. It is therefore used in the next session.

For a subsystem syntax file:

The specified subsystem syntax file is activated system-wide for all user tasks. In addition, the syntax file name is entered in the SDF parameter file; it is therefore used in the next session. If a subsystem syntax file is being deactivated, the names of the subsystem and the associated subsystem syntax file are deleted from the SDF parameter file.

For a group syntax file:

The specified group syntax file is assigned to the specified profile ID. This assignment only takes effect for subsequent user jobs (from the next LOGON in the current session). User jobs which are already in progress are not affected by the change.

The specified group syntax file is entered in the SDF parameter file and is therefore used in the next session. In the case of a deactivation (*NONE), the existing profile ID and its associated group syntax file name are deleted from the SDF parameter file.

*With SYSTEM-LOGON-PROC or SYSTEM-LOGON-INCL = *NO:*

Deactivates the system-wide LOGON procedure (call or include procedure) for the next LOGON processing activities in the current session. Its name is deleted from the SDF parameter file. If one is available, the system-wide LOGON procedure with the default name will be used, starting from the next session.

With SYSTEM-LOGON-PROC or SYSTEM-LOGON-INCL = <filename 1..54>:

Activates the specified system-wide LOGON procedure (call or include procedure) for the all subsequent LOGON processing activities in the current session. Its name is stored in the SDF parameter file, and will therefore be used again in the next session.

*With SYSTEM-LOGOFF-PROC or SYSTEM-LOGOFF-INCL = *NO:*

The system-wide LOGOFF procedure is deactivated for all subsequent LOGOFF processing in the current session. Its name is deleted from the SDF parameter file. If present, the system-wide LOGOFF procedure with the default name is used as of the next session.

*With SYSTEM-LOGOFF-PROC or SYSTEM-LOGOFF-INCL = <filename 1..54> or *STD:*

The specified system-wide LOGOFF procedure is activated for all subsequent LOGOFF processing in the current session. Its name is stored in the SDF parameter file and is therefore also evaluated in the following session.

SCOPE = *NEXT-SESSION(...)

For a system syntax file:

The specified system syntax file name is stored in the SDF parameter file, and will be used in the next session. The current session is not affected by this.

For a subsystem syntax file:

The specified subsystem syntax file name is stored in the SDF parameter file, and will be used in the next session. The current session is not affected by this. If a subsystem syntax file is being deactivated, the names of the subsystem and the associated subsystem syntax file are deleted from the SDF parameter file (the current session is not affected by this).

For a group syntax file:

The specified group syntax file is assigned to the specified profile ID in the SDF parameter file. This assignment only takes effect in the next session. User jobs which are already in progress, and subsequent ones in the present session, are not affected by the change. In the case of a deactivation (*NONE), the existing profile ID and its associated group syntax file name are removed from the SDF parameter file. The group syntax file which belongs to the systems support profile ID need only be shareable if it will also be used by other user IDs.

The specified syntax file name is not checked before being stored in the SDF parameter file. Checking will take place in the next session.

*With SYSTEM-LOGON-PROC or SYSTEM-LOGON-INCL = *NO:*

The name of the system-wide LOGON procedure (call or include procedure) is deleted from the SDF parameter file. This has no effect on the current session. If one is available, the system-wide LOGON procedure with the default name will be used, starting from the next session.

With SYSTEM-LOGON-PROC or SYSTEM-LOGON-INCL = <filename 1..54>:

The name of the specified system-wide LOGON procedure (call or include procedure) is stored in the SDF parameter file. This specification will apply from the next session, and has no effect on the current session.

*With SYSTEM-LOGOFF-PROC or SYSTEM-LOGOFF-INCL = *NO:*

The name of the system-wide LOGOFF procedure is deleted from the SDF parameter file. If available, the system-wide LOGOFF procedure with the default name is used as of the next session. This specification does not affect the current session.

*With SYSTEM-LOGOFF-PROC or SYSTEM-LOGOFF-INCL = <filename 1..54> or *STD:*

The name of the specified system-wide LOGOFF procedure is stored in the SDF parameter file. The specification applies as of the next session and does not affect the current session.

PARAMETER-FILE-NAME = *CURRENT / <filename 1..54>

Specifies the name of the parameter file which is to be created or updated.

PARAMETER-FILE-NAME = *CURRENT

Identifies the parameter file name for the current session.

SYNTAX-FILE-TYPE =

Specifies the type of syntax file concerned.

SYNTAX-FILE-TYPE = *SYSTEM(...)

The syntax file is a system file.

NAME = <filename 1..54>

Specifies the name of the file to be used as the (basic) system syntax file.

SYNTAX-FILE-TYPE = *GROUP(...)

The syntax file is a group file.

NAME =

Specifies the name of the file to be used as the group syntax file.

NAME = *NONE

Deletes the assignment of the group syntax file to the specified profile ID.

NAME = <structured-name 1..30>

The specified group syntax file is assigned to the specified profile ID.

PROFILE-ID = <structured-name 1..30>

Defines the profile ID which was (or is to be) assigned to the group syntax file.

HIERARCHY =

Specifies whether the SDF file hierarchy is to be retained for the syntax analysis of the commands/statements in a user job with the specified profile ID, i.e. whether the system syntax file is to be referred to in making the syntax analysis.

HIERARCHY = *YES

By default the system syntax file is activated when a user ID is set up.

HIERARCHY = *NO

The system syntax file is deactivated immediately after LOGON processing. For users with the specified profile ID, the definitions in the system syntax file then become irrelevant. The only definitions which apply are those stored in the assigned group syntax file. A group syntax file which is defined using HIERARCHY = *NO *must* contain, in addition to the global information, at least the EXIT-JOB or LOGOFF command. Otherwise it is not possible to terminate a user job which has the specified profile ID assigned to it.

SYNTAX-FILE-TYPE = *SUBSYSTEM(...)

The syntax file is a subsystem syntax file.

NAME = *NONE / <filename 1..54>

Specifies the name of the file which is to be used as the subsystem syntax file. If *NONE is specified, the subsystem syntax file which belongs to SUBSYSTEM-NAME is deactivated.

SUBSYSTEM-NAME = <structured-name 1..8>

Specifies the name of the subsystem to which the subsystem syntax file belongs.

SYSTEM-LOGON-PROC =

Specifies whether a system-wide LOGON procedure is to run as a call procedure. The specifications made for a system-wide LOGON call procedure have different effects, depending on what is specified for the SCOPE operand.

SYSTEM-LOGON-PROC = *UNCHANGED

There is to be no change in the system-wide LOGON call procedure.

SYSTEM-LOGON-PROC = *STD

The system-wide LOGON call procedure with the default name TSOS.SYS.SDF.LOGON.SYSPROC is activated for all subsequent LOGON operations in the current session (see the SCOPE operand).

SYSTEM-LOGON-PROC = *NO

Deactivates the system-wide LOGON call procedure (see the SCOPE operand).

SYSTEM-LOGON-PROC = <filename 1..54>

Activates the specified system-wide LOGON call procedure (see the SCOPE operand).

SYSTEM-LOGON-INCL =

The specified system-wide LOGON include procedure is activated. The specifications for the system-wide LOGON include procedure have different effects depending on the SCOPE operand.

SYSTEM-LOGON-INCL = *UNCHANGED

There is to be no change in the system-wide LOGON include procedure.

SYSTEM-LOGON-INCL = *STD

The system-wide LOGON include procedure with the default name TSOS.SYS.SDF.LOGON.SYSINCL is activated for the next LOGON operations in the current session (see the SCOPE operand).

SYSTEM-LOGON-INCL = *NO

Deactivates the system-wide LOGON include procedure (see the SCOPE operand).

SYSTEM-LOGON-INCL = <filename 1..54>

Activates the specified system-wide LOGON include procedure (see the SCOPE operand).

SYSTEM-LOGOFF-PROC =

Specifies whether a system-wide LOGOFF procedure is to run as a call procedure. The specifications made for the system-wide LOGOFF call procedure have a different effect depending on the value of the SCOPE operand.

SYSTEM-LOGOFF-PROC = *UNCHANGED

No change to the system-wide LOGOFF call procedure.

SYSTEM-LOGOFF-PROC = *NO

The system-wide LOGOFF call procedure is deactivated (see also the description of the SCOPE operand).

SYSTEM-LOGOFF-PROC = *STD

The system-wide LOGOFF call procedure with the default name \$TSOS.SYS.SDF.LOGOFF.SYSPROC is activated (see also the description of the SCOPE operand).

SYSTEM-LOGOFF-PROC = <filename 1..54>

The specified system-wide LOGOFF call procedure is activated (see also the description of the SCOPE operand).

SYSTEM-LOGOFF-INCL =

Specifies whether a system-wide LOGOFF procedure is to run as an include procedure. The specifications made for the system-wide LOGOFF include procedure have a different effect depending on the value of the SCOPE operand.

SYSTEM-LOGOFF-INCL = *UNCHANGED

No change of the system-wide LOGOFF include procedure.

SYSTEM-LOGOFF-INCL = *NO

The system-wide LOGOFF include procedure is deactivated (see also the description of the SCOPE operand).

SYSTEM-LOGOFF-INCL = *STD

The system-wide LOGOFF include procedure with the default name \$TSOS.SYS.SDF.LOGOFF.SYSINCL is activated (see also the description of the SCOPE operand).

SYSTEM-LOGOFF-INCL = <filename 1..54>

The specified system-wide LOGOFF include procedure is activated (see also the description of the SCOPE operand).

Return codes

(SC2)	SC1	Maincode	Meaning/Guaranteed messages
	0	CMD0001	No error
2	0	CMD0677	Access rights for the system syntax file have been changed (warning) Guaranteed message: CMD0677
2	0	CMD0689	HIERARCHY=*NO is not included in the current parameter file Guaranteed message: CMD0689
1	32	CMD0500	Invalid syntax specification in the current syntax file Guaranteed message: CMD0500
	64	CMD0556	Command executed unsuccessfully Guaranteed messages: CMD0300, CMD0302, CMD0490, CMD0508, CMD0509, CMD0556, CMD0557, CMD0671, CMD0672, CMD0674, CMD0678, CMD0679, CMD0681, CMD0682, CMD0687, CMD0688, CMD0690, CMD0814, CMD0815
1	64	CMD0601	Command reserved for use by systems support Guaranteed message: CMD0601

Notes

- Access to the SDF parameter file (MODIFY-SDF-PARAMETERS command) is possible only for a task under the TSOS ID. Concurrent accesses of further tasks are rejected with an error message.
- The group syntax file allocated to the profile ID of systems support (TSOS) need not be shareable unless it is used by other user IDs. If the file is protected by BASIC-ACL or GUARDS, the user IDs must have at least execute permission.
- If SCOPE=*NEXT-SESSION is specified, specified syntax file names and the names of the system LOGON procedures (call and include procedures) are stored in the parameter file without being checked. Checking does not take place until the start of the next session.
- File names specified without a user ID are given the current catalog ID or user ID of the task.
- When replacing alias names, only the real file names are entered.
- Global information from subsystem syntax files is ignored.

- If SCOPE=*TEMPORARY or *PERMANENT is specified, the TSOS group syntax file cannot be deactivated.
- A subsystem syntax file may also be activated automatically by DSSM when the subsystem is started (defined in the subsystem declarations). If a subsystem syntax file has already been declared and hence activated for the subsystem in the SDF parameter file, only the last syntax file activated for the subsystem is evaluated. A syntax file automatically activated by DSSM cannot be removed for the subsystem by means of MODIFY-SDF-PARAMETERS; it can only be exchanged. Syntax files automatically activated by DSSM are deactivated again by DSSM when the subsystem is shut down. Syntax files activated by means of the SDF parameter file must in all cases be deactivated with a suitable MODIFY-SDF-PARAMETERS command.

MODIFY-SPACE-SATURATION-LEVELS

Modify space saturation thresholds

Description status:	BS2000 OSD/BC V10.0A
Functional area:	Pubset and MRSCAT management System control and optimization
Domain:	MULTI-CATALOG-AND-PUBSET-MGMT
Privileges:	TSOS
Routing code:	\$

Function

The MODIFY-SPACE-SATURATION-LEVELS command enables systems support to modify the threshold levels for storage space saturation monitoring on pubsets. The threshold settings are pubset-specific for single-feature pubsets (SF pubsets). With system-managed pubsets (SM pubsets) the thresholds are defined for each volume set.

A defined disk space saturation threshold is reached when the number of free PAM pages on an SF pubset or in a volume set on an SM pubset falls below the figure set for the saturation level. When a saturation level is reached, assigned console messages are output. From saturation level 4, requests for space from certain jobs are rejected. A system reserve (ZIP level) can be kept free for pubsets needed at system startup. The reserved space is not released for allocation until a ZIP start is performed (see the “Introduction to System Administration” [14]).

The pubset for which the saturation thresholds are to be modified generally has to be in service. In the case of SF pubsets, though, changes to values which are not to come into effect until the next startup can also be made when the pubset is not in service.

The SCOPE operand governs when modifications take effect and how long the effect lasts. With SF pubsets, a permanent change applies only to the system on which it was made. An exception is made when the change is requested from a slave system, in which case it applies only to the current master system.

In the case of a pubset which does not yet have any permanently configured values, suitable values are calculated when the pubset is taken into service. The setting of the L4SPDEF system parameter and the current capacity of the SF pubset, or that of the individual volume sets in the case of an SM pubset, are taken into account.



Permanent settings of saturation level 4 for an SF pubset can also be defined with the ADD-MASTER-CATALOG-ENTRY command. If settings have already been defined with MODIFY-SPACE-SATURATION-LEVELS, they should not be changed with the MODIFY-MASTER-CATALOG-ENTRY command because in that case the threshold condition checking described below would not be performed.

When setting thresholds, make sure that the values for saturation levels 1 through 5 and the system reserve which is equivalent to saturation level 6 form a descending sequence; in other words, the following condition must be met:

$$\text{LEVEL-1} \geq \text{LEVEL-2} \geq \text{LEVEL-3} \geq \text{LEVEL-4} \geq \text{LEVEL-5} \geq \text{ZIP-LEVEL}$$

If threshold settings are to take immediate effect, the specified values must also not exceed the current capacity of the SF pubset or of the volume sets in the SM pubset.

Systems support can use the SHOW-SPACE-SATURATION-LEVELS command to find out which thresholds are currently set. This information is also contained in the output of the SHOW-PUBSET-PARAMETERS command. The SHOW-PUBSET-SPACE-ALLOCATION command provides information on how space is currently allocated.

Format

MODIFY-SPACE-SATURATION-LEVELS
<pre> PUBSET = <cat-id 1..4> ,PUBSET-TYPE = <u>*SINGLE-FEATURE</u> / SYSTEM-MANAGED(...) SYSTEM-MANAGED(...) VOLUME-SET = <cat-id 1..4> ,LEVEL-1 = <u>*UNCHANGED</u> / *STD / <integer 1..2147483647 2Kbyte> ,LEVEL-2 = <u>*UNCHANGED</u> / *STD / <integer 1..2147483647 2Kbyte> ,LEVEL-3 = <u>*UNCHANGED</u> / *STD / <integer 1..2147483647 2Kbyte> ,LEVEL-4 = <u>*UNCHANGED</u> / *STD / <integer 1..2147483647 2Kbyte> ,LEVEL-5 = <u>*UNCHANGED</u> / *STD / <integer 1..2147483647 2Kbyte> ,ZIP-LEVEL = <u>*UNCHANGED</u> / *STD / <integer 0..2147483647 2Kbyte> ,SCOPE = <u>*PERMANENT</u> / *TEMPORARY / *NEXT-PUBSET-SESSION </pre>

Operands

PUBSET = <cat-id 1..4>

Identifies the pubset which is to have its space saturation monitoring thresholds modified.

PUBSET-TYPE = *SINGLE-FEATURE / *SYSTEM-MANAGED(...)

Specifies whether the pubset is an SF or SM pubset.

PUBSET-TYPE = *SINGLE-FEATURE

The pubset is an SF pubset. The thresholds are defined on a pubset-global basis.

PUBSET-TYPE = *SYSTEM-MANAGED(...)

The pubset is an SM pubset. The thresholds are defined for the volume set specified next.

VOLUME-SET = <cat-id 1..4>

Identifies the volume set.

LEVEL-1 = *UNCHANGED / *STD / <integer 1..2147483647 2Kbyte>

Defines the threshold for saturation level 1. If the number of free PAM pages falls below the specified figure, saturation level 1 has been reached. The default is *UNCHANGED, which means that the existing setting is left unchanged.

LEVEL-1 = *STD

The threshold for saturation level 1 is calculated by the system.

LEVEL-2 = *UNCHANGED / *STD / <integer 1..2147483647 2Kbyte>

Defines the threshold for saturation level 2. If the number of free PAM pages falls below the specified figure, saturation level 2 has been reached. The default is *UNCHANGED, which means that the existing setting is left unchanged.

LEVEL-2 = *STD

The threshold for saturation level 2 is calculated by the system.

LEVEL-3 = *UNCHANGED / *STD / <integer 1..2147483647 2Kbyte>

Defines the threshold for saturation level 3. If the number of free PAM pages falls below the specified figure, saturation level 3 has been reached. The default is *UNCHANGED, which means that the existing setting is left unchanged.

LEVEL-3 = *STD

The threshold for saturation level 3 is calculated by the system.

LEVEL-4 = *UNCHANGED / *STD / <integer 1..2147483647 2Kbyte>

Defines the threshold for saturation level 4. If the number of free PAM pages falls below the specified figure, saturation level 4 has been reached. The default is *UNCHANGED, which means that the existing setting is left unchanged.

LEVEL-4 = *STD

The value of the L4SPDEF system parameter is set as the default for saturation level 4.

LEVEL-4 = <integer 1..2147483647 2Kbyte>

Number of non-reserved PAM pages.

LEVEL-5 = *UNCHANGED / *STD / <integer 1..2147483647 2Kbyte>

Defines the threshold for saturation level 5. If the number of free PAM pages falls below the specified figure, saturation level 5 has been reached. The default is *UNCHANGED, which means that the existing setting is left unchanged.

LEVEL-5 = *STD

The threshold for saturation level 5 is calculated by the system.

ZIP-LEVEL = *UNCHANGED / *STD / <integer 0..2147483647 2Kbyte>

Defines a system reserve of non-reserved space. This space can only be allocated if system startup takes the form of a ZIP start. The system reserve should be set to zero for pubsets which are never used at system startup. The default is *UNCHANGED, which means that the existing setting is left unchanged.

ZIP-LEVEL = *STD

A system reserve of 66 PAM pages is kept free for SF pubsets. No system reserve (equivalent to ZIP-LEVEL=0) is kept free for SM pubsets because they cannot be used at system startup.

ZIP-LEVEL = <integer 0..2147483647 2Kbyte>

Number of PAM pages to be kept free as a system reserve.

SCOPE = *PERMANENT / *TEMPORARY / *NEXT-PUBSET-SESSION

Defines how long the setting applies and when it comes into effect.

SCOPE = *PERMANENT

The setting takes immediate effect and applies until the next modification.

SCOPE = *TEMPORARY

The setting takes immediate effect and applies only for the duration of the current pubset session, i.e. until the pubset is taken out of service.

SCOPE = *NEXT-PUBSET-SESSION

The setting applies until the next permanent modification. However, the setting does not take effect until the start of the next pubset session.

MODIFY-SPACE-SATURATION-LEVELS

Return codes

(SC2)	SC1	Maincode	Meaning
	0	CMD0001	No errors
2	0	DMS1402	Action only partly successful
	1	CMD0202	Syntax error
	32	CMD0221	Internal system error
	64	CMD0216	User does not have the necessary privilege
	64	DMS140B	Pubset not available
	64	DMS140C	Pubset type conflict
	64	DMS140D	Volume set not available
	64	DMS140E	Specified values not in descending sequence
	64	DMS1403	Level higher than capacity
	64	DMS1404	Values do not match the previously set temporary values
	64	DMS1405	Values do not match the previously set defined values
	130	DMS140F	Not enough class 4/5 memory

MODIFY-SPACEPRO-PARAMETERS

Modify SPACEPRO parameters

Description status:	SPACEPRO V1.0A
Functional area:	Pubset and MRSCAT management
Domain:	MULTI-CATALOG-AND-PUBSET-MGMT
Privileges:	TSOS

Function

The MODIFY-SPACEPRO-PARAMETERS command enables SPACEPRO parameters to be modified. These parameters control the following:

- Behavior in the case of lock contention when accessing SPACEPRO options and histories on the individual SPACEPRO pubsets
 - Wait time until an action is repeated
 - Maximum number of repetitions
- Default values for operands of the same name in the MODIFY-PUBSET-SPACEPRO-OPTIONS and MOVE-SPACEPRO-DISK commands
 - Default for the SATURATION-LEVEL operand
 - Default for the BLOCKING-TIME operand
 - Default for the CHECK-PUBSET-MIRRORS operand
 - Default for the CLEAR-VOLUME-TIME operand
- Settings for the PROP-XT interface of SPACEPRO:
 - User ID for executing PROP-XT actions
 - LOGON password for the user ID
 - Operator role for the PROP-XT interface

The SPACEPRO parameters only apply on the local system. This must be taken into account in particular when a shared pubset is configured as a SPACEPRO pubset.

The current parameter settings can be queried using the SHOW-SPACEPRO-PARAMETERS command.

Format

MODIFY-SPACEPRO-PARAMETERS

```
LOCK-WAIT-TIME = *UNCHANGED / <integer 1..3600 seconds>
,LOCK-RETRIES = *UNCHANGED / <integer 1..100> / *UNLIMITED
,SATURATION-LEVEL = *UNCHANGED / <integer 1..5>
,BLOCKING-TIME = *UNCHANGED / <integer 1..999 hours> / <time> / *UNLIMITED
,CLEAR-VOLUME-TIME = *UNCHANGED / <integer 1..65280 seconds>
,CHECK-PUBSET-MIRRORS = *UNCHANGED / *NO / *YES
,OPERATOR-USER-ID = *UNCHANGED / *OWN / <alphanum-name 1..8>
,OPERATOR-PASSWORD = *UNCHANGED / *NO / *OWN / *SECRET / <c-string 1..8> / <x-string 1..16>
,OPERATOR-ROLE = *UNCHANGED / <alphanum-name 1..8>
```

Operands

LOCK-WAIT-TIME = *UNCHANGED / <integer 1..3600 seconds>

When a contention occurs, determines the wait time during extension or reduction until one of the following actions is repeated:

- Renewed attempt at a lock request
- Renewed attempt to import a pool pubset
- Renewed check of whether an import is completed when a saturation message occurs during import processing

Default after SPACEPRO installation: 60 seconds

Note

The wait time should match the “time for automatic extension”. This roughly corresponds to the time for a VOLIN run plus 1 minute for the other actions. The VOLIN time can be ignored for disks of the type D3435.

LOCK-RETRIES = *UNCHANGED / <integer 1..100> / *UNLIMITED

Determines the maximum number of repetitions of the actions listed in the LOCK-WAIT-TIME operand.

Default after SPACEPRO installation: At most 3 repetitions

Note

The maximum number should match the “number of BS2000 systems involved”.

SATURATION-LEVEL = *UNCHANGED / <integer 1..5>

Defines a saturation level which is to be used when the *BY-PARAMETER value is specified in the operand of the same name in the MODIFY-PUBSET-SPACEPRO-OPTIONS command.

When the specified saturation level is reached, the SPACEPRO pubset is to be extended automatically. The SPACEPRO monitor reacts to the console message events. In the case of an SM pubset, the saturation level reached is displayed in insert 3 of the message DMS1400. In the case of an SF pubset, the message EXC044n where n=0..5 is output in accordance with the saturation level reached.

Default after SPACEPRO installation: Saturation level 3

BLOCKING-TIME = *UNCHANGED / <integer 1..999 hours> / <time> / *UNLIMITED

Defines a minimum time which is to be used when the *BY-PARAMETER value is specified in the operand of the same name in the MODIFY-PUBSET-SPACEPRO-OPTIONS command.

The specified minimum time must have elapsed after the last extension before the next extension may be performed.

Default after SPACEPRO installation: 24 hours

BLOCKING-TIME = <integer 0..999 hours>

Specifies the minimum time in hours relative to the time of the last extension.

BLOCKING-TIME = <time>

Specifies the minimum time relative to the time of the last extension in the format hh:mm:ss.

BLOCKING-TIME = *UNLIMITED

The SPACEPRO pubset can only be automatically extended once. Subsequently extension can only be performed manually.

CLEAR-VOLUME-TIME = *UNCHANGED / <integer 1..65280 seconds>

Defines a wait time for emptying a volume when the *BY-PARAMETER value is specified in the operand of the same name in the MOVE-SPACEPRO-DISK command.

Default after SPACEPRO installation: 300 seconds

CHECK-PUBSET-MIRRORS = *UNCHANGED / *NO / *YES

Determines whether a homogeneity check which is to be used when the *BY-PARAMETER value is specified in the operand of the same name in the MODIFY-PUBSET-SPACEPRO-OPTIONS and MOVE-SPACEPRO-DISK commands.

The specification determines whether a homogeneity check with regard to SRDF and/or BCV mirroring is to be performed when a pubset is extended (the operand specification is used in the MODIFY-PUBSET-PROCESSING command which must be performed internally).

Default after SPACEPRO installation: *NO

CHECK-PUBSET-MIRRORS = *NO

No homogeneity check is performed when a pubset is extended.

CHECK-PUBSET-MIRRORS = *YES

A homogeneity check is performed when a pubset is extended.

The homogeneity check is performed for additional mirror units (SRDF and TimeFinder/Mirror functions on Symmetrix disk storage systems) and for clones (EC-Clone functions on ETERNUS DX, TimeFinder/Clone on Symmetrix and Snapview clone on CLARiiON disk storage systems).

The value *YES is ignored when a pubset is extended if the SHC-OSD subsystem is not available.

OPERATOR-USER-ID = *UNCHANGED / *OWN / <alphanum-name 1..8>

Determines the user ID under which PROP-XT actions are to be started. This user ID must be assigned the operator role which was configured for the PROP-XT interface of SPACEPRO (see OPERATOR-ROLE operand).

The user ID of the caller is defined with *OWN.

Default after SPACEPRO installation: SYSOPR

OPERATOR-PASSWORD = *UNCHANGED / *NO / *OWN / *SECRET / <c-string 1..8> / <x-string 1..16>

LOGON password of the user ID for PROP-XT actions. The specified value is used in the corresponding operands of the START-PROP-OBJECT-MONITORING command.

Default after SPACEPRO installation: *NO.

The OPERATOR-PASSWORD operand has the following special features:

- The value entered is not logged.
- In prompted dialog the input field is automatically blanked out.
- When *SECRET or ^ is specified, in prompted dialog and in foreground procedures SDF provides a blanked-out input field for concealed input of the operand value.

OPERATOR-ROLE = *UNCHANGED / <alphanum-name 1..8>

Specifies which operator role was configured for the PROP-XT interface of SPACEPRO.

Default after SPACEPRO installation: SYSADM

Return codes

(SC2)	SC1	Maincode	Meaning
	0	CMD0001	Command executed without error
	1	CMD0202	Syntax error
	32	CMD0221	System error
	64	SPP0305	JV subsystem not available
	64	SPP0311	Unexpected return code of the command specified in the insert
	64	SPP0622	Parameter not supported in this BS2000 version
	64	SPP0702	Error when writing the SPACEPRO parameter
	130	SDP0099	Shortage of memory space

MODIFY-SPOOLOUT-OPTIONS

Compress SPOOL output

Description status:	SPOOL V4.9A
Functional area:	Controlling spoolout job
Domain:	SPOOL-PRINT-ADMINISTRATION
Privileges:	STD-PROCESSING PRINT-SERVICE-ADMINISTRATION SAT-FILE-EVALUATION SAT-FILE-MANAGEMENT SECURITY-ADMINISTRATION

Function

This command compresses printouts by reducing line feeds.

The MODIFY-SPOOLOUT-OPTIONS command affects the way in which feed control characters in files edited for printing are handled during printout. You can define the degree of compression. Entries made here affect all subsequent PRINT-DOCUMENT commands in which interpretation of the feed control character has been explicitly requested (LINE-SPACING operand).

The entries lose their effect at the end of the job or when the MODIFY-SPOOLOUT-OPTIONS command is issued with corresponding arguments.

Format

MODIFY-SPOOLOUT-OPTIONS
COMPRESS-OUTPUT = <u>*UNCHANGED</u> / *NO / *MINIMUM / *MAXIMUM

Operands

COMPRESS-OUTPUT =

Degree of compression.



The COMPRESS-OUTPUT operand is ignored if the LINE-SPACING operand has not been specified with a value of *BY-EBCDIC-CONTROL, *BY-IBM-CONTROL or *BY-ASA-CONTROL in the PRINT-DOCUMENT command.

COMPRESS-OUTPUT = *UNCHANGED

The existing entry is valid (= *NO at the start of a job).

COMPRESS-OUTPUT = *NO

No compression, i.e. the entries in the PRINT-DOCUMENT command (LINE-SPACING operand) are not changed.

COMPRESS-OUTPUT = *MINIMUM

Interprets the feed control characters in the edited file as follows:

Feed control character for	Line feed
1 line	1 line
2 lines	1 line
3 lines	2 lines
> 3 lines	3 lines

COMPRESS-OUTPUT = *MAXIMUM

Selects a 1-line feed (minimum space requirement) for the output of edited files.

Return codes

(SC2)	SC1	Maincode	Meaning
	0	CMD0001	No error
	1	CMD0202	Syntax error

MODIFY-STORAGE-CLASS

Modify storage class definition

Description status:	BS2000 OSD/BC V10.0A
Functional area:	Pubset and MRSCAT management
Domain:	MULTI-CATALOG-AND-PUBSET-MGMT
Privileges:	TSOS

Function

The MODIFY-STORAGE-CLASS command enables systems support to modify the definition of an existing storage class.

The SM pubset for which the storage class is defined must have been imported to the local system (in exclusive or shared mode).

All the file attributes which are modified for the storage class initially apply to new files assigned to the storage class. An existing file which belongs to the storage class will not be given the modified file attributes of the storage class until they are reassigned to the file in a MODIFY-FILE-ATTRIBUTES command which specifies STORAGE-CLASS=*UPDATE.

Format

```

MODIFY-STORAGE-CLASS

STORAGE-CLASS-NAME = <composed-name 1..8>
, PUBSET = <cat-id 1..4>
, FILE-ATTRIBUTES = *UNCHANGED / *PARAMETERS(...)
    *PARAMETERS(...)
        | IO-ATTRIBUTES = *UNCHANGED / *PARAMETERS(...)
        | *PARAMETERS(...)
        | | PERFORMANCE = *UNCHANGED / *STD / *HIGH / *VERY-HIGH
        | | , USAGE = *UNCHANGED / *READ-WRITE / *WRITE / *READ
        | , DISK-WRITE = *UNCHANGED / *STD / *IMMEDIATE / *BY-CLOSE
        | , AVAILABILITY = *UNCHANGED / *STD / *HIGH
        | , FILE-PREFORMAT = *UNCHANGED / *BY-PUBSET-DEFAULT / *K / *NK2 / *NK4
        | , WORK-FILE = *UNCHANGED / *NO / *YES
, STORAGE-CLASS-INFO = *UNCHANGED / *NONE / <c-string 1..720 with-low>
, PROTECTION = *UNCHANGED / *NONE / *BY-GUARDS(...)
    *BY-GUARDS(...)
        | GUARD-NAME = <filename 1..18 without-cat-gen-vers>
, VOLUME-SET-LIST = *UNCHANGED / *NONE / <composed-name 1..8>

```

Operands

STORAGE-CLASS-NAME = <composed-name 1..8>

Name of the storage class which is to have its definition modified.

PUBSET = <cat-id 1..4>

Identifies the pubset for which the storage class was created. The pubset must have been imported to the local system (in exclusive or shared mode).

FILE-ATTRIBUTES = *UNCHANGED / *PARAMETERS(...)

Specifies which subset management requirements, representable in the form of file attributes, are to be modified. These file attributes apply to all new files to which the user assigns the storage class instead of explicit attributes (see the STORAGE-CLASS operand of the CREATE-FILE or MODIFY-FILE-ATTRIBUTES command).

An existing file which belongs to the storage class will not be given the modified file attributes of the storage class until they are reassigned to the file in a MODIFY-FILE-ATTRIBUTES command which specifies STORAGE-CLASS=*UPDATE.

The default value, *UNCHANGED, means that the existing setting of the file attributes in question is left unchanged.

FILE-ATTRIBUTES = *PARAMETERS(...)

Specifies which file attributes are to be modified for files in the given storage class.

IO-ATTRIBUTES = *UNCHANGED / *PARAMETERS(...)

Specifies which performance requirements are to be modified for files in this storage class.

The default value, *UNCHANGED, means that the existing setting of the file attributes in question is left unchanged.

IO-ATTRIBUTES = *PARAMETERS(...)

Performance attributes are determined by the values of the PERFORMANCE and USAGE operands.

PERFORMANCE = *UNCHANGED / *STD / *HIGH / *VERY-HIGH

Specifies the performance attribute for files in this storage class. It indicates the priority required for the I/O operations selected in the USAGE operand.

PERFORMANCE = *STD

No performance requirements are defined for files in this storage class. In this case the USAGE operand has no impact on file processing.

PERFORMANCE = *HIGH

A cache should be used to process files in this storage class (high performance priority).

PERFORMANCE = *VERY-HIGH

A cache should be used to process files in this storage class, and if possible the entire file should be kept permanently in the cache (highest performance priority, only available in the GS cache medium).

USAGE = *UNCHANGED / *READ-WRITE / *WRITE / *READ

Specifies the I/O operations for which enhanced performance (caching) is required. The default is *READ-WRITE, i.e. the requirement applies to both read and write operations.

The requirement may also be applied only to write operations (*WRITE) or only to read operations (*READ).

If the file has no special performance attribute (PERFORMANCE=*STD), the USAGE operand has no impact on processing.

DISK-WRITE = *UNCHANGED / *STD / *IMMEDIATE / *BY-CLOSE

Specifies the time at which data consistency is required for files in this storage class after a write operation.

DISK-WRITE = *STD

The default setting of *STD is equivalent to *IMMEDIATE for permanent files and to *BY-CLOSE for temporary files.

DISK-WRITE = *IMMEDIATE

The data in a file must be in a consistent state immediately on completion of a write operation, so a volatile write cache should not be used to process files in this storage class.

DISK-WRITE = *BY-CLOSE

The data in a file does not have to be in a consistent state until after CLOSE processing, so a volatile write cache may be used to process files in this storage class.

AVAILABILITY = *UNCHANGED / *STD / *HIGH

Specifies availability requirements for files in this storage class.

AVAILABILITY = *STD

There are no special availability requirements.

AVAILABILITY = *HIGH

Files in this storage class are required to have high availability (e.g. storage on mirrored disks).

FILE-PREFORMAT = *UNCHANGED / *BY-PUBSET-DEFAULT / *K / *NK2 / *NK4

Governs the preferred file format for files in this storage class. This specification only applies when the catalog entry is created; it is used to determine the storage location automatically.

As long as the file does not yet have a creation date (CRE-DATE=NONE), the storage location is provisional and may still change in the course of OPEN processing.

FILE-PREFORMAT = *BY-PUBSET-DEFAULT

The pubset-global default applies.

FILE-PREFORMAT = *K

File in this storage class are to be created as K files.

FILE-PREFORMAT = *NK2

File in this storage class are to be created as NK2 files.

FILE-PREFORMAT = *NK4

File in this storage class are to be created as NK4 files.

WORK-FILE = *UNCHANGED / *NO / *YES

Specifies whether files in this storage class are work files.

WORK-FILE = *NO

Files in this storage class are created as normal files.

WORK-FILE = *YES

Files in this storage class are created as work files. Systems support can delete work files at appointed times.

STORAGE-CLASS-INFO = *UNCHANGED / *NONE / <c-string 1..720 with-low>

Systems support can compose a brief text describing storage class attributes. It will typically relate to special subset management requirements which are defined by systems support but cannot be represented in the form of file attributes. This brief text is included in the output of the SHOW-STORAGE-CLASS command to inform the user of any special properties of the storage class.

STORAGE-CLASS-INFO = *NONE

There is to be no explanatory text for the storage class. If one already exists, it is deleted.

STORAGE-CLASS-INFO = <c-string 1..720 with-low>

A brief text describing special properties of the storage class as defined by systems support. Any existing explanatory text is overwritten.

PROTECTION = *UNCHANGED / *NONE / *BY-GUARDS(...)

Specifies whether access to the storage class is to be controlled by guards.

PROTECTION = *NONE

Access to the storage class is not to be controlled by guards. Any existing guards protection is canceled.

PROTECTION = *BY-GUARDS(...)

Allocation to the storage class and the listing of the storage class definitions are to be controlled by a guard. The guard named next defines conditions under which a user is allowed to access the storage class.

GUARD-NAME = <filename 1..18 without-cat-gen-vers>

Name of the guard.

VOLUME-SET-LIST = *UNCHANGED / *NONE / <composed-name 1..8>

Specifies whether a volume set list is to be assigned to the storage class.

VOLUME-SET-LIST = *NONE

No volume set list is to be assigned to the storage class. Any existing assignment is canceled.

VOLUME-SET-LIST = <composed-name 1..8>

The specifies volume set list is assigned to the storage class. Any existing assignment is canceled.

The volume set list must already exist for this SM pubset.

Return codes

(SC2)	SC1	Maincode	Meaning
	0	CMD0001	No errors
	1	CMD0202	Syntax error in command
	32	CMD0221	Internal system error
	64	CMD0216	No authorization to issue command
	64	DMS148A	Storage class not defined
	64	DMS1497	Invalid file attribute combination
	64	DMS148B	Volume set list not defined
	64	DMS1485	Pubset not known
	64	DMS1486	Pubset is not a system-managed pubset
	64	DMS1487	Pubset not available
	64	DMS1490	Storage class management not available for this pubset
	64	DMS1483	Storage class catalog invalid
	64	DMS1481	Error accessing storage class catalog
	64	DMS1484	Volume set list catalog invalid
	64	DMS1482	Error accessing volume set list catalog
	129	DMS148D	Not enough class 4/5 memory
	129	DMS148E	Error on MSCF connection to master
	129	DMS148F	GCF subsystem not ready

MODIFY-SUBSYSTEM-PARAMETER

Modify subsystem parameters

Description status:	DSSM V4.3B
Functional area:	Subsystem management
Domain:	SYSTEM-MANAGEMENT
Privileges:	SUBSYSTEM-MANAGEMENT

Function

A user with the SUBSYSTEM-MANAGEMENT privilege can run this command to modify the parameters governing a subsystem; only the parameters explicitly specified are changed.

The command modifies only the dynamic subsystem catalog, not the static catalog. Consequently, any changes that are made do not remain in effect at the next startup. To prevent the changes being lost, the SAVE-SUBSYSTEM-CATALOG command can be used to store them in a static catalog. Note, however, that changes which are useful for the current session may be pointless or even counter-productive after the next startup. (For example: a message file is assigned to a subsystem which has BEFORE-DSSM-LOAD as its activation point. If the subsystem is restarted during the current session, this may well be a useful change to make; but it cannot be implemented the next time the system is started up.)



Before using this command it is essential to be well-informed about the subsystem that is being modified, as the command is capable of making far-reaching changes to the subsystem attributes.

The command has three different types of operand:

- operands which have their value stored in the dynamic subsystem catalog and take immediate effect (such as VERSION-COEXISTENCE).
- operands which have their value stored in the dynamic subsystem catalog but do not take effect until the next START-SUBSYSTEM command (such as LIBRARY).
- operands which are accepted only if the subsystem is not currently running (such as MESSAGE-FILE).

For further information see the “Subsystem Management” manual [49].

Format

(Part 1 of 2)

MODIFY-SUBSYSTEM-PARAMETER
<p>SUBSYSTEM-NAME = <structured-name 1..8></p> <p>,VERSION = <product-version mandatory-man-corr> / <product-version without-man-corr></p> <p>,INSTALLATION-UNIT = <u>*UNCHANGED</u> / *NONE / *STD / <text 1..30></p> <p>,INSTALLATION-USERID = <u>*UNCHANGED</u> / *NONE / <name 1..8> / *DEFAULT-USERID</p> <p>,COPYRIGHT = <u>*UNCHANGED</u> / *NONE / <c-string 1..54>(…)</p> <p> <c-string 1..54>(…)</p> <p> YEAR = <u>*YEAR-1990</u> / <c-string 4..4></p> <p>,SUBSYSTEM-LIBRARY = <u>*UNCHANGED</u> / *STD / *INSTALLED(…) / <filename 1..54 without-gen-vers></p> <p> *INSTALLED(…)</p> <p> LOGICAL-ID = <u>*UNCHANGED</u> / *REFRESH / <filename 1..30 without-catid-userid-gen-vers></p> <p> DEFAULT-NAME = <u>*UNCHANGED</u> / <filename 1..54></p> <p>,SUBSYSTEM-LOAD-MODE = <u>*UNCHANGED</u> / *STD / *ADVANCED</p> <p>,REP-FILE = <u>*UNCHANGED</u> / *STD / *NO / *INSTALLED(…) / <filename 1..54 without-gen-vers></p> <p> *INSTALLED(…)</p> <p> LOGICAL-ID = <u>*UNCHANGED</u> / *REFRESH / <filename 1..30 without-catid-userid-gen-vers></p> <p> DEFAULT-NAME = <u>*UNCHANGED</u> / *NONE / <filename 1..54></p> <p>,REP-FILE-MANDATORY = <u>*UNCHANGED</u> / *NO / *YES</p> <p>,MESSAGE-FILE = <u>*UNCHANGED</u> / *NO / *INSTALLED(…) / <filename 1..54 without-gen-vers></p> <p> *INSTALLED(…)</p> <p> LOGICAL-ID = <u>*UNCHANGED</u> / *REFRESH / <filename 1..30 without-catid-userid-gen-vers></p> <p> DEFAULT-NAME = <u>*UNCHANGED</u> / *NONE / <filename 1..54></p> <p>,SUBSYSTEM-INFO-FILE = <u>*UNCHANGED</u> / *NO / *INSTALLED(…) / <filename 1..54 without-gen-vers></p> <p> *INSTALLED(…)</p> <p> LOGICAL-ID = <u>*UNCHANGED</u> / *REFRESH / <filename 1..30 without-catid-userid-gen-vers></p> <p> DEFAULT-NAME = <u>*UNCHANGED</u> / *NONE / <filename 1..54></p> <p>,SYNTAX-FILE = <u>*UNCHANGED</u> / *NO / *INSTALLED(…) / <filename 1..54 without-gen-vers></p> <p> *INSTALLED(…)</p> <p> LOGICAL-ID = <u>*UNCHANGED</u> / *REFRESH / <filename 1..30 without-catid-userid-gen-vers></p> <p> DEFAULT-NAME = <u>*UNCHANGED</u> / *NONE / <filename 1..54></p> <p>,DYNAMIC-CHECK-ENTRY = <u>*UNCHANGED</u> / *STD / *NO / <text 1..8 without-sep></p>

```

,CREATION-TIME = *UNCHANGED / *AT-CREATION-REQUEST / *AT-SUBSYSTEM-CALL(...) /
                *AT-DSSM-LOAD / *MANDATORY-AT-STARTUP / *BEFORE-SYSTEM-READY /
                *AFTER-SYSTEM-READY

    *AT-SUBSYSTEM-CALL(...)
        |   ON-ACTION = *STD / *ISL-CALL / *ALL

,INIT-ROUTINE = *UNCHANGED / *NO / <text 1..8 without-sep>
,CLOSE-CTRL-ROUTINE = *UNCHANGED / *NO / *DYNAMIC / <text 1..8 without-sep>
,STOPCOM-ROUTINE = *UNCHANGED / *NO / *DYNAMIC / <text 1..8 without-sep>
,DEINIT-ROUTINE = *UNCHANGED / *NO / *DYNAMIC / <text 1..8 without-sep>
,STOP-AT-SHUTDOWN = *UNCHANGED / *NO / *YES
,INTERFACE-VERSION = *UNCHANGED / *NO / <text 1..8 without-sep>
,SUBSYSTEM-HOLD = *UNCHANGED / *ALLOWED / *FORBIDDEN
,STATE-CHANGE-CMDS = *UNCHANGED / *ALLOWED / *FORBIDDEN / *BY-ADMINISTRATOR-ONLY
,FORCED-STATE-CHANGE = *UNCHANGED / *ALLOWED / *FORBIDDEN
,RESET = *UNCHANGED / *ALLOWED / *FORBIDDEN
,RESTART-REQUIRED = *UNCHANGED / *NO / *YES
,VERSION-COEEXISTENCE = *UNCHANGED / *FORBIDDEN / *ALLOWED
,VERSION-EXCHANGE = *UNCHANGED / *FORBIDDEN / *ALLOWED
,MEMORY-CLASS = *UNCHANGED / *SYSTEM-GLOBAL(...) / *LOCAL-UNPRIVILEGED(...) /
                *BY-SLICE(...)

    *SYSTEM-GLOBAL(...)
        |   SUBSYSTEM-ACCESS = *LOW / *HIGH

    *LOCAL-UNPRIVILEGED(...)
        |   SIZE = *UNCHANGED / <integer 1..32767 4Kbyte>
        |   ,SUBSYSTEM-ACCESS = *UNCHANGED / *LOW / *HIGH
        |   ,START-ADDRESS = *UNCHANGED / *ANY / <x-string 7..8>

    *BY-SLICE(...)
        |   SIZE = <integer 1..32767 4Kbyte>

,LINK-ENTRY = *UNCHANGED (...) / <text 1..8 without-sep>(…)

    *UNCHANGED(...)
        |   AUTOLINK = *UNCHANGED / *ALLOWED / *FORBIDDEN

    <text 1..8 without-sep>(…)
        |   AUTOLINK = *ALLOWED / *FORBIDDEN

,UNRESOLVED-EXTERNALS = *UNCHANGED / *ALLOWED / *FORBIDDEN
,CHECK-REFERENCES = *UNCHANGED / *YES / *NO
,CHANGE-STATE = *UNCHANGED / *YES / *NO

```

Operands

SUBSYSTEM-NAME = <structured-name 1..8>

Specifies the name of the subsystem for which the parameters are to be changed.

**VERSION = <product-version mandatory-man-corr> /
<product-version without-man-corr>**

Identifies the version number.

If a version number is specified, the format specified here must be identical to the format used when the subsystem was defined (release and correction status mandatory or not allowed; cf. SDF metasyntax).

INSTALLATION-UNIT =

Defines a name for the installed release unit. A value other than *NONE must be specified for all subsystems installed using IMON if *INSTALLED(LOGICAL-ID=...) is the value specified for any of the following operands: SUBSYSTEM-LIBRARY, REP-FILE, SUBSYSTEM-INFO-FILE, MESSAGE-FILE or SYNTAX-FILE.

INSTALLATION-UNIT = *UNCHANGED

The name of the installed release unit remains unchanged.

INSTALLATION-UNIT = *NONE

No name is allocated. This value is not allowed for any subsystem installed using IMON.

INSTALLATION-UNIT = *STD

The name specified in the SUBSYSTEM-NAME operand is used as the name of the installed release unit.

INSTALLATION-UNIT = <text 1..30>

New name for the installed release unit.

INSTALLATION-USERID = *UNCHANGED / *NONE / <name 1..8> / *DEFAULT-USERID

Changes the default user ID of the files associated with the subsystem (REP-FILE, SUBSYSTEM-LIBRARY, SYNTAX-FILE and MESSAGE-FILE, SUBSYSTEM-INFO-FILE operands). File names specified without a user ID are assumed to belong to the new installation user ID defined here.

A change to the installation user ID is rejected if the subsystem is active and there is a message file (MESSAGE-FILE operand) or a syntax file (SYNTAX-FILE operand) assigned to it with no user ID specified.

The change takes effect immediately.

INSTALLATION-USERID = *UNCHANGED

The installation user ID is not changed.

INSTALLATION-USERID = *NONE

Removes the installation user ID.

If an installation user ID existed before the command was issued, it is stripped from all files to which it was assigned.

INSTALLATION-USERID = <name 1..8>

The user ID given here will be the new installation user ID. The name of the user ID must be given without its dollar sign prefix '\$'.

INSTALLATION-USERID = *DEFAULT-USERID

Selects the system default user ID as the installation user ID (which means that file names begin with '\$.').

COPYRIGHT = *UNCHANGED / *NONE / <c-string 1..54>(…)

Changes the copyright notice displayed when the subsystem is loaded.

The change takes effect as soon as the subsystem is restarted (START-SUBSYSTEM command).

COPYRIGHT = *UNCHANGED

The copyright notice is not changed.

COPYRIGHT = *NONE

No copyright notice is displayed.

COPYRIGHT = <c-string 1..54>(…)

Changes the copyright notice displayed when the subsystem is loaded.

YEAR = *YEAR-1990 / <c-string 4..4>

Defines the year displayed as the first production year in the copyright notice. The default year is 1990. Any other year must be specified explicitly. Note that the operand value is not subjected to semantic validity checking.

SUBSYSTEM-LIBRARY = *UNCHANGED / *STD / *INSTALLED(…) / <filename 1..54 without-gen-vers>

Changes the module library assignment for the specified subsystem (LIBRARY parameter). The module library supplies the code which is loaded for a subsystem which is not yet running.

The change takes effect as soon as the subsystem is restarted (START-SUBSYSTEM command).

SUBSYSTEM-LIBRARY = *UNCHANGED

The setting is left unchanged.

SUBSYSTEM-LIBRARY = *STD

Assigns the following default library name:

SYSLNK.<subsysname>.<subsysvers#>

The value of “subsysvers#” comprises three digits, which are the “mmn” elements specified in the SUBSYSTEM-NAME=...(VERSION=…) operand.

SUBSYSTEM-LIBRARY = *INSTALLED(...)

The library name is determined by invocation of IMON-GPN (the installation path manager).

LOGICAL-ID =

Defines the logical program or object module library name by which the library is known to IMON-GPN.

LOGICAL-ID = *UNCHANGED

The logical name of the program or object module library is left unchanged.

LOGICAL-ID = *REFRESH

The path name associated with the logical name has been changed and is now to be updated in the catalog. The logical name itself is left unchanged.

LOGICAL-ID = <filename 1..30 without-catid-userid-gen-vers>

New logical name for the program or object module library.

DEFAULT-NAME =

Name of the library if IMON-GPN is not available or if the logical ID is unknown.

DEFAULT-NAME = *UNCHANGED

The library name is left unchanged.

DEFAULT-NAME = <filename 1..54>

New library name.

SUBSYSTEM-LIBRARY = <filename 1..54 without-gen-vers>

The fully qualified file name specified here is defined as the new library name (see Note 3 on page 4-441).

SUBSYSTEM-LOAD-MODE = *UNCHANGED / *STD / *ADVANCED

Defines how the subsystem is loaded.

SUBSYSTEM-LOAD-MODE = *UNCHANGED

The subsystem loading mode is left unchanged.

SUBSYSTEM-LOAD-MODE = *STD

BLS is invoked in STD run mode (via the BLS-DSSM interface \$PBBND1) to load the subsystem code as an object module.

SUBSYSTEM-LOAD-MODE = *ADVANCED

BLS is invoked in ADVANCED run mode (via the BLS-DSSM interface \$PBBND1) to load the subsystem code as a link-and-load module.

REP-FILE = *UNCHANGED / *STD / *NO / *INSTALLED(...) / <filename 1..54 without-gen-vers>

Changes the REP patch file assignment for the specified subsystem version. REP patch files are designed to incorporate module updates in a subsystem which is not currently running.

The change takes effect as soon as the subsystem is restarted (START-SUBSYSTEM command).

REP-FILE = *UNCHANGED

The REP patch file parameters are not changed.

REP-FILE = *STD

Assigns the following default name for the REP patch file:

SYSREP.<subsysname>.<subsysvers#>

The value of "subsysvers#" comprises three digits, which are the "mmn" elements specified in the SUBSYSTEM-NAME=...(VERSION=...) operand.

REP-FILE = *NO

There is no REP patch file for the subsystem.

REP-FILE = *INSTALLED(...)

The name of the REP file is determined by invocation of IMON-GPN (the installation path manager).

LOGICAL-ID =

Defines the logical REP file name by which the file is known to IMON-GPN.

LOGICAL-ID = *UNCHANGED

The logical name of the REP file is left unchanged.

LOGICAL-ID = *REFRESH

The path name associated with the logical name has been changed and is now to be updated in the catalog. The logical name itself is left unchanged.

LOGICAL-ID = <filename 1..30 without-catid-userid-gen-vers>

New logical name for the REP file.

DEFAULT-NAME =

Name of the REP file if IMON-GPN is not available or if the logical ID is unknown.

DEFAULT-NAME = *UNCHANGED

The REP file name is left unchanged.

DEFAULT-NAME = *NONE

No default name is assigned to the REP file.

DEFAULT-NAME = <filename 1..54>

New name for the REP file.

REP-FILE = <filename 1..54 without-gen-vers>

The fully qualified file name specified here is defined as the new REP patch file name (see Note 3 on page 4-441).

REP-FILE-MANDATORY = *UNCHANGED / *NO / *YES

Defines whether the subsystem is started if errors occur while the REP patch file is being processed.

The change takes effect as soon as the subsystem is restarted (START-SUBSYSTEM command).

REP-FILE-MANDATORY = *UNCHANGED

The current setting is left unchanged.

REP-FILE-MANDATORY = *NO

Errors during processing of the REP patch file have no effect on subsystem loading.

REP-FILE-MANDATORY = *YES

Dynamic subsystem management (DSSM) inhibits subsystem loading in the following cases:

- DMS errors during REP patch file processing (e.g. REP file not cataloged)
- errors during REP file validation
- REP file incorrectly named
- DMS errors during NOREF file processing

MESSAGE-FILE = *UNCHANGED / *NO / *INSTALLED / <filename 1..54 without-gen-vers>

Changes the message file definition associated with the specified subsystem version.

The subsystem version must not be running at the time.

DMS file naming requirements are not checked.

MESSAGE-FILE = *UNCHANGED

The current setting is left unchanged.

MESSAGE-FILE = *NO

No subsystem-specific message file is available.

This setting is needed for cases where BEFORE-DSSM-LOAD is defined as the activation point for the subsystem.

MESSAGE-FILE = *INSTALLED(...)

The name of the message file is determined by invocation of IMON-GPN (the installation path manager).

LOGICAL-ID =

Defines the logical message file name by which the file is known to IMON-GPN.

LOGICAL-ID = *UNCHANGED

The logical name of the message file is left unchanged.

LOGICAL-ID = *REFRESH

The path name associated with the logical name has been changed and is now to be updated in the catalog. The logical name itself is left unchanged.

LOGICAL-ID = <filename 1..30 without-catid-userid-gen-vers>

New logical name for the message file.

DEFAULT-NAME =

Name of the message file if IMON-GPN is not available or if the logical ID is unknown.

DEFAULT-NAME = *UNCHANGED

The message file name is left unchanged.

DEFAULT-NAME = *NONE

No default name is assigned to the message file.

DEFAULT-NAME = <filename 1..54>

New name for the message file.

MESSAGE-FILE = <filename 1..54 without-gen-vers>

The fully qualified file name specified here is defined as the new message file name (see [Note 3 on page 4-441](#)).

SUBSYSTEM-INFO-FILE = *UNCHANGED / *NO / *INSTALLED(...) / <filename 1..54 without-gen-vers>

Specifies which information file to use for the specified subsystem version.

SUBSYSTEM-INFO-FILE = *UNCHANGED

The current setting is left unchanged.

SUBSYSTEM-INFO-FILE = *NO

No information file is available.

SUBSYSTEM-INFO-FILE = *INSTALLED(...)

The information file name is determined by invocation of IMON-GPN (the installation path manager).

LOGICAL-ID =

Defines the logical information file name by which the file is known to IMON-GPN.

LOGICAL-ID = *UNCHANGED

The logical name of the information file is left unchanged.

LOGICAL-ID = *REFRESH

The path name associated with the logical name has been changed and is now to be updated in the catalog. The logical name itself is left unchanged.

LOGICAL-ID = <filename 1..30 without-catid-userid-gen-vers>

New logical name for the information file.

DEFAULT-NAME =

Name of the information file if IMON-GPN is not available or if the logical ID is unknown.

DEFAULT-NAME = *UNCHANGED

The name of the information file is left unchanged.

DEFAULT-NAME = *NONE

No default name is assigned to the information file.

DEFAULT-NAME = <filename 1..54>

New name for the information file.

SUBSYSTEM-INFO-FILE = <filename 1..54 without-gen-vers>

The fully qualified file name specified here is defined as the new information file name (see Note 3 on page 4-441).

SYNTAX-FILE = *UNCHANGED / *NO / *INSTALLED(...)**<filename 1..54 without-gen-vers>**

Changes the syntax file definition associated with the specified subsystem version.

The syntax file contains the applicable command and operand values for the subsystem version.

The subsystem version must not be running when the command is issued.

DMS file naming requirements are not checked.

SYNTAX-FILE = *UNCHANGED

The current setting is left unchanged.

SYNTAX-FILE = *NO

No information file is available.

This setting is needed for cases where BEFORE-DSSM-LOAD or AT-DSSM-LOAD is defined as the activation point for the subsystem.

SYNTAX-FILE = *INSTALLED(...)

The name of the syntax file is determined by invocation of IMON-GPN (the installation path manager).

LOGICAL-ID =

Defines the logical syntax file name by which the file is known to IMON-GPN.

LOGICAL-ID = *UNCHANGED

The logical name of the syntax file is left unchanged.

LOGICAL-ID = *REFRESH

The path name associated with the logical name has been changed and is now to be updated in the catalog. The logical name itself is left unchanged.

LOGICAL-ID = <filename 1..30 without-catid-userid-gen-vers>

New logical name for the syntax file.

DEFAULT-NAME =

Name of the syntax file if IMON-GPN is not available or if the logical ID is unknown.

DEFAULT-NAME = *UNCHANGED

The syntax file name is left unchanged.

DEFAULT-NAME = *NONE

No default name is assigned to the syntax file.

DEFAULT-NAME = <filename 1..54>

New name for the syntax file.

SYNTAX-FILE = <filename 1..54 without-gen-vers>

The fully qualified file name specified here is defined as the new syntax file name (see [Note 3 on page 4-441](#)).

DYNAMIC-CHECK-ENTRY = *UNCHANGED / *STD / *NO / <text 1..8 without-sep>

Changes the reference address used to check that the loaded encoding for the subsystem is correct.

DYNAMIC-CHECK-ENTRY = *UNCHANGED

The current setting is left unchanged.

DYNAMIC-CHECK-ENTRY = *STD

The reference address specified in the LINK-ENTRY operand is used as the reference address for dynamic checking.

DYNAMIC-CHECK-ENTRY = *NO

No checking is performed. This setting is not allowed if the activation point defined for the subsystem is BEFORE-DSSM-LOAD.

DYNAMIC-CHECK-ENTRY = <text 1..8 without-sep>

The address specified here is defined as the new reference address for dynamic checking.

**CREATION-TIME = *UNCHANGED / *AT-CREATION-REQUEST /
*AT-SUBSYSTEM-CALL / *AT-DSSM-LOAD / *MANDATORY-AT-STARTUP /
*BEFORE-SYSTEM-READY / *AFTER-SYSTEM-READY**

Changes the subsystem startup time.

CREATION-TIME = *UNCHANGED

The current setting is left unchanged.

CREATION-TIME = *AT-CREATION-REQUEST

The subsystem startup time is reset to the (generation) default setting of “Startup on START-SUBSYSTEM invocation”.

CREATION-TIME = *AT-SUBSYSTEM-CALL(...)

The subsystem startup time is changed to the value AT-SUBSYSTEM-CALL. That means that the subsystem starts up automatically in response to the first SVC or ISL call.

This operand value is available only for subsystems called by the SVC or ISL mechanism.

This operand value can be assigned to the specified subsystem version after it has been withdrawn, if necessary, from another subsystem version. If no other version has this attribute, it is directly transferred to the specified subsystem version. If some other subsystem version has this attribute, it is withdrawn from that subsystem, either immediately (if the subsystem is not running) or after the subsystem has closed down (if it currently running).

Subsystems with the attribute VERSION-COEXISTENCE=*ALLOWED are an exception to this rule. Here, different versions of the same subsystem can have the attribute CREATION-TIME=*AT-SUBSYSTEM-CALL at the same time.

As with SSCM, this attribute can only be allocated to a subsystem where the CALL entry is set to MODE=*SVC/*ISL.

ON-ACTION =

Determines what causes automatic loading of the subsystem.

ON-ACTION = *STD

Default: loading begins when any SVC entry point belonging to the subsystem is called.

ON-ACTION = *ISL-CALL

Loading begins when any ISL entry point belonging to the subsystem is called.

ON-ACTION = *ANY

Loading begins when any SVC or ISL entry point belonging to the subsystem is called.

CREATION-TIME = *AT-DSSM-LOAD

The subsystem is to be loaded under the control of the DSSM task during system initialization. It must be a privileged subsystem, and any address and dependency relations it has must be with subsystems which also have this startup attribute or the BEFORE-DSSM-STARTUP attribute.

The file name for this subsystem must be located on the home pubset under the TSOS user ID, as at startup time the user catalog is not accessible and IMPORT-PUBSET processing has not been completed.

These subsystems are not allowed to have a syntax file attached.

CREATION-TIME = *MANDATORY-AT-STARTUP

The subsystem must be loaded during system initialization (Phase 2: after DSSM has been loaded). As with BEFORE-SYSTEM-READY, subsystem activation is initiated synchronously; but in this case, as opposed to BEFORE-SYSTEM-READY, loading of the subsystem must be completed **successfully**. Otherwise the startup routine is sent a message indicating that a mandatory subsystem could not be loaded. The startup routine then decides whether to continue or abort processing.

The subsystem must be a privileged subsystem, and any address and dependency relations it has must be with subsystems which have the same startup attribute or either BEFORE-DSSM-STARTUP or AT-DSSM-LOAD. The file name for this subsystem must be cataloged on the home pubset.

CREATION-TIME = *BEFORE-SYSTEM-READY

The subsystem is to be loaded during system initialization (Phase 2). Activation is initiated synchronously; control is not returned to the startup routine until after completion of loading (or a loading error). Once the startup routine has regained control, it can report SYSTEM READY.

The subsystem must be a privileged subsystem, and any address and dependency relations it has must be with subsystems which have the same startup attribute or one of BEFORE-DSSM-STARTUP, AT-DSSM-LOAD or MANDATORY-AT-STARTUP.

The file name for this subsystem must be cataloged on the home pubset.

CREATION-TIME = *AFTER-SYSTEM-READY

Loading of the subsystem is initiated during system initialization (Phase 2). Loading is not synchronized with the startup routine, which can report SYSTEM-READY before loading of this subsystem has been completed.

Any address and dependency relations the subsystem has must be with subsystems which have the same startup attribute or one of BEFORE-DSSM-STARTUP, AT-DSSM-LOAD, MANDATORY-AT-STARTUP or BEFORE-SYSTEM-READY.

The files for the subsystem must be cataloged on the home pubset.

INIT-ROUTINE = *UNCHANGED / *NO / <text 1..8 without-sep>

Changes the subsystem initialization routine, provided that this does not affect the manner in which the subsystem functions.

The change takes effect immediately to allow the subsystem to be reconstructed if necessary.

INIT-ROUTINE = *UNCHANGED

The current setting is left unchanged.

INIT-ROUTINE = *NO

No initialization routine is carried out.

INIT-ROUTINE = <text 1..8 without-sep>

The name specified here is defined as the new reference address name for the subsystem (see Note 4 on page 4-441).

CLOSE-CTRL-ROUTINE = *UNCHANGED / *NO / *DYNAMIC / <text 1..8 without-sep>

Changes the subsystem's CLOSE-CTRL routine, provided that this does not affect the manner in which the subsystem functions.

The change takes effect immediately.

CLOSE-CTRL-ROUTINE = *UNCHANGED

The current setting is left unchanged.

CLOSE-CTRL-ROUTINE = *NO

DSSM processes the STOP-SUBSYSTEM and HOLD-SUBSYSTEM commands without invoking a CLOSE-CTRL routine.

CLOSE-CTRL-ROUTINE = *DYNAMIC

The subsystem dynamically invokes the CLOSE-CTRL routine at the end of the initialization (INIT) routine. A reference address name must have been defined for the CLOSE-CTRL routine.

CLOSE-CTRL-ROUTINE = <text 1..8 without-sep>

The name specified here is defined as the new reference address name for the CLOSE-CTRL routine (see Note 4 on page 4-441).

STOPCOM-ROUTINE = *UNCHANGED / *NO / *DYNAMIC / <text 1..8 without-sep>

Changes the subsystem's STOPCOM routine, provided that this does not affect the manner in which the subsystem functions.

The change takes effect immediately.

STOPCOM-ROUTINE = *UNCHANGED

The current setting is left unchanged.

STOPCOM-ROUTINE = *NO

DSSM processes the STOP-SUBSYSTEM and HOLD-SUBSYSTEM commands without invoking a STOPCOM routine.

STOPCOM-ROUTINE = *DYNAMIC

The subsystem dynamically invokes the STOPCOM routine at the end of the CLOSE-CTRL routine or, if no CLOSE-CTRL routine is defined, at the end of the initialization (INIT) routine.

STOPCOM-ROUTINE = <text 1..8 without-sep>

The name specified here is defined as the new reference address name for the STOPCOM routine (see Note 4 on page 4-441).

DEINIT-ROUTINE = *UNCHANGED / *NO / *DYNAMIC / <text 1..8 without-sep>

Changes the subsystem's DEINIT routine, provided that this does not affect the manner in which the subsystem functions.

The change takes effect immediately.

DEINIT-ROUTINE = *UNCHANGED

The current setting is left unchanged.

DEINIT-ROUTINE = *NO

DSSM processes the STOP-SUBSYSTEM and HOLD-SUBSYSTEM commands without invoking a DEINIT routine.

DEINIT-ROUTINE = *DYNAMIC

The subsystem dynamically invokes the DEINIT routine at the end of the STOPCOM routine or, if no STOPCOM routine is defined, at the end of the CLOSE-CTRL routine. If no CLOSE-CTRL routine is defined either, the DEINIT routine is invoked at the end of the initialization (INIT) routine.

DEINIT-ROUTINE = <text 1..8 without-sep>

The name specified here is defined as the new reference address name for the DEINIT routine (see Note 4 on page 4-441).

STOP-AT-SHUTDOWN = *UNCHANGED / *NO / *YES

Causes DSSM to close down the subsystem automatically as soon as the SHUTDOWN (terminate session) command is issued.

The change takes effect immediately.

STOP-AT-SHUTDOWN = *UNCHANGED

The current setting is left unchanged.

STOP-AT-SHUTDOWN = *NO

DSMM ignores the subsystem when the SHUTDOWN command is issued.

STOP-AT-SHUTDOWN = *YES

DSSM closes down the subsystem as soon as the SHUTDOWN command is issued (as with the STOP-SUBSYSTEM command).

INTERFACE-VERSION = *UNCHANGED / *NO / <text 1..8 without-sep>

Designates the entry point through which DSSM can access the interface version used for decoupled calling of the INIT, CLOSE-CTRL, STOPCOM and DEINIT routines.

The change takes effect immediately.

INTERFACE-VERSION = *UNCHANGED

The current setting is left unchanged.

INTERFACE-VERSION = *NO

None of the following entry point names is available:

INIT, DEINIT, STOPCOM, CLOSE-CTRL-ROUTINE.

INTERFACE-VERSION = <text 1..8 without-sep>

The name specified here is defined as the new entry point.

SUBSYSTEM-HOLD = *UNCHANGED / *ALLOWED / *FORBIDDEN

Defines whether a command or macro can be used to halt or unload the subsystem.

The change takes effect immediately.

SUBSYSTEM-HOLD = *UNCHANGED

The current setting is left unchanged.

SUBSYSTEM-HOLD = *ALLOWED

A command or macro can be used to halt or unload the subsystem.

SUBSYSTEM-HOLD = *FORBIDDEN

As with the STOP-AT-SHUTDOWN operand value, the subsystem cannot be unloaded until the BS2000 system is closed down with the SHUTDOWN command.

STATE-CHANGE-CMDS = *UNCHANGED / *ALLOWED / *FORBIDDEN / *BY-ADMINISTRATOR-ONLY

Defines whether the DSSM commands START-SUBSYSTEM, RESUME-SUBSYSTEM, STOP-SUBSYSTEM and HOLD-SUBSYSTEM are allowed for the subsystem.

The change takes effect immediately.

In the event of a version change, this setting applies only to the new version being activated.

The other, "old" version will always be deactivated.

STATE-CHANGE-CMDS = *UNCHANGED

The current setting is left unchanged.

STATE-CHANGE-CMDS = *ALLOWED

The listed commands can be issued from the console or under a user ID with the SUBSYSTEM-MANAGEMENT privilege.

STATE-CHANGE-CMDS = *FORBIDDEN

The listed commands cannot be issued either from the console or under a user ID with the SUBSYSTEM-MANAGEMENT privilege.

STATE-CHANGE-CMDS = *BY-ADMINISTRATOR-ONLY

The listed commands can be issued under a user ID with the SUBSYSTEM-MANAGEMENT privilege but not from the console.

FORCED-STATE-CHANGE = *UNCHANGED / *ALLOWED / *FORBIDDEN

Defines whether the FORCED operand of the DSSM STOP-SUBSYSTEM and HOLD-SUBSYSTEM commands is allowed for the subsystem.

The change takes effect immediately.

FORCED-STATE-CHANGE = *UNCHANGED

The current setting is left unchanged.

FORCED-STATE-CHANGE = *ALLOWED

Use of the FORCED operand in these commands is allowed.

FORCED-STATE-CHANGE = *FORBIDDEN

Use of the FORCED operand is forbidden.

RESET = *UNCHANGED / *ALLOWED / *FORBIDDEN

Defines whether the RESET=*YES operand of the DSSM START-SUBSYSTEM and RESUME-SUBSYSTEM commands is allowed for the subsystem.

The change takes effect immediately.

RESET = *UNCHANGED

The current setting is left unchanged.

RESET = *ALLOWED

The DSSM START-SUBSYSTEM and RESUME-SUBSYSTEM commands are accepted if issued with the operand RESET=*YES.

RESET = *FORBIDDEN

The DSSM START-SUBSYSTEM and RESUME-SUBSYSTEM commands are rejected if issued with the operand RESET=*YES.

RESTART-REQUIRED = *UNCHANGED / *NO / *YES

Defines whether the initialization (INIT) routine is invoked to restart the subsystem in the event of abnormal holder task termination.

The initialization routine is invoked during reconstruction of the holder task.

The change takes effect immediately.

RESTART-REQUIRED = *UNCHANGED

The current setting is left unchanged.

RESTART-REQUIRED = *NO

In the event of abnormal holder task termination, the subsystem is locked during reconstruction of the holder task.

RESTART-REQUIRED = *YES

The initialization routine is invoked to restart the system.

VERSION-COEXISTENCE = *UNCHANGED / *FORBIDDEN / *ALLOWED

Defines whether different versions of the subsystem can be active at the same time. The change takes effect immediately.

VERSION-COEXISTENCE = *UNCHANGED

The current setting is left unchanged.

VERSION-COEXISTENCE = *FORBIDDEN

Only one version of the subsystem can be active.

VERSION-COEXISTENCE = *ALLOWED

Different versions of the subsystem can be active at the same time.

VERSION-EXCHANGE = *UNCHANGED / *FORBIDDEN / *ALLOWED

Defines whether a new subsystem version can be activated without the need to delete the old version.

The change takes effect immediately.

VERSION-EXCHANGE = *UNCHANGED

The current setting is left unchanged.

VERSION-EXCHANGE = *FORBIDDEN

A new subsystem version cannot be activated unless the old version has been totally deleted.

VERSION-EXCHANGE = *ALLOWED

A subsystem version can be activated without the need to delete the other version.

MEMORY-CLASS = *UNCHANGED / *SYSTEM-GLOBAL(...) /***LOCAL-UNPRIVILEGED(...) / *BY-SLICE(...)**

Changes the subsystem's memory class or defines the subsystem's position in main memory (above or below 16 megabytes). Note the following:

- A privileged subsystem cannot be changed to a nonprivileged subsystem.
- If the memory class is changed, all suboperands must be specified.
- A subsystem cannot be made LOCAL-UNPRIVILEGED if there is an address overlap between two LOCAL-UNPRIVILEGED subsystems sharing the same holder task.

The change takes effect as soon as the subsystem is restarted (START-SUBSYSTEM command).

MEMORY-CLASS = *UNCHANGED

The current setting is left unchanged.

MEMORY-CLASS = *SYSTEM-GLOBAL(...)

The memory class of the subsystem is changed to class 3 or class 4 memory.

SUBSYSTEM-ACCESS = *LOW / *HIGH

Defines the rights of access to the requested space and the location of the requested space in the address space.

SUBSYSTEM-ACCESS = *LOW

Defines the rights of access to the requested space and the location of the requested space in the address space.

SUBSYSTEM-ACCESS = *HIGH

Nonprivileged address space up to 2 gigabytes is requested.

MEMORY-CLASS = *LOCAL-UNPRIVILEGED(...)

The memory pool is set up as class 5 memory (only for subsystems which are to be executed in the same way as programs).

SIZE = *UNCHANGED / <integer 1..32767 4Kbyte>

Defines the size of the address space required for the memory pool in 4K pages. The defined value must be large enough to hold the subsystem and all the units and load units dynamically loaded by the subsystem.

SIZE = *UNCHANGED

The current setting is left unchanged.

SIZE = <integer 1..32767 4Kbyte>

The address space specified here defines the size of the memory pool.

SUBSYSTEM-ACCESS = *UNCHANGED / *LOW / *HIGH

Defines the rights of access to the requested space and the location of the requested space in address space.

SUBSYSTEM-ACCESS = *UNCHANGED

The current setting is left unchanged.

SUBSYSTEM-ACCESS = *SYSTEM

Privileged address space is requested. The load address is above 16 MB.

SUBSYSTEM-ACCESS = *LOW

Nonprivileged address space is requested. The load address is below 16 MB.

SUBSYSTEM-ACCESS = *HIGH

Nonprivileged address space up to 2 gigabytes is requested.

START-ADDRESS = *UNCHANGED / *ANY / <x-string 7..8>

Defines the base address of the subsystem. It must be a multiple of X'100000'. The user is responsible for specifying an address which references class 6 memory.

START-ADDRESS = *UNCHANGED

The current setting is left unchanged.

START-ADDRESS = *ANY

The location of the subsystem in class 6 memory is defined by DSSM.

START-ADDRESS = <x-string 7..8>

Address in the segment raster at which the base address of the subsystem is to be located. The address must be a multiple of X'100000'.

MEMORY-CLASS = *BY-SLICE(...)

The specified subsystem is a no-privileged subsystem consisting of an LLM which is made up of shareable code (program area) and non-shareable code (data area).

The program area is loaded into shareable address space (equivalent to MEMORY-CLASS= *SYSTEM-GLOBAL). The data area is loaded into the user address space of the holder task and copied into the private user address spaces of the connected tasks at the same address.

If the subsystem is defined using *BY-SLICE, note the following:

- If reserved address space designed to hold the data area already exists, the command is not executed unless there is enough space free within this reserved address area to hold the modified subsystem.
- If there is no such reserved address space, it will be created by the system. The tasks which are connected to the subsystem at the time when this reserved address space is created are not able to use the data area.

When a task is first connected to a subsystem that was defined with *BY-SLICE, DSSM informs the BLSSERV subsystem that the copy of the data area in the private user address space can be accessed with the VSVI1 macro.

The VSVI1 macro informs the user about entries in the DBL tables. See the “BLSSERV” manual [3] for details on the macro.

When the last connection is shut down, DSSM informs the BLSSERV subsystem that this private area can no longer be accessed.

DSSM only accepts an address space change in the new *BY-SLICE attribute if MODE=*LINK was specified for the type of specified incoming job for the subsystem and CONNECTION-SCOPE=*TASK / *PROGRAM was specified for all subsystem entries.

SIZE = <integer 1..32767 4Kbyte>

Specifies the size of the requested space for the data area in 4K pages.

LINK-ENTRY = *UNCHANGED(...) / <text 1..8 without-sep>(...)

Changes the reference address used for subsystem loading. It is also possible to specify whether automatic linking of modules in phases (AUTOLINK) is allowed.

The change takes effect as soon as the subsystem is restarted (START-SUBSYSTEM command).

LINK-ENTRY = *UNCHANGED(...)

The current setting is left unchanged.

AUTOLINK = *UNCHANGED / *ALLOWED / *FORBIDDEN

Defines whether automatic linking of modules in phases (AUTOLINK) is allowed

AUTOLINK = *UNCHANGED

The current setting is left unchanged.

AUTOLINK = *ALLOWED

AUTOLINK is allowed.

AUTOLINK = *FORBIDDEN

AUTOLINK is not allowed.

LINK-ENTRY = <text 1..8 without-sep>(...)

The address specified here is used as the new reference address for subsystem loading.

AUTOLINK = *ALLOWED / *FORBIDDEN

Defines whether automatic linking of modules in phases (AUTOLINK) is allowed

AUTOLINK = *ALLOWED

AUTOLINK is not allowed.

AUTOLINK = *FORBIDDEN

AUTOLINK is allowed.

UNRESOLVED-EXTERNALS = *UNCHANGED / *ALLOWED / *FORBIDDEN

Defines whether unresolved external references prevent subsystem startup.

UNRESOLVED-EXTERNALS = *UNCHANGED

The current setting is left unchanged.

UNRESOLVED-EXTERNALS = *ALLOWED

Unresolved external reference do not prevent subsystem startup.

This setting is intended for debugging purposes only.

UNRESOLVED-EXTERNALS = *FORBIDDEN

Unresolved external reference prevent subsystem startup.

CHECK-REFERENCES = *UNCHANGED / *YES / *NO

Defines whether DSSM is to check the status of subsystems with which there is a dependency relation. The status of these subsystems may determine whether loading or unloading of the subsystem is allowed.

The change takes effect immediately.

CHECK-REFERENCES = *UNCHANGED

The current setting is left unchanged.

CHECK-REFERENCES = *YES

DSSM checks the status of subsystems with which there is a dependency relation. Depending on the status of these subsystems, DSSM decides whether the subsystem referred to by this command can be loaded or unloaded.

CHECK-REFERENCES = *NO

If the subsystem referred to by this command has a dependency relation with another subsystem, DSSM checks that the latter subsystem is loaded. If it is, the former subsystem can be loaded, even if the other subsystem is not yet runnable (the reference is held to be resolved).

The RESUME-SUBSYSTEM, STOP-SUBSYSTEM and HOLD-SUBSYSTEM commands are executed regardless of any dependency relations which may exist.

CHANGE-STATE = *UNCHANGED / *YES / *NO

Restricts the use of subsystem control commands, or cancels a restriction currently in force. This operand is particularly significant in relation to a malfunctioning subsystem, as it can be used to prevent loading, activation and deactivation of the subsystem for as long as it takes to eliminate the malfunction.

The change takes effect immediately. It is applicable only to the current session (it is not stored in the catalog referenced by the SAVE-SUBSYSTEM-CATALOG command). The next time the subsystem is started up, the operand value is set to *NO.

CHANGE-STATE = *UNCHANGED

The current setting is left unchanged.

CHANGE-STATE = *YES

The commands locked by an operand value of CHANGE-STATE=*NO in an earlier MODIFY-SUBSYSTEM-PARAMETER command are released for use, thus restoring full control of the subsystem.

CHANGE-STATE = *NO

Prevents subsystem loading, activation, deactivation, suspending, resuming and unlocking. The following commands are locked until the next time the MODIFY-SUBSYSTEM-PARAMETER command is entered with CHANGE-STATE set to *YES:

- START-SUBSYSTEM
- RESUME-SUBSYSTEM
- STOP-SUBSYSTEM
- HOLD-SUBSYSTEM
- REMOVE-SUBSYSTEM
- UNLOCK-SUBSYSTEM

Return codes

(SC2)	SC1	Maincode	Meaning/Guaranteed messages
	0	CMD0001	Command executed without error Guaranteed message: ESM0254
	0	CMD0001	Command executed with warnings Guaranteed message: ESM0647
1	0	CMD0001	Command executed with warnings (no LOGICAL-ID found or message file (de)activated)
	1	ESM0414	Syntax error: invalid version specified
	1	ESM0415	Syntax error: invalid INSTALLATION-UNIT name specified
	1	ESM0653	Syntax error: invalid job entry name specified
	32	ESM0646	Internal DSSM problem during processing
	32	ESM0646	Internal error
	64	ESM0201	Subsystem not found
	64	ESM0269	Subsystem without SVC or ISL entry point
	64	ESM0280	Command not executed to avoid inconsistencies in the subsystem catalog
	64	ESM0340	Reserved address-space exhausted for subsystems with MEMORY-CLASS=*BY-SLICE
	64	ESM0613	Changes to the message or syntax file or the installation user ID not allowed. Subsystem must first be removed with STOP-SUBSYSTEM.
	64	ESM0617	Memory class changed; all parameters must be specified

Notes

1. If the command changes subsystem attributes in such a way that they are given values that they already had before the command was issued, no change is made, but message ESM0647 is nonetheless issued to indicate that changes have been made. This can be avoided by using the default values (generally *UNCHANGED).
2. The CREATION-TIME operand is designed to modify the parameters of subsystems added by means of ADD-SUBSYSTEM commands.
3. If file names are specified without a user ID in the SUBSYSTEM-LIBRARY, MESSAGE-FILE, SYNTAX-FILE, REP-FILE and SUBSYSTEM-INFO-FILE operands, the subsystem's installation user ID is searched for the files.
4. Changes to the INIT-ROUTINE, CLOSE-CTRL-ROUTINE, STOPCOM-ROUTINE and DEINIT-ROUTINE operands are accepted only if they do not impair the functioning of the subsystem.
5. If a change cannot be made, a message to that effect is sent to SYSOUT. Messages relating to accepted changes are written to the CONSLOG file.

Example

Version 9.0 of the ARCHIVE subsystem is to be started up automatically as soon as the first SVC call is issued:

```
/MODIFY-SUBSYSTEM-PARAMETER SUBSYSTEM-NAME=ARCHIVE,VERSION='09.0', -  
    CREATION-TIME=*AT-SUBSYSTEM-CALL
```

MODIFY-SYSFILE-OPTIONS

Define maximum length of log output records

Description status:	SYSFILE V19.0A
Functional area:	Job processing File processing
Domain:	JOB
Privileges:	STD-PROCESSING

Function

With the MODIFY-SYSFILE-OPTIONS command, users can specify the maximum length of log output records. Logging is set with the MODIFY-JOB-OPTIONS command. The command has effect only if the log is directed to a cataloged file (SYSOUT is assigned to a file) and to SYSLST. Outputs to terminal are not influenced.

The user can determine whether output is to be additionally directed into a file which is accessible while library elements are output to SYSLST or SYSOUT.

Effect of maximum output record length

Output records exceeding the specified record length are distributed over several lines when logged. These lines do not exceed the specified record line. The length of the output records also contains the “prefix” (e.g. blanks, the character strings *(IN)* or *(OUT)*), which precedes each record to be logged.

Format

MODIFY-SYSFILE-OPTIONS

LOGGING-LINE-SIZE = *UNCHANGED / *STD / <integer 18..2044>

,LIBRARY-OUTPUT-COPY = *UNCHANGED / *YES / *NO / *BY-SYSTEM-PARAMETER

Operands

LOGGING-LINE-SIZE = *UNCHANGED

The default is *UNCHANGED, i.e. the setting remains unchanged. At the beginning of a job, the default value of 132 is set. During logging, output records exceeding 132 characters in length are spread over two or more lines containing a maximum of 132 characters. Each continuation line thus created also contains a “prefix”.

Example

With LOGGING-LINE-SIZE=132, a 1000-byte-long data record is spread over eight lines for SYSOUT output to a cataloged file and over nine lines for hardcopy output.

LOGGING-LINE-SIZE = *STD

The *STD entry sets line size to the default value of 132.

LOGGING-LINE-SIZE = <integer 16..2044>

Sets the specified value. The largest specifiable value depends on the attributes of the file assigned: A SAM file with BUF-LEN=STD(1) on an NK disk can contain no more than one record with a length of 2032 bytes.

LIBRARY-OUTPUT-COPY = *UNCHANGED / *YES / *NO / *BY-SYSTEM-PARAMETER

Specifies whether the output records are additionally written into a file when SYSLST or SYSOUT is assigned to a PLAM library element. When a task starts, the SSMMILOG system parameter setting applies.

The default value is *UNCHANGED, i.e. the current setting remains unchanged.

LIBRARY-OUTPUT-COPY = *YES

In each assignment of SYSLST or SYSOUT to a PLAM library element, a file is generated as a copy and each output record is also written into that file. The copy is assigned the following name:

S.LST.<lib>.<elem>.<tsn>.<counter>

or

S.OUT.<lib>.<elem>.<tsn>.<counter>

The name sections have the following meanings:

lib: the first 7 characters of the PLAM library
elem: the first 7 characters of the element
tsn: the task's TSN
counter: 4-position counter

LIBRARY-OUTPUT-COPY = *NO

Output records are not copied.

LIBRARY-OUTPUT-COPY = *BY-SYSTEM-PARAMETER

The setting of the SSMMILOG system parameter applies.

Return codes

(SC2)	SC1	Maincode	Meaning
	0	CMD0001	Command executed
	64	CMD0216	Semantic error

MODIFY-SYSTEM-BIAS

Change maximum value for resident main memory pages

Description status:	BS2000 OSD/BC V10.0A
Functional area:	System control and optimization
Domain:	SYSTEM-TUNING
Privileges:	TSOS OPERATING
Routing code:	R

Function

After system initialization there are by default no more than 24 resident main memory pages available to all users together. The MODIFY-SYSTEM-BIAS command can be used to change the limit during system operation. A reasonable value must be chosen, as appropriate to the load and the types of job being performed. The value must at least comply with the condition specified in the MAX-RESIDENT-PAGES operand. A suitable method for determining an “optimum” value (resulting in no performance degradation) is described in the “Performance Handbook” [27].

Systems support can use the SHOW-SYSTEM-STATUS command, operand INFORMATION=*SYSTEM-PARAMETERS to display the currently valid values.

The default value *UNCHANGED in the corresponding operands means that the previously valid definition still applies.

Format

MODIFY-SYSTEM-BIAS

MAX-RESIDENT-PAGES = *UNCHANGED / <integer 0..2147483639 4Kbyte>

Operands

MAX-RESIDENT-PAGES = *UNCHANGED / <integer 0..2147483647 4Kbyte>

Maximum number of resident main memory pages available for user jobs.

The value must comply with the following condition:

$$0 \leq n \leq w - x - y - 256$$

where:

w	number of main memory pages
x	number of class 1 memory pages
y	number of class 3 memory pages
256	saturation criterion

Return codes

(SC2)	SC1	Maincode	Meaning
	0	CMD0001	No error
	3	CMD0202	Function or unit not supported
	3	EXC0450	Parameter error
	3	EXC0451	Missing privilege
	3	EXC0452	Insufficient storage space available

MODIFY-SYSTEM-PARAMETERS

Modify system parameters

Description status:	BS2000 OSD/BC V10.0A
Functional area:	System control and optimization
Domain:	SYSTEM-TUNING
Privileges:	TSOS

Function

The systems support staff can modify the following parameters of the BS2000 system while it is operational with the aid of the MODIFY-SYSTEM-PARAMETERS command:

- | | | |
|------------|-------------|------------|
| - BLSCOPYN | - ISBLKVdAL | - SSMASEC |
| - BLSCOPYR | - JTABSMEM | - SSMCOPT |
| - BLSLDPXS | - JTMAXMEM | - SSMMILOG |
| - BLSOPENX | - JTSHMEM | - SSMOUT |
| - DIATTL | - JTSTDMEM | - SSMSDEVB |
| - DUMPCL5P | - NBMSGCSD | - SSMSDEVD |
| - DUMPCTRL | - NRKILL | - SYSGJASL |
| - DUMPSD# | - RDTESTPR | - SYSGJCPU |
| - DUMPSEPA | - SHUTARCH | - SYSGJPRI |
| - DUMPSREF | - SHUTCTL | - TCHOFLO |
| - EACTETYP | - SHUTPROC | - TCHREAD |
| - FILECRYP | - SNAPTIME | - TCHTACK |
| - FST32GB | - SSMAPRI | - VMGIORAL |
| | | - WRTESTPR |

The system parameters are generated with default values and can be modified using the parameter service while the system is being started. The system parameters define the character of the BS2000 system. The SHOW-SYSTEM-PARAMETERS command provides information on the current setting of the system parameters.

A detailed description of the system parameters and of their possible settings is contained in the “Introduction to System Administration” [14].

Format

MODIFY-SYSTEM-PARAMETERS

PARAMETER = <name 1..8>

,VALUE = <c-string 1..128> / <x-string 1..8> / <integer 0..2147483647>

Operands

PARAMETER = <name 1..8>

Name of the system parameter to be modified. Only system parameters that can be modified while the system is operational are allowed.

VALUE = <c-string 1..128> / <x-string 1..8> / <integer 0..2147483647>

New value to be assigned to the system parameter. Note the value ranges allowed.

Return codes

(SC2)	SC1	Maincode	Meaning
	0	CMD0001	No error
	1	CMD2201	Parameter error (see SYSOUT message NSI6260 for details)
	64	CMD0216	Required authorization not available

MODIFY-TAPE-OUTPUT-STATUS

Change administration parameters for tape devices

Description status:	SPOOL V4.9A
Functional area:	Controlling spoolout job
Domain:	SPOOL-PRINT-ADMINISTRATION
Privileges:	OPERATING PRINT-SERVICE-ADMINISTRATION
Routing code:	S

Function

The MODIFY-TAPE-OUTPUT-STATUS command changes the administration parameters for the specified tape devices.
If the default value *UNCHANGED is specified then no changes are made to the initial value of the parameter in question.

Format

(Part 1 of 3)

MODIFY-TAPE-OUTPUT-STATUS
<p>UNIT = list-poss(8): <alphanum-name 2..2> / <alphanum-name 4..4></p> <p>DESTINATION = *UNCHANGED / *NONE / *ADD(...) / *REMOVE(...) / list-poss(16): <alphanum-name 1..8> / *CENTRAL</p> <p>*ADD(...) DESTINATION-LIST = list-poss(16): *CENTRAL / <alphanum-name 1..8></p> <p>*REMOVE(...) DESTINATION-LIST = list-poss(16): *CENTRAL / <alphanum-name 1..8></p> <p>FORM-NAME = *UNCHANGED / *ALL / *STD / *EXCEPT(...) / *ADD(...) / *REMOVE(...) list-poss(16): <alphanum-name 1..6></p> <p>*EXCEPT(...) FORMS-LIST = list-poss(16): <alphanum-name 1..6></p> <p>*ADD(...) FORMS-LIST = list-poss(16): <alphanum-name 1..6></p> <p>*REMOVE(...) FORMS-LIST = list-poss(15): <alphanum-name 1..6></p>

```
,FORMS-OVERLAY = *UNCHANGED / *ALL / *NONE / *ONLY / *EXCEPT(...) / *ADD(...) / *REMOVE(...) /
list-poss(16): <alphanum-name 2..2>

*EXCEPT(...)
|   FORMS-OVERLAY-LIST = list-poss(16): <alphanum-name 2..2>
*ADD(...)
|   FORMS-OVERLAY-LIST = list-poss(16): <alphanum-name 2..2>
*REMOVE(...)
|   FORMS-OVERLAY-LIST = list-poss(15): <alphanum-name 2..2>
,USER-IDENTIFICATION = *UNCHANGED / *ALL / *EXCEPT(...) / *ADD(...) / *REMOVE(...) /
list-poss(16): <name 1..8>

*EXCEPT(...)
|   USER-IDENT-LIST = list-poss(16): <name 1..8>
*ADD(...)
|   USER-IDENT-LIST = list-poss(16): <name 1..8>
*REMOVE(...)
|   USER-IDENT-LIST = list-poss(15): <name 1..8>
,SPOOLOUT-CLASS = *UNCHANGED / *ALL / *EXCEPT(...) / *ADD(...) / *REMOVE(...) /
list-poss(16): <integer 1..255>

*EXCEPT(...)
|   SPOOLOUT-CLASS-LIST = list-poss(16): <integer 1..255>
*ADD(...)
|   SPOOLOUT-CLASS-LIST = list-poss(16): <integer 1..255>
*REMOVE(...)
|   SPOOLOUT-CLASS-LIST = list-poss(15): <integer 1..255>
,SPOOLOUT-NAME = *UNCHANGED / *ALL / *EXCEPT(...) / *ADD(...) / *REMOVE(...) /
list-poss(16): <alphanum-name 1..8> / <c-string 1..8 with-low>

*EXCEPT(...)
|   SPOOLOUT-NAME-LIST = list-poss(16): <alphanum-name 1..8> / <c-string 1..8 with-low>
*ADD(...)
|   SPOOLOUT-NAME-LIST = list-poss(16): <alphanum-name 1..8> / <c-string 1..8 with-low>
*REMOVE(...)
|   SPOOLOUT-NAME-LIST = list-poss(15): <alphanum-name 1..8> / <c-string 1..8 with-low>
```

```

,ACCOUNT = *UNCHANGED / *ALL / *EXCEPT(...) / *ADD(...) / *REMOVE(...) /
          list-poss(16): <alphanum-name 1..8>
  *EXCEPT(...)
    | ACCOUNT-LIST = list-poss(16): <alphanum-name 1..8>
  *ADD(...)
    | ACCOUNT-LIST = list-poss(16): <alphanum-name 1..8>
  *REMOVE(...)
    | ACCOUNT-LIST = list-poss(15): <alphanum-name 1..8>
,ROTATION = *UNCHANGED / *ANY / *NO / *YES
,TWO-UP-PROCESSING = *UNCHANGED / *ANY / *YES / *NO / *MODE-1 / *MODE-2
,FORMS-OVERLAY-BUFFER = *UNCHANGED / *ANY / *ONLY / *NO / *RANGE(...)
  *RANGE(...)
    | LOW = *UNCHANGED / <integer 0..32767>
    | ,HIGH = *UNCHANGED / <integer 0..32767>
,PRIORITY = *UNCHANGED / *ALL / *RANGE(...)
  *RANGE(...)
    | FROM = *UNCHANGED / <integer 30..255>
    | ,TO = *UNCHANGED / <integer 30..255>
,CHARACTER-SET-NUMBER = *UNCHANGED / *ALL / *ONE / *RANGE(...)
  *RANGE(...)
    | LOW = *UNCHANGED / <integer 1..32767>
    | ,HIGH = *UNCHANGED / <integer 1..32767>
,SPOOL-OUT-TYPE = *UNCHANGED / *ALL / *HP-PRINTER / *PRINTER /
                 *PAGE-PRINTER / *BUFFER-LINE-PRINTER / *LIST(...)
  *LIST(...)
    | SELECTION-TYPE = *MAY / *MUST
    | ,DEVICE-TYPE = list-poss(8): *HP-PRINTER / *LP-PRINTER / *LP48-PRINTER /
    |                 *LP65-PRINTER / *HP90-PRINTER / *LP-EMULATED-PRINTER /
    |                 *2090-APA-PRINTER / *2050-APA-PRINTER / *2090-TWIN-PRINTER / *PCL-PRINTER
,REVISION-NUMBER = *ANY / <integer 1..255>

```

Operands

UNIT = list-poss(8): <alphanumeric-name 2..2> / <alphanumeric-name 4..4>

Mnemonic device names of the tape devices whose assignment parameters are to be modified for waiting spoolout jobs.

DESTINATION =

Defines the device pools for which the spoolout jobs which can be processed on the specified tape devices are intended.

DESTINATION = *NONE

The list of local pools is cleared, i.e. spoolout jobs for local device pools are no longer processed on the specified tape devices.

DESTINATION = *ADD(...)

Device pools which are to be added to an existing list of local pools for which the spoolout jobs which can be processed on the specified tape devices are intended.

DESTINATION-LIST = list-poss(16): *CENTRAL / <alphanumeric-name 1..8>

List of local device pools to be added.

DESTINATION = *REMOVE(...)

Local device pools which are to be removed from an existing list of pools for which the spoolout jobs which can be processed on the specified tape devices are intended.

DESTINATION-LIST = list-poss(16): *CENTRAL / <alphanumeric-name 1..8>

List of local device pools to be removed.

DESTINATION = list-poss(16): <alphanumeric-name 1..8> / *CENTRAL

List of local device pools for which the spoolout jobs which can be processed on the specified tape devices are intended.

FORM-NAME =

Names of the forms with which spoolout jobs can be processed on the specified tape devices.

FORM-NAME = *ALL

Spoolout jobs can be processed on the specified tape devices irrespective of the form used.

FORM-NAME = *STD

Only spoolout jobs with FORM=*STD can be processed on the specified tape devices.

FORM-NAME = *EXCEPT(...)

Forms with which spoolout jobs cannot be processed on the specified tape devices.

FORMS-LIST = list-poss(16): <alphanumeric-name 2..2>

List of excluded forms.

FORM-NAME = *ADD(...)

Forms to be added to an existing list of forms with which spoolout jobs can be processed on the specified tape devices.

FORMS-LIST = list-poss(16): <alphanum-name 1..6>

List of forms to be added.

FORM-NAME = *REMOVE(...)

Forms which are to be removed from an existing list of forms with which spoolout jobs can be processed on the specified tape devices.

FORMS-LIST = list-poss(15): <alphanum-name 1..6>

List of forms to be removed.

FORM-NAME = list-poss(16): <alphanum-name 1..6>

List of forms with which spoolout jobs can be processed on the specified tape devices. If there is already a (positive) list of forms for the specified tape devices it is replaced by this new list.

FORMS-OVERLAY =

Film overlays with which spoolout jobs can be processed on the specified tape devices.

FORMS-OVERLAY = *ALL

Spoolout jobs can be processed on the specified tape devices irrespective of the film overlays specified.

FORMS-OVERLAY = *NONE

Only spoolout jobs which do not use film overlays can be processed on the specified tape devices.

FORMS-OVERLAY = *ONLY

Only spoolout jobs which use (any) film overlay can be processed on the specified devices.

FORMS-OVERLAY = *EXCEPT(...)

Film overlays with which spoolout jobs cannot be processed on the specified tape devices.

FORMS-OVERLAY-LIST = list-poss(16): <alphanum-name 2..2>

List of excluded film overlays.

FORMS-OVERLAY = *ADD(...)

Film overlays to be added to an existing list with which spoolout jobs can be processed on the specified tape devices.

FORMS-OVERLAY-LIST = list-poss(16): <alphanum-name 2..2>

List of film overlays to be added.

FORMS-OVERLAY = *REMOVE(...)

Film overlays which are to be removed from an existing list with which spoolout jobs can be processed on the specified tape devices.

FORMS-OVERLAY-LIST = list-poss(15): <alphanum-name 2..2>

List of film overlays to be removed.

FORMS-OVERLAY = list-poss(16): <alphanum-name 2..2>

List of film overlays with which spoolout jobs can be processed on the specified tape devices.

USER-IDENTIFICATION =

User IDs under which spoolout jobs can be processed on the specified tape devices.

USER-IDENTIFICATION = *ALL

Spoolout jobs can be processed on the specified tape devices under all user IDs.

USER-IDENTIFICATION = *EXCEPT(...)

User IDs under which spoolout jobs cannot be processed on the specified tape devices.

USER-IDENT-LIST = list-poss(16): <name 1..8>

List of excluded user IDs.

USER-IDENTIFICATION = *ADD(...)

User IDs to be added to an existing list of user IDs under which spoolout jobs can be processed on the specified tape devices.

USER-IDENT-LIST = list-poss(16): <name 1..8>

List of user IDs to be added.

USER-IDENTIFICATION = *REMOVE(...)

User IDs which are to be removed from an existing list of user IDs under which spoolout jobs can be processed on the specified tape devices.

USER-IDENT-LIST = list-poss(15): <name 1..8>

List of user IDs to be removed.

USER-IDENTIFICATION = list-poss(16): <name 1..8>

List of user IDs under which spoolout jobs can be processed on the specified tape devices. If there is already a (positive) list of user IDs for the specified tape devices, it is replaced by this new list.

SPOOLOUT-CLASS =

Spoolout classes from which spoolout jobs can be processed on the specified tape devices.

SPOOLOUT-CLASS = *ALL

Spoolout jobs from all spoolout classes can be processed on the specified tape devices.

SPOOLOUT-CLASS = *EXCEPT(...)

Spoolout classes from which spoolout jobs cannot be processed on the specified tape devices.

SPOOLOUT-CLASS-LIST = list-poss(16): <integer 1..255>

List of excluded spoolout classes.

SPOOLOUT-CLASS = *ADD(...)

Spoolout classes to be added to an existing list of spoolout classes from which spoolout jobs can be processed on the specified tape devices.

SPOOLOUT-CLASS-LIST = list-poss(16): <integer 1..255>

List of spoolout classes to be added.

SPOOLOUT-CLASS = *REMOVE(...)

Spoolout classes to be removed from an existing list of spoolout classes from which spoolout jobs can be processed on the specified tape devices.

SPOOLOUT-CLASS-LIST = list-poss(15): <integer 1..255>

List of spoolout classes to be removed.

SPOOLOUT-CLASS = list-poss(16): <name 1..8>

List of spoolout classes from which spoolout jobs can be processed on the specified tape devices.

If there is already a (positive) list of spoolout classes for the specified tape devices, it is replaced by this new list.

SPOOLOUT-NAME =

Job names under which spoolout jobs can be processed on the specified tape devices.

SPOOLOUT-NAME = *ALL

Spoolout jobs can be processed on the specified tape devices irrespective of the job name.

SPOOLOUT-NAME = *EXCEPT(...)

Job names under which spoolout jobs cannot be processed on the specified tape devices.

SPOOLOUT-NAME-LIST = list-poss(16): <alphanum-name 1..8> /

<c-string 1..8 with-low>

List of excluded job names.

SPOOLOUT-NAME = *ADD(...)

Job names to be added to an existing list of job names under which spoolout jobs can be processed on the specified tape devices.

SPOOLOUT-NAME-LIST = list-poss(16): <alphanum-name 1..8> /

<c-string 1..8 with-low>

List of job names to be added.

SPOOLOUT-NAME = *REMOVE(...)

Job names which are to be removed from an existing list of job names under which spoolout jobs can be processed on the specified tape devices.

**SPOOLOUT-NAME-LIST = list-poss(15): <alphanum-name 1..8> /
<c-string 1..8 with-low>**

List of job names to be removed.

**SPOOLOUT-NAME = list-poss(16): <alphanum-name 1..8> /
<c-string 1..8 with-low>**

List of job names under which spoolout jobs can be processed on the specified floppy disk devices.

If there is already a (positive) list of job names for the specified tape devices it is replaced by this new list.

ACCOUNT =

Account numbers with which spoolout jobs can be processed on the specified tape devices.

ACCOUNT = *ALL

Spoolout jobs can be processed on the specified tape devices irrespective of the account number.

ACCOUNT = *EXCEPT(...)

Account numbers under which spoolout jobs cannot be processed on the specified tape devices.

ACCOUNT-LIST = list-poss(16): <alphanum-name 1..8>

List of excluded account numbers.

ACCOUNT = *ADD(...)

Account numbers to be added to an existing list of account numbers under which spoolout jobs can be processed on the specified tape devices.

ACCOUNT-LIST = list-poss(16): <alphanum-name 1..8>

List of account numbers to be added.

ACCOUNT = *REMOVE(...)

Account numbers which are to be removed from an existing list of account numbers under which spoolout jobs can be processed on the specified tape devices.

ACCOUNT-LIST = list-poss(15): <alphanum-name 1..8>

List of account numbers to be removed.

ACCOUNT = list-poss(16): <name 1..8>

List of account numbers under which spoolout jobs can be processed on the specified tape devices.

If there is already a (positive) list of account numbers for the specified tape devices it is replaced by this new list.

ROTATION =

Indicates whether spoolout jobs which require the page rotation module can be processed on the specified tape devices.

ROTATION = *ANY

Spoolout jobs can be output on the specified tape devices whether they require the page rotation module or not.

ROTATION = *NO

Only spoolout jobs which do not require the page rotation module can be processed on the specified tape devices.

ROTATION = *YES

Only spoolout jobs which require the page rotation module can be processed on the specified tape devices.

TWO-UP-PROCESSING = *UNCHANGED / *ANY / *YES / *NO / *MODE-1 / *MODE-2

Specifies 'TWO-UP' processing for the specified HP90 (2090, 2140) printers (see the "SPOOL" manual [43]).

FORMS-OVERLAY-BUFFER =

Indicates whether spoolout jobs which use an FOB overlay can be processed on the specified tape devices.

FORMS-OVERLAY-BUFFER = *ANY

Spoolout jobs with and without FOB overlays can be processed on the specified tape devices.

FORMS-OVERLAY-BUFFER = *ONLY

Only spoolout jobs which require an FOB overlay can be processed on the specified tape devices.

FORMS-OVERLAY-BUFFER = *RANGE(...)

Only spoolout jobs with FOB overlays which lie within the specified size range can be processed on the specified tape devices.

LOW = *UNCHANGED / <integer 0..32767>

Lower limit of the range.

HIGH = *UNCHANGED / <integer 0..32767>

Upper limit of the range.

PRIORITY =

Priorities with which spoolout jobs can be processed on the specified tape devices.

PRIORITY = *ALL

Spoolout jobs can be processed on the specified tape devices irrespective of their priority.

PRIORITY = *RANGE(...)

Spoolout jobs with priorities within this range can be processed on the specified tape devices.

FROM = *UNCHANGED / <integer 30..255>

Lower limit of the range.

TO = *UNCHANGED / <integer 30..255>

Upper limit of the range.

CHARACTER-SET-NUMBER =

Spoolout jobs can be processed on the specified tape devices according to the number of character sets required.

CHARACTER-SET-NUMBER = *ALL

Spoolout jobs can be processed on the specified tape devices irrespective of the number of character sets required.

CHARACTER-SET-NUMBER = *ONE

Only spoolout jobs which require no more than one character set can be processed on the specified tape devices.

CHARACTER-SET-NUMBER = *RANGE(...)

Spoolout jobs with a number of required character sets which falls within the range can be processed on the specified tape devices.

LOW = *UNCHANGED / <integer 1..32767>

Lower limit of the range.

HIGH = *UNCHANGED / <integer 1..32767>

Upper limit of the range.

SPOOLOUT-TYPE =

Spoolout jobs for certain types of output device can be processed on the specified tape devices.

SPOOLOUT-TYPE = *ALL

Spoolout jobs can be processed on the specified tape devices irrespective of the type of output device for which they were created.

SPOOLOUT-TYPE = *HP-PRINTER

Only spoolout jobs for printers of type 3351/3353 can be processed on the specified tape devices.

SPOOLOUT-TYPE = *PRINTER

Only spoolout jobs for printers can be processed on the specified tape devices.

SPOOLOUT-TYPE = *PAGE-PRINTER

Only spoolout jobs for laser printers can be processed on the specified tape devices.

SPOOLOUT-TYPE = *BUFFER-LINE-PRINTER

Only spoolout jobs for line printers with loadable buffers (3337, 3338, 3339, 3348, 3349) can be processed on the specified tape devices.

SPOOLOUT-TYPE = *LIST(...)

Spoolout jobs for the specified list of device types can be processed on the specified tape devices.

SELECTION-TYPE = *MAY / *MUST

The selection of spoolout jobs

- is restricted to those which at least may be output on one of the specified device types (*MAY)
- is restricted to those which must be output on one of the specified device types and may not be output on any device type than the ones specified (*MUST).

DEVICE-TYPE = list-poss(8): *HP-PRINTER / *LP-PRINTER / *LP48-PRINTER / *LP65-PRINTER / *HP90-PRINTER / *LP-EMULATED-PRINTER / *2090-APA-PRINTER / *2050-APA-PRINTER / *2090-TWIN-PRINTER / *PCL-PRINTER

List of device types. For the symbolic names see the “SPOOL” manual [42].

REVISION-NUMBER = *ANY / <integer 1..255>

The number given must match the current revision number.

Return codes

(SC2)	SC1	Maincode	Meaning
	0	CMD0001	No error
2	0	SCP0915	Element to be deleted not found
2	0	SCP0954	Only first 100 pools activated for the device
	1	CMD0202	Syntax error
	1	SCP0973	Semantic error
	32	SCP0974	System error. Command rejected
	64	SCP0975	No authorization for command
	64	SCP0976	Invalid operand value

MODIFY-TASK-CATEGORIES

Control allocation of CPU, main memory and I/O processor resources to tasks

Description status:	BS2000 OSD/BC V10.0A
Functional area:	System control and optimization
Domain:	SYSTEM-TUNING
Privileges:	TSOS OPERATING
Routing code:	R

Function

Systems support staff can use the MODIFY-TASK-CATEGORIES command to define the number of tasks per category which are competing for the resources CPU, main memory and I/O processor (active tasks), to decide on the priorities of the categories, and to assign I/O priorities for the tasks of a category.

Together with the CHANGE-TASK-PRIORITY command, this command enables systems support staff to specify the distribution of the resources CPU and main memory to the individual tasks. In addition to the four categories with the standard names TP, DIALOG, BATCH and SYS, the task management also supports 12 further categories whose names are declared with the JMU utility routine.

Systems support can modify the assignment of individual tasks to a category using the MOVE-TASK-TO-CATEGORY command.

Systems support defines in the user catalog and job classes allocated to the user the task attributes the user can add on to his tasks.

The I/O priorities are evaluated solely by the IORM subsystem for task-specific control of inputs/outputs, with runtime control both by PRIOR and by the PCS subsystem.

The current values for resource distribution can be displayed by means of the SHOW-SYSTEM-STATUS command.

Format

MODIFY-TASK-CATEGORIES

CATEGORY-NAME = <name 1..7> / *DIALOG / *BATCH / *TP
 ,**WEIGHT-CODE** = *UNCHANGED / <integer 1..511>
 ,**MINIMUM-ACTIVE-TASKS** = *UNCHANGED / <integer 0..4095>
 ,**MAXIMUM-ACTIVE-TASKS** = *UNCHANGED / <integer 0..4095>
 ,**IO-PRIORITY** = *UNCHANGED / *NONE / *LOW / *MEDIUM / *HIGH

Operands

CATEGORY-NAME = <name 1..7> / *DIALOG / *BATCH / *TP

Name of the category.

WEIGHT-CODE = *UNCHANGED / <integer 1..511>

This operand serves to weight the categories and controls task activation and task initiation (CPU allocation). It influences the relationships in which tasks are activated from categories. In addition, it is taken into consideration when setting the internal task priority which controls the CPU allocation.

A high value indicates a high degree of urgency.

MINIMUM-ACTIVE-TASKS = *UNCHANGED / <integer 0..4095>

Minimum number of tasks in the specified category which must be active. This ensures a minimum workload per category.

MAXIMUM-ACTIVE-TASKS = *UNCHANGED / <integer 0..4095>

Maximum number of tasks in the specified category which must be active.

This operand establishes a workload limit in cases of overload.

IO-PRIORITY = *UNCHANGED / *NONE / *LOW / *MEDIUM / *HIGH

Determines the I/O priority of all tasks of the specified category. This value is evaluated only if the IORM subsystem has been started and priority control is active (IORM statement IOPT_SET_ON=YES). The default *NONE means that all tasks of this category are assigned an I/O priority which is derived from the task priority (implicit I/O priority).

Return codes

(SC2)	SC1	Maincode	Meaning
	0	CMD0001	No error
2	0	EXC049B	The PCS subsystem, is active; details will only be stored for PRIOR
	64	EXC045D	Invalid parameter
	64	EXC046B	Invalid category name
	64	EXC046C	No access to the SYS category
	64	CMD0216	Privilege infringement

Example

```
/show-sys-sta inf=*category
```

```
CATEGORY MIN  MAX  WT  #EXIS #ACT #READY #RDY NOT  IO-PRIO
NAME      MPL  MPL      TING      INACT  ADMITTED
SYS       0030 0064 512 0101  0028 0000   0000   NONE
DIALOG    0001 0999 001 0001  0001 0000   0000   NONE
BATCH     0001 0999 001 0006  0000 0000   0000   NONE
TP        0001 0999 001 0007  0001 0000   0000   NONE
BATCHF    0001 0999 001 0005  0002 0000   0000   NONE
```

```
/mod-task category-name=dialog,min-act=10,max-act=100
```

```
% EXC046D PROCESSING OF /MODIFY-TASK-CATEGORIES COMPLETED
```

```
/show-sys-sta inf=*category
```

```
CATEGORY MIN  MAX  WT  #EXIS #ACT #READY #RDY NOT  IO-PRIO
NAME      MPL  MPL      TING      INACT  ADMITTED
SYS       0030 0064 512 0101  0025 0000   0000   NONE
DIALOG    0010 0100 001 0001  0001 0000   0000   NONE
BATCH     0001 0999 001 0006  0000 0000   0000   NONE
TP        0001 0999 001 0007  0001 0000   0000   NONE
BATCHF    0001 0999 001 0005  0002 0000   0000   NONE
BATCHF    0001 0999 001 0002  0002 0000   0000   NONE
```

MODIFY-TERMINAL-OPTIONS

Modify logical terminal properties

Description status: TIAM V13.2

Functional area: Job processing

Domain: JOB

Privileges: STD-PROCESSING
 TSOS
 HARDWARE-MAINTENANCE
 SAT-FILE-EVALUATION
 SAT-FILE-MANAGEMENT
 SECURITY-ADMINISTRATION

Function

The MODIFY-TERMINAL-OPTIONS command allows users to change the logical properties of their terminals.

The command can be used only in timesharing mode and only has any effect if the terminal is being used as a line or page terminal.

The logical properties of the terminal are defined in the system by setting system parameters, through generation of the terminal, by the terminal itself, and through VTSU operating parameters. These defined values are in force at the start of the interactive task; they can be modified within the user's task by means of the MODIFY-TERMINAL-OPTIONS command. The user can obtain information on the current settings and terminal attributes with the aid of the SHOW-TERMINAL-ATTRIBUTES command.

The user can set the following logical properties:

Logical property	Operand	Preset by
Type of screen overflow control	OVERFLOW-CONTROL	Class 2 system parameter TCHOFLO
Number of lines after which screen overflow occurs	MAXIMUM-LINES	Generation of the terminal
End-of-line character	LINE-END-CHARACTER	VTSU operating parameter
Control of display of outputs and the type of input	WRITE-READ-MODE	Class 2 system parameter TCHREAD
Uppercase/lowercase differentiation	LOWER-CASE	Generation of the terminal
Use of graphics	GRAPHICS	Generation of the terminal
Use of an APL character set	APL-CHARACTER-SET	Generation of the terminal
Support for a hardcopy printer	HARDCOPY	Generation of the terminal

Table 74: Logical properties of the terminal (operand and presetting) (Part 1 of 2)

Logical property	Operand	Preset by
Substitute characters for displaying nonprinting characters	SUBSTITUTE-CHARACTER	Dependent on terminal type: – X' 4A' for type 8193 – X' 4A' for type 8193 – X' 07' for all other types ("smudge character")
Acknowledgment system	ACKNOWLEDGE-OUTPUT	Class 2 system parameter TCHTACK
Code table	CODED-CHARACTER-SET	Dependent upon – terminal type – user entry – VTSU operating parameter (see table below)
System input prompt	SYSTEM-PROMPT	Default is a slash(/)
Program input prompt (read with RDATA)	PROGRAM-PROMPT	Default is an asterisk (*)
Terminal roll-up mode	ROLL-UP	VTSU operating parameter TERMROLL

Table 74: Logical properties of the terminal (operand and presetting) (Part 2 of 2)

The following table shows the preset code tables for CODED-CHARACTER-SET, dependent of the terminal type, the user entry for the standard code, and the VTSU operating parameter TIAM-PERM8.

Terminal type / Terminal mode	7-bit	8-bit	8-Bit / Unicode	8-Bit / Unicode
Standard CCS	-	EDF03iRV	EDFxxx	EDFxxx
TIAM-PERM8	-	-	N¹	Y²
Code table(setting after system startup)	EDF03iRV	EDF03iRV	EDF03iRV	EDFxxx

Table 75: Logical properties of the terminal (preset values for the code table)

¹ Corresponds to /MODIFY-TERM-OPTIONS CODE-CHARACTER-SET=*7-BIT

² Corresponds to /MODIFY-TERM-OPTIONS CODE-CHARACTER-SET=*8-BIT-DEFAULT

The default value *UNCHANGED in the various operands means in each case that the existing specification applies.

Format

MODIFY-TERMINAL-OPTIONS

```

OVERFLOW-CONTROL = *UNCHANGED / *NO-CONTROL / *USER-ACKNOWLEDGE / *TIME(...)
    *TIME(...)
        | TIMEOUT = *STD / <integer 0..60>
,MAXIMUM-LINES = *UNCHANGED / <integer 3..255>
,LINE-END-CHARACTER = *UNCHANGED / *NONE / <c-string 1..1>
,WRITE-READ-MODE = *UNCHANGED / *MODIFIED-FIELDS / *NO-FIELDS
,LOWER-CASE = *UNCHANGED / *YES / *NO
,GRAPHICS = *UNCHANGED / *YES / *NO
,APL-CHARACTER-SET = *UNCHANGED / *YES / *NO
,HARDCOPY = *UNCHANGED / *NO / *LOCAL / *CENTRAL
,SUBSTITUTE-CHARACTER = *UNCHANGED / *STD / <c-string 1..1> / <x-string 1..2>
,ACKNOWLEDGE-OUTPUT = *UNCHANGED / *YES / *NO
,CODED-CHARACTER-SET = *UNCHANGED / *7-BIT / *8-BIT-DEFAULT / <name 1..8>
,SYSTEM-PROMPT = *UNCHANGED / *STD / <c-string 1..32 with-low>
,PROGRAM-PROMPT = *UNCHANGED / *STD / <c-string 1..32 with-low>
,ROLL-UP = *UNCHANGED / *STD / *YES / *NO

```

Operands

OVERFLOW-CONTROL = *UNCHANGED / *NO-CONTROL / *USER-ACKNOWLEDGE / *TIME(...)

Type of control in the event of screen overflow.

An overflow is assumed by the system whenever the number of screen lines (still) to be output exceeds the maximum number of lines (MAXIMUM-LINES).

At the start of an output the last user input is taken into consideration in calculating the screen overflow.

If the overflow control is effected through acknowledgments (*USER-ACKNOWLEDGE), the acknowledgment request issued by the system is included in the maximum number of screen lines to be output.

OVERFLOW-CONTROL = *NO-CONTROL

No overflow control. In cases of long screen outputs, the system takes no steps to enable the ESCAPE function (K2 key) or to prevent the premature overwriting of data on the screen.

OVERFLOW-CONTROL = *USER-ACKNOWLEDGE

Overflow control by means of acknowledgments. When screen overflow occurs, the system requests the terminal user with the message % PLEASE ACKNOWLEDGE to enter an acknowledgment. The user can thus determine when the output is to be continued following a screen overflow. Any input other than ESCAPE and BREAK counts as an acknowledgment. After an acknowledgment is received, output is continued with the next screen.

OVERFLOW-CONTROL = *TIME(...)

Overflow control is effected on a time basis. The screen output is continued after the specified delay time has elapsed. When the last screen line is reached, the screen contents displayed are “scrolled” up appropriately with each further output line, and input or output data at the top of the screen is overwritten.

TIMEOUT = *STD / <integer 0..60>

Delay time, in seconds, that is to pass when screen overflow has occurred before further output is displayed.

TIMEOUT = *STD

The last value defined by the user applies. If the user does not specify a value, a wait time of 6 seconds is set.

Note

The value set for time-based control (TIMEOUT) applies even when there is a switch in screen mode (e.g. a switch on termination of a line-mode output back to the formatted input mode of guided dialog).

MAXIMUM-LINES = *UNCHANGED / <integer 3..255>

Maximum number of lines that may be displayed until the next overflow control.

LINE-END-CHARACTER = *UNCHANGED / *NONE / <c-string 1..1>

End-of-line character, to be appended to each line output at the terminal (only applicable to 8110 and 3270).

It may be any character that can be entered from the keyboard; it is used in output to indicate logical end-of-line. Subsequently, display continues in the next line. In input, this character in the input text is passed by the system as NEW LINE to the user program. (Default setting by the system is “\” or “ö”.)

LINE-END-CHARACTER = *NONE

No end-of-line character. For screen output, logical end-of-line is represented only by a change of lines. For input, the function is not available.

WRITE-READ-MODE = *UNCHANGED / *MODIFIED-FIELDS / *NO-FIELDS

Controls the display of output messages and the type of input.

WRITE-READ-MODE = *MODIFIED-FIELDS

Reads modified fields. Data is displayed on the screen in fields. Only the modified fields are transferred to the system.

WRITE-READ-MODE = *NO-FIELDS

Reads unprotected fields. Data is displayed on the screen without fields, input takes place from the beginning of the screen or from the cursor position.

LOWER-CASE = *UNCHANGED / *YES / *NO

Specifies whether output of lowercase letters is to be possible.

GRAPHICS = *UNCHANGED / *YES / *NO

Specifies whether a graphics option can be used.

APL-CHARACTER-SET = *UNCHANGED / *YES / *NO

Specifies whether an APL character set can be used.

HARDCOPY = *UNCHANGED / *NO / *LOCAL / *CENTRAL

Specifies what type of hardcopy logging is to be possible.

HARDCOPY = *NO

No hardcopy printer.

HARDCOPY = *LOCAL

Local hardcopy printer, operable directly at the terminal. This operand is interpreted only if a local hardcopy device was assigned when the connection was established. Otherwise, the operand is ignored.

HARDCOPY = *CENTRAL

Central hardcopy printer, operable on channel 0,...,31 of the same cluster controller to which the terminal is connected. The channel is the one specified at generation of the terminal in PDN (default value = 0).

SUBSTITUTE-CHARACTER = *UNCHANGED / *STD / <c-string 1..1> / <x-string 1..2>

Substitute character to be used in place of nonprinting characters.

In output texts, nonprinting characters are replaced by the specified substitute character.

SUBSTITUTE-CHARACTER = *STD

A device-specific smudge character is used as the substitute character.

ACKNOWLEDGE-OUTPUT = *UNCHANGED / *YES / *NO

Specifies whether terminal output is to be acknowledged within the system.

The value set explicitly for ACKNOWLEDGE-OUTPUT applies for all subsequent output in program and system mode until a new setting is made with MODIFY-TERMINAL-OPTIONS or until EXIT-JOB/LOGOFF.

ACKNOWLEDGE-OUTPUT = *NO

No internal acknowledgment.

Messages that are output immediately prior to EXIT-JOB or LOGOFF may be lost due to the connection being cleared down.

CODED-CHARACTER-SET = *UNCHANGED / *7-BIT / *8-BIT-DEFAULT / <name 1..8>
 Specifies whether the terminal is to operate in 7-bit or 8-bit mode.

CODED-CHARACTER-SET = *7-BIT
 The terminal operates in 7-bit mode.

CODED-CHARACTER-SET = *8-BIT-DEFAULT
 Activates the 8-bit code table of the user entry provided the entry contains an 8-bit code table. The terminal then operates in 8-bit mode. If the user entry contains no 8-bit code table, the terminal continues to operate in 7-bit mode.

CODED-CHARACTER-SET = <name 1..8>
 Name of a code table (CCS).
 Depending on the explicit specification of a code in the VTSUCB (VTSU Control Block), the following situations may arise:

Standard CCS	7	7	7	7	7	7	name	name	name ₁	name	name	name ₁
8-bit terminal	n	n	n	j	j	j	n	n	n	j	j	j
MOD-TERM-OPT C-C-S =	7	8	name	7	8	name	7	8	name ₂	7	8	name ₂
Result	1)	2)	2)	3)	4)	7)	1)	2)	2)	5)	6)	8)

- 1) The command is accepted.
 The terminal works in 7-bit mode.
 First item of information supplied by TSTAT: blank
 Second item of information supplied by TSTAT: blank
- 2) The command is rejected.
 The terminal works in 7-bit mode.
 First item of information supplied by TSTAT: blank
 Second item of information supplied by TSTAT: blank
- 3) The command is accepted.
 The terminal works in 7-bit mode, if no VTSUCB if used or if blanks were detected in the VTSUCB.
 First item of information supplied by TSTAT: blank
 Second item of information supplied by TSTAT: blank
- 4) The command is rejected.
 The terminal works in 7-bit mode, if no VTSUCB if used or if blanks were detected in the VTSUCB.
 First item of information supplied by TSTAT: blank
 Second item of information supplied by TSTAT: blank

- 5) The command is accepted.
 The terminal works in 7-bit mode, if no VTSUCB if used or if blanks were detected in the VTSUCB.
 The terminal works in 8-bit mode if a valid extended code name or *EXTEND was defined in the VTSUCB. In this case, the standard CCS name is used.
 First item of information supplied by TSTAT: name
 Second item of information supplied by TSTAT: blank
- 6) The command is accepted.
 The terminal works in 8-bit mode (with the character set name) if no VTSUCB if used or if blanks were detected in the VTSUCB. It likewise works in 8-bit mode if a valid character set name or *EXTEND was detected in the VTSUCB. In this case, the character set name is used.
 First item of information supplied by TSTAT: name
 Second item of information supplied by TSTAT: name
- 7) The command is accepted if name is supported by the terminal.
 The terminal works in 8-bit mode (with the character set name) if no VTSUCB is used or if no character set name is specified in the VTSUCB.
 First item of information supplied by TSTAT: blank
 Second item of information supplied by TSTAT: name
- 8) The command is accepted if name2 is supported by the terminal.
 The terminal works in 8-bit mode (with the character set name2) if no VTSUCB is used or if no character set name is specified in the VTSUCB
 First item of information supplied by TSTAT: name1
 Second item of information supplied by TSTAT: name2

Working with Unicode code tables

The Unicode variant UTFE (CODED-CHARACTER-SET=UTFE specification) permits Unicode code tables to be used. To select this variant, the terminal mode must be *Unicode* and the terminal type *DSS9763*.

The CODED-CHARACTER-SET=UTFE specification is rejected if this variant cannot be selected. The entry is possible if the output of the SHOW-TERMINAL-ATTRIBUTES command displays the value 240 in one of the up to 16 code tables which are possible (see CHARACTER-SET-i output field in the CAPABILITIES information block, where i=1 to 16).

SYSTEM-PROMPT = *UNCHANGED / *STD / <c-string 1..32 with-low>

Specifies with which type of prompt the system requests command input.

SYSTEM-PROMPT = *STD

The system prompt is a slash (/). This is the value set when the task is started.

SYSTEM-PROMPT = <c-string 1..32 with-low>

The system prompts input with this character string. A maximum of 32 characters may be entered. The string may contain wildcards for which the relevant value will be substituted:

Wildcard	Value substituted
#H	Host name
#J	Job name
#P	Processor name
#S	Station name
#U	User ID

PROGRAM-PROMPT = *UNCHANGED / *STD / <c-string 1..32 with-low>

Specifies with which type of prompt programs will request input read with RDATA.

PROGRAM-PROMPT = *STD

Program entries read with RDATA are prompted with an asterisk (*). This is the value set when the task is started.

PROGRAM-PROMPT = <c-string 1..32 with-low>

Program entries read with RDATA are prompted with this character string. A maximum of 32 characters may be entered. The string may contain wildcards for which the relevant value will be substituted (see SYSTEM-PROMPT operand).

ROLL-UP = *UNCHANGED / *STD / *YES / *NO

Specifies how "old" screen contents is to be treated (terminal roll-up mode).

ROLL-UP = *STD

The value defined in the VTSU operating parameter TERMRoll in the VTSU parameter file applies.

ROLL-UP = *YES

Old screen contents is rolled up.

ROLL-UP = *NO

The old screen contents is deleted up to the write mark when reissued.

Return codes

(SC2)	SC1	Maincode	Meaning
1	0	CMD0001	Command executed successfully
	0	CMD0001	Command not effective until the overflow control has been reactivated
2	0	TIA0500	Command executed with warning; at least one entry has been ignored because of a semantic error
	1	TIA0502	Syntax error
	32	TIA0122	Unrecoverable VTSU-B error
	64	CMD0216	Privilege error

Example

`/show-file proc.time` _____ (1)

```

/      SET-PROC-OPT      ERROR-MECHANISM=*BY-RETURNCODE
/      SET-VAR          A = 1
/REPEAT-1: REPEAT
/          WRITE-TEXT '** It is now &(TIME()).'
/          SET-VAR A = (A + 1)
/          UNTIL      CONDITION = (A > 10)
/EXIT:  EXIT-PROC
/ERROR: IF-BLOCK-ERROR
/      WRITE-TEXT '** Error with subcode1 &(SC1) and subcode2 (SC2) *'
/      HELP-MSG MSG-ID=&(MC)
/      END-IF

% SH00301 WARNING: END OF FILE REACHED
e                                     S*SOF+      1(      1)

```

% SH00500 ':20SG:\$USERXY01.PROC.TIME' CLOSED _____ (2)

`/mod-term-opt overflow-control=no` _____ (3)

```

/call-proc proc.time
** It is now 14:19:50.
** It is now 14:19:50.
** It is now 14:19:50.
** It is now 14:19:50.
** It is now 14:19:50.
** It is now 14:19:50.
** It is now 14:19:50.

```

```

** It is now 14:19:50.
** It is now 14:19:50.
** It is now 14:19:50.
/mod-term-opt system-prompt='Host07:' _____ (4)
Host07:mod-term-opt overflow-control=*user-ack,max-lines=3 _____ (5)
Host07:call-proc proc.time _____ (6)
** It is now 14:23:43.
%PLEASE ACKNOWLEDGE
** It is now 14:23:43.
** It is now 14:23:49.
%PLEASE ACKNOWLEDGE
** It is now 14:23:49.
** It is now 14:23:58.
%PLEASE ACKNOWLEDGE
** It is now 14:23:58.
** It is now 14:23:59.
%PLEASE ACKNOWLEDGE
** It is now 14:23:59.
** It is now 14:24:01.
%PLEASE ACKNOWLEDGE
** It is now 14:24:01.
Host07:mod-term-opt overflow-control=*time(timeout=30) _____ (7)
Host07:call-proc proc.time _____ (8)
** It is now 14:24:46.
** It is now 14:24:46.
** It is now 14:24:46.
** It is now 14:25:16.
** It is now 14:25:16.
** It is now 14:25:16.
** It is now 14:25:46.
** It is now 14:25:46.
** It is now 14:25:46.
** It is now 14:26:16.

```

- (1) The SHOW-FILE command displays the contents of the file *PROC.TIME*. This is an S procedure which determines the current time ten times (builtin function TIME()) and outputs it to SYSOUT by means of the WRITE-TEXT command. E (END) terminates the output of the SHOW-FILE command.
- (2) Overflow control is deactivated (*OVERFLOW-CONTROL=*NO-CONTROL*).
- (3) Calls the procedure *PROC.TIME*. Since no screen overflow occurs, the message giving the time is output ten times in succession. The time displayed does not change on account of the instantaneous output.
- (4) The character string *Host07:* is defined as the input prompt for commands.
- (5) Overflow control is set to **USER-ACKNOWLEDGE* with a maximum of 3 output lines.

- (6) Calls the procedure *PROC.TIME*. After every 3 lines the system requests an acknowledgment from the user. The first overflow occurs immediately after the first time output since the procedure call and acknowledgment request are included in calculating the maximum number of lines. The user acknowledges, for example by pressing the **[DUE]** key. The output then continues. Different times are displayed on account of the delay.
- (7) Overflow control is set to a delay of 30 seconds.
The maximum number of lines is not changed.
- (8) Calls the procedure *PROC.TIME*. A delay of 30 seconds elapses after every 3 lines. The delay can be seen from the times output: the time advances 30 seconds after every three output lines.

MODIFY-TEST-OPTIONS

Modify task-specific settings for testing and diagnostics

Description status:	AIDSYSA V19.0A
Functional area:	Program control
Domain:	PROGRAM
Privileges:	all privileges bar OPERATING

Function

The MODIFY-TEST-OPTIONS command allows the user to modify the task-specific test and diagnostic options:

- The test and diagnostic privilege values can be modified for the user's own tasks (PRIVILEGE operand). The maximum possible test privilege values for AID are defined in the user entry and cannot be exceeded.
- Users can control the options for requests for user and area dumps for their own tasks and tasks under their own user IDs (USERDUMP-OPTIONS operands). Users can specify whether a dump is to be generated in response to an event that is capable of generating a dump. They can specify the pubset on which the created dumps are to be stored, whether duplicates of dumps are to be suppressed and the maximum number of dumps that are to be created. They can also specify whether a dump is to contain DIV windows and data spaces and swapped in areas of POSIX memory mapping.
- Users can permit or prohibit the use of the hardware or linkage audits for their own tasks (AUDIT operand).
- The static AID test with a lower test privilege can be permitted or prohibited for other tasks running under the user's own user ID (OWN-UID-DEBUGGING operand). If testing with reduced privileges is permitted then, in the case of read access to another task, the same test privileges as for the user's own task are sufficient. In the case of write access, a write privilege ≥ 2 is required.

Privileged functions

Privileged users (TSOS privilege) can control the dump request options for any task (TSN operand).

Format

MODIFY-TEST-OPTIONS	Alias: MDTSO
<pre> PRIVILEGE = <u>*UNCHANGED</u> / *PARAMETERS(...) *PARAMETERS(...) READ = <integer 1..9> ,WRITE = <integer 1..9> ,USERDUMP-OPTIONS = <u>*UNCHANGED</u> / *PARAMETERS(...) *PARAMETERS(...) TSN = *OWN / <alphanum-name 1..4> / <c-string 1..4> ,DUMP = <u>*UNCHANGED</u> / *STD / *YES / *NO / *SYSTEM ,DUMP-CONTENTS = <u>*UNCHANGED</u> / *PARAMETERS(...) *PARAMETERS(...) DATA-IN-VIRTUAL = *STD / *NO / *YES ,DATA-SPACES = *STD / *NO / *YES ,MEMORY-MAP = *STD / *NO / *YES ,OUTPUT-PUBSET = <u>*UNCHANGED</u> / *DEFAULT-PUBSET / <cat-id 1..4> ,MAXIMUM-NUMBER = <u>*UNCHANGED</u> / *UNLIMITED / <integer 1..255> ,SUPPRESS-DUPLICATES = <u>*UNCHANGED</u> / *NO / *YES ,AUDIT = <u>*UNCHANGED</u> / *PARAMETERS(...) *PARAMETERS(...) HARDWARE-AUDIT = <u>*UNCHANGED</u> / *NOT-ALLOWED / *ALLOWED ,LINKAGE-AUDIT = <u>*UNCHANGED</u> / *NOT-ALLOWED / *ALLOWED ,OWN-UID-DEBUGGING = <u>*UNCHANGED</u> / *PARAMETERS(...) *PARAMETERS(...) ACCEPT-ACCESS = <u>*UNCHANGED</u> / *NO / *YES(...) *YES(...) PASSWORD = *NONE / <c-string 1..8> ,ENABLE-ACCESS = <u>*UNCHANGED</u> / *NO / *YES(...) *YES(...) PASSWORD = <c-string 1..8> </pre>	

Operands

PRIVILEGE = *UNCHANGED / *PARAMETERS(...)

Test privilege values for testing and diagnostics.

This operand is primarily required for testing using AID.

Values specified here must not exceed the maximum values specified in the user entry. In addition, in the user entry, systems support may specify whether consent of the operator or systems support is necessary to increase the values.

See SHOW-USER-ATTRIBUTES command, output fields *READ-PRIVILEGE*, *WRITE-PRIVILEGE* and *MODIFICATION*, grouped under *TEST-OPTIONS*.

PRIVILEGE = *UNCHANGED

The current specification applies, i.e. the values last set in MODIFY-TEST-OPTIONS, otherwise, the standard system values apply.

PRIVILEGE = *PARAMETERS(...)

READ = <integer 1..9>

Value for read privilege. Default value: 1

WRITE = <integer 1..9>

Value for write privilege. Default value: 1

USERDUMP-OPTIONS = *UNCHANGED / *PARAMETERS(...)

Controls the output of user and area dumps for the user's own tasks and tasks under the user's own user ID.

USERDUMP-OPTIONS = *PARAMETERS(...)

TSN = *OWN / <alphanum-name 1..4> / <c-string 1..4>

Specifies the task for which the output of user dumps is to be modified.

TSN = *OWN

The modifications apply to the user's own task.

TSN = <alphanum-name 1..4> / <c-string 1..4>

TSN of the task to which the modifications are to apply. Nonprivileged callers may only specify tasks running under their own user IDs.

DUMP = *UNCHANGED / *STD / *YES / *NO / *SYSTEM

Specifies whether a user or area dump is actually to be created in the event of a dump request.

DUMP = *UNCHANGED

The current setting applies, i.e. the most recent setting for the specified task made using MODIFY-TEST-OPTIONS. In case no specification was made, the default system setting will be effective (corresponds to the operand value *STD).

DUMP = *STD

The standard control is in effect:

In interactive mode, the system asks: DUMP DESIRED? REPLY (Y=YES, N=NO)

If the user answers "N", the memory dump is suppressed. If the answer is "Y", the system outputs the memory dump and issues the message

DUMP IN PROGRESS, PLEASE WAIT

In batch mode and in procedures, the memory dump is suppressed and the following message is issued: SYSTEM REGULATIONS PROHIBIT DUMP

DUMP = *YES

Every memory dump is output.

DUMP = *NO

No memory dump is to be output if cause for one occurs during the current job.

DUMP = *SYSTEM

A system dump is generated instead of a user or area dump. However, this conversion to a system dump is performed only if one of the following conditions relating to test privileges is fulfilled:

- The task making the DUMP=*SYSTEM setting possesses a read privilege ≥ 3 .
- The task in which the dump occurs possesses a read privilege ≥ 3 .

A converted dump is handled in the same way as a genuine system dump, i.e. the control mechanisms that apply to system dumps also apply to such dumps (instead of those applying to user and area dumps).

DUMP-CONTENTS = *UNCHANGED / *PARAMETERS(...)

Determines the content of user dumps for the specified task. These settings do not apply to area dumps.

DUMP-CONTENTS = *PARAMETERS(...)**DATA-IN-VIRTUAL = *STD / *NO / *YES**

Specifies whether user dumps also contain DIV windows. The default value is *STD, i.e. DIV windows are included in user dumps if no entry was made in the CDUMP macro.

DATA-SPACES = *STD / *NO / *YES

Specifies whether user dumps also contain data spaces. The default value is *STD, i.e. data spaces are included in user dumps if no entry was made in the CDUMP macro.

MEMORY-MAP = *STD / *NO / *YES

Specifies whether user dumps contain swapped in areas of POSIX memory mapping. The default value is *STD, i.e. POSIX mapping pages are issued in the user dumps if no particular specifications are made in the dump request.

OUTPUT-PUBSET = *UNCHANGED / *DEFAULT-PUBSET / <cat-id 1..4>

Defines the pubset on which any user or area dumps resulting from the specified task are to be created. They are stored on the corresponding pubset either under the task's user ID or, if the task involves protected data, under the SYSUSER user ID.

OUTPUT-PUBSET = *UNCHANGED

The current setting applies, i.e. the most recent setting for the specified task made using MODIFY-TEST-OPTIONS. If no setting was made then the system defaults apply (OUTPUT-PUBSET=*DEFAULT-PUBSET).

OUTPUT-PUBSET = *DEFAULT-PUBSET

User or area dumps are stored on the default pubset declared for the user ID of the specified task in the user catalog. Dumps involving protected data are stored under the SYSUSER user ID on the default pubset.

OUTPUT-PUBSET = <cat-id 1..4>

Catalog ID of the pubset on which user or area dumps are to be stored.

MAXIMUM-NUMBER = *UNCHANGED / *UNLIMITED / <integer 1..255>

Defines the maximum number of user or area dumps that are to be generated for the specified task.

MAXIMUM-NUMBER = *UNCHANGED

The current setting applies, i.e. the most recent setting for the specified task made using MODIFY-TEST-OPTIONS. If no setting was made then the system defaults apply (MAXIMUM-NUMBER=*UNLIMITED).

MAXIMUM-NUMBER = *UNLIMITED

There is no restriction on the maximum number of user or area dumps.

MAXIMUM-NUMBER = <integer 1..255>

Maximum number of user or area dumps.

SUPPRESS-DUPPLICATES = *UNCHANGED / *NO / *YES

Specifies whether or not the output of a user or area dump for the specified task should be suppressed if these represent duplicates of dumps that have already been created. A dump is treated as a duplicate if a dump with the same interrupt weight has already occurred at the same point within the same program.

SUPPRESS-DUPPLICATES = *UNCHANGED

The current setting applies, i.e. the most recent setting for the specified task made using MODIFY-TEST-OPTIONS. If no setting was made then the system defaults apply (SUPPRESS-DUPPLICATES=*NO).

SUPPRESS-DUPPLICATES = *NO

The output of dump duplicates should not be suppressed.

SUPPRESS-DUPPLICATES = *YES

The output of dump duplicates should be suppressed..

AUDIT = *UNCHANGED / *PARAMETERS(...)

Specifies whether hardware audits and linkage audits may be controlled using commands within a task.

HARDWARE-AUDIT = *UNCHANGED / *NOT-ALLOWED / *ALLOWED

Specifies whether the hardware audit may be controlled using commands within the task.

HARDWARE-AUDIT = *NOT-ALLOWED

The hardware audit may not be controlled using commands within the task.

HARDWARE-AUDIT = *ALLOWED

The hardware audit may be controlled using commands within the task. Use of the hardware audit has to be allowed for the user ID.

LINKAGE-AUDIT = *UNCHANGED / *NOT-ALLOWED / *ALLOWED

Specifies whether the linkage audit may be controlled using commands within the task.

LINKAGE-AUDIT = *NOT-ALLOWED

The linkage audit may not be controlled using commands within the task.

LINKAGE-AUDIT = *ALLOWED

The linkage audit may be controlled using commands within the task. Use of the hardware audit has to be allowed for the user ID.

OWN-UID-DEBUGGING = *UNCHANGED / *PARAMETERS(...)

Controls the static AID test with lower test privileges for other tasks running under the user's own user ID.

If testing with reduced privileges is permitted then, in the case of read access to another task, the same test privileges as for the user's own task are sufficient. In the case of write access, a write privilege ≥ 2 is required.

If testing with lower privileges is not permitted then test privilege 8 is required for both reading and writing.

OWN-UID-DEBUGGING = *UNCHANGED

The current setting applies, i.e. the most recent setting for the specified task made using MODIFY-TEST-OPTIONS. If no setting was made then the system defaults apply (ACCEPT-ACCESS=*NO and ENABLE-ACCESS=*NO).

OWN-UID-DEBUGGING = *PARAMETERS(...)**ACCEPT-ACCESS = *UNCHANGED / *NO / *YES(...)**

Specifies whether the user's own task permits testing with lower test privileges by other tasks running under the user's ID.

ACCEPT-ACCESS = *UNCHANGED

The current setting applies, i.e. the most recent setting for the specified task made using MODIFY-TEST-OPTIONS. If no setting was made then the system defaults apply (ACCEPT-ACCESS=*NO).

ACCEPT-ACCESS = *NO

The user's own task prohibits testing with a lower test privilege by other tasks running under the user's own ID.

ACCEPT-ACCESS = *YES(...)

The user's own task prohibits testing with a lower test privilege by other tasks running under the user's own ID (observer tasks). It therefore declares itself as the test task.

PASSWORD = *NONE / <c-string 1..8>

Specifies whether a password has to be entered in the event of testing by another task (observer task).

PASSWORD = *NONE

No password is declared. Observer tasks do not have to log on explicitly at the test tasks.

PASSWORD = <c-string 1..8>

Password that has to be used by an observer task for testing (see the ENABLE-ACCESS operand). Only the password last specified by the test task can be used for logon.

ENABLE-ACCESS = *UNCHANGED / *NO / *YES(...)

Specifies whether the user's own task can identify itself to a test task running under the user's own ID as an observer task for testing with lower privileges.

ENABLE-ACCESS = *UNCHANGED

The current setting applies, i.e. the most recent setting for the specified task made using MODIFY-TEST-OPTIONS. If no setting was made then the system default applies (ACCEPT-ACCESS=*NO). (ENABLE-ACCESS=*NO).

ENABLE-ACCESS = *NO

Observer task identification is revoked. This makes all previously specified passwords invalid.

ENABLE-ACCESS = *YES(...)

The user's own task identifies itself to a test task running under the user's own ID as an observer task. Such a task is only permitted to observe a test task if the test task has not declared any password protection (in this case the setting ENABLE-ACCESS=*YES is obsolete) or if one of the last 8 passwords entered for observation purposes corresponds to the password of the test task.

PASSWORD = <c-string 1..8>

Password used to identify the task to a test task.

Return codes

(SC2)	SC1	Maincode	Meaning
	0	CMD0001	Command successfully executed
	1	CMD2201	Error in function call: function invalid
	3	CMD2203	Error in function call: version invalid
	1	IDA0300	Syntax error
	32	CMD0221	System error
	64	CMD0216	Error: command privilege missing
	64	IDA0301	Semantic error

MODIFY-USER-ATTRIBUTES

Modify catalog entry for user

Description status:	SRPMNUC V19.0A
Functional area:	User management
Domain:	USER-ADMINISTRATION
Privileges:	STD-PROCESSING USER-ADMINISTRATION
Routing code:	\$

Function

If an entry for the user catalog of the home pubset is modified, the access rights to BS2000 (e.g. account number, password of the user ID, etc.) and the access rights to a pubset (default catalog ID) can be reassigned. These specifications are only checked in the user catalog of the home pubset for user compliance (logon validation).

The command modifies user attributes on SF or SM pubsets, which means that the user catalog entry is modified for the associated ID.

If an entry is created in a user catalog of an imported pubset, pubset-specific information must be stored. Systems support must define an upper limit for the user up to which the user may occupy storage space on this pubset. In addition, it can grant the user permission to exceed this limit. These new declarations, however, take effect only after the user logs on again, not for current tasks.

The default value *UNCHANGED in the corresponding operands means that the previously valid definition still applies.

Restriction

The only nonprivileged users (STD-PROCESSING privilege) authorized to issue this command are those designated as group administrators. The actions a group administrator can take are defined by systems support. On setting up and managing user groups see the "SECOS" manual [35].

Format

(Part 1 of 3)

MODIFY-USER-ATTRIBUTES

```

USER-IDENTIFICATION = <name 1..8>
,PROTECTION-ATTRIBUTE = *UNCHANGED / *PARAMETERS(...)
    *PARAMETERS(...)
        LOGON-PASSWORD = *UNCHANGED / *NONE / <c-string 1..8> / <c-string 9..32> /
            <x-string 1..16> / *SECRET
        ,PASSWORD-ENCRYPTION = *YES / *NO
        ,PASSWORD-MANAGEMENT = *UNCHANGED / *BY-USER / *BY-ADMINISTRATOR /
            *USER-CHANGE-ONLY
        ,TAPE-ACCESS = *UNCHANGED / *STD / *PRIVILEGED / *READ / *BYPASS-LABEL / *ALL
        ,FILE-AUDIT = *UNCHANGED / *NO / *ALLOWED
,MAILING-ADDRESS = *UNCHANGED / *NONE / <c-string 1..64 with-low> / <x-string 1..128>
,EMAIL-ADDRESS = *UNCHANGED / *NONE / <composed-name 1..1800> /
    <c-string 1..1800 with-low> / <x-string 1..3600>
,PUBLIC-SPACE-LIMIT = *UNCHANGED / *MAXIMUM / *STD / <integer 0..2147483647 2Kbyte>
,PUBLIC-SPACE-EXCESS = *UNCHANGED / *NO / *ALLOWED / *TEMPORARILY-ALLOWED
,ADDRESS-SPACE-LIMIT = *UNCHANGED / *STD / <integer 1..2147483647 Mbyte>
,MAX-ACCOUNT-RECORDS = *UNCHANGED / *NO-LIMIT / <integer 0..32767>
,PROFILE-ID = *UNCHANGED / *NONE / <structured-name 1..30>
,PUBSET = *HOME / <cat-id 1..4>
,RESIDENT-PAGES = *UNCHANGED / *STD / *MAXIMUM / <integer 0..2147483647 4Kbyte>
,CSTMP-MACRO-ALLOWED = *UNCHANGED / *NO / *YES
,DEFAULT-PUBSET = *UNCHANGED / *HOME / <cat-id 1..4>
,TEST-OPTIONS = *UNCHANGED / *PARAMETERS(...)
    *PARAMETERS(...)
        READ-PRIVILEGE = *UNCHANGED / <integer 1..9>
        ,WRITE-PRIVILEGE = *UNCHANGED / <integer 1..9>
        ,MODIFICATION = *UNCHANGED / *CONTROLLED / *UNCONTROLLED
,AUDIT = *PARAMETERS (...)
    *PARAMETERS(...)
        HARDWARE-AUDIT = *UNCHANGED / *ALLOWED / *NOT-ALLOWED
        ,LINKAGE-AUDIT = *UNCHANGED / *ALLOWED / *NOT-ALLOWED
,DEFAULT-MSG-LANGUAGE = *UNCHANGED / <name 1..1> / *STD
,FILE-NUMBER-LIMIT = *UNCHANGED / *MAXIMUM / <integer 0..16777215>

```

```

, JV-NUMBER-LIMIT = *UNCHANGED / *MAXIMUM / <integer 0..16777215>
, TEMP-SPACE-LIMIT = *UNCHANGED / *MAXIMUM / <integer 0..2147483647 2Kbyte>
, DMS-TUNING-RESOURCES = *UNCHANGED / *NONE / *CONCURRENT-USE / *EXCLUSIVE-USE
, CODED-CHARACTER-SET = *UNCHANGED / *STD / <name 1..8>
, PHYSICAL-ALLOCATION = *UNCHANGED / *NOT-ALLOWED / *ALLOWED
, CRYPTO-SESSION-LIMIT = *UNCHANGED / *STD / *MAXIMUM / <integer 0..32767>
, NET-STORAGE-USAGE = *UNCHANGED / *NOT-ALLOWED / *ALLOWED
, ACCOUNT-ATTRIBUTES = *UNCHANGED / *ADD(...) / *MODIFY(...) / *REMOVE(...)

*ADD(...)
  ACCOUNT = <alphanum-name 1..8>
  , CPU-LIMIT = *STD / *MAXIMUM / <integer 0..2147483647 seconds>
  , SPOOLOUT-CLASS = 0 / *STD / <integer 0..255>
  , MAXIMUM-RUN-PRIORITY = *STD / <integer 30..255>
  , MAX-ALLOWED-CATEGORY = *STD / *TP / *SYSTEM
  , PRIVILEGE = *NO / *PARAMETERS(...) / list-poss(3): *NO-CPU-LIMIT /
    *START-IMMEDIATE / *INHIBIT-DEACTIVATION
    *PARAMETERS(...)
      NO-CPU-LIMIT = *NO / *YES
      , START-IMMEDIATE = *NO / *YES
      , INHIBIT-DEACTIVATION = *NO / *YES
    , POSIX-RLOGIN-DEFAULT = *NO / *YES
  , LOGON-DEFAULT = *NO / *YES

*MODIFY(...)
  ACCOUNT = <alphanum-name 1..8>
  , CPU-LIMIT = *UNCHANGED / STD / *MAXIMUM / <integer 0..2147483647 seconds>
  , SPOOLOUT-CLASS = *UNCHANGED / *STD / <integer 0..255>
  , MAXIMUM-RUN-PRIORITY = *UNCHANGED / <integer 30..255>
  , MAX-ALLOWED-CATEGORY = *UNCHANGED / *STD / *TP / *SYSTEM
  , PRIVILEGE = *UNCHANGED / *NO / *PARAMETERS(...) / list-poss(3): *NO-CPU-LIMIT /
    *START-IMMEDIATE / *INHIBIT-DEACTIVATION
    *PARAMETERS(...)
      NO-CPU-LIMIT = *UNCHANGED / *NO / *YES
      , START-IMMEDIATE = *UNCHANGED / *NO / *YES
      , INHIBIT-DEACTIVATION = *UNCHANGED / *NO / *YES
    , POSIX-RLOGIN-DEFAULT = *UNCHANGED / *NO / *YES
  , LOGON-DEFAULT = *UNCHANGED / *NO / *YES

```

***REMOVE(...)**
 | **ACCOUNT** = list-poss(10): <alphanum-name 1..8>

Operands

USER-IDENTIFICATION = <name 1..8>

Defines the name of the user ID for which the entry is to be modified.

PROTECTION-ATTRIBUTE = *UNCHANGED / *PARAMETERS(...)

Defines protection attributes.

PROTECTION-ATTRIBUTE = *PARAMETERS(...)

Individual protection attributes are to be modified.

LOGON-PASSWORD = *UNCHANGED / *NONE / <c-string 1..8> / <c-string 9..32> / <x-string 1..16> / *SECRET

Password protecting the user ID from unauthorized access (long password (<c-string 9..32>), see the MODIFY-USER-PROTECTION command).

PASSWORD-ENCRYPTION = *YES / *NO

The password of the user ID is encrypted after entry or is stored in its original form. Password encryption presupposes that the system parameter ENCRYPT=Y is set in the parameter file (see the "Introduction to System Administration" [14]).

PASSWORD-MANAGEMENT = *UNCHANGED / *BY-USER / *BY-ADMINISTRATOR / *USER-CHANGE-ONLY

Specifies the user's rights with regard to modification of his password.

PASSWORD-MANAGEMENT = *BY-USER

The user may define, modify or delete a password.

PASSWORD-MANAGEMENT = *BY-ADMINISTRATOR

Only systems support staff may define, modify or delete the password for the user ID.

PASSWORD-MANAGEMENT = *USER-CHANGE-ONLY

The user may define and modify a password.

Deletion of the password, i.e. cancellation of access rights, is not permissible.

TAPE-ACCESS = *UNCHANGED / *STD / *PRIVILEGED / *BYPASS-LABEL / *ALL

Defines whether error messages generated during label checking of tapes may be ignored for the user concerned.

TAPE-ACCESS = *STD

Error messages must not be ignored.

TAPE-ACCESS = *PRIVILEGED

The following error messages for input and output files may be ignored by the owner of the tape or by systems support staff:

- invalid volume serial number (VSN)
- tape is write-protected
- invalid file set identifier in the HDR1 label of the tape.

TAPE-ACCESS = *READ

The user may ignore error messages relating to input files; label checking is not deactivated. The following errors may result in messages during tape processing:

- invalid volume serial number (VSN)
- invalid file name
- invalid label on tape
- invalid access method
- invalid file sequence number on tape
- tape mark instead of end-of-volume label on tape
- double tape mark instead of end-of-volume label on tape.

TAPE-ACCESS = *BYPASS-LABEL

Label checking and thus any data protection for tape files is deactivated for tapes processed in INPUT or REVERSE mode. This privilege implies the TAPE-ACCESS=*READ function.

TAPE-ACCESS = *ALL

All error messages which have "I" (ignore) as a possible response may be ignored. This privilege implies the TAPE-ACCESS=*PRIVILEGED and TAPE-ACCESS=*BYPASS-LABEL functions.

FILE-AUDIT = *UNCHANGED / *NO / *ALLOWED

Defines whether the user is authorized to activate the AUDIT mode. This mode serves to monitor DMS accesses to files and file generations via system exit routines or, if the SECOS software product is used, by the SAT component.

MAILING-ADDRESS = *UNCHANGED / <c-string 1..64 with-low> / <x-string 1..128>

Mailing address for spoolout lists.

EMAIL-ADDRESS = *UNCHANGED / *NONE / <composed-name 1..1800> / <c-string 1..1800 with-low> / <x-string 1..3600>

Specifies an email address or a list of email addresses for the users of this user ID. The addresses must be entered in the format '<local-part>@<domain>[, . . .]'. Optionally an address can also be prefixed by an address name in parentheses (see ADD-USER, "Example" on page 2-149). A list consists of multiple addresses separated by a comma and can only be specified as a string (c or x string).

The address or address list entered is evaluated when a file is sent by email (see the MAIL-FILE command).

PUBLIC-SPACE-LIMIT = *UNCHANGED / *STD / *MAXIMUM / <integer 0..2147483647 2Kbyte>

Assigns the maximum storage space the user may occupy for his files on public volumes on the pubset allocated with the PUBSET operand.

PUBLIC-SPACE-LIMIT = *STD

Allocates the user 16,777,215 PAM pages.

PUBLIC-SPACE-LIMIT = *MAXIMUM

Allocates the user 2,147,483,647 PAM pages.

PUBLIC-SPACE-EXCESS = *UNCHANGED / *NO / *TEMPORARILY-ALLOWED / *ALLOWED

Defines whether the user may exceed the limit defined by the PUBLIC-SPACE-LIMIT operand for the storage space on the allocated pubset. This authorization is restricted to user jobs started before this limit was reached.

PUBLIC-SPACE-EXCESS = *TEMPORARILY-ALLOWED

The storage space limit may be exceeded, provided that the upper limit had not been reached at the time of the SET-LOGON-PARAMETERS command.

ADDRESS-SPACE-LIMIT = *UNCHANGED / *STD / <integer 1..2147483647 Mbyte>

Defines how much user memory a task can request under this user ID. The user memory comprises both conventional class-6 memory (program space) and (data spaces). The maximum user memory depends on the size of the virtual memory and can be less than the value specified here.

ADDRESS-SPACE-LIMIT = *STD

The value of the system parameter SYSGJASL is assigned (the system parameter SYSGJASL has the default value 16 MB, see the "Introduction to System Administration" [14]).

MAX-ACCOUNT-RECORDS = *UNCHANGED / *NO-LIMIT / <integer 0..32767>

Defines how many user-specific accounting records for each job or program are allowed to be written into the accounting file of the system.

MAX-ACCOUNT-RECORDS = *NO-LIMIT

The user is authorized to write any number of user-specific accounting records and accounting records of his own in the accounting file.

MAX-ACCOUNT-RECORDS = <integer 0..32767>

Defines how many user-specific accounting records can be written in the system accounting file for each job or program. The user is not authorized to add accounting records of his own.

PROFILE-ID = *UNCHANGED / *NONE / <structured-name 1..30>

Determines whether the user ID is assigned an SDF-PROFILE-ID. This PROFILE-ID characterizes a (SDF) group of user IDs which use a common group syntax file. Systems support can effect direct assignment of a user ID to a group syntax file by means of a suitable entry in the SDF parameter file.

PROFILE-ID = *NONE

The user is not assigned a PROFILE-ID and thus no group syntax file.

PROFILE-ID = <structured-name 1..30>

Defines the name of the PROFILE-ID which can be assigned to a group syntax file in the SDF parameter file.

PUBSET =

Defines the pubset whose user catalog is to accept the entry.

PUBSET = *HOME

The entry is made in the user catalog of the home pubset.
As a result, system access authorizations are redefined.

PUBSET = <cat-id 1..4>

Catalog identifier of the pubset whose user catalog is to accept the entry.

RESIDENT-PAGES = *UNCHANGED / *STD / *MAXIMUM / <integer 0..2147483647 4Kbyte>

Defines the maximum number of resident main memory pages available to the user ID.

RESIDENT-PAGES = *STD

The user may use 32,767 resident main memory pages.

RESIDENT-PAGES = *MAXIMUM

The user may use 2,147,483,647 resident main memory pages.

CSTMP-MACRO-ALLOWED = *UNCHANGED / *NO / *YES

Determines whether the user may use the CSTMP macro in his programs. The user can use the CSTMP macro to write-protect a memory pool (in class 6 memory) that can be shared by multiple users or explicitly cancel this protection. The macro is described in detail in the “Executive Macros” manual [22].

DEFAULT-PUBSET = *UNCHANGED / *HOME / <cat-id 1..4>

Assigns the user ID a default pubset on which the user can store his files and request storage space. Systems support can change the DEFAULT-PUBSET operand in any user catalog of an imported pubset. However, the user default pubset is determined only with the aid of the user catalog of the home pubset. For the TSOS user ID the DEFAULT-PUBSET value must be identical to the PUBSET value.

User jobs which have the status HELD-BY-PUBSET due to the non-availability of a default pubset are released for restart once the newly defined default pubset is available.

DEFAULT-PUBSET = *HOME

Defines the home pubset to be the user default pubset.

DEFAULT-PUBSET = <cat-id 1..4>

Catalog identifier of the pubset to be used as the user default pubset of the user ID.

TEST-OPTIONS = *UNCHANGED / *PARAMETERS(...)

Defines the maximum possible privilege for testing and diagnostic analysis of program and hardware. The test privilege is interpreted by the software products AID and DAMP, by the access method ANITA and by hardware test and diagnostics products (TDPs) when performing maintenance work under the user ID which has the HARDWARE-MAINTENANCE system privilege (by default: SERVICE).

TEST-OPTIONS = *PARAMETERS(...)

Defines the maximum permitted privilege levels for read and write access. Even at privilege level 2 the user has access to task-specific, sensitive data (system tables and control blocks). Higher values should be allocated only on request and for a limit period to selected user IDs. The values possible for this and a description can be found in [section “Overview of test privileges” on page 1-106](#).

READ-PRIVILEGE = *UNCHANGED / <integer 1..9>

Defines the maximum read privilege.

WRITE-PRIVILEGE = *UNCHANGED / <integer 1..9>

Defines the maximum write privilege.

MODIFICATION = *UNCHANGED / *UNCONTROLLED / *CONTROLLED

Specifies whether the user requires the operator’s permission to modify his/her current test privilege.

MODIFICATION = *UNCONTROLLED

The user does not require the operator’s permission.

MODIFICATION = *CONTROLLED

The user requires the operator's permission.

AUDIT = *PARAMETERS(...)

Defines user-specific audit authorization. Authorization may be assigned to users separately for hardware audit and linkage audit. System-wide availability of the audit function is defined via the AUDALLOW system parameter.

Note Hardware audits are only supported on systems with /390 architecture.

HARDWARE-AUDIT = *UNCHANGED / *ALLOWED / *NOT-ALLOWED

Specifies whether a user is authorized to control the hardware audit mode. The audit mode can be controlled by means of the START-, STOP-, HOLD- and RESUME-HARDWARE-AUDIT commands and via the AUDIT macro for the function states TU (task unprivileged) and TPR (task privileged). Modifications only affect the user ID's new tasks.

HARDWARE-AUDIT = *ALLOWED

The user is allowed to control the hardware audit mode, provided the audit function is available throughout the system.

HARDWARE-AUDIT = *NOT-ALLOWED

The user is not allowed to control the hardware audit mode.

LINKAGE-AUDIT = *UNCHANGED / *ALLOWED / *NOT-ALLOWED

Specifies whether a user is authorized to control the linkage audit mode. The audit mode can be controlled by means of the START-, STOP-, HOLD- and RESUME-LINKAGE-AUDIT commands and via the AUDIT macro for the function states TU (task unprivileged), TPR (task privileged) and SIH (service interrupt handling). Modifications only affect the user ID's new tasks.

LINKAGE-AUDIT = *ALLOWED

The user is allowed to control the linkage audit mode, provided the audit function is available throughout the system.

LINKAGE-AUDIT = *NOT-ALLOWED

The user is not allowed to control the linkage audit mode.

DEFAULT-MSG-LANGUAGE = *UNCHANGED / *STD / <name 1..1>

Specifies the language in which messages are output by default.

DEFAULT-MSG-LANGUAGE = *STD

The language defined using the MSGLPRI system parameter is used.

FILE-NUMBER-LIMIT =

Specifies the maximum number of files that may be created. This upper limit, or any lower value, may be assigned to subgroups or group members.

FILE-NUMBER-LIMIT = *MAXIMUM

The maximum number of files is 16,777,215.

FILE-NUMBER-LIMIT = <integer 0..16777215>

Specifies the maximum possible number of catalog entries as an exact number.

JV-NUMBER-LIMIT =

Specifies the maximum number of job variables that may be created. This upper limit, or any lower value, may be assigned to subgroups or group members.

JV-NUMBER-LIMIT = *MAXIMUM

The maximum number of job variables is 16,777,215.

JV-NUMBER-LIMIT = <integer 0..16777215>

Specifies the maximum possible number of job variables as an exact number.

TEMP-SPACE-LIMIT =

Specifies the maximum amount of temporary storage space which may be occupied on the shared volumes specified in the PUBSET operand.

TEMP-SPACE-LIMIT = *MAXIMUM

The maximum amount of storage space is 2,147,483,647 PAM pages.

TEMP-SPACE-LIMIT = <integer 0..2147483647 *2Kbyte*>

Specifies exactly the amount of temporary storage space.

DMS-TUNING-RESOURCES =

Specifies which performance measures may be utilized, and the form in which they may be used.

DMS-TUNING-RESOURCES = *NONE

No tuning measures may be utilized.

DMS-TUNING-RESOURCES = *CONCURRENT-USE

The user may reserve preferred resources, but in doing so competes with all other users who have the same authorization.

DMS-TUNING-RESOURCES = *EXCLUSIVE-USE

The user may make exclusive reservations of preferred resources.

Permitted performance measures for the home and data pubsets

PUBSET = *HOME				
DMS-TUNING-RESOURCES=	Resident ISAM pools	Resident FASTPAM environment	File attribute PERFORMANCE	
			=HIGH	=VERY-HIGH
4	no	no	no	-
*CONCURRENT-USE	-	no	-	-
*EXCLUSIVE-USE	-	-	-	-

PUBSET = *HOME				
DMS-TUNING-RESOURCES=	Resident ISAM pools	Resident FASTPAM environment	File attribute PERFORMANCE	
			=HIGH	=VERY-HIGH
4	-	-	no	no
*CONCURRENT-USE	-	-	-	no
*EXCLUSIVE-USE	-	-	-	-

Home subset	Data subset	Permitted performance measures
4	4	- None
*CONCURRENT-USE	4	- Resident ISAM pools
*EXCLUSIVE-USE	4	- Resident ISAM pools - Resident FASTPAM environment
4	*CONCURRENT-USE	- File attribute PERFORMANCE = HIGH on data subset
4	*EXCLUSIVE-USE	- File attribute PERFORMANCE = HIGH on data subset - File attribute PERFORMANCE = VERY-HIGH on data subset
*CONCURRENT-USE	*CONCURRENT-USE	- Resident ISAM pools
*CONCURRENT-USE	*EXCLUSIVE-USE	- Resident ISAM pools - File attribute PERFORMANCE = VERY-HIGH on data subset
*EXCLUSIVE-USE	*CONCURRENT-USE	- Resident ISAM pools - Resident FASTPAM environment
*EXCLUSIVE-USE	*EXCLUSIVE-USE	- Resident ISAM pools - Resident FASTPAM environment - File attribute PERFORMANCE = VERY-HIGH on data subset

Table 76: Permitted performance measures (ADD-USER command)

CODED-CHARACTER-SET = *UNCHANGED / *STD / <name 1..8>

Specifies which CODED-CHARACTER-SET (CCS) is to be used. A name should only be specified here if the one required differs from the one preset by the system (*STD). The specified CCS should be an EBCDIC character set.

PHYSICAL-ALLOCATION = *UNCHANGED / *NOT-ALLOWED / *ALLOWED

Governs whether the user is allowed to perform physical space allocation (direct allocation) for the pubset.

PHYSICAL-ALLOCATION = *UNCHANGED

The current status is to be retained.

PHYSICAL-ALLOCATION = *NOT-ALLOWED

The user is no longer allowed to perform physical space allocation for the pubset.

PHYSICAL-ALLOCATION = *ALLOWED

The user is now allowed to perform physical space allocation for the pubset.

CRYPTO-SESSION-LIMIT = *UNCHANGED / *STD / *MAXIMUM / <integer 0..32767>

Defines the maximum number of openCRYPT sessions within a BS2000 session. The number of openCRYPT sessions already used is set to 0 at the start of a BS2000. The values *STD and *MAXIMUM define the maximum number of 128 or 32767 openCRYPT sessions.

NET-STORAGE-USAGE = *UNCHANGED / *NOT-ALLOWED / *ALLOWED

Specifies whether the user may occupy space on Net-Storage volumes.

NET-STORAGE-USAGE = *UNCHANGED

The current status is to be retained.

NET-STORAGE-USAGE = *NOT-ALLOWED

The user is not permitted to use Net-Storage volumes.

NET-STORAGE-USAGE = *ALLOWED

The user is permitted to use Net-Storage volumes. The space occupied on the Net-Storage volume is not counted toward the user's PUBLIC-SPACE-LIMIT.

ACCOUNT-ATTRIBUTES = *UNCHANGED / *ADD(...) / *MODIFY(...) / *REMOVE(...)

Specifies whether an account number is to be added, changed or deleted.

ACCOUNT-ATTRIBUTES = *ADD(...)

A new account number and specific attributes for the user ID is to be added.

ACCOUNT = <alphanum-name 1..8>

Account number of the user ID which is to be entered in the user catalog and to which the following data relate:

CPU-LIMIT = *STD / *MAXIMUM / <integer 0..2147483647 seconds>

Total CPU time available for user jobs under the account number.

CPU-LIMIT = *STD

The default value set in the SYSGJCPU system parameter (see the “Introduction to System Administration” [14]) is available.

CPU-LIMIT = *MAXIMUM

2,147,483,647 CPU seconds are available to the user ID.

SPOOLOUT-CLASS = 0 / <integer 0..255> / *STD

Spoolout class for the account number of the user ID.

SPOOLOUT-CLASS = *STD

The default value set in the SYSGJCLA system parameter (see the “Introduction to System Administration” [14]) is available.

MAXIMUM-RUN-PRIORITY = *STD / <integer 30..255>

Defines the highest priority that may be assigned to jobs of the user ID (see note on page 4-499).

MAXIMUM-RUN-PRIORITY = *STD

The default value set in the SYSGJPRI system parameter (see the “Introduction to System Administration” [14]) is available.

MAX-ALLOWED-CATEGORY =

This operand defines the task attribute user jobs are allowed to attain. If the user employs the TINF macro in his/her programs, a check is made in both the job class used by the job concerned and in the user catalog to see whether the right to use the task attribute TP was assigned to the user under the specified account number.

MAX-ALLOWED-CATEGORY = *STD

The tasks of the user can attain the task attributes BATCH and DIALOG.

MAX-ALLOWED-CATEGORY = *TP

The tasks of the user can attain the task attributes BATCH, DIALOG and TP.

MAX-ALLOWED-CATEGORY = *SYSTEM

All task attributes are permitted for the tasks of the user.

PRIVILEGE = *NO / *PARAMETERS(...) / list-poss(3): *NO-CPU-LIMIT / *START-IMMEDIATE / *INHIBIT-DEACTIVATION

Defines privileges of job management.

PRIVILEGE = *NO

The user ID does not receive any job management privileges.

PRIVILEGE = *PARAMETERS(...)

Defines a sequence of job management privileges.

NO-CPU-LIMIT = *NO / *YES

Defines whether the user is allowed to run batch jobs without a time limitation.

NO-CPU-LIMIT = *YES

The user is authorized to run batch jobs without time limitation under the specified account number. This applies even if the job class assigned to the job does not permit this start attribute. If the user specified the CPU-LIMIT=*NO operand in the SET-LOGON-PARAMETERS or ENTER-JOB command and this function is authorized neither in the user catalog nor in the job class assigned to the job, the batch job is rejected with an error message.

In the case of tasks without a time limit, the user's CPU account is not debited.

START-IMMEDIATE = *NO / *YES

Defines whether the user is authorized to use the job express function.

START-IMMEDIATE = *YES

The user is authorized to use the job express function. With this authorization batch jobs are started immediately, even if the class limit of the job class in which the job concerned is to be started has been reached. This applies even if the definition of the job class does not permit this start attribute. If the EXPRESS function is not permitted either in the user catalog or in the job class definition, the batch job is accepted, but it is not started as an EXPRESS job.

INHIBIT-DEACTIVATION = *NO / *YES

Defines whether the user is authorized to inhibit deactivation.

INHIBIT-DEACTIVATION = *YES

The user ID is authorized to inhibit deactivation. The user's jobs are thus independent of the PRIOR function, by means of which jobs are placed in subordinate queues according to their system service requirements (macro time slice).

PRIVILEGE = *NO-CPU-LIMIT

The user is authorized to run batch jobs without time limitation under the specified account number.

PRIVILEGE = *START-IMMEDIATE

The user is authorized to use the job express function.

PRIVILEGE = *INHIBIT-DEACTIVATION

The user ID is authorized to inhibit deactivation.

POSIX-RLOGIN-DEFAULT = *NO / *YES

Defines whether the account number being added is to be used for accounting of a POSIX remote login session. The POSIX remote login account number is unique within a user ID. The user administration system automatically performs a comparison with existing account numbers, and the declaration of a different account number as the POSIX account number overrides any earlier declaration. The old account number can from then on be used for BS2000 sessions only.

LOGON-DEFAULT = *NO / *YES

Defines whether the designated account number is to be used as the default account number for BS2000 timesharing mode if no account number is specified in the case of dialog or batch access.

ACCOUNT-ATTRIBUTES = *MODIFY(...)

An existing account number or the corresponding attributes are to be modified. The account number is recreated if necessary.

ACCOUNT = <alphanum-name 1..8>

Account number of the user ID for which the following values are to be modified in the user catalog.

CPU-LIMIT = *UNCHANGED / *STD / *MAXIMUM / <integer 0..2147483647 seconds>

Total CPU time available for user jobs under an existing account number.

CPU-LIMIT = *STD

The default value set in the SYSGJCPU system parameter (see the “Introduction to System Administration” [14]) is available.

CPU-LIMIT = *MAXIMUM

The CPU time for the existing accounting number is changed to the value of 2,147,483,647 seconds.

SPOOLOUT-CLASS = *UNCHANGED / <integer 0..255> / *STD

Spoolout class for the account number of the user ID.

SPOOLOUT-CLASS = *STD

The default value set in the SYSGJCLA system parameter (see the “Introduction to System Administration” [14]) is available.

MAXIMUM-RUN-PRIORITY = *UNCHANGED / <integer 30..255>

Defines the highest priority that may be assigned to jobs of the user ID (see note on [page 4-499](#)).

MAX-ALLOWED-CATEGORY = *UNCHANGED / *STD / *TP / *SYSTEM

This operand defines the task attribute user jobs are allowed to attain. If the user employs the TINF macro in his/her programs, a check is made in both the job class used by the job concerned and in the user catalog to see whether the right to use the task attribute TP was assigned to the user under the specified account number.

MAX-ALLOWED-CATEGORY = *STD

The tasks of the user can attain the task attributes BATCH and DIALOG.

MAX-ALLOWED-CATEGORY = *TP

The user jobs may attain the task attributes BATCH, DIALOG and TP.

MAX-ALLOWED-CATEGORY = *SYSTEM

All task attributes are permitted for the user jobs.

PRIVILEGE = *UNCHANGED / *PARAMETERS(...) / list-poss(3): *NO-CPU-LIMIT / *START-IMMEDIATE / *INHIBIT-DEACTIVATION

Defines privileges of job management.

PRIVILEGE = *PARAMETERS(...)

Defines a sequence of job management privileges.

NO-CPU-LIMIT = *UNCHANGED / *NO / *YES

Defines whether the user is allowed to run batch jobs without a time limitation.

NO-CPU-LIMIT = *YES

The user is authorized to run batch jobs without time limitation under the specified account number. This applies even if the job class assigned to the job does not permit this start attribute. If the user specified the CPU-LIMIT=*NO operand in the SET-LOGON-PARAMETERS or ENTER-JOB command and this function is authorized neither in the user catalog nor in the job class assigned to the job, the batch job is rejected with an error message.

In the case of tasks without a time limit, the user's CPU account is not debited.

START-IMMEDIATE = *UNCHANGED / *NO / *YES

Defines whether the use is authorized to use the job express function.

START-IMMEDIATE = *YES

The user is authorized to use the job express function. With this authorization batch jobs are started immediately, even if the class limit of the job class in which the job concerned is to be started has been reached. This applies even if the definition of the job class does not permit this start attribute. If the EXPRESS function is not permitted either in the user catalog or in the job class definition, the batch job is accepted, but it is not started as an EXPRESS job.

INHIBIT-DEACTIVATION = *UNCHANGED / *NO / *YES

Defines whether the user is authorized to inhibit deactivation.

INHIBIT-DEACTIVATION = *YES

The user ID is authorized to inhibit deactivation. The user's jobs are thus independent of the PRIOR function, by means of which jobs are placed in subordinate queues according to their system service requirements (macro time slice).

PRIVILEGE = *NO-CPU-LIMIT

The user is authorized to run batch jobs without time limitation under the specified account number. This applies even if the job class assigned to the job does not permit this start attribute. If the user specified the CPU-LIMIT=*NO operand in the SET-LOGON-PARAMETERS or ENTER-JOB command and this function is authorized neither in the user catalog nor in the job class assigned to the job, the batch job is rejected with an error message.

In the case of tasks without a time limit, the user's CPU account is not debited.

PRIVILEGE = *START-IMMEDIATE

The user is authorized to use the job express function. With this authorization batch jobs are started immediately, even if the class limit of the job class in which the job concerned is to be started has been reached. This applies even if the definition of the job class does not permit this start attribute. If the EXPRESS function is not permitted either in the user catalog or in the job class definition, the batch job is accepted, but it is not started as an EXPRESS job.

PRIVILEGE = *INHIBIT-DEACTIVATION

The user ID is authorized to inhibit deactivation. The user's jobs are thus independent of the PRIOR function, by means of which jobs are placed in subordinate queues according to their system service requirements (macro time slice).

POSIX-RLOGIN-DEFAULT = *UNCHANGED / *NO / *YES

Defines whether the account number to be changed is to be used for accounting of a POSIX remote login session. The POSIX remote login account number is unique within a user ID. The user administration system automatically performs a comparison with existing account numbers, and the declaration of a different account number as the POSIX account number overrides any earlier declaration. The old account number can from then on be used for BS2000 sessions only.

LOGON-DEFAULT = *UNCHANGED / *NO / *YES

Defines whether the designated account number is to be used as the default account number for BS2000 timesharing mode if no account number is specified in the case of dialog or batch access.

ACCOUNT-ATTRIBUTES = *REMOVE(...)

An account number is to be removed from the user ID.

ACCOUNT = list-poss(10): <alphanum-name 1..8>

Account number of the user ID to be deleted.

An account number must always be maintained for the user ID.

Return codes

(SC2)	SC1	Maincode	Meaning
	0	CMD0001	No errors
2	0	SRM6001	Command executed with a warning
	1	SRM6010	Syntax error
	32	SRM6020	System error during command processing
	64	SRM6040	Semantic error
	130	SRM6030	Command cannot temporarily be executed

Note

The task scheduling priorities (30-255) for job control are defined:

- in the user catalog (ADD-USER command, MAXIMUM-RUN-PRIORITY operand)
- in the job class definition (JMU statement DEFINE-JOB-CLASS, RUN-PRIORITY operand; in addition to the default priority, a maximum priority can also be defined)

If the user specifies a task scheduling priority in the SET-LOGON-PARAMETERS or ENTER-JOB command, this priority is checked both in the user catalog and in the job class assigned to the job (for an example see the ADD-USER command).

If the priority specified by the user in the SET-LOGON-PARAMETERS or ENTER-JOB command is **worse** than the best priority of the job class and in the user catalog (i.e. allowed either in the job class or in the user catalog), the job is started with the priority specified by the user. If the priority specified by the user in the SET-LOGON-PARAMETERS or ENTER-JOB command is **better** than the priorities of the job class and in the user catalog (i.e. not allowed either in the job class or in the user catalog), the job is given whichever is worse, the default priority of the job class or the priority in the user catalog.

If the user does not specify any priority in the SET-LOGON-PARAMETERS or ENTER-JOB command, the job is started with the default priority.

MODIFY-USER-PROTECTION

Modify password for user ID

Description status:	SRPMNUC V19.0A
Functional area:	User management
Domain:	USER-ADMINISTRATION
Privileges:	STD-PROCESSING HARDWARE-MAINTENANCE OPERATING SAT-FILE-EVALUATION SAT-FILE-MANAGEMENT SECURITY-ADMINISTRATION
Routing code:	@

Function

With the MODIFY-USER-PROTECTION command, users can define a password for their user ID, change this password or delete it. The password for a user ID is part of the user entry in the user catalog. The MODIFY-USER-PROTECTION command will only be executed if the user entry contains an appropriate authorization for the user ID (see output field *PASSWORD-MGMT*, SHOW-USER-ATTRIBUTES command).

Long passwords

In BS2000/OSD-BC V2.0 and above, users can define a “long password” to protect their user IDs. A long password is at least 9 and at most 32 characters long. The long password mechanism allows users to select passwords which are easy to remember while satisfying data protection requirements because of the large range of possible combinations. When a 9 to 32-character password is entered, a hash algorithm converts the long password to an 8-byte password. The converted 8-byte password is stored in the system (encrypted as appropriate) for password checking purposes.

The following commands support the long password mechanism:

- ENTER-JOB and ENTER-PROCEDURE
- PRINT-DOCUMENT
- SET-LOGON-PARAMETERS
- SET-RFA-CONNECTION
- TRANSFER-FILE (openFT V9.0 and higher)

In cases where the long password mechanism is not supported, e.g. for program interfaces, for TRANSFER-FILE (openFT < V9.0) or in nonhomogeneous computer networks, the user must find out and enter the converted 8-byte password.

There are various ways to do this:

- The SDF-P subsystem is available on the local system:
The converted password can be ascertained with the HASH-STRING builtin function. The function is called with the parameters STRING='<long_password>' and LENGTH=8 (see also the “SDF-P” manual [34]. As the STRING parameter, unlike the password interface, is case-sensitive, the long password must be entered in upper case.

With commands and statements (SDF interface), expression substitution can be used, i.e. the password operand can, for example, be specified as follows (see also the example on [page 4-504](#)):

```
PASSWORD='&(TO-C-LIT(HASH-STRING(STRING='long_password',LENGTH=8)))'
```

If the SDF interface is not being used, an S variable is assigned the result of the builtin function and SHOW-VARIABLE is used to output the variable value as an X literal (as the converted string can also contain non-enterable characters). This variable value is entered as password (<x-string>) at the input interface.

- The SDF-P subsystem is not available on the local system:
 - If the local system has access to another system on which SDF-P is available, the converted 8-byte password can be ascertained with HASH-STRING as described above.
 - The converted 8-byte password can be requested from systems support staff (unless encryption is in force on the system).
 - The user ID in question can temporarily be assigned a “short” password.
- Whether SDF-P is present or not, with TRANSFER-FILE the name of an FT profile (FTAC authorization profile) can be specified instead of the LOGON authorization.

If the SECOS software product is installed, additional user-specific security checks can be set up for passwords. The default values for the minimum length and complexity of a password are set to *NONE (attributes not checked). If these attributes are changed to maximum values, in some cases it may be that the 8-byte password converted from a “long” password will fail to comply with security requirements. For that reason the minimum length should not be set to more than 6, and the minimum complexity should not be set to more than 2.

Restrictions

The following functions of the MODIFY-USER-PROTECTION command are only available if SECOS is used:

- A new password specified in the NEW-LOGON-PASSWORD operand can be specified a second time for verification purposes in the CONFIRM-NEW-PASSWORD operand (SECOS ≥ V3.0).

- In the USER-IDENTIFICATION operand, it is possible to specify that password changes should be performed for the personal logon (SECOS ≥ V4.0).

If SECOS is not available then only the default value can be specified for these operands.

Format

MODIFY-USER-PROTECTION

```
LOGON-PASSWORD = *NONE / <c-string 1..8> / <c-string 9..32> / <x-string 1..16> / *SECRET  
,NEW-LOGON-PASSWORD = *NONE / <c-string 1..8> / <c-string 9..32> / <x-string 1..16> / *SECRET  
,CONFIRM-NEW-PASSWORD = *NOT-SPECIFIED / *NONE / <c-string 1..8> / <c-string 9..32> /  
                        <x-string 1..16> / *SECRET  
,PUBSET = *HOME / <cat-id 1..4>  
,USER-IDENTIFICATION = *STD / *PERSONAL-USER-ID
```

Operands

LOGON-PASSWORD = *NONE / <c-string 1..8> / <c-string 9..32> / <x-string 1..16> / ***SECRET**

Old password for the user ID.

The long password mechanism is supported (<c-string 9..32>). A hash algorithm converts the long password to an 8-byte password which is used for password checking. See Function above for details of the long password mechanism.

The operand has the following special characteristics:

- The password entered is not logged.
- The input field is automatically blanked out in the guided dialog.
- In unguided dialog and foreground procedures, the entry *SECRET or ^, SDF provides a blanked out input field for inputting the password .

NEW-LOGON-PASSWORD = *NONE / <c-string 1..8> / <c-string 9..32> / <x-string 1..16> / ***SECRET**

New password for the user ID. The new password must not be the same as the previous password.

The long password mechanism is supported (<c-string 9..32>). A hash algorithm converts the long password to an 8-byte password which is used for password checking. See Function above for details of the long password mechanism.

The operand has the following special characteristics:

- The password entered is not logged.
- The input field is automatically blanked out in the guided dialog.
- In unguided dialog and foreground procedures, the entry *SECRET or ^, SDF provides a blanked out input field for inputting the password .

CONFIRM-NEW-PASSWORD = *NOT-SPECIFIED / *NONE / <c-string 1..8> / <c-string 9..32 / <x-string 1..16> / *SECRET

The operand is only available in conjunction with SECOS versions as of V3.0.

Allows a new password specified using the NEW-LOGON-PASSWORD operand to be checked. Entering the password twice is to avoid a password containing a typing error being assigned when password entry is nondisplaying.

If a value other than the default *NOT-SPECIFIED is entered, then it must be identical with the entry made for NEW-LOGON-PASSWORD, otherwise the command is rejected.

The CONFIRM-NEW-PASSWORD operand has the following special characteristics:

- The password entered is not logged.
- The input field is automatically blanked out in the guided dialog.
- In unguided dialog and foreground procedures, the entry *SECRET or ^, SDF provides a blanked out input field for inputting the password .

PUBSET =

Defines the catalog ID of the public volume set whose user catalog contains the entry for the user ID.

PUBSET = *HOME

Catalog ID of the home public volume set.

PUBSET = cat-id 1..4>

Catalog ID of a local public volume set whose user catalog contains an entry for the user ID.

USER-IDENTIFICATION = *STD / *PERSONAL-USER-ID

This operand is only available if SECOS ≥ V4.0 is in use.

Specifies whether the password of the logon user ID or the password corresponding to the the personal user ID (personal logon) is to be changed.

USER-IDENTIFICATION = *STD

The password corresponding to the logon user ID is changed.

If the command is called during the updating of the logon password then *STD designates the following user ID:

- following the output of message SRM3204, the logon user ID
- following the output of message SRM3207, the personal user ID

USER-IDENTIFICATION = *PERSONAL-USER-ID

The password corresponding to the personal user ID is modified. If no personal logon has been performed then the password corresponding to the logon ID is modified.

Return codes

(SC2)	SC1	Maincode	Meaning
	0	CMD0001	Command terminated without errors
	1	SRM6010	Syntax error in command
	32	SRM6020	System error during command processing
	64	SRM6040	Semantic error during command processing
	130	SRM6030	Command cannot temporarily be executed

Notes

- In the log (SYSOUT), passwords are overwritten with the letter P.
- For a nonexistent password (equivalent to the default value *NONE) the system uses binary zeros (X'00 00 00 00 00 00 00 00'). Binary zeros used as passwords are not encrypted, however.
- If the system parameter ENCRYPT=Y is set, the system encrypts all passwords except for those consisting of binary zeros (if the default value *NONE is specified).

Example

Allocating a long password:

```
/mod-user-prot logon-pass='short#12',new='special password of $rudi!'
```

Finding out the converted, 8-byte password for use at an interface which does not support the long password mechanism. SET-VARIABLE (alias = STV) copies the password to variable A, and then SHOW-VARIABLE (alias = SHV) displays the variable in the form of an X literal (as it may include non-typable characters):

```
/stv a=hash-string(string='SPECIAL PASSWORD OF $RUDI!',LENGTH=8)
/shv a,inf=*par(value=*x-lit)
A = X'E611BB422CDB4FA5'
```

When using the builtin TO-X-LITERAL function, the password can also be transferred into a variable as an X literal (in the example: PASS):

```
/stv pass=to-x-lit(string=
    hash-string(string='SPECIAL PASSWORD OF $RUDI!',length=8))
/shv pass
PASS = X'E611BB422CDB4FA5'
```


The converted, 8-byte password typically needs to be specified in TRANSFER-FILE commands. Here are various ways of specifying it:

`/transfer-file ... password=x'e611bb422cdb4fa5'.....` (1)

`/transfer-file ... password=&(pass).....` (2)

`/transfer-file ... password=&(to-x-lit(string=a)).....` (3)

`/transfer-file ... password=&(to-x-lit(string=hash-string(
string='SPECIAL PASSWORD OF $RUDI!',length=8)).....` (4)

- (1) Entering the converted password directly as an X string.
- (2) Entering the password by means of the variable substitution mechanism (contents of variable PASS).
- (3) Entering the password by means of the variable substitution mechanism (X literal of the A variable).
- (4) Entering the password directly by means of the variable substitution mechanism, which is first used to copy the password into the PASS variable in the form of an X literal. In this case there is no need to ascertain the password by assigning it to a variable.

MODIFY-USER-PUBSET-ATTRIBUTES

Modify pubset-specific user attributes of user ID

Description status:	SRPMNUC V19.0A
Functional area:	User management Pubset and MRSCAT management
Domain:	USER-ADMINISTRATION
Privileges:	STD-PROCESSING USER-ADMINISTRATION
Routing code:	\$

Function

This command modifies the pubset-specific user attributes of a user ID in the user catalog of the specified pubset. It is primarily intended for SM pubsets, but with various restrictions can also be used for SF pubsets.

Every user ID set up with the ADD-USER command from the beginning has pubset-specific user attributes. These are mostly default resource management attributes.

If an entry is created in a user catalog of an imported pubset, pubset-specific information must be stored. Systems support must define an upper limit for the user up to which the user may occupy storage space on this pubset. In addition, it can grant the user permission to exceed this limit. These new declarations, however, take effect only after the user logs on again, not for current tasks.

The default value *UNCHANGED in the corresponding operands means that the previously valid definition still applies. The term “hierarchical quota differentials” as used in this description refers to the fact that a given value must be included within the value above it in the hierarchy. Thus, for example, the value for VERY-HIGH-PERF-SPACE must always be \leq the value in HIGH-PERF-SPACE, which in turn must be \leq the value in S0-LEVEL-SPACE, and this must be \leq the value in TOTAL-SPACE. If quota differentials are not maintained, command processing is aborted.

Restriction

The only nonprivileged users (STD-PROCESSING privilege) authorized to issue this command are those designated as group administrators. The actions a group administrator can take are defined by systems support. On setting up and managing user groups see the “SECOS” manual [35].

Format

(Part 1 of 2)

MODIFY-USER-PUBSET-ATTRIBUTES
<p>USER-IDENTIFICATION = <name 1..8></p> <p>,PUBSET = *HOME / <cat-id 1..4></p> <p>,FILE-NUMBER-LIMIT = *UNCHANGED / *MAXIMUM / <integer 0..16777215></p> <p>,JV-NUMBER-LIMIT = *UNCHANGED / *MAXIMUM / <integer 0..16777215></p> <p>,DEF-STORAGE-CLASS = *UNCHANGED / *NONE / <structured-name 1..8></p> <p>,RIGHTS = *UNCHANGED / *PARAMETERS(...)</p> <p> *PARAMETERS(...)</p> <p> DMS-TUNING-RESOURCES = *UNCHANGED / *NONE / *CONCURRENT-USE / *EXCLUSIVE-USE</p> <p> ,NET-STORAGE-USAGE = *UNCHANGED / *NOT-ALLOWED / *ALLOWED</p> <p> ,PHYSICAL-ALLOCATION = *UNCHANGED / *NOT-ALLOWED / *ALLOWED</p> <p> ,PUBLIC-SPACE-EXCESS = *UNCHANGED / *NOT-ALLOWED / *TEMPORARILY-ALLOWED / *ALLOWED</p> <p>,PERM-SPACE-LIMITS = *UNCHANGED / *PARAMETERS(...)</p> <p> *PARAMETERS(...)</p> <p> TOTAL-SPACE = *AUTOMATIC-ADAPT / *UNCHANGED / *MAXIMUM / *UNLIMITED / <integer 0..2147483647 2Kbyte></p> <p> ,S0-LEVEL-SPACE = *AUTOMATIC-ADAPT / *UNCHANGED / *MAXIMUM / <integer 0..2147483647 2Kbyte></p> <p> ,HIGH-PERF-SPACE = *AUTOMATIC-ADAPT / *UNCHANGED / *MAXIMUM / <integer 0..2147483647 2Kbyte></p> <p> ,VERY-HIGH-PERF-SPACE = *AUTOMATIC-ADAPT / *UNCHANGED / *MAXIMUM / <integer 0..2147483647 2Kbyte></p> <p> ,HIGH-AVAILABLE-SPACE = *AUTOMATIC-ADAPT / *UNCHANGED / *MAXIMUM / <integer 0..2147483647 2Kbyte></p>

(Part 2 of 2)

```

,TEMP-SPACE-LIMITS = *UNCHANGED / *PARAMETERS(...)
  *PARAMETERS(...)
    |
    | TOTAL-SPACE = *AUTOMATIC-ADAPT / *UNCHANGED / *MAXIMUM / *UNLIMITED /
    |               <integer 0..2147483647 2Kbyte>
    |
    | HIGH-PERF-SPACE = *AUTOMATIC-ADAPT / *UNCHANGED / *MAXIMUM /
    |                   <integer 0..2147483647 2Kbyte>
    |
    | VERY-HIGH-PERF-SPACE = *AUTOMATIC-ADAPT / *UNCHANGED / *MAXIMUM /
    |                         <integer 0..2147483647 2Kbyte>
    |
WORK-SPACE-LIMITS = *UNCHANGED / *PARAMETERS(...)
  *PARAMETERS(...)
    |
    | TOTAL-SPACE = *AUTOMATIC-ADAPT / *UNCHANGED / *MAXIMUM / *UNLIMITED /
    |               <integer 0..2147483647 2Kbyte>
    |
    | HIGH-PERF-SPACE = *AUTOMATIC-ADAPT / *UNCHANGED / *MAXIMUM /
    |                   <integer 0..2147483647 2Kbyte>
    |
    | VERY-HIGH-PERF-SPACE = *AUTOMATIC-ADAPT / *UNCHANGED / *MAXIMUM /
    |                         <integer 0..2147483647 2Kbyte>

```

Operands

USER-IDENTIFICATION = <name 1..8>

Defines the name of the user ID for which the pubset-specific user attributes are to be modified.

PUBSET = *HOME / <cat-id 1..4>

Identifies the pubset in whose user catalog pubset-specific user attributes are to be modified. This will typically be an SM pubset.

PUBSET = *HOME

The entry is made in the user catalog of the home pubset.

PUBSET = <cat-id 1..4>

Catalog ID of the pubset in whose user catalog the entry is to be made.

FILE-NUMBER-LIMIT = *UNCHANGED / *MAXIMUM / <integer 0..16777215>

Defines the maximum number of files allowed for a user ID.

FILE-NUMBER-LIMIT = *MAXIMUM

The number of files allowed for the user ID is set at 16,777,215.

FILE-NUMBER-LIMIT = <integer 0..16777215>

Specifies the exact number of files for the user ID's file number limit.

JV-NUMBER-LIMIT = *UNCHANGED / *MAXIMUM / <integer 0..16777215>

Specifies the maximum number of job variables that may be created.

JV-NUMBER-LIMIT = *MAXIMUM

The number of job variables allowed for the user ID is set at 16,777,215.

JV-NUMBER-LIMIT = <integer 0..16777215>

Specifies the exact number of job variables for the user ID's JV number limit.

DEF-STORAGE-CLASS = *UNCHANGED / *NONE / <structured-name 1..8>

Defines the default storage class for files on SM pubsets.

DEF-STORAGE-CLASS = *NONE

No default storage class is defined.

DEF-STORAGE-CLASS = <structured-name 1..8>

Specifies the name of the default storage class.

RIGHTS = *UNCHANGED / *PARAMETERS(...)

Defines the pubset-specific rights of a user ID.

RIGHTS = *PARAMETERS(...)

Specifies which pubset-specific rights are to be modified.

DMS-TUNING-RESOURCES = *UNCHANGED / *NONE / *CONCURRENT-USE / *EXCLUSIVE-USE

Specifies which performance measures may be utilized, and the form in which they may be used.

DMS-TUNING-RESOURCES = *NONE

No tuning measures may be utilized.

DMS-TUNING-RESOURCES = *CONCURRENT-USE

The user is allowed to reserve preferred resources, but in doing so competes with all other users who have the same authorization.

DMS-TUNING-RESOURCES = *EXCLUSIVE-USE

The user may make exclusive reservations of preferred resources.

Permitted performance measures for the home and data pubsets

PUBSET = *HOME				
DMS-TUNING-RESOURCES=	Resident ISAM pools	Resident FASTPAM environment	File attribute PERFORMANCE =HIGH	=VERY-HIGH
4	no	no	no	-
*CONCURRENT-USE	-	no	-	-
*EXCLUSIVE-USE	-	-	-	-
PUBSET = <Daten-Pubset>				
DMS-TUNING-RESOURCES=	Resident ISAM pools	Resident FASTPAM environment	File attribute PERFORMANCE =HIGH	=VERY-HIGH
4	-	-	no	no
*CONCURRENT-USE	-	-	-	no
*EXCLUSIVE-USE	-	-	-	-

Home pubset	Data pubset	Permitted performance measures
4	4	- None
*CONCURRENT-USE	4	- Resident ISAM pools
*EXCLUSIVE-USE	4	- Resident ISAM pools - Resident FASTPAM environment
4	*CONCURRENT-USE	- File attribute PERFORMANCE = HIGH on data pubset
4	*EXCLUSIVE-USE	- File attribute PERFORMANCE = HIGH on data pubset - File attribute PERFORMANCE = VERY-HIGH on data pubset
*CONCURRENT-USE	*CONCURRENT-USE	- Resident ISAM pools
*CONCURRENT-USE	*EXCLUSIVE-USE	- Resident ISAM pools - File attribute PERFORMANCE = VERY-HIGH on data pubset
*EXCLUSIVE-USE	*CONCURRENT-USE	- Resident ISAM pools - Resident FASTPAM environment
*EXCLUSIVE-USE	*EXCLUSIVE-USE	- Resident ISAM pools - Resident FASTPAM environment - File attribute PERFORMANCE = VERY-HIGH on data pubset

Table 77: Permitted performance measures (MODIFY-USER-PUBSET-ATTRIBUTES)

NET-STORAGE-USAGE = *UNCHANGED / *NOT-ALLOWED / *ALLOWED

Specifies whether the user may occupy space on Net-Storage volumes.

NET-STORAGE-USAGE = *NOT-ALLOWED

The user is not permitted to use a Net-Storage volume.

NET-STORAGE-USAGE = *ALLOWED

The user is permitted to use a Net-Storage volume.

PHYSICAL-ALLOCATION = *UNCHANGED / *NOT-ALLOWED / *ALLOWED

Governs whether the user is allowed to perform absolute space allocation (direct allocation).

PHYSICAL-ALLOCATION = *NOT-ALLOWED

The user is no longer allowed to perform physical space allocation.

PHYSICAL-ALLOCATION = *ALLOWED

The user is allowed to perform physical space allocation.

PUBLIC-SPACE-EXCESS = *UNCHANGED / *NOT-ALLOWED / *TEMPORARILY-ALLOWED / *ALLOWED

Defines whether the user may if necessary exceed the defined space limits on the pubset.

PUBLIC-SPACE-EXCESS = *NOT-ALLOWED

The space limits may not be exceeded.

PUBLIC-SPACE-EXCESS = *TEMPORARILY-ALLOWED

While a process is executing, the space limit imposed on the user may be exceeded temporarily.

PUBLIC-SPACE-EXCESS = *ALLOWED

The space limits imposed on the user are removed.

PERM-SPACE-LIMITS = *UNCHANGED / *PARAMETERS(...)

Defines the permanent space granted to a user ID on a pubset. The operand is primarily intended for SM pubsets. If it is specified for an SF pubset, only the S0-LEVEL-SPACE value has any effect.

PERM-SPACE-LIMITS = *PARAMETERS(...)

The permanent storage space available is to be defined.

TOTAL-SPACE = *AUTOMATIC-ADAPT / *UNCHANGED / *MAXIMUM / *UNLIMITED / <integer 0..2147483647 2Kbyte>

Defines the maximum number of PAM pages for the user ID's permanent space. The specified value must be $\leq 2,147,483,647$.

TOTAL-SPACE = *AUTOMATIC-ADAPT

The number of PAM pages in the user ID's permanent space is to adapt automatically. The hierarchical quota differentials are maintained.

TOTAL-SPACE = *MAXIMUM

The number of PAM pages in the user ID's permanent space is to be set at 2,147,483,647.

TOTAL-SPACE = *UNLIMITED

The number of PAM pages in the user ID's permanent space is unlimited.

TOTAL-SPACE = <integer 0..2147483647 2Kbyte>

Defines the exact maximum number of PAM pages to be granted to the user ID as permanent storage space.

S0-LEVEL-SPACE = *AUTOMATIC-ADAPT / *UNCHANGED / *MAXIMUM / <integer 0..2147483647 2Kbyte>

Defines the maximum number of PAM pages for the user ID's S0-LEVEL-SPACE. The value specified must be \leq the value specified for TOTAL-SPACE. On SF pubsets the value specified for this operand corresponds to that of the PUBLIC-SPACE-LIMIT operand.

S0-LEVEL-SPACE = *AUTOMATIC-ADAPT

The number of PAM pages in the user ID's S0-LEVEL-SPACE is to adapt automatically. The hierarchical quota differentials are maintained.

S0-LEVEL-SPACE = *MAXIMUM

The number of PAM pages in S0-LEVEL-SPACE is to be set at the highest possible logical value allowed by the value above it in the hierarchy (in this case TOTAL-SPACE).

S0-LEVEL-SPACE = <integer 0..2147483647 2Kbyte>

Defines the exact maximum number of PAM pages to be granted to the user ID as S0-LEVEL-SPACE.

HIGH-PERF-SPACE = *AUTOMATIC-ADAPT / *UNCHANGED / *MAXIMUM / <integer 0..2147483647 2Kbyte>

Defines the maximum number of PAM pages for the user ID's permanent high-performance space. The value specified must be \leq the value specified for TOTAL-SPACE.

HIGH-PERF-SPACE = *AUTOMATIC-ADAPT

The number of PAM pages in the user ID's HIGH-PERF-SPACE is to adapt automatically. The hierarchical quota differentials are maintained.

HIGH-PERF-SPACE = *MAXIMUM

The number of PAM pages in HIGH-PERF-SPACE is to be set at the highest possible logical value allowed by the value above it in the hierarchy (in this case S0-LEVEL-SPACE).

HIGH-PERF-SPACE = <integer 0..2147483647 2Kbyte>

Defines the exact maximum number of PAM pages to be granted to the user ID as HIGH-PERF-SPACE.

VERY-HIGH-PERF-SPACE = *AUTOMATIC-ADAPT / *UNCHANGED / *MAXIMUM / <integer 0..2147483647 2Kbyte>

Defines the maximum number of PAM pages for the user ID's permanent very-high-performance space. The value specified must be \leq the value specified for TOTAL-SPACE.

VERY-HIGH-PERF-SPACE = *AUTOMATIC-ADAPT

The number of PAM pages in the user ID's VERY-HIGH-PERF-SPACE is to adapt automatically. The hierarchical quota differentials are maintained.

VERY-HIGH-PERF-SPACE = *MAXIMUM

The number of PAM pages in VERY-HIGH-PERF-SPACE is to be set at the highest possible logical value allowed by the value above it in the hierarchy (in this case HIGH-PERF-SPACE).

VERY-HIGH-PERF-SPACE = <integer 0..2147483647 2Kbyte>

Defines the exact maximum number of PAM pages to be granted to the user ID as VERY-HIGH-PERF-SPACE.

HIGH-AVAILABLE-SPACE = *AUTOMATIC-ADAPT / *UNCHANGED / *MAXIMUM / <integer 0..2147483647 2Kbyte>

Defines the maximum number of PAM pages for the user ID's permanent high-availability space. The value specified must be \leq the value specified for TOTAL-SPACE.

HIGH-AVAILABLE-SPACE = *AUTOMATIC-ADAPT

The number of PAM pages in the user ID's HIGH-AVAILABLE-SPACE is to adapt automatically. The hierarchical quota differentials are maintained.

HIGH-AVAILABLE-SPACE = *MAXIMUM

The number of PAM pages in HIGH-AVAILABLE-SPACE is to be set at the highest possible logical value allowed by the value above it in the hierarchy (in this case S0-LEVEL-SPACE).

HIGH-AVAILABLE-SPACE = <integer 0..2147483647 2Kbyte>

Defines the exact maximum number of PAM pages to be granted to the user ID as HIGH-AVAILABLE-SPACE.

TEMP-SPACE-LIMITS = *UNCHANGED / *PARAMETERS(...)

Defines the temporary space granted to a user ID on a pubset. The operand is primarily intended for SM pubsets. If it is specified for an SF pubset, only the TOTAL-SPACE value has any effect.

TEMP-SPACE-LIMITS = *PARAMETERS(...)

The temporary storage space available is to be defined.

TOTAL-SPACE = *AUTOMATIC-ADAPT / *UNCHANGED / *MAXIMUM / *UNLIMITED / <integer 0..2147483647 2Kbyte>

Defines the total number of PAM pages for the user ID's temporary space. The specified value must be $\leq 2,147,483,647$.

TOTAL-SPACE = *AUTOMATIC-ADAPT

The total number of PAM pages in the user ID's temporary space is to adapt automatically. The hierarchical quota differentials are maintained.

TOTAL-SPACE = *MAXIMUM

The number of PAM pages in the user ID's total temporary space is to be set at 2,147,483,647.

TOTAL-SPACE = *UNLIMITED

The number of PAM pages in the user ID's total temporary space is unlimited.

TOTAL-SPACE = <integer 0..2147483647 2Kbyte>

Defines the exact maximum number of PAM pages to be granted to the user ID as total temporary storage space.

HIGH-PERF-SPACE = *AUTOMATIC-ADAPT / *UNCHANGED / *MAXIMUM / <integer 0..2147483647 2Kbyte>

Defines the maximum number of PAM pages for the user ID's temporary high-performance space. The value specified must be \leq the value specified for TOTAL-SPACE.

HIGH-PERF-SPACE = *AUTOMATIC-ADAPT

The number of PAM pages in the user ID's temporary high-performance space is to adapt automatically. The hierarchical quota differentials are maintained.

HIGH-PERF-SPACE = *MAXIMUM

The number of PAM pages in HIGH-PERF-SPACE is to be set at the highest possible logical value allowed by the value above it in the hierarchy (in this case TOTAL-SPACE).

HIGH-PERF-SPACE = <integer 0..2147483647 2Kbyte>

Defines the exact maximum number of PAM pages to be granted to the user ID as temporary high-performance space.

VERY-HIGH-PERF-SPACE = *AUTOMATIC-ADAPT / *UNCHANGED / *MAXIMUM / <integer 0..2147483647 2Kbyte>

Defines the number of PAM pages for the user ID's temporary very-high-performance space. The value specified must be \leq the value specified for TOTAL-SPACE.

VERY-HIGH-PERF-SPACE = *AUTOMATIC-ADAPT

The number of PAM pages in the user ID's temporary very-high-performance space is to adapt automatically. The hierarchical quota differentials are maintained.

VERY-HIGH-PERF-SPACE = *MAXIMUM

The number of PAM pages in VERY-HIGH-PERF-SPACE is to be set at the highest possible logical value allowed by the value above it in the hierarchy (in this case HIGH-PERF-SPACE).

VERY-HIGH-PERF-SPACE = <integer 0..2147483647 2Kbyte>

Defines the exact maximum number of PAM pages to be granted to the user ID as temporary very-high-performance space.

WORK-SPACE-LIMITS = *UNCHANGED / *PARAMETERS(...)

Defines the space for work files granted to a user ID on a pubset. The operand is intended for use with SM pubsets only.

WORK-SPACE-LIMITS = *PARAMETERS(...)

The storage space available for work files is to be defined.

TOTAL-SPACE = *AUTOMATIC-ADAPT / *UNCHANGED / *MAXIMUM / *UNLIMITED / <integer 0..2147483647 2Kbyte>

Defines the total number of PAM pages for the user ID's work file space. The specified value must be $\leq 2,147,483,647$.

TOTAL-SPACE = *AUTOMATIC-ADAPT

The total number of pages in the user ID's work file space is to adapt automatically. The hierarchical quota differentials are maintained.

TOTAL-SPACE = *MAXIMUM

The number of PAM pages in the user ID's total work file space is to be set at 2,147,483,647.

TOTAL-SPACE = *UNLIMITED

The number of PAM pages in the user ID's total work file space is unlimited.

TOTAL-SPACE = <integer 0..2147483647 2Kbyte>

Defines the exact maximum number of PAM pages to be granted to the user ID as total work file space.

HIGH-PERF-SPACE = *AUTOMATIC-ADAPT / *UNCHANGED / *MAXIMUM / <integer 0..2147483647 2Kbyte>

Defines the proportion of high-performance work file space for the user ID (proportion of the total work file space).

The value specified must be \leq the value specified for TOTAL-SPACE.

HIGH-PERF-SPACE = *AUTOMATIC-ADAPT

The number of pages in the user ID's high-performance work file space is to adapt automatically. The hierarchical quota differentials are maintained.

HIGH-PERF-SPACE = *MAXIMUM

The number of PAM pages in HIGH-PERF-SPACE is to be set at the highest possible logical value allowed by the value above it in the hierarchy (in this case TOTAL-SPACE).

HIGH-PERF-SPACE = <integer 0..2147483647 2Kbyte>

Defines the exact maximum number of PAM pages to be granted to the user ID as high-performance work file space.

VERY-HIGH-PERF-SPACE = *AUTOMATIC-ADAPT / *UNCHANGED / *MAXIMUM / <integer 0..2147483647 2Kbyte>

Defines the proportion of very-high-performance work file space for the user ID (proportion of the high-performance work file space). The value specified must be ≤ the value specified for HIGH-PERF-SPACE.

VERY-HIGH-PERF-SPACE = *AUTOMATIC-ADAPT

The number of PAM pages in the user ID's very-high-performance work file space is to adapt automatically. The hierarchical quota differentials are maintained.

VERY-HIGH-PERF-SPACE = *MAXIMUM

The number of PAM pages in VERY-HIGH-PERF-SPACE is to be set at the highest possible logical value allowed by the value above it in the hierarchy (in this case HIGH-PERF-SPACE).

VERY-HIGH-PERF-SPACE = <integer 0..2147483647 2Kbyte>

Defines the exact maximum number of PAM pages to be granted to the user ID as very-high-performance work file space.

Return codes

(SC2)	SC1	Maincode	Meaning
	0	CMD0001	No errors
2	0	SRM6001	Command executed with a warning
	1	SRM6010	Syntax error
	32	SRM6020	System error during command processing
	64	SRM6040	Semantic error
	130	SRM6030	Command cannot temporarily be executed

MODIFY-USER-SWITCHES

Turn user switches on/off

Description status:	BS2000 OSD/BC V10.0A
Functional area:	User management
Domain:	USER-ADMINISTRATION
Privileges:	STD-PROCESSING HARDWARE-MAINTENANCE SAT-FILE-EVALUATION SAT-FILE-MANAGEMENT SECURITY-ADMINISTRATION

Function

With the MODIFY-USER-SWITCHES command, users can set their user switches (ON), clear them (OFF) or invert them (INVERT).

For each user ID there are 32 user switches available (numbered 0 to 31), whose settings can be changed by every job running under the user ID. If a new user ID is created by systems support or if the system is newly generated, all user switches are cleared (value OFF).

User switches are not cleared at the end of a job (job switches are cleared at the end of a job; see [section "Job switches" on page 1-78](#)).

The current settings of the user switches can be queried using SHOW-USER-SWITCHES. It is also possible to query the user switches of other user IDs.

Privileged functions

Systems support staff working under the TSOS user ID can modify the user switches of any user ID (USER-IDENTIFICATION operand).

Format

MODIFY-USER-SWITCHES	Alias: MDUSW
<p>USER-IDENTIFICATION = *OWN / <name 1..8> ,ON = *UNCHANGED / list-poss(32): <integer 0..31> ,OFF = *UNCHANGED / list-poss(32): <integer 0..31> ,INVERT = *UNCHANGED / list-poss(32): <integer 0..31></p>	

Operands

USER-IDENTIFICATION = *OWN / <name 1..8>

User ID whose user switches are to be set according to the entries for the operands ON, OFF and INVERT.

The default value is *OWN, i.e. the user ID of the calling task. Nonprivileged users can only explicitly specify their own user ID.

ON = *UNCHANGED / list-poss(32): <integer 0..31>

User switches to be set to ON.

OFF = *UNCHANGED / list-poss(32): <integer 0..31>

User switches to be set to OFF.

INVERT = *UNCHANGED / list-poss(32): <integer 0..31>

User switches to be inverted.

The user switches specified are set from ON to OFF or from OFF to ON.

Return codes

(SC2)	SC1	Maincode	Meaning
	0	CMD0001	Command executed
2	0	CMD0002	Command executed; error in WHEN queue (error possible for tasks waiting for this event)
	1	CMD0202	Contradictory entries
	32	EXC0041	System error
	64	EXC0868	User ID not found
	130	CMD2382	User switches not available because the user ID is locked

Note

A user switch can be modified explicitly only once in a MODIFY-USER-SWITCHES command, i.e. switched on or off or inverted.

Example

```

/show-user-sw _____ (1)
%  USER SWITCHES ON EQUAL-
%   3, 4
/mod-user-sw on=(1,4),off=3 _____ (2)
/show-user-sw
%  USER SWITCHES ON EQUAL-
%   1, 4
/mod-user-sw invert=(2,3,4) _____ (3)
/show-user-sw
%  USER SWITCHES ON EQUAL-
%   1, 2, 3

```

- (1) Switches 3 and 4 were already set to ON.
- (2) Switches 1 and 4 are set to ON (note that switch 4 is already ON), switch 3 is set to OFF.
- (3) Switches 2, 3 and 4 are inverted.

MODIFY-VOLUME-SET-LIST

Modify volume set list definition

Description status:	BS2000 OSD/BC V10.0A
Functional area:	Pubset and MRSCAT management
Domain:	MULTI-CATALOG-AND-PUBSET-MGMT
Privileges:	TSOS

Function

The MODIFY-VOLUME-SET-LIST command enables systems support to modify a defined volume set list. Volume sets can be added and removed. A volume set list can hold a maximum of 255 volume sets. It is also possible to modify the brief explanatory text. The SM pubset for which the volume set list definition is to be modified must have been imported to the local system (in exclusive or shared mode).

Format

MODIFY-VOLUME-SET-LIST

```

VOLUME-SET-LIST-NAME = <composed-name 1..8>
,PUBSET = <cat-id 1..4>
,REMOVE-VOLUME-SET = *NO / *ALL / list-poss(255): <cat-id 1..4>
,ADD-VOLUME-SET = *NO / list-poss(255): <cat-id 1..4>
,VOLUME-SET-LIST-INFO = *UNCHANGED / *NONE / <c-string 1..720 with-low>
    
```

Operands

VOLUME-SET-LIST-NAME = <composed-name 1..8>

Name of a defined volume set list which is to be modified.

PUBSET = <cat-id 1..4>

Identifies the SM pubset for which the volume set list now being modified is defined.

REMOVE-VOLUME-SET = *NO / *ALL / list-poss(255): <cat-id 1..4>

Indicates whether volume sets are to be removed from the volume set list.

REMOVE-VOLUME-SET = *NO

No volume sets are to be removed.

REMOVE-VOLUME-SET = *ALL

All the volume sets are to be removed from the volume set list.

REMOVE-VOLUME-SET = list-poss(255): <cat-id 1..4>

The specified volume sets are to be removed from the volume set list. Up to 255 volume sets can be listed.

ADD-VOLUME-SET = *NO / list-poss(255): <cat-id 1..4>

Indicates whether volume sets are to be added to the volume set list.

ADD-VOLUME-SET = *NO

No volume sets are to be added.

ADD-VOLUME-SET = list-poss(255): <cat-id 1..4>

The specified volume sets are to be added to the volume set list. Up to 255 volume sets can be listed. Up to 255 volume sets can be assigned to a volume set list. This ceiling must not be exceeded.

The command does not check that the specified volume sets really belong to the SM pubset. Volume sets specified both in REMOVE-VOLUME-SET and in ADD-VOLUME-SET will still be on the volume set list when the command has finished executing.

VOLUME-SET-LIST-INFO = *UNCHANGED / *NONE / <c-string 1..720 with-low>

Specifies whether the brief explanatory text about the volume set list is to be modified. The default is *UNCHANGED, which means that any existing text is retained.

VOLUME-SET-LIST-INFO = *NONE

Any existing explanatory text is to be deleted.

VOLUME-SET-LIST-INFO = <c-string 1..720 with-low>

The brief text entered here is incorporated as a description of the volume set list. Any existing text will be overwritten.

Return codes

(SC2)	SC1	Maincode	Meaning
	0	CMD0001	No errors
	1	CMD0202	Syntax error in command
	32	CMD0221	Internal system error
	64	CMD0216	No authorization to issue command
	64	DMS148B	Volume set list not defined
	64	DMS148C	Maximum number of volume set entries exceeded
	64	DMS1485	Pubset not known
	64	DMS1486	Pubset is not a system-managed pubset
	64	DMS1487	Pubset not available
	64	DMS1490	Storage class management not available for this pubset
	64	DMS1484	Volume set list catalog invalid
	64	DMS1482	Error accessing volume set list catalog

(Part 1 of 2)

MODIFY-VOLUME-SET-LIST

(SC2)	SC1	Maincode	Meaning
	129	DMS148D	Not enough class 4/5 memory
	129	DMS148E	Error on MSCF connection to master
	129	DMS148F	GCF subsystem not ready

(Part 2 of 2)

MOUNT-NET-STORAGE

Connect Net-Storage

Description status:	BS2000 OSD/BC V10.0A
Functional area:	Net-Storage administration
Domain:	DEVICE STORAGE-MANAGEMENT
Privileges:	TSOS OPERATING
Routing code:	G

Function

The MOUNT-NET-STORAGE command connects a directory released on a Net-Server as storage space (Net-Storage) with BS2000.

In this case the connection to the net server and net client is set up. The Net-Storage is mounted on the net client as a file system and is consequently available to the BS2000 system. From the BS2000 viewpoint the Net-Storage is in the MOUNTED status.

Before a pubset with a Net-Storage volume is imported, the Net-Storage concerned should be connected. Only then can files on the Net-Storage be accessed immediately after the pubset has been imported.

Information on the mounted directories can be requested using the SHOW-NET-STORAGE command.

Fundamental information on the use of Net-Storage in BS2000 is provided in the "Introduction to System Administration" [14]. How to work with files on Net-Storage is described in the "Introductory Guide to DMS" [13].

Format

<p>MOUNT-NET-STORAGE</p> <p>DIRECTORY = <c-string 1..64 with-low></p> <p>,SERVER = <composed-name 1..256 with-under> / <c-string 1..256 with-low> / *IP-ADDRESS(...)</p> <p> *IP-ADDRESS(...)</p> <p> IP-ADDRESS = <composed-name 7..15> / <c-string 2..39></p> <p>,CLIENT = <composed-name 1..8 with-under> / <c-string 1..8> / *DNS(...) / *IP-ADDRESS(...)</p> <p> *DNS(...)</p> <p> DNS-NAME = <c-string 1..256 with-low></p> <p> *IP-ADDRESS(...)</p> <p> IP-ADDRESS = <composed-name 7..15> / <c-string 2..39></p>

Operands

DIRECTORY = <c-string 1..64 with-low>

Specifies the directory name of the Net-Storage released on the net server.

SERVER =

Specifies the net server which makes the Net-Storage available.

SERVER = <composed-name 1..256 with-under> / <c-string 1..256 with-low>

Host name or fully qualified domain name of the net server.

SERVER = *IP-ADDRESS

Specifies the IP address of the net server in IPv4 or IPv6 format.

SERVER = *IP-ADDRESS(...)

IP address of the net server.

IP-ADDRESS = <composed-name 7..15> / <c-string 2..39>

Specifies the IP address of the net server in IPv4 or IPv6 format.

CLIENT =

Specifies the net client on which the Net-Storage (more precisely: the released directory) is to be mounted. For SUs /390 and S servers this is an HNC. For SUs x86 and SQ servers X2000 performs this role.

CLIENT = <composed-name 1..8 with-under> / <c-string 1..8>

Internal BCAM name of the net client.

CLIENT = *DNS(...)

Domain name of the net client.

DNS-NAME = <c-string 1..256 with-low>>

Specifies the fully qualified domain name of the net client.

CLIENT = *IP-ADDRESS(...)

IP address of the net client.

IP-ADDRESS = <composed-name 7..15> / <c-string 2..39>

Specifies the IP address of the net client in IPv4 or IPv6 format.

Return codes

(SC2)	SC1	Maincode	Meaning/Guaranteed messages
	0	CMD0001	Command executed without error
	0	NKAN005	Net-Storage already connected
	1	NKAN003	Syntax error in the input
	32	CMD0221	system error
	32	NKAN004	Error in command execution
	64	NKAN009	Leading slash in directory name missing

MOVE-JOBS

Import or export job descriptions

Description status:	BS2000 OSD/BC V10.0A
Functional area:	Job processing
Domain:	JOB
Privileges:	TSOS

Function

The systems support staff can export or import job descriptions with the MOVE-JOBS command:

- Job descriptions may be exported from an active job pool into an interim file. Batch jobs whose data is being transferred into the destination file, are deleted from the active job pool, i.e. waiting jobs are not started and active jobs are canceled.
- Job descriptions may be imported again into an active job pool from a file or from an inactive job pool. Batch jobs whose data is being transferred into the active job pool, are deleted from the source file (interim file or inactive job pool).

Method

The command realizes the following two functions:

- extracts jobs from the job pool and places them in an interim file
- imports jobs from an interim file or an inactive job pool into an active job pool.

The interim file has the same format as a job pool file. Jobs may also be imported directly from an accessible inactive job pool file, without the use of an interim file. Either function may be started at any time in the course of a system run, provided that “Batch-System-Ready” has been reached during startup or system shutdown has not been initiated yet. No further instance of the MOVE-JOBS command is allowed while jobs are being exported.

When a batch job is exported it is always simultaneously eliminated from the active job pool (the user job is canceled) unless the job is currently being processed and *NO has been specified in CANCEL-RUNNING-JOBS.

This implicit cancelation differs from a cancelation using the CANCEL-JOB command, however. Temporary files, for instance, that may have been created by the JMS (S.IN, S.E, S.PROC files) are not deleted. A job variable that may be monitoring the job, receives the status '\$M'. The jobs are exported one after another, according to the selection criteria specified, i.e. the job descriptions are removed from the job pool and written into the specified file one after another.

The active JMS job scheduling is not affected by a lengthy export process. Jobs accepted in the course of an export process will also be considered. The JMS shows the same behavior as in a warm start as regards the import function. In contrast to a warm start, however, the JMS may not be able to take over the original TSN of a batch job, because it has already been assigned in the current system run. A new TSN will then be assigned.

Format

MOVE-JOBS	Alias: MVJ
<pre> FROM-FILE = *STD(...) / <filename 1..54 without-gen> / *INACTIVE-SYSTEM-JOBPOOL(...) *STD(...) CANCEL-RUNNING-JOBS = *YES / *NO *INACTIVE-SYSTEM-JOBPOOL(...) PUBSET = <alphanum-name 1..4> ,TO-FILE = *STD / <filename 1..54 without-gen>(…) <filename 1..54 without-gen>(…) WRITE-MODE = *CREATE / *EXTEND ,SELECT = *BY-ATTRIBUTES(…) / *BY-TSN(…) / *ALL *BY-ATTRIBUTES(…) JOB-STATE = *ANY / list-poss(3): *INACTIVE / *EXECUTING / *REPEAT ,PUBSET = *ANY / list-poss(16): <alphanum-name 1..4> ,JOB-NAME = *ANY / list-poss(16): *NONE / <alphanum-name 1.8> ,USER-IDENTIFICATION = *ANY / list-poss(16): <alphanum-name 1.8> ,JOB-CLASS = *ANY / list-poss(16): <alphanum-name 1.8> *BY-TSN(…) TSN = *ALL / list-poss(28): <alphanum-name 1..4> ,OUTPUT = <filename 1..54 without-gen>(…) / *DUMMY(…) <filename 1..54 without-gen>(…) SYSOUT = *YES / *NO ,SYSLST = *NO / *YES *DUMMY(…) SYSOUT = *YES / *NO ,SYSLST = *NO / *YES ,DIALOG-CONTROL = STD / *YES / *NO </pre>	

Operands**FROM-FILE = *STD(...)** / <filename 1..54 without-gen> /***INACTIVE-SYSTEM-JOBPOOL(...)**

Source file from which the job descriptions are to be imported or exported.

FROM-FILE = *STD(...)

The job descriptions are exported from the current job pool file (\$TSOS.SYSTEM.JOBPOOL on the home pubset).

CANCEL-RUNNING-JOBS = *YES / *NO

Specifies whether batch jobs that are to be moved and that are already being processed, are to be canceled or not.

CANCEL-RUNNING-JOBS = *YES

Batch jobs that are already being moved, are canceled.

CANCEL-RUNNING-JOBS = *NO

Batch jobs that are already being moved, continue as normal. They cannot be moved again.

In the case of repeat and calendar jobs, however, this only applies to the current instance of the job. Further repeats are not started.

FROM-FILE = <filename 1..54 without-gen>

The job descriptions are imported from the specified interim file (for inactive job pool files).

FROM-FILE = *INACTIVE-SYSTEM-JOBPOOL(...)

The job descriptions are imported from the inactive job pool file of another imported pubset.

PUBSET = <alphanum-name 1..4>

Catalog ID of the imported pubset.

TO-FILE = *STD / <filename 1..54 without-gen-vers>(...)

Name of the file into which the batch jobs are to be moved. This must be a file other than the file specified in the FROM-FILE operand.

TO-FILE = *STD

The batch jobs are moved (imported) into the current job pool file (\$TSOS.SYSTEM.JOBPOOL on the home pubset).

TO-FILE = <filename 1..54 without-gen-vers>(...)

The batch jobs are moved into the specified destination file (export, e.g. into the job pool file of another pubset or into an interim file).

WRITE-MODE = *CREATE / *EXTEND

Specifies whether a new destination file is to be created or an existing one extended.

WRITE-MODE = *CREATE

A new destination file is created. If the file already exists the command is canceled.

WRITE-MODE = *EXTEND

The destination file is extended. If the file does not already exist, a warning is issued after which it is created.

SELECT = *BY-ATTRIBUTES(...) / *ALL / *BY-TSN(...) /

Specifies whether the number of batch jobs to be moved is to be restricted.

Note

When exporting from the active job pool, it is also possible to select, export or delete jobs that are essential for the normal operation of the system. Job management merely stops the job scheduler and the task under which the command is currently running from being exported.

SELECT = *BY-ATTRIBUTES(...)

Only jobs with the specified attributes may be moved.

JOB-STATE = *ANY / list-poss(3): *INACTIVE / *EXECUTING / *REPEAT

Specifies whether the job status may be a selection attribute. By default, only the inactive jobs may be selected.

JOB-STATE = *ANY

Jobs may be selected regardless of their status.

JOB-STATE = *INACTIVE

Inactive jobs that are not repeat jobs are selected.

JOB-STATE = *EXECUTING

Active jobs that are not repeat jobs are selected.

JOB-STATE = *REPEAT

All repeat jobs are selected.

PUBSET = *ANY / list-poss(16): <alphanum-name 1..4>

Specifies whether the pubset on which the command file for the job is located is to be the selection attribute.

PUBSET = *ANY

The pubset is not a selection attribute.

PUBSET = list-poss(16): <alphanum-name 1..4>

All jobs whose command files are on one of the specified pubsets are selected. As many as 16 pubsets can be specified in a list.

JOB-NAME = *ANY / list-poss(16): *NONE / <alphanum-name 1.8>

Specifies whether the job name is to be a selection attribute.

JOB-NAME = *ANY

The job name is not a selection attribute.

JOB-NAME = list-poss(16): *NONE / <alphanum-name 1.8>

The jobs with the specified names are all selected. Jobs without a job name are selected with *NONE. As many as 16 job names can be specified in a list.

USER-IDENTIFICATION = *ANY / list-poss(16): <alphanum-name 1.8>

Specifies whether the user ID under which a job is running is to be the selection attribute.

USER-IDENTIFICATION = *ANY

The user ID is not a selection attribute.

USER-IDENTIFICATION = list-poss(16): <alphanum-name 1.8>

All jobs with one of the specified user IDs are selected. As many as 16 user IDs can be specified in a list.

JOB-CLASS = *ANY / list-poss(16): <alphanum-name 1.8>

Specifies whether the job class is to be the selection attribute.

JOB-CLASS = *ANY

The job class is not a selection attribute.

JOB-CLASS = list-poss(16): <alphanum-name 1.8>

All jobs that are to run in one of the specified job classes are selected. As many as 16 job classes can be specified in a list.

SELECT = *ALL

All jobs are moved.

SELECT = *BY-TSN(...)

Only jobs with the specified TSN are moved.

TSN = list-poss(128): <alphanum-name 1..4>

TSN of the job to be moved. The default is *ALL, i.e. all jobs are moved.

OUTPUT = <filename 1..54 without-gen>(…) / *DUMMY(...)

Specifies whether and to which destination the result of the command (import or export) is to be output.

OUTPUT = <filename 1..54 without-gen>(…)

The command result is to be logged in the specified file (see [page 4-533](#) for output format).

SYSOUT = *YES / *NO

Specifies whether the output is also to be copied to SYSOUT.

The default value is *YES, i.e. output is also copied to SYSOUT.

SYSLST = *YES / *NO

Specifies whether the output is also to be copied to SYSLST.

The default value is *NO, i.e. output is not also copied to SYSLST.

OUTPUT = *DUMMY(...)

The result of the command execution is not copied into a file. By default the result is output only to SYSOUT.

SYSOUT = *YES / *NO

Specifies whether the log is to be output to SYSOUT.
The default is *YES, i.e. output is directed to SYSOUT.

SYSLST = *YES / *NO

Specifies whether the log is to be output to SYSLST.
The default is *NO, i.e. no output to SYSLST.

DIALOG-CONTROL = *STD / *YES / *NO

Specifies whether or not a dialog should be conducted with the user for control purposes during execution of the command in order to permit step-by-step command processing. If command processing is interrupted with [K2] then the control dialog is started. A control dialog is only possible in dialog mode but, in this mode, may also be used in procedures. In batch mode, all operand values have the same effect as *NO.

In the control dialog, the user is asked, following the successful processing of a batch job or interruption with [K2], by means of message JMS0523 whether or not command processing is to be continued. The SDF abbreviation rules apply to the entered response. To display the possible responses, enter a question mark. If the response contains a syntax error the query will be repeated up to 10 times.

Syntax of the response to message JMS0523 (control dialog)

possible responses: *NO / *YES(...)

*YES(...)

| DIALOG-CONTROL = *UNCHANGED / *YES / *NO

Meaning of the responses

Response *NO

Processing of the MOVE-JOBS command is interrupted.

Response *YES(...)

Processing of the MOVE-JOBS command is continued. The subordinate operand DIALOG-CONTROL corresponds to the operand of the same name in the command and makes it possible to modify the associated settings. The operand value *UNCHANGED leaves the previous setting unchanged.

DIALOG-CONTROL = *STD

In the interactive dialog (SYSCMD is assigned to the operator terminal), the default value STD corresponds to the value *YES in procedures, and in batch mode to the value *NO.

DIALOG-CONTROL = *NO

The selected batch jobs are processed without any control query.

DIALOG-CONTROL = *YES

Whenever a batch job has been terminated successfully, a query is issued to ask whether processing should be continued.

Return codes

(SC2)	SC1	Maincode	Meaning
	0	CMD0001	No error
2	0	CMD0002	Command executed with a warning
	32	CMD0221	System error
	64	JMS0630	Semantic error or privilege error (see SYSOUT message; e.g. processor or catalog ID unknown or MONJV not accessible)
	64	JMS0640	File defective or not accessible, e.g. empty, not a PAM file, no access authorization
	130	JMS0620	No storage space or no TSN available
	130	JMS0660	Function currently not executable

Notes

1. When job description data is transferred into the active job pool, the availability of resources or the authorization of the job issuer is not checked (as is the case when a job is accepted). Basically, the behavior of the JMS is identical to that in the event of a warm start, here. It is up to the systems support staff to make sure that the system environment is identical at the time the task is started to that at the time the job was initially accepted (command file, user attributes, default catalog, etc.). Before the job is imported, the system merely checks whether the job class and the user ID under which the job is to run are available. If they are not available, the job is not imported. JMS cancels the job, if inconsistencies are encountered when it is underway. Before the MOVE-JOBS command is used in a network, the job environment needs to be checked carefully. If JMS cannot start a job because the necessary conditions are not met, this is regarded as an abnormal termination from the viewpoint of JMS, i.e. the job is deleted from the job pool.
2. JMS attempts to retain the TSN of a job. However, this cannot always be achieved, in particular when a job has been moved from another computer.
3. The "Current image" and the "Next image" of a repeat job are treated as pertaining to one single job, i.e. both will be deleted from the active job pool, but only the next image will be imported into the interim file. The entire repeat job is then reconstructed from the next image when it is imported (same as startup). If the current image was in the system at the time of export and was then selected in the import, the next image will be changed back into its predecessor.

4. After an export the S. files belonging to the jobs that were moved are released. During the import they will be locked again.
5. The interim file created when jobs were exported can be used as a job pool in a warm start. In addition to the name convention for system job pool files and Note 1, the following must be observed:
 - In the case of a warm start, jobs cannot be taken over into the system if their TSN is already occupied by SPOOL. This situation is avoided if start-up is performed with the same EQUISAMQ that was active at the time of the export.
 - The jobs' monitoring JVs are initially closed and have the status "\$M". Only when a job is terminated is the associated JV opened and the status reset to "\$R".

Format of the logfile

The logfile that is generated is an SAM file with a variable record length. The events that are logged, are contained in a record and can be identified by means of a four-position record type code. A sample export log and import log with explanations follow below.

Example 1 (export log)

```

*HDR > MOVE-JOBS   Date: 2012-03-23   Time: 13:50   _____ (1)
*CMD > FROM-FILE = *STD   _____ (2)
*CMD >           ( CANCEL-RUNNING-JOBS = *YES )
*CMD > TO-FILE    = JOBPOOL.112
*CMD >           ( WRITE-MODE = *EXTEND )
*CMD > SELECT    = *BY-ATTRIBUTES (
*CMD >           JOB_STATE = *ANY
*CMD >           PUBSET    = *ANY
*CMD >           JOB-NAME  = *ANY
*CMD >           USER-ID   = *ANY
*CMD >           JOB-CLASS = *ANY
*CMD >           )
*CMD > OUTPUT    = HEMUL
*CMD >           ( SYSOUT = *YES, SYSLST = *NO )
*CMD > DIA-CONTR = *NO

+KEY >   TSN      JSTATE   CAT      JNAME      UID        JCLASS      O-TSN _____ (3)
EXT >   0AQS   *INACT   2V24   HEM11     TSOS       JCJS2XSB   _____ (4)
EXT >   0AQT   *INACT   2V24   HEM22     TSOS       JCJS2XSB
EXT >   0AAK   *INACT   A       LUCKI     TSOS       JCJS2XSB
EXT >   0CTC   *INACT   2V27   ENTPE     TSOS       JCJS2XSB
EXT >   0AAL   *INACT   A       LUCKI     TSOS       JCJS2XSB
EXT >   0AAM   *INACT   A       LUCKI     TSOS       JCJS2XSB
EXT >   0AAN   *REPEAT  A       LUCKI     TSOS       JCJS2XSB
EXT >   0AAQ   *REPEAT  A       LUCKI     TSOS       JCJS2XSB
EXT >   0CUY   *INACT   2V27   ENTPE     TSOS       JCJS2XSB
EXT >   0AEG   *INACT   G       TSOS      JCJS2XSB
EXT >   0AEH   *INACT   G       TSOS      JCJS2XSB
EXT >   0AEI   *REPEAT  G       TSOS      JCJS2XSB
EXT >   0AEK   *INACT   G       TSOS      JCJS2XSB
EXT >   0APY   *REPEAT  G       TSOS      JCJS3XSB   _____ (5)
*REM >   0APX   CURRENT  IMAGE OF  OAPY      TSOS      JCJS3XSB   _____ (6)
EXT >   0APU   *REPEAT  G       TSOS      JCJS3XSB

```

```

*REM > OAPT CURRENT IMAGE OF OAPU
EXT > OAPW *REPEAT G TSOS JCJS3XSB
*REM > OAPV CURRENT IMAGE OF OAPW
#SYS > RC FROM PAM WRITE 5678 _____ (7)
*WAR > SOME JOBS COULD NOT BE PROCESSED _____ (8)
*WAR > OAPP
    
```

Explanation

- (1) Heading line (record type *HDR)
- (2) Command entered (record type *CMD)
- (3) Normally (import or export successful) the information per job is output to the following columns:
 - TSN: the job's TSN at the time of export or assigned at the time of import (see also O-TSN)
 - JSTATE: Job status
 - CAT: Catalog ID of the pubset where the job's command file is located
 - JNAME: Job name
 - UID: User ID under which the job runs
 - JCLSS: Job class
 - O-TSN: Only relevant for import. If a new TSN has to be assigned when the job is imported, because the TSN already exists in the system, the O-TSN (original TSN) column contains the job's original TSN.
- (4) The information lines that follow begin with a process identification (record type *EXT for successful export or *IMP for successful import).
- (5) Export of a repeat job. Repeat jobs may exist in two forms, namely current image and next image. The MOVE-JOBS command only exports the next image, in order to avoid job duplication. If a current image exists during the export process, that will be deleted and reconstructed again from the next image on import. If possible, the current image will retain its TSN.
- (6) A current image existed when the repeat jobs was exported and was deleted (see item 5).
- (7) Example of a system error during command execution; it was not possible to read a PAM page.
- (8) Comprehensive warning message on command conclusion.

Example 2 (export log)

```

*HDR > MOVE-JOBS   Date: 2012-03-24   Time: 08:49           _____ (1)
*CMD > FROM-FILE = *STD
*CMD >              ( CANCEL-RUNNING-JOBS = *NO )
*CMD > TO-FILE     = JOBPOOL.1
*CMD >              ( WRITE-MODE = *EXTEND )
*CMD > SELECT      = *BY-TSN ( TSN =
*CMD >              OXXX,OYYY,OZZZ,OAPP,OAPR,OAPS
*CMD >              )
*CMD > OUTPUT      = HEMUL
*CMD >              ( SYSOUT = *YES, SYSLST = *NO )
*CMD > DIA-CONTR  = *NO

+KEY >   TSN      JSTATE   CAT    JNAME      UID          JCLASS      O-TSN
#ERR >   OAPS     IS CALLER TASK _____ (2)
#ERR >   OAPR     IS ALREADY EXTRACTED
#ERR >   OAPP     IS JOB-SCHEDULER
*NFD >   OZZZ     IN SYSTEM JOBPPOOL _____ (3)
*NFD >   OYYY     IN SYSTEM JOBPPOOL
*NFD >   OXXX     IN SYSTEM JOBPPOOL

#SYS >          RC FROM JOBP BOURSE   01234567
*WAR >          SOME JOBS COULD NOT BE PROCESSED
*WAR >   OXXX
*WAR >   OYYY
*WAR >   OZZZ
*WAR >   OAPP
*WAR >   OAPR
*WAR >   OAPS

EXT >   OAPR *INACT   G          TSOS      JCJS2XSB
#ERR >   OAPR RC FROM CANCEL   09
EXT >   OAPQ *INACT   G          TSOS      JCJS2XSB
EXT >   OAPP *INACT   G          TSOS      JCJS2XSB

```

Explanation

- (1) This sample log shows a further export. A new logfile is created for each execution of the MOVE-JOBS command.
- (2) The information lines are identified by IMP (for import). See item 3 above for details. Specific user jobs cannot be exported, because this would mean that they would be removed completely from the system and that is not desirable (e.g. the task under which the MOVE-JOBS command is currently running or the scheduler task of the JMS). The MOVE-JOBS command cannot, however, avoid all essential tasks from being exported. If the MOVE-JOBS command is not used with the utmost care, then important user-specific jobs may be canceled causing serious disruption to system operation.
- (3) The TSN of a job to be exported is not known to the JMS (record type *NFD).

Example 3 (import log)

```
*HDR > MOVE-JOBS   Date: 2012-03-23   Time: 13:50
*CMD > FROM-FILE = JOBPPOOL.GROSS
*CMD > TO-FILE   = *STD
*CMD > SELECT    = *BY-ATTRIBUTES (
*CMD >             JOB_STATE = ( *INACTIVE, *REPEAT )
*CMD >             PUBSET    = (
*CMD >                 A ,G ,L ,2V24,2V27
*CMD >             )
*CMD >             JOB-NAME  = *ANY
*CMD >             USER-ID   = *ANY
*CMD >             JOB-CLASS = (
*CMD >                 JCJS2XSB,JCJS3XSB,J1 ,J2 ,
*CMD >                 J3 ,J4 ,J5
*CMD >             )
*CMD >             )
*CMD > OUTPUT     = HEMUL
*CMD >             ( SYSOUT = *YES, SYSLST = *NO )
*CMD > DIA-CONTR = *NO
```

+KEY >	TSN	JSTATE	CAT	JNAME	UID	JCLASS	0-TSN	
IMP >	0AQS	*INACT	2V24	HEM11	TSOS	JCJS2XSB	_____	(1)
IMP >	0AQT	*INACT	2V24	HEM22	TSOS	JCJS2XSB		
IMP >	0AAU	*INACT	2V24	HEM33	TSOS	JCJS2XSB		
IMP >	0AAV	*INACT	2V24	HEM44	TSOS	JCJS2XSB		
IMP >	0AAW	*REPEAT	2V24	HEM55	TSOS	JCJS2XSB		
IMP >	0AAQ	*REPEAT	2V24	HEM66	TSOS	JCJS2XSB		
IMP >	0AAQ	*REPEAT	2V24	HEM77	TSOS	JCJS2XSB		
IMP >	0AAQ	*REPEAT	2V24	HEM88	TSOS	JCJS2XSB		
#ERR >	0AP0	UNDEFINED	USER-ID	HEMUL			_____	(2)
#ERR >	0AP1	UNDEFINED	USER-ID	HEMUL				
#ERR >	0AP2	UNDEFINED	USER-ID	HEMUL				
#ERR >	0AP3	UNDEFINED	USER-ID	HEMUL				
#ERR >	0AP4	UNDEFINED	USER-ID	HEMUL				
#ERR >	0AP5	UNDEFINED	USER-ID	HEMUL				
*MOD >	0AP7	TO CURRENT	IMAGE	0AP6				
#ERR >	0AP6	UNDEFINED	JOB-CLASS	JCJS3XSB			_____	(3)
*MOD >	0AP9	TO CURRENT	IMAGE	0AP8				
#ERR >	0AP8	UNDEFINED	JOB-CLASS	JCJS3XSB				
*MOD >	0AAQ	TO CURRENT	IMAGE	0AAQ				
IMP >	0AAQ	*REPEAT	G	TSOS		JCJS2XSB	_____	(4)
#ERR >	0AAQ	UNDEFINED	JOB-CLASS	JCJS3XSB				
IMP >	0AAK	*INACT	A	LUCKI	TSOS	JCJS2XSB		
IMP >	0CTC	*INACT	2V27	ENTPE	TSOS	JCJS2XSB		
IMP >	0AAL	*INACT	A	LUCKI	TSOS	JCJS2XSB		
IMP >	0AAM	*INACT	A	LUCKI	TSOS	JCJS2XSB		
IMP >	0AAN	*REPEAT	A	LUCKI	TSOS	JCJS2XSB		
IMP >	0AAQ	*REPEAT	A	LUCKI	TSOS	JCJS2XSB		
IMP >	0CUY	*INACT	2V27	ENTPE	TSOS	JCJS2XSB		
IMP >	0AEG	*INACT	G	TSOS		JCJS2XSB		
IMP >	0AEH	*INACT	G	TSOS		JCJS2XSB		
IMP >	0AEK	*INACT	G	TSOS		JCJS2XSB		
#SYS >	0AEG	RC FROM JMS	JMJENQ	04			_____	(5)
#SYS >	0AEE	RC FROM TSN	REASSIGN	FFFF				
#SYS >		RC FROM PAM	READ	4567				
#ERR >		WRONG VERSION	ENTRY ON	JOBPOOL	PAGE	0005		
#SYS >		RC FROM PAM	WRITE	5678				

Explanation

- (1) Example of a successfully imported job. The information lines are identified by IMP (for import). For the meaning of output columns see item 3 of [“Example 1 \(export log\)” on page 4-533](#).
- (2) It was not possible to import the job because the user ID *HELMUL* was not defined in the system.
- (3) It was not possible to import the job because the the job class *JCJS3XSB* was not defined in the system.
- (4) Example of a successfully imported repeat job whose current image has been reconstructed.
- (5) Example of another error situation reported in the log. It is not always possible to allocate an error to a specific job.

MOVE-PRINT-JOBS

Move print job from EQUISAMQ file

Description status:	SPOOLSYS V2.3E
Functional area:	Controlling spoolout job
Domain:	SPOOL-PRINT-ADMINISTRATION
Privileges:	PRINT-SERVICE-ADMINISTRATION

Function

Systems support can use the MOVE-PRINT-JOBS command to extract print jobs from one EQUISAMQ file (job spool queue) and move them into another. This allows systems support to remove urgent print jobs from a system that has failed and place them in the EQUISAMQ file of a functioning system for them to be printed. The command can also be used to relieve the print load of a system.

The function is also available when the SPOOL subsystem is not loaded.

The print jobs from the EQUISAMQ file of one system can be moved directly into the EQUISAMQ file of another system, or they can be stored in a work file before being finally moved to the EQUISAMQ file of the destination system and vice versa.

The number of print jobs that were moved successfully is output in the SPA0114 message. Each print job that has been successfully transferred is deleted from the input file.

If the TSN of a transferred print job already exists on the target system the job is assigned a new TSN and a message is issued to the operator terminal. The access authorizations pertaining to the print job remain unchanged.

The number 0 means that either no print job has been chosen or that no selection was possible due to an error.

As a standard, all local print jobs may be transferred. However, it is also possible to transfer all the the distributed print jobs. Additional the number of print jobs moved may also be restricted with the aid of selection attributes (SELECT=*BY-ATTRIBUTES(...) operand):

- Selection via the subset on which the required resources are located (RESOURCES-PUBSET operand).
- Selection via job status (JOB-TYPE operand); waiting, active or on-hold jobs can be selected.
- Selection via the job type (JOB-SCOPE operand); local or distributed print jobs may be selected.

The MOVE-PRINT-JOBS command supports all print jobs that are processed by the Dprint, SPOOL, RSO, SCSIPCL and SPS subsystems. Distributed print jobs can only be processed if the SPOOL subsystem is not loaded.

The following distributed printed jobs can be processed:

- Print jobs that were output by remote clusters (BS2000 or Xprint) and processed by the server located on the gateway host (gateway host = server host).
- Print jobs that were output by a BS2000 client host and processed on the associated home server (client host = server host).

The Dprint commands MODIFY-MULTIPLE-PRINT-JOBS and CANCEL-MULTIPLE-PRINT-JOBS can be used for other distributed print jobs (see the “Distributed Print Services” User Guide [10]).

Format

MOVE-PRINT-JOBS
<pre> FROM-FILE = *STD / <filename 1..54 without-gen-vers> / *INACTIVE-SYSTEM-PRINT-QUEUE(..) *INACTIVE-SYSTEM-PRINT-QUEUE(...) PUBSET= <catid 1..4> ,TO-FILE = *STD / <filename 1..54 without-gen-vers> ,SELECT = *LOCAL-PRINT-JOBS / *DISTRIBUTED-PRINT-JOBS / *BY-ATTRIBUTES(...) *BY-ATTRIBUTES(...) RESOURCES-PUBSET = *ANY / list-poss(128): <cat-id 1..4> ,JOB-TYPE = *ANY / list-poss(3): *WAIT / *ACTIVE / *KEEP ,JOB-SCOPE = *ANY / list-poss(2): *LOCAL-PRINT-JOBS / *DISTRIBUTED-PRINT-JOBS </pre>

Operands

FROM-FILE = *STD / <filename 1..54 without-gen-vers>

***INACTIVE- SYSTEM-PRINT-QUEUE(...)**

The name of the original file from which the print jobs are to be transferred. This can be the EQUISAMQ file on the local system (\$TSOS.EQUISAMQ on the home pubset), an EQUISAMQ file on an imported pubset or a work file generated with MOVE-PRINT-JOBS.

FROM-FILE = *STD

The print jobs are transferred from the EQUISAMQ file on the local system (\$TSOS.EQUISAMQ on the home pubset).

FROM-FILE = <filename 1..54 without-gen-vers>

The print jobs are transferred from the file specified. The pathname of an EQUISAMQ file (\$TSOS.EQUISAMQ) or of a work file may be specified. The specified file must be existent and it must have the file attributes of an EQUISAMQ file.

A work file contains print jobs that have already been “collected” with MOVE-PRINT-JOBS and that are now to be transferred into an EQUISAMQ file or into another work file.

FROM-FILE = *INACTIVE-SYSTEM-PRINT-QUEUE(...)

The print jobs are transferred from the remote system's EQUISAMQ file (\$TSOS.EQUISAMQ on a pubset imported in the local system).

PUBSET= <cat-id 1..4>

Catalog ID of the imported pubset.

TO-FILE = *STD / <filename 1..54 without-gen-vers>

The name of the destination file into which the print jobs are to be transferred. The destination file can be an EQUISAMQ file on the local system (home pubset), an EQUISAMQ file on an imported pubset or a workfile, however, it must not be the original file specified in the FROM-FILE operand.

TO-FILE = *STD

The print jobs are transferred to the EQUISAMQ file on the local system (\$TSOS.EQUISAMQ on the home pubset). The file has to exist already (generated when the SPOOLSYS subsystem is started).

TO-FILE = <filename 1..54 without-gen-vers>

The print jobs are transferred into the specified destination file. The path name of an EQUISAMQ file (\$TSOS.EQUISAMQ) or of a work file may be specified. The specified file must have the file attributes of an EQUISAMQ file. If the file does not yet exist, it will be generated with the appropriate file attributes. An exception to this rule is the EQUISAMQ on the local system. This must already exist (it is generated when the SPOOLSYS subsystem is started).

Print jobs can be collected in a work file and then transferred to an EQUISAMQ file at some later stage.

SELECT = *LOCAL-PRINT-JOBS / *DISTRIBUTED-PRINT-JOBS / *BY-ATTRIBUTES(...)

Specifies whether the number of print jobs to be transferred is to be restricted.

SELECT = *LOCAL-PRINT-JOBS

All local print jobs are transferred (corresponds to the specification SELECT=*ALL which is still supported for reasons of compatibility).

SELECT = *DISTRIBUTED-PRINT-JOBS

All local print jobs are transferred (see the notes on usage below).

SELECT = *BY-ATTRIBUTES(...)

Only the print jobs with the specified selection attributes are transferred.

RESOURCES-PUBSET = *ANY / list-poss(128): <cat-id 1..4>

Specifies whether the pubset with the required resources is the selection attribute.

RESOURCES-PUBSET = *ANY

The print jobs are selected regardless of the pubset on which the required resources are located. The following resources are considered when selecting local print jobs (specified with the PRINT-DOCUMENT command):

- file to be printed (FROM-FILE operand)
- job variable monitoring the job (MONJV operand, if specified)
- file with the user resources (USER-RESOURCES-FILE operand, if specified)
- translation table (TRANSLATION-TABLE operand, if specified)

In the case of distributed print jobs under BS2000 where client = server, the monitoring job variable and the user resource file are taken into account as resources (if specified).

RESOURCES-PUBSET = list-poss(128): <cat-id 1..4>

Only print jobs with the required resources on the specified pubset are selected. As many as 128 pubsets can be included in a list. If more than 128 pubsets are to be considered the MOVE-PRINT-JOBS command will have to be issued again for the remaining pubsets.

JOB-TYPE = *ANY / list-poss(3): *WAIT / *ACTIVE / *KEEP

Specifies whether the job status is to be a selection attribute. Several statuses may be given in a list (OR operation).

JOB-TYPE = *ANY

The print jobs are selected regardless of their status.

JOB-TYPE = *WAIT

The jobs that are waiting for a printer are selected. Their status may be WT (wait) or WP (wait-pre-processing).

JOB-TYPE = *ACTIVE

The jobs which have had a printer assigned to them are selected. Their status may be ACT (active), TRT (before-apa-print), TRD (after-apa-print) or PRE (pre-processing).

Selecting active jobs makes sense, when you want to move print jobs from an EQUISAMQ file of a system that has failed into the EQUISAMQ file of a functioning system. If there is no system failure, active jobs cannot be accessed.

JOB-TYPE = *KEEP

Jobs that were put on hold are selected (e.g. with the HOLD-PRINT-JOB command). Their status is KP (keep).

JOB-SCOPE = *ANY / list-poss(2): *LOCAL-PRINT-JOBS / *DISTRIBUTED-PRINT-JOBS

Specifies whether local (*LOCAL-PRINT-JOBS) or distributed (*DISTRIBUTED-PRINT-JOBS) print jobs are to be selected. The default value is *ANY, i.e. both local and distributed print jobs are selected. Both types of print job can be specified in a list (OR operator).

Return codes

(SC2)	SC1	Maincode	Meaning
	0	CMD0001	No error
	32	SPA0101	System error
	64	CMD0216	No authorization
	64	CMD2201	Parameter error
	64	SPA0102	Command execution terminated abnormally
	64	SPA0103	Command has already been executed by another task

Notes

- The MOVE-PRINT-JOBS command is rejected if you try to access the current EQUISAMQ file if the SPOOL subsystem is in the status IN-CREATE, IN-HOLD, IN-RESUME or IN-DELETE. This behavior is preset in the initialization file of the SPOOLSYS subsystem:

`MOVE.SPOOL.REQUEST=ABORT-REQUEST`

If the parameter value is changed into WAIT-SPOOL, command execution will not begin until the SPOOL subsystem is in the state CREATED or NOT-CREATED.

- While a MOVE-PRINT-JOBS command which accesses the current EQUISAMQ file is being processed, the START-, HOLD-, RESUME- and STOP-SUBSYSTEM commands are rejected for the SPOOL subsystem. This behavior is preset in the initialization file of the SPOOL subsystem:

`MOVE.SPOOL.REQUEST=ABORT-REQUEST`

If the parameter value is changed into WAIT-MOVE, command execution will not begin until the MOVE-PRINT-JOBS command has been concluded.

- While a MOVE-PRINT-JOBS command is being executed any other MOVE-PRINT-JOBS command is rejected. This behavior is preset in the initialization file of the SPOOLSYS subsystem:

`MOVE.COMMAND=ABORT-REQUEST`

If the parameter value is changed into WAIT-REQUEST, command execution of a further MOVE-PRINT-JOBS command will be started, when the currently active command execution routine is conclude.

- If the print jobs are output independent of the pubset on which the required resources are located, it is also possible to select print jobs that require resources on the home pubset. They can only be printed in another system if the pubset has been imported on that system. If this is not the case, the print jobs are rejected (status KP).

- Print jobs that have been successfully transferred to the destination file are deleted from the original file.
- RSO print jobs that were transferred into the current EQUISAMQ file are only visible if the RSO subsystem has been loaded.
- Print jobs whose TSN is already in use in the destination file, are assigned a new TSN. The relevant information is issued to the operator station.
- When a print job has been transferred to the destination file the job variable that is monitoring the job will be updated. The new TSN and the status of the print job (as established on the output device) are entered. The other fields remain unchanged.
- Print jobs with the same TSN (one PRINT-DOCUMENT command for several files with FAMILY-PROCESSING=*YES) are split up in the transfer process, i.e. n-1 elements of the job all receive a TSN of their own.
- Active print jobs that are transferred (after a system crash), are returned to the wait state. The other jobs retain their respective states.
- Print jobs that request a file lock (LOCK-FILE operand in the PRINT-DOCUMENT or MODIFY-PRINT-JOB-ATTRIBUTES command) are ignored when jobs are being transferred from a work file into the current EQUISAMQ file, if the file lock cannot be set (e.g. the file no longer exists or the pubset cannot be accessed).

Special characteristics of distributed print jobs

- If the TSN of a print job already refers to another task or another print job on the remote system to which it was moved with the MOVE-PRINT-JOBS command, this print job is assigned a new TSN, and a console message (SPA0105) is issued. In addition, this second print job (on the target system) is set with message SPA0117 to “not schedulable”, i.e. stopped, in the following cases:
 - a) if the print job to be moved is a distributed print job on different clusters, with gateway = server
 - b) if the TSN of the print job matches the TSN of a distributed print job (not client = server) on the target system
 - c) if the SPOOL subsystem is not loaded.

The assignment of a new TSN occurs only when print jobs are moved to the standard EQUISAMQ file of the system. If a new TSN was assigned, the order of the print jobs involved must be defined in accordance with the new TSN.

- The distributed print jobs (from remote clusters, with gateway = server) that were started with a DPRINT-CL version before V01.0G are never moved to an EQUISAMQ file of the system, since some of the information needed to define the print job is missing.

- The user ID of virtual printer server tasks should be defined under a (selectable or shared) pubset which is not the home pubset in order to facilitate the administration of the user ID within HIPLEX (provided that the HIPLEX function is available).

MOVE-SPACEPRO-DISK

Extend or reduce a SPACEPRO pubset

Description status:	SPACEPRO V1.0A
Functional area:	Pubset and MRSCAT management
Domain:	MULTI-CATALOG-AND-PUBSET-MGMT
Privileges:	TSOS

Function

The MOVE-SPACEPRO-DISK command offers systems support the following functions for modifying the SPACEPRO configuration manually:

- Manual reduction of a SPACEPRO pubset with the volume being returned to a pool pubset (including emptying the volume using an internal SPACEOPT call)
- Manual extension of a SPACEPRO pubset if automatic extension could not be performed (e.g. because the wait time since the last extension has not elapsed)
- Extension of a pool pubset by a new volume
- Reduction of a pool pubset by a volume which is to be returned

This command can be used on any pubsets, i.e. they do not need to be SPACEPRO or pool pubsets. However, the pubsets specified must have been imported.

Notes on command processing

- When required, internal processing makes use of commands which require the SUBSYSTEM-MANAGEMENT and USER-ADMINISTRATION privileges.
- When it is necessary to empty a volume, SPACEPRO starts the SPACEOPT subsystem if required. To permit this, the necessary privileges must exist.
- When CHECK-PUBSET-MIRROR=*YES is specified, SPACEPRO starts the POSIX and SHC-OSD subsystems as required, provided these are available and the necessary privileges exist.

Format

MOVE-SPACEPRO-DISK	
FROM = *PUBSET(...) / *DISK(...)	
*PUBSET(...)	PUBSET = <cat-id 1..4>(…) <cat-id 1..4>(…) VOLUME-SET = *NONE / <cat-id 1..4> VOLUME = *LAST / <vsn 6..6> CLEAR-VOLUME-TIME = *BY-PARAMETER / <integer 1..65280 seconds>
*DISK(...)	UNIT = <alphanum-name 2..2> / <x-text 4..4> OVERWRITE-DISK = *NON-STANDARD / *ANY / <vsn 1..6>
,TO= *PUBSET(...) / *DISK(...)	
*PUBSET(...)	PUBSET = <cat-id 1..4>(…) <cat-id 1..4>(…) VOLUME-SET = *NONE / <cat-id 1..4> VOLUME = *NEXT / <vsn 6..6> ALLOCATION-ON-VOLUME = *NOT-RESTRICTED / *NOT-ALLOWED CHECK-PUBSET-MIRRORS = *BY-PARAMETER / *NO / *YES
*DISK(...)	NEW-VSN = *NON-STANDARD / <vsn 6..6>(…) <vsn 6..6>(…) FORMAT = *UNCHANGED / *K / *NK(...) *NK(...) PHYSICAL-BLOCK-SIZE = *2K(...) / *4K(...) *2K(...) ALLOCATION-UNIT = 6 / 8 / 64 *4K(...) ALLOCATION-UNIT = 8 / 64
,DESTROY-OLD-CONTENTS = *NO / *YES(...)	
*YES(...)	NUMBER-OF-OVERWRITES = *VOLIN-STD / <integer 1..10>

Operands

FROM = *PUBSET(...) / *DISK(...)

Specifies whether the disk whose status is to be modified belongs to a pubset or is a single disk volume.

FROM = *PUBSET(...)

The disk is a volume of a pubset (SF pubset in the case of VOLUME-SET=*NONE or volume set of an SM pubset). When a change of status takes place, it must be removed from this pubset (reduction of a SPACEPRO pubset or of a pool pubset).

PUBSET = <cat-id 1..4>(…)

Catalog ID of the SF or SM pubset.

VOLUME-SET = *NONE / <cat-id 1..4>

Specifies the volume set to be modified if an SM pubset was specified. In the case of an SF pubset, only *NONE may be specified.

VOLUME = *LAST / <vsn 6..6>

Specifies the VSN of the volume to be removed. The default is *LAST, i.e. the volume with the last VSN assigned (highest disk number in the VSNs) is removed.

CLEAR-VOLUME-TIME = *BY-PARAMETER / <integer 1..65280 seconds>

Defines a maximum wait time for volume to be emptied by the internal SPACEOPT call. The default is *BY-PARAMETER, i.e. the setting is taken from the relevant SPACEOPT parameter.

FROM = *DISK(...)

The status of a single disk volume is to be modified.

UNIT = <alphanum-name 2..2> / <x-text 4..4>

Mnemonic of the disk.

OVERWRITE-DISK = *NON-STANDARD / *ANY / <vsn 1..6>

Controls the subsequent VOLIN run with regard to overwriting the VSN.

OVERWRITE-DISK = *NON-STANDARD

The VSN is only overwritten for a non-standard disk.

OVERWRITE-DISK = *ANY

The VSN is overwritten for every disk.

OVERWRITE-DISK = <vsn 1..6>

The VSN is only overwritten for the disk with the specified VSN.

TO= *PUBSET(...) / *DISK(...)

Determines the target status which the volume specified in the FROM operand is to assume.

TO= *PUBSET(...)

The volume specified in the FROM operand is to be entered as the volume in the pubset (SF pubset or volume set of an SM pubset) subsequently specified (extension of a SPACEPRO pubset or of a pool pubset).

PUBSET = <cat-id 1..4>(…)

Catalog ID of the SF or SM pubset.

VOLUME-SET = *NONE / <cat-id 1..4>

Specifies the volume set if an SM pubset was specified. In the case of an SF pubset, only *NONE may be specified.

VOLUME = *NEXT / <vsn 6..6>

Specifies which VSN is to be assigned to the volume. The default is *NEXT, i.e. the next free VSN is used.

ALLOCATION-ON-VOLUME = *NOT-RESTRICTED / *NOT-ALLOWED

Controls the operand of the same name in the MODIFY-PUBSET-RESTRICTIONS command used internally. *NOT-ALLOWED must be specified when a pool pubset is extended.

CHECK-PUBSET-MIRRORS = *BY-PARAMETER / *NO / *YES

Controls the operand of the same name in the MODIFY-PUBSET-PROCESSING command used internally.

TO= *DISK(...)

The volume specified in the FROM operand is to become a single volume with a new VSN. The VOLIN restrictions with regard to the VSN and format must be observed.

NEW-VSN = *NON-STANDARD

The disk becomes a non-standard disk.

NEW-VSN = <vsn 6..6>(…)

The disk is assigned the specified VSN.

FORMAT = *UNCHANGED / *K / *NK(…)

Determines the disk's physical format.

FORMAT = * K

The disk is assigned K formatting.

FORMAT = *NK(...)

The disk is assigned NK formatting.

PHYSICAL-BLOCK-SIZE = *2K(...) / *4K(...)

Determines the size of the physical blocks.

PHYSICAL-BLOCK-SIZE = *2K(...)

The physical blocks are 2 KB in size.

ALLOCATION-UNIT = 6 / 8 / 64

Size of the smallest allocation unit in KB.

PHYSICAL-BLOCK-SIZE = *4K(...)

The physical blocks are 4 KB in size.

ALLOCATION-UNIT = 8 / 64

Size of the smallest allocation unit in KB.

DESTROY-OLD-CONTENTS = *NO / *YES(...)

Defines whether the user data on the disk is to be deleted in the VOLIN run.

DESTROY-OLD-CONTENTS = *YES(...)

The user data on the disk is to be deleted in the VOLIN run.

NUMBER-OF-OVERWRITES = *VOLIN-STD / <integer 1..10>

Specifies how often the user data is to be overwritten in the VOLIN run.

Return codes

(SC2)	SC1	Maincode	Meaning
	0	CMD0001	Command executed without error
	1	CMD0202	Syntax error
	32	CMD0221	System error
	64	SPP0305	JV subsystem not available
	64	SPP0306	Wrong version of the SDF-P-BASYS subsystem
	64	SPP0311	Unexpected return code of the command specified in the insert
	64	SPP0330	Lock on pubset not received
	64	SPP0340	Maximum number of volumes reached in the pubset/volume set
	64	SPP0422	Invalid disk status of the volume
	64	SPP0600	Non-standard disks in FROM and TO
	64	SPP0601	SPACEPRO pubset not available
	64	SPP0602	Target pubset (TO) not available
	64	SPP0606	Pubset for FROM and TO identical
	64	SPP0607	Invalid volume set specified for the pubset
	64	SPP0608	Invalid volres specification
	64	SPP0609	Volume specified in FROM not found
	64	SPP0610	Volume specified in TO not found
	64	SPP0611	Volume specified in FROM could not be emptied

(Part 1 of 2)

(SC2)	SC1	Maincode	Meaning
	64	SPP0617	Transfer of disk rejected
	64	SPP0619	Error in VOLIN run
	64	SPP0621	Parameter CHECK-PUBSET-MIRRORS=*YES, but SHC-OSD subsystem could not be started
	64	SPP0622	Parameter not supported in this BS2000 version
	64	SPP0626	Pubset specified in TO is a shared pubset and the local system is not pubset master
	130	SDP0099	Shortage of memory space

(Part 2 of 2)

Examples

1. Manual reduction of a SPACEPRO pubset by one volume which is to be returned to the pool pubset

```

/ATTACH-DEVICE *PUBSET-DEVICE(PUBSET=<p-ps>)                (Attach pool pubset)
/IMPORT-PUBSET PUBSET=<p-ps>                                  (Import pool pubset)
/MOVE-SPACEPRO-DISK
  FROM=*PUBSET(PUBSET=<s-ps>[(VOLUME-SET=<s-vs>)])
  CLEAR-VOLUME-TIME=<cvt>),
  TO=*PUBSET(PUBSET=<p-ps>[(VOLUME-SET=<p-vs>)]),
  ALLOCATION-ON-VOLUME=*NOT-ALLOWED),
  DESTROY-OLD-CONTENTS=YES(NUMBER-OF-OVERWRITES=<no>)
/EXPORT-PUBSET PUBSET=<p-ps>                                  (Export pool pubset)
/DETACH-DEVICE *PUBSET-DEVICE(PUBSET=<p-ps>)                (Detach pool pubset)

```

2. Manual extension of a SPACEPRO pubset by one volume from the pool pubset

```

/ATTACH-DEVICE *PUBSET-DEVICE(PUBSET=<p-ps>)                (Attach pool pubset)
/IMPORT-PUBSET PUBSET=<p-ps>                                  (Import pool pubset)
/MOVE-SPACEPRO-DISK
  FROM=*PUBSET(PUBSET=<p-ps>[(VOLUME-SET=<p-vs>)]])
  TO=*PUBSET(PUBSET=<s-ps>[(VOLUME-SET=<s-vs>)]),
  CHECK-PUBSET-MIRROR=<cpm>)
/EXPORT-PUBSET PUBSET=<p-ps>                                  (Export pool pubset)
/DETACH-DEVICE *PUBSET-DEVICE(PUBSET=<p-ps>)                (Detach pool pubset)

```

3. Extension of a pool pubset by one volume to Unit= <mn>

```

/ATTACH-DEVICE *PUBSET-DEVICE(PUBSET=<p-ps>)                (Attach pool pubset)
/ATTACH-DEVICE <mn>                                          (Attach disk)
/IMPORT-PUBSET PUBSET=<p-ps>                                  (Import pool pubset)
/MOVE-SPACEPRO-DISK
  FROM=*DISK(UNIT=<mn>, OVERWRITE-VSN=*NON-STANDARD/*ANY/<ovsn>),
  TO=*PUBSET(PUBSET=<p-ps>[(VOLUME-SET=<p-vs>)]),
  ALLOCATION-ON-VOLUME=*NOT-ALLOWED),
  DESTROY-OLD-CONTENTS=YES(NUMBER-OF-OVERWRITES=<no>)
/EXPORT-PUBSET PUBSET=<p-ps>                                  (Export pool pubset)

```

/DETACH-DEVICE *PUBSET-DEVICE(PUBSET=<p-ps>) *(Detach pool pubset)*

4. Reduction of a pool pubset by one volume which is to be placed in the NON-STANDARD DISK status

/ATTACH-DEVICE *PUBSET-DEVICE(PUBSET=<p-ps>) *(Attach pool pubset)*

/IMPORT-PUBSET PUBSET=<p-ps> *(Import pool pubset)*

/MOVE-SPACEPRO-DISK
FROM=*PUBSET(PUBSET=<p-ps>[(VOLUME-SET=<p-vs>)]),
TO=*DISK(NEW-VSN=*NON-STANDARD)

/EXPORT-PUBSET PUBSET=<p-ps> *(Export pool pubset)*

/DETACH-DEVICE *PUBSET-DEVICE(PUBSET=<p-ps>) *(Detach pool pubset)*

MOVE-TASK-TO-CATEGORY

Modify category assignment of a task

Description status:	BS2000 OSD/BC V10.0A
Functional area:	Job processing
Domain:	JOB SYSTEM-TUNING
Privileges:	TSOS

Function

The MOVE-TASK-TO-CATEGORY command enables systems support to modify the application of a task to a category if it is necessary to handle this task better or relieve the load on a category.

In addition to the four categories with the standard names TP, DIALOG, BATCH and SYS, the task management supports 12 other categories whose names are defined with the JMU utility routine. The job management system (JMS) notifies the task management of these JMS categories.

PCS (Performance Control System) enables further categories which are not known to JMS to be set up. However, these additional categories can only be successor categories of JMS categories. A JMS category can also be defined as a successor category of another JMS category.

The change in the chain of successor categories is initiated by PCS when a predefined quantity of added SERVICE-UNITS is exceeded (also referred to as DURATION RUNOUT).

The successor categories specified when PCS is used are displayed using the PCS command SHOW-PCS-OPTION.

The MOVE-TASK-TO-CATEGORY command assigns a task only to target categories which are JMS categories and not successor categories.

Task attributes assigned to the user (DIALOG, BATCH, TP) are defined by systems support in the user catalog and in the job classes. They can be modified via program interfaces (TINF macro).

A task can only be assigned to a target category if the task type which is assigned to the target category is the same as the current task type of the task (if required using a setting made with TINF).

The command is rejected in the event of a task with the task type "SYSTEM" and if the category SYS is specified.

Format

MOVE-TASK-TO-CATEGORY	Alias: MTTC
<p>JOB-IDENTIFICATION = *TSN(...) / *MONJV(...)</p> <p> *TSN(...)</p> <p> TSN = <alphanum-name 1..4></p> <p> *MONJV(...)</p> <p> MONJV = <filename 1..54 without-gen-vers></p> <p>,TO-CATEGORY = <name 1..7> / *DIALOG / *BATCH / *TP</p>	

Operands**JOB-IDENTIFICATION =**

Type of job identification.

Jobs can be identified by their task sequence number (TSN) or monitoring JV (MONJV).

Jobs with the task type "SYSTEM" are not accepted.

JOB-IDENTIFICATION = *TSN(...)

The job is identified by its task sequence number (TSN).

TSN = <alphanum-name 1..4>

TSN of the job whose category assignment is to be modified.

JOB-IDENTIFICATION = *MONJV(...)

The job is identified by the JV which monitors it.

MONJV = <filename 1..54 without-gen-vers>

Name of the JV monitoring the job whose category assignment is to be modified.

TO-CATEGORY = <name 1..7> / *DIALOG / *BATCH / *TP

Name of the target category to which the task is to be assigned. The category SYS is not accepted.

Return codes

(SC2)	SC1	Maincode	Meaning
	0	CMD0001	Without errors
1	0	CMD0001	Task is already assigned to the specified target category
	1	CMD0202	Syntactical error
	32	CMD0221	System-internal error
	64	CMD0216	Authorization missing
	64	EXC0200	Parameter error: TSN or MONJV unknown or MONJV belongs to another system in the MSCF network
	64	EXC0201	Parameter error: Target category unknown
	64	EXC0202	Parameter error: Task with system type SYSTEM is not allowed
	64	EXC0203	Parameter error: SYS is not allowed as the target category
	64	EXC0204	Target category is not a JMS category (but a category set up by PCS)
	64	EXC0205	Target category is a (PCS) successor category and not an "autonomous" JMS category or a (JMS) start category in a chain of PCS successor categories
	64	EXC0206	Task type of task and target category do not match

Example

The task with TSN=0BMU is assigned to the category BATCHF and is now to be assigned to the category TP2:

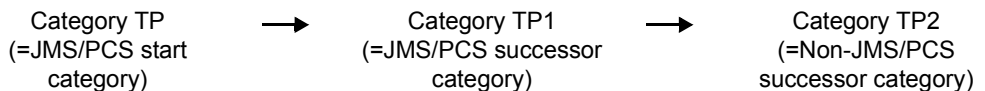
```
/show-job-status job-id=*tsn(0bmu)
TSN:      OBMU      TYPE:      2 BATCHF      NOW: 2012-03-08.154540
...
```

```
/move-task-to-category tsn=0bmu, to-category=tp2
```

The command is rejected with the following message:

```
% EXC0205 TARGET-CATEGORY IS A CONSECUTION CATEGORY. COMMAND NOT PROCESSED.
```

When PCS is used the PCS command /SHOW-PCS-OPTION supplies the following information:



The task is therefore to be assigned to the ('JMS) start category, namely TP, in this sequence:

```
/move-task-to-category tsn=0bmu, to-category=tp  
% EXC0208 TASK WITH TSN = 'OBMU' ASSIGNED TO TARGET-CATEGORY 'TP'. COMMAND  
COMPLETED.
```

The SHOW-JOB-STATUS command now shows that the task is now assigned to the category TP:

```
/show-job-status job-id=*tsn(0bmu)  
TSN:      OBMU      TYPE:      2 TP      NOW:      2012-03-08.154820  
...
```

As the task is already assigned to the target category TP, only message EXC0207 is output when the MOVE-TASK-TO-CATEGORY command is issued again for the target category TP:

```
/move-task-to-category tsn=0bmu, to-category=tp  
% EXC0207 TASK WITH TSN = 'OBMU' ALREADY ASSIGNED TO TARGET-CATEGORY 'TP'.  
COMMAND COMPLETED.
```

