
FUJITSU Software BS2000/OSD-BC

Version V8.0A
November 2015

Release Notice

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1 General

This Release Notice is a summary of the major extensions, dependencies and operating information with respect to the delivery components of the BS2000/OSD-BC *) V8.0 that are contained in the following technical delivery units:

'BS2GA.APACHE V8.0',	'BS2GA.BS2OSD V8.0',	
'BS2GA.CRTE-BAS V8.0',	'BS2GA.DSSM V8.0',	'BS2GA.IMON V8.0',
'BS2GA.JENV V8.0',	'BS2GA.LLMAM V8.0',	'BS2GA.PLAM V8.0',
'BS2GA.POSIX V8.0',	'BS2GA.SDF V8.0',	'BS2GA.SIR V8.0',
'BS2GA.SPOOL V8.0',	'BS2GA.STRT V8.0',	'BS2GA.WTOSD V8.0'

- *15 The contents relate to release level November 2015.
- *15 Changes to release level April 2015 are marked with *15
- *14 Changes to release level December 2014 are marked with *14
- *13 Changes to release level November 2014 are marked with *13.
- *12 Changes to release level July 2014 are marked with *12.
- *11 Changes to release level May 2014 are marked with *11.
- *10 Changes to release level November 2013 are marked with *10
- *9 Changes to release level May 2013 are marked with *9.
- *8 Changes to release level November 2012 are marked with *8.
- *7 Changes to release level June 2012 are marked with *7.
- *6 Changes to release level November 2011 are marked with *6.
- *5 Changes to release level May 2011 are marked with *5.
- *4 Changes to release level November 2010 are marked with *4.
- *3 Changes to release level June 2010 are marked with *3.
- *2 Changes to release level November 2009 are marked with *2.
- *1 Changes to release level May 2009 are marked with *1.

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

The following Release Notices of the technical delivery units that are shipped with BS2000/OSD-BC V8.0A must also be noted when using the product:

- *15 SYSFGM.APACHE.022.E
- *15 SYSFGM.CRTE-BAS.018.E
- *9 SYSFGM.IMON.033.E
- *15 SYSFGM.JENV.080.E
- *15 SYSFGM.POSIX-BC.080.E
- *5 SYSFGM.SDF.047.E
- *15 SYSFGM.SPOOL.049.E
- *15 SYSFGM.WEBTRANS-OSD.075.E
- *3 The Release Notice SYSFGM.OSDXC.041.E and SYSFGM.OSDXC.040.E must also be observed for SX and SQ servers.

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 be noted.

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Modified Release Notice structure

*2 Up to now a separate Release Notice was provided for the release units
 *2 BINDER, BLSSERV, PTHREADS, RMS, ELSA and PRSC and for the technical delivery
 units DSSM, LLMAM, SIR and STRT.
 These Release Notices will no longer be created in future; functional changes in the
 respective components are described in this Release Notice.

1.1 Ordering

BS2000/OSD-BC V8.0 can be ordered from your local distributors and the general terms
 and conditions for the contract concerning the product use and support of software prod-
 ucts are valid for the BS2000/OSD-BC V8.0.

1.2 Delivery

The BS2000/OSD-BC V8.0 files are supplied via SOLIS.

BS2000/OSD-BC V8.0 components

The following release units (RU) of the technical delivery units (DU) are part of the deliv-
 ery scope of the BS2000/OSD-BC V8.0:

	<u>DU / RU</u>	<u>Version</u>	<u>Comment</u>
	<u>BS2GA.APACHE</u>		
	APACHE	2.2A	
*15	PERL	5.8A	
	TOMCAT	5.5A	
	<u>BS2GA.BS2OSD</u>		
	ACS	17.0A	
	ADAM	17.0A	
	AIDSYS	17.0A	
	AIDSYSA	17.0A	
*7	ANITA	18.0A	
	ASE	1.0A	
*6	ASSEMBH-GEN	1.3A	
*14	ASTI	2.0E	
*1	BINDER	2.6A	
	BLSSEC	17.0A	
*1	BLSSERV	2.8A	
	BS2CP	17.0A	
	BS2000-EXEC	17.0A	
	BUILDER	1.0A	
*7	C-TPR-LZS	2.6A	
	CALENDAR	17.0A	
	CALENDAR-TU	17.0A	
*15	CAPRI	2.0B	
	CCOPY	7.0A	
*7	CHDATES	1.0A	
	COSMOS-BC	17.0A	
	CPR	17.0A	
*15	C2H	1.0A	Utility program
*15	DAMP	4.8A	Utility program
	DCADITO	17.0A	Utility program
	DIV	17.0A	

	DIVTRAC	17.0A	
	DLMUSER	17.0A	
	DPAGE	17.0A	Utility program
	DWS	11.0A	
	ELFE	17.0A	Utility program
	ELSA	1.7A	Utility program
	FASTPAM	17.0A	
	FITC	7.0A	
	GCF	1.7A	
	GET-TIME	17.0A	
	GSMAN	17.0A	
	GSVOL	1.3A	
*14	HAP-OSD	1.0A	
	HELGA	17.0A	Utility program
	IDIAS	17.0A	
	INIT	17.0A	Utility program
	IOFCOPY	17.0A	Utility program
*6	IOGEN	17.0B	Utility program
	IORM	8.0A	
	IOTRACE	17.0A	Utility program
	JITSYS	5.0A	
*4	JMP	2.0C	Utility program
	JMU	14.0A	Utility program
	JOBSCHED	17.0A	Utility program
	JPROPT	2.6A	
	KDCMON	17.0A	
*15	LMSCONV	3.4C	Utility program
	LNM	17.0A	
	MIP	17.0A	
	MSCFANC	17.0A	
*1	MSGMAKER	1.2B	
	NDMDAMP	16.0A	
	NKISAM	17.0A	
	NKISTRAC	17.0A	Utility program
	NKS	17.0A	
	NKV	17.0A	
	NLMSERVE	17.0A	Utility program
*15	PAMCONV	12.1D	Utility program
*15	PAMINT	8.0C	
	PASSWORD	17.0A	Utility program
	PRSC	1.0A	Utility program
*7	PTHREADS	1.4A	
	PVSREN	4.0A	Utility program
	RESLOG	1.5A	
*14	REWAS	1.0A	
	RMS	7.1G	Utility program
*14	SANCHECK	3.0A	Utility program
	SCDM	8.0A	Utility program
*9	SHOW-FILE	17.1B	
	SMI	1.0A	
	SMPGEN-S	17.0A	Utility program
	SMPGEN-U	17.0A	
	SPACEPRO	1.0A	
	SPCCTRL	17.0A	Utility program
	STATUS	15.2A	
	SRPMNUC	17.0A	
*9	SYSFILE	17.2A	
	TANGBAS	1.5A	
	TANGRAM	1.5A	
	TPCOMP2	17.0A	Utility program

TPRLAM	17.0A	
TSOSLNK	21.0E	Utility program
TULAM	17.0A	
UTM-SM2	17.0A	
VOLIN	17.0A	Utility program
WARTOPT	17.0A	

BS2GA.CRTE-BAS

*15	CRTE-BAS	1.8G20
*15	CRTE-BASYS	1.8G20
*15	CRTE-MSG	1.8G20
*15	POSIX-HEADER	1.8G20

BS2GA.DSSM

*5	DSSM	4.3B	
	ROSI	17.0A	Utility program
	SSCM	2.3B	Utility program

BS2GA.IMON

*9	IMON	3.3A
*9	IMON-BAS	3.3A
*9	IMON-GPN	3.3A
*9	IMON-SIC	3.3A

BS2GA.JENV

*15	JENV	8.0A
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BS2GA.LLMAM

	LLMAM	3.4A
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BS2GA.PLAM

*4	PLAM	3.6A
*4	PMLOG	3.6A
*4	PMSYS170	3.6A

BS2GA.POSIX

	POSIX-ADDON-LIB	2.1A30
*15	POSIX-BC	8.0A43
*7	POSIX-NSL	8.0A43
*7	POSIX-SH	8.0A43
*7	POSIX-SOCKETS	8.0A43
	POSPRRTS	8.4A10

BS2GA.SDF

	DISPLAY	1.1A
	FHS-TPR	8.3A
*7	SDF	4.7D
	SDF-CONV	3.0B
*3	SDF-I	4.1C
*15	SDF-P-BASYS	2.5F
	SDF-PAR	1.1A
	SDF-SFC	3.1A
	SDF-SRV	3.1A
*3	SDF-U	4.1G
*7	VAS	2.4B

BS2GA.SIR

	SIR	17.0A
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BS2GA.SPOOL

*15	BS2ZIP	1.2H
	PRMMAN	1.4A
	PRMPRES	1.2A
*14	SNRTP	2.0C
	SPCONV	1.2A
	SPOOL	4.9A
*15	SPOOLSYS	2.3F
	SPSERVE	2.9B
	SPSRVMAN	2.4A

BS2GA.STRT

*7	IPL	17.0B
*7	SLED	17.0B
	STRT	17.0A

BS2GA.WTOSD

*15	WEBTRANS-OSD	7.5B
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You will find the delivery components for the separate release units listed in the SOLIS2 delivery letter together with the current file and data medium characteristics.

1.3 Documentation

- *7 The BS2000 documentation is available on DVD in German and English under the title
- *7 BS2000 SoftBooks.
- *7 The SoftBooks DVD also includes the Release Notices for the BS2000.
- *12 The documentation is also available on the internet at <http://manuals.ts.fujitsu.com> .
- *12 Manuals which are displayed with an order number can also be ordered in printed form.
- *7 There may also be some README files available for the manuals listed above. These
- *7 files contain modifications and supplements for the manual applying to each relevant
- *7 product.
- *14 README files are on the SoftBooks DVD and available online at <http://manuals.ts.fujitsu.com>.
- *7 The respective HW documentation is required for the use of HW peripheral devices.

Changes to the handbook structure in BS2000/OSD-BC V8.0

The two pocketbooks “Data Center” and the pocketbook “Commands” are no longer available. The information in these pocketbooks is available in other manuals.

The manual “Commands, Volume 6, S Variable”, has been dropped as a separate manual. The S-Variables with the respective SHOW-commands are described in the manual “Commands”.

*2 The manual “System Reports, Volume 1-3” has been replaced by a help system, which
 *2 is available both online and as a self extracting ZIP-archive for download on the manual
 *2 server. Both variants of the message help system are also available with the BS2000
 *2 SoftBooks DVD.

2 Software extensions

Only the main extensions and enhancements compared to the previous version BS2000/OSD-BC V7.0 are described in the following sections. Components, whose latest version only covers the support of the BS2000/OSD-BC V8.0, are not given a special mention.

2.1 Support of the new server line SQ-server

BS2000/OSD-BC V8.0 supports the new SQ100 servers of the SQ series with Intel X86 architecture as the hardware basis. As with the SX servers, the hardware abstraction layer X2000 is required in order to run BS2000 and its applications which, with the new SQ servers, are based on Linux.

The largest part of the operating system and the privileged concurrent system software is native ported to X86 hardware. Existing customer applications run in the /390 code on an unchanged, object-compatible basis. The /390 code is also generated as a standard feature for new applications.

The SQ server release is planned in several stages. The delivery release of BS2000/OSD-BC V8.0 (first stage) means that BS2000 operation on SQ servers will only be supported in native mode (no VM2000). The next stage sees the VM2000 released for SQ servers. The SQ server only provides support via FC or SCSI-linked bus peripherals; channels to SQ100 are not available. Further information about the SQ server is available in the Release Notice SYS-FGM.OSDXC.040.E.

*3 Details about the HW/SW architecture of the SQ server with BS2000 and X2000 are
 *3 described in the manual SQ Business Servers – Operation and Administration
 *3 (chapter 2 Architecture and strategies) http://manuals.ts.fujitsu.com/file/9718/sq_bv.pdf

2.2 Extended support of the Symmetrix DMX function TimeFinder/Snap

EMC offers the Symmetrix internal replication mechanism, TimeFinder/Snap, for Symmetrix DMX storage systems. Snapshot-oriented backup restore scenarios are supported in BS2000/OSD-BC V7.0 for the first time. The virtual copy of a Pubset, the so-called "Snapset", is used for the restore and consists of simultaneously created snap units for all volumes of the Pubset.

Snapsets are created and deleted by the administrator. The administrator can restore the complete pubset from the last snapset and the user can restore files or job variables from existing snapsets.

In BS2000/OSD-BC V8.0, the support of TimeFinder/Snap is extended by the following functions. The snapset function necessitates the use of SHC-OSD V7.0 in BS2000/OSD-BC V8.0.

Extension of the number of snapsets to 52

In BS2000/OSD-BC V8.0, the previous restriction of 26 snapsets for FBA disks has been extended to 52 snapsets. With daily backups, this now permits more than a month's coverage to be achieved using only snapset backups.

EMC-Microcode 5772 and SHC-OSD V7.0 are prerequisites for the use of up to 52 snapsets; EMC previously supported a maximum of 15 snapsets.

Note:

- A maximum of 26 snapsets can be used in the shared pubset operation of BS2000/OSD-BC V7.0 and BS2000/OSD-BC V8.0.
- If the snapset limit in BS2000/OSD-BC V8.0 is set to a value greater than 26, snapshots cannot be processed for this pubset during shared pubset operation with BS2000/OSD-BC V7.0.
- For CKD disks, the hardware-related limit of 15 snaps is still valid for each original unit.

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Extensions with the information functions

The increased number of snapsets is also supported by extensions in the information functions.

- With SHOW-SNAPSET-CONFIGURATION, in addition to the snapset ID the relative age of the snapset is displayed with a rating from -1 to -52.
- With SHOW-SNAPSET-CONFIGURATION, one line was output for each snapset until now. Due to the increased number of snapsets, two snapsets are now shown per line.
- With the LIST and RESTORE functions, an interval input can now be entered when selecting the snapset.

Program interfaces for snapsets

In BS2000/OSD-BC V8.0, the functions for listing and restoring the files and job variables for snapshots are also offered to the administrator and end users via program interfaces.

Considering snapsets with SRDF swap

In a contingency protection scenario with SRDF mirroring snapshots can be managed both in the source and in the target system. However, the snapsets are not mirrored by SRDF, snap copies are created locally on the source and target systems. When swapping to the mirrored Symmetrix with the HIPLEX-AF function "Autoswap" or the command "SET-REMOTE-COPY-ACCESS", the access to the snapsets assigned to the pubsets are not swapped.

The new command ADAPT-SNAPSET-ACCESS permits the swap for the snapsets assigned to the pubset to be mirrored. The command verifies whether the access to the snapsets in the same symmetrix box takes place as for the pubset. If not, currently connected snapsets are disconnected and the snapsets in the local Symmetrix box connected. This ensures that snapsets also remain available after an autoswap.

2.3 Performance improvements

2.3.1 Optimizing disk inputs and outputs

The disk data rate depends on the degree of I/O parallelism, the alignment of the data on the disk and the transfer length.

Parallel I/Os on a logical volume are made possible to S-servers through Parallel Access Volume (PAV) and to SQ and SX servers through Remote System Call (RSC).

In BS2000/OSD-BC V8.0, the internal transfer length is increased during sequential reading of the disk, thus further optimizing the backup to fast tapes (LTO).

Each of the transfer lengths for the various disks has been increased to the following values:

- D3475-8F from 32 to 80 PAM pages
- D3435, NK2 formats to Symmetrix from 80 to 240 PAM pages
- D3435, Nk2 formats to FibreCAT from 80 to 128 PAM pages

The larger internal transfer lengths from HSMS/ARCHIVE V9.0 are used, with the COPY-FILE command and with the disk memory reorganisation with SPACEOPT, through which the load on the CPU is relieved and runtimes improved.

2.3.2 Tape inputs and outputs on SQ servers via RSC

I/Os are executed on SQ servers by the X2000 CPU. Analogue to using RSC (Remote System Call) for disk I/Os, the RSC interface is also used for performance-relevant read/write I/Os on tape, in order to reduce the load to the X2000 CPU on SQ servers.

Compared to the SX servers, this reduces the load on the X2000 CPU for the tape I/Os on SQ servers and increases read/write throughput.

2.4 Support of the new LTO-4 tape drive and LTO-4 encryption

The device type LTO-4 is supported on a Quantum/ADIC library system on S and SQ servers on the FC channel in BS2000/OSD-BC V8.0, in addition to the current LTO device types LTO-1, LTO-2 and LTO-3.

*8 On SQ servers, LTO-4 can also be operated in an MTC tape library ETERNUS LT40 S2
*8 when connected via FC or SAS.

The maximum data rate of the LTO-4 devices is 120 MB/sec in contrast to 80 MB/sec with LTO-3 devices. The minimum data rate for streaming LTO-4 tapes remains the same as for LTO-3 tapes (30 MB/sec).

From a hardware point of view, LTO-4 drives support "tape encryption". Activated tape encryption reduces the data rate by a mere 1%.

In BS2000/OSD-BC V8.0, tape encryption is supported via extensions in the magnetic tape administration product MAREN V12.0. MAREN V12.0 handles key management, encryption and decryption. The encryption is performed according to the AES standard using a symmetrical 256-bit key.

Details are available in the Release Notice SYSFGM.MAREN.120.E.

Notes:

- If the high-performance LTO-4 devices are not connected via CentricStor, but directly to an S server, then a fast disk peripheral will be required that is connected via the FC channel.
- The “tape encryption” hardware feature can only be used in conjunction with a library system with direct connection of the LTO-4 devices, i.e. without CentricStor.
- LTO-4 drives are not supported on SX servers.

2.5 MAIL functions in BS2000/OSD-BC V8.0

In BS2000/OSD-BC V8.0, new mail functions are offered which allow system components and users to create e-mails or send files per e-mail directly from the system procedures.

The prerequisite for using the new e-mail function is the mail sender in the product interNet Services (SEND-MAIL).

Several commands have been extended and the new command MAIL-FILE introduced in order to implement the new mail functions.

- Specifying the e-mail address in the user ID

In BS2000/OSD-BC V8.0, each user can be assigned one or several e-mail addresses as a string, which is saved under the new entry EMAIL-ADDRESS in the user input of the ID.

The existing entry in the user ID “MAILING ADDRESS” is still used for dispatching Spoolout as before.

The new operand EMAIL-ADDRESS is supported in the commands ADD-USER, MODIFY-USER-ATTRIBUTES and SHOW-USER-ATTRIBUTES.

- MAIL-FILE

MAIL-FILE is offered as a command and macro interface so that BS2000 text files (SAM and ISAM files) can be easily sent. The actual transfer is via the MAIL-SENDER of the interNet Services product to the e-mail addresses specified in the user entry.

The file attribute CCS name of the BS2000 file to be sent is evaluated for automatic character set conversion.

- Mail dispatch of the system files *SYSLST and *SYSOUT

Analogue to the print output, MAIL-FILE offers the mail dispatch of the system files *SYSLST and *SYSOUT.

In BS2000/OSD-BC V8.0, the commands EXIT-JOB, CANCEL-JOB and ENTER-PROCEDURE have been extended in the output operands with the new value *MAIL. As an alternative to the printer output, this enables the system file to be sent as a mail, on a task-specific basis, to the e-mail address entered in the user ID.

With the new Class2 parameter SSMOUT, the standard value in the output operands of the commands EXIT-JOB, CANCEL-JOB and ENTER-PROCEDURE (new value: *STDOUT) can be switched from print (PRINT) to mail dispatch (MAIL). If mail dispatch is not possible, then the file is printed instead.

- Using the mail functions in the SW products

HIPLEX MSCF V6.0 offers mail dispatch via the SEND-MAIL interface for especially important system messages when critical conditions occur. The administration commands define when and to which address the mail dispatch should be made SET-MSCF-ENVIRONMENT and MODIFY-MSCF-ENVIRONMENT.

The MAIL-FILE interface is used in BS2000/OSD-BC V8.0 by the following products:

- HSMS V9.0 offers mail dispatch for HSMS reports.
- MAREN V12.0 offers dispatch per mail for all commands which create an output file.

Further information is in the Release Notices per product.

2.6 POSIX A41

In addition to supporting BS2000/OSD-BC V8.0, POSIX A41 also offers transparent access to BS2000 files from within POSIX as an essential new function using existing POSIX interfaces. This is made possible via another new file system type, bs2fs.

This entails the files or a number of files from a BS2000 user in POSIX being mounted in the position specified in the mount command. In order to process the files using POSIX resources, they are copied for the user as required (copy on demand) into a ufs container file system, available for this purpose only, and the file in the BS2000 disabled for the user. The POSIX user can now execute read and write operations on the file. When closing, the file is copied back to the BS2000 and deleted in the container.

The file system bs2fs provides powerful POSIX commands for the BS2000 files, such as the search function "grep" that is used for searching through files for specific patterns, or "make" which permits the creation of programs or program systems.

Procedures, which previously necessitated swapping between BS2000 and POSIX, can now be replaced by pure POSIX scripts. The bs2fs file system also simplifies the provision of BS2000 files in the web.

2.7 Extensions in DSSM V4.3

DSSM (Dynamic Subsystem Management) is the central instance in the BS2000 and is used for the dynamic management of subsystems.

In addition to supporting the SQ server, DSSM V4.3 also includes the following extensions:

- The REMOVE-SUBSYSTEM command also supports subsystems declared with MEMORY-CLASS=*BY-SLICE.
- On SX servers, the size specification is checked when a subsystem is loaded which has been declared with "**BY-SLICE". If odd values are detected, the size is automatically increased by 1.
For subsystems loaded during start-up, corrections are documented with the new message ESM0345.
No message is output if the subsystem is activated using ADD-SUBSYSTEM TYPE=*NEW-SUBSYSTEM,
The command MODIFY-SUBSYSTEM-PARAMETER checks the size specification and, if necessary, makes the correction without issuing a message.

- The command RELEASE-SUBSYSTEM-SPACE has been extended by the operand MEMORY-TYPE.
- On systems with BLSSEC, DSSM supports the message BLS0540 when loading subsystems. In this case, BLS supplies a return code and DSSM terminates the subsystem abnormally.

2.8 Extensions in SIR V17.0

The product SIR (System Install and Restore) is used to install a subset and offers basic services for the software delivery, such as copying files to a subset or to private disks from different sources.

In support of the new SQ server with X86 architecture, SIR V17.0 has the extension *X86 added to the command /CREATE-IPL-VOLUME in the operand HSI-TYPE.

SIR V17.0 runs as of BS2000/OSD-BC V6.0 and OSD/XC V2.0.

2.9 Utility Program ELSA V1.7

- *2 The utility program ELSA (Error Logging System Analysis) is used to prepare and
- *2 analyze error data saved by the system function HEL and the SVP (Service Processor).
- *2 The complete functionality of ELSA only is supported on S-Servers with /390
- *2 architecture.

2.10 Utility Program PRSC V1.0

- *2 The utility program PRSC is used for checking the Teleservice functionality in the
- *2 REMOTE-SERVICE BS2000 customer part.
- *2 The program PRSC is activated once a day by a REPEAT job to check the connection
- *2 path between SKPX or X2000 and BS2000.
- *2 Additionally a Remote Service Call will be sent in adjustable intervals to check the
- *2 remote path to the ServiceCenter.
- *2 PRSC logs these test calls in the log file RS.TESTCALL.PROTOKOLL.

2.11 Extensions in SSCM V2.3

- *2 By using the new value *BY-PROGRAM(...) in the SUBSYSTEM-ENTRIES operand of
- *2 the SET-SUBSYSTEM-ATTRIBUTES statement, the entries of the specified subsystems
- *2 are dynamically supplied at load time from the BLS name list.
- *2 The *BY-PROGRAM(...) setting concerned can be modified in the
- *2 MODIFY-SUBSYSTEM-ATTRIBUTES statement
- *2 With the new GENERATE-CATALOG-SOURCE statement, SSCM creates a file
- *2 containing a list of all SSCM statements which are required for (re)generating a
- *2 subsystem catalog.
- *2 The definitions of all versions of the specified subsystem can be deleted from the catalog
- *2 by specifying VERSION=*ALL in the REMOVE-CATALOG-ENTRY statement.

2.12 New functions in BS2000/OSD-BC V8.0A with Correction Package 2/2009

2.12.1 Extensions in SHOW-FILE V17.1A

*1 The SHOW-FILE command permits a file to be displayed on the screen without requiring
 *1 the user to load an editor program.
 *1 SHOW-FILE V17.1 also displays files with Unicode code sets UTF8, UTF16 and UTFE
 *1 and thus files in every character set supported by XHCS-SYS.

*1 To support Unicode three new statements have been introduced:
 *1 - CODENAME
 *1 - OFFSET
 *1 - TERMINAL

*1 The output formats have been adjusted to comply with Unicode character sets.

*1 The new statement VDT supports each of the four display formats F1, F2, F3 and F4 of
 *1 terminal type DSS 9763.

*1 The statement FIND has been extended by reverse search and an extended retrieval
 *1 strategy

*1 The behavior of positioning statements, especially when reaching the end or beginning
 *1 of the file, and the default values have been modified in some cases.
 *1 In some few points the SHOW-FILE output on the terminal has been extended and
 *1 modified.

*1 The display in the dump format was completely revised and adapted to existing formats
 *1 of other tools.
 *1 This was necessary for the layout of the new supported display formats.

*1 The description of the command SHOW-FILE will be updated in the manual BS2000
 *1 commands, volume 6.

2.12.2 Extensions in BINDER V2.6

*1 Diagnose options have been improved with BINDER V2.6
 *1 In statement RENAME-SYMBOLS the new parameter WARNING-MESSAGE has
 *1 been introduced in the structure of the operand SYMBOL-OCCURRENCE.
 *1 In case of a given value in OCCURRENCE-NUMBER exceeding the real number of the
 *1 occurrence of the symbol, the extended message BND2103 will be displayed.
 *1 In case the given value in OCCURRENCE-NUMBER is lower than the real number of
 *1 the occurrence of the symbol, the new message BND2106 will be displayed.
 *1 The messages BND2103 and BND2106 include five inserts, which allow a facile
 *1 identification of the causing RENAME-SYMBOLS statement.

2.12.3 Extensions in BLSSERV V2.8

*1 The possible values for MINIMUM/MAXIMUM of the operand RESIDENT-PAGES in the
 *1 commands LOAD-EXECUTABLE-PROGRAM and START-EXECUTABLE-PROGRAM
 *1 have been increased and adjusted according to the value range in the commands
 *1 ADD-USER and MODIFY-USER-ATTRIBUTES

2.12.4 Support for Symmetrix V-Max hardware

- *1 BS2000/OSD-BC V8.0A supports the V-Max series Symmetrix disk subsystems with
- *1 Microcode e5874 for connection to BS2000 via type FC channel.
- *1 Type S channel is not supported with Symmetrix V-Max.
- *1 The SHC-OSD V7.0 product serves for function support from BS2000.
- *1 The lowest required correction level is V7.0A01 (release effective in 09.2009).

2.13 New functions in BS2000/OSD-BC V8.0A with Correction Package 1/2010

2.13.1 Support of S210 and S175 BS2000 Business Servers

- *2 BS2000/OSD-BC V8.0 and VM2000 V9.0 support the new S175 and S210
- *2 Business Servers with /390 architecture. In addition the SANCHECK utility will be
- *2 extended for supporting the max. 8 IOPs of the S210 Business Servers.

2.13.2 Support for new ETERNUS DX410/D440 and DX8400/DX8700 hardware

- *2 The storage systems ETERNUS DX410/DX440 and DX8400/DX8700, connected to
- *2 BS2000 S-Servers via FC channel, are supported in BS2000/OSD-BC V8.0 with the
- *2 following restrictions:
- *2 - only RAID1 and RAID5 disks are supported.
- *2 - only one storage subsystem with a maximum of 512 Luns/port may be connected to a
- *2 single type FC channel.
- *2 - a ETERNUS DX FC-port, attached to a BS2000 FC channel, may not be connected
- *2 with any further BS2000- or other host.
- *2 - operation as shared pubset (HIPLEX MSCF) is not yet possible.
- *2
- *2 Removal of the above restrictions is planned for September 2010.
- *2 Operation of ETERNUS DX storage systems with BS2000 requires the new
- *2 Firmware version V20L47.

2.13.3 Extensions in SYSLST V17.1

- *2 Two new commands SET-SYSLST-READ-MARK and SET-SYSOUT-READ-MARK
- *2 are offered in order to enable online access to SYSLST and SYSOUT.
- *2 These commands set a "read mark" on the current end of the SYSLST resp. SYSOUT.
- *2 Further SYSLST/SYSOUT output is written behind the read mark without interruption.
- *2 If SYSLST/SYSOUT is assigned to a file, the content of the file prior the read mark is
- *2 accessible in read-only mode. There is no need to change the SYSLST/SYSOUT
- *2 assignment.

2.13.4 CONV2PDF: Conversion of text files to pdf

- *2 The new command CONVERT-FILE-TO-PDF enables converting cataloged SAM or IS-
- *2 AM BS2000 text files into "pdf files".
- *2 It is also possible to convert several text files into one single pdf file and insert
- *2 bookmarks between the individual input files.
- *2 For further processing the pdf files must be transferred to a PC and can there be viewed
- *2 with Acrobat Reader for example.
- *2 CONV2PDF is provided with the Release Unit SPOOLSYS V2.3B.
- *2 The description of the command CONVERT-FILE-TO-PDF is available online as a pdf
- *2 file stored on the manual server.

2.13.5 Extensions in PTHREADS V1.2

- *2 PTHREADS V1.2 supports the functions mmap, mprotect and munmap.
- *2 Note:
- *2 The use of PTHREADS V1.2A requires at least CRTE-BASYS V1.8D
- *2 PTHREADS V1.2A requires at least 256 MB virtual user address space.
- *2 PTHREADS V1.2A is prerequisite for using SCCA-BS2 as of V2.0A and SHC-OSD as of V7.0A.
- *2 PTHREADS is only released for internal use by these products, therefore the
- *2 documentation of PTHREADS is only provided by special request.

2.14 New functions in BS2000/OSD-BC V8.0A with Correction Package 2/2010

2.14.1 Enhancements in CONV2PDF

- *3 - Support of SPOOL parameters
- *3 Initially layout requirements could only be specified directly via presentation parameters
- *3 in the in CONVERT-FILE-TO-PDF command.
- *3 Now layout requirements can also be specified via SPOOL parameters, i.e. with the
- *3 same parameters and values as is possible within a PRINT command.

- *3 - Program interface
- *3 The function of the CONVERT-FILE-TO-PDF command is now available via an
- *3 Assembler program interface.

2.14.2 New features in IMON V3.2

- *3 IMON V3.2 introduces a parameter file SYSPAR.IMON that is used in the case that no
- *3 SYSPAR.IMON.<customer_code> parameter file is found

- *3 Customer specific installation parameters can be supplied within a parameter file named
- *3 SYSPAR.IMON.<customer_code> on the userid from which the installation is being
- *3 started. Special deliveries like pilot and test deliveries are not delivered using the
- *3 customer code, so the customer specific parameter file is not used for them.
- *3 As a consequence, these deliveries are routed into a special inventory.
- *3 As of IMON V3.2 the generic parameter file can be used instead of the customer specific
- *3 parameter file. So the customer can achieve that all deliveries including pilot and
- *3 test deliveries are processed the same way.
- *3 A new issue of the IMON manual will be published for IMON V3.2

2.14.3 Withdrawal of restrictions for ETERNUS DX Storage Systems

- *3 With correction package 2/10 the restrictions for the ETERNUS DX systems of the initial
- *3 support in May 2010 are withdrawn.
- *3 The actual firmware version for the ETERNUS DX systems is V20L50.

2.15 New functions in BS2000/OSD-BC V8.0A with Correction Package 1/2011

2.15.1 Support of the new LTO-5 tape drive

- *4 S- and SQ servers in BS2000/OSD-BC V8.0 support the new device type LTO-5 with
- *4 the same functionality as LTO-4 devices, including tape encryption, if connected to FC
- *4 channel.
- *8 On SQ servers, LTO-5 can also be operated in an MTC tape library ETERNUS LT40 S2
- *8 when connected via FC.
- *4 Release of Scalar i500 will be mid 2011. Scalar i6k and Scalar 10k will be supported
- *4 during second half of 2011.

2.15.2 PLAM V3.6: Performance Improvements

- *4 To improve the performance of the LMS statement REORGANIZE-LIBRARY
- *4 – especially for big libraries – in PLAM V3.6 the algorithm for the reorganisation of
- *4 libraries was changed.

2.15.3 Extensions in PTHREADS V1.3

- *4 The so far hidden administration command MAIL-DIAGNOSTIC-INFORMATION is now
- *4 available for all customers. This allows sending diagnostic information for a PTHREADS
- *4 application as a mail attachment.
- *4 PTHREADS V1.3 is prerequisite for using Oracle Management Agent 10g

2.15.4 Extensions in POSIX A41: new command edtu

- *4 Up to now only the edt command with the functions of EDT V16.6 existed in POSIX for
- *4 editing.
- *4 With the new command edtu all functions of EDT V17.0 in Unicode mode are available in
- *4 POSIX shell.
- *7 It is possible to process up to 22 POSIX files and process command output via pipes.
- *4 As the edt command, edtu is available on block terminals only and cannot be invoked
- *4 from sub-shells.
- *4 Further information is available in the Release Notice SYSFGM.POSIX-BC.080.E or in
- *4 the Readme file SYSRME.POSIX-BC.080

2.16 New functions in BS2000/OSD-BC V8.0A with Correction Package 2/2011**2.16.1 Support of new Hardware ETERNUS DX410 S2 and ETERNUS DX440 S2**

- *5 Since September 2011 DX410 S2 and DX440 S2 disk systems can be used with all
- *5 actual S- and SQ-Servers and also SX100-D and SX160, connected via FC channel
- *5 type.
- *5 With SHC-OSD V9.0 the ETERNUS DX replication functions Equivalent Copy (EC) and
- *5 Remote Equivalent Copy (REC) are supported for S- and SQ-Servers.
- *5 EC provides local mirroring at volume level and is comparable to Time Finder/Clone on
- *5 Symmetrix. REC provides remote mirroring comparable to SRDF on Symmetrix.
- *5 These features will not be available on SX-Servers.
- *5 Operation of ETERNUS DX410 S2 or DX440 S2 requires at least Firmware version
- *5 V10L13.
- *5 For SQ-Servers X2000 as of V5.2A0802 and for SX100-D / SX160 X2000 as of V4.0A04
- *5 are necessary.
- *5 For further information please refer to Release Notice SYSFGM.SHC-OSD 090.E

2.16.2 Extensions in CONV2PDF

- *5 - The command CONVERT-FILE-TO-PDF has been extended. Now library elements
- *5 can be converted to PDF files without extracting them from the library.
- *5 - Until now PDF files could be stored as SAM files only. The new command operand
- *5 FILE-FORMAT allows to store PDF files in PAM format. This functionality is also
- *5 available in the API.
- *5 - Lines, which are too long for the page width, are split in several lines during conver-
- *5 sion to PDF format. So far lines too long have been truncated.
- *5 Further information is available in the Release Notice SYSFGM.SPOOL.049.E

2.16.3 Extensions in BS2ZIP

- *5 - As of correction package 2/2011 BS2ZIP allows to transfer library elements directly to a ZIP-container without extracting them from the library first.
- *5 - The command START-ZIP-CONVERTER has been renamed into
- *5 START-SAM-PAM-CONVERTER.

*5 Further information is available in the Release Notice SYSFGM.SPOOL.049.E

2.16.4 Extensions in SYSFILE V17.1

- *5 - SHOW-SYSTEM-FILE-ASSIGNMENTS
- *5 Up to now SHOW-SYSTEM-FILE-ASSIGNMENTS provided information about the
- *5 SYSOUT / SYSLST assignment of the own task only.
- *5 With the extended command SHOW-SYSTEM-FILE-ASSIGNMENTS SYSOUT /
- *5 SYSLST assignments of foreign tasks can be identified too.
- *5 - SET-SYSOUT-READ-MARK / SET-SYSLST-READ-MARK
- *5 Both commands now display the filename assigned to SYSOUT / SYSLST.

2.16.5 Extensions in SDF V4.7C

- *5 - The messages CMD1000, CMD1100 and CMD1200 have two additional inserts:
- *5 "Interface" and "Returncode".
- *5 - The SDF syntax check of procedures via the EDT statement SDFTEST now also
- *5 accepts lines which contain commands separated by a semicolon.

*5 Further information is available in the Release Notice SYSFGM.SDF.047.E

2.16.6 Extensions in SDF-P V2.5C

- *5 - SELECT-VARIABLE-ELEMENT
- *5 - The permitted length of headlines has been increased from 80 to 240 characters.
- *5 - The selection row has been extended to 3 characters.

*5 Further information is available in the Release Notice SYSFGM.SDF-P.025.E

2.17 New functions in BS2000/OSD-BC V8.0A with Correction Package 1/2012

- *6 In Correction Package 1/2012 only error corrections are implemented.
- *6 The package contains no functional extensions for BS2000.

2.18 New functions in BS2000/OSD-BC V8.0A with Correction Package 2/2012

2.18.1 New subsystem CHDATES

*7 Up to now the changeover time between summer and winter time had to be entered in
 *7 the GTIME area of the system parameter file. The system parameter file is only read and
 *7 evaluated during system start. Therefore, to update the changeover time a restart and an
 *7 interruption to system operations were necessary.

*7 The new subsystem CHDATES enables future changeover times between summer and
 *7 winter time to be updated in the system during ongoing operation.

*7 Four new commands are provided for this:

- *7 - ADD-CHANGE-DATE
- *7 - MODIFY-CHANGE-DATE
- *7 - REMOVE-CHANGE-DATE
- *7 - SHOW-CHANGE-DATES

*7 The commands are described in the manuals BS2000 commands.

*7 Note:

*7 The changes initiated through the commands only have an effect until the end of the cur-
 *7 rent BS2000 session. They are not transferred to the system parameter file; this still has
 *7 to be edited manually.

2.18.2 Extensions in POSIX A43

*7 Amongst other things POSIX A43 implements following improvements:

- *7 - NFS connection of the BS2000 file system bs2fs
- *7 - Acceleration of POSIX shutdown
- *7 - New syslog-demon and new command "logrotate" for writing and changing logging
 *7 files during ongoing operation
- *7 - Improved output of the online help with command "man"
- *7 - IPv6-compatible "ping"-command

*7 You will find detailed information about all innovations to POSIX A43 in the Release No-
 *7 tice SYSFGM.POSIX-BC.080.E.

2.19 New functions in BS2000/OSD-BC V8.0A with Correction Package 1/2013

2.19.1 Extensions in BS2ZIP V1.2E

*8 The statement //ADD-FILE has been extended.
 *8 As of BS2ZIP V1.2E it is possible to delete the original files or PLAM library elements af-
 *8 ter adding them with //ADD-FILE.

*8 For further information please refer to the Release Notice SYSFGM.SPOOL.049.E.

2.19.2 Extensions in SDF-P V2.5E

*8 As of SDF-P V2.5E CLOSE-VARIABLE-CONTAINER also deletes the variable declared
 *8 inside the container.

*8 For further information please refer to the Release Notice SYSFGM.SDF-P.0425.E

2.20 New functions in BS2000/OSD-BC V8.0A with Correction Package 2/2013**2.20.1 Extensions in ASTI V2.0C**

- *9 In ASTI a sporadic deadlock situation can occur, e.g. when a task, which holds a central
 *9 ASTI lock is terminated abnormally. Then the functionality of ASTI is no more available.
 *9 In most cases this required a reboot of the system.
 *9 The new procedure SYSPRC.ASTI.020.RESET-LOCK permits to release this lock.
 *9 The procedure must be executed explicitly when a lock situation is suspected.
- *9 For detailed information please refer to the Readme file SYSRME.ASTI.020.E.

2.21 New functions in BS2000/OSD-BC V8.0A with Correction Package 1/2014

- *10 Besides a change request in BS2ZIP and corrections the correction package 1/2014
 *10 doesn't contain further functional extensions.

2.22 New functions in BS2000/OSD-BC V8.0A with Correction Package 2/2014

- *12 Besides corrections and a change request in BS2ZIP (enhancements of ADD-FILE
 *12 statement) the correction package 2/2014 doesn't contain further functional extensions.

2.23 New functions in BS2000/OSD-BC V8.0A with Correction Package 1/2015

- *14 BS2000/OSD-BC V8.0 (as of correction level A51) is part of the OSD/XC package
 *14 BS2000 OSD/XC V8.5 for the new SE server. On SE server BS2000/OSD-BC V8.0 is
 *14 only supported as a guest system under VM2000.

2.23.1 Last Byte Pointer (LBP) support

- *14 To support interoperability of file processing with open systems (UNIX/Windows), the
 *14 new attribute "last byte pointer" (LBP) is introduced in the catalogue entry of files.
 *14 In PAM files the last byte pointer (LBP) points to the last valid byte of the last logical
 *14 block of the PAM file. Thus later an application is able to extrapolate the file byte precise
 *14 after close and reopen.
 *14 To the user the extended functionality is visible on program level (FSTAT macro,
 *14 C-library functions) and in the output of SHOW-FILE. PAMCON, PAMINT and some
 *14 software products also support the last byte pointer (LBP).
 *14 Applications, which do not evaluate the LBP, are further fully supported.

***14 Notice:**

- *15 **LBP should not be used until all systems, with which data exchange occurs (e.g.
 *15 via shared pubsets, EXPORT-PUBSET/IMPORT-PUBSET or Filetransfer) have acti-
 *15 vated correction package 2/2015**
 *15 **For detailed information please refer to**
 *15 <http://docs.ts.fujitsu.com/dl.aspx?id=22aafa65-9393-4a28-95fd-4959fc6aa77d>

- *14 Files, which are generated in a system with LBP support, should not be processed in an
 *14 environment without LBP support.
 *15 Trying to copy files with LBP to private disks or tapes or to encrypt is rejected with
 *15 DMS0D09.

- *14 In BS2000/OSD-BC V8.0 the LBP functionality is supported with CRTE 2.8G as of cor-
 *14 rection package 2/2014.

*14 For data exchange and process (i.e. via shared pubset network, RFA, import/export of
*14 pubsets) with BS2000/OSD-BC V7.0B additional reps are required. These reps can be
*14 ordered from the BS2000 service.
*14 If applications in a network with BS2000/OSD-BC V7.0B determine the end of file by
*14 means of the last byte pointer (LBP), a special release is required for BS2000/OSD-BC
*14 V7.0B

2.23.2 Extensions in SANCHECK V3.0

*14 - Support of Brocade virtual fabrics
*14 - Support of NPIV-compatible F-ports on the FC switch
*14 - Showing SAN information on the SE Manager on the SE server
*14 - Preliminary activities to support the future function "Live migration on SE server"

*14 With the extensions in SANCHECK V3.0 the previous restrictions are withdrawn.

2.23.3 New subsystems REWAS and HAP-OSD

*14 The both new privileged subsystems REWAS and HAP-OSD support the functionality of
*14 SE servers. REWAS does not support S-Servers, on S-Servers the subsystem termi-
*14 nates with the message REW0001.
*14 REWAS uses the functionality of the internal product ASTI V2.0E. HAP-OSD requires
*14 the subsystem REWAS.

*14 Via REWAS .the communication between SE Manager and BS2000 components is pro-
*14 cessed, HAP-OSD monitors the state of a BS2000 guest system on the SE server.

2.23.4 New functions with ASTI 2.0E

*14 Besides source corrections and realization of change requests to support the new
*14 subsystem REWAS, the new messages SVTS030, SVTE030 and SVTS031 are
*14 implemented in ASTI 2.0E

2.24 New functions in BS2000/OSD-BC V8.0A with Correction Package 2/2015

2.24.1 Last Byte Pointer (LBP) support by the concerned software products

*15 As of correction package 2/2015 all software products support the last byte pointer
*15 (LBP). The LBP should not be used until all systems, with which data exchange occurs,
*15 have activated correction package 2/2015.
*15 For detailed information please refer to
*15 <http://docs.ts.fujitsu.com/dl.aspx?id=22aafa65-9393-4a28-95fd-4959fc6aa77d>

2.24.2 New utility program C2H for the technical support

*15 By means of C2H (Configuration to HTML) the configuration-, status- and diagnose
*15 information, as well as important system files of a BS2000 can be automatically written
*15 into a HTML-File and be displayed with a Web Browser after the transfer to a PC.
*15 C2H is installed in the userid \$SERVICE and is intended for the use by the technical
*15 support of Fujitsu.
*15 You will find information for the installation of C2H in chapter "Product Installation"

2.25 Implemented change requests / extended commands

2.25.1 Status information about common memory pools

The new command SHOW-MEMORY-POOL-STATUS provides information about the common memory pools currently available in the system. The output is made after SYSOUT and supplies a list of memory pool identifications (pool name, scope, user ID, group ID) together with the TSNs of all tasks linked to the pool. The output can be restricted to the memory pools of a specific name group, sharer group or restricted to specific attributes.

The privileged initiator also receives information about privileged memory pools.

2.25.2 Information and modification of NK-ISAM caches

Since BS2000/OSD-BC V6.0B all NK-ISAM pools are saved in data spaces. The maximum number of data spaces for task-spanning NK-ISAM-Pools is determined by the parameter MAXDSBN in the ISAM system parameter file. Values ranging from 1 – 127 can be specified, standard value is 2.

In BS2000/OSD-BC V8.0 two new commands permit information about NK-ISAM-Pools and, when required, caches can be created or switched off.

SHOW-ISAM-CACHING supplies information about the actual data spaces used for the task-spanning NK-ISAM-Pools, the respective created ISAM-pools and buffered files.

With MODIFY-ISAM-CACHING the system administration can dynamically increase or reduce the number of data spaces used by NK-ISAM.

2.25.3 Restricting console messages

The command SET-MSG-SUPPRESSION is used to suppress the output of messages on the console for specified message keys. This is possible for all types of messages which do not have to be answered.

During a system run, the output of up to 128 different message keys can be suppressed. In BS2000/OSD-BC V8.0, the previous limit of 128 message keys has been increased to approx. 1000 message keys. In order to keep the lock routes in the UCON task short when comparing the message outputs with the exceptions list, a new insert / scan strategy has been implemented.

2.25.4 ADD-MASTER-CATALOG-ENTRY

- Modified default value for Speedcat

In the operand START-SPEEDCAT, the current default value *NO has been changed to the new value *AUTOMATIC. If the product SCA (Speedcat) is installed, Speedcat is automatically started in the mode *SPEEDCAT-TASK when importing the pubset.

- New Operand PUBRES-UNIT

With the new operand PUBRES-UNIT, the Pubres mnemonic can be specified when setting up the MRSCAT. The system can thus automatically determine the physical configuration before importing the pubset for the first time.

2.25.5 Command extensions for the new mail function

In order to support the new MAIL-FILE functions, the following commands have been extended:

- ADD-USER / MODIFY-USER-ATTRIBUTES

Both commands have been extended with the operand EMAIL-ADDRESS. One or more e-mail addresses can be entered for one ID.

- SHOW-USER-ATTRIBUTES

The new operand EMAIL-ADDRESS is also considered when outputting the attributes.

- CANCEL-JOB / EXIT-JOB / ENTER-PROCEDURE

The commands have been extended with the operands *MAIL and *STDOUT for dispatching the system files *SYSLST and *SYSOUT via MAIL-FILE.

2.25.6 Further change requests

PVSREN V4.0

When a pubset is renamed all of the catalogue settings of the original pubset can now be included into the MRSCAT of the renamed pubset, e.g. including the settings for Speedcat.

SHOW-AUDIT-STATUS

The new command SHOW-AUDIT-STATUS provides information detailing which procedure units (e.g. tasks), HARDWARE-AUDIT or LINKAGE-AUDIT, are activated.

Recovery of pubset reconfiguration locks

Pubsets can be dynamically extended or scaled down. With the dynamic pubset reconfiguration, reconfiguration locks can in seldom cases hang up in the MSCF network. Until recently, the BS2000 had to be terminated in such cases in order to get a pubset fully operational again.

This system failure can be avoided using the following two commands for displaying and resetting the locks:

```
SHOW-PUBSET-LOCKS
REMOVE-PUBSET-LOCK
```

SMPGEN V17.0

Until now pubsets with paging files could not be included in an SM pubset using SMPGEN. SMPGEN V17.0 accepts paging files on pubsets as long as they are not labelled as active paging pubsets in MRSCAT.

BLSSERV V2.7

The number of memory pools, in which the user can save shared code with the macro ASHARE, was previously restricted for each user ID to 8 per application area (ENAMP-Operand SCOPE). With BLSSERV V2.7, the maximum number of useable memory pools has now been increased from 8 to 16 per application area.

COPY-FILE

With the new operand PROTECTION=*SAME-AND-CHANGE-DATE, the command COPY-FILE allows the protection attributes and the change date to be transferred from the source file to the target file, e.g. in order to clone an ID or a pubset.

2.25.7 Implemented change requests / Extended commands with Correction Package 1/2013

- *8 ASTI V2.0B: command-output in OPS-Variables
- *8 The internal product ASTI offers at the command interface the two information com-
*8 mands SHOW-ORDER-STATUS and SHOW-SERVER-STATUS.
*8 As of ASTI V2.0B the returned information of the both commands can be written in OPS-
*8 variables.

2.25.8 Implemented change requests / Extended commands with Correction Package 2/2013

- *9 Extended interface between POSIX and SYSFILE
- *9 The new decoupled SYSFILE interface SSMPOS enables POSIX to determine the
*9 complete SYSFILE environment of a task.
- *9 ASSIGN-SYSDTA: variable substitution within data records in procedures
- *9 So far no variable substitution inside data records was carried out within procedures,
*9 when SYSDTA was not assigned to SYSCMD. To allow substitution even then, when in
*9 procedures SYSDTA is assigned to a file, the command ASSIGN-SYSDTA has been ex-
*9 tended by the operand DATA-ESCAPE-CHARACTER.
*9 The operand is only allowed within S-procedures and may accept the values
*9 *COMPATIBLE / *STD / #&&' / #' / '@' / '\$'
*9 When reading a record of the file, a variable substitution is performed according the
*9 common rules if the data record contains one of these special characters.
- *9 Correction package 2/13 is required.
- *9 SHOW-FILE: scrolling in big files
- *9 For the statements +n, -n and Rn the allowed numerical data has been increased to
*9 2^{**63-1}. Thus SAM/ISAM –files with more than 2^{**31} records can be displayed. Record
*9 numbers are further represented by 10 characters. Record numbers greater or equal 10
*9 thousand million are cut. This is indicated by a #-character.

2.25.9 Implemented change requests / Extended commands with Correction Package 1/2014

- *10 BS2ZIP
- *10 As of BS2ZIP V1.2F the “ZIP64-Format-Extensions” are fully supported. This allows stor-
*10 ing more than 65535 elements in one zip archive.
*10 For further information please refer to SYSFGM.SPOOL.049.E.

2.25.10 Implemented change requests / Extended commands with Correction Package 2/2014

- *12 As of BS2ZIP V1.2G the file selection criterias for the ADD-FILE statement have been
*12 extended. For example is it now possible to list the names of the files in a file and specify
*12 this filename in the ADD-FILE statement.
*12 For further information please refer to SYSFGM.SPOOL.049.E

3 Technical information

3.1 Resource requirements

With respect to BS2000/OSD-BC V7.0, using BS2000/OSD-BC V8.0 requires approximately 1% more CPU performance.

Main memory requirements / Increased main memory requirements:

The recommended minimum main memory requirement for using BS2000/OSD-BC V8.0 depends on the model of the business server and has not changed with respect to BS2000/OSD-BC V7.0. The values from the Performance Handbook (section: Recommended values for S and SX servers) can be taken for previously released servers.

The additional static requirement compared with BS2000/OSD-BC V7.0 is 3 MB. The additional dynamic requirement is approximately 10 KB per task depending on the size of the user space allocated.

Before changing versions, you should clarify any additional installation-related resource requirements with your regional service.

Disk storage space:

You will find the disk storage space required by the SOLIS2 delivery for BS2000/OSD-BC V8.0 in the SOLIS2 delivery letter. In addition, you must also plan in the space required for the system files (PAGING-Area, TSOSCAT, CONSLOGs, SERSLOGs, etc.).

3.2 SW configuration

The following SOLIS correction levels are required in the source version for BS2000/OSD-BC V8.0:

BS2000/OSD-BC V7.0 (as of correction level A81) or

BS2000/OSD-BC V6.0 (as of correction level B81)

If systems running BS2000/OSD-BC V7.0 or V6.0 using shared resources are operated in parallel, this correction level must also be used on these systems.

To run a BS2000/OSD-BC V8.0 guest system under VM2000 V9.0 at least SOLIS correction level A81 is required.

*6 If systems running BS2000/OSD-BC V9.0, V8.0 and V7.0 using shared resources are
*6 operated in parallel, correction level A12 is required for all these systems.

*6 As of BS2000/OSD-BC V9.0 access to files on Net-Storage is supported. If pubsets with
*6 catalogue entries for files on Net-Storage are used in BS2000/OSD-BC V8.0 or V7.0, for
*6 example in a MSCF network, correction level A13 respectively B13 is necessary.

*14 For data exchange with other BS2000 systems – i.e. via RFA or MSCF – additional reps
*14 must be placed in BS2000/OSD-BC V7.0 due to the LBP support. These reps are sup-
*14 plied by the BS2000 service. Further a special release is required for BS2000/OSD-BC
*14 V7.0, if applications determine the end of the file via the LBP.

*14 For BS2000/OSD-BC V8.0 and BS2000/OSD-BC V9.0 correction level A51 is required.

When using BS2000/OSD-BC V8.0, new versions of many of the system level software products must also be used.

The following table shows the versions required for use under BS2000/OSD-BC V8.0.

Further information is also available online under

http://globalsp.ts.fujitsu.com/dmsp/Publications/public/wp_bs2000-osd-bc_v8_de.pdf

and in English under

http://globalsp.ts.fujitsu.com/dmsp/Publications/public/wp_bs2000-osd-bc_v8.pdf

	<u>Product</u>	<u>Version</u>	
*15	AID	V3.4	correction version
*14	ARCHIVE	V9.0 / V10.0	
*6	ASSEMBH	V1.2 / V1.3	
*5	AVAS/AVAS-SV	V8.0 / V8.5	
*15	C/C++	V3.2	correction version
	COBOL85	V2.3	
	COBOL2000	V1.4 / V1.5	
*6	COLUMBUS85	V1.0 / V1.1	
	COSMOS	V17.0	
*12	CRTE	V2.8G	
	DAB	V9.2	
	Distributed	V1.2	
	Print Services		
	DRIVE	V3.1	
	DRIVE/WINDOWS	V2.1	
	DRV	V3.2	
*15	EDT	V17.0	correction version
*14	ESQL-COBOL	V3.0	
*14	FDDRL	V17.0 / V18.0 / V19.0	
*14	FDDRL-OS	V17.0 / V18.0 / V19.0	
	FHS	V8.3	
	FMS	V2.4	
	FOR1	V2.2	
	HIPLEX AF	V3.3	
	HIPLEX MSCF	V6.0	
*14	HSMS	V9.0 / V10.0	
	IFG	V8.3	
*15	interNet Services	V3.3 / V3.4	correction version for V3.4
*15	JV	V15.0 / V15.1	correction version for V15.1
*15	LEASY	V6.2	correction version
*15	LMS	V3.4 / V3.5	correction version
	MAREN	V12.0	
	NFS	V3.0	
*2	OMNIS	V8.4 / V8.5	
*2	OMNIS-MENU	V3.4 / V3.5	
	OMNIS-PROP	V3.2	
	openCRYPT-SERV	V1.3	
*15	openFT	V10.0 / V11.0 / V12.0	correction version for V12.0
*15	openFT-AC	V10.0 / V11.0 / V12.0	correction version for V12.0
*15	openFT-CR	V10.0 / V11.0 / V12.0	correction version for V12.0
*15	openFT-FTAM	V10.0 / V11.0 / V12.0	correction version for V12.0
*15	openFT-FTP	V10.0 / V11.0 / V12.0	correction version for V12.0
*14	openNet Server	V3.3 / V3.4 / V3.5 / V3.6	
*14	openUTM	V5.3 / V6.0 / V6.1 / V6.2 / V6.3	
*14	openUTM-CLIENT	V5.3 / V6.0 / V6.1 / V6.2 / V6.3	
*14	openUTM-CRYPT	V5.3 / V6.0 / V6.1 / V6.2 / V6.3	
	openUTM-D	V5.3	
	openSM2(BS2000)	V8.0	
*7	Oracle	9i / 10g Release 2 / 11g Release 2	
	OSS(BS2000)	V4.1	
	PASCAL-XT	V2.2	
	PLI1	V4.2	
	PCS	V2.9	
*15	PERCON	V2.9	correction version
	PROP-TPM	V3.0	
	PROP-XT	V1.3	
	RAV	V5.1	
	RFA	V17.0	

	<u>Product</u>	<u>Version</u>	
*14	ROBAR	V6.0 / V6.5 / V7.0	
	RPG3/RPG3-XT	V4.0	
*15	RSO	V3.6	correction version
	SBA-BS2	V6.2	
	SCA	V17.0	
*8	SCCA-BS2	V2.0 / V2.1 / V2.2 / V2.3	
	SDF-A	V4.1	
*15	SDF-P	V2.5	
*8	SECOS	V5.2 / V5.3 / V5.4	
*14	SESAM/SQL-Server	V5.0 / V6.0 / V7.0 / V8.0	
*14	SESAM/SQL-DCN	V5.0 / V6.0 / V7.0 / V8.0	
*14	SESAM/SQL-LINK	V5.0 / V6.0 / V7.0 / V8.0	
*14	SHC-OSD	V7.0 / V8.0 / V9.0 / V10.0 / V11.0	
	SM2-PA	V2.0	
*12	SORT	V8.0	
	SPACEOPT	V5.0	
	SSA-OUTM-BS2	V5.0	
	SSA-SM2-BS2	V5.0	
	SSC-BS2	V6.0	
	TASKDATE	V17.0	
	TIAM	V13.2	
	TOMDOORS-M	V5.0	
	TOM-DOC	V3.2	
	TOM-GEN	V2.1	
	TOM-REF	V3.0	
	TOM-TI	V3.0	
*8	UDS-D	V2.4 / V2.5 / V2.6 / V2.7	
*8	UDS/SQL	V2.4 / V2.5 / V2.6 / V2.7	
	UDS-IQS	V4.0	
	VM2000	V9.0 (for S-servers and SX servers)	
*3		V9.5 (for SQ-Server)	
*7		V10.0 (for S- / SQ servers)	
	VTSU-X29	V1.5	
*3	WEBTRANS-UTM	V7.1 / V7.5	
*5	At least the correction level of the SOLIS delivery release from 07.06.2011 is required on the products of the software configuration.		
*15	The use of the Last Byte Pointer (LBP) requires correction level of the SOLIS delivery		
*15	release from November 2015 (correction level A52)		
*14	Note: Only product versions are supported, which have not reached end of support		

3.3 Product installation

*3 Installation of BS2000/OSD-BC V8.0 must be carried out with the IMON installation monitor. At least IMON V3.0 is required for installation. IMON V3.1 or V3.2 is required for the new servers of the SQ series.

The installation information provided in the delivery letter and in the manual or Release Notice for each relevant product should be noted.

The inputs required and the IMON installation procedure are described in the IMON manual (and any available README file).

New features in IMON V3.0

With IMON V3.0, delivery units that are parked on a key-formatted pubset can be installed on a non-key-formatted pubset.

Previously, the statement GENERATE-IDF displayed all the delivery units. Only the installed delivery units are now offered in the dialog.

As of IMON V3.0, the TASKLIB and MACROLIB can also be installed under a default user ID (DEFLUID system parameter) other than TSOS. The parameter ZVDEFSUP in the IMON parameter file must be set to "Y" for this.

Important note: if the parameter ZVDEFSUP is set to "Y", the two files \$TSOS.TASKLIB and \$TSOS.MACROLIB must be copied under the default user ID and deleted from under \$TSOS before the next IMON installation.

IMON V3.0 also contains advance features for future hardware platforms and BS2000/OSD-BC versions. IMON V3.0 also contains advance features for future hardware platforms and BS2000/OSD-BC versions.

New features in IMON V3.1

The decisive new feature of IMON V3.1 is the support of the new SQ series Business Server SQ100.

*3 New features in IMON V3.2

*3 IMON V3.2 introduces a parameter file SYSPAR.IMON, which allows the
*3 customer to process all deliveries including special deliveries in the same way.

*9 New features in IMON V3.3

*9 For installation of POSIX satellites a new item type "**NP" has been introduced, a combi-
*9 nation of "**NW" and „*PS“.

*9 As of IMON 3.3 it is possible to select for POSIX installations, if a complete POSIX in-
*9 stallation should be performed (Option ALL/YES) or only an update for already installed
*9 products (Option CFG).

*8 ASTI

*8 The subsystem ASTI manages the orders of MAIL-SERVICE in the files
8 \$TSOS.SYSQUE.ASTI and \$. SYS.<tsn>.<service-name>.<order-id>.
*8 The format of these files has changed and cannot be used with ASTI V2.0B.
*9 Therefore these files must be removed before migrate ASTI V2.0A to V2.0B or V2.0C.
*8 Subsystem ASTI must not be created.
*8 \$TSOS.SYSQUE.ASTI is created at start of the subsystem ASTI, if the file does not
*8 exist.

*8 Following procedure is recommended:

*8 STOP-MAIL-SERVICE
*8 STOP-SUBSYSTEM ASTI

*8 DELETE-FILE \$TSOS.SYSQUE.ASTI
8 DELETE-FILE \$. SYS.<tsn>.<service-name>.<order-id> (if existing)

CRTE-BASYS:

The subsystem CRTEBASY of the product CRTE-BASYS V1.8 is available as a runtime environment for BS2000-internal applications. This subsystem should only be preloaded if this is recommended in the Release Notice of another installed product.

By default the subsystem is loaded in upper class 4 memory. As an alternative, the subsystem can also be loaded below 16 MB in class 4 memory using the SYSSSC file with the extension LOW.

In addition, IMON copies the IC@RTSXS, IC@STLNK and IC@ULINK modules from the SYSLNK.CRTE-BASYS.018.CLIB library into the CLIB. If no \$.CLIB file exists on the source system it is created by IMON. This \$.CLIB can be used for programs which were compiled with C V2.0 or earlier.

The compatibility library SYSLNK.ILCS is also installed with CRTE-BASYS.

If a default user ID other than TSOS is used (DEFLUID system parameter), it should be noted that when installing CRTE-BASYS not all libraries are automatically installed under the default user ID. When the installation with IMON is completed, the \$TSOS.CLIB file must be copied to \$<default_user_ID>.CLIB.

- *3 If the product PTHREADS is used, PTHREADS as of V1.2A is required for running with
*2 CRTE-BASYS V1.8D.

PLAM

- *4 The SYSLNK.PMLOG.036 library must be available under the default user ID (\$.).
*4 If the default user ID is not TSOS, \$.SYSLNK.PMLOG.036 must be copied to \$TSOS.PLAMLIB, if products explicitly require the file \$TSOS.PLAMLIB.

PCA

The PCA subsystem is no longer supported as of BS2000/OSD-BC V7.0.
PCA must be uninstalled before converting from BS2000/OSD-BC V6.0 to BS2000/OSD-BC V8.0.

- *2 ELSA
*2 The standard installation userid for ELSA is \$SERVICE.
*2 The userid for installation is selectable, only SYSLNK.ELSA.017 must be installed in
*2 \$SERVICE.
*2 For product operation the privilege HW-MAINTENANCCE is required.
*2 Co-existence with other product versions is not possible.

PRSC

- *2 PRSC is used to forward messages on all BS2000 servers via remote service.
*2 The connection to the teleservice is carried out on
*2 - S servers via SKPX
*2 - SQ servers via X2000
- *2 PRSC is installed in BS2000 under the ID \$SERVICE, configured by the Fujitsu service
*2 and activated in agreement with the local contact person.
*2 For uninterrupted run of PRSC please make sure, that in the current BS2000 (under VM2000 only in the monitor system)
*2 - the enter job \$SERVICE.SYSENT.PRSC.010 is started as a daily repeat job.
*2 - a BCMAP entry is set for the communication with the teleservice center.
*2 (BCMAP FU=DEF,SUB=GLOB,NA=PRSCX,ES=<name>,PORT#=1156,
*2 PTSEL-I='PRSCX ')
*2 <name> here means the processor-name of the SKPX or of X2000 e.g. S210SKPX.
- *15 A separate BCMAP entry is necessary, if there exists a second SKP.

*15 C2H
 *15 By means of C2H (Configuration to HTML) the configuration-, status- and diagnose in-
 *15 formation as well as important system files of a BS2000 system can be automatically
 *15 written into a HTML-File. After the transfer to a PC the created HTML-file can be dis-
 *15 played with a Web Browser.
 *15 C2H is installed in the userid \$SERVICE and is intended for the use by the technical
 *15 Service of Fujitsu.

*15 The library \$SERVICE.SYSPRC.C2H.010 contains all, what is needed for C2H in
 *15 BS2000.
 *15 For detailed information about C2H please refer to the readme file, which is contained in
 *15 the ZIP archive \$SERVICE.SPCDAT.C2H.010.ZIP. For this please transfer the file
 *15 \$SERVICE.SPCDAT.C2H.010.ZIP with openFT or FTP in binary mode to your PC into
 *15 an optional folder.
 *15 If you are using openFT(BS2000) lower than V11.0A you first have to convert the file
 *15 \$SERVICE.SPCDAT.C2F.010.ZIP with START-ZIP-CONVERTER before being
 *15 transferred.

3.4 Product use

All conversion activities for BS2000/OSD-BC V8.0 are described in the manual BS2000/OSD-BC V8.0 Migration Guide.

A version change to BS2000/OSD-BC V8.0 is possible on the basis of BS2000 versions BS2000/OSD-BC V6.0 and BS2000/OSD-BC V7.0. A first-time installation of BS2000/OSD-BC V8.0 must be made for all earlier BS2000 versions. Configurations with BS2000/OSD-BC V6.0 and BS2000/OSD-BC V7.0 from HIPLEX MSCF V4.0 and openNet Server V3.1 are possible with a shared pubset network using MSCF.

For availability reasons, you are strongly advised not to perform an update installation on the active home pubset!

Certain hardware requirements must be fulfilled for a first-time installation: The installed hardware configuration must be a superset of the minimum configuration, i.e. it must include at least one business server with input/output system and operator terminal with associated service processor, plus one tape controller and disk controller with one tape device and two disk devices respectively.

Note: The CD drive of the SKP 3970-xx is supported as a tape device (device with type code E8) for reading CDs. This makes the CD usable as a data media for software deliveries.

Only a two character tape mnemonic is allowed for the CD drive of the SKP 3970-xx. This function is only offered as of hardware basis PRIMERGY 470 and as of SINIX-2000-Z V8.1A K818.4 and BS2000/OSD-BC V5.0C or PRIMERGY TX300-S3 with LINUX-based operating system.

You will find further information on using emulated tape devices on S and SX servers under

http://globalsp.ts.fujitsu.com/dmsp/Publications/public/wp_emulated-tapes.pdf

CALENDAR:

The public holiday file (file for managing public holidays) must be generated by systems support from the sample file \$TSOS.SYSDAT.CALENDAR.170.HOLIDAY or from an earlier public holiday file:

```
/COPY-FILE FROM-FILE=$TSOS.SYSDAT.CALENDAR.170.HOLIDAY,  
TO-FILE=$TSOS.SYSDAT.CALENDAR.HOLIDAY,PROTECTION=*SAME
```


MSGMAKER:

Files can be exchanged or included using either /COPY-MSG-FILES or /MERGE-MSG-FILES.

For performance reasons, large numbers of messages should be processed with MERGE-MSG-FILES. This command is not listed when MSGMAKER is started. However, by entering '?' in the 'command' field of the screen mask you can switch to guided dialog. The call can also be made via the batch interface. You must make sure that the output file is always empty.

BCAM memory values:

The values for the maximum size of the resident and paging memory for data transfers are calculated by BCAM at startup from the size of the system memory (BS2000 MEMSIZE system value). The relevant RESMEM and PAGMEM parameters should not generally be specified in the BCAM DCSTART, DCOPT and BCMOD commands, but should retain their values set by BCAM.

Memory monitoring can be activated with the BCAM BCMON command (RECORD=(RES-MEMORY,PAG-MEMORY)) and this allows detection of whether the current values reach the limits.

Any adjustments to the memory values should only be made in agreement with the first level support responsible.

SIR

A SIR version is generally coupled to a specific BS2000 version, which means that the following is always valid: Operating version <= target version.

This also means that a downgrade is not possible. With a downgrade, the user must either retain a bootstrap disk from the old version, or he must use the offline initial installation procedure for BS2000/OSD-BC V6.0 or V7.0.

- *15 The Last Byte Pointer (LBP) is not supported by the SIR function "copy from tape".
- *15 Therefore as of correction package 1/2015 SOLIS deliveries must be installed with
- *15 ARCHIVE. For this ARCHIVE is delivered as part of the FIRST installation tape.
- *15 Further information is also available under
- *15 <http://docs.ts.fujitsu.com/dl.aspx?id=22aafa65-9393-4a28-95fd-4959fc6aa77d>
- *15 The function "copy from disk" supports the LPB as of correction package 2/2014.

STRT

Since STRT V16.0, the file IPL-CONF is partitioned dynamically. This permits several start-up configurations to be stored in this file by various systems. The data format in the IPL-CONF file has become incompatible and is the reason why any IPL-CONF file existing on the IPL disk cannot be used from a version lower than BS2000/OSD-BC V7.0.

- *2 DSSM/SSCM
- *2 For compatibility reasons DSSM V4.3 supports all catalogue formats generated with
- *2 SSCM < V2.3B. It is possible to modify old catalogues and convert them into the SSCM
- *2 V2.3B format.
- *2 Catalogues generated with SSCM V2.3B may be used with DSSM as of V3.6.

Parameter service:

The following class 2 system parameters have been extended:

- SSMOUT

SSMOUT defines system-wide whether the system files *SYSLST and *SYSOUT should be sent per e-mail or printed as a standard feature.

SSMOUT can have the value MAIL or PRINT, the default value is PRINT.

The parameter SSMOUT can be changed dynamically.

- SHUTPROC

On SQ servers the BS2000 shutdown can be requested by X2000.

The new SHUTPROC parameter has been introduced in order to support this function. SHUTPROC can have the two values "BY-SHUTDOWN-CMD" or "BY-ENTER-JOB", the default value is BY-SHUTDOWN-CMD.

A SHUTDOWN requested by X2000 will be logged on the console.

With the setting "BY-SHUTDOWN-CMD", on request the system termination is performed in a dynamically created system task.

This corresponds to the operator command SHUTDOWN *END

With the setting BY-ENTER-JOB, an ENTER-JOB is started on system termination. The command file is expected under the name \$TSOS.SYSENT.SHUTDOWN and must include the command SHUTDOWN MODE=*NO / *END(RESTART=*NO) as the last command. The job is called under the ID specified in the command SET-LOGON-PARAMETER, which requires the privilege OPERATING.

The following class 2 system parameters have been omitted:

- None –

The following class 2 system parameters have been changed:

- BMTNUM

The previous standard value has been increased from 6 to 32

Changes in the parameter sets:

- Parameter set SRPM

New parameter

As of SECOS V5.2, the SECOS administration, which was hitherto split into several roles, can now be performed centrally through TSOS.

This authorization is defined in the SRPM parameter file with the new command "SECADM UNITED=NO/YES".

Hardware generation:

The product IOGEN is available for generating I/O configuration data. As of IOGEN V17.0, tape devices can be generated with DVC-Type CE (LTO-U4).

The I/O configuration file is only required for S-servers and SX-servers with channel peripherals.

3.5 Obsolete (and discontinued) functions

The following functions are no longer supported with effect from:

- Release Unit SNMP-LIGHT

SNMP-LIGHT is no longer supplied with the operating system BS2000/OSD-BC V8.0. The product has been discontinued.

Familiarizing yourself with SNMP is best achieved using the test systems of the BS2000-SNMP basic agent (Product: SBA-BS2).

- SW product Desk2000

Desk2000 is no longer part of BS2000/OSD-BC V8.0. The BS2000 PC workstation Desk2000 has been implemented in a client server architecture, which in the meantime has become obsolete and has seen an ever decreasing lack of acceptance as the BS2000 interfaces function was only supported on a selective basis. The product has thus been discontinued.

- Utility program SCDM

The S-Connection Director (SCD) has exceeded the end of maintenance period and, as of V8.0, can now only be used in BS200 in conjunction with a special release. The utility program SCDM used for operating the SCD is therefore no longer described in the manual utility programs.

The SCDM utility program itself is still provided as it can still be used by the service for diagnosing problems relating to the S-channel.

- *4 - Support of local subsystems in DSSM V4.3
- *4 Local subsystems are no longer supported in DSSM V4.3. The commands for support of
- *4 local subsystems are no more visible in SDF guided mode.

- *15 - Diagnose program DAMP

- *15 Remote diagnostics with DAMP V4.7 are no longer supported

The following function is supported for the last time in this version:

- Reduction of a dump file with DAMP V4.6

The DAMP function "Reduce Dumpfile" is being withdrawn and will be supported for the last time with BS2000/OSD-BC V8.0 / DAMP V4.6 on S and SX servers. The function is not available on SQ servers. It is no longer described in the Diagnostics Manual for BS2000/OSD-BC V8.0.

The DAMP function "Reduce Dumpfile" permits the size of a Sled or system dump to be reduced for the transmission (with the danger that relevant information required for the diagnosis is missing). The recommended method for transmitting extensive diagnostic files is to pack them into a zip file and send per e-mail.

3.5.1 Obsolete macros

- none -

3.5.2 Obsolete commands

- *4 - SET-SS-OPTIONS
- *4 The old DSSM command SET-SS-OPTIONS is discontinued. The function is provid-
- *4 ed with the equivalent command RELEASE-SUBSYSTEM-SPACE.
- *4 - Commands for support of local subsystems
- *4 The commands for the support of local subsystems are no longer available:
- *4 LOAD-LOCAL-SUBSYSTEM-CTALOG
- *4 START-LOCAL-SUBSYSTEM
- *4 STOP-LOCAL-SUBSYSTEM
- *4 UNLOAD-LOCAL-SUBSYSTEM-CTALOG

3.6 Incompatibilities with BS2000/OSD-BC V7.0

- Modified default value for starting Speedcat:

If the product SCA (Speedcat) is installed, Speedcat is started as of BS2000/OSD-BC V8.0 in the *SPEEDCAT-TASK mode as default when installing a pubset, thus ensuring high-performance catalog access with SF-Pubsets.

If Speedcat does not need to be started for a Pubset, this must be specifically set up in the catalogue entry by entering the operand START-SPEEDCAT=*NO in the command ADD-MASTER-CATALOG-ENTRY or MODIFY-MASTER-CATALOG-ENTRY.

3.7 Restrictions

- Unicode
Files with Unicode character sets cannot be processed in versions earlier than BS2000/OSD-BC V6.0B (correction level B62).

3.8 Procedure in the event of errors

General information on generating error documents

To successfully diagnose and eliminate software problems, error documents must be generated or saved to the extent required and at the earliest possible time. As far as possible, documents for the software problems should be provided in file form so that they can be processed with diagnostic tools.

In the case of reproducible errors you should describe exactly how the error can be reproduced. If possible, you should provide procedures, enter jobs, execution logs, etc., so that the error condition can be reproduced.

Information on the system environment

In addition to the error documents, the following general information is important for error diagnosis:

- Operating system version number and correction level of BS2000/OSD-BC (loader version and any modifications in BS2000).
- Version numbers of any subsystems, OSD-BC version-independent products or TU programs contributing to the problem together with their correction levels or REP files
- Information as to which system exits were active
- Information about the connected hardware peripherals

Document types

If an error occurs, the following documents are required depending on the error condition:

- SLED (following a system crash)
- SNAPFILE
- SYSTEMDUMP (following a system dump message)
- SYSOUT/SYSLST protocols
- STARTUP parameter files
- USERDUMP
- Diagnose dump (IDIAS call: CREATE-SYSTEM-DUMP <tsn>)
- SERSLOG file
- CONSLOG file
- System-Repfile
- Rep files of any subsystems involved and separate products
- HERSFILE and possibly IOTRACE for input/output problems or device error messages

User documents

Depending on the error boundary conditions, the following documents are required:
User files, tapes, procedures, job streams (including job class information), programs (source listing, load module and libraries, execution log for the process, printer logs, as far as possible in file form)

In the case of functional errors complete information on all commands, program inputs, etc., is essential.

Documents needed for special problems

For performance problems and problems in task management:

- Possibly COSMOS listing or tape or SM2 reports

For job management problems:

- SHOW-JOB-CLASS or SHOW-JOB-STREAM listing
- Compiler listing from your own scheduler
- SJMSFILE
- SYSTEM-JOBPOOL
- Entry in the user catalog of the user IDs affected
- In exceptional cases: diagnostic dump instead of SLED
- SCHEDLOG file

For problems in the binder loader system:

- If the error can be reproduced: libraries involved and phase
- With SHARE problems:
Consol protocol and dump of entire class 4 memory
- With ELDE problems: Phase

For SYSFILE management problems:

- Procedures/enter jobs in file form
- SYSOUT or SYSLST log

For NDM problems:

- NDMDAMP (PRODAMP procedure, see "Diagnostics Manual" DAMP)
- CONSLOG file

For BCAM problems:

- Activate all DCM traces with /DCDIAG DCM.,MODE=SAVE and after reproducing the error, save the generated trace files S.DCTRAC.* with /DCDIAG DCM.,MODE=CLOSE or submit the diagnostic information to main memory with /DCDIAG DCM.,MODE=HOLD and evaluate it with ASTRID

For problems at the hardware and software interface:

- HERSFILE
- Hard and software configuration
- Possible IOTRACE list.

For tape problems:

- If possible you should send in the original tape for error diagnosis, otherwise you should at least provide
A listing of all tape labels and the first data blocks
- SYSOUT log and CONSLOG file

For SPD problems:

- Dump of the VTOC area
- NDMDAMP
- CONSLOG files of all systems involved.

For IORM problems

- IORM dump
- CONSLOG file

If problems occur with the IORM DPAV, DDAL or IOLVM functions, under VM operation these documents are required from both the guest and the monitor system.

For DSSM problems

- CONSLOG file
- SERSLOG file
- Subsystem catalog
- SYSLST- / SYSOUT protocols
- DSSMLOG file (if available)

For STRT problem

- SLED (for IPL or startup problems)
- SLED from SLED (for SLED problem)
- Rep files for IPL, STRT, SLED and BS2000
To SX and SQ servers, possibly additional
- IOHDUMP
- IOSDUMP
- Traces of the device emulation

*2
*2
*2
*2
*2
*2

For PTHREADS problems

- Dump of the application
- SYSOUT protocol
- stderr protocol if running under POSIX
- LOGFILE of the internal LOGGING function (if existent)

Note: the internal LOGGING function requires at least a free isk space of 20 MB in a mounted POSIX file system.

Final note:

The above description does not contain any information on generating documents in conjunction with using BS2000 tracers. Please consult the reference manuals of the relevant tracers for this

4 Hardware support

*14 Note: Only that hardware is supported, which has not reached “end of support”

4.1 Business Server

4.1.1 Supported business servers

The following business servers are supported in BS2000/OSD-BC V8.0. A prerequisite for using BS2000/OSD-BC V8.0 on SX servers and SQ servers is the hardware abstraction layer X2000 with SOLARIS or LINUX as the carrier system

Supported S-Server:

*2 Business Server S165
 *2 Business Server S175
 *2 Business Server S200
 *2 Business Server S210

Supported SQ-Server:

*3 SQ Server with X2000 V5.1 (Basis LINUX SLES10/XEN) and
 *3 SQ Server with X2000 V5.2 (Basis LINUX SLES11/XEN)
 Business Server SQ100

*5 SQ Server with X2000 V5.2 (Basis LINUX SLES11/XEN)
 Business Server SQ200

*6 SQ Server with X2000 V5.3 (Basis LINUX SLES11 SP1/XEN)
 *6 Business Server SQ210 maximum 8 processors
 *6 No support of Live Migration and High Availability

Supported SE Server:

*14 On SE Servers BS2000/OSD-BC V8.0 as part of the OSD/XC V8.5 package is runnable
 *14 as a guest system under VM2000.

*14 SE700 with SU /390 and optional SU x86
 *14 SE500 with SU /390 and optional SU x86
 *14 SE300 with SU x86

*14 SU x86 requires abstraction layer X2000 V6.0A.
 *14 For further information see the special release notice SYSFGM.OSDXC.085.E.

Following servers have reached “end of support”:

*14 Business Server S120
 *14 Business Server S140
 *14 Business Server S145
 *14 Business Server S155
 *14 Business Server S170
 *14 Business Server S180
 *14 Business Server S190

*14 SX-Server with X2000 V3.0 (Basis SOLARIS V8)
 *14 Business Server SX100-A /-B / -C
 *14 Business Server SX140
 *14 Business Server SX150

*14 SX-Server with X2000 V4.0 (Basis SOLARIS V10)
 *14 Business Server SX160
 *14 Business Server SX100-D

The following versions of the HCP (Hardware Control Program) at least are required for using BS2000/OSD-BC V8.0:

	- E45L01G-01R+008	for Business Server S120	*
	- E40L01G-02R+084	for Business Server S140 and S170	*
	- E14L01S-02R+012	for Global Store SSU-4	
*2	- E60L02G-02N+026	for Business Server S145, S155, S180, S190	*
*2	- E16L02S-02N+004	for Global Store SSU-5	
*2	- E70L01G-01X+078	for Business Server S165 and S200	
	- E17L01S-01X+000	for Global Store SSU-6	
*2	- E80L01G-01S+005	or Business Server S175 and S210	

Notes:

If you want to use fibre channel, before using the HCP versions marked with *, a new generation with an IOGEN version as of V14.0C is mandatory (inhibition of I/O interface time monitoring).

The HCP version required for using BS2000/OSD-BC V8.0 can be obtained from your regional service.

4.1.2 Discontinued support

The following are no longer supported in BS2000/OSD-BC V8.0:

Business Server S110
 Business Server S115
 Business Server S130
 Business Server S135
 Business Server S150
 Business Server S160
 Business Server SX130

4.1.3 Extended support

- none -

4.2 Channels

4.2.1 Supported channels

All business servers supported by BS2000/OSD-BC V8.0 can be equipped with an FC channel.

(The IPL from FC channel is not possible on S120)

4.2.2 Discontinued support

- none -

4.3 FC switches

4.3.1 Supported FC switches

The following FC switches are supported by S-servers:

Model designation	Order number
Brocade 300	D:FCSW-300L, D:FCSW-300E
Brocade 3200	D:FCSW-8P2GB01
Brocade 3250	D:FCSW-8P2G3250, D:FCSW-8P2G3255
Brocade 3800	D:FCSW-16P2GB01
Brocade 3850	D:FCSW-16P2G3850, D:FCSW-26P2G3855
Brocade 3900	D:FCSW-32P2G3900
Brocade 4100	D:FCSWR-32P4100L, D:FCSWR-32P4100E D:FCSW-32P4116L
Brocade 4900	D:FCSW-64P4932L, D:FCSW-64P4932E
Brocade 5000	D:FCSW-32P5000L, D:FCSW-32P5000E
Brocade 5100	D:FCSW-5100L, D:FCSW-5100E
Brocade 5300	D:FCSW-5300L, D:FCSW-5300E
Brocade 12000	D:FCSW-32P2GB01, D:FCSW-64P2GB01 D:FCSW-128P2GB01
Brocade 24000	D:FCSW-128P24032
Brocade 200E	D:FCSWR-16P200EL, D:FCSW-16P200EL D:FCSWR-16P200EE, D:FCSW-16P200EE D:FCSWR-08P200EE, D:FCSW-8P200EE D:FCSWR-08P200EL, D:FCSW-8P200EL
*2 Brocade 48K	D:FCSW-48K several order numbers
*2 Brocade Director DCX	several order numbers
*2 Brocade Director DCX-4S	several order numbers

Notes:

- *2 The FC switches BROCADE 300 5100 5300 48K DCX DCX-4S can only be operated with the 4Gbit/sec SFPs (small form factor pluggable D:FCSFP-B-MM4G) on S-servers.

A special release is available for the following FC switches from CISCO. The product SANCHECK is not supported for these switches:

Cisco MDS 9506
Cisco MDS 9509
Cisco MDS 9513
Cisco MDS 9216I
Cisco MDS 9216A

- *14 For business servers of the SX series, SQ servers and SE servers, see the special
*14 release notice SYSFGM.OSDXC.040.E respectively SYSFGM.OSDXC.085.E.

4.3.2 Discontinued support

The following are not supported in BS2000/OSD-BC V8.0:

Model name	Order number
Brocade 2400	D:PSFS-B081, D:PSFS-B084
Brocade 2800	D:PSFS-B161
Brocade 6400	D:PSFS-B641

4.4 Disk memory storage controllers

4.4.1 Supported disk storage controllers

The following models of disk storage controllers are supported in BS2000/OSD-BC V8.0:

EMC² Symmetrix controllers

	5630, 5830, 5930 (Channel type S)		up to microcode 5267
	8230, 8430, 8530, 8730, 8830, (channel type S, type FC)		up to microcode 5568
*6	DMX800, DMX801 (channel type FC)		as of microcode 5671
*6	DMX1000, DMX2000 (channel type S, Typ FC)		as of microcode 5671
*6	DMX3000 (channel type S, type FC)		as of microcode 5671
	DMX-3 (channel type S, type FC)		as of microcode 5771
	DMX-3_950 (channel type FC)		as of microcode 5771
	DMX-4 (channel type S, type FC)		as of microcode 5772
	DMX-4_950 (channel type FC)		as of microcode 5772
*1	Symmetrix V-Max (channel type FC)		as of microcode 5874
*7	Symmetrix V-Max-20K (channel type FC)		as of microcode 5876
*7	Symmetrix V-Max-40K (channel type FC)		as of microcode 5876
*7	(General availability of Symmetrix V-MAX-40K by EMC ² Hopkinton)		
*2	ETERNUS DX controllers		
*2	DX8400, DX8700 (channel type FC)	as of firmware level	V20L47
	DX410, DX440 (channel type FC)	as of firmware level	V20L47
*11	DX410 S2, DX440 S2 (channel type FC)	as of firmware level	V10L13 ¹⁾
*11	DX8700 S2 (channel type FC)	as of firmware level	V10L22 ¹⁾
*11	DX500 S3 (channel type FC)	as of firmware level	V10L20 ²⁾³⁾
*11	DX600 S3 (channel type FC)	as of firmware level	V10L20 ²⁾³⁾
*11	1) The combined port mode RA/CA is not supported in BS2000		
*11	2) Currently the feature "Storage Cluster Option" (Transparent Failover TFO) is not supported for BS2000 volumes. "TFO" indicated volumes must not be administrated by SHC-OSD.		
*11	3) Use of firmware level V10L30 requires SHC-OSD as of V10.0A02 with StorMan as of V6.0.		
*14	For business servers of the SX-, SQ- and SE series, see the separate release notice		
*14	SYSFGM.OSDXC.041.E and SYSFGM.OSDXC.085.E.		

4.4.2 Discontinued support

The following EMC² Symmetrix controllers are no longer supported in BS2000/OSD-BC V8.0:

5330, 5430, 5700 (channel type S)

4.5 Magnetic tape devices

4.5.1 Supported magnetic tape devices

The following magnetic tape devices are supported in BS2000/OSD-BC V8.0 on S-servers. Magnetic tape devices supported by SX and SQ servers are described in the Release Notice SYSFGM.OSDXC.040.E.

- The magnetic tape cartridge systems
3591-B1, 3591-B2, 3591-B3, 3591-B4,
3591-BU, 3591-EX
- The MTC archive systems
AML/2
AML/E
AML/J
with 3591 via SPCC
- Scalar I2000, Scalar 10K
with LTO-2, LTO-3, LTO-4
via channel type FC
- *4 Scalar 10k
with LTO-2, LTO-3, LTO-4, LTO-5
via channel type FC
- *4 Scalar I6000
with LTO-3, LTO-4, LTO-5
in Scalar I2000 compatible mode
*3 via channel type FC
*3
- *8 Scalar I6000
with LTO-3, LTO-4, LTO-5
*6 as of ROBAR V6.5 via channel type FC
- Scalar 1000, Scalar 10K
with 3591, via SPCC, channel type S
- *4 Scalar i500
with LTO-3, LTO-4, LTO-5
*4 (release LTO-5 midyear 2011)
via channel type FC

Virtual Tape Libraries

- *3 - ETERNUS CS High End
*2 ETERNUS CSxxxx (Data Protection Appliance, channel type S, FC)
*2 ETERNUS CS Disk Library Editions (CS500DL, CS1500DL, channel type FC)
*2 ETERNUS CS50 Virtual Tape Controller
- *13 - ETERNUS CS8000 (channel type FC)
*13 ETERNUS CS8200, CS8400, CS8800
*13 ETERNUS CS900 Entry
- CentricStor
CentricStor VTA (Virtual Tape Appliance, channel type S, FC)
CentricStor VTC (Virtual Tape Controller, channel type S, FC)
CentricStor SBU-BS2 (Smart Backup Unit, channel type S, FC)

Emulated tape device

CD/DVD drive on the service console processor SKP 3970

4.5.2 Discontinued support

The following are no longer supported in BS2000/OSD-BC V8.0:

- The MTC systems
3588-M1, 3588-M2, 3588-GL
3590-D31, 3590-D32, 3590-D41, 3590-D42
3590-A01, 3590-A02, 3590-B02, 3590-B04
3590-A10, 3590-A20, 3590-B20, 3590-B40
3590-C10, 3590-C11, 3590-C22
- The MTC archive system 3560

4.6 Printers

4.6.1 Supported printers

The following printers are supported in BS2000/OSD-BC V8.0:

- The fast / tape printers:
3348-120x, 3349-120x
- The laser printers:
3351-23, 3351-231
3353-23, 3353-231
2050-2x, 2050-1x
2075-2x, 2075-1x
2090-4, 2090-Lx, 2090-2
2140-4, 2140-2
2240-4, 2240-2
Pagestream 55, 75, 88, 110DC, 200DSC,
235, 350, 440, 470, 700, 880
- Vario Print
3090, 3110, 5115, 5140, 5160
- Vario Stream
6100, 7200, 7300, 7400, 7450, 7550, 7650
8550, 8650, 8750,
9210, 9220, 9230,

4.7 Other peripherals

4.7.1 Other supported peripherals

The following are supported in BS2000/OSD-BC V8.0:

- The operating stations

Time-Server 3920
ATOP 3925
Radio clock 3919
- The LAN channel connection

HNC-III	91851 (channel type S)
HNC-IIIIR	91852 (channel type S)
HNC-IV	91853 (channel type S, FC)
- For encryption:

openCrypt-BOX

4.7.2 Discontinued support

The following are no longer supported in BS2000/OSD-BC V8.0:

- The connection director (SCD) 3950-1, -2, -3
- The DUE pre-processor 9681, 9686, 9688 and 9689
with central unit connection controller
ZAS-I 9631-6x
- The LAN channel connector HNC 91850