

FUJITSU Software BS2000 openNet Server

Version 3.6A
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 openNet Server V3.6A under the BS2000 operating system.

- *2 The release level is that of: November 2015.
- *1 Changes to previous-version openNet Server V3.5A are marked with *1.
- *2 Changes to release level April 2015 are marked with *2.

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

openNet Server provides the basic BS2000 communication services. A list of the release units contained in delivery unit openNet Server V3.5A is provided in chapter "1.2 Delivery".

PLUS, VTSU-B and XHCS-SYS have separate, dedicated Release Notices (SYSFGM.PLUS.091.E, SYSFGM.VTSU-B.133.E, and SYSFGM.XHCS-SYS.022.E).

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

openNet Server V3.6A can be ordered from your local distributors.

This software product is made available to the customer subject to the general terms and conditions of the software product use and service agreement in return for regular payments.

1.2 Delivery

The openNet Server V3.6A files are supplied via SOLIS.

The following release units belong to the delivery scope of openNet Server V3.6A:

*1	BCAM	V23.0A	BCAM-DIAG	V01.0A
	BCAM-GEN	V01.1A	CMX(BS2000)	V01.4A
	DCAM	V13.3A	DCM-DIAG	V01.1A
*1	IPSEC	V01.4A	LWRESD	V01.3A
*1	ONETSERV	V03.6A	PLUS	V09.1B
*1	PRNGD	V01.1A	SOCKETS	V02.7A
	VTSU-B	V13.3A	VTSUTRAC	V13.3A
	XHCS-SYS	V02.2A		

The individual files with current file and volume characteristics are listed in the SOLIS2 delivery cover letter.

1.3 Documentation

The BS2000 documentation is available in German and English on DVD with the title BS2000 SoftBooks.

The documentation is also available in the Internet at <http://manuals.ts.fujitsu.com>. Manuals shown with an order number can also be ordered in printed form.

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.<product>.<version>.E (file with English text)
 SYSRME.<product>.<version>.D (file with German text)

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

2 Software extensions

*1

Only the enhancements and improvements over the previous version openNet Server V3.5A are described below.

- **Performance-enhancing measures in BCAM / SOCKETS**

- TCP segmentation offload (TSO) within BCAM: Oversized IP segments (data chunks) are sent to BCAM SIH by BCAM TPR and separated again before starting IO
- Input/Output processing in 2 SIH processes in each case
- Optimization of the queue sizes and loop counters
- Larger TIDU (Transport Interface Data Unit) size
- Measures in SOCKETS with the aim of higher-performance events

- **Performance-enhancing measures in connection with X2000 / HNC**

- Generic segmentation offload (GSO) when sending
- Large receive during read (GRO, generic receive offload)
- 256 kB of data between BS2000 and X2000/HNC

- **Support of the new SE servers**

- Introduction of a private control network for communication between BS2000 and the MU (management unit). This LAN is reserved for Fujitsu Technology Solutions. It is used to provide support for display functions and SE server administration.
- Provision of templates for the network configuration in order to support the first installation of an SE server.

- **Simple resolution of an address conflict**

The BCAM commands DEACTIVATE-OWN-ADDRESS and ACTIVATE-OWN-ADDRESS are introduced in order to enable address conflicts to be handled in IP or IPv6. They are used to specifically respond to own addresses that have caused a recognized address conflict.

SHOW-OWN-ADDRESS or SHOW-BCAM-ADDRESS indicates an address conflict.

Own addresses that have been deactivated using DEACTIVATE-OWN-ADDRESS are fully withdrawn from handling by other BCAM commands until further notice and no longer have any impact in the network.

The commands ACTIVATE(-VLAN)-LINE and DEACTIVATE(-VLAN)-LINE take such deactivated own addresses into account and do not perform any implicit actions with them.

If a deactivated address is to be used again, it must first be explicitly provided using the command ACTIVATE-OWN-ADDRESS.

- **Extensions to the BCAM information functions**

- SHOW-BCAM-INFO-ADDRESS
Show BCAM information for an address.
- SHOW-BCAM-INFO-BASIC
Show BCAM basic information.

- SHOW-BCAM-INFO-CONFIG
Show BCAM configuration information.
- SHOW-BCAM-INFO-NAME
Show information for BCAM objects that are selected by a name.
- SHOW-BCAM-INFO-TOOLS
Show information about BCAM tools.

- **Rebasing of the LWRESD**
Rebasing to BIND V9.9 is carried out in order to ensure BIND support.

- **Reverse Lookup implementation**
The Reverse Lookup function is provided via an nslookup command interface that is connected to SOCKETS.

3 Technical information

3.1 Resource requirements

The following resources are required for BCAM V23.0A:

*1 Static requirement per generated LAN connection: 1536 kByte

Dynamic requirement:

- dependent on communication load
- dependent on operating option Dynamic Right Sizing (if the option is enabled, more memory may be required)

Memory classes 1-5 are used.

It is recommended not to change the system-dependent size of resident memory selected by BCAM for data communications. In other words, it is not necessary to specify RESMEM in the DCSTART, DCOPT and BCMOD commands. Increasing the size of the BCAM pool is an option to improve performance if a memory bottleneck was diagnosed.

LWRESD requires minimum virtual memory of 32 MB.

3.2 SW configuration

The runtime environment for openNet Server V3.6A is as follows:

S Server	BS2000/OSD-BC:	V9.0	V8.0
	BS2000 OSD/BC	V10.0	
SQ Server	BS2000 OSD/XC	V10.0	
SE Server	BS2000 OSD/XC	V10.0	V9.5 V8.5

openNet Server V3.6A also requires the following products:

Product	Version	
*1 JV	as of 15.0A	if job variables are used
*1 SDF-P	as of 2.5A	if S variables are used
*1 SECOS	as of 5.2A	if SAT is used with RSC
openCRYPT	1.3A by special release	if IPsec is used

ASTI

LWRESD V1.3A and IPsec V1.4A require ASTI V2.0D of the BS2000-GA.

interNet Services

*1 If the interNet Service FTP server is used, correction version TCP-IP-AP (052/A07; 051/A11)
 *1 as of correction package I/2014 is required.

SNMP connection

The product SNMP-Basic-Agent BS2000 is required as of V6.0 for the SNMP connection to an Enterprise Management platform.

3.3 Product installation

Installation of the product openNet Server 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.

After these actions have been executed you have to install the product with IMON. The necessary inputs and the sequence of the installation are described in the IMON documentation.

3.4 Product use

Loader:

The RMS files SYSRMS.<product>.<version> must be imported into the RMS depot. The respective Rep files are created with RMS.

Configuration files:

When upgrading from older openNet Server versions ensure that the version number is included in the names of the configuration files of some of the components (e.g. LWRES and IPSEC). Thus the new configuration files have to be adapted before using the products, because existing settings are not automatically transferred.

SDF:

It is recommended to assign the BCAM-SDF syntax files to the BCAM or BCAM-CMD subsystem, the IPsec-SDF syntax file to the IPsec subsystem and the SOCKETS-SDF syntax file to the SOC6 subsystem.

Dump libraries:

In order to use the diagnostics tools (ASTRID, DIANA, IPSECDIA and DAMP) the library SYSLNK.BCAM.DUMP (supplied as SYSLNK.BCAM-DIAG.010) must be available under the TSOS ID (SHARE=YES and USER-ACCESS=*ALL-USERS).

Subsystems:

The following subsystems exist in connection with openNet Server V3.6A:

BCAM	BCAM-CMD	BCAM-COS
BCAM-SM2	DCAM	DCAM-COS
DCM-DIAG	CMX-TU	CMX-TP
CMX-11	IPSEC	PRNGD
SOC-TP	SOC6	SOC6-X8 (only on SQ servers)
VTSU	VTSUTRAC	XHCS-SYS

CMX-11 is the TU subsystem for CMX applications. CMX-TU exists to ensure compatibility with existing TU applications.

SE Server:

- *2 When used on a SE Server the following BCAM Options must not be changed,
*2 otherwise there may be problems in the internal control LAN (MCNPR; Management
*2 Control Network Private):
*2 IPV6-SUPPORT
*2 IPV6-PREFIX-LEN-CTRL
*2 MULTICAST

SOCKETS:

- *1 SOCKETS V2.7A, which is included in openNet Server V3.6A, is shipped with the subsystem SOC6.

- *1 The entries used by the SOCKETS V2.7A subsystem remain open during linking.
They are only satisfied by the subsystem when the application is started.

The SOC6 subsystem is always loaded into the address space above 16 MB, i.e. all user programs that use it must be executable in 31-bit address mode and advance run mode (AMODE/RMODE).

- *1 The library SYSDOC.SOCKETS.027.OSS includes the open source components to be released and the appropriate license texts.

IPSEC:

With the correction packet 2/2013 a library SYSDOC.IPSEC.014.OSS is delivered for the first time. The library includes the open source components to be released and the appropriate license texts.

LWRESD

- *1 The library SYSDOC.LWRESD.013.OSS includes the license text to be released and the open source components used.

SAT:

Quantity problems may occur when logging BCAM events (memory bottlenecks) if applications do not function according to specification and thereby create a flood of SAT messages. For example, if BCAM is restarted without first stopping POSIX, the BCAM-EVENT BAO (open TSAP) is written constantly into the SATLOG file as a failure entry.

System Exit:

The system exit function 02 offers the option of controlling use of the BCAM transport system. BCAM reports opening of TSAPs and active/passive attempts to start communication relationships, regardless of the interface functionality.

The exit routine is called if the following two conditions are true:

- System exit function 02 was enabled in BCAM with MODIFY-BCAM-OPTIONS.
- A TSAP is opened in BCAM or BCAM detects a communication request.

3.5 Discontinued functions (and those to be discontinued)

No functions have been omitted or discontinued in openNet Server V3.6A.

3.6 Incompatibilities

openNet Server V3.6A is fully compatible with openNet Server V3.5A.

3.7 Restrictions

VLAN:

The support of VLAN requires HNC-IV 91853 at least.

LINK-AGGREGATION:

LINK-AGGREGATION support in BCAM requires the HNC software V2.0A02.

Checksum Offload:

Checksum Offload support requires the HNC software V2.0A02.

IPSec:

NAT Traversal in IKEv1 and IKEv2 cannot be used in this version.

3.8 Procedure in the event of errors

The following libraries must be available as shareable under the TSOS ID in order to use the diagnostics tools (ASTRID, DIANA, IPSECDIA, DAMP, NETSTAT, PING4, PING6, TEDDY, NSLOOKUP, DIG):

- *1 • SYSLNK.BCAM.DUMP
- *1 • SYSPRG.BCAM.230
- SYSPRG.DCAM.133
- SYSPRG.IPSEC.014
- *1 • SYSPRG.LWRES.D.013.DIG
- *1 • SYSLNK.SOCKETS.027.PING4
- *1 • SYSLNK.SOCKETS.027.PING6
- *1 • SYSPRG.SOCKETS.027.NSLOOKUP

SYSLNK.BCAM-DIAG.010 is supplied with the delivery unit openNet Server V3.6 and this also contains the main modules of older versions. SYSLNK.BCAM-DIAG.010 is copied by SOLIS to SYSLNK.BCAM.DUMP.

If ASTRID is to run under an ID other than TSOS, test privileges 8,1 must be entered in the user entry of the ID concerned. This is necessary because ASTRID uses AIDSYS and issues the OPTION TESTPRIV=(8,1), DUMP=YES command internally.

In the event of an error, the following information is required for diagnostics purposes depending on the nature of the problem:

- Detailed problem description
- System environment:
 - BS2000 computer:
 - Computer name, computer address (IP address, Ethernet address)
 - BS2000: version, loader
 - BCAM, DCAM, CMX, SOCKETS: version, loader or correction level
 - Application: name, version, port number (TCP)
 - Protocols used: TCP, ISO
 - Partner computer:
 - Computer name, computer address
 - System: BS2000 / SINIX / PC
 - Operating system version, correction level
 - Application: name, version, port number (TCP)
 - Hardware:
 - LAN (Gigabit/10Gigabit)
 - HNC use
 - Firmware level
 - Router in use?
- Environment:
 - Prior software upgrade?
 - Prior hardware upgrade?
 - Prior loader change?

- Prior use of new reps?
- Documentation:
 - ASTRID (BCAM), DIANA (DCAM), IPSECDIA (IPSec): always
 - Rep file: if possible
 - RDF source: as required
 - CONSLOG: as required
 - SERSLOG: as required
 - HERSLOG: as required
 - System or DCS dumps that are required under the TSN BCAM, BCAT, BCAF, BCAC, BCA0, BCAA, BCAS or under the user task.

With reproducible problems, you should turn on the DCM traces via DCDIAG command before the problem occurs (see the BCAM manual for a description).

You can use the /BCSET command to change diagnostics maintenance parameters. It may only be used by the personnel specified in the manual since wrong usage may cause errors.

With SLEDs the class 4 memory is absolutely necessary.

You can use the PING4 and PING6 programs to check the accessibility of partner systems over IP routes (see the BCAM manual for a description).

The possible options for the new programs PING4, PING6, DIG and NSLOOKUP can be read in the online help (ping4/ping6/dig/nslookup -h).

4 Hardware requirements

Central units:

- *1 openNet Server V3.6A runs on all CPUs that are supported by the operating system versions stated in chapter 3.2.

Channel adapter redundancy:

The redundancy concept for Ethernet, Fast, Gigabit and 10Gigabit-Ethernet can be implemented with the High-Speed Net Connect (HNC) as the network access product.

HNC support for link aggregation and checksum offload:

See chap. 5 Firmware levels

5 Firmware levels

HNC (High-Speed Net Connect) 91853, 91854 and 91855:

The Link-Aggregation and Checksum Offload functions are only supported as of HNC-IV and also require firmware version 2.0A (REV=0202) for HNC-IV.