Fujitsu Software BS2000 openNet Server

Version V21.0C

January 2026

Release Notice

1 General

This Release Notice is a summary of the major extensions, dependencies and operating information with respect to openNet Server V21.0C under the BS2000 operating system.

Release level of content is valid as of January 2026.

This and other current Release Notices are available online: https://bs2manuals.ts.fujitsu.com.

openNet Server provides the basic BS2000 communication services.

A list of components of openNet Server V21.0C is provided in chapter "1.2 Delivery".

PLUS, VTSU-B and XHCS-SYS have separate, dedicated Release Notices.

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 V21.0C is part of the package BS2000 OS DX V1.0C. It cannot be ordered separately. The components of openNet Server V21.0C are bunched together in the single technical supply unit BS2OS.ONETSERV V1.0C.

The general contract terms and conditions concerning the use and support of software products are valid for openNet Server V21.0C.

1.2 Delivery

BS2OS.ONETSERV V1.0C files are supplied via SOLIS.
The following release units are part of the BS2OS.ONETSERV V1.0C delivery units:

BCAM	V25.1A
BCAM-DIAG	V01.0A17
BCAM-GEN	V25.1A
CMX(BS2000)	V01.4C
DCAM	V21.0C
DCM-DIAG	V01.1A03
IPSEC	V01.4A04
LWRESD	V21.1A
PRNGD	V01.1B
PLUS	V09.1B
SOCKETS	V21.1A

VTSU-B	V21.0C
VTSUTRAC	V13.3A02
XHCS-SYS	V21.0C

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

1.3 Documentation

The documentation for openNet Server V21.0C consists of the following parts. New editions for openNet Server V21.0C are marked with *.

	Manual	Version	Typ
*	BCAM	V25.1	User Guide
	CMX	V1.0	User Guide
	DCAM COBOL	V13.3	User Guide
	DCAM Makros	V13.3	User Guide
	DCAM Program Interfaces	V13.3	User Guide
	IPSec Internet Security in BS2000/OSD	V1.4	User Guide
	IPv6 Conversion Guide Level 1	V4.0	User Guide
	PRNGD (Described in the interNet Services Administrator manual)	V1.1	Administrator Guide
	SNMP Management openNet Server	V4.0	User Guide
*	SOCKETS	V21.1	User Guide
	VTSU	V11.0	User Guide
	XHCS	V2.0	User Guide

The documentation is available on the Internet at https://bs2manuals.ts.fujitsu.com.

There you will find both individual manuals and (under the "Softbooks" tab) the ISO image of a DVD with the entire inventory.

The manuals may be supplemented with README files. These contain changes and extensions to the manual of the product concerned.

2 Software extensions

In the following, the extensions and improvements compared to the previous version openNet Server V21.0B are described.

- **DNS Name Resolution in BS2000 with GETDNS / Replacement of LWRESD**

  The GETDNS program, ported to BS2000, has implemented a central DNS resolver connection for BCAM and SOCKETS(BS2000). This meets current security requirements, ensures future viability, and replaces the LWRESD product.

  The introduction of GETDNS and the migration from LWRESD will occur with the update to SOCKETS V21.1A and BCAM V25.1A.

  Section "Configuration Files" in Chapter 3.4 must be observed.

- **Changes in SOCKETS**

  A new option in setsockopt() has been introduced to determine the order of DNS resolution (CR A0618266).

  Currently, when a DNS request is made via SOCKETS(BS2000), DNS resolution is performed by the DNS client (LWRESD). Only if no result is returned DNS resolution is performed locally.

  The new SOCKETS option SO_RESOLVE_BCAM offers application programs a way to influence the resolution order for DNS requests. When this option is set via the setsockopt() function, SOCKETS first attempts to perform DNS resolution locally (i.e., from routing information, SYSDAT.BCAM.PROCESSORS, SYSDAT.BCAM.ETC.HOSTS, SYSDAT.BCAM.FQDN) before sending a DNS resolution request to the DNS server. If this option is not set, the DNS server will be contacted first, as before.

- **Changes to the DNS Resolver**

  Two new parameters have been introduced in the resolv.conf file SYSDAT.SOCKETS.211.RESOLV.CONF

  - **parallel**
    This parameter can be used to configure whether nameservers, if multiple are present, are contacted successively or simultaneously.

  - **options**
    Various settings for the behavior of the DNS resolver can be changed with this parameter. Currently, there are two options:
    - **timeout**
      specifies how long the DNS resolver waits for a response from the nameserver before contacting the next nameserver from the configuration file (if available).

- **dnssec**
  configures whether DNSSEC should be used for DNS requests. For successful use of DNSSEC, the nameserver entered in the configuration file must also be able to handle DNSSEC.

- **Support**

BS2000 OS DX V1.0C
SE from V6.5 SP2

3 Technical information

3.1 Resource requirements

The following resources are required for BCAM V25.1A:

Static requirement per generated LAN connection: ca. 2MB.

Dynamic requirement:
- depending on communication load
- depending 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-depending 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.

GETDNS requires minimum virtual memory of 32 MB.

3.2 SW configuration

openNet Server V21.0C will run under SE server as of BS2000 OS DX V1.0C.

Information regarding the software products of an SE Server (M2000, HNC, X2000, and StorMan) can be found in the corresponding release announcements.

When certain functions are used, openNet Server V21.0C also requires the following products:

Product	Version	
SECOS	as of 5.6A	if SAT is used with RSC
CRYPT	as of 21.0A	if IPSec is used

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

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. SOCKETS and IPSEC). Thus, the new configuration files have to be adapted before using the products, because existing settings are not automatically transferred.

Due to the migration to GETDNS, the SYSDAT.SOCKETS.211.RESOLV.CONF configuration file is required instead of SYSDAT.LWRESD.211.RESOLV.CONF

Subsystems:
The following subsystems exist in connection with openNet Server V21.0C:

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 x86)
VTSU	VTSUTRAC	XHCS-SYS

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

BCAM-options:
The following BCAM Options must not be changed, otherwise there may be problems in the internal control LAN (MCNPR; Management Control Network Private):

IPV6-SUPPORT
IPV6-PREFIX-LEN-CTRL
MULTICAST

SOCKETS:

SOCKETS V21.1A, which is included in openNet Server V21.0C, is shipped with the subsystem SOC6.
The entries used by the SOCKETS V21.1A subsystem remain open during linkage. 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).
The SYSDOC.SOCKETS.211.OSS library contains the Open-Source components and the corresponding license texts.
Socket programs, that were compiled with the headers from SYSLIB.SOCKETS.211,
cannot run on systems with subsystem version <V21.1.

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)

None

3.6 Incompatibilities

- **Changes to the DNS Resolver**
  - LWRESD is completely replaced by the new DNS client GETDNS.
  - All LWRESD commands are no longer supported; the required functionality is now offered via new GETDNS commands.
  - ASTI is no longer required for the DNS resolver.

- **Changed BCAM Commands**
  - **DCOPT**
    The operand LWRESD has been renamed to DNS-CLIENT.
  - **DCSTART**
    The operand LWRESD has been renamed to DNS-CLIENT.
  - **SHOW-BCAM-START-PARAMETERS**
    The S-variable LWRESD has been renamed to DNS-CLIENT.

3.7 Restrictions

Redundancy
If a line or VLAN line does not become active during the first ACTIVATE-LINE / ACTIVATE-VLAN-LINE command, its IP address in a redundancy configuration will be taken over by the redundant line when the node is activated, but data transfer via this IP address will not be possible.
Workaround: Manual deactivation (/DEACTIVATE-LINE or /DEACTIVATE-VLAN-LINE) and reactivation (/ACTIVATE-LINE or /ACTIVATE-VLAN-LINE) of the redundant line makes the address reachable.

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

3.8 Procedure in the event of errors

SYSLNK.BCAM-DIAG.010 is supplied with openNet Server V21.0C and this also contains the main modules of older versions. SYSLNK.BCAM-DIAG.010 is renamed to SYSLNK.BCAM.DUMP by SOLIS.

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 requested under the TSN BCAM, BCAT, BCAF, BCAC, BCA0, BCAH, 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 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 programs PING4, PING6, DIG, NSLOOKUP and TRACEROUTE can be read in the online help (ping4/ping6/dig/nslookup -h, traceroute --help).

4 Hardware requirements

openNet Server V21.0C runs on all BS2000 as of OS DX V1.0C business servers which fulfil the software requirements.

Peripheral devices:

The /390 systems are connected on a SE server by means of a HNC, which is part of the Net Unit (NU) of the SE server.