FUJITSU Software BS2000 X2000

Version 6.3A
January 2020

Release Notice

1 General information

This Release Notice is a summary of the major extensions, dependencies and operating information about the delivery components of the FUJITSU software BS2000 X2000 V6.3A.
Together with the Linux operating system, X2000 V6.3A serves on the Intel x86_64 architecture based Server Units SU300, SU300B and SU310 as the carrier system for BS2000.

X2000 V6.3A offers the functions for operation and administration of the hardware for the BS2000 OSD/XC operating systems.

The contents correspond to the release level of January 2020.

The current release corresponds to the following delivery release:
X2000 V6.3A0501 Release 12.2020

The following Release Notices must also be taken into consideration for X2000 V6.3A:

- M2000 V6.3A
- OSD/XC V10.0, OSD/XC V11.0B
- VM2000 V11.5A

This and other current Release Notices are on the SoftBooks DVD and are also available online: https://bs2manuals.ts.fujitsu.com/.

If one or more previous upgrades are skipped when this product version is used, then the information from the Release Notices (and README files) for these previous versions must also be taken into account.

1.1 Ordering

The software X2000 V6.3A is supplied preinstalled as a component of a SE Server with SU x86 and cannot be ordered separately.

1.2 Delivery

The software X2000 is part of a SE Server with SU x86 and is either supplied preinstalled on the Server Units or will be installed on an already delivered SU x86 by a FUJITSU service technician.

The X2000 V6.3A files are delivered in line with the hardware delivery as DVD media.

1.3 Documentation

The following manuals are part of the SE server documentation:

- SE specific manuals which describe concepts and the operation of a server of the SE series:
  - Fujitsu Server BS2000 SE Series Administration and Operation
  - Fujitsu Server BS2000 SE Series Quick Start Guide
  - Fujitsu Server BS2000 SE Series Security Manual

- White paper
  - Fujitsu Server BS2000 SE Series Cluster Solutions for SE Server

- Operating manual Fujitsu Server BS2000 SE series comprising the following modules
  - Fujitsu Server BS2000 SE Series Basic Operation Manual
  - Fujitsu Server BS2000 SE Series Operation Manual Server Unit /390
  - Fujitsu Server BS2000 SE Series Operation Manual Server Unit x86
  - Fujitsu Server BS2000 SE Series Operation Manual Additive Components

These manuals are on the documentation DVD of the delivered Media Set.

The documentation is also available on the internet under https://bs2manuals.ts.fujitsu.com/. The current versions of this and other Release Notices are also available there.

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

The corresponding HW documentation is required in order to use the HW peripheral devices.

2 Software extensions

X2000 V6.3A is a further development of the X2000 version V6.2A SP1 and offers the following major extensions and enhancements compared to the previous version:

- **VM recover for SU x86 (failover concept)**
  In addition to Live Migration a SU cluster also supports the recovery of a VM on a remote SU in case of SU failure.

- **Support of a new High End x86-64 system as HW base for SU310**
  A high end x86-64 server with Intel® Xeon® Gold 6242 processors is supported as a new HW base for SU x86 (SU model name: "SE SERVER SU310 M1").

- **Support of ETERNUS LT140 S4**
  The tape library ETERNUS LT140 S4 is supported with single path FC direct connection and one LTO-6 or LTO-7 drive with a base license for 20 slots.

- **Support of ETERNUS DX100 S4**
  The storage subsystem ETERNUS DX100 S4 is supported with single path FC direct connection for the use as RAID system without SHC-OSD.

- **Dynamic performance control (performance quota)**
  The performance quota of a SU x86 can be set dynamically (ongoing BS2000 operations) via the SE Manager. The performance can be reduced up to 50%.

3 Technical information

3.1 Resource requirements

Main memory requirements:

Model type SU300

SU x86 model	Processors / cores	Main memory (GB) basic configuration / guest systems / BS2000 without JIT	PCIe slots
SU300-10A	2 / 24	32 / 24 / 14,4	4
SU300-10B	2 / 24	32 / 24 / 14,4	4
SU300-10C	2 / 24	32 / 24 / 14,4	4
SU300-10D	2 / 24	32 / 24 / 14,4	4
SU300-10E	2 / 24	32 / 24 / 14,4	4
SU300-10F	2 / 24	32 / 24 / 14,4	4
SU300-20A	4 / 48	64 / 48 / 28,8	10
SU300-20F	4 / 48	64 / 48 / 28,8	10
SU300-30F	4 / 48	64 / 48 / 28,8	10
SU300-40F	4 / 48	64 / 48 / 28,8	10
SU300-50F	4 / 48	64 / 48/ 28,8	10
SU300-60F	4 / 48	64 / 48 / 28,8	10
SU300-80F	4 / 48	64 / 48 / 28,8	10
SU300-100F	4 / 48	96 / 80 / 48	10
SU300-120F	4 / 48	96 / 80 / 48	10
SU300-160F	4 / 48	96 / 80 / 48	10

Model type SU300B

SU x86 model	Processors / cores	Main memory (GB) basic configuration / guest systems / BS2000 without JIT	PCIe slots
SU300B-10A	2 / 36	32 / 24 / 14,4	4
SU300B-10B	2 / 36	32 / 24 / 14,4	4
SU300B-10C	2 / 36	32 / 24 / 14,4	4
SU300B-10D	2 / 36	32 / 24 / 14,4	4
SU300B-10E	2 / 36	32 / 24 / 14,4	4
SU300B-10F	2 / 36	32 / 24 / 14,4	4
SU300B-20A	4 / 72	64 / 48 / 28,8	10
SU300B-20F	4 / 72	64 / 48 / 28,8	10
SU300B-30F	4 / 72	64 / 48 / 28,8	10
SU300B-40F	4 / 72	64 / 48 / 28,8	10
SU300B-50F	4 / 72	64 / 48/ 28,8	10
SU300B-60F	4 / 72	64 / 48 / 28,8	10
SU300B-80F	4 / 72	64 / 48 / 28,8	10
SU300B-100F	4 / 72	96 / 80 / 48	10
SU300B-120F	4 / 72	96 / 80 / 48	10
SU300B-160F	4 / 72	96 / 80 / 48	10

Model type SU310

SU x86 modell	BS2000 processors	Main memory (GB) basic configuration / guest systems / BS2000 without JIT	PCIe slots
SU310-10R	1	128 / 112 / 67	6
SU310-10	1	128 / 112 / 67	6
SU310-20	2	128 / 112 / 67	6

The required main memory depends on the customer's configuration, especially for the used applications and the number of guest systems.

Calculation base for computing the main memory needed for BS2000 guest systems:
Approximately 16 GB is occupied by the firmware of the SU x86. The remaining memory can be used for BS2000 guest systems, whereof approx. 40% is required by JIT.

3.2 SW configuration

BS2000 OSD/XC native and VM2000 mode on SU300 and SU300B

- BS2000 native
  - OSD/XC V11.0B, V11.0A, V10.0
- VM2000 V11.5
  - OSD/XC V11.0B, V11.0A as monitor system
  - OSD/XC V11.0B, V11.0A or V10.0 as guest system
- VM2000 V11.0
  - OSD/XC V11.0B, V11.0A or V10.0 as monitor system
  - OSD/XC V11.0B, V11.0A or V10.0 as guest system
- Precondition for Live Migration (LM):
  - OSD/XC V11.0B, V11.0A or V10.0
  - VM2000 V11.5 if using VM2000 mode (LM on SU /390 only possible in VM2000 mode)

OSD/XC V10.0A and VM2000 V11.0A are supported as of correction package 2018 each.

Xen guest systems on SU300(B)

Released Xen guest systems for SU300 and SU300B:
- SUSE Linux Enterprise Server 11 and 12
- RedHat Enterprise Linux 6.x and 7.x
- Windows Server 2008 R2, 2012 and 2012 R2

BS2000 OSD/XC native and VM2000 mode on SU310

- BS2000 native
  - OSD/XC V11.0B
- VM2000 V11.5
  - OSD/XC V11.0B as monitor system
  - OSD/XC V11.0B or V10.0A as guest system

The support is supplied as of service pack 19.1each.

Linux is not released for use on X2000

The Linux appliance X2000 is a scaled-down Linux systems exclusively designed to run on Server Unit SU300(B) / SU310. This is why the use of Linux on X2000 is not released for customer applications.

3.3 Product installation

The SE Server is delivered with X2000 pre-installed on the Server Units x86.
Any new correction versions of X2000 that may be required are provided as part of the hardware service contract and are installed by the service technician responsible for you.

3.4 Product use

- The operation of X2000 takes place via a web-based GUI called SE Manager running on the Management Unit of the SE Server. The remote operation and administration takes place via PC workplaces that can access the SE Manager on the Management Unit via a web browser.
  For information about supported browsers see release notice for M2000 V6.3A.

- Additionally to the terminals integrated in SE Manager, the connection to BS2000 console, BS2000 dialog and SVP console for accounts of the roles operator and BS2000 administrator is possible via the commands bs2Console, bs2Dialog and svpConsole. These commands are intended to be executed as “remote command” in the SSH client PuTTY.
  See manual "FUJITSU Server BS2000 SE Administration and Operation" for additional information.

- BS2000 hostname:
  The minimum length for the bs2000 hostname is 4 characters.
  The following special characters are supported in principle: #, @
  We recommend not to use special characters.

- Dynamic performance control
  For the use of dynamic performance control, the key "Performance quota" must be installed by the service technician responsible for you.

- ETERNUS DX100 S4
  Connection is only supported with single path FC direct connection (not via switch) without SHC-OSD. Concerning the port configuration in the storage subsystem, mode "Fabric" has to be chosen as connection mode. For other settings see hints below.

- The following maximum configuration is supported for a SU x86 in a SE Server:
  - a maximum of 2048 LUNs on one HBA port
  - a maximum of 2048 LUNs on one RAID controller port
  - a maximum of 8192 BS2000 disks
  - a maximum of 16384 paths may be visible
  - a maximum of 256 MTC devices
  - a maximum of 8 tape devices emulated on file/CD/DVD
  - a maximum of 2048 virtual devices for Linux / Windows guest systems (SU300(B) only)
  - an overall maximum of 16384 SCSI LUNs per sever unit

  Hints:
  - In order to avoid the maximum of 8192 BS2000 disks or 16384 visible paths respectively being exceeded, disks that are not required should be made invisible in the ETERNUS or Symmetrix system by LUN masking / LUN mapping.
  - Tape devices must be configured exclusively at one Server Unit and must not be accessible by a second Server Unit simultaneously. This is to be ensured by suitable actions like LUN masking / mapping.
  - Disks and tapes should be connected to different HBA ports of the SU x86.
  - Using BS2000 disks of an ETERNUS disk storage system needs the host response profile "BS2000" being activated. Additional information can be found in the document "FUJITSU Storage ETERNUS DX, ETERNUS AF Configuration Guide -Server Connection-" which is available under http://sp.ts.fujitsu.com/dmsp/Publications/public/dp-eternus-dx-scg-bs2-em-en.pdf.

  - The number of available licenses is displayed in SE Manager's main pages for administering BS2000 devices. Detailed license information is displayed in a tool tip.

- Inhomogeneous SE Cluster
  An inhomogeneous SE Cluster (cluster with one Server running V6.2A SP1 and one Server running V6.3A) is released limited in time for version upgrading on existing customer systems.
  The model SE310 must not be operated in an inhomogeneous SE Cluster.

- Live Migration in a inhomogeneous SU x86 Cluster:
  In an inhomogeneous SU x86 Cluster (X2000 V6.2A SP1 - X2000 V6.3A) Live Migration is supported only from V6.2A SP1 to V6.3A.

- Live Migration in a homogeneous SU x86 Cluster
  In a homogeneous SU x86 Cluster (X2000 V6.3A running on both SU x86) Live Migration is released between two SU300(B) Units in SE300(B) - SE300(B) Management Cluster configurations.

  Live Migration with the participation of SU310 is only released upon request. Please consult your sales representative for this purpose.

3.5 Obsolete (and discontinued) functions

- Xen guest systems (Xen VMs) can't be set up any more on Server Unit SU310.

- Disk type D3475-8F isn't supported any more on Server Unit SU310.

- SW configuration:
  OSD/XC V9.5 is no longer supported.

3.6 Incompatibilities

- none -

3.7 Restrictions

- VM2000
  Calling the VM2000 command pair /HOLD-VM and /RESUME-VM should be avoided because the guest system might abort abnormally after /RESUME-VM (SETS).

3.8 Procedure in the event of errors

For successful diagnostics and elimination of software problems, sufficient error documentation must be created or saved as soon as possible.
If possible, error report documentation should be supplied in the form of files so that it can be analyzed with diagnostic tools. For reproducible errors the user should include detailed information on how to generate the error condition.

Creating X2000 diagnostic data

In X2000:
If an error situation occurs, the generation of diagnostic data can be initiated by the administrator or operator via the SE Manager on the Management Unit by way of the "Diagnostics" tab of the menu
Hardware -> Units (SEnnn) -> <Name> (SU3nn) -> Service -> Diagnostics

The file can either be downloaded or sent directly via File Transfer by a member of Fujitsu Service using AIS Connect.

In case of problems which are visible in SE Manager depending on the situation the following diagnostic data should be created:

- meaningful screenshots
- Relevant output at browser's console (text copy or screenshot)

The release note for M2000 V6.3A contains additional information about creating diagnostic data in SE Manager.

In BS2000:

- SLED (in case of BS2000 system crash or if the BS2000 system locks up)
- for input/output problems or device error messages HERSFILE and possibly IOTRACE

4 Hardware requirements

X2000 V6.3A is released for the x86 core technology based Server Units SU300, SU300B and SU310 of the SE Server series.

5 Firmware levels

The following minimum firmware levels should be used on the Server Units x86 in BS2000 SE Servers. They are installed during system installation in the factory.

Any new firmware levels that may be required are provided as part of the hardware service contract and installed by the service technician responsible for you.

SU 300 with HW basis RX4770 M1

Component	**FW version**
BIOS	V5.0.0.8 - R1.38.0
iRMC Firmware	9.20F sdr03.48
SAS PRAID EP400i (Cougar4)	4.680.00-8417 - 1.0.0
FibreChannel LPe12002	2.02A3
FibreChannel LPe16002	11.2.210.13
RAID Ctrl SAS 6Gb 5/6 – LSI SAS 9286CV-8e (JX40)	3.460.15-5052
SAS Ctrl 6Gb/s 8 port LSI SAS 9200-8e (LT40-S2)	16.00.00.00

SU 300B with HW basis RX4770 M3

Component	**FW version**
BIOS	V5.0.0.11 - R1.20.0
iRMC Firmware	9.20F sdr03.21
SAS PRAID EP420i	4.680.00-8417 - 1.0.0
SAS PRAID EP420e (JX40 S2)	4.680.00-8417 - 1.0.0
PSAS CP400e FH (LT40-S2)	11.00.00.00
FibreChannel LPe12002	2.02A3
FibreChannel LPe16002	11.2.210.13
FibreChannel LPe31002	12.0.261.33

SU 310 with HW basis RX4770 M5

Component	**FW version**
BIOS	V5.0.0.14-R1.15.0
iRMC Firmware	02.50P / 03.08
SAS PRAID EP420i	4.680.00-8417 - 1.0.0
FibreChannel LPe31002	12.0.261.33
FibreChannel LPe32002	12.0.261.33
LAN PLAN EP X710-DA4 4x10Gb SFP+	1.32.20.30
PLAN EP X710-T4 4x10GBASE-T	1.32.20.30