1 Preface

1.1 Brief product description

This manual describes the software product RFA (**R**emote **F**ile **A**ccess) in BS2000/OSD. RFA enables access to files that reside on nonlocal (i.e. remote) BS2000 processors.
A BS2000 processor can be either a BS2000 system with separate hardware or a virtual BS2000 machine made available by VM2000.
RFA can be used with or without HIPLEX MSCF® (**H**igh **I**ntegrated System Com**plex** **M**ulti **S**ystem **C**ontrol **F**acility).

1.2 Target group

The manual is intended both for users of RFA and BS2000/OSD commands and for Assembler programmers using the macro interfaces of BS2000OSD.

1.3 Summary of contents

The manual is broken down into the following sections:

Chapter 2, “General description”, deals with the basic features of RFA.

Chapter 3, “Commands for user and systems support”, contains descriptions of the nonprivileged RFA commands used in the course of an RFA session, an overview of the RFA-compatible DMS commands, and the privileged commands used by systems support to deal with RFA connections. It also includes tracer listings of RFA sessions.

Chapter 4, “Macros”, contains an overview of the RFA-compatible DMS macros.

Chapter 5, “Commands for user task logging”, provides an explanation of the commands for requesting task status information.

Chapter 6, “Accounting”, contains information on RFA session accounting.

Chapter 7, “Installation”, contains information on installing RFA.

Chapter 8, “Messages”, contains all the messages that can be output by RFA.

Chapter 9, “SDF syntax representation”, contains a description of the SDF metasyntax (notational conventions) valid for SDF V4.5A.

References in the text to other manuals are made in abbreviated form. The complete title for each publication to which reference is made is listed under "Related publications". This is followed by a brief note on how to order manuals.

README file

Information on any functional changes and additions to the current product version described in this manual can be found in the product-specific README file.

You will find the readme file on your BS2000 computer under the filename SYSRME.*product*.*version*.*language*, e.g. for RFA V14.0A under SYSRME.RFA.140.E. Ask your system administration for the user password where the readme file can be found. To see the full path name use the following command

```
/SHOW-INSTALLATION-PATH INSTALLATION-UNIT=RFA,LOGICAL-IDENTIFIER=SYSRME.E
```

The readme file can be shown on the screen using /SHOW-FILE command or editor. Alternatively print the file on a standard printer using

```
/PRINT-DOCUMENT <Pfadname>, LINE-SPACING=*BY-EBCDIC-CONTROL
```

1.4 Changes since the last version of the manual

The March 2002 edition of the "RFA" manual for RFA 14.0A contains the following changes with respect to the previous edition (December 1996):

The manual has been edited and updated taking into consideration the current commands and product versions.

2 General description

2.1 Description of functions

RFA (**R**emote **F**ile **A**ccess) enables the user to access and update files stored on tape or disk which are physically located on another BS2000/OSD processor. This may also be a virtual BS2000/OSD machine made available by VM2000. RFA ensures that all operations available for local file access are also supported when accessing remote files, i.e. files on a remote processor can be created, processed and deleted.

RFA also permits files to be transferred from one processor to another (file transfer). However, it is intended primarily for record-oriented access, and it is more practical to use the software product *open*FT (BS2000) to transfer large files.

The user can establish RFA connections from the local processor to one or more target processors at the same time. When an RFA connection is opened, an AFR (Access From Remote) partner task is generated on the appropriate target processor. This AFR partner task controls the file processing operations executed on the target processor. The RFA connection is cleared down by the user once processing has been completed.

RFA supports the access methods SAM, ISAM, UPAM and BTAM.

It does not support procedure calls, or the loading and execution of programs.

2.2 Requirements and restrictions

RFA V14.0A is running under BS2000/OSD V5.0A. Additionally the latest BCAM and TIAM product versions for BS2000/OSD V5.0 are necessary. The BCAM product is part of the delivery unit *open*Net Server.

In order to use the system component RFA the following requirements must be met:

– On every processor working with RFA, the RFA component must be available.

– The processor which sets up the RFA connection and the processor on which the AFR partner task is generated must form a data communication network (BCAM network).

– The operator, systems support or the network administrator must have issued the required BCIN command both at the local processor and at the target processor (as well as to all nodes on the path between the two processors).

– Systems support must first issue the ADD-MASTER-CATALOG-ENTRY command (see the “Commands” manual [1]) in the local processor; this is in order to generate an MRSCAT entry with the catalog identifier and the BCAM name of the partner processor.

Setting up a connection to a target processor via RFA is subject to the following restrictions:

– As of BS2000/OSD-BC V3.0, connections to processors belonging to a BS2000 version earlier than BS2000/OSD-BC V1.0 are no longer supported. In this case, a SET-RFA-CONNECTION command is rejected and message RFA0016 is issued.

– With RFA V14.0, connections with RFA V11.0 or RFA V11.2 are no longer supported.

– RFA does not support user authentication via chipcards, i.e. no user ID that is protected by a chipcard may be specified in the target processor in the SET-RFA-CONNECTION command.

2.3 Basic principles of RFA

RFA connections

An RFA connection with a specific catalog is set up by means of the SET-RFA-CONNECTION command and cleared by means of the REMOVE-RFA-CONNECTION command.

Once an RFA connection has been established, a user task can access the catalog entries and files managed in a remote processor.

In the following, the terms "remote system" and "remote file" refer to systems or files on a remote processor.

As long as the RFA connection is set up, files stored in the remote system can be processed using DMS operations originating from the user task in the local system.

Several RFA system runs may be opened in parallel, as demonstrated in the following example:

Local system S1 with catalog LOCA runs on local processor P1; remote system S2 with catalog REMB, remote system S3 with catalog REMC and remote system S4 with catalog REMD are remote systems active on the remote processors P2, P3 and P4 respectively. A BCAM/DCAM connection (data communication link) exists between P1, P2, P3 and P4, i.e. P1, P2, P3 and P4 form a data communication network.

This produces the following execution sequence:

/SET-LOGON-PARAMETERS...	Starts the user task on local system S1
.	
.	
.	
/SET-RFA-CONNECTION CAT-ID=REMB...	Sets up an RFA connection with remote system S2 (catalog REMB)
.	
.	
.	
/SET-RFA-CONNECTION CAT-ID=REMC...	Sets up an RFA connection with remote system S3 (catalog REMC)
.	
.	
.	
/REMOVE-RFA-CONNECTION CAT-ID=REMB...	Clears down the RFA connection with remote system S2 (catalog REMB)
.	
.	
.	
/SET-RFA-CONNECTION CAT-ID=REMD...	Sets up an RFA connection with remote system S4 (catalog REMD)
.	
.	
.	
/REMOVE-RFA-CONNECTION CAT-ID=REMD...	Clears down the RFA connection with remote system S4 (catalog REMD)
.	
.	
.	
/EXIT-JOB	Clears down the RFA connection with remote system S3 (catalog REMC) and terminates the user task in system S1.

A user task in the local system is assigned precisely one AFR partner task in each remote system with which it has established an RFA connection.

The AFR partner task is generated by means of the SET-RFA-CONNECTION command and terminated either explicitly by means of the REMOVE-RFA-CONNECTION command or implicitly by means of the EXIT-JOB (or LOGOFF) command. The "LOGON information" required to generate the AFR partner task is taken from the following sources:

– information for JOB-NAME and LOGGING from the SET-LOGON-PARAMETERS (or LOGON) command of the user task initiating the RFA connection

– user ID and account number from the SET-RFA-CONNECTION or SET-LOGON-PARAMETERS (or LOGON) command

– password from the SET-RFA-CONNECTION command.

In the above example three AFR partner tasks are generated (i.e. one task each for REMB, REMC and REMD).

Up to 16 RFA connections (i.e. SET-RFA-CONNECTION commands) with different catalog IDs are possible at the same time.

Notes

– An AFR partner task can only be generated successfully in the remote system defined by the RFA task if the remote system allows another interactive task to be created (DEFINE-JOB-CLASS, MODIFY-JOB-CLASS). In addition, a sufficiently large number of BCAM applications and BCAM connections must be defined in the local system (BCMOD function).

– LOGON and LOGOFF procedures under the user ID in the remote system under which the AFR task is to run are **not** executed when the AFR partner task is started.

– If the user task has already opened an RFA connection for the relevant remote system (i.e. an AFR partner task already exists in the remote system), no new AFR partner task is generated for the same remote system if a further SET-RFA-CONNECTION command is issued. In this case, specifying a LOGON authorization in the PROCESSING-ADMISSION operand will be ignored.

– The number of REMOVE-RFA-CONNECTION commands to be executed when an RFA connection is to be terminated must be the same as the number of SET-RFA-CONNECTION commands issued when setting up the connection.
This allows procedures which contain the commands SET-RFA-CONNECTION and REMOVE-RFA-CONNECTION to be nested.

– If a SET-RFA-CONNECTION command is issued for the local system, no AFR partner task is generated. However, the connection that has been set up is counted as an RFA connection.

– If the catalog ID of an imported catalog is specified in the SET-RFA-CONNECTION command and the catalog has been imported to the local (home) system, no AFR partner task is generated.
The MPVS function can be used to access the files of an imported pubset (see the manual "Introductory Guide to Systems Support" [4]). If the catalog has been imported to a remote system, however, an AFR partner task is generated in that system.

An RFA connection of a user task on processor A (catalog LOCA) to processor B (catalog REMB) is set up as follows: the user task addresses the catalog ID REMB in a SET-RFA-CONNECTION command and thereby successfully establishes a connection.
The messages and outputs of the AFR user task in system B are transferred to the local user task in system A and output via SYSOUT.

During connection setup there is a phase (between /SET-LOGON-PARAMETERS and /START-SYSAFR or /START PROGRAM $SYSAFR) in which the following setting applies under the AFR partner task: MODIFY-JOB-OPTIONS INFORMATION-LEVEL=*MINIMUM (system messages are output in coded form only). During this phase, however, the AFR partner task can issue message JMS0032. The message code appears in the RFA task, accompanied by the corresponding message text (output by RFA). If the message text changes in the course of time, the change is not duplicated in RFA.

This is illustrated in the following diagram:

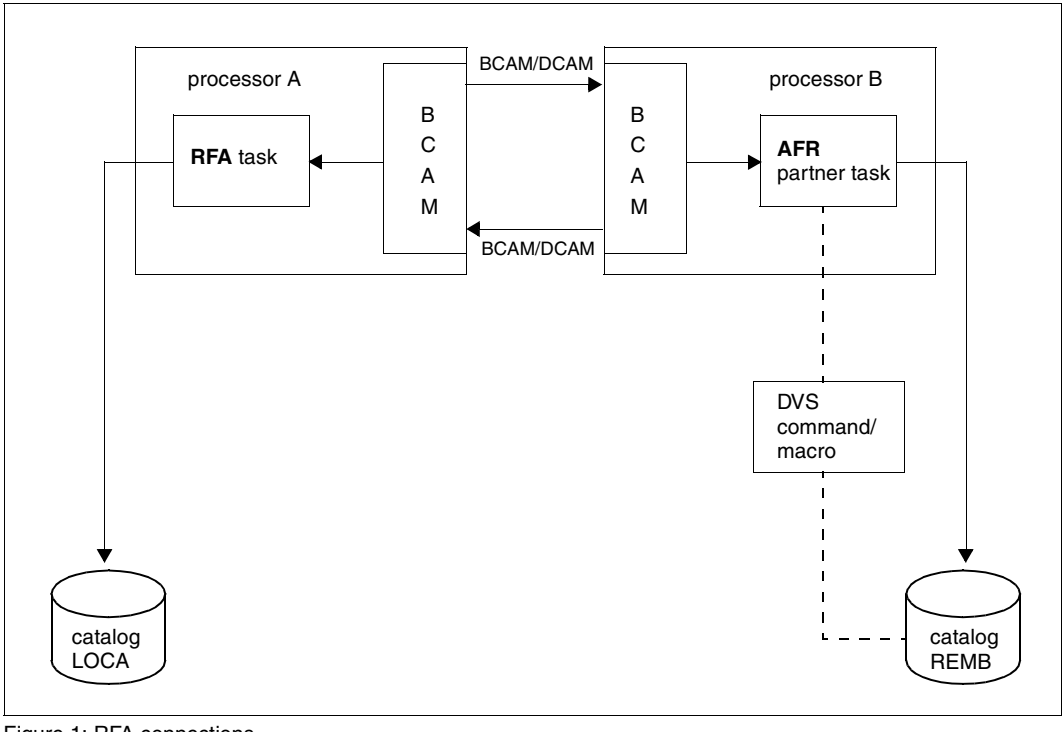


Figure 1: RFA connections

DMS operations

For the duration of an RFA connection to a remote system (which is addressed via the catalog identifier specified in the SET-RFA-CONNECTION command), the user is able to issue DMS commands and macros to operate on files which are held and managed in that remote system. Execution of the DMS commands and macros is controlled by the AFR partner task in the remote system (which can be accessed via the RFA connection).

File identification in RFA

In RFA, files are identified by means of character strings which are made up of three parts and constitute what is known as the path name:

Structure of the path name

pathname	:catid:$userid.filename
	Total length: not more than 54 characters
catid	catalog identifier; ID of the pubset on which the file is cataloged. Length: 1 character. "catid" can only contain the letters A,...,Z and the digits 0,...,9, and must not begin with the string 'PUB'. If the path name includes a catalog ID, DMS checks whether it is included in the RFA table, i.e. whether an RFA connection has been set up, and initiates RFA access if appropriate.
userid	user ID
	Length: not more than 8 characters
filename	Fully qualified file name defined by the user;
	Length: for permanent files, up to 41 characters
	for temporary user files (including prefix), up to 31 characters
	for file generation groups, up to 34 characters
	The maximum possible length is reduced if, for a catalog ID of more than one digit, the sum of the length of the catalog ID (including colons) and the length of the user ID (including dollar sign and dot) - i.e. the length of `:catid:$userid.` - exceeds 13 characters.

Definitions

A file name is termed "partially qualified" if it ends with a period; otherwise it is termed "fully qualified".

A catalog name is considered "incomplete" if one of the two parts ("catid" and "userid") is missing; otherwise it is considered "complete".

Notes

– "catid" must be enclosed in colons (":catid:"). The user ID, if specified, must be preceded by a dollar sign ($) and followed by a period (.).
For a catalog ID of more than one character, the maximum length of the file name depends on the length of the catalog ID and the user ID: it varies between 38 characters (for a four-character catalog ID and eight-character user ID) and 41 characters (for a single-character catalog ID). By the same token, the maximum length of the names of file generation groups (group names) lies between 31 characters (for a four-character catalog ID and eight-character user ID) and 34 characters (for a single-character catalog ID).

  We recommend always restricting the length of file and group names to the maximum value for four-character catalog IDs and eight-character user IDs. This guarantees that the files can later be easily transferred to another pubset or another user ID (if, for example, the user switches from pubset "A" to pubset "AB01").

– If "userid" is not specified, the remote system will assume the user ID of the calling task, i.e. of the AFR partner task. This is the user ID given in the first SET-RFA-CONNECTION command for this target processor. If no user ID was specified in the SET-RFA-CONNECTION command, that of the local user task is assumed.

– If only "$." or "$" is specified as the user ID, the remote system uses its system default user ID.

– If the catalog ID denotes a local catalog, the file name is not extended by the "catid" and "userid" operands specified in the SET-RFA-CONNECTION command. If no user ID is specified, that of the local user task is assumed.

– In the case of catalog IDs consisting of more than one character, the default values described above may result in path names longer than 54 characters. Commands or macros with such names will be rejected with an appropriate error message or return code.

– RFA only supports the use of real file names. If the file name of a file on a remote system has been modified by the ACS subsystem (Alias Catalog Service), commands and macros for the remote file will be rejected. The ACS functions "Replace alias names" and "Insert prefix" are not supported by RFA. Users can address remote files only by their real file names.

MRS catalog (MRSCAT)

The MRS catalog (MRSCAT) is a data structure that ensures the allocation of catalog identifiers to processors. MRSCAT contains information on the availability and status of each catalog as well as the processor name (BCAM name) of the processor managing the catalog.

MRSCAT is managed using the following commands (cf. the manuals “Commands, Volumes 1 - 6” [1] - [2] and "Introductory Guide to Systems Support" [4]).

/ADD-MASTER-CATALOG-ENTRY
A new MRSCAT entry is cataloged in the home MRSCAT.

/MODIFY-MASTER-CATALOG-ENTRY
An MRSCAT entry is modified in the home MRSCAT.

/REMOVE-MASTER-CATALOG-ENTRY
An MRSCAT entry is deleted from the home MRSCAT.

/SHOW-MASTER-CATALOG-ENTRY
MRSCAT entries are output to SYSOUT.

The SHOW-MASTER-CATALOG-ENTRY command is also available to nonprivileged users.

Note

The command SET-RFA-CONNECTION CAT-ID=catid sets up a connection to the processor which is currently assigned to the catalog ID *catid* in the MRSCAT (`HOST=processor-name` as output by the command SHOW-MASTER-CATALOG-ENTRY; see page 34). However, systems support or the operator can modify the MRSCAT entry, and thereby this assignment, even during an RFA connection. Existing RFA connections are not affected by such modifications.

The state INACC (inaccessible) of a pubset entered in MRSCAT is irrelevant for RFA. RFA connections can exist or be set up to such a pubset despite its INACC state.

Example

```
/SHOW-MASTER-CATALOG-ENTRY ENTRY=A
 PUBSET A   :    HOST= host1
/SET-RFA-CONNECTION CAT-ID=A ──────────────────────────────────────────  (1)
 .
 .
 .
/SHOW-MASTER-CATALOG-ENTRY ENTRY=A
 PUBSET A   :    HOST= host2        ──────────────────────────────────  (2)
/SET-RFA-CONNECTION CAT-ID=A ──────────────────────────────────────────  (3)
/REMOVE-RFA-CONNECTION CAT-ID=A
/REMOVE-RFA-CONNECTION CAT-ID=A ──────────────────────────────────────  (4)
/SHOW-MASTER-CATALOG-ENTRY ENTRY=A
 PUBSET A   :    HOST= host2
/SET-RFA-CONNECTION CAT-ID=A ──────────────────────────────────────────  (5)
```

(1) The SET-RFA-CONNECTION command sets up an RFA connection to processor *host1*, which is currently assigned to catalog ID A in the MRSCAT.

(2) While the RFA connection to host1 is in force, the assignment in the MRSCAT is changed by, say, the system administrator using the command MODIFY-MASTER-CATALOG-ENTRY: pubset A is now assigned to processor *host2*.

(3) A new SET-RFA-CONNECTION command for pubset A does **not** create an AFR partner task in processor *host2*; it merely increments the internal counter for the AFR partner task in *host1*.

(4) The AFR partner task in *host1*, and thus implicitly the RFA connection to pubset A, is not terminated until the second REMOVE-RFA-CONNECTION command.

(5) If another connection to pubset A is set up, an AFR partner task is started in processor *host2*, which is now assigned to this pubset in the MRSCAT (as shown by the preceding SHOW-MASTER-CATALOG-ENTRY command).

2.4 RFA configuration

Structure of configuration

The following diagram shows an example of a possible RFA configuration:

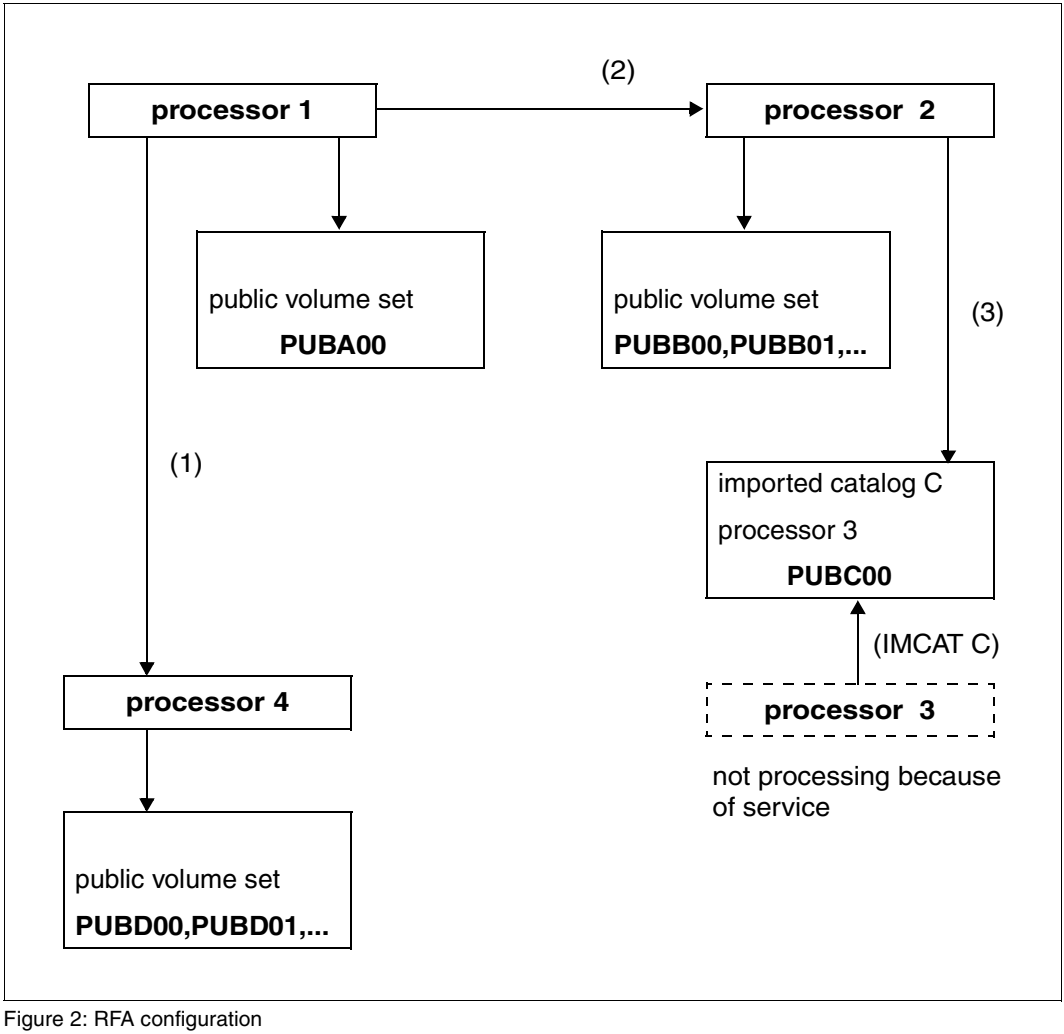


Figure 2: RFA configuration

Notes on the preceding diagram

(1) In order to access files in public volume set D of processor 4 from processor 1, an RFA connection for D must be set up. During this RFA connection any permissible DMS operations may be executed on private and public files in D.

(2) Similarly, in order to access files in public volume set B of processor 2 from processor 1, an RFA connection must be initiated for B.

(3) In order to access entries in catalog C (imported to processor 2 with its catalog B) from processor 1, either an RFA connection must be initiated for C or catalog C must be imported to processor 1.

2.5 Examples

The following examples illustrate the setting up and clearing down of an RFA connection and a file transfer.

Example 1

```
/SET-LOGON-PARAMETERS USER-ID=U1, ...
 .
 .
 .
/ADD-FILE-LINK LINK-NAME=MRSLNK,FILE-NAME=MRSFILE ————————————————————  (1)
 .
 .
 .
/SET-RFA-CONNECTION CAT-ID=REMB,CONNECTION=*WITHIN(SECONDS=200) ————————  (2)
/SKIP-COMMANDS TO-LABEL=A
/SET-JOB-STEP
/REMARK Control branches to /SKIP-COMMANDS TO-LABEL=LOG at timeout
/SKIP-COMMANDS TO-LABEL=LOG
/.A REMARK RFA connection set up
 .
 .
 .
/ADD-FILE-LINK LINK-NAME=RFALNK,FILE-NAME=:REMB:RFAFILE ——————————————  (3)
 .
 .
 .
/START-PROGRAM FROM-FILE=PROG ————————————————————————————————————————  (4)
 .
 .
 .
/REMOVE-RFA-CONNECTION CAT-ID=REMB ———————————————————————————————————  (5)

 .
 .
 .
/.END   EXIT-JOB
```

(1) The ADD-FILE-LINK command establishes the connection to the local file MRSFILE.

(2) This command produces an AFR partner task with userid U1 on the remote system, which the REMB catalog has imported.
If the AFR partner task has not been created after 200 seconds, the command is rejected and an error message is displayed. If the command is executed successfully, the AFR partner task is started in system B.
The connection remains in force until the corresponding REMOVE-RFA-CONNECTION command or EXIT-JOB (LOGOFF) is issued.

(3) This command is issued to remote system B, where it is executed under the control of the AFR partner task in system B. The Data Management System (DMS) of the remote system must have access to the volume on which the file RFAFILE is located. A mount request is issued there if necessary.

(4) In the given situation, the program "PROG" can process MRSFILE and RFAFILE via the link names MRSLNK and RFALNK respectively.

(5) This command causes the AFR partner task assigned to the RFA task to be deactivated. This also terminates RFA mode.

Example 2

```
/SET-LOGON-PARAMETERS...
/SHOW-MASTER-CATALOG-ENTRY ENTRY=REMB ————————————————————————————  (1)
/SET-RFA-CONNECTION CAT-ID=REMB,CONNECTION=*WITHIN(SECONDS=100) ———————  (2)
/COPY-FILE FROM-FILE=:LOCA:FILE.RFA.PUB,TO-FILE=:REMB:FILE.RFA.SAM ————  (3)
/COPY-FILE FROM-FILE=:REMB:FILE.RFA.SAM,TO-FILE=:LOCA:FILE.RFA ———————  (4)
/START $EDT ——————————————————————————————————————————————————————  (5)
@READ ':REMB:FILE.RFA.SAM'
 .
 .
 .
@SAVE ':REMB:FILE.RFA.ISAM'
/SHOW-FILE-ATTRIBUTES F-NAME=:REMB:FILE.RFA.ISAM,INF=*PAR(STAND=*YES) —  (6)
/MODIFY-FILE-ATTRIBUTES F-NAME=:REMB:FILE.RFA.ISAM, -
/       NEW-NAME=:REMB:FILE.RFA ——————————————————————————————————  (7)
/DELETE-FILE F-NAME=:REMB:FILE. ——————————————————————————————————  (8)
/DELETE-FILE F-NAME=FILE.RFA ———————————————————————————————————  (9)
/REMOVE-RFA-CONNECTION CAT-ID=REMB ————————————————————————————— (10)

/EXIT-JOB
```

(1) Output the MRS catalog entry for the REMB catalog.

(2) Set up an RFA connection to the target catalog REMB. If the AFR partner task has not been created after 100 seconds, the command is rejected with an error message.

(3) Copy the (SAM) file :LOCA:FILE.RFA.PUB from the local system to the remote system under the name :REMB:FILE.RFA.SAM.

(4) Copy the remote SAM file :REMB:FILE.RFA.SAM back to the local system under the new name :LOCA:FILE.RFA.

(5) Call the program EDT; read in the SAM file :REMB:FILE.RFA.SAM from the remote system and process it as required; write the contents of EDT main memory back to the remote system as an ISAM file with the name :REMB:FILE.RFA.ISAM.

(6) Check whether the file :REMB:FILE.RFA.ISAM has been cataloged in the remote system as an ISAM file.

(7) Rename the ISAM file in the remote system.

(8) Delete all files in the remote system beginning with the partially qualified name "FILE.".

(9) Delete the file FILE.RFA from the local catalog LOCA.

(10) Clear down the RFA connection.

3 Commands for users and systems support

This chapter describes the nonprivileged commands used with RFA and contains notes on the DMS commands which support remore file access.
Use of RFA is illustrated with the aid of two practical examples.

3.1 RFA user commands

This section describes the commands required by nonprivileged users for remote file access with RFA:

Command	Function	Page
REMOVE-RFA-CONNECTION	Terminate an RFA connection	28
SET-RFA-CONNECTION	Set up an RFA connection	22
SHOW-MASTER-CATALOG-ENTRY	Indicate whether an RFA connection is possible	34
SHOW-RFA-CONNECTIONS	Provide information on existing RFA connections	30

SET-RFA-CONNECTION
Set up RFA connection

Domain: MULTI-CATALOG-AND-PUBSET-MGMT

Privileges: STD-PROCESSING
SAT-FILE-EVALUATION
SAT-FILE-MANAGEMENT

Function

This command sets up an RFA connection. The first time a connection to a remote system is set up, a partner task is generated under the specified user ID. The command can also be used for a local catalog, in which case an RFA connection is set up within the local system and no partner task is generated.
By means of the SHOW-RFA-CONNECTIONS command, the user can request information on all existing RFA connections.

The REMOVE-RFA-CONNECTION command is used to clear down an RFA connection. A corresponding REMOVE-RFA-CONNECTION command must be issued for each SET-RFA-CONNECTION command. A partner task on a remote system is not terminated until the last connection has been cleared. When the local user task is terminated, all existing RFA connections are automatically cleared down by the system.

As of BS2000/OSD-BC V5.0, connections to processors with a BS2000 version older than BS2000/OSD-BC V3.0 are rejected with message RFA0016.

Prerequisite

Each processor on which the command is to be issued must have an entry for the specified catalog ID with the appropriate processor name in the MRS catalog. The user can request information on the entries in the MRS catalog by means of the SHOW-MASTER-CATALOG-ENTRY command.

Format

SET-RFA-CONNECTION

CATALOG-**ID** = <catid 1..4>

,**PROC**ESSING-**ADMIS**SION = ***PAR**AMETERS (...)

***PAR**AMETERS(...)

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

,**ACCOUNT** = ***SAME** / <alphanum-name 1..8>

,**PASS**WORD = ***NONE** / <c-string 1..8> / <c-string 9..32> / <x-string 1..16> / ***SECRET**

,**CONN**ECTION = ***IMMED**IATE / ***WITHIN**(...)

***WITHIN**(...)

SECONDS = <integer 32..99999999 *seconds*>

,**ANSWER** = ***STD** / **N** / **Y** / ***SYSDTA**

Operands

CATALOG-ID = <catid 1..4>
Catalog ID to which the RFA connection is to be set up.
The command will be rejected if the catalog ID is not entered in the MRS catalog, if the entry is incorrect or incomplete, or if the catalog is not accessible.
The user can use the SHOW-MASTER-CATALOG-ENTRY command to find out whether the catalog ID has been entered in the MRS catalog.
If the catalog ID refers to a remote processor and if the SET-RFA-CONNECTION command is the first for this processor, a partner task will be generated on this processor.
If the catalog ID refers to the local system, no partner task will be generated.

PROCESSING-ADMISSION = *PARAMETERS(...)
Specifications concerning the partner task to be generated.
These specifications are only evaluated if the RFA connection to a remote processor is being set up for the first time. In this case, a partner task is generated and the specifications are checked for logon authorization.
For subsequent SET-RFA-CONNECTION commands to other catalogs of the same remote processor, the specifications are ignored. (For an exception, see the notes on shared pubsets on page 26.) The already generated partner task is used for access to additional catalogs of the remote processor.

USER-IDENTIFICATION = *SAME / <name 1..8>
User ID under which the partner task is to run.

USER-IDENTIFICATION = *SAME
The user's own user ID (under which the command is issued) applies.

ACCOUNT = *SAME / <alphanum-name 1..8>
Account number under which the partner task is to run.

ACCOUNT = *SAME
The account number of the current user task (under which the command is issued) applies).

PASSWORD = *NONE / <c-string 1..8> / <c-string 9..32> / <x-string 1..16> / *SECRET
Password of the user ID under which the partner task is to run.
Entry of a "long password" (corresponding to <c-string 9..32>) is supported. Information on the specification of long passwords can be found under the description of the MODIFY-USER-PROTECTION command in the manual "Commands, Volume 3" [1].
If the PASSWORD operand is defined as "secret":
– the specified value is not logged
– the entry field is automatically blanked out in guided dialog
– entering *SECRET or ^ in guided dialog and in foreground procedures enables the desired value to be entered without being visible to anyone else. SDF prompts the user to enter the "secret" value and provides an entry field which will be blanked out.

The password must be specified even if it is the same as the one for the current user task. The user ID, the account number and the password are all likewise checked by the remote system.
The LOGON parameters JOB-NAME and LOGGING for the partner task are taken from the current user task.

CONNECTION =
Specifies whether the attempt to set up a connection is to be made only once or more than once within a defined period.

CONNECTION = *IMMEDIATE
The attempt to set up an RFA connection is made once only. If it is unsuccessful, the user receives an error message to this effect.

CONNECTION = *WITHIN(...)
Specification of a period of time within which the system attempts to set up the RFA connection.

SECONDS = <integer 32..99999999 *seconds***>**
Period of time in seconds within which the system attempts to set up the connection every 32 seconds (assuming it is feasible to make repeated attempts).
If the attempts prove unsuccessful, an error message is issued.

ANSWER = *STD / N / Y / *SYSDTA
This operand is only evaluated in procedures or in batch mode.
Following logon processing, the first information block of the bulletin file (containing systems support information) is output. If the prompt `CONTINUE Y/N` is isssued, the user can request output of the next information block by entering 'Y' in response, or decline by entering 'N'. This operand specifies how queries concerning continued output of the information blocks output by the remote system during connection setup are to be answered.

ANSWER = *STD
In interactive mode, the queries from the remote system are sent to the local processor, where they must be answered from the terminal. The responses are sent to the remote system and evaluated there.
In procedure mode and batch mode, ANSWER=N applies, i.e. all queries are answered in the negative ('N').

ANSWER = N
All queries from the remote system are answered with 'N'.

ANSWER = Y
All queries from the remote system are answered with 'Y'.

ANSWER = *SYSDTA
All queries from the remote system are sent to the local processor, where the responses are expected from SYSDTA. The responses are sent to the remote system and evaluated there.
Responses from SYSDTA make sense only if the user knows the number of information blocks in the remote bulletin file, i.e. when the user knows exactly what information he/she wishes to receive.

Command return codes

(SC2)	SC1	Maincode	Meaning/ guaranteed messages
	0	RFA0002	Command executed
	1	RFA0026	Command for shared pubset rejected
	64	RFA0016	BS2000 version of the remote system not supported
	64	RFA0023	RFA connection faulty
	64	RFA0024	No further RFA connection possible
	64	RFA0027	Configuration error

Notes

– Setting up a connection to a target processor by means of RFA is subject to the following restrictions:

  A BS2000 version ≥ BS2000/OSD-BC V1.0 must be installed on the target processor.
  If a version older than this is installed, any attempt to set up a connection will be rejected and message RFA0016 will be issued.
  RFA does not support user authentication via a chipcard, i.e. no user ID protected by a chipcard may be specified in the target processor in the SET-RFA-CONNECTION command.

– The REMOVE-RFA-CONNECTION command clears down the RFA connection. When the task is terminated, the system automatically clears any RFA connections that still exist.

– Procedure nesting: if two or more SET-RFA-CONNECTION commands are issued for the same catalog ID (of the remote system), only one partner task is created. However, in order to clear this connection there must be as many REMOVE-RFA-CONNECTION commands as there were SET-RFA-CONNECTION commands.

– LOGON procedures under the user ID in the remote system under which the AFR task is to run are **not** executed when the AFR partner task is started.

Shared pubset

– A pubset entered in the MRSCAT in conjunction with the specification SHARED-PUBSET=*YES in the ADD-MASTER-CATALOG-ENTRY or MODIFY-MASTER-CATALOG-ENTRY command can be used as a shared pubset.
  If there is not yet an RFA connection to the processor associated with this pubset, it is possible to set up an RFA connection to the pubset only:

  – if the user ID from the SET-RFA-CONNECTION command matches the user ID of the RFA task

– if the user ID from the SET-RFA-CONNECTION command does not match the user ID of the RFA task, and the pubset has not been imported as a shared pubset and is *LOCAL ACCESSIBLE*.

If there is already an RFA connection to the processor associated with this pubset, an RFA connection to the pubset can be set up only if the user ID in the command SET-RFA-CONNECTION matches the user ID of the RFA task **and** of the AFR partner task.
In all other cases, a SET-RFA-CONNECTION command for this pubset will be rejected.
As a result of this restriction, SHARED-PUBSET=*YES should only be defined for pubsets which are genuinely used as shared pubsets.

– An RFA connection to a shared pubset with the catalog ID *catid* will not be set up if *catid* has been entered in the user catalog as the default catalog ID for the user ID of the local task.

REMOVE-RFA-CONNECTION
Clear down RFA connection and terminate partner task

Domain: MULTI-CATALOG-AND-PUBSET-MGMT

Privileges: STD-PROCESSING
SAT-FILE-EVALUATION
SAT-FILE-MANAGEMENT

Function

The REMOVE-RFA-CONNECTION command clears down one or all RFA connections previously set up by means of the SET-RFA-CONNECTION command. When the last RFA connection to a remote processor is cleared down, the partner task on the remote processor is terminated at the same time.
When the local task is terminated (EXIT-JOB or LOGOFF), the system automatically clears down all RFA connections set up during the current task.

The REMOVE-RFA-CONNECTION command is rejected if a program has been loaded.

The user can use the SHOW-RFA-CONNECTIONS command to request information on all existing RFA connections.

Notes

– More than one SET-RFA-CONNECTION command can be issued for the same catalog ID. When clearing this connection, the same number of REMOVE-RFA-CONNECTION commands must be issued as SET-RFA-CONNECTION commands were issued when setting it up.

– LOGOFF procedures are **not** executed when the AFR partner task is terminated.

Format

REMOVE-**RFA**-CONNECTION
CATALOG-**ID** = <catid 1..4> / ***ALL**

Operands

CATALOG-ID = <catid 1..4> / *ALL
Catalog ID to which the RFA connection is to be cleared down. Specifying *ALL clears all RFA connections.

Command return codes

(SC2)	SC1	Maincode	Meaning/ guaranteed messages
	0	RFA0002	Command executed
1	0	RFA0002	No RFA connection exists which could be cleared down
	64	RFA0025	Program loaded
	64	RFA0027	Configuration error

SHOW-RFA-CONNECTIONS
Output information on RFA connections

Domain: MULTI-CATALOG-AND-PUBSET-MGMT

Privileges: STD-PROCESSING
SAT-FILE-EVALUATION
SAT-FILE-MANAGEMENT

Function

By means of the SHOW-RFA-CONNECTIONS command the user can request information on all existing RFA connections. The information is output to SYSOUT. The user receives an output line for the local processor (beginning with “LOCAL HOST”) and one output line for each existing RFA connection (beginning with “CONNECTION”) containing the following information:

– catalog ID to which the RFA connection exists (for RFA connections only)
– indication of whether the RFA connection is local or remote
– name of the processor to which the RFA connection is set up
– user ID of the AFR partner task or of the local task
– task sequence number of the AFR partner task or the local task

The RFA connection is displayed once only per catalog ID, even if more than one SET-RFA-CONNECTION command was issued for the catalog ID. A maximum of 16 RFA connections can exist for different catalogs.

This command supports structured output in S variables (see page 33). More detailed information can be found in the manual “Commands, Volume 6, Output in S Variables” [2]).

Format

SHOW-RFA-CONNECTIONS
CATALOG-**ID** = ***ALL** / <catid 1..4>

Operands

CATALOG-ID = <catid 1..4> / *ALL
Catalog ID of an RFA connection for which information was requested. Specifying *ALL produces information on all RFA connections.

Command return codes

(SC2)	SC1	Maincode	Meaning/ guaranteed messages
	0	RFA0002	Command executed
	32	CMD2009	Error when creating output variables
	32	RFA0019	Output incomplete
	32	RFA0020	Error in output to SYSOUT
	64	RFA0017	No RFA connection exists
	64	RFA0018	No RFA connection exists for the specified catalog ID

Output format

The information is output in table form. The first line contains information on the local processor (without catalog ID) and begins with “LOCAL HOST:”. This is followed by one information line for each existing RFA connection. These lines each begin with “CONNECTION:” and are output in ascending order of catalog ID. The information is split up into the following 5 output columns:

Output column	Meaning
CATID	Catalog ID to which the RFA connection exists. Only one RFA connection is displayed per catalog ID. No catalog ID is displayed in the information line for the local processor.
STATE	LOCAL is displayed for a catalog ID assigned to the local processor or, for a shared pubset, to the master processor. REMOTE is displayed for a catalog ID assigned to a remote processor or, for a shared pubset, to a slave processor.
HOST	BCAM name of the processor to which the RFA connection exists.
USERID	User ID of the AFR partner task (when STATE is shown as REMOTE) or of the local task (when STATE is shown as LOCAL).
TSN	Task sequence number of the AFR partner task or of the local task.

Table 1: Output columns of the SHOW-RFA-CONNECTIONS command

Output in S variables

Output information	Name of the S variable	T	Contents
Catalog ID to which the RFA connection exists	var(*LIST).CAT-ID	S	<cat-id 1..4>
Type of information	var(*LIST).INDICATOR	S	*CONN *LOC-HOST
Name of the processor to which the RFA connection is set up	var(*LIST).PARTNER-NAME	S	<alphanum-name 1..8>
Status of the RFA connection	var(*LIST).PUBSET-STA	S	*LOC *REM
Task sequence number of the AFR partner task or of the local task	var(*LIST).TSN	S	<name 1..4>
User ID of the AFR partner task or of the local task	var(*LIST).USER-ID	S	<name 1..8>

Table 2: Output variables of the SHOW-RFA-CONNECTIONS command

Example

```
/show-rfa-connections
%              CATID STATE  HOST     USERID   TSN
%LOCAL HOST:         LOCAL  D006ZE07 US224RZK 1ATH
%CONNECTION:   N     LOCAL  D006ZE07 US224RZK 1ATH
%CONNECTION:   1OSB  LOCAL  D006ZE07 US224RZK 1ATH
%CONNECTION:   2OS2  REMOTE D006ZE04 US211    1VDH
%CONNECTION:   2OS7  REMOTE D006ZE04 US211    1VDH
```

In the dialog job with the task sequence number *1ATH* and the user ID *US224RZK*, the user issues the SHOW-RFA-CONNECTIONS command to request information on existing RFA connections.
The output shows the local processor *D006ZE07* and two local RFA connections to the catalogs *N* and *1OSB*. Two remote RFA connections to the processor *D006ZE04* with catalogs *2OS2* and *2OS7* are shown. On the remote processor *D006ZE04* there is **one** partner task active under the user ID *US211* and the task sequence number *1VDH*.

SHOW-MASTER-CATALOG-ENTRY
Request information on MRSCAT entries

Domain: MULTI-CATALOG-AND-PUBSET-MGMT

Privileges: STD-PROCESSING
TSOS
OPERATING
SW-MONITOR-ADMINISTRATION

Routing code: E

Function

The SHOW-MASTER-CATALOG-ENTRY command lists the MRSCAT entries for SF and SM pubsets and volume sets. It thus provides the user with information about the status of a pubset and hence about the accessibility of its catalog.

The command supports structured output in S variables (see page 44). Further information can be found in the manual “Commands, Volume 6, Output in S Variables“ [2]).

Privileged functions

Privileged users can also request information on volume sets.

The priviliged user can now recieve detailed information about cache configuration, allocation attributes, EAM parameters and pubset parameters using SHOW-PUBSET-PARAMETERS command.

Format

SHOW-MASTER-CATALOG-ENTRY Alias: **SHMCE**

ENTRY-NAME = ***ALL** / ***HOME** / <alphanum-name 1..4 with-wild(255)>

,**INF**ORMATION = ***STD** / ***USER**

,**SEL**ECT = ***ALL** / ***LOC**AL / ***SPEEDCAT** / ***REMOTE** / ***ACCESS**IBLE / ***PAGING** / ***SHARE**D / ***EXCL**USIVE / ***LOCAL-ACCESS**IBLE / ***REMOTE-ACCESS**IBLE / ***XCS-CONFIG**URATED / ***HSMS-SUP**PORTED / ***SINGLE-FEATURE** / ***SYSTEM-MANAGED** / ***VOL**UME-**SET**S(...) / ***UNUSED-VOL**UME-**SET**S / ***MAST**ER-**CHA**NGE-**ERROR** / ***INACCESS**IBLE / ***DEFINED-XCS-CONFIG**URATED

***VOL**UME-**SET**S(...)

PUBSET = ***ALL** / <alphanum-name 1..4>

Operands

ENTRY-NAME =
Catalog ID for which information is required.
If there is an entry in the MRS catalog for this catalog ID, it is output. If not, the command is rejected. If an unknown catalog ID is specified, the following message is issued:
`CMS0312 MRSCAT ENTRY NOT FOUND.`

If you specify more than one catalog ID (using wildcards or *ALL), you can use the SELECT operand to restrict the set of entries to be shown.

ENTRY-NAME = *ALL
All entries in the local MRS catalog are output.

ENTRY-NAME = *HOME
Information is output for the home pubset.

ENTRY-NAME = <alphanum-name 1..4 with-wild(255)>
Information is output for the specified pubset.
The catalog can be specified using wildcards (maximum four characters). In this case, information is output for all pubsets whose catalog ID matches the pattern (see also the information on data types and suffixes in the SDF metasyntax).

INFORMATION =
Determines the scope of the information output for the specified pubset.

INFORMATION = *STD
Only default information about SF and SM pubsets and about volume sets is output.

INFORMATION = *USER
All information accessible to nonprivileged users is output for locally accessible SF and SM pubsets. Only default information is output for all other pubsets.

SELECT = *ALL / *LOCAL / *SPEEDCAT/ *REMOTE / *ACCESSIBLE / *PAGING / *SHARED / *EXCLUSIVE / *LOCAL-ACCESSIBLE / *REMOTE-ACCESSIBLE / *XCS-CONFIGURATED / *HSMS-SUPPORTED / *SINGLE-FEATURE / *SYSTEM-MANAGED / *VOLUME-SETS(...) / *UNUSED-VOLUME-SETS / *MASTER-CHANGE-ERROR / *INACCESSIBLE / *DEFINED-XCS-CONFIGURATED
Specifies a selection criterion for the MRS catalog entries to be output. It makes sense to specify a selection criterion if the value *ALL (default value) or a pattern was specified in the CATALOG-ID operand. A selection criterion can be used to restrict the scope of the output information :

Value	Meaning
*ALL	Default; unrestricted output for SF pubsets, SM pubsets and volume sets
*LOCAL	Output for local pubsets only
*SPEEDCAT	Output for local and accessible pubsets with file catalog access via SPEEDCAT
*REMOTE	Output only for pubsets to which the criterion LOCAL does not apply
*ACCESSIBLE	Output only for accessible pubsets
*PAGING	Output only for pubsets with paging areas (local)
*SHARED	Output only for pubsets that are used as shared pubsets
*EXCLUSIVE	Output only for pubsets that are not used or cannot be used as shared pubsets
*LOCAL-ACCESSIBLE	Output only for locally accessible pubsets
*REMOTE-ACCESSIBLE	Output only for accessible pubsets on remote processors
*XCS-CONFIGURATED	Output only for pubsets in an XCS configuration
*HSMS-SUPPORTED	Output only for SM pubsets supported by HSMS
*SINGLE-FEATURE	Output only for SF pubsets
*SYSTEM-MANAGED	Output only for SM pubsets
*VOLUME-SETS(...) PUBSET=	Output only for volume sets belonging to the specified SM pubsets

Value	Meaning
*UNUSED-VOLUME-SETS	Output only for defined but unused volume sets
*MASTER-CHANGE-ERROR	Output only for pubsets with which an error occurred when the master was changed
*INACCESSIBLE	Output only for not accessible pubsets
*DEFINED-XCS-CONFIGURATED	Output ony for volume sets, which belong to the specified SM pubsets

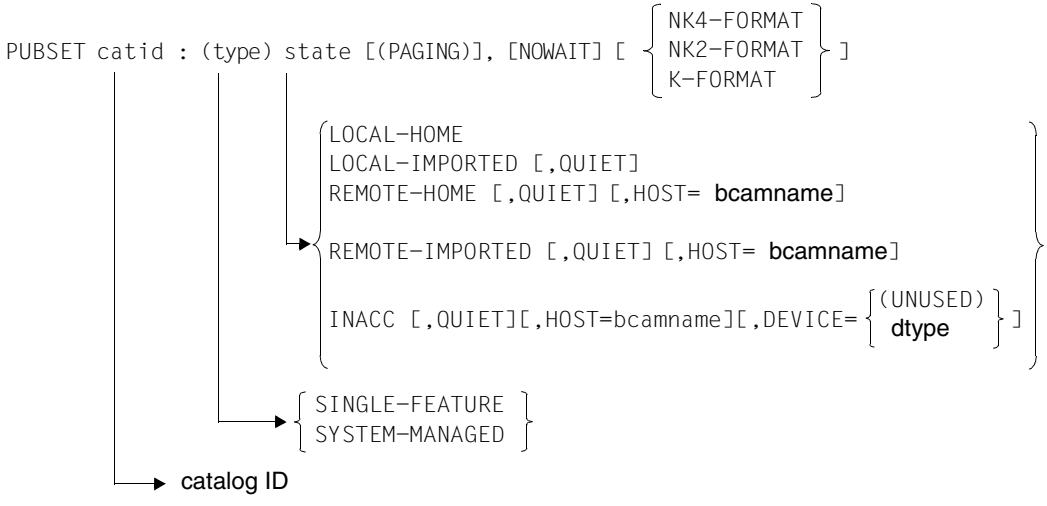
Return codes

(SC2)	SC1	Maincode	Meaning
	0	CMD0001	No errors
	1	CMS0011	Syntax error
	1	CMS0314	Syntax error for <catid>
	32	CMD0221	Internal system error
	32	CMS0310	Error during privilege check
	32	CMS0311	Invalid operand
	32	CMS0313	Storage space release error
	32	CMS0316	Internal storage space error
	32	CMS0318	Synchronization error
	32	CMS031F	MRS parameter error
	64	CMS0312	MRSCAT entry not found
	64	CMS0317	Lock conflict in MRSCAT
	64	CMS031C	Invalid processor name
	130	CMS0313	Storage space request error
	130	CMS031A	MRSCAT not initialized
	130	CMS031B	Transfer error

Output format

Output with INFORMATION = *STD:

Output line for pubsets:



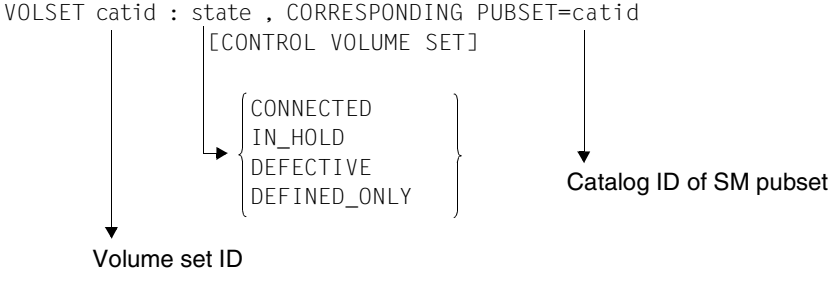
The individual parts of the text have the following meanings:

Value	**Meaning**
(SINGLE-FEATURE)	The pubset is an SF pubset.
(SYSTEM-MANAGED)	The pubset is an SM pubset.
(PAGING)	Output if a paging area is set up on the pubset.
LOCAL	The catalog is locally accessible, i.e. it is administered from the processor at which the command was issued.
REMOTE	The catalog is not locally accessible, i.e. it is not administered on the processor at which the command was issued.
INACC	The catalog is inaccessible, but may be accessible via RFA, for example.
HOME	The catalog is the home catalog of a local or remote processor.
IMPORTED	The catalog has been imported to a local or remote processor.
QUIET	The connection is temporarily interrupted.
NOWAIT	A connection failure results in the “inaccessible” status.
HOST=bcamname	BCAM name of the host - on which the catalog is administered or - on which the catalog was last administered or - which was specified in the HOST operand.
NK4-FORMAT, NK2-FORMAT, K-FORMAT	For SF pubsets only: Specifies whether the pubset is a K or NK pubset and the size of the minimum transfer unit (TU).
DEVICE	Device type of the PUBRES or “(UNUSED)”

Note

The status “INACC, QUIET” indicates that a master change could not be initiated or that it terminated abnormally. The pubset can be exported, or you can again try to change the master by entering IMPORT-PUBSET ... SHARER-TYPE=*MASTER(MASTER-CHANGE=*YES).

Output line for volume sets:



The individual parts of the text have the following meanings:

Value	Meaning
CORRESPONDING PUBSET	Catalog ID of associated SM pubset
CONTROL_VOLUME_SET	Output only for control volume set
CONNECTED	Volume set is in service and accessible
IN_HOLD	Volume set is temporarily not in service
DEFECTIVE	Volume set is defective
DEFINED_ONLY	Volume set is only defined

In some cases a second line of information is output:

– For SF pubsets only:

  If the user is authorized to request individual volumes of an SF pubset, a second line is output:

  ```
  PHYSICAL ALLOCATION BY USER ALLOWED
  ```

  For inaccessible high-availability pubsets, the following additional line is output:

  ```
  DRV PUBSET
  ```

  or

  ```
  RAID PUBSET
  ```

– For SM pubsets only:

  If the SM pubset is in the process of being generated, the following additional line is output:

  ```
  GENERATION-IN-PROCESS
  ```

– For SF and SM pubsets only:

  For inaccessible pubsets for which an import job is in progress, a second line is output:

  ```
  IMPORT-IN-PROCESS
  ```

  For inaccessible pubsets for which an export job is in progress, a second line is output:

  ```
  EXPORT-IN-PROCESS
  ```

  For local shared pubsets for which a master change is in progress, an additional line is output:

  ```
  SHARED, MASTER-CHANGE-IN-PROCESS
  ```

  For local and accessible shared pubsets, an additional line is output:

  ```
  SHARED, MASTER-HOST= OWN-HOST / bcamname
  ```

  In the case of an exclusive pubset, the *nonprivileged* user receives the following additional line:

  ```
  ACCESS CONTROLLED, RESERVED TO OWN USERID
  ```

  or

  ```
  ACCESS CONTROLLED, RESERVED TO OTHER USERID
  ```

  The *privileged* user receives the following additional line:

  ```
  ACCESS CONTROLLED, RESERVED TO <userid>
  ```

If wildcards are used or *ALL is specified, the output ends with the number of entries found:

```
1 ENTRY FOUND
```

or

```
<integer> ENTRIES FOUND
```

Additional output for INFORMATION=*USER:

Extra information is output relating to current pubset operating parameters and, in the case of SF pubsets, to the cache configuration. It is shown only for locally accessible pubsets.

Information on current pubset operating parameters

The information block begins with the following header line:

```
-- CURRENT PUBSET PARAMETERS-------------------------------------
```

Then the following lines of values are displayed:

– Information on the maximum I/O transfer length (2 Kbytes):

```
MAXIMAL I/O LENGTH            | <n> HP
```

– For SF pubsets this is followed by information on the allocation values of the pubset (Kbytes):

```
ALLOCATION UNIT SIZE          | <n> HP
```

– For SF pubsets this is followed by information as to whether absolute space allocation is allowed for nonprivileged users or only for systems support staff:

```
PHYSICAL ALLOCATION           | BY ADMINISTRATOR
                              | USER ALLOWED
```

– Information on the SPEEDCAT mode (for SF pubsets only):

```
SPEEDCAT MODE                 | NO SCA RUNNING
                              | SCA RUNNING
```

Information on the current PFA cache configuration (for SF pubsets only)

The information block begins with the following header line:

```
--- CURRENT CACHE-CONFIGURATION-----------------------------------
```

Then the following lines of values are displayed:

– Information on the cache medium:

```
CACHE MEDIUM                  | NO CACHE IN USE
                              | NONVOLATILE
                              | VOLATILE
```

Key:

`NO CACHE IN USE` There is currently no cache area active for the pubset.

NONVOLATILE — There is a cache area active for the pubset in a nonvolatile cache medium. This may be global storage with its own power supply (battery backup or UPS) or a cache controller. Full data consistency is guaranteed in the event of both power failure and a system error.

VOLATILE — There is a cache area active for the pubset in a volatile cache medium. This may be main memory (MM), expanded storage (ES) or global storage (GS) without its own power supply. Data storage is volatile. If used as a write cache, data inconsistency may result in the event of a power failure or a system error.

If the cache is currently active, additional information is output relating to cache size and buffering mode:

– Information on cache size (in Mbytes or Kbytes):

```
CACHE SIZE                    | <n> MB
                              | <n> KB
                              | GLOBAL CACHE
```

In the case of a cache controller of type 3860, the current cache size is shown as GLOBAL CACHE. This cache cannot be partitioned.

– Only for the GS cache medium with caching duplicated in two GS units:

```
DOUBLE BUFFERING              | NO
```

Output in S variables

Output information	Name of the S variable	T	Contents
Access to the pubset is checked	var(*LIST).ACCESS-CONTR	B	FALSE TRUE
Minimum size of a memory allocation; (integers are output right-justified in an eleven-character string); only with INF=*USER	var(*LIST).ALLOC-UNIT-SIZE	S	<integer> *UNDEF
Cache medium being used; only with INF=*USER *NONE = no cache activated *NOT-VOLATILE = non-volatile cache activated *VOLATILE = volatile cache activated	var(*LIST).CACHE-MED	S	*NONE *NOT-VOLATILE *VOLATILE
Cache size; only with INF=*USER	var(*LIST).CACHE-SIZE	S	*UNDEF *UNLIM 1..32767
Dimension of the cache size; only with INF=*USER	var(*LIST).CACHE-SIZE-DIM	S	*KB *MB *UNDEF
Status of the volume set	var(*LIST).CONF-STA	S	*DEFECTIVE *DEFI-ONLY *IN-HOLD *NORMAL-USE
The volume set is the control volume set	var(*LIST).CONTROL-VOLSET	B	FALSE TRUE
Catalog ID of the associated SM pubsets	var(*LIST).CORRESP-PUBSET	S	<cat-id>
Device type of the PUBRES (pubset residence)	var(*LIST).DEV	S	*UNUSED <dev-type>
Double data retention in the cache; only with INF=*USER	var(*LIST).DOUBLE-BUF	B	FALSE TRUE
High availability through DRV	var(*LIST).DOUBLE-REC	B	FALSE TRUE

Table 3: Output variables of the SHOW-MASTER-CATALOG-ENTRY command (part 1 of 3)

Output information	Name of the S variable	T	Contents
Name of the entry	var(*LIST).ENTRY-NAME	S	<cat-id>
Type of the entry	var(*LIST).ENTRY-TYPE	S	*SINGLE-FEATURE *SYSTEM-MANAGED *VOLUME-SET
Pubset is being exported	var(*LIST).EXP-IN-PROCESS	B	FALSE TRUE
Pubset format	var(*LIST).FORM	S	*K *NK2 *NK4 *UNDEF
Host processor	var(*LIST).HOST	S	*UNDEF <host-name>
Pubset is being imported	var(*LIST).IMP-IN-PROCESS	B	FALSE TRUE
SM pubset is being generated	var(*LIST).IN-GENERATION	B	FALSE TRUE
Master processor changed in local shared pubset	var(*LIST).MASTER-CHA-PROCESS	B	FALSE TRUE
Maximum size of a transfer unit (integers are output right-justified in an eleven-character string); only with INF=*USER	var(*LIST).MAX-IO-LEN	I	<integer> *UNDEF
MSCF connection failure	var(*LIST).NOWAIT	B	FALSE TRUE
Paging area available on pubset	var(*LIST).PAGING	B	FALSE TRUE
Storage space on pubset disk occupied by nonprivileged user; only with INF=*USER	var(*LIST).PHYS-ALLOC	B	FALSE TRUE
Master processor of the pubset	var(*LIST).PUBSET-MASTER	S	*OWN-HOST *UNDEF
Temporary interruption of the MSCF connection	var(*LIST).QUIET	B	FALSE TRUE
High availability through RAID	var(*LIST).RAID-PUBSET	B	FALSE TRUE
Shared pubset	var(*LIST).SHARE-PUBSET	B	FALSE TRUE

Table 3: Output variables of the SHOW-MASTER-CATALOG-ENTRY command (part 2 of 3)

Output information	Name of the S variable	T	Contents
Optimization of catalog access using SPEEDCAT; only with INF=*USER	var(*LIST).SPEEDCAT-MODE	B	FALSE TRUE
Status of the entry	var(*LIST).STA	S	*LOC-HOME *LOC-IMP *NOT-ACCESS *REM-HOME *REM-IMP
User ID	var(*LIST).USER-ID	S	*OTHER *OWN *UNDEF

Table 3: Output variables of the SHOW-MASTER-CATALOG-ENTRY command (part 3 of 3)

3.2 Commands in an RFA environment

3.2.1 Overview

The table below contains all the commands that are relevant for an RFA environment. Any special information relating to the individual commands is provided after the table.

The following general observation applies:

In the case of an RFA connection to a system < BS2000/OSD-BC V5.0, commands for the remote file are supported only with regard to the functionality of the BS2000 version of the remote system.

Command	Brief description
ADD-ACCESS-CONDITIONS [3]	Adds access conditions to a guard.
ADD-FILE-LINK	Adds user entries concerning the attributes of a file to the TFT under the specified link name for subsequent processing.
ADD-ISAM-POOL-LINK [1]	Assigns a pool link name to an ISAM pool.
ADD-PASSWORD	Adds passwords for files to the password table of the task.
CHANGE-FILE-LINK	Changes the file link name of a file (in the task file table).
CONCATENATE-DISK-FILES	Copies the contents of two or more SAM files into one file.
COPY-FILE	Copies a file, file generation or file generation group.
CREATE-ALTERNATE-INDEX [2]	Defines an alternate index (secondary key) in an NK-ISAM file.
CREATE-FILE	Creates a catalog entry.
CREATE-FILE-GENERATION	Creates new file generations for existing file generation groups.
CREATE-FILE-GROUP	Creates a catalog entry for a file generation group.
CREATE-GUARD [3]	Creates a guard.
CREATE-ISAM-POOL [1]	Creates an ISAM pool or connects a task to an existing host-specific ISAM pool.
CREATE-TAPE-SET	Creates a tape set.
DELETE-ALTERNATE-INDEX [2]	Deletes an alternate index (secondary key) of an NK-ISAM file.
DELETE-FILE	Deletes one or more of a user's files.
DELETE-FILE-GENERATION	Deletes one or more file generations belonging to a file generation group.

Table 4: DMS commands in an RFA environment (part 1 of 3)

Command	Brief description
DELETE-FILE-GROUP	Deletes a file generation group with the associated file generations.
DELETE-GUARD [3)]	Deletes a guard.
DELETE-ISAM-POOL [1)]	Deletes an ISAM pool or clears the connection between a task and an ISAM pool.
DELETE-SYSTEM-FILE	Deletes a system file.
DELETE-TAPE-SET	Deletes a tape set.
EDIT-FILE-ATTRIBUTES	Outputs the operand form of the MODIFY-FILE-ATTRIBUTES command with the current operand values for a given file.
EDIT-FILE-GENERATION-SUPPORT	Outputs the operand form of the MODIFY-FILE-GENERATION-SUPPORT command with the current operand values for a given file generation.
EDIT-FILE-GROUP-ATTRIBUTES	Outputs the operand form of the MODIFY-FILE-GROUP-ATTRIBUTES command with the current operand values for a given file generation group.
EDIT-FILE-LINK	Outputs the operand form of the ADD-FILE-LINK command with the current values for a TFT entry.
EXPORT-FILE	Deletes the catalog entries of one or more files residing on a private volume.
EXTEND-TAPE-SET	Extends a tape set.
LOCK-FILE-LINK	Locks a file link name in the task file table.
MODIFY-ACCESS-CONDITIONS [3)]	Modifies existing access conditions.
MODIFY-FILE-ATTRIBUTES	Modifies a catalog entry.
MODIFY-FILE-GENERATION-SUPPORT	Modifies the catalog entry of an existing file generation.
MODIFY-FILE-GROUP-ATTRIBUTES	Modifies a catalog entry for a file generation group.
MODIFY-GUARD [3)]	Modifies attributes of a guard.
REMOVE-ACCESS-CONDITIONS [3)]	Removes access conditions from a guard.
REMOVE-FILE-ALLOCATION-LOCKS	Makes files which were locked due to a system crash or task abort available again.
REMOVE-FILE-LINK	Deletes the entry in the TFT for the specified file link name and releases the associated private volumes and disks.
REMOVE-ISAM-POOL-LINK [1)]	Delete either one specific pool link name or all pool link names in the pool table of the task.

Table 4: DMS commands in an RFA environment (part 2 of 3)

Command	Brief description
REMOVE-PASSWORD	Deletes passwords for files from the password table of the task.
REPAIR-DISK-FILES	Reconstructs a disk file which was not properly closed due to a system crash or task abort.
SECURE-RESOURCE-ALLOCATION	Requests private devices, private volumes and files on public and private volumes.
SET-FILE-LINK [4)]	Adds user entries concerning the attributes of a file to the TFT under the specified link name for subsequent processing (as of BS2000/OSD-BC V2.0, see ADD-FILE-LINK).
SHOW-ACCESS-ADMISSION [3)]	Shows the access conditions contained in a guard and defined for a task.
SHOW-ACCESS-CONDITIONS [3)]	Shows all access conditions contained in a guard.
SHOW-FILE-ATTRIBUTES	Provides information on catalog entries.
SHOW-FILE-LINK	Provides information on entries in the TFT.
SHOW-GUARD-ATTRIBUTES [3)]	Provides information on guard attributes.
SHOW-INDEX-ATTRIBUTES [2)]	Provides information on alternate indices (secondary keys) in an NK-ISAM file.
SHOW-ISAM-POOL-ATTRIBUTES [1)]	Provides information on ISAM pools with which the task is associated.
SHOW-ISAM-POOL-LINK [1)]	Provides information on the assignment of ISAM pools to pool link names.
UNLOCK-FILE-LINK	Cancels the lock imposed by LOCK-FILE-LINK for a file link name (entry in the TFT).

Table 4: DMS commands in an RFA environment (part 3 of 3)

Notes

1) ISAM pools are used only in conjunction with the processing of NK-ISAM files.

The BLOCK-CONTROL-INFO operand of the ADD-FILE-LINK (or SET-FILE-LINK) command controls whether K-ISAM or NK-ISAM processing is to take place. ISAM pools on remote processors can be utilized for processing NK-ISAM files. ISAM pools can be generated using the CREATE-ISAM-POOL command (or the CREPOOL macro) and a catalog ID on the remote processor.

Information on the attributes of remote ISAM pools and on the assignment of these pools to pool link names can be obtained from the local system.

Example

```
/CREATE-ISAM-POOL CAT-ID=A
```

The ADD-ISAM-POOL-LINK command (or ADDPLNK macro) can be used to assign a pool link name to the ISAM pool; this link name must also be entered in the TFT (ADD-FILE-LINK command, POOL-LINK operand). The connection to the ISAM pool is cleared down by means of the commands REMOVE-ISAM-POOL-LINK (or the REMPLNK macro) and DELETE-ISAM-POOL (or the DELPOOL macro).

The manual "Introductory Guide to DMS" [6] contains a description of the NK-ISAM access method. The corresponding commands and macros are described in the manuals “Commands, Volumes 1-6” [1] - [2] and “DMS Macros” [7].

2) Commands for creating and managing alternate indices (secondary keys) may only be issued for NK-ISAM files.

The manual "Introductory Guide to DMS" [6] contains a description of secondary keys. The corresponding commands and macros are described in the manuals ““Commands, Volumes 1-6” [1] - [2] and “DMS Macros” [7].

3) The GUARDS commands listed are only available if the software product SECOS is in use (see the “SECOS” manual [8]). In managing the GUARDS objects (i.e. the guards) on a remote processor, the following restrictions apply:

– copying a guard is only possible when target and source guard are locally accessible on the same processor

– should a guard be renamed, the target guard and the source guard must be locally accessible on the same processor

– the output area for RFA SHOW commands is only supported up to a size of 64 Kbytes.

4) The SET-FILE-LINK command is still supported but you are advised not to use it.

3.2.2 Special features of DMS commands

ADD-FILE-LINK
Enter file attributes in task file table

When file access is via a link name, the point in time at which the ADD-FILE-LINK command occurs determines in which mode the file is accessed. If the TFT entry was generated before the RFA connection was set up, access is via MSCF even during the RFA connection.

A TFT entry for a remote file which was generated while an RFA connection existed is deleted automatically when the connection is cleared.

For the TFT entry, the pool link name of an ISAM pool must be specified in the POOL-LINK operand.

If the file attributes of a reference file are to be added to the TFT entry for a file (operand DATA-ATTRIBUTE=*FROM-FILE(...)), the reference file must have the same catalog ID. This means:
– for a remote file, the reference file must likewise be located in the remote system
– for a local file, the reference file must be located in the local system

ADD-PASSWORD/REMOVE-PASSWORD
Enter/delete passwords in password table

The ADD-PASSWORD and REMOVE-PASSWORD commands are automatically forwarded by the requesting RFA task to all AFR partner tasks and processed under the control of these partner tasks.

COPY-FILE
Copy files, file generations and file generation groups

– A file can be copied from one remote system to another remote system; input and output operations are performed on two different systems. The local system then serves as an intermediate storage system for the transfer of data. Copying is possible only if the SET-RFA-CONNECTION command was issued on the local system (i.e. the system which executes the command) for both remote systems **prior** to the copy procedure.

– PLAM libraries in a remote system which are protected by means of Basic-ACL, ACL or GUARDS cannot be copied.

– Privileged users cannot ignore the protection attributes of a remote file when copying.
– When copying with PROTECTION=*SAME, the ACL entry of the target file (remote system) cannot be deleted.
– If PROTECTION=*SAME is specified when copying a remote file to a local file, the passwords are not transferred. The same applies when copying a remote file to another remote system.
– If the path name of the source file to be copied contains wildcard characters in the catalog ID portion, all catalogs which match the wildcard string and which can be accessed via an RFA connection are ignored when processing the COPY-FILE command. Remote files can be copied only if the catalog ID is specified explicitly.

CREATE-FILE
Define name and attributes of new file

If the protection attributes of a reference file are to be adopted for a new file (operand PROTECTION-ATTR=*FROM-FILE(...)), the reference file must have the same catalog ID. This means:
– for a remote file, the reference file must likewise be located in the remote system
– for a local file, the reference file must be located in the local system

When creating a file via an RFA connection in a remote system for which the system parameter FARMTSAV=1 is set, the catalog ID is marked as modified (internal version number is given the value 1) and may also be saved in the course of an incremental save.

CREATE-FILE-GROUP
Define name and attributes of new file generation group

If the protection attributes of a reference file are to be adopted for a new file generation group (operand PROTECTION-ATTR=*FROM-FILE(...)), the reference file must have the same catalog ID. This means:
– for a remote file generation group, the reference file must likewise be located in the remote system
– for a local file generation group, the reference file must be located in the local system

DELETE-FILE
Delete file

If the path name of the file to be deleted contains wildcard characters in the catalog ID portion, all catalogs which match the wildcard string and are accessible via an RFA connection are ignored when the DELETE-FILE command is processed. Remote files can only be deleted by specifying the catalog ID explicitly.

DELETE-FILE-GROUP
Delete file generation group

If the path name of the file generation group to be deleted contains wildcard characters in the catalog ID portion, all catalogs which match the wildcard string and are accessible via an RFA connection are ignored when the DELETE-FILE-GROUP command is processed. Remote file generation groups can only be deleted by specifying the catalog ID explicitly.

DELETE-FILE-GENERATION
Delete file generation

If the path name of the file generation to be deleted contains wildcard characters in the catalog ID portion, all catalogs which match the wildcard string and are accessible via an RFA connection are ignored when the DELETE-FILE-GENERATION command is processed. Remote file generations can only be deleted by specifying the catalog ID explicitly.

EXPORT-FILE
Delete catalog ID of files on private volumes

If the path name of the file to be exported contains wildcard characters in the catalog ID portion, all catalogs which match the wildcard string and are accessible via an RFA connection are ignored when the EXPORT-FILE command is processed. Remote files on private volumes can only be exported by specifying the catalog ID explicitly.

MODIFY-FILE-ATTRIBUTES
Modify attributes of file

If the protection attributes of a reference file are to be adopted for a new file (operand PROTECTION-ATTR=*FROM-FILE(...)), the reference file must have the same catalog ID. This means:

– for a remote file, the reference file must likewise be located in the remote system
– for a local file, the reference file must be located in the local system

If the path name of the file to be deleted contains wildcard characters in the catalog ID portion, all catalogs which match the wildcard string and are accessible via an RFA connection are ignored when the MODIFY-FILE-ATTRIBUTES command is processed. Remote files can only be deleted by specifying the catalog ID explicitly.

MODIFY-FILE-GENERATION-SUPPORT
Modify attributes of file generation

If the path name of the file to be deleted contains wildcard characters in the catalog ID portion, all catalogs which match the wildcard string and are accessible via an RFA connection are ignored when the MODIFY-FILE-GENERATION-SUPPORT command is processed. Remote files can only be deleted by specifying the catalog ID explicitly.

MODIFY-FILE-GROUP-ATTRIBUTES
Modify attributes of file generation group

If the protection attributes of a reference file are to be adopted for a new file (operand PROTECTION-ATTR=*FROM-FILE(...)), the reference file must have the same catalog ID. This means:

– for a remote file, the reference file must likewise be located in the remote system
– for a local file, the reference file must be located in the local system

If the path name of the file to be deleted contains wildcard characters in the catalog ID portion, all catalogs which match the wildcard string and are accessible via an RFA connection are ignored when the MODIFY-FILE-GROUP-ATTRIBUTES command is processed. Remote files can only be deleted by specifying the catalog ID explicitly.

REPAIR-DISK-FILES
Reconstruct files, file generations and file generation groups

If an ISAM file is to be reconstructed, the newly reconstructed file must be cataloged in the same catalog ("catid") as the original ISAM file. Similarly, the work file which is used while reconstruction is carried out is cataloged in the same catalog as the ISAM file to be reconstructed.

SECURE-RESOURCE-ALLOCATION
Request resources

The SECURE-RESOURCE-ALLOCATION command cannot be used to reserve local and remote resources simultaneously. Files can be reserved in a remote system via RFA. This, however, does not apply to devices and volumes.

Example

```
/SECURE-RESOURCE-ALLOCATION FILE=(NAME=pathname,ACCESS=*WRITE)
```

SHOW-FILE-LINK
Provide information on TFT entries

With this command the user can request information on the TFT entry of a file on a remote system.

*Output format for INFORMATION=*NAMES-AND-FILES*

```
%-- LINK-NAME --------- FILE-NAME ----------------------------------------
%R  linkname            pathname  (as specified in ADD-FILE-LINK)
```

The catalog containing the file is identified in the path name (pathname) by “catid”. A REMOTE-TFT entry on the local processor is identified by the letter **R**. The REMOTE-TFT entry does not take all the information from the ADD-FILE-LINK command. The complete information from the ADD-FILE-LINK command is evaluated by the AFR partner task.

SHOW-ISAM-POOL-ATTRIBUTES
Output attributes and occupancy states of NK-ISAM pools

The SHOW-ISAM-POOL-ATTRIBUTES command provides local information about NK-ISAM pools. If the task is connected to an ISAM pool on a remote processor, the catalog ID of the appropriate ISAM pool is marked by two asterisks (**) in the output of the SHOW-ISAM-POOL-ATTRIBUTES command.
Privileged users can request information on a remote ISAM pool only if their task is connected to this ISAM pool.

Example

```
/set-rfa-conn cat-id=2os2 ------------------------------------------------ (1)
/cre-isam-pool pool-name=rempool1,cat-id=2os2,size=512 -------------------- (2)
/show-isam-pool-attr pool=*all,info=*users-and-attr ----------------------- (3)

%
%  CATID    POOLNAME  SCOPE            WROUT   SIZE  EXTENTS  RESIDENT
%=========================================================================
%  1OSP     SDFPOOLN  TASK              NO       32   --/--      NO
%
%-------------- ANGESCHLOSSENE TASKS ---------------------------------
%                                          TSN = OUID
%-------------------------------------------------------------------------
%
%
%  CATID    POOLNAME  SCOPE            WROUT   SIZE  EXTENTS  RESIDENT
%=========================================================================
%  2OS2 **  REMPOOL1  TASK              NO      512   --/--      NO
%
%-------------- ANGESCHLOSSENE TASKS ---------------------------------
%                                          TSN = OUID
%-------------------------------------------------------------------------
%
```

(1) An RFA connection to remote pubset *2OS2* is set up.

(2) Connection to the ISAM pool *REMPOOL1* on the remote pubset.

(3) The ISAM pool *REMPOOL1* is located on the remote processor (identified by the two asterisks **).

3.3 Systems support commands

Only those aspects of the systems support commands which are relevant for the use of RFA are described in this section. A more detailed description can be found in the manuals "Commands, Volumes 1 - 5” [1]. An RFA connection can only be set up if there is an entry in the MRS catalog for the appropriate pubset.
This section describes the commands needed by systems support in order to create and administer the MRS catalog entries:

Command	Function	Page
ADD-MASTER-CATALOG-ENTRY	Create entry in MRS catalog	58
MODIFY-MASTER-CATALOG-ENTRY	Modify entry in MRS catalog	62
REMOVE-MASTER-CATALOG-ENTRY	Delete entry in MRS catalog	66
SHOW-MASTER-CATALOG-ENTRY	Provide information on MRS catalog entries (see section “RFA user commands” on page 21)	34

Only the operands relevant to RFA are described below. A complete description of these commands can be found in the manuals “Commands, Volumes 1 - 6” [1] - [2].

ADD-MASTER-CATALOG-ENTRY
Create entry in MRSCAT of home pubset

Domain: MULTI-CATALOG-AND-PUBSET-MGMT

Privileges: TSOS

Routing code: $

Function

This command can be used to create an MRSCAT entry both for single-feature pubsets (SF pubsets) and for system-managed pubsets (SM pubsets). The newly entered catalog is given the status "inaccessible". If there is already an entry for the specified catalog ID, no entry is created. The catalog IDs must be unique throughout the entire network, i.e. the disks must be appropriately initialized using the VOLIN utility routine.

Unlike IMPORT-PUBSET and EXPORT-PUBSET, the ADD-MASTER-CATALOG-ENTRY command has no influence on the accessibility of the catalogs.

In the case of SF pubsets, default values are allocated for all cache attributes, but only for the cache attributes FORCE-IMPORT and SIZE-TOLERANCE in the case of SM pubsets. If the attributes are to be changed later on, this must be done with the MODIFY-PUBSET-CACHE-ATTRIBUTES commands (this is described in the “Introductory Guide to Systems Support” [4], administration of SM pubsets see also manual „SMS“ [19]).

It is not possible to use this command to create a volume set entry.

The operand description contains only the operands relevant to RFA. A complete description of all the operands can be found in the manuals “Commands, Volumes 1 - 6” [1] - [2].

Format

ADD-MASTER-**CAT**ALOG-**ENTRY**

ENTRY-NAME = <catid 1..4>

,**PUBSET-TYPE** = ***SINGLE-FEATURE** (...) / ***SYSTEM-MANAGED**(...)

***SINGLE-FEATURE**(...)

START-SPEEDCAT = ***NO** / ***SPEEDCAT-TASK** / ***OWN-TASK**

,**PHYSICAL-ALLOCATION** = ***ADMINISTRATOR-ONLY** / ***USER-ALLOWED**

,**NEXT-CATALOG-EXPORT** = ***NO-CONVERSION** / ***V10-COMPATIBLE**

,**ALLOC**ATION = ***STD** / ***PAR**AMETERS(...)

***PAR**AMETERS(...)

SATURATION-**LEVEL4** = ***STD** / <integer 66..2147483647>

,**PRIM**ARY-**ALLOC**ATION = ***STD** / <integer 1..16777215>

,**SEC**ONDARY-**ALLOC**ATION = ***STD** / <integer 1..65535>

,**MAX**IMAL-**ALLOC**ATION = ***STD** / <integer 1..65535>

***SYSTEM-MANAGED**(...)

CONTROL-VOLUME-SET = ***NONE** / <catid 1..4>

,**PARTNER-NAME** = ***OWN** / <alphanum-name 1..8>

,**ACCESS-FAIL**URE = ***HOLD-JOBS** / ***CAN**CEL-**JOBS**

,**RESID**ENT-**BUFFERS** = ***SYS**TEM-**STD** / ***NO** / ***Y**ES

,**NUM**BER-**OF-BUFFERS** = ***SYS**TEM-**STD** / <integer 1..255>

,**BATCH-WAIT-TIME** = **28800** / <integer 0..2147483647>

,**DIALOG-WAIT-TIME** = **30** / <integer 0..2147483647>

,**SHARE**D-**PUB**SET = ***NO** / ***Y**ES

,**ACCESS-CONTR**OLLED = ***NO** / ***Y**ES(...)

***Y**ES(...)

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

,**EAM** = ***STD** / ***PAR**AMETERS(...)

***PAR**AMETERS(...)

MAXIMAL-**SIZE** = ***STD** / <integer 12..193536>

,**MIN**IMAL-**SIZE** = ***STD** / <integer 12..193536>

,**SEC**ONDARY-**ALLOC**ATION = ***STD** / <integer 1..193536>

,**VIRTUAL-MEMORY** = ***STD** / <integer 0..8192>

,**REMOTE-IMPORT** = ***BY-CONNECTION** / ***BY-COMMAND-ONLY**

,**XCS-CONFIGURATION** = ***NO** / ***Y**ES

Description of the operands relevant to RFA

ENTRY-NAME = <cat-id 1..4>
Catalog ID of the pubset for which a new entry is to be created in the MRSCAT.

PARTNER-NAME = *OWN / <alphanum-name 1..8>
BCAM name of the partner processor for remote file access.

PARTNER-NAME = *OWN
No BCAM name is entered.

PARTNER-NAME = <alphanum-name 1..8>
BCAM name of the partner processor for remote file access. This operand may only be specified if there is no MRS connection but remote file access is required nevertheless. When working with shared pubsets, the name of the master processor is entered here.

Command return codes

(SC2)	SC1	Maincode	Meaning
	0	CMD0001	Command executed without errors
2	0	CMS0002	Disk error
	1	CMS0011	Syntax error
	1	CMS0314	Syntax error in the entry name or errors in the wildcard specification
	32	CMD0221	Internal system error
	32	CMS0001	SLOT manager error
	32	CMS031F	MRSCAT parameter error
	32	CMS0310	Error in privilege check
	32	CMS0317	MRSCAT is locked
	32	CMS0318	Synchronization error due toTask Lock Manager problem
	64	CMS0004	MRSCAT entry already exists
	64	CMS0005	Too many entries in MRSCAT
	64	CMS0010	Command is reserved for systems support

Notes

- A pubset entered in MRSCAT with the specification SHARED-PUBSET=*YES in the ADD-MASTER-CATALOG-ENTRY or MODIFY-MASTER-CATALOG-ENTRY command can be operated as a shared pubset.
  If there is not yet an RFA connection to the processor associated with this pubset, a connection to this pubset can be set up via RFA only if

  – the user ID under which the SET-RFA-CONNECTION command is issued matches that of the RFA task

  – the user ID under which the SET-RFA-CONNECTION command is issued does not match that of the RFA task and the pubset is not imported as a shared pubset and is *LOCALLY ACCESSIBLE*.

  If an RFA connection already exists to the processor associated with this pubset, a connection to this pubset can be set up via RFA only if the user ID under which the SET-RFA-CONNECTION command is issued matches that of the RFA task **and** of the AFR partner task.
  If all other cases, a SET-RFA-CONNECTION command for this pubset will be rejected.
  Because of this restriction, it is advisable to specify SHARED-PUBSET=*YES only for pubsets which are actually used as shared pubsets.

- An RFA connection to a shared pubset with the catalog ID *catid* is not set up if *catid* is entered in the user catalog as the standard catalog ID for the user ID of the local task.

MODIFY-MASTER-CATALOG-ENTRY
Modify entry in MRSCAT of home pubset

Domain: MULTI-CATALOG-AND-PUBSET-MGMT

Privileges: TSOS

Routing code: $

Function

With this command the default values for access mode can be changed for a catalog input in MRSCAT of the home pubset. This is also possible for single feature pubsets (SF pubsets) as well as system managed pubsets (SM pubsets).

It is important to note that neither the pubset type nor a volume set entry can be modified by means of this command. Any changes that are made do not take effect until the next time the pubset is imported (IMPORT-PUBSET command).

The accessibility of the catalog can be modified by means of the IMPORT-PUBSET command.

The default value *UNCHANGED in any given operand means that the previously valid specification still applies.

The operand description contains only the operands relevant to RFA. A complete description of all the operands can be found in the manuals "Commands, Volumes 1-6" [1]-[2].

Format

MODIFY-**MAST**ER-CATALOG-ENTRY

ENTRY-NAME = <catid 1..4>

,**PUB**SET-**TYPE** = ***BY-PUB**SET / ***SINGLE-FEATURE**(...) / ***SYS**TEM-**MANAG**ED(...)

***SINGLE-FEATURE**(...)

START-SPEEDCAT = ***UNCHA**NGED / ***NO** / ***SPEEDCAT-TASK** / ***OWN-TASK**

,**PHYS**ICAL-**ALLOC**ATION = ***UNCHA**NGED / ***ADM**INISTRATOR-**ONLY** / ***USER-ALLOW**ED

,**NEXT-CATALOG-EXPORT** = ***UNCHA**NGED / ***NO-CONVERSION** / ***V10-COMPATIBLE**

,**ALLOC**ATION = ***UNCHA**NGED / ***PAR**AMETERS(...)

***PAR**AMETERS(...)

SATURATION-**LEVEL4** = ***UNCHA**NGED / ***STD** / <integer 66..2147483647>

,**PRIM**ARY-**ALLOC**ATION = ***UNCHA**NGED / ***STD** / <integer 1..16777215>

,**SEC**ONDARY-**ALLOC**ATION = ***UNCHA**NGED / ***STD** / <integer 1..65535>

,**MAX**IMAL-**ALLOC**ATION = ***UNCHA**NGED / ***STD** / <integer 1..65535>

***SYS**TEM-**MANAG**ED(...)

CONTROL-**VOL**UME-**SET** = ***UNCHA**NGED / <catid 1..4>

,**PARTNER-NAME** = ***UNCHA**NGED / <alphanum-name 1..8>

,**ACCESS-FAIL**URE = ***UNCHA**NGED / ***HOLD-JOBS** / ***CAN**CEL-**JOBS**

,**RESID**ENT-**BUFFERS** = ***UNCHA**NGED / ***NO** / ***Y**ES

,**NUM**BER-**OF-BUFFERS** = ***UNCHA**NGED / <integer 1..255>

,**BATCH-WAIT-TIME** = ***UNCHA**NGED / <integer 0..2147483647 *seconds*>

,**DIALOG-WAIT-TIME** = ***UNCHA**NGED / <integer 0..2147483647 *seconds*>

,**SHARE**D-**PUB**SET = ***UNCHA**NGED / ***Y**ES / ***NO**

,**ACCESS-CONTR**OLLED = ***UNCHA**NGED / ***NO** / ***Y**ES(...)

***Y**ES(...)

USER-IDENTIFICATION = ***UNCHA**NGED / <alphanum-name 1..8> / ***TSOS**

,**EAM** = ***UNCHA**NGED / ***PAR**AMETERS(...)

***PAR**AMETERS(...)

MAXIMAL-**SIZE** = ***UNCHA**NGED / ***STD** / <integer 12..193536 *2Kbyte*>

,**MIN**IMAL-**SIZE** = ***UNCHA**NGED / ***STD** / <integer 12..193536 *2Kbyte*>

,**SEC**ONDARY-**ALLOC**ATION = ***UNCHA**NGED / ***STD** / <integer 1..193536 *2Kbyte*>

,**VIRTUAL-MEMORY** = ***UNCHA**NGED / ***STD** / <integer 0..8192 *2Kbyte*>

,**REMOTE-IMPORT** = ***BY-CONNECTION** / ***BY-COMMAND-ONLY**

,**XCS-CONF**IGURATION = ***UNCHA**NGED / ***NO** / ***Y**ES

Description of the operands relevant to RFA

ENTRY-NAME = <cat-id 1..4>
Catalog ID of the pubset whose MRSCAT is to be modified.

PARTNER-NAME = *UNCHANGED / <alphanum-name 1..8>
BCAM name of the processor for remote file access (the specified operand value may be modified only if it is not possible to access the catalog).

Command return codes

(SC2)	SC1	Maincode	Meaning/ guaranteed messages
	1	CMD0001	Command executed without errors
1	1	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	MRS parameter error
	32	CMS0310	Error in privilege check
	32	CMS0317	MRSCAT is locked
	32	CMS0318	Synchronization error
	64	CMS0010	No authorization for command
	64	CMS0312	MRSCAT entry not found
	64	CMS0319	Pubset typ conflict

Notes

- A pubset entered in the MRSCAT with the specification SHARED-PUBSET=*YES in the ADD-MASTER-CATALOG-ENTRY or MODIFY-MASTER-CATALOG-ENTRY command can be operated as a shared pubset.
  If there is not yet an RFA connection to the processor associated with this pubset, a connection to this pubset can be set up via RFA only if
  - the user ID under which the SET-RFA-CONNECTION command is issued matches that of the RFA task
  - the user ID under which the SET-RFA-CONNECTION command is issued does not match that of the RFA task, and the pubset is not imported as a shared pubset and is *LOCALLY ACCESSIBLE*.

  If an RFA connection already exists to the processor associated with this pubset, a connection to this pubset can only be set up via RFA if the user ID under which the SET-RFA-CONNECTION command is issued matches that of the RFA task **and** of the AFR partner task.
  If all other cases, a SET-RFA-CONNECTION command for this pubset will be rejected.
  Because of this restriction, it is advisable to specify SHARED-PUBSET=*YES only for pubsets which are actually used as shared pubsets.
- An RFA connection to a shared pubset with the catalog ID *catid* is not set up if *catid* is entered in the user catalog as the standard catalog ID for the user ID of the local task.

REMOVE-MASTER-CATALOG-ENTRY
Delete entry in MRSCAT of home pubset

Domain: MULTI-CATALOG-AND-PUBSET-MGMT

Privileges: TSOS

Routing code: $

Function

If the pubset concerned does not have the status “inaccessible”, the REMOVE-MASTER-CATALOG-ENTRY command will be rejected.

Once the entry has been removed, it is no longer possible to identify the pubset. Systems support can add a new catalog ID by means of the ADD-MASTER-CATALOG-ENTRY command.

A detailed description of this command can be found in the manuals "Commands, Volumes 1-6" [1]-[2].

Format

REMOVE-**MAST**ER-CATALOG-ENTRY
ENTRY-NAME = <catid 1..4> ,**VOL**UME-**SET-ENTRIES** = ***REMOVE** / ***KEEP**

Operands

ENTRY-NAME = <catid 1..4>
Catalog ID of the pubset whose MRSCAT entry is to be deleted.

VOLUME-SET-ENTRIES = *REMOVE / *KEEP
Specifies whether deletion of the MRSCAT entry for a system-managed pubset (SM pubset) is to be accompanied by deletion of the associated volume set entries.

VOLUME-SET-ENTRIES = *REMOVE
Deletion of the MRSCAT entry for a system-managed pubset (SM pubset) is to be accompanied by deletion of the associated volume set entries.

VOLUME-SET-ENTRIES = *KEEP
Only the MRSCAT entry for a system-managed pubset is to be deleted, not the associated volume set entries.

Command return codes

(SC2)	SC1	Maincode	Meaning/ guaranteed messages
	0	CMD0001	Command executed without errors
1	0	CMS0312	MRSCAT entry not found
2	0	CMS0002	Disk error
	1	CMS0011	Syntax error
	1	CMS0314	Syntax error in entry name or error when using wildcards
	32	CMS0001	Error in SLOT manager
	32	CMD0221	Internal system error
	32	CMS031F	MRSCAT parameter error
	32	CMS0310	Error in privilege check
	32	CMS0317	Locked MRSCAT entry cannot be released
	32	CMS0318	Synchronization error due to Task Lock Manager problem
	64	CMS0010	Command reserved for systems support
	130	CMS0003	MRSCAT entry cannot be deleted because the pubset is occupied

3.4 Examples

Tracer listing 1

```
(IN)     show-file-attr file-name=rfa. ------------------------------------------------------------  (1)
(OUT)             3 :2OS6:$USER1.RFA.DMADR
(NL)             12 :2OS6:$USER1.RFA.MF.14O.DE.MML
(NL)             12 :2OS6:$USER1.RFA.MF.14O.EN.MML
(NL)             21 :2OS6:$USER1.RFA.PROT.ACCOUNT
(NL)             78 :2OS6:$USER1.RFA.PROT.RDTFT
(NL)             72 :2OS6:$USER1.RFA.PROT.1
(NL)             30 :2OS6:$USER1.RFA.RDTFT
(NL)     :2OS6: PUBLIC:      7 FILES RES=       228 FRE=       193 REL=       186 PAGES
(IN)     show-master-catalog-entry ----------------------------------------------------------------  (2)
(OUT)    PUBSET A   : SINGLE-FEATURE, INACC, HOST=N89HO4, DEVICE=STDDISK
(NL)     PUBSET AAK3: SINGLE-FEATURE, INACC, HOST=DO15B219, DEVICE=STDDISK
(NL)     PUBSET AAK4: SINGLE-FEATURE, INACC, HOST=DO15B219, DEVICE=STDDISK
(NL)     PUBSET AAN3: SINGLE-FEATURE, INACC, HOST=DO15B219, DEVICE=STDDISK
(NL)     PUBSET AA4N: SINGLE-FEATURE, INACC, DEVICE=D349O-10
(NL)     PUBSET AKEY: SINGLE-FEATURE, INACC, HOST=HELIOS2, DEVICE=D3475-8F
 .
 .
 .
(NL)     PUBSET 2OSQ: SINGLE-FEATURE, LOCAL-IMPORTED, K-FORMAT
(NL)     PUBSET 2OS6: SYSTEM-MANAGED, LOCAL-IMPORTED  ---------------------------------------------  (3)
(NL)                  SHARED, MASTER-HOST=OWN-HOST
(NL)     PUBSET 2OS7: SINGLE-FEATURE, LOCAL-IMPORTED, K-FORMAT
(NL)                  SHARED, MASTER-HOST=OWN-HOST
 .
 .
 .
(NL)     PUBSET TO51: SINGLE-FEATURE, INACC, HOST=DO17ZE11, DEVICE=STDDISK, PUBRES-MN=46OB -------  (4)
(OUT)    PUBSET TO52: SINGLE-FEATURE, INACC, DEVICE=STDDISK
(NL)     PUBSET TO53: SINGLE-FEATURE, INACC, HOST=DO17ZE11, DEVICE=STDDISK
(NL)     PUBSET TO54: SINGLE-FEATURE, INACC, HOST=DO16ZE27, DEVICE=STDDISK
 .
 .
 .
(NL)     PUBSET 7OWI: SINGLE-FEATURE, REMOTE-IMPORTED, HOST=DO16ZE15, K-FORMAT
(NL)                  DRV PUBSET
(NL)     PUBSET 9OSH: SINGLE-FEATURE, INACC, DEVICE=STDDISK
(NL)     PUBSET 9OSQ: SINGLE-FEATURE, INACC, DEVICE=STDDISK
(NL)     411 ENTRIES FOUND
(IN)     set-rfa-connection cat-id=tO51,proc-admis=(user-id=USER3,account=account1,password=P)     (5)
(OUT)    MESSAGE FROM TO51:  %  JMSO066 TESTOSID 01-12-12 17:33 OCOJ
(OUT)    MESSAGE FROM TO51:  ************************************************
(NL)     ***    ======================================    ***
(NL)     ***    BS2OOO Version OSD V5 (14.0a)  / PVLU N    ***
(NL)     ***    ======================================    ***
(NL)     ***    Replader : Status  A, F und X             ***
(NL)     ***                                              ***
(NL)     ************************************************
(OUT)    MESSAGE FROM TO51:  %  BLSO5OO PROGRAM 'SYSAFR', VERSION '14.0AOO' OF '2001-10-30
(  )     ' LOADED
(OUT)    MESSAGE FROM TO51:  %  BLSO552 COPYRIGHT (C) FUJITSU SIEMENS COMPUTERS GMBH 1993.
(  )      ALL RIGHTS RESERVED
(OUT)    MESSAGE FROM TO51:  %  RFAOOO1 SYSAFR. DATE '2OOO-11-24  VER 14.0AOO'
(OUT)    MESSAGE FROM TO51:  SYSAFR  READY
(OUT)    %  RFAOOO2 COMMAND PROCESSING COMPLETED
```

```
(IN)     show-file-attr f-name=:t051:rfa. ———————————————————————————————————————————— (6)
(OUT)          12 :T051:$USER3.RFA.PROT.2
(NL)            9 :T051:$USER3.RFA.SFVERSION
(NL)            3 :T051:$USER3.RFA.TESTFILE.1
(NL)            3 :T051:$USER3.RFA.TESTFILE.2
(NL)           15 :T051:$USER3.RFA.TESTFILE.3
(NL)           15 :T051:$USER3.RFA.TESTFILE.4
(NL)           15 :T051:$USER3.RFA.TESTFILE.5
(NL)     :T051: PUBLIC:      7 FILES RES=        72 FRE=        34 REL=         9 PAGES
(IN)     show-file-attr f-name=:t051:rfa.testfile.2,inf=*par(history=*yes,org=*yes) ———————— (7)
(OUT)    0000000003 :T051:$USER3.RFA.TESTFILE.2
(NL)       ------------------------------- HISTORY      -------------------------------
(NL)       CRE-DATE   = 2001-12-12  ACC-DATE   = 2001-12-12  CHANG-DATE = 2001-12-12
(NL)       CRE-TIME   =   17:30:50  ACC-TIME   =   17:30:50  CHANG-TIME =   17:30:50
(NL)       ACC-COUNT  = 1           S-ALLO-NUM = 0
(NL)       ------------------------------- ORGANIZATION -------------------------------
(NL)       FILE-STRUC = SAM         BUF-LEN    = STD(1)      BLK-CONTR  = PAMKEY
(NL)       IO(USAGE)  = READ-WRITE  IO(PERF)   = STD         DISK-WRITE = IMMEDIATE
(NL)       REC-FORM   = (F,N)       REC-SIZE   = 80
(NL)       AVAIL      = *STD
(NL)     :T051: PUBLIC:      1 FILE  RES=         3 FRE=         3 REL=         0 PAGES
(IN)     add-file-link link-name=edtsam,f-name=:t051:rfa.testfile.2,record-format=*by-cat,
(  )                   record-size=*by-cat  ————————————————————————————————————————— (8)
(IN)     show-file-link link=edtsam  ———————————————————————————————————————————————— (9)
(OUT)    -- LINK-NAME --------- FILE-NAME ---------------------------------------------
(NL)      R EDTSAM              :T051:RFA.TESTFILE.2
(IN)     start-edt
(OUT)    %  BLS0517 MODULE 'EDTSTRT' LOADED
(IN)     read ´/´ ——————————————————————————————————————————————————————————————————— (10)

           1.00 ***********************************************************************
           2.00 ** DIESE DATEI WURDE AUF DEM SYSTEM B EINGERICHTET (CAT-ID T051).     **
           3.00 ** SIE WIRD VOM SYSTEM A AUS BEARBEITET (CAT-ID 20S6)                 **
           4.00 ***********************************************************************

          22.00
          23.00
         system'remove-file-link edtsam';write'rfa.testfile.1-a'          0001.00:001(0)
         ———————————————————————————————————————————————————————————————————————————— (11)
(OUT)    %  EDT0173 FILE 'RFA.TESTFILE.1-A' CREATED AND WRITTEN
(IN)     halt
(OUT)    %  EDT8000 EDT TERMINATED
(IN)     show-file-attr f-name=rfa.testfile.1-a,inf=*par(history=*yes,org=*yes) ——————— (12)
(OUT)    0000000003 :20S6:$USER1.RFA.TESTFILE.1-A
(NL)       ------------------------------- HISTORY      -------------------------------
(NL)       CRE-DATE   = 2001-12-12  ACC-DATE   = 2001-12-12  CHANG-DATE = 2001-12-12
(NL)       CRE-TIME   =   17:51:13  ACC-TIME   =   17:51:13  CHANG-TIME =   17:51:13
(NL)       ACC-COUNT  = 1           S-ALLO-NUM = 0
(NL)       ------------------------------- ORGANIZATION -------------------------------
(NL)       FILE-STRUC = SAM         BUF-LEN    = STD(1)      BLK-CONTR  = PAMKEY
(NL)       IO(USAGE)  = READ-WRITE  IO(PERF)   = STD         DISK-WRITE = IMMEDIATE
(NL)       REC-FORM   = (V,N)       REC-SIZE   = 0
(NL)       AVAIL      = *STD
(NL)       WORK-FILE  = *NO         F-PREFORM  = *K          SO-MIGR    = *ALLOWED
(NL)     :20S6: PUBLIC:      1 FILE  RES=         3 FRE=         2 REL=         0 PAGES
(IN)     copy-file from-file=:t051:rfa.testfile.3,to-file=rfa.testfile.2-a ——————————— (13)
(IN)     show-file-attr f-name=rfa.testfile.2-a,inf=*par(history=*yes,org=*yes)
(OUT)    0000000015 :20S6:$USER1.RFA.TESTFILE.2-A
(NL)       ------------------------------- HISTORY      -------------------------------
(NL)       CRE-DATE   = 2001-12-12  ACC-DATE   = 2001-12-12  CHANG-DATE = 2001-12-12
(NL)       CRE-TIME   =   18:08:57  ACC-TIME   =   18:08:57  CHANG-TIME =   18:08:57
(NL)       ACC-COUNT  = 1           S-ALLO-NUM = 0
(NL)       ------------------------------- ORGANIZATION -------------------------------
(NL)       FILE-STRUC = SAM         BUF-LEN    = STD(1)      BLK-CONTR  = PAMKEY
(NL)       IO(USAGE)  = READ-WRITE  IO(PERF)   = STD         DISK-WRITE = IMMEDIATE
```

```
(NL)       REC-FORM   = (V,M)       REC-SIZE   = 0
(NL)       AVAIL      = *STD
(NL)       WORK-FILE  = *NO         F-PREFORM  = *K          SO-MIGR    = *ALLOWED
(NL)     :2OS6: PUBLIC:      1 FILE  RES=        15 FRE=         2 REL=         0 PAGES
(IN)     start-edt
(OUT)    %  BLS0517 MODULE 'EDTSTRT' LOADED
(IN)     read 'rfa.testfile.2-a'
```

```
   1.00 ************************************************************************
   2.00 ** DIESE DATEI WAR EINGERICHTET AUF DEM SYSTEM B (CAT-ID TO51) UND    **
   3.00 ** WURDE IN DAS SYSTEM A KOPIERT (CAT-ID 2OS6).                      **
   4.00 ** SIE WIRD NACH DER BEARBEITUNG IM SYSTEM A UNTER EINEM NEUEN NAMEN  **
   5.00 ** IM SYSTEM B ZURUECKGESCHRIEBEN                                    **
   6.00 ************************************************************************

  22.00
  23.00
write':t051:rfa.testfile.6'                                    0001.00:001(0)
```

```
(OUT)    %  EDT0173 FILE ':TO51:RFA.TESTFILE.6' CREATED AND WRITTEN
(IN)     halt
(OUT)    %  EDT8000 EDT TERMINATED
(IN)     show-file-attr f-name=:t051:rfa.testfile.6,inf=*par(history=*yes,org=*yes)
(OUT)    0000000003 :TO51:$USER3.RFA.TESTFILE.6
(NL)       -------------------------------- HISTORY      --------------------------------
(NL)       CRE-DATE   = 2001-12-12  ACC-DATE   = 2001-12-12  CHANG-DATE = 2001-12-12
(NL)       CRE-TIME   =   18:17:28  ACC-TIME   =   18:17:28  CHANG-TIME =   18:17:28
(NL)       ACC-COUNT  = 1           S-ALLO-NUM = 0
(NL)       -------------------------------- ORGANIZATION --------------------------------
(NL)       FILE-STRUC = SAM         BUF-LEN    = STD(1)      BLK-CONTR  = PAMKEY
(NL)       IO(USAGE)  = READ-WRITE  IO(PERF)   = STD         DISK-WRITE = IMMEDIATE
(NL)       REC-FORM   = (V,N)       REC-SIZE   = 0
(NL)       AVAIL      = *STD
(NL)     :TO51: PUBLIC:      1 FILE  RES=         3 FRE=         2 REL=         0 PAGES
(IN)     show-file :t051:rfa.testfile.6
```

```
************************************************************************
** DIESE DATEI WAR EINGERICHTET AUF DEM SYSTEM B (CAT-ID TO51) UND    **
** WURDE IN DAS SYSTEM A KOPIERT (CAT-ID 2OS6).                      **
** SIE WIRD NACH DER BEARBEITUNG IM SYSTEM A UNTER EINEM NEUEN NAMEN  **
** IM SYSTEM B ZURUECKGESCHRIEBEN                                    **
************************************************************************


 FILE:    :TO51:$QM211.RFA.TESTFILE.6
end                                                  S*SOF+         1(     1)
```

```
(OUT)    %  SHO0500 ':TO51:$USER3.RFA.TESTFILE.6' CLOSED
(IN)     show-rfa-connections
(OUT)                CATID STATE  HOST     USERID   TSN
(NL)     LOCAL HOST:         LOCAL  DO16ZE04 USER1    2LKB
(NL)     CONNECTION:  TO51   REMOTE DO17ZE11 USER3    0C0J
(IN)     remove-rfa-conn cat-id=t051
(OUT)    MESSAGE FROM TO51:  %  EXC0419 /LOGOFF AT 1822 ON 01-12-12 FOR TSN '0C0J'
(OUT)    MESSAGE FROM TO51:  %  EXC0421 CPU TIME USED: 0.0487
(OUT)    %  RFA0002 COMMAND PROCESSING COMPLETED
(IN)     show-rfa-connections
(OUT)    %  RFA0017 NO ACTIVE RFA CONNECTIONS
```

(1) On local system A the names of all files of the user ID *USER1* which begin with the prefix *RFA.* are requested. They are cataloged on pubset *2OS6* under user ID *USER1*.

(2) The SHOW-MASTER-CATALOG-ENTRY command lists the entries in the local MRS catalog.

(3) The entry of the local pubset *2OS6*, which is assigned to user *USER1* as a data pubset, is displayed.

(4) The entry of the remote pubset *T051*, to which an RFA connection is subsequently to be set up, is likewise displayed.

(5) From the list of pubsets entered in the MRS catalog the catalog ID *T051* is selected; an RFA connection is set up to this pubset by means of the SET-RFA-CONNECTION command. The AFR partner task is to run under user ID *USER3*.

(6) Once the RFA connection has been set up, the names of the files cataloged on pubset *T051* and beginning with the prefix *RFA.* are requested. The user ID is taken from the user ID of the AFR partner task, i.e. *USER3*.

(7) Of the displayed files, the file *:T051:$USER3.RFA.TESTFILE.2* is to be processed using EDT. The SHOW-FILE-ATTRIBUTES command is used to request the information blocks HISTORY and ORGANIZATION for this file. The output fields *FILE-STRUC*, *REC-FORM* and *REC-SIZE* indicate that it is a SAM file with fixed-length records.

(8) Since EDT normally expects only files with variable-length records, the ADD-FILE-LINK command must first be used to create a TFT entry for the file *:T051:$USER3.RFA.TESTFILE.2* under the link name *EDTSAM*.

(9) The SHOW-FILE-LINK command displays the **local** TFT entry for the link name *EDTSAM*. The letter **R** before the link name identifies the entry as a remote TFT entry, i.e. the link name is assigned to a remote file. The complete information from the ADD-FILE-LINK command - such as the PERFORMANCE specification - is passed only to the AFR partner task.

(10) After EDT is called by means of the START-EDT command, the EDT statement *read '/'* is used to read into the work area the file entered in the TFT under the link name *EDTSAM*, i.e. the remote file *:T051:$USER3.RFA.TESTFILE.2.*

(11) In order to ensure that the file that has been read in can be written back under a new name, the EDT statement *system* is used to issue the REMOVE-FILE-LINK command and thus release the TFT entry under the link name *EDTSAM*. The work area is then written back to the local pubset *20S6* under the name *RFA.TESTFILE.1-A*.

(12) The output of the SHOW-FILE-ATTRIBUTES command confirms that this file was created on the pubset *2OS6*. Since there was no longer a TFT entry, the file was created by EDT with standard attributes (SAM file with records of variable length).

(13) Using the COPY-FILE command, the file *RFA.TESTFILE.3* on the remote pubset *T051* is copied under the name *RFA.TESTFILE.2-A* to the pubset *2OS6*.

(14) After EDT has been called, the file copied to pubset *N* is read into the work area and then written back to the remote pubset *T051* under the name *RFA.TESTFILE.6*.

(15) The outputs of the SHOW-FILE-ATTRIBUTES command shows that *RFA.TESTFILE.6* has been created on the remote pubset.

(16) The SHOW-FILE command shows the contens of the file *RFA.TESTFILE.6* on the remote pubset.

(17) The SHOW-RFA-CONNECTIONS command supplies information on the existing RFA connection to the remote pubset *T051*.

(18) The REMOVE-RFA-CONNECTION command clears the connection to pubset *T051* and terminates the AFR partner task on remote system B at the same time.

(19) The SHOW-RFA-CONNECTIONS command shows that there are no more RFA connections.

Tracer listing 2

```
(IN)     show-master-cat-entry ──────────────────────────────────────────────── (1)
(OUT)    PUBSET ANNE: SINGLE-FEATURE, INACC, DEVICE=STDDISK, PUBRES-MN=5B98
(NL)     PUBSET B2  : SINGLE-FEATURE, INACC, HOST=SATURN2, DEVICE=STDDISK
  .
  .
  .
(NL)     PUBSET T051: SINGLE-FEATURE, LOCAL-HOME (PAGING), K-FORMAT ──────────── (2)
(NL)     PUBSET T053: SINGLE-FEATURE, INACC, DEVICE=STDDISK, PUBRES-MN=5118
(NL)     PUBSET T054: SINGLE-FEATURE, INACC, DEVICE=STDDISK
  .
  .
  .
(NL)     PUBSET 20SG: SINGLE-FEATURE, INACC, HOST=D016ZE04, DEVICE=STDDISK ───── (3)
(NL)     PUBSET 20SH: SINGLE-FEATURE, INACC, HOST=D016ZE04, DEVICE=STDDISK
(NL)     PUBSET 20S6: SINGLE-FEATURE, INACC, HOST=D016ZE04, DEVICE=STDDISK ───── (4)
  .
  .
  .
(NL)     PUBSET 810 : SINGLE-FEATURE, INACC, DEVICE=D3435, PUBRES-MN=58CD
(NL)     PUBSET 82N : SINGLE-FEATURE, INACC, DEVICE=STDDISK, PUBRES-MN=58C4
(NL)     PUBSET 820 : SINGLE-FEATURE, INACC, DEVICE=D3435, PUBRES-MN=58C8
(NL)     63 ENTRIES FOUND
(IN)     set-rfa-conn cat-id=2osg,proc-adm=*par(user1,acc01,P) ──────────────── (5)
(OUT)    MESSAGE FROM 20SG:  %  SRM3202 WARNING: PASSWORD EXPIRES ON '2001-12-24'
(OUT)    MESSAGE FROM 20SG:  %  JMS0066 RFATEST2 01-12-13 17:15 2PQM
(
(OUT)    MESSAGE FROM 20SG:  *********************************************************** D
(   )    016ZE04 ***
(NL)     ** ANLAGEN-TYP ? INFORMATION DURCH /SHOW-SYSTEM-INFORMATION           **
(NL)     ** OSD V5.0N                                                          **
(NL)     **                            BS2000 SUPPORT DESK          TEL. 49267 **
(NL)     **                            ANRUFBEANTWORTER BS2000      TEL. 44027 **
(NL)     **                            LISTEN- BZW. DRUCKPROBLEME   TEL. 111   **
(NL)     ************************************************************************
(OUT)    MESSAGE FROM 20SG:  %  BLS0500 PROGRAM 'SYSAFR', VERSION '14.0A00' OF '2001-10-30
(   )    ' LOADED
(OUT)    MESSAGE FROM 20SG:  %  BLS0552 COPYRIGHT (C) FUJITSU SIEMENS COMPUTERS GMBH 1993.
(   )     ALL RIGHTS RESERVED
(OUT)    MESSAGE FROM 20SG:  %  RFA0001 SYSAFR. DATE '2000-11-24  VER 14.0A00'
(OUT)    MESSAGE FROM 20SG:  SYSAFR  READY
(OUT)    %  RFA0002 COMMAND PROCESSING COMPLETED
(IN)     set-rfa-conn cat-id=2osg,proc-adm=*par(user2,acc01,P) ──────────────── (6)
(IN)     show-file-attr :2osg:$user2. ────────────────────────────────────────── (7)
(OUT)           273 :20SG:$USER2.ASS.PLAMLIB
(NL)              3 :20SG:$USER2.PROC.MODLOGON
(NL)              6 :20SG:$USER2.PROC.SDFFRAME
(NL)              6 :20SG:$USER2.PROC.SDFFRAME.TRANS
(NL)     :20SG: PUBLIC:      4 FILES RES=       288 FRE=        52 REL=         0 PAGES
(IN)     show-rfa-conn ───────────────────────────────────────────────────────── (8)
(OUT)                 CATID STATE  HOST     USERID   TSN
(NL)     LOCAL HOST:        LOCAL  D017ZE11 USER2    0C1R
(NL)     CONNECTION:  20SG  REMOTE D016ZE04 USER1    2PQM
(IN)     rem-rfa-conn cat-id=2osg ────────────────────────────────────────────── (9)
(IN)     show-rfa-conn
(OUT)                 CATID STATE  HOST     USERID   TSN
(NL)     LOCAL HOST:        LOCAL  D017ZE11 USER2    0C1R
(NL)     CONNECTION:  20SG  REMOTE D016ZE04 USER1    2PQM
(IN)     rem-rfa-conn cat-id=2osg ────────────────────────────────────────────── (10)
(OUT)    MESSAGE FROM 20SG:  %  EXC0419 /LOGOFF AT 1719 ON 01-12-13 FOR TSN '2PQM'
(OUT)    MESSAGE FROM 20SG:  %  EXC0421 CPU TIME USED: 0.0674
(OUT)    %  RFA0002 COMMAND PROCESSING COMPLETED
(IN)     set-rfa cat-id=2osg,proc-adm=*par(user2,acc01,P) ─────────────────────── (11)
(OUT)    MESSAGE FROM 20SG:  %  SRM3202 WARNING: PASSWORD EXPIRES ON '2001-12-24'
(OUT)    MESSAGE FROM 20SG:  %  JMS0066 RFATEST2 01-12-13 17:21 2PQT
```

```
(OUT)    MESSAGE FROM 2OSG:  ********************************************************** D
(  )     O16ZE04 ***
(NL)     ** ANLAGEN-TYP ? INFORMATION DURCH /SHOW-SYSTEM-INFORMATION           **
(NL)     ** OSD V5.0N                                                         **
(NL)     **                          BS2000 SUPPORT DESK          TEL. 49267 **
(NL)     **                          ANRUFBEANTWORTER BS2000      TEL. 44027 **
(NL)     **                          LISTEN- BZW. DRUCKPROBLEME   TEL. 111   **
(NL)     ************************************************************************
(OUT)    MESSAGE FROM 2OSG:  %  BLS0500 PROGRAM 'SYSAFR', VERSION '14.0A00' OF '2001-10-30
(  )     ' LOADED
(OUT)    MESSAGE FROM 2OSG:  %  BLS0552 COPYRIGHT (C) FUJITSU SIEMENS COMPUTERS GMBH 1993.
(  )      ALL RIGHTS RESERVED
(OUT)    MESSAGE FROM 2OSG:  %  RFA0001 SYSAFR. DATE '2000-11-24  VER 14.0A00'
(OUT)    MESSAGE FROM 2OSG:  SYSAFR  READY
(OUT)    %  RFA0002 COMMAND PROCESSING COMPLETED
(IN)     show-file-attr :2osg:$user2. ------------------------------------------------------------ (12)
(OUT)             6 :2OSG:$USER2.ABK.ABKLST
(NL)              9 :2OSG:$USER2.ABK.KDOLST
(NL)              6 :2OSG:$USER2.ABK.NEU
(NL)              6 :2OSG:$USER2.ARCHIVE.DIR
(NL)            273 :2OSG:$USER2.ASS.PLAMLIB
 .
 .
 .
(NL)              3 :2OSG:$USER2.PROC.MODLOGON
(NL)              6 :2OSG:$USER2.PROC.SDFFRAME
(NL)              6 :2OSG:$USER2.PROC.SDFFRAME.TRANS
 .
 .
 .
(NL)             12 :2OSG:$USER2.PROC.WAIT-600
(NL)              3 :2OSG:$USER2.PROC.WRT
(NL)     :2OSG: PUBLIC:     69 FILES RES=      1290 FRE=       263 REL=         0 PAGES
(NL)     :2OSG: PUB/S2:      4 FILES RES=       645 FRE=        36 REL=         0 PAGES
(IN)     show-file-attr :2os6:$user3. ------------------------------------------------------------ (13)
(OUT)    %  DMS051B REQUESTED USER ID NOT IN PUBSET 2OS6
(IN)     set-rfa 2os6,proc-adm=*par(user3,acc01,P) ---------------------------------------------- (14)
(IN)     show-file-attr :2os6:$user3. ------------------------------------------------------------ (15)

(OUT)    %  DMS0533 REQUESTED FILE NOT CATALOGED IN PUBSET '2OS6'. COMMAND TERMINATED

(IN)     show-rfa-conn -------------------------------------------------------------------------- (16)
(OUT)                CATID STATE  HOST     USERID   TSN
(NL)     LOCAL HOST:        LOCAL  D017ZE11 USER2    0C1R
(NL)     CONNECTION:  2OSG  REMOTE D016ZE04 USER2    2PQT
(NL)     CONNECTION:  2OS6  REMOTE D016ZE04 USER2    2PQT
(IN)     rem-rfa-conn *all ---------------------------------------------------------------------- (17)
(OUT)    MESSAGE FROM 2OS6:  %  EXC0419 /LOGOFF AT 1738 ON 01-12-13 FOR TSN '2PQT'
(OUT)    MESSAGE FROM 2OS6:  %  EXC0421 CPU TIME USED: 0.4661
(OUT)    %  RFA0002 COMMAND PROCESSING COMPLETED
(IN)     set-rfa 2os6,proc-adm=*par(user3,acc01,P) ---------------------------------------------- (18)
(OUT)    MESSAGE FROM 2OS6:  %  SRM3202 WARNING: PASSWORD EXPIRES ON '2001-12-24'
(OUT)    MESSAGE FROM 2OS6:  %  JMS0066 RFATEST2 01-12-13 17:39 2PRM
(OUT)    MESSAGE FROM 2OS6:  ********************************************************** D
(  )     O16ZE04 ***
(NL)     ** ANLAGEN-TYP ? INFORMATION DURCH /SHOW-SYSTEM-INFORMATION           **
(NL)     ** OSD V5.0N                                                         **
(NL)     **                          BS2000 SUPPORT DESK          TEL. 49267 **
(NL)     **                          ANRUFBEANTWORTER BS2000      TEL. 44027 **
(NL)     **                          LISTEN- BZW. DRUCKPROBLEME   TEL. 111   **
(NL)     ************************************************************************
(OUT)    MESSAGE FROM 2OS6:  %  BLS0500 PROGRAM 'SYSAFR', VERSION '14.0A00' OF '2001-10-30
(  )     ' LOADED
(OUT)    MESSAGE FROM 2OS6:  %  BLS0552 COPYRIGHT (C) FUJITSU SIEMENS COMPUTERS GMBH 1993.
(  )      ALL RIGHTS RESERVED
(OUT)    MESSAGE FROM 2OS6:  %  RFA0001 SYSAFR. DATE '2000-11-24  VER 14.0A00'
(OUT)    MESSAGE FROM 2OS6:  SYSAFR  READY
```

```
(OUT)    %  RFA0002 COMMAND PROCESSING COMPLETED
(IN)     show-file-attr :2os6: ─────────────────────────────────────────────────────────────── (19)
(OUT)           630 :2OS6:$USER3.ABRECHNUNGSSAETZE.050.PS
(NL)           3729 :2OS6:$USER3.ARCHIVE.060.PS
(NL)           3519 :2OS6:$USER3.BLSSERV.023.PS
(NL)           1734 :2OS6:$USER3.DAB.080.PS
(NL)            786 :2OS6:$USER3.DATEIEN-VOLUMES-GROESSER-32GB.050.PS
 .
 .
 .
(NL)           2520 :2OS6:$USER3.SUBSYSTEME.050.PS
(NL)           7665 :2OS6:$USER3.SYSTEMBETREUUNG.050.PS
(NL)           4173 :2OS6:$USER3.SYSTEMEXITS.050.PS
(NL)           2064 :2OS6:$USER3.SYSTEMINSTALLATION.050.PS
(NL)     :2OS6: PUBLIC:     37 FILES RES=    155916 FRE=        38 REL=         0 PAGES
(IN)     show-rfa-conn
(OUT)                 CATID STATE  HOST     USERID   TSN
(NL)     LOCAL HOST:        LOCAL  D017ZE11 USER2    0C1R
(NL)     CONNECTION:  2OS6  REMOTE D016ZE04 USER3    2PRM
(IN)     rem-rfa-conn 2os6 ──────────────────────────────────────────────────────────────────── (20)
(OUT)    MESSAGE FROM 2OS6:  %  EXC0419 /LOGOFF AT 1741 ON 01-12-13 FOR TSN '2PRM'
(OUT)    MESSAGE FROM 2OS6:  %  EXC0421 CPU TIME USED: 0.0896
(OUT)    %  RFA0002 COMMAND PROCESSING COMPLETED
```

(1) The SHOW-MASTER-CATALOG-ENTRY command lists the entries in the local MRS catalog.

(2) The entry of the remote pubset *T051*, which is assigned to user *USER1* as a data pubsetto which an RFA connection is subsequently to be set up, is displayed.

(3) The entry of the remote pubset *2OSG*, to which an RFA connection is subsequently to be set up, is likewise displayed.

(4) The entry of the local pubset *2OS6*, to which an RFA connection is subsequently to be set up, is displayed.

(5) The first SET-RFA-CONNECTION command of the task sets up an RFA connection to the pubset with the catalog ID *2OSG*. The AFR partner task is to run on the remote system under user ID *USER1*. The subsequent messages indicate that this partner task has been started with the TSN *2PQM*.

(6) A second SET-RFA-CONNECTION is issued for pubset *2OSG*. This command does not initiate a new AFR partner task, even though another user ID (*USER2*) was specified.

(7) The SHOW-FILE-ATTRIBUTES command for all files of user ID *USER2* on pubset *2OSG* yields the display of only those files which can be accessed by a foreign user ID - in this case *USER1* - if the highest access control is active (cf. point 12 below).

(8) The SHOW-RFA-CONNECTIONS command displays the current RFA connections of the task. The connection to pubset *2OSG* is displayed only once, even though two SET-RFA-CONNECTION commands were issued for it.

(9) The REMOVE-RFA-CONNECTION command clears the first connection to pubset *2OSG*. The subsequent SHOW-RFA-CONNECTIONS command shows that the connection to this pubset still exists.

(10) This REMOVE-RFA-CONNECTION command clears the second and last connection to pubset *2OSG*. At the same time, it also terminates the AFR partner task, since this was the last connection to the remote system with the BCAM name *D216ZE04*.

(11) SET-RFA-CONNECTION is issued to set up a new RFA connection to pubset *2OSG*. This time the AFR partner task runs under the user ID *USER2* and is given the TSN *2PQT*.

(12) The SHOW-FILE-ATTRIBUTES command for all files of user ID *USER2* on pubset *2OSG* now returns **all** files of this user ID, since the AFR task is running under this user ID.

(13) This SHOW-FILE-ATTRIBUTES command for all files of user ID *USER3* on pubset *2OSG* is rejected, since this user ID is not entered in the user catalog of pubset *2OS6*.

(14) SET-RFA-CONNECTION sets up another RFA connection, this time for pubset *IOSY*. Since pubset *2OS6* is also assigned to remote processor *D216ZE04* (see output of the SHOW-MASTER-CATALOG-ENTRY command at the beginning of the trace, and also point 2 above), no new AFR task is started (see point 16).

(15) The SHOW-FILE-ATTRIBUTES command for all files of user ID *USER3* on pubset *2OS6* returns no files, since the user ID has no files on pubset *2OS6* or all files are inaccessible for foreign user IDs (the AFR partner task is running under the "foreign" user ID *USER2*).

(16) A further SHOW-RFA-CONNECTIONS command supplies information on all currently existing RFA connections of the task.

(17) REMOVE-RFA-CONNECTION with the specification CATALOG-ID=*ALL clears down **all** RFA connections of the task and thus also terminates the AFR partner task.

(18) The SET-RFA-CONNECTION command sets up an RFA connection to pubset *2OS6*. This time the AFR partner task runs under the user ID *USER3* and is given the TSN *2PRM*.

(19) SHOW-FILE-ATTRIBUTES can now be used to display all files of user ID *USER3* on pubset *2OS6*.

(20) This REMOVE-RFA-CONNECTION command clears the RFA connection to pubset *2OS6* and thus also terminates the AFR partner task.

4 Macros

4.1 DMS macros in an RFA environment

The following table contains all the DMS macros relevant for an RFA environment. Any special features of specific macros are explained in the notes following the table.

General note:

In the case of an RFA connection to a system < BS2000/OSD-BC V5.0, macros for the remote file are only supported with regard to the functionality of the BS2000 version of the remote system.

Macro	Brief description
ADDPLNK [1)]	Assigns a pool link name to an ISAM pool.
ADD-PASSWORD (via the CMD macro)	Adds passwords for files to the password table of the task.
CATAL	Creates or updates a catalog entry.
CHKFAR	Provides information on whether a file can be accessed and, if so, which access method is permitted.
CHKSAC [3)]	Requests conditional analysis from GUARDS.
CHNGE	Changes the file link name of a file in the task file table (TFT).
COPFILE	Copies a file, file generations, or a file generation group.
COPGUAD [3)]	Copies a guard.
COPY	Copies a file, file generations, or a file generation group (cf. COPFILE).
CREAIX [2)]	Defines an alternate index in an NK-ISAM file.
CREGUAD [3)]	Creates a guard or modifies the attributes of a guard.
CREPOOL [1)]	Creates an ISAM pool or associates the task with an existing ISAM pool.
DELAIX [2)]	Deletes alternate indices of an NK-ISAM file.
DELGUAD [3)]	Deletes a guard.
DELPOOL [1)]	Deletes an ISAM pool or clears the connection between a task and an ISAM pool.

Table 5: DMS macros in an RFA environment (part 1 of 2)

Macro	Brief description
DROPTFT	Cancels the lock for a file link name imposed by LOCK-FILE-LINK (entry in the TFT).
ERASE	Erases one or more files of one user.
FILE	Defines the memory allocation of a file and creates a catalog entry and a TFT entry for this file.
FSTAT	Transfers catalog entries partially or in their entirety (but without passwords) to a user area.
LOCK-FILE-LINK (via the CMD macro)	Locks a file link name in the TFT.
MODGUAD [3)]	Modifies the attributes of a guard.
MODSAC [3)]	Adds access conditions to a guard or modifies existing access conditions.
RDTFT	Provides information on file link names and the associated files.
REL	Deletes the file link name in the TFT and releases the associated private volumes and devices.
RELTFT	Deletes the file link name in the TFT and releases the associated private volumes and devices.
REMPLNK [1)]	Deletes one or all pool link names in the pool table of the task.
REMSAC [3)]	Removes access conditions from a guard.
REMOVE-PASSWORD (via the CMD macro)	Deletes passwords for files from the password table of the task.
SECURE-RESOURCE-ALLOCATION (via the CMD macro)	Requests private devices, private volumes and files on public and private volumes.
SHOPLNK [1)]	Provides information on the assignment of ISAM pools to pool link names.
SHOPOOL [1)]	Provides information on ISAM pools with which the task is connected.
SHOWAIX [2)]	Provides information on alternate indices in an NK-ISAM file.
SHWGUAD [3)]	Provides information on guard attributes.
SHWSAC [3)]	Shows the access conditions defined for the task or all access conditions contained in a guard.
UNLOCK-FILE-LINK via the CMD macro	Cancels the lock for a file link name imposed by LOCK-FILE-LINK (entry in TFT); cf. DROPTFT.
VERIF	Reconstructs corrupted files.
FCB (+ OPEN, CLOSE)	Generates a file control block for editing files.
The macros of the access methods UPAM, ISAM, SAM and BTAM are also supported.	

Table 5: DMS macros in an RFA environment (part 2 of 2)

Notes

1) For information on NK-ISAM files, see the correspsonding commands on page 47ff. Information on the attributes of remote ISAM pools and on pool link name assignment can be retrieved from the local system.

2) The corresponding commands for the remote processing of NK-ISAM files with alternate indexes (secondary keys) can be found on page 47ff.

3) The GUARDS macros listed here are available only if the software product SECOS is in use. In managing the GUARDS objects (i.e. the guards) on a remote processor, the following restrictions apply:
   – copying a guard is only possible when target and source guard are locally accessible on the same processor
   – should a guard be renamed, the target and source guard are locally accessible on the same processor
   – the output area for RFA SHOW commands is only supported up to a size of 64 Kbytes. If the output area is larger, only information of maximum 64 Kbytes per call will be transfered. The rest of the information can be transfered by repeating the call. In this way, no information is lost from the macro.

4.2 Special features of DMS macros

EXLST
Branch to error exits

The R0 register does not contain the address of the errored block for the error exits ERROPT and WLRERR of the EXLST macro.

Additional note

The system ignores ERROPT=RELEXP and WLRERR=RELEXP.

FCB
Reserve space and supply information to file control block

This macro is supported in an RFA connection. However, the EAM access method is **not** supported in RFA mode.

In the case of SAM and ISAM files, a user entry for IOAREA1/IOAREA2 is ignored.

RDTFT
Provide information on files

The RDTFT macro (call parameters MF=D, PLIST=OUTPUT,VERSION=3) can be used to generate a DSECT for the output information.
The following extract from a macro expansion was created with PREFIX=C. Bit 2^6 in byte CDRSNT1 identifies a given file as a remote file:

```
  TFTOUT2  RDTFT MF=D,PLIST=OUTPUT,PREFIX=C,VERSION=3
1 *********      READ TFT (RDTFT) OUTPUT PARAMETER LIST
  .
  .
  .
1 ********************LINKAGE INFORMATION                          003
1 CDRLINFO EQU   *                                                003
1 CDRSNTO  DS    X                SENTINEL                        003
  .
  .
  .
1 CDRSNT1  DS    X                EXTENDED SENTINEL               003
1 CDRUNLOD EQU   X‘80‘             7-7 S UNLOAD                    003
1 CDRREMOT EQU   X‘40‘             6-6 REMOTE FILE                 004
1 CDROCVOL EQU   X‘08‘             3-3 OPEN VOLUME
1 CDRLLEN  EQU   *-CDRLINFO          LENGTH OF LINKAGE INFORMATION  003
  .
  .
  .
```

5 Commands for user task logging

Status information on active RFA tasks and their AFR partner tasks can be obtained by means of the commands described below.

SHOW-APPLICATION
Output BCAM application of RFA tasks

By means of the SHOW-APPLICATION command, systems support staff can query from the console which RFA tasks are active in the system.

`/SHOW=APPLICATION` addresses all open BCAM applications in the system. If the MAX-MSG-NUMBER operand is not specified, not more than 10 applications will be displayed. Message BCA08E7, which includes (in insert &00) the name of the application, is issued for every application that is displayed. The name of a BCAM application which was opened by an RFA task is:

R<tsn><sysid> where

<tsn> is the task sequence number of the RFA task (4 characters)

<sysid> is the system identifier (1 to 3 characters)

If theTSN of an RFA task is known, systems support staff can request information on all BCAM applications opened by this task by issuing
`/SHOW=APPLICATION,SELECT=*by-attributes(job-id=*tsn<tsn>)`

A detailed description of the SHOW-APPLICATION command can be found in the manual “BCAM, Volume 2” [10].

The SHOW-APPLICATION commanc is available as of BCAM V16.0. On systems with BCAM <V16.0 the information can be output using BCSHOW command.

Example

```
/show-application select=*by(job-id=*tsn(0axp))
%  BCA08E7 APPLICATION (APP#=X'0000001C'): NAME=(NEA,ROAXP171D017ZE11)/
HOST=D017ZE11, TASKS=1, CONNECTIONS=1, GROUP=-, FUNCT=NEA, SHARE=N
%  BCA08E7 APPLICATION (APP#=X'00000001'): NAME=(NEA,$DIALOG D017ZE11)/
HOST=D017ZE11, TASKS=5, CONNECTIONS=4, GROUP=APLGO, FUNCT=NEA, SHARE=Y
```

The RFA task was opened with the system identifier *171*. An RFA task with the TSN *0AXP* (see BCAM name R0AXP171) is running in the system.

SHOW-USER-STATUS
Output information on active RFA tasks

The SHOW-USER-STATUS command in conjunction with the operand INFORMATION=*ENVIRONMENT logs the following information for an AFR partner task: under STATION, the corresponding BCAM application; under PROCESSOR, the BCAM name of the RFA processor.
The user receives information on all tasks running under his user ID and on all tasks which he has started from his user ID (extended access).
Systems support staff can request information on all tasks in the system.
A detailed description of this command can be found in the manual “Commands, Volume 3” [1].

Example of a SHOW-USER-STATUS output

In local system A a user task with the name *RFAJOB* sets up an RFA connection to remote system B. The outputs in the local and remote systems for the command SHOW-USER-ATTRIBUTES INFORMATION=*ENVIRONMENT for the user IDs of the user task and the AFR partner task are reproduced below:

Local system A (with system ID *171*):

Terminal:

```
/show-user-sta inf=*envir
NAME      TSN   STATION  PROCESSOR  HOLD MRSCAT
RFAJOB   0AXP   BT200407 D016ZE04
%  SPS0171 NO LOCAL SPOOLOUT JOB PRESENT
%  SPS0420 RSO WARNING : SOME RSO PRINT-JOBS CANNOT BE DISPLAYED
%  SCP1095 DPRINTSV WARNING : SOME DPRINT PRINT-JOBS CANNOT BE DISPLAYED
```

Console:

```
/show-application select=*by(job-id=*tsn(0axp))
%  BCA08E7 APPLICATION (APP#=X'0000001C'): NAME=(NEA,ROAXP171D017ZE11)/
HOST=D017ZE11, TASKS=1, CONNECTIONS=1, GROUP=-, FUNCT=NEA, SHARE=N
%  BCA08E7 APPLICATION (APP#=X'00000001'): NAME=(NEA,$DIALOG D017ZE11)/
HOST=D017ZE11, TASKS=5, CONNECTIONS=4, GROUP=APLGO, FUNCT=NEA, SHARE=Y
```

A SHOW-APPLICATION command at the console of local system A displays the name of the BCAM application *R0AXP171* opened by the RFA task with the task sequence number *0AXP*.

Remote system B:

Terminal:

```
/show-user-sta inf=*envir
%NAME      TSN   STATION  PROCESSOR  HOLD MRSCAT
%REMJOB   9VHI   $$$06581 FIREBALL
%RFAJOB   9VJ2   ROAXP171 D017ZE11
%  SPS0171 NO LOCAL SPOOLOUT JOB PRESENT
%  SR00376 NO RSO JOB OF TYPE 'T7' PRESENT
%  SCP1095 DPRINTSV WARNING : SOME DPRINT PRINT-JOBS CANNOT BE DISPLAYED

/show-job-status *tsn(9vj2)
%TSN:     9VJ2       TYPE:    3 DIALOG1  NOW:     2002-02-08.102619
%JOBNAME: RFAJOB     PRI:     0 210
%USERID:  QM211      JCLASS:  JCDSTD     LOGON:   2002-02-08.1022
%ACCNB:   89001      CPU-MAX:   9000     CPU-USED:000000.0532
%STATION: ROAXP171   PROC:    D017ZE11
%TID:     001001DE   UNP/Q#:    17/012
%CMD:     EXECUTE                        SIZE:        26
%PROG:    :2OSH:$TSOS.SYSAFR
%MONJV:   *NONE
```

The AFR partner task in remote system B (with the TSN *9VJ2*) has adopted the job name *RFAJOB* of the calling task from local system A. Furthermore, the TSN *0AXP* of the calling task has become part of the terminal name for the AFR partner task (see gray shading). The output of the SHOW-JOB-STATUS command for the AFR partner task (with the TSN *9VJ2*) indicates that this has loaded the program *$TSOS.SYSAFR*.

6 Accounting

The accounting system is responsible for collecting and preparing data for user accounting and operations accounting.

The data acquired for user accounting enables the computer center to bill users for resources/services received and/or to fix certain quotas for the allocation of such resources/services.
The information collected for operations accounting provides a complete survey of the utilization and availability of the entire computer system for the specified time.

Depending on the contents, the accounting routine writes different types of accounting records to a file specially provided for that purpose. This accounting file is then the basis for further evaluation.

For a definition of the accounting file and a detailed explanation of the accounting record please refer to the appropriate section in „Computer Center Ready Reference, Volume 1“ [17].

The RAV software product is available to evaluate the accounting file, see manual „RAV“ [18].

RFA session accounting record

The RFA session accounting record is written upon termination of an RFA session (REMOVE-RFA-CONNECTION, EXIT-JOB, LOGOFF, task abortion).

Using the ARDS macro, a user can generate for record ID ’DRFA’ a dummy section (DSECT) which describes the data structure of the RFA session accounting record in the accounting file. The ARDS macro is described in greater detail in the manual "Executive Macros" [12].

(A) Record definition

Field no.	Displacement hex.	Displacement dec.	Length (bytes)	Format	Meaning
1	00	0	4	A	Record ID DRFA
2	04	4	8	B	Date time stamp
3	0C	12	2	B	Length of identification section
4	0E	14	2	B	Length of basic information
5	10	16	4	-	reserved

Length of the record description: 20 bytes

(B) Identification section

Field no.	Displacement hex.	Displacement dec.	Length (bytes)	Format	Meaning
1	00	0	8	A	User ID of home system
2	08	8	8	A	Account number of home system
3	10	16	4	Z/C	TSN of home system
4	14	20	8	A	Name of user group [1)]

1) Contains *UNIVERS if the user does not belong to a user group or if the software product SECOS is not is use.

Length of the identification section: 28 bytes

(C) Basic information

Field no.	Displacement hex.	Displacement dec.	Length (bytes)	Format	Meaning
1	00	0	6	Z	Date of /SET-RFA-CONNECTION (yymmdd)
2	06	6	6	Z	Time of /SET-RFA-CONNECTION (hhmmss)
3	0C	12	6	Z	Date of RFA session end (yymmdd)
4	12	18	6	Z	Time of RFA session end (hhmmss)
5	18	24	4	A	Catalog ID of partner system
6	1C	28	8	A	Processor name of partner system
7	24	36	8	A	User ID of partner system
8	2C	44	8	A	Account number of partner system
9	34	52	4	Z/C	TSN of partner system
10	38	56	4	B	Number of logical accesses
11	3C	60	4	B	Number of bytes transferred
12	40	64	2	Z	Century, with reference to field 1, i.e. at start of RFA session
13	42	66	2	Z	Century, with reference to field 3, i.e. at end of RFA session

Length of basic information: 68 bytes

(D) Variable information

Field no.	Displacement hex.	Displacement dec.	Length (bytes)	Format	Meaning
1	00	0	2	B	Number of record extensions: X'01', i.e. there is one extension
2	02	2	2	B	Displacement of first record extension to beginning of record

Length of extension header: 4 bytes

The variable information of the accounting record is contained in a record extension:

Field no.	Displacement hex.	Displacement dec.	Length (bytes)	Format	Meaning
1	00	0	2	A	Extension ID 'ST'
2	02	2	1	B	Number of elements: X'01', i.e. in extension 'ST' there is 1 element
3	03	3	1	B	Length of elements: X'0E' , i.e. 14 bytes follow the field
4	04	4	2	A	Termination identifier ' T' = normal termination ' A' = abnormal termination
5	06	6	1	-	reserved
6	07	7	1	A	Termination request 'C' = User command (REMOVE-RFA-CONNECTION, EXIT-JOB, LOGOFF) 'E' = User error '$' = Hardware or system fault 'X' = /CANCEL-JOB or /SHUTDOWN
7	08	8	7	A/C	Termination code 'RFAEND' = Command REMOVE-RFA-CONNECTION 'LOGOFF' = Command EXIT-JOB or LOGOFF 'CANU' = /CANCEL-JOB by user 'CANS' = /CANCEL-JOB by systems support 'CANO' = /CANCEL-JOB by operator task 'CAN-R' = /CANCEL-JOB from another processor 'SHUT' = Command /SHUTDOWN by operator 'RFA0003' = Error during SET- RFA-CONNECTION; for details see return code in field 9 'RFA0004' = Error during attempt to send/receive 'RFA0006' = Termination due to error in RFA log 'AFRTERM' = Unexpected termination of partner task 'BREAK' = Unexpected cleardown of connection to partner system 'DUMP' = Termination by system dump
8	0F	15	1	-	Reserved
9	10	16	2	C	Return code corresponding to insert of system message RFA0003

The record extension must not be deactivated.

Length of extension: 18 bytes.

7 Installation

The following components are delivered with RFA V14.0A:

IMON installation directory

The installation directory SYSSII.RFA.140 contains the release items belonging to RFA V14.0A for installation using the installation monitor IMON. More detailed information can be found in the “IMON” manual [13].

The following table provides an overview of the release items and the associated file names for the RFA subsystem. The TSOS user ID is assumed by default.

Release item	File name with default user ID
SIPLIB	$TSOS.SIPLIB.RFA.140
SYSFGM.D	$TSOS.SYSFGM.RFA.140.D
SYSFGM.E	$TSOS.SYSFGM.RFA.140.E
SYSLIB	$TSOS.SYSLIB.RFA.140
SYSLNK	$TSOS.SPMLNK.RFA.140
SPMLNK	$TSOS.SYSLNK.RFA.140
SYSMES	$TSOS.SYSMES.RFA.140
SYSPRG	$TSOS.SYSPRG.RFA.140.SYSAFR
SYSRMS	$TSOS.SYSRMS.RFA.140
SYSSDF	$TSOS.SYSSDF.RFA.140

Table 6: Release items and associated file names with default user IDs

Release notice

The files SYSFGM.RFA.140.D and SYSFGM.RFA.140.E contain the release notice for the subsystem RFA V14.0A in German and English, respectively.
The release notice includes information on the installation of the subsystem and can be printed by means of the command /PRINT-DOCUMENT <file>, LINE-SPACING=*BY-EBCDIC-CONTROL.

Syntax file

The syntax file SYSSDF.RFA.140 is supplied with RFA. This file is entered in the SDF parameter file as the subsystem syntax file (MODIFY-SDF-PARAMETERS command).

For user-defined group and user syntax files, the following points apply in the case of a version changeover:
If these files contain RFA commands modified by SDF-A, they must be regenerated. Group syntax files for which HIERARCHY=*NO is set and which contain RFA commands must likewise be regenerated.
The management of system and group syntax files and the SDF-I utility routine are described in the “SDF Management” manual [14].

Message file

The message file SYSMES.RFA.140 is supplied with RFA. It is entered during the IMON installation as a MIP parameter file (MODIFY-MIP-PARAMETER command).

In addition, the message texts (plus explanatory and response texts) can be found in chapter “Messages” on page 91.

Libraries and the REP file

You will find the link and load modules (LLM) for /390 systems, belonging to the subsystem RFA in the SYSLNK.RFA.140 library.
You will find the link and load modules (LLM) with SPARC architecture in the SPMLNK.RFA.140 library.
The SIPLIB.RFA.140 library contains privileged static calls for the RFA subsystem.
The file SYSLIB.RFA.140 contains non privileged static calls (i.e. macros) for the RFA subsystem.

SYSAFR program

The SYSAFR program is called by the partner task of a remote system. It controls the RFA accesses of the remote system to the local system.
The SYSPRG.RFA.140.SYSAFR file is renamed to $.SYSAFR during IMON installation.

8 Messages

RFA0001 SYSAFR. DATE '(&00)'

Meaning
(&00): creation date in the form YYYY/MM/DD.

RFA0002 COMMAND PROCESSING COMPLETED

Meaning
The command /SET-RFA-CONNECTION or /REMOVE-RFA-CONNECTION or /SHOW-RFA-CONNECTIONS has been executed successfully.

RFA0003 ERROR '(&00)'. COMMAND PROCESSING ABORTED

Meaning
Error (&00) occurred during the processing of the /SET-RFA-CONNECTION or /REMOVE-RFA-CONNECTION command.
In a procedure all commands are rejected until /SET-JOB-STEP or /LOGOFF.
(&00): error code.

01: possible reasons:
- incomplete MRSCAT entry.
- Invalid MRSCAT entry.
- The remote MRSCAT status is INACCESSIBLE.
Contact the system administrator.

02: catalog identifier not found in MRSCAT.
The system administrator has to create the MRSCAT entry.

03: /SET-RFA-CONNECTION with the cat ID of the user default pubset is not possible if the user default pubset is a shared pubset.

04: the /REMOVE-RFA-CONNECTION command is rejected because no /SET-RFA-CONNECTION command has been issued before.

05: error during creation of RFA bourses and contingencies.

06: RFA connection inoperable.
Terminate the connection with the /REMOVE-RFA-CONNECTION command and create a new one with the /SET-RFA-CONNECTION command.

07: BCAM did not answer within a specified time limit.

08: the /SET-RFA-CONNECTION command cannot be executed because the user already has established the maximum number of 16 RFA connections.

09: insufficient class 5 memory for RFA tables.
Repeat the /SET-RFA-CONNECTION command later.

0A: shortage of BCAM. Possible reasons:
- limit of BCAM applications,
- limit of BCAM connections,
- BCAM requests to try the action later.
  Possible reason:
  - the remote processor does not run.
  - The local host is not known to BCAM in the partner system.

Cases 1 and 2: contact the system administrator.

0B: BCAM shutdown warning.

0C: BCAM shutdown finished.

0D: BCAM not active.
Contact the system administrator.

0E: unknown partner.
The host name found in the MRSCAT entry is not known to BCAM.
Contact the system administrator.

0F: request of connection has been rejected.
Contact the system administrator.

10: the operator disconnects BCAM.
Contact the system administrator.

11: error during creation of the partner task. Possible reasons:
- error in the protocol.
- File $SYSAFR missing, not share or not cataloged on the default user ID.
- The versions of $SYSAFR and the remote BS2000 do not fit together.
- User ID or account number unknown to the remote system.
- Invalid password.

Contact the system administrator to install the (correct) file $SYSAFR or to make file $SYSAFR share or to establish the missing user ID and account number in the remote system or correct the command.

12: the /REMOVE-RFA-CONNECTION command is rejected while a program is loaded.
Terminate the program and try the command again.

13: BCAM buffer too small.
BCAM has been generated with a buffer size which is not big enough for RFA.
Contact the system administrator.

14: error during a read from a terminal:
a hardware error or the terminal is disconnected.
Try the command again.

15: for shared pubsets the user IDs of /SET-RFA-CONNECTION, /SET-LOGON-PARAMETERS and the AFR partner task have to be the same.
Contact the system administrator to give a /MODIFY-MASTER-CATALOG-ENTRY with SHARED-PUBSET=NO for this catalog identifier.

RFA0004 RFA BCAM CONNECTION ERROR '(&00)'
(B) Routing code: R Weight: 70

Meaning
BCAM has detected an error.
This message is sent to the console for diagnostic purposes.
(&00): BCAM information word.

RFA0005 WARNING: COMMAND REJECTED FOR IMPORTED CATALOG

Meaning
The user issued a /SET-RFA-CONNECTION command for an imported catalog.
Files on public volumes are not accessible.

RFA0006 RFA PROTOCOL ERROR. RFA PROCESSOR TERMINATED WITH DUMP

Meaning
The partner task SYSAFR detected an error in the RFA protocol.

RFA0007 CATALOG NOT AVAILABLE. INVALID HOST NAME

Meaning
The MRS catalog entry with the catalog identifier specified
in the /SET-RFA-CONNECTION command contains an invalid host name.

Response
Contact the system administrator to correct the host name.

RFA0008 SPECIFY CATALOG IDENTIFIER

Meaning
The mandatory operand <catalog identifier> in the
/SET-RFA-CONNECTION or /REMOVE-RFA-CONNECTION has not been specified.

Response
Repeat the command with a catalog identifier.

RFA0009 UNKNOWN OPERAND

Meaning
The /SET-RFA-CONNECTION or /REMOVE-RFA-CONNECTION command contains an unknown operand.

Response
Compare the command with the description in the manual and correct it.

RFA0010 INVALID KEYWORD

Meaning
The /SET-RFA-CONNECTION or /REMOVE-RFA-CONNECTION command contains an invalid keyword.

Response
Compare the command with the description in the manual and correct it.

RFA0011 INVALID OPERAND '(&00)'

Meaning
The displayed operand in the /SET-RFA-CONNECTION or /REMOVE-RFA-CONNECTION command has an invalid value.
(&00): Name of operand
CATALOG-ID
USER-IDENTIFICATION
ACCOUNT
PASSWORD
CONNECTION
ANSWER.

Response
Compare the operand with the description in the manual and correct it.

RFA0012 ERROR IN RFA OR IN TASK TABLES OR MEMORY MANAGEMENT

Meaning
Possible reasons:
- A software error was detected during RFA processing.
- A request or release memory was terminated with system error.
- When trying to get a task specific or job specific information an error was detected.

Response
Contact system diagnosis if the reason of this error is unexplainable.

RFA0013 NO REMOTE PARTNER. SYSAFR ABORTED

Meaning
RDATA has been rejected with operand error.
This indicates that SYSAFR has been executed by a local user, which cannot be done successfully. SYSAFR must be executed by a partner system.

RFA0014 COMMAND NOT KNOWN IN REMOTE SYSTEM

Meaning
A command, which was transmitted by RFA, is not known in the remote system on account of the SDF system syntax file or on account of the SDF user syntax file belonging to the user ID specified in the /SET-RFA-CONNECTION command.

RFA0015 PLEASE ENTER REPLY TO MESSAGE FROM '(&00)'

Meaning
RFA asks the user to enter his answer to the message from the remote system, which has just been displayed.
(&00): catalog identifier of the remote system.

Response
Enter reply.

RFA0016 VERSION OF REMOTE SYSTEM IS NOT SUPPORTED

Meaning
A connection to the remote BS2000 version by RFA is not supported.

RFA0017 NO ACTIVE RFA CONNECTIONS

Meaning
There are no active RFA connections for this user identification.

RFA0018 NO RFA CONNECTION

Meaning
There does not exist any RFA connection to the given catalog identifier.

RFA0019 WARNING: OUTPUT CUT

Meaning
The output to SYSOUT is not complete.

RFA0020 OUTPUT ERROR

Meaning
An error occurred when giving the output to SYSOUT.

RFA0021 NO BCAM NAME

Meaning
The own (local) BCAM name could not be found out.

RFA0022 SYSAFR (&00) NEEDS BS2000 (&01). BS2000 (&02) ACTIVE. SYSAFR ABORTED

Response
Contact the system administrator to install the right SYSAFR.

RFA0023 RFA CONNECTION INOPERABLE.

Meaning
The RFA connection is not established correctly; it is inoperable.

Response
Terminate the connection with /REMOVE-RFA-CONNECTION and create a new one with /SET-RFA-CONNECTION.

RFA0024 NO ADDITIONAL RFA CONNECTION POSSIBLE.

Meaning
The maximum number of RFA connections is already established.

RFA0025 PROGRAM LOADED. COMMAND PROCESSING ABORTED.

Meaning
The command /REMOVE-RFA-CONNECTION is rejected while a program is loaded.

Response
Terminate the program and try the command again.

RFA0026 COMMAND REJECTED FOR A SHARED PUBSET.

Meaning
The SET-RFA-CONNNECTION command is rejected when the catalog identifier specifies a shared pubset and
- the catalog identifier specifies the user default pubset or
- the userids of /SET-RFA-CONNECTION, /SET-LOGON-PARAMETERS and the AFR partnertask are not the same.

RFA0027 RFA CONFIGURATION ERROR.

Meaning
During the command processing an error occurs in the RFA configuration.
For example
- the host name is missing in the MRSCAT entry or
- the partner host is unknown to BCAM.

Response
For more detail look at the obtained message RFA0003 and
contact the system or network administrator if necessary.

9 SDF syntax representation

The following example shows the representation of the syntax of a command in a manual. The command format consists of a field with the command name. All operands are then listed, accompanied by their permissible values. Operand values which introduce structures and the operands dependent on these operands are listed separately.

HELP-SDF Alias: **HPSD**

GUIDANCE-**MODE** = ***NO** / ***Y**ES

,**SDF-COM**MANDS = ***NO** / ***Y**ES

,**ABBR**EVIATION-**RULES** = ***NO** / ***Y**ES

,**GUID**ED-**DIA**LOG = ***Y**ES (...)

***Y**ES(...)

SCREEN-STEPS = ***NO** / ***Y**ES

,**SPEC**IAL-**FUNC**TIONS = ***NO** / ***Y**ES

,**FUNC**TION-**KEYS** = ***NO** / ***Y**ES

,**NEXT-FIELD** = ***NO** / ***Y**ES

,**UNGUID**ED-**DIA**LOG = ***Y**ES (...) / ***NO**

***Y**ES(...)

SPECIAL-**FUNC**TIONS = ***NO** / ***Y**ES

,**FUNC**TION-**KEYS** = ***NO** / ***Y**ES

This syntax description is valid for SDF V4.5A.The syntax of the SDF command/statement language is explained in the following three tables.

Table 7: Notational conventions

The meanings of the special characters and the notation used to describe command and statement formats are explained in table 7.

Table 8: Data types

Variable operand values are represented in SDF by data types. Each data type represents a specific set of values. The number of data types is limited to those described in table 8.

The description of the data types is valid for the entire set of commands/statements. Therefore only deviations (if any) from the attributes described here are explained in the relevant operand descriptions.

Table 9: Suffixes for data types

Data type suffixes define additional rules for data type input. They contain a length or interval specification and can be used to limit the set of values (suffix begins with *without*), extend it (suffix begins with *with*), or declare a particular task mandatory (suffix begins with *mandatory*). The following short forms are used in this manual for data type suffixes:

cat-id	cat
completion	compl
correction-state	corr
generation	gen
lower-case	low
manual-release	man
odd-possible	odd
path-completion	path-compl
separators	sep
temporary-file	temp-file
underscore	under
user-id	user
version	vers
wildcard-constr	wild-constr
wildcards	wild

The description of the ‘integer’ data type in table 9 contains a number of items in italics; the italics are not part of the syntax and are only used to make the table easier to read.
For special data types that are checked by the implementation, table 9 contains suffixes printed in italics (see the *special* suffix) which are not part of the syntax.

The description of the data type suffixes is valid for the entire set of commands/statements. Therefore only deviations (if any) from the attributes described here are explained in the relevant operand descriptions.

Metasyntax

Representation	Meaning	Examples
UPPERCASE LETTERS	Uppercase letters denote keywords (command, statement or operand names, keyword values) and constant operand values. Keyword values begin with *.	**HELP-SDF** **SCREEN-STEPS** = ***NO**
UPPERCASE LETTERS in boldface	Uppercase letters printed in boldface denote guaranteed or suggested abbreviations of keywords.	**GUID**ANCE**-MODE** = ***Y**ES
=	The equals sign connects an operand name with the associated operand values.	**GUID**ANCE**-MODE** = ***NO**
< >	Angle brackets denote variables whose range of values is described by data types and suffixes (see tables 8 and 9).	**SYNTAX-F**ILE = <filename 1..54>
Underscoring	Underscoring denotes the default value of an operand.	**GUID**ANCE**-MODE** = ***NO**
/	A slash serves to separate alternative operand values.	**NEXT-FIELD** = ***NO** / ***Y**ES
(…)	Parentheses denote operand values that initiate a structure.	,**UNGUID**ED**-DIA**LOG = ***Y**ES (...) / ***NO**
[ ]	Square brackets denote operand values which introduce a structure and are optional. The subsequent structure can be specified without the initiating operand value.	**SELECT** = [***BY-ATTR**IBUTES](...)
Indentation	Indentation indicates that the operand is dependent on a higher-ranking operand.	,**GUID**ED**-DIA**LOG = ***Y**ES (...) ***Y**ES(...) **SCREEN-STEPS** = ***NO** / ***Y**ES

Table 7: Metasyntax (part 1 of 2)

Representation	Meaning	Examples
	A vertical bar identifies related operands within a structure. Its length marks the beginning and end of a structure. A structure may contain further structures. The number of vertical bars preceding an operand corresponds to the depth of the structure.	**SUP**PORT = ***TAPE**(...) ***TAPE(...)** **VOL**UME = ***ANY**(...) ***ANY**(...) ...
,	A comma precedes further operands at the same structure level.	**GUID**ANCE-**MODE** = ***NO** / ***Y**ES ,**SDF-COM**MANDS = ***NO** / ***Y**ES
list-poss(n):	The entry “list-poss” signifies that a list of operand values can be given at this point. If (n) is present, it means that the list must not have more than n elements. A list of more than one element must be enclosed in parentheses.	list-poss: ***SAM** / ***ISAM** list-poss(40): <structured-name 1..30> list-poss(256): ***OMF** / ***SYSLST**(...) / <filename 1..54>
Alias:	The name that follows represents a guaranteed alias (abbreviation) for the command or statement name.	**HELP-SDF** Alias: **HPSDF**

Table 7: Metasyntax (part 2 of 2)

Data types

Data type	Character set	Special rules
alphanum-name	A…Z 0…9 $, #, @	
cat-id	A…Z 0…9	Not more than 4 characters; must not begin with the string PUB
command-rest	freely selectable	
composed-name	A…Z 0…9 $, #, @ hyphen period catalog ID	Alphanumeric string that can be split into multiple substrings by means of a period or hyphen. If a file name can also be specified, the string may begin with a catalog ID in the form :cat: (see data type filename).
c-string	EBCDIC character	Must be enclosed within single quotes; the letter C may be prefixed; any single quotes occurring within the string must be entered twice.
date	0…9 Structure identifier: hyphen	Input format: yyyy-mm-dd jjjj: year; optionally 2 or 4 digits mm: month tt: day
device	A…Z 0…9 hyphen	Character string, max. 8 characters in length, corresponding to a device available in the system. In guided dialog, SDF displays the valid operand values. For notes on possible devices, see the relevant operand description.
fixed	+, - 0…9 period	Input format: [sign][digits].[digits] [sign]: + or - [digits]: 0...9 must contain at least one digit, but may contain up to 10 characters (0...9, period) apart from the sign.

Table 8: Data types (part 1 of 6)

Data type	Character set	Special rules
filename	A…Z 0…9 $, #, @ hyphen period	Input format: [:cat:][$user.] { file | file(no) | group | group { (*abs) | (+rel) | (-rel) } } :cat: optional entry of the catalog identifier; character set limited to A...Z and 0...9; maximum of 4 characters; must be enclosed in colons; default value is the catalog identifier assigned to the user ID, as specified in the user catalog. $user. optional entry of the user ID; character set is A…Z, 0…9, $, #, @; maximum of 8 characters; first character cannot be a digit; $ and period are mandatory; default value is the user's own ID. $. (special case) system default ID file file or job variable name; may be split into a number of partial names using a period as a delimiter: $name_1$[.$name_2$[...]] $name_i$ does not contain a period and must not begin or end with a hyphen; file can have a maximum length of 41 characters; it must not begin with a $ and must include at least one character from the range A...Z.

Table 8: Data types (part 2 of 6)

Data type	Character set	Special rules
filename (contd.)		#file (special case) @file (special case) # or @ used as the first character indicates temporary files or job variables, depending on system generation. file(no) tape file name no: version number; character set is A...Z, 0...9, $, #, @. Parentheses must be specified. group name of a file generation group (character set: as for “file”) group{(*abs) (+rel) (-rel)} (*abs) absolute generation number (1-9999); * and parentheses must be specified. (+rel) (-rel) relative generation number (0-99); sign and parentheses must be specified.
integer	0…9, +, -	+ or -, if specified, must be the first character.
name	A…Z 0…9 $, #, @	Must not begin with 0...9.

Table 8: Data types (part 3 of 6)

Data type	Character set	Special rules
partial-filename	A…Z 0…9 $, #, @ hyphen period	Input format: [:cat:][$user.][partname.] :cat: see filename $user. see filename partname optional entry of the initial part of a name common to a number of files or file generation groups in the form: $name_1.[name_2.[...]]$ $name_i$ (see filename). The final character of “partname” must be a period. At least one of the parts :cat:, $user. or partname must be specified.
posix-filename	A...Z 0...9 special characters	String with a length of up to 255 characters; consists of either one or two periods or of alpha-numeric characters and special characters. The special characters must be escaped with a preceding \ (backslash); the / is not allowed. Must be enclosed within single quotes if alter-native data types are permitted, separators are used, or the first character is a ?, ! or ^. A distinction is made between uppercase and lowercase.
posix-pathname	A...Z 0...9 special characters structure identifier: slash	Input format: $[/]part_1/.../part_n$ where $part_i$ is a posix-filename; max. 1023 characters; must be enclosed within single quotes if alter-native data types are permitted, separators are used, or the first character is a ?, ! or ^.

Table 8: Data types (part 4 of 6)

Data type	Character set	Special rules
product-version	A…Z 0…9 period single quote	Input format: [[C]']][V][m]m.naso['] correction status release status where m, n, s and o are all digits and a is a letter. Whether the release and/or correction status may/must be specified depends on the suffixes to the data type (see suffixes without-corr, without-man, mandatory-man and mandatory-corr in table 9). product-version may be enclosed within single quotes (possibly with a preceding C). The specification of the version may begin with the letter V.
structured-name	A…Z 0…9 $, #, @ hyphen	Alphanumeric string which may comprise a number of substrings separated by a hyphen. First character: A...Z or $, #, @
text	freely selectable	For the input format, see the relevant operand descriptions.
time	0…9 structure identifier: colon	Time-of-day entry: Input format: hh:mm:ss / hh:mm / hh hh: hours mm: minutes ss: seconds Leading zeros may be omitted
vsn	a) A…Z 0…9 b) A…Z 0…9 $, #, @	a) Input format: pvsid.sequence-no max. 6 characters pvsid: 2-4 characters; PUB must not be entered sequence-no: 1-3 characters b) Max. 6 characters; PUB may be prefixed, but must not be followed by $, #, @.

Table 8: Data types (part 5 of 6)

Data type	Character set	Special rules
x-string	Hexadecimal: 00…FF	Must be enclosed in single quotes; must be prefixed by the letter X. There may be an odd number of characters.
x-text	Hexadecimal: 00…FF	Must not be enclosed in single quotes; the letter X must not be prefixed. There may be an odd number of characters.

Table 8: Data types (part 6 of 6)

Suffixes for data types

Suffix	Meaning
x..y *unit*	With data type “integer”: interval specification
	x minimum value permitted for “integer”. x is an (optionally signed) integer.
	y maximum value permitted for “integer”. y is an (optionally signed) integer.
	unit with “integer” only: additional units. The following units may be specified: *days* *byte* *hours* *2Kbyte* *minutes* *4Kbyte* *seconds* *Mbyte*
x..y *special*	With the other data types: length specification For data types catid, date, device, product-version, time and vsn the length specification is not displayed.
	x minimum length for the operand value; x is an integer.
	y maximum length for the operand value; y is an integer.
	x=y the length of the operand value must be precisely x.
	special Specification of a suffix for describing a special data type that is checked by the implementation. “special” can be preceded by other suffixes. The following specifications are used: *arithm-expr* arithmetic expression (SDF-P) *bool-expr* logical expression (SDF-P) *string-expr* string expression (SDF-P) *expr* freely selectable expression (SDF-P) *cond-expr* conditional expression (JV) *symbol* CSECT or entry name (BLS)
with	Extends the specification options for a data type.
-compl	When specifying the data type “date”, SDF expands two-digit year specifications in the form yy-mm-dd to: 20jj-mm-tt if jj < 60 19jj-mm-tt if jj ≥ 60
-low	Uppercase and lowercase letters are differentiated.
-path-compl	For specifications for the data type “filename”, SDF adds the catalog and/or user ID if these have not been specified.
-under	Permits underscores (_) for the data type “name”.

Table 9: Data type suffixes (part 1 of 7)

<table>
<tr><th>Suffix</th><th>Meaning</th></tr>
<tr><td>with (contd.)</td><td></td></tr>
<tr><td>-wild(n)</td><td>Parts of names may be replaced by the following wildcards.
n denotes the maximum input length when using wildcards.
Due to the introduction of the data types posix-filename and posix-pathname, SDF now accepts wildcards from the UNIX world (referred to below as POSIX wildcards) in addition to the usual BS2000 wildcards. However, as not all commands support POSIX wildcards, their use for data types other than posix-filename and posix-pathname can lead to semantic errors.
Only POSIX wildcards or only BS2000 wildcards should be used within a search pattern. Only POSIX wildcards are allowed for the data types posix-filename and posix-pathname. If a pattern can be matched more than once in a string, the first match is used.
<table>
<tr><th>BS2000 wildcards</th><th>Meaning</th></tr>
<tr><td>*</td><td>Replaces an arbitrary (even empty) character string. If the string concerned starts with *, then the * must be entered twice in succession if it is followed by other characters and if the character string entered does not contain at least one other wildcard.</td></tr>
<tr><td>Terminating period</td><td>Partially-qualified entry of a name.
Corresponds implicitly to the string “./*”, i.e. at least one other character follows the period.</td></tr>
<tr><td>/</td><td>Replaces any single character.</td></tr>
<tr><td><s_x:s_y></td><td>Replaces a string that meets the following conditions:
– It is at least as long as the shortest string (s_x or s_y)
– It is not longer than the longest string (s_x or s_y)
– It lies between s_x and s_y in the alphabetic collating sequence; numbers are sorted after letters (A...Z, 0...9)
– s_x can also be an empty string (which is in the first position in the alphabetic collating sequence)
– s_y can also be an empty string, which in this position stands for the string with the highest possible code (contains only the characters X’FF’)</td></tr>
<tr><td><s_1,…></td><td>Replaces all strings that match any of the character combinations specified by s. s may also be an empty string. Any such string may also be a range specification “s_x:s_y” (see above).</td></tr>
</table>
</td></tr>
</table>

Table 9: Data type suffixes (part 2 of 7)

Suffix	Meaning	
with-wild(n)		
(contd.)	-s	Replaces all strings that do not match the specified string s. The minus sign may only appear at the beginning of string s. Within the data types filename or partial-filename the negated string -s can be used exactly once, i.e. -s can replace one of the three name components: cat, user or file.
	Wildcards are not permitted in generation and version specifications for file names. Only system administration may use wildcards in user IDs. Wildcards cannot be used to replace the delimiters in name components cat (colon) and user ($ and period).	
	POSIX wildcards	Meaning
	*	Replaces any single string (including an empty string). An * appearing at the first position must be duplicated if it is followed by other characters and if the entered string does not include at least one further wildcard.
	?	Replaces any single character; not permitted as the first character outside single quotes.
	$[c_x\text{-}c_y]$	Replaces any single character from the range defined by c_x and c_y, including the limits of the range. c_x and c_y must be normal characters.
	[s]	Replaces exactly one character from string s. The expressions $[c_x\text{-}c_y]$ and [s] can be combined into $[s_1c_x\text{-}c_ys_2]$.
	$[!c_x\text{-}c_y]$	Replaces exactly one character not in the range defined by c_x and c_y, including the limits of the range. c_x and c_y must be normal characters. The expressions $[!c_x\text{-}c_y]$ and [!s] can be combined into $[!s_1c_x\text{-}c_ys_2]$.
	[!s]	Replaces exactly one character not contained in string s. The expressions [!s] and $[!c_x\text{-}c_y]$ can be combined into $[!s_1c_x\text{-}c_ys_2]$.

Table 9: Data type suffixes (part 3 of 7)

<table>
<tr><th>Suffix</th><th>Meaning</th></tr>
<tr><td>with (contd.)

wild-
constr(n)</td><td>Specification of a constructor (string) that defines how new names are to be constructed from a previously specified selector (i.e. a selection string with wildcards). See also with-wild. n denotes the maximum input length when using wildcards.
The constructor may consist of constant strings and patterns. A pattern (character) is replaced by the string that was selected by the corresponding pattern in the selector.
The following wildcards may be used in constructors:
<table>
<tr><th>Wildcard</th><th>Meaning</th></tr>
<tr><td>*</td><td>Corresponds to the string selected by the wildcard * in the selector.</td></tr>
<tr><td>Termina-
ting period</td><td>Corresponds to the partially-qualified specification of a name in the selector;
corresponds to the string selected by the terminating period in the selector.</td></tr>
<tr><td>/ or ?</td><td>Corresponds to the character selected by the / or ? wildcard in the selector.</td></tr>
<tr><td><n></td><td>Corresponds to the string selected by the n-th wildcard in the selector, where n is an integer.</td></tr>
</table>
Allocation of wildcards to corresponding wildcards in the selector:
All wildcards in the selector are numbered from left to right in ascending order (global index).
Identical wildcards in the selector are additionally numbered from left to right in ascending order (wildcard-specific index).
Wildcards can be specified in the constructor by one of two mutually exclusive methods:
1. Wildcards can be specified via the global index: <n>
2. The same wildcard may be specified as in the selector; substitution occurs on the basis of the wildcard-specific index. For example:
the second “/” corresponds to the string selected by the second “/” in the selector</td></tr>
</table>

Table 9: Data type suffixes (part 4 of 7)

Suffix	Meaning
with-wild-constr(n) (contd.)	The following rules must be observed when specifying a constructor: – The constructor can only contain wildcards of the selector. – If the string selected by the wildcard <...> or [...] is to be used in the constructor, the index notation must be selected. – The index notation must be selected if the string identified by a wildcard in the selector is to be used more than once in the constructor. For example: if the selector “A/” is specified, the constructor “A<n><n>” must be specified instead of “A//”. – The wildcard * can also be an empty string. Note that if multiple asterisks appear in sequence (even with further wildcards), only the last asterisk can be a non-empty string, e.g. for “****” or “*//*”. – Valid names must be produced by the constructor. This must be taken into account when specifying both the constructor and the selector. – Depending on the constructor, identical names may be constructed from different names selected by the selector. For example: “A/*” selects the names “A1” and “A2”; the constructor “B*” generates the same new name “B” in both cases. To prevent this from occurring, all wildcards of the selector should be used at least once in the constructor. – If the constructor ends with a period, the selector must also end with a period. The string selected by the period at the end of the selector cannot be specified by the global index in the constructor specification.

Table 9: Data type suffixes (part 5 of 7)

<table>
<tr><th>Suffix</th><th>Meaning</th></tr>
<tr><td>with-wild-
constr(n)
(contd.)</td><td>Examples:
<table>
<tr><th>Selector</th><th>Selection</th><th>Constructor</th><th>New name</th></tr>
<tr><td>A//*</td><td>AB1
AB2
A.B.C</td><td>D<3><2></td><td>D1
D2
D.CB</td></tr>
<tr><td>C.<A:C>/<D,F></td><td>C.AAD
C.ABD
C.BAF
C.BBF</td><td>G.<1>.<3>.XY<2></td><td>G.A.D.XYA
G.A.D.XYB
G.B.F.XYA
G.B.F.XYB</td></tr>
<tr><td>C.<A:C>/<D,F></td><td>C.AAD
C.ABD
C.BAF
C.BBF</td><td>G.<1>.<2>.XY<2></td><td>G.A.A.XYA
G.A.B.XYB
G.B.A.XYA
G.B.B.XYB</td></tr>
<tr><td>A//B</td><td>ACDB
ACEB
AC.B
A.CB</td><td>G/XY/</td><td>GCXYD
GCXYE
GCXY. [1]
G.XYC</td></tr>
</table>
[1] The period at the end of the name may violate naming conventions (e.g. for fully-qualified file names).</td></tr>
<tr><td>without</td><td>Restricts the specification options for a data type.</td></tr>
<tr><td>-cat</td><td>Specification of a catalog ID is not permitted.</td></tr>
<tr><td>-corr</td><td>Input format: [[C]’][V][m]m.na[’]
Specifications for the data type product-version must not include the correction status.</td></tr>
<tr><td>-gen</td><td>Specification of a file generation or file generation group is not permitted.</td></tr>
<tr><td>-man</td><td>Input format: [[C]’][V][m]m.n[’]
Specifications for the data type product-version must not include either release or correction status.</td></tr>
<tr><td>-odd</td><td>The data type x-text permits only an even number of characters.</td></tr>
<tr><td>-sep</td><td>With the data type “text”, specification of the following separators is not permitted: ; = ( ) < > ␣ (i.e. semicolon, equals sign, left and right parentheses, greater than, less than, and blank).</td></tr>
<tr><td>-temp-
file</td><td>Specification of a temporary file is not permitted (see #file or @file under filename).</td></tr>
</table>

Table 9: Data type suffixes (part 6 of 7)

Suffix	Meaning
without (contd.)	
-user	Specification of a user ID is not permitted.
-vers	Specification of the version (see “file(no)”) is not permitted for tape files.
-wild	The file types posix-filename and posix-pathname must not contain a pattern (character).
mandatory	Certain specifications are necessary for a data type.
-corr	Input format: [[C]’][V][m]m.naso[’] Specifications for the data type product-version must include the correction status and therefore also the release status.
-man	Input format: [[C]’][V][m]m.na[so][’] Specifications for the data type product-version must include the release status. Specification of the correction status is optional if this is not prohibited by the use of the suffix without-corr.
-quotes	Specifications for the data types posix-filename and posix-pathname must be enclosed in single quotes.

Table 9: Data type suffixes (part 7 of 7)

Glossary

access in RFA mode

A file is accessed in RFA mode whenever an RFA connection exists, with the following exception: if the TFT entry for a file was created before the RFA connection was set up, then this file is also accessed via HIPLEX MSCF while the connection exists.

AFR

Access From Remote; access from (an)other BS2000 processor(s) to files stored on a local processor.

AFR partner task

Task (of one processor) which is assigned to the RFA task of another processor; the operations requested by the RFA task are performed on a local file by the partner task. The AFR partner task is executed in the user state (TU state).

MRS

Multiprocessor system; constitutes a homogeneous BS2000 computer network.

MRSCAT

Data structure which performs the mapping between the catalog identifier and the BCAM name of the BS2000 processor on which the catalog is located.

processor

This denotes both a BS2000 system with its own hardware and a virtual BS2000 machine made available under VM2000.

remote file

File which is located and managed on a BS2000 processor other than that from which an RFA session is opened.

remote system

BS2000 system running on another, remote processor or on a virtual machine made available under VM2000.

RFA

Remote File Access; access to files in other BS2000 processors from the local processor (home system).

RFA task

User task for which there is at least one RFA connection to a remote processor.

shared pubset

Pubset that can be operated at several systems or processors simultaneously. This pubset has to be entered in the MRSCAT by systems support by means of ADD-MASTER-CATALOG-ENTRY or MODIFY-MASTER-CATALOG-ENTRY ...,SHARED-PUBSET=*YES.

SYSID

Identification of a processor, consisting of one to three characters. The following values are possible: A,...,Z; 0,...9 and 65,...,192. The default value is 250.

Figures

Tables

Related publications

[1] **BS2000/OSD-BC V5.0**
Commands, Volumes 1 - 5
User Guide

Target group
This manual is addressed to nonprivileged users and systems support staff.
Contents
Volumes 1 through 5 contain the BS2000/OSD commands ADD-... to WRITE-... (basic configuration and selected products) with the functionality for all privileges. The command and operand functions are described in detail, supported by examples to aid understanding. An introductory overview provides information on all the commands described in Volumes 1 through 5.
The Appendix of Volume 1 includes information on command input, conditional job variable expressions, system files, job switches, and device and volume types.
The Appendix of Volumes 4 and 5 contains an overview of the output columns of the SHOW commands of the component NDM. The Appendix of Volume 5 contains additionally an overview of all START commands.
There is a comprehensive index covering all entries for Volumes 1 through 5.
Order numbers
U2338-J-Z125-15-76 Commands, Volume 1, A – C
U41074-J-Z125-2-76 Commands, Volume 2, D – MOD-JO
U21070-J-Z125-5-76 Commands, Volume 3, MOD-JV – R
U41075-J-Z125-2-76 Commands, Volume 4, S – SH-PRI
U23164-J-Z125-4-76 Commands, Volume 5, SH-PUB – Z

[2] **BS2000/OSD-BC V5.0**
Commands, Volume 6, Output in S Variables and SDF-P-BASYS
User Guide

Target group
This manual is addressed to programmers and users who write procedures.
Contents
Volume 6 contains tables of all S variables that are supplied with values by the SHOW commands in conjunction with structured output. Further chapters deal with:
– introduction to working with S variables
– SDF-P-BASYS V2.2A
Order number
U23165-J-Z125-4-76

[3] **SDF V4.5A** (BS2000/OSD)
Introductory Guide to the SDF Dialog Interface
User Guide

Target group
BS2000/OSD users
Contents
This manual describes the interactive input of commands and statements in SDF format. A Getting Started chapter with easy-to-understand examples and further comprehensive examples facilitates use of SDF. SDF syntax files are discussed.
Order number
U2339-J-Z125-8-76

[4] **BS2000/OSD-BC V5.0**
Introductory Guide to Systems Support
User Guide

Target group
This manual is addressed to BS2000/OSD systems support staff and operators.
Contents
The manual covers the following topics relating to the management and monitoring of the BS2000/OSD basic configuration: system initialization, parameter service, job and task control, memory/device/system time/user/file/pubset management, assignment of privileges, accounting and operator functions.
Order number
U2417-J-Z125-14-76

[5] **HIPLEX MSCF V3.0A** (BS2000/OSD)
BS2000 Processor Networks
User Guide

Target group
This manual is addressed to systems support, operators and nonprivileged users.
Contents
HIPLEX MSCF (BS2000) makes it possible to combine two or more BS2000/OSD mainframes to form an LCS, CCS, SPVS or XCS computer network. The manual describes HIPLEX MSCF (BS2000), possible applications, prerequisites for use, and commands.
Order number
U3615-J-Z125-8-76

[6] **BS2000/OSD-BC V5.0**
Introductory Guide to DMS
User Guide

Target group
This manual is addressed to nonprivileged users and systems support staff.
Contents
It describes file management and processing in BS2000.
Attention is focused on the following topics:
– volumes and files
– file and catalog management
– file and data protection
– OPEN, CLOSE and EOV processing
– DMS access methods (SAM, ISAM,...)

The main new features of OSD-BC V5.0 are the introduction of files larger than or equal to 32 Gbytes and the possibility of restricting TSOS co-ownership of files.
Order number
U4237-J-Z125-7-76

[7] **BS2000/OSD-BC V5.0**
DMS Macros
User Guide

Target group
The manual addresses assembly language programmers.
Contents
The manual describes the DMS macro interface for the BS2000/OSD basic configuration. There is a brief description of the access method-specific features relevant to programming, followed by a description of the macros in alphabetical order.
Order number
U4250-J-Z125-7-76

[8] **SECOS V4.0A** (BS2000/OSD
Security Control System
User Guide

Target group
– BS2000 system administrators
– BS2000 users working with extended access protection for files

Contents
Capabilities and application of the functional units:
– SRPM (System Resources and Privileges Management)
– SRPMSSO (Single Sign On)
– GUARDS (Generally Usable Access Control Administration System)
– GUARDDEF (Default Protection)
– GUARDCOO (Co-owner Protection)
– SAT (Security Audit Trail).

Order number
U5605-J-Z125-6-76

[9] **BS2000/OSD-BC V5.0**
Utility Routines
User Guide

Target group
The manual addresses both nonprivileged users and systems support.

Contents
The manual describes the utilities: DPAGE V14.0A, INIT V14.0A, JMP V2.0A, JMU V14.0A, LMSCONV V3.3B, PAMCONV V13.0A, PASSWORD V14.0A, PVSREN V1.4A, RMS V7.1A, SCDM V5.0A, SMPGEN V14.0A, SPCCNTRL V14.0A, TPCOMP2 V14.0A, VOLIN V14.0A.

Order number
U4303-J-Z125-7-76

[10] ***open*Net Server V2.0** (BS2000/OSD)
BCAM V16.0A Volume 1
User Guide

Target group
The manual is intended for network planners, generators and administrators who define BS2000 systems.
Contents
BCAM Volume 1 describes BCAM itself, how it is embedded in TRANSDATA and TCP/IP and ISO networks, plus generation and administrative activities.
Generation examples illustrate the description.
Additionally BCAM tools for generation and diagnosis are described.

[11] ***open*Net Server V2.0** (BS2000/OSD)
BCAM V16.0A Volume 2
Reference Manual

Target group
The manual is intended for network operators, generators and administrators who define BS2000 systems.
Contents
BCAM Volume 2 is based on Volume 1 and describes in detail the BCAM commands required for generation and operation.
The KOGS macros required for static generation are introduced and the BCAM messages are listed.

[12] **BS2000/OSD-BC V5.0**
Executive Macros
User Guide

Target group
This manual is addressed to all BS2000/OSD assembly language programmers.
Contents
The manual contains a summary of all Executive macros:
– linking and loading
– virtual storage, memory pool, ESA
– task and program control
– ITC, serialization, eventing, DLM, contingencies, STXIT
– messages, accounting, JMS, TIAM, VTSU, ...
Detailed description of all macros in alphabetical order and with examples; general training section dealing with ITC, serialization, eventing, DLM, contingencies, STXIT, virtual storage, memory pool, ESA, ...
Order number
U3291-J-Z125-10-76

[13] **IMON V2.5** (BS2000/OSD)
Installation Monitor
User Guide

Target group
This manual is intended for systems support staff of the BS2000/OSD operating system.
Contents
The manual describes the installation and administration of BS2000 software using the IMON installation monitor and its three components IMON-BAS, IMON-GPN and IMON-SIC. Installation (standard and customer-specific) using the component IMON-BAS for systems with BS2000-OSD V2.0 and as of BS2000-OSD V3.0/V4.0 is described in detail with the aid of examples in two separate chapters.
Order number
U21926-J-Z125-3-76

[14] **SDF V4.5A** (BS2000/OSD)
SDF Management
User Guide

Target group
This manual is intended for system administrators and experienced BS2000 users.
Contents
It describes how SDF is installed and administered using SDF commands and the SDF-I, SDF-U and SDF-PAR utility routines. It includes a description of SDF-I, SDF-U and SDF-PAR statements.
Order number
U2622-J-Z125-10-76

[15] **BS2000/OSD-BC V5.0**
System Installation
User Guide

Target group
This manual is intended for BS2000/OSD system administration.
Contents
The manual describes the generation of the hardware configuration with UGEN and the following installation services: disk organization with MPVS, the installation of volumes using the SIR utility routine, and the IOCFCOPY subsystem.
Order number
U2505-J-Z125-15-7600

[16] **DSSM V4.0/SSCM V2.3**
Subsystem Management in BS2000/OSD
User Guide

Target group
This manual addresses systems support staff and software consultants of BS2000/OSD.
Contents
The following are described: BS2000/OSD subsystem concept, dynamic subsystem management (DSSM) V4.0, subsystem catalog management (SSCM) V2.3 and the associated commands and statements.
DSSM supports the option of creating and managing user-specific subsystem configurations on a task-local basis.
Order number
U23166-J-Z125-3-76

[17] **BS2000/OSD-BC V4.0**
Computer Center Ready Reference, Volume 1

Target group
This Ready Reference is addressed to systems support staff in BS2000 computer centers.
Contents
The Ready Reference is intended to assist systems support staff in their daily work in the BS2000 computer center. It contains tables and excerpts from other manuals presenting information on BS2000 operation in concise, condensed form; information on accounting records, the parameter service and the syntax of the computer center utility routines.
Order number
U370-J-Z125-13-76

[18] **RAV** (BS2000/OSD)
Computing Center Accounting Procedure
User Guide

Target group
This manual is intended for systems support staff and RAV administrators.
Contents
The manual describes the use of RAV in computer centers and the accounting process.

[19] **BS2000/OSD-BC V5.0**
System-Managed Storage
User Guide

Target group
This manual is intended for systems support staff.
Contents
The manual provides an overview of the functions available in BS2000/OSD and the products of the basic configuration for supporting system-managed storage. The most important of these is the SM pubset, whose structure, characteristics and application options are described in the manual. A variety of scenarios are presented, showing how the SMS functionality can best be used and explaining the transition from SF pubsets to SM pubsets.
Order number
U25174-J-Z125-2-76

[20] **SDF-P V2.2A** (BS2000/OSD)
Programming in the Command Language
User Guide

Target group
This manual is addressed to BS2000 users and systems support staff.
Contents
SDF-P is a structured procedure language in BS2000. The manual begins with introductory chapters dealing with the basic principles of procedures and variables, and goes on to provide detailed descriptions of SDF-P commands, functions and macros.
Overview of contents:
– brief introduction to SDF-P
– procedure concept in SDF-P
– creating, testing, calling and controlling S procedures
– S variables, S variable streams, functions, expressions
– converting non-S procedures
– macros, predefined (built-in) functions, SDF-P commands

SDF-P V2.2A can only be used in conjunction with SDF-P-BASYS ≥ V2.1A, VAS ≥ V2.0A and SDF ≥ V4.1A.
Order number
U6442-J-Z125-5-76

[21] **BS2000/OSD**
Softbooks English
CD-ROM

Target group
BS2000/OSD users
Contents
The CD-ROM “BS2000/OSD SoftBooks English” contains almost all of the English manuals and README files for the BS2000 system software of the latest BS2000/OSD version and also of the previous versions, including the manuals listed here.
These Softbooks can also be found in the Internet on our manual server. You can browse in any of these manuals or download the entire manual.
Order number
U26175-J8-Z125-1-76
Internet address
http://manuals.fujitsu-siemens.com

Index

Contents

RFA V14.0A (BS2000/OSD)

Remote File Access

Target group
Users and systems support

Contents
The manual explains the basics of the RFA concept. All RFA commands are described in detail, as are the particularities of DMS commands when accessing files on a remote system by means of RFA.

Edition: March 2002

File: rfa.pdf

This manual was produced by
cognitas. Gesellschaft für Technik-Dokumentation mbH
www.cognitas.de

Fujitsu Siemens computers GmbH
User Documentation
81730 Munich
Germany

Fax: (++49) 700 / 372 00000

e-mail: manuals@fujitsu-siemens.com
http://manuals.fujitsu-siemens.com

Comments
Suggestions
Corrections

Submitted by

Comments on RFA V14.0A
Remote File Access

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