

Fujitsu Technology Solutions

SDF (BS2000/OSD)
Version 4.7D
March 2013

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Release Notice

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1 General

*02 This Release Notice is a summary of the major extensions, dependencies and operating information pertaining to SDF V4.7D under the operating system BS2000/OSD.

This Release Notice is a supplement to:

- *02 • BS2000/OSD-BC V9.0¹
- OSD/XC V4.1

*02 and contains an overview of the main extensions, dependencies and operating information for SDF V4.7D and the associated software products included in the technical delivery units:

*02 BS2GA.SDF V9.0 (for BS2000/OSD and OSD/XC)

Depending on the operating system variant involved (S-, SX- or SQ-Server) these represent a component of the BS2000 basic configuration.

*02 BS2GA.SDF V9.0 comprises:

- *02 - DISPLAY V1.1A
- SDF V4.7D
- SDF-U V4.1G
- SDF-I V4.1C
- SDF-PAR V1.1A
- SDF-CONV V3.0B
- FHS-TPR V8.3A
- *03 - SDF-P-BASYS V2.5E
- *02 - VAS V2.4B
- SDF-SRV V3.1A
- SDF-SFC V3.1A

SDF is a syntax processor that supports input of commands and program statements (optionally with interactive prompting). SDF operates with syntax files in which the command and statement definitions are stored.

SDF-U is a utility tool to perform some operations on syntax files.

SDF-I is a utility program to merge system or group syntax files. It is dedicated to developers and system integrators. Originally designed for running on installations without SDF environment, SDF-I does not offer all convenient SDF capabilities and user comfort. It does not rely on any syntax file for the definition of its user interface. The statements are read by RDATA and analyzed by ISP.

DISPLAY allows non privileged users access to the full output scope of selected SHOW commands without having to grant the user ID additional privileges (cf. Change Request A0299322).

SDF-PAR is a parameter-file editor for the product SDF. The SDF parameter-files can then be easily prepared / customized off-line, through an SDF interface.

SDF-CONV is a syntax convertor which allows to convert any existing well running NOT-S/S-PROC procedure with ISP/SDF commands, to an S-PROC with SDF commands. SDF-CONV operates with syntax files in which the commands and statements definitions are stored.

FHS-TPR is a TPR subsystem to allow the use of FHS as an output server for S variable streams.

The SDF-P software product is a procedure language that extends the BS2000 command language to a programming language in which structured programming can be performed just as it can use

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high-level programming languages. With SDF-P, even beginners can generate short procedures quickly and easily. At the same time, SDF-P greatly simplifies the generation and maintenance of larger, more complex procedures. The SDF-P-BASYS software product is the non-chargeable part of SDF-P and incorporates only a small part of the functionality of SDF-P.

VAS (Variable Access Services) gives several services to put, get, copy and delete structured data into a memory area (known as SSTA, Standard Structured Transfer Area). This product is dedicated to privileged callers.

SDF-SRV (SDF Server) is a decoupled BS2000 subsystem which enables the interface between SDF and the SDF-DOORS editor on the front-end. SDF-SRV is also the BS2000 Service Manager of the DESK2000 product.

SDF-SFC (Syntax File Converter) is a utility to convert the SDF syntax files which will be used by SDF-DOORS as OFF-LINE syntax files.

- *03 The release level is that of March 2013.
- *02 Changes to version 1 have been marked at the left margin with *02.
- *03 Changes to version 2 have been marked at the left margin with *03.

The Release Notice is shipped on the product delivery medium.

This and other current Release Notices are shipped on the SoftBooks DVD and are available online at <http://manuals.ts.fujitsu.com/>.

If one or more previous versions are skipped when this product version is used, the information from the Release Notices (and README files) of the previous versions must also be noted.

1.1 Ordering

The supply-unit BS2GA.SDF can be ordered from your local distributors.

The general conditions of the Contract for the Use and Maintenance of Software Products apply for BS2GA.SDF.

1.2 Delivery

- *02 The BS2GA.SDF V9.0 files are supplied via SOLIS.
- *02 The following delivery groups are part of the BS2GA.SDF V9.0 delivery scope:
- *02 **1.2.1 SDF V4.7D**

Files independent from the HSI:

Delivery components	Product description
SYSFGM.SDF.047.D	Release notice (German)
SYSFGM.SDF.047.E	Release notice (English)
SYSRME.SDF.047.D	Readme file (German)
SYSRME.SDF.047.E	Readme file (English)
SYSRMS.SDF.047	RMS delivery set
SYSSSC.SDF.047	SSCM catalog
SYSSDF.SDF.047	Syntax file

Delivery components	Product description
SIPLIB.SDF.047	Macro and include library restricted to BS2000/OSD development
SYSLIB.SDF.047	Library containing the user assembler macros, the definition of the interface functions for the languages COBOL, FORTRAN and C, the CMDCSTM module and the high level language interface modules
SYSMES.SDF.047	Message file
SYSSII.SDF.047	IMON information file for delivery units and components

Files only necessary on S-Servers:

Delivery components	Product description
SYSLNK.SDF.047	Library containing SDF

Files only necessary on SX-Servers:

Delivery components	Product description
SPMLNK.SDF.047	Library containing SDF

Files only necessary on SQ-Servers:

Delivery components	Product description
SKMLNK.SDF.047	Library containing SDF

1.2.2 SDF-U V4.1G

Delivery components	Product description
SYSLNK.SDF-U.041	Library containing SDF-U
SYSMES.SDF-U.041	Message file
SYSPRG.SDF-U.041	Program for executing /START-PROGRAM SDF-U (for reasons of compatibility)
SYSRMS.SDF-U.041	RMS delivery set
SYSSDF.SDF-U.041	Syntax file

1.2.3 DISPLAY V1.1A

Files independent from the HSI:

Delivery components	Product description
SYSMES.DISPLAY.011	Message file
SYSPRC.DISPLAY.011	Procedure for creating entries in the syntax file
SYSRMS.DISPLAY.011	RMS delivery set
SYSSDF.DISPLAY.011	Syntax file
SYSSII.DISPLAY.011	IMON information file for delivery units

<u>Delivery components</u>	<u>Product description and components</u>
SYSSSC.DISPLAY.011	SSCM catalog

Files only necessary on S-Servers:

<u>Delivery components</u>	<u>Product description</u>
SYSLNK.DISPLAY.011	Library containing DISPLAY

Files only necessary on SX-Servers:

<u>Delivery components</u>	<u>Product description</u>
SPMLNK.DISPLAY.011	Library containing DISPLAY

Files only necessary on SQ-Servers:

<u>Delivery components</u>	<u>Product description</u>
SKMLNK.DISPLAY.011	Library containing DISPLAY

*03 1.2.4 SDF-P-BASYS V2.5E

Files independent from the HSI:

<u>Delivery components</u>	<u>Product description</u>
SYSSSC.SDF-P-BASYS.025	SSCM catalog
SYSSDF.SDF-P-BASYS.025	Syntax file
SIPLIB.SDF-P-BASYS.025	Macro and include library restricted to BS2000/OSD development
SYSLIB.SDF-P-BASYS.025	Library containing the user assembler macros
SYSMES.SDF-P-BASYS.025	Message file
SYSRMS.SDF-P-BASYS.025	RMS delivery set
SYSPRC.SDF-P-BASYS.025	Procedures implementing SDF-P commands.
SYSSII.SDF-P-BASYS.025	IMON information file for delivery units and components

Files only necessary on S-Servers:

<u>Delivery components</u>	<u>Product description</u>
SYSLNK.SDF-P-BASYS.025	Library containing SDF-P-BASYS

Files only necessary on SX-Servers:

<u>Delivery components</u>	<u>Product description</u>
SPMLNK.SDF-P-BASYS.025	Library containing SDF-P-BASYS

Files only necessary on SQ-Servers:

<u>Delivery components</u>	<u>Product description</u>
SKMLNK.SDF-P-BASYS.025	Library containing SDF-P-BASYS

1.2.5 SDF-I V4.1C

Delivery components	Product description
SYSPRG.SDF-I.041	Program file
SYSMES.SDF-I.041	Message file
SYSMSV.SDF-I.041	Message file for BS2000/OSD V1.0
SYSSDF.SDF-I.041	Syntax file containing the description of the command /[START-]SDF-I
SYSSII.SDF-I.041	IMON information file for delivery units and components

1.2.6 SDF-PAR V1.1A

Delivery components	Product description
SYSPRG.SDF-PAR.011	Program file
SYSMES.SDF-PAR.011	Message file
SYSMSV.SDF-PAR.011	Message file up to BS2000/OSD V1.0
SYSPRC.SDF-PAR.011.100	Procedure to run the program from BS2000 V10.0.
SYSPRC.SDF-PAR.011.112	Procedure to run the program from BS2000/OSD V2.0.
SYSSDF.SDF-PAR.011.USER	Syntax file
SYSSII.SDF-PAR.011	IMON information file for delivery units and components

1.2.7 SDF-CONV V3.0B

Delivery components	Product description
SYSLNK.SDF-CONV.030	Library containing SDF-CONV. The SDF-CONV program must be installed using the DSSM command /START-SUBSYSTEM
SYSMES.SDF-CONV.030	Message file
SYSMSV.SDF-CONV.030	Message file up to BS2000/OSD V1.0
SYSSDF.SDF-CONV.030	Syntax file
SYSSDF.SDF-CONV.030.USER.U.CMD	Syntax file containing the description of the User unprivileged ISP commands to be converted
SYSSDF.SDF-CONV.030.USER.S.CMD	Syntax file containing the description of the privileged ISP commands to be converted
SYSSSC.SDF-CONV.030	SSCM Catalog from BS2000/OSD V1.0

1.2.8 SDF-SRV V3.1A

Files independent from the HSI:

Delivery components	Product description
SYSRMS.SDF-SRV.031	RMS delivery set
SYSSSC.SDF-SRV.031	SSCM catalog

<u>Delivery components</u>	<u>Product description</u>
SYSSII.SDF-SRV.031	IMON information file for delivery units and components

Files only necessary on S-Servers:

<u>Delivery components</u>	<u>Product description</u>
SYSLNK.SDF-SRV.031	Library containing SDF-SRV

Files only necessary on SX-Servers:

<u>Delivery components</u>	<u>Product description</u>
SPMLNK.SDF-SRV.031	Library containing SDF-SRV

Files only necessary on SQ-Servers:

<u>Delivery components</u>	<u>Product description</u>
SKMLNK.SDF-SRV.031	Library containing SDF-SRV

1.2.9 SDF-SFC V3.1A

<u>Delivery components</u>	<u>Product description</u>
SYSPRG.SDF-SFC.031	Program file
SYSSII.SDF-SFC.031	IMON information file for delivery units and components

*02 1.2.10 VAS V2.4B

Files independent from the HSI:

<u>Delivery components</u>	<u>Product description</u>
SIPLIB.VAS.024	Macro and include library restricted to BS2000/OSD development
SYSLIB.VAS.024	Library containing the assembler macros and SPL and C includes
SYSRMS.VAS.024	RMS delivery set
SYSSSC.VAS.024	SSCM catalog
SYSSII.VAS.024	IMON information file for delivery units and components

Files only necessary on S-Servers:

<u>Delivery components</u>	<u>Product description</u>
SYSLNK.VAS.024	Library containing VAS

Files only necessary on SX-Servers:

<u>Delivery components</u>	<u>Product description</u>
SPMLNK.VAS.024	Library containing VAS

Files only necessary on SQ-Servers:

<u>Delivery components</u>	<u>Product description</u>
SKMLNK.VAS.024	Library containing VAS

1.3 Documentation

The BS2000/OSD documentation is available in German and English on DVD with the title BS2000/OSD Softbooks.

The documentation is also available in the form of online manuals at <http://manuals.ts.fujitsu.com> or can be ordered at extra cost at <http://manualshop.ts.fujitsu.com>. In the manual shop only manuals are available for products which are still orderable.

The manuals may be supplemented with README files. These contain changes and extensions to the manual of the product concerned. The file names are made up as follows:

SYSRME.SDF.047.E (file with English text)

When printing the files, you should specify the CONTR-CHAR=EBCDIC operand in the PRINT-FILE command.

The manuals are shipped as PDF files on the product medium.

SDF V4.7

Title	Order no.
SDF V4.7 Dialogschnittstelle SDF	U2339-J-Z125-9
SDF V4.7 SDF Dialog Interface	U2339-J-Z125-9-76

SDF-P V2.4

Title	Order no.
SDF-P (BS2000/OSD) V2.4A Programmierung in der Kommandosprache	U6442-J-Z125-6
SDF-P (BS2000/OSD) V2.4A Programming in the Command Language	U6442-J-Z125-6-76

*02	BS2000/OSD V9.0	Title	Order no.
*03		BS2000/OSD V9.0 Kommandos Band 1 Allgemeiner Teil	U41651-J-Z125-3
*03		BS2000/OSD V9.0 Commands Volume 1 General Part	U41651-J-Z125-3-76

There is no dedicated manual for the DISPLAY subsystem. This Release Notice contains all the necessary information.

More detailed information on editing syntax files, as may be necessary for the DISPLAY subsystem commands, can be found in the manual of the SDF-A version being used:

SDF-A V4.0A User Guide
Order number: U2284-J-Z125-7 (German version)
U2284-J-Z125-7-76 (English version)

SDF-A V4.1A User Guide
Order number: U2284-J-Z125-8 (German version)
U2284-J-Z125-8-76 (English version)

SDF-A V4.1E User Guide
Order number: U2284-J-Z125-9 (German version)
U2284-J-Z125-9-76 (English version)

2 Software expansions

Only the expansions and improvements distinguishing this version from the predecessor version are described below:

2.1 SDF V4.7

New and extended functions of SDF V4.7 are described in details in the README file. Nevertheless, here is a summary of the new functionalities.

- 1) CMDSEL interface
Support of new parameters MESSAGE@, MESSAGEL, MARKL
Extension of TITLE parameter (TITLE@, TITLEL) to 240 characters.
- 2) Support of case sensitive text and cmd-rest data types.
- 3) CMDSCA interface (SVC)
Parsing of input separated by semicolons for TU programs.

2.2 SDF-P-BASYS V2.5

None

2.3 SDF-U V4.1

- 1) Adaptations to SDF V4.1
- 2) //SET-GLOBALS FUNCTION-KEY=
- 3) //SHOW-STATUS support
- 4) Open processing performance enhancement

2.4 SDF-I V4.1

- 1) Allow the generation of syntax files as PAMKEY or DATA4K
- 2) Speed-up the merge processing by overwriting an already catalogued output file and using its catalog attributes
- 3) Generate the work files to the same cat-id and user-id than the output file
- 4) A default value *STD is provided for the operand FORMAT
- 5) Support the Automatic Correction Information

- 6) Display the customer REMOVE-IDs
- 7) The SHOW can now be interrupted so as to allow the user to enter a next SDF-I instruction: use the sequence <K2-key> - </INTR-command>
- 8) Suppress the messages of weight WARNING while merging SUSFs

2.5 SDF-PAR V1.1

New statement //MODIFY-SYSTEM-LOGON-INCLUDE. The SDF parameter file can contain the specification of an automatic system logon include; this specification is not mandatory

2.6 SDF-CONV V3.0

- 1) Support of S-procedures (S-PROC)
Input S procedures are identified and allowed and input NOT-S-procedures can be converted to S-PROC ones.
- 2) Preserve ISP commands.
The conversion of the input commands to SDF ones can be disabled.
- 3) Preserve procedure "look and feel"
Blanks, comments and labels that were inserted BEFORE the input COMMAND name are restored - unchanged - BEFORE the output COMMAND name: this way, the global procedure appearance is not changed.
- 4) Messages
Added: CVRF063 / F064 / F162 / F217 / F21B / F262 / F280 / F283.
Enhanced: CVRF042 / F060 / F260, CVR1019 / 1022.
- 5) Support PLAM library types other than J.
Besides the standard PLAM library types, customers can create their own types; SDF-CONV allows to read and to create elements of such types.
- 6) Commands conversion.
/LOGON can be converted to /SET-LOGON-PARAMETERS from BS2000/OSD V1.0.
- 7) Generate commands in ACCEPTED form
- 8) Prefix keyword values with '*' in INVARIANT/ACCEPTED form.
- 9) Highlight procedure parameters during /BEGIN-PROCEDURE generation.
The procedure parameters are generated at the beginning of next line to enhance the readability and to reduce the size of the generated value for the PROCEDURE-PARAMETERS operand. This avoids reaching the limit of 1800 characters when formatting with leading blanks during conversion.
- 10) Full logging of SDF error messages.
The previous version did only log the 256 first digits of the SDF error messages. Now, the full error message is logged.
- 11) No more empty output cataloged files/library elements.
Sometimes the conversion can end before any record is written to the output file i.e. the output is empty. Only files/library elements that are not empty are kept.
- 12) Different statement and command continuation character.
The SDF command /MODIFY-SDF-OPTIONS CONTINUATION=OLD/NEW defines the allowed positions of the continuation character in NOT-S-procedures for the commands but not for the statements. To be "continued", statement lines only need to have a '-' trailing, without position constraints, like data.

2.7 SDF-SFC V3.1

Adaptations to SDF V4.1

2.8 VAS V2.4

*02 Improved check of requested SSTA size for complex SSTAPUT assignments.

2.9 DISPLAY V1.1

The DISPLAY V1.1A subsystem allows non privileged users access to the full output scope of selected SHOW commands without having to grant these users additional privileges. Only a few security-relevant SHOW commands are excluded.

However, to ensure security and compatibility, the supplied standard configuration only provides the basic mechanisms required. No functional commands for accessing privileged information are provided. It is up to the system administrator to decide which users have access to which SHOW commands according to the prevailing requirements.

3 Technical information

3.1 Resource requirements

3.1.1 SDF V4.7

At runtime, the following memory areas are required in the system and user address space:

ca. 0.5 Mbyte static

at least 5 Mbyte of dynamic system memory, depending on the complexity of the opened syntax files (single object size can be up to 250 Kbytes!) and of the objects read from these files.

Memory classes: 4 & 5

3.1.2 SDF-P-BASYS V2.5

To run SDF-P-BASYS, the following amount of memory is required in the system and user address spaces:

ca. 0.2 Mbyte of dynamic system memory. 0.2 Mbyte must be added for each nested procedure call. Additional memory is also required for variables and streams.

Memory class: 5

3.1.3 SDF-I V4.1

At runtime, the following memory areas are required in the system and user address spaces :

ca. 2 Mbyte of dynamic user memory

Memory class: 6

3.1.4 SDF-PAR V1.1

At runtime, the following memory areas are required in the system and user address spaces :

ca. 0,5 Mbyte of dynamic user memory

Memory class: 6

3.1.5 SDF-CONV V3.0

ca. 8,8 Mbyte static disk space

ca. 0,5 Mbyte of dynamic user memory

Memory class: 6

3.1.6 SDF-SRV V3.1

At runtime, the following memory areas are required in the system and user address spaces :

ca. 0,5 Mbyte of dynamic system memory

Memory class: 5

3.1.7 SDF-SFC V3.1

At runtime, the following memory areas are required in the system and user address spaces :

ca. 0,5 Mbyte of dynamic user memory

Memory class: 6

3.1.8 VAS V2.4

At runtime, the following memory areas are required in the system and user address spaces:

ca. 0,1 Mbyte of dynamic system memory

Memory class: 5

3.1.9 DISPLAY V1.1

The DISPLAY subsystem has no minimum system requirements, apart from those required for running BS2000. The static disk space required for the subsystem files is approximately 500 PAM pages.

ca. 0,01 Mbyte of dynamic system memory

Memory class: 4

3.2 Software configuration

3.2.1 Necessary environment

BS2000/OSD V7.0 or OSD/XC V3.0 or higher is required for SDF V4.7.

FHS-TPR V8.2D requires

BS2000/OSD	V1.0	or higher
IFG	V8.1A	or higher

TIAM	V10.0A or higher
VTSU-B	V11.0A or higher
XHCS-SYS	V1.0A or higher

SDF-CONV requires the JV software product.

3.2.2 Requirement for specific functions

SDF-P-BASYS V2.5 needs JV V11.0 or higher.

3.3 Product installation

Installation of the product SDF with the IMON installation monitor is mandatory. You must follow the information concerning installation in the delivery cover letter and in the product documentation as well as the information in this Release Notice.

Before calling IMON, you must carry out the actions listed in the delivery cover letter as installation requirements.

The necessary inputs and the sequence of the installation are described in the IMON documentation.

After successful installation of the product with IMON you have to carry out the actions listed in the delivery cover letter.

After successful installation of the product with IMON you have to carry out the following actions:

3.3.1 Installation of SDF V4.7 syntax files

To migrate from SDF 041 or 042 to SDF 047, the parameter file SYSPAR.SDF.041 (or .042) must be copied on the SYSPAR.SDF.

The syntax file of SDF must be activated as the basic system syntax file in the parameter file.

The syntax file containing all basic BS2000/OSD must be activated as the first subsystem syntax file.

The product SDF-PAR V1.1 must be used to modify the standard parameter file SYSPAR.SDF:

```
//OPEN-PARAMETER-FILE SYSPAR.SDF, MODE=*UPDATE
//MODIFY-SYNTAX-FILE TYPE=*SYSTEM, -
//          NAME=$TSOS.SYSSDF.SDF.047
//MODIFY-SYNTAX-FILE TYPE=*SUBSYSTEM (SUBSYSTEM-NAME=BS2CP), -
//          NAME=$TSOS.SYSSDF.BS2CP.xyz
```

3.3.2 SDF-U

For compatibility, the program SDF-U must be copied to its original name:

```
/COPY-FILE SYSPRG.SDF-U.041, SDF-U
/MODIFY-FILE-ATTRIBUTE SDF-U, USER-ACCESS=*ALL-USERS
```

3.3.3 SDF-I

For compatibility, the SDF-I program must be copied to its original name:

```
/COPY-FILE SYSPRG.SDF-I.041, SDF-I
/MODIFY-FILE-ATTRIBUTE SDF-I,-
/          USER-ACCESS=*ALL-USERS
```

3.3.4 SDF-PAR

The starting procedure of the SDF-PAR program must be renamed:

```
/MOD-FILE-ATTR SYSPRC.SDF-PAR.011.112, -
/          NEW-NAME=SYSPRC.SDF-PAR.011, -
/          USER-ACCESS=*ALL-USERS
```

3.3.5 SDF-CONV 3.0A

The following actions must be executed to install SDF-CONV 3.0A:

1) DSSM catalogue

A new BS2000 SSCM catalogue must be generated with the following file:

```
SYSSSC.SDF-CONV.030
```

Use it as input for SSCM, then add and start the subsystem explicitly.

2) Messages file

The message file must be shareable

```
/MOD-FILE-ATTR SYSMES.SDF-CONV.030, USER-ACCESS=*SPECIAL
```

3) OML and rep file

The rep files and OML's must be installed with the names:

```
SYSREP.SDF-CONV.030
SYSLNK.SDF-CONV.030
```

4) Syntax files

The SDF-CONV syntax files must be shareable:

```
/MOD-FILE-ATTR SYSSDF.SDF-CONV.030, USER-ACCESS=*SPECIAL
```

```
/MOD-FILE-ATTR SYSSDF.SDF-CONV.030.USER.U.CMD, USER-ACCESS=*ALL
/MOD-FILE-ATTR SYSSDF.SDF-CONV.030.USER.S.CMD, USER-ACCESS=*ALL
```

3.3.6 DISPLAY

Regardless of the type of installation, it must be noted that the supplied DISPLAY subsystem syntax file contains only the CREATE-DISPLAY-CMD and DELETE-DISPLAY-CMD commands for security reasons.

New DISPLAY commands must be entered in the syntax file to allow the subsystem to be used (see section 3.4, "Product use").

3.4 Product use

3.4.1 SDF-CONV V3.0

For a standard conversion, the next statement is generally used:

```
//CONVERT FROM-FILE=..., TO-FILE=... [, PROCEDURE-FORMAT=*S-PROC]
```


3.4.2 DISPLAY V1.1

The users who can access the DISPLAY subsystem services and the commands they can use are defined in the subsystem syntax file (SYSSDF.DISPLAY.011). A DISPLAY-xxx command with identical operands must be entered there for each SHOW-xxx command to be made available to a non-privileged user.

The entry is to be made with the supplied CREATE-DISPLAY-CMD command. A separate call is required for each DISPLAY command to be entered. The process must be repeated if changes occur to the SHOW command, e.g. after a version update.

The DISPLAY command created in this way corresponds to a copy of the SHOW command without any operand changes. This copy must be recreated each time syntax file changes are made to the SHOW command (e.g. after a BS2000 version update).

If the functionality of the SHOW command is to be restricted or, conversely, if operands or values whose use with the SHOW command are restricted are also to be granted, the DISPLAY command must subsequently be edited with SDF-A. The following actions are permissible:

- Deleting optional operands:
optional operands of a DISPLAY command may be completely deleted. Such operands are internally assigned the default value valid for the SHOW command.
- Changing the privileges of operands and operand values:
separate operands and operand values can be assigned individual privileges to restrict their use to specific users of the command.

The following applies to the DISPLAY command:

As long as a permissible input option remains for all users, the default privileges of an operand or operand value may be restricted as required. However, they may only be extended if they include at least one of the privileges TSOS and PRINT-SERVICE-ADMINISTRATION.

- Changing the default:
As long as it is syntactically correct, default values for DISPLAY command operands may be deleted (i.e. the operand is made mandatory), changed or reentered (i.e. a mandatory operand is made optional).
- Restricting the value range:
The permitted value range of an operand may be restricted by deleting or suitably modifying the default options (e.g. forbidding wildcards in file names).
In particular, attention should be drawn to the option of replacing general data types with a list of the actually allowed values (e.g. replacing the data type name_1..8 for a user ID with the ID names X, Y and Z for which the command is to be permitted).

It is particularly recommended to make use of the list-option when granting security-critical commands such as SHOW-FILE (file may contain passwords) or SHOW-JV-ATTRIBUTES (output of passwords with INF=*ALL).

The commands and statements with which the syntax file is created should also be stored as a procedure. This simplifies reconstruction after a version update.

A DISPLAY-xxx command created in this way then behaves as follows in comparison to the SHOW-xxx command from which it was derived:

- The text output (after SYSOUT/SYSLST) corresponds exactly to the output which the SHOW command would supply under an ID with the SRPM privileges TSOS and PRINT-SERVICE-ADMINISTRATION.

- With normal execution, the command return code and SPIN-OFF behavior is also the same as that of the SHOW command. If internal errors occur during execution, the main code DSP0001 "Internal error" occurs instead; subcode1 / 2 are 32 / 0 in this case.
- Structured output in an S-variable only occurs if explicitly requested with /EXECUTE-CMD (DISPLAY-xxx), STRUCT-OUT= <variable>. There is no output in the SYSINF variable stream.

3.5 Discontinued functions (and functions to be discontinued)

None.

3.6 Incompatibilities

SDF V4.7 is fully compatible with SDF V4.1.

SDF-P-BASYS V2.5 is fully compatible with the previous versions except for the following restrictions:

1. a print control character (a space) is added in front of each record output by the SHOW-VARIABLE command on SYSLST. The incompatibility concerns only the SHOW-VARIABLE command when OUTPUT=*SYSLST; it allows a correct printing of the SYSLST file by means of the command /PRINT-DOCUMENT *SYSLST.

Following incompatibility is introduced in SDF-CONV V3.0:

- Input procedures must mandatorily start with a command.
Up to SDF-CONV V2, the first procedure record had no matter. From SDF-CONV V3, input procedures must be identified as NOT-S or S-PROC; this is mandatory to direct the conversion. The procedure is NOT-S if the first line is a command named /PROCEDURE or /BEGIN-PROCEDURE or /LOGON or /SET-LOGON-PARAMETERS.
The procedure is S-PROC if the first line is a command not pertaining to the upper list. The procedure conversion is aborted if the first line is not a command line.

3.7 Restrictions

3.7.1 SDF

None

3.7.2 SDF-PAR

Special restriction: One and only one parameter-file can be opened at a time. This feature is common to both user- and program-interface.

3.7.3 SDF-CONV

- The input must be a well-running procedure.
- Even if REPLACE-OLD-FILE=YES, the output file name must differ from the input one.
- NOT-S command lines are evaluated on their 72 first characters.
- Card reader commands are no longer supported; they are thus not converted.
- Procedure parameters can bring limits to the conversion.
- Context dependent ISP commands are not converted.
- S-PROC parameters cannot be as long as NOT-S ones.
- The logging conversion from NOT-S to S-PROC is performed, although it leads to a different procedure behavior.
- Batch jobs cannot be converted to S-PROC forms.
- NK4-able: partially (all except the rep file)

3.7.4 VAS

Generation of the parameter list for the macros SSTAGET, SSTADEL and SSTAMOV is completed with MF=E

3.7.5 DISPLAY

The DISPLAY subsystem may not be used in a secure system according to F2/Q3 specifications.

The products SDF-A is required for configuring DISPLAY subsystem.

The DISPLAY mechanism cannot be used on commands defined with CMD-ALLOWED = NO.

For security reasons, the DISPLAY mechanism cannot be used on:

- the SHOW-USER-ATTRIBUTES command
- information whose SHOW output is linked to privileges other than TSOS or PRINT-SERVICE-ADMINISTRATION.
- commands defined with CMD-ALLOWED=YES (UNLOAD=YES)

When granting other security-relevant commands such as SHOW-FILE (file may contain passwords) or SHOW-JV-ATTRIBUTES (passwords are output with INF=*ALL), it is strongly recommended to make use of the protective measures described in section 3.4, "Product use".

Furthermore, the DISPLAY syntax file should not be maintained by the users. Incorrect entries present a massive danger to the entire system!

After modifying syntax file entries for a SHOW command from which a DISPLAY command is derived (e.g. after a BS2000 version update), the syntax file entry for the DISPLAY command concerned must be recreated.

The contents of the structured output created by DISPLAY commands in S variables correspond to those of the SHOW command from which they were derived (see the description in the BS2000 "Commands" manual).

However, in contrast to SHOW commands, DISPLAY commands do not write to the SYSINF variable stream. They only create their structured output upon explicit request with /EXECUTE-CMD (DISPLAY-xxx), STRUCTURE-OUTPUT = <variable>

3.8 Procedure in the event of error

If an error occurs, the following error documents are needed for diagnostics:

- BS2000/OSD version
- CONSLOG
- output of /SHOW-SDF-PARAMETERS and /SHOW-SYNTAX-VERSIONS
- SLED, system dump or user dump of the affected task.
- SERSLOG
- Active syntax file (system/group/user) in error condition
- SYSOUT/SYSLST protocols
- A complete description of the input (procedure/enter file or dialog input trace).
- It is also important to say if the problem can be reproduced and, if yes, how to reproduce it.

The error must be reported to the appropriate service provider. A PERLE error report will be opened for Second Level Support.

A Tele-service connection with call-back option or an AIS Connect access is essential for diagnostics. [If this is not available, the service provider is entitled to invoice additional services rendered.]

3.8.1 SDF-CONV

The following additional information aids diagnosis:

- Used SDF and SDF-A versions
- input file
- options specified in the //CONVERT statement.
- *SYSLST and *SYSOUT protocol if any.

3.8.2 DISPLAY

The following additional information aids diagnosis:

- Used SDF and SDF-A versions
- Was the configuration modified in any way before the problem occurred (new command entered into the DISPLAY syntax file, new version of a product employed, new corrections taken over, etc)?

CAUTION:

If problems occur with DISPLAY commands which previously worked without error, a check should be made to ensure that the syntax file in which the corresponding SHOW commands are defined has not been modified in the meantime.

If it has been modified, the entry for the DISPLAY command must be recreated (see section 3.4, "Product use")!

4 Hardware support

- *02 The product BS2GA.SDF can be used on all servers supported by the BS2000/OSD version or OSD/XC version which is in use.