

FUJITSU Software BS2000 M2000

Version 6.3A
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Release Notice

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1	General information	3
1.1	Ordering	3
1.2	Delivery	3
1.3	Documentation	4
2	Software extensions	5
3	Technical information	7
3.1	Resource requirements	7
3.2	Software configuration	7
3.3	Product installation	8
3.4	Product use	8
3.5	Obsolete (and discontinued) functions	12
3.6	Incompatibilities	12
3.7	Restrictions	13
3.8	Procedure in the event of errors	13
4	Hardware requirements	14
4.1	Supported Application Units	14
5	Firmware levels	15

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 M2000 V6.3A.

M2000 is running on the Management Unit (MU) which is integrated in the rack of the FUJITSU Servers BS2000 SE710, SE700(B), SE500(B), SE310 and SE300(B). It is used for administration, monitoring and operating of all components of the SE Server.

The contents correspond to the release level of January 2020.

The current release corresponds to the following delivery releases:

M2000 V6.3A0503	Release 12.2019
StorMan V8.0.2-0	Release 01.2019

The following Release Notices must also be taken into consideration for M2000 V6.3A:

- StorMan 8.0
- HNC V6.3A (if /390 Server Units are used)
- X2000 V6.3A (if x86 Server Units are used)
- ROBAR-SV V7.6A (optional)
- openSM2 V11.0 (optional)
- openUTM V6.5 (optional)
- NUX V1.0 (optional)

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 M2000 V6.3A is supplied preinstalled on the Management Unit as a component of the SE Server hardware and cannot be ordered separately.

1.2 Delivery

M2000 V6.3A is part of the basic operating software for BS2000 SE Servers. M2000 V6.3A is either supplied pre-installed on the Management Unit (MU) or will be installed on already delivered Management Units by a FUJITSU service technician.

The M2000 V6.3A files are delivered along 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

M2000 V6.3A is a further development of M2000 V6.2A SP2 and offers the following main extensions and enhancements compared to the previous version:

- **New SE Server models SE710 and SE310**
With M2000 V6.3A the new SE Server generations SE710 and SE310 are supported, equipped with a new generation of Server Units SU710 and SU310.
- **Support of Primergy RX2530 M5 as HW base for MU**
The PRIMERGY model RX2530 M5 is supported as new HW base for Management Units (MU model name "SE Server MU M3").
- **Support of Cisco Switches as Net Unit extension**
A Net Unit can be extended with Cisco Switches of type Nexus9000. For administration and integration via SE Manager the M2000 add-on pack NUX (Net Unit eXtention) is available.
- **New Net Unit switch Brocade ICX7450-48**
As successor for the Net Unit Switch ICX6450 the Brocade switch ICX7450 with 48 ports is supported.
- **Support of Primergy RX2540 M4 as special release for AU25**
As new HW base for Application Units of type AU25 the PRIMERGY model RX2540 M4 is supported (special release).
- **Support of Primergy RX2540 M5 as AU25**
As new HW base for Application Units of type AU25 the PRIMERGY model RX2540 M5 is supported.
- **Support of Primergy RX4770 M5 as AU47**
As new HW base for Application Units of type AU47 the PRIMERGY model RX4770 M5 is supported.
- **Alarm management: Selection of components and alarms of openSM2**
The triggering component can be selected in the Alarm Management of the SE Manager when configuring mail and snmp recipients.
In addition the notifications of the optional add-on OPENSM2 are sent as events of component OPENSM2.
- **Unit monitoring and extended eventing**
MUs, HNCs and SU x86 of SE Servers are monitored concerning system resources and software failure. In case of lack of system resources and software errors the status of the unit will be set to WARNING in SE Manager and the reason will be displayed in a tool tip. In addition teleservice calls and events will be generated.
- **Display of unit's hardware status in SE Manager**
For the units of type MU, HNC, SU x86 and AU detailed hardware status information is displayed in SE Manager (sensor data).
- **Simplification of FC network configuration in SE Manager**
For each FC network it is sufficient to configure only one switch per fabric in SE Manager.
- **Overview of software version and add-ons in SE Manager**
In a central overview the software version for units of type MU, HNC, SU x86 and AU as well as installed add-on packs are displayed in SE Manager.

- **Adoption of SU /390's system name in SE Manager**
The system name of a SU /390 may be freely edited in SE Manager.
- **Description fields for systems, networks and IP-based access rights in SE Manager**
For systems, networks and IP-based access rights a description can be entered in SE Manger which is then displayed in the overview tables.
- **Support of IBM LTO-7 tape drives in SE Manager**
The administration of tape drives in SE Manager supports drives of type IBM LTO-7.
- **IO configuration for SU /390 in SE-Manager**
Files containing IOGEN instructions can be uploaded via the SE Manager from the local PC. Based on this source files an IORSF can be generated and transferred to a selected level on the SVP hard disk. In addition the IORSF of the base configuration for the emergency system or for the first installation can be written to the SVP.
- **Integration of Application Units only at hardware level**
If there is no need to administrate the virtual machines (VMs) of an Application Unit, the integration of the AU can be restricted to hardware level only. In this case the monitoring will be restricted to AU's hardware. The AU's software state is not taken into account. In table "Hardware -> Units". The AU is then displayed with system status "NOT_MONITORED". On page "Systems -> Overview" the AU is displayed as Native-AU with status "NOT_MONITORED". VMs are not retrieved and therefore not displayed.
On the dashboard an info icon with a tool tip indicates the existence of "NOT_MONITORED" AUs.
- **Support of peripheral devices DX100 and LT140**
The tape library ETERNUS LT140 and the storage subsystem ETERNUS DX100 S4 are supported, each with single path FC direct connection.

3 Technical information

3.1 Resource requirements

M2000 is installed on the internal mirrored disks of the MU, which have a preset partitioning.

For SE Servers with a redundant Management Unit resp. in a SE Cluster configuration a disk/LUN with a capacity of at least 8 GB must be available as external configuration disk.

Remark:

For disks in an ETERNUS DX disk storage system the host response profile "BS2000" must be 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>.

3.2 Software configuration

SW basis SE Server

- HNC V6.3A (if /390 Server Units are used)
- X2000 V6.3A (if x86 Server Units are used)
- Add-on software:
 - STORMAN V8.0.2-0
 - ROBAR V7.6A02-1.0
 - OPENSMB2 V11.0B0300
 - OPENUTM V6.5A00
 - SEHABASIS V1.1.0-2.0
 - NUX V1.0.0-5.0

BS2000 OSD/XC native and VM2000 mode on SU700(B), SU500(B), SU300(B)

- 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.

BS2000 OSD/XC native and VM2000 mode on SU710 and 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 19.1 each.

Linux is not released for use on M2000

The Linux appliance M2000 is a scaled down Linux system exclusively designed to run on the Management Unit of a SE Server. This is why the use of Linux on M2000 is not released for customer applications.

3.3 Product installation

The SE Server is delivered with M2000 preinstalled, including add-on STORMAN. Any required new correction levels for M2000 that may be required are supplied as part of the hardware service contract and are installed by a Fujitsu service technician.

3.4 Product use**SE Manager**

Operation takes place via a web-based graphic user interface called SE Manager (SEM). Local access is possible via a web browser that is started in M2000 on the rack console integrated in the SE rack.

Remote operation and administration takes place via PC workplaces that can access the SE Manager via a web browser.

To ensure that all SE Manager functions can be used, an up-to-date web browser is required.

- Supported browsers:
 - Microsoft Internet Explorer 11
 - Microsoft Edge
 - Mozilla Firefox as of version 45 ESR

In the case of extensive device configurations in particular, the use of Firefox is recommended for performance reasons.

- Browser settings:
 - JavaScript is permitted.
 - Cookies are permitted.
 - If you intend to open a large number of BS2000 console windows or dialog windows simultaneously, the maximum number of server connections must be configured accordingly.
- Global Session
 - The following prerequisites must be met in order to establish a global session covering multiple MUs:
 - The MUs are embedded in an external DNS within the same net domain.
 - The domain configured on the MU is the same as the external one.

- The connection to the SE Manager has been made by entering MU's DNS name in browser.
- Device configuration of a SU /390:
If the I/O configuration has been changed in BS2000 (IORSF file is changed), the IORSF file list must be actualized in SE Manager in order to be able to assign new devices to the BS2000 VMs.
- Alarm management: Choice of components
After restore of the CSR archive during upgrade from V6.2A SP1 to M2000 V6.3A mail and SNMP receivers will be registered with "ANY" as triggering component. In case they have to be made component-specific they must be deleted and created again.

SE Cluster: Automatic configuration merge

The configuration of a Management Cluster will be done by your service technician. When the Cluster is set up, the configuration regarding accounts, alarm management, FC networks and user-defined applications will be merged into the central cluster configuration. As a preparation phase for this, the configuration should be made unambiguous.

An instruction for this is contained in the whitepaper

"Fujitsu Server BS2000 SE Cluster Solutions for SE Server" (see Chapter 1.3)

Inhomogeneous SE Cluster: Restrictions

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 new models SE710 and SE310 must not be operated in an inhomogeneous SE cluster.

The following restrictions apply to an inhomogeneous SE Cluster:

- Hot fix upload
Hot fixes can only be uploaded using the SE Manager of an MU of the same SE server the target unit (MU, HNC, SU x86) is part of.
- IORSF update
The action "Update IORSF file list" for refreshing the SU /390 devices of the SE Server running V6.2A SP1 should be called from the SE Manager of a MU which is part of the V6.3A Server.
In the SE Manager of a V6.2A SP1 MU the action may result in error "The LAN connection was lost and the result of the action could not be determined." (timeout).
- CLI command "remoteCommand"
The CLI command remoteCommand should be used only within a server. That means that MU and the target SU x86 should be in the same server.
- SVP console and shadow terminal
SVP console and shadow terminal can only be opened using the SE Manager of a MU on the local SE server.
- IO configuration for SU /390 in SE Manager
The generation of an IORSF file is always executed on the MU with active connection to SVP.
Due to the fact that on MU with version V6.2 SP1 this function doesn't exist, the action "Generate and transfer IORSF file" called for a SU /390 in a V6.2A SP1 SE Server will abort with error: "404 Not Found".

- **Setting the system name of the SU /390**
The name of a SU /390 belonging to a V6.2A SP1 Server can't be freely chosen. The name can be set on a V6.3A MU but after some minutes the BCAM hostname will be displayed again.
- **Alarm Management: Specification of component**
Mail and SNMP receivers of the V6.2A SP1 Server will be handled as entries with "ANY" as triggering component when the Cluster is configured and configuration is merged automatically.
In this situation duplicate entries may occur. Cleaning up must be performed manually.

If the Cluster Manager is a V6.2A SP1 MU, the component will not be evaluated when mails and SNMP-traps are sent by the MU. Therefore mails and traps will be sent independently from the specified component. In case of receivers with the same addressee but with different components mails and traps are sent multiple.

The Cluster Manager MU is displayed on page "Cluster -> Management Cluster"

- **Integration of Application Units only at hardware level**
The status of Application Units which have been registered in V6.3A only for HW monitoring will not be evaluated in the groups "Systems" and "Units/Partitions" on the dashboard of a MU running V6.2A SP1.
- **Unit monitoring**
In case of lack of system resources and SW errors on an Unit which belongs to the V6.3A Server, the Unit status will be set to WARNING. In this case the menu entries of "Hardware -> Units -> <Server> -> <Unit>" in a SE Manager of a V6.2A SP1 MU are locked. Therefore the administration of a Unit with status WARNING is only possible in SE Manager of a V6.3A MU. The same applies to device configuration of a Unit with status WARNING.
- **Live Migration in an inhomogeneous SU x86 Cluster**
In an inhomogeneous SU x86 Cluster Live Migration is released only from V6.2A SP1 to V6.3A.
For further information see release note for X2000 V6.3A.

Application Units: Supported operating systems

The following native operation systems and hypervisors are supported to run on PRIMERGY based Application Units (AU20, AU25, AU47):

- Citrix XenServer 7.x
- Microsoft Windows Server 2016, 2019
- Microsoft Windows Hyper-V Server (Version upon request)
- Oracle LINUX 7.x
- Oracle VM Server 3.4 ¹⁾
- Red Hat Enterprise Linux 7, 8
- SUSE Linux Enterprise Server 12
- VMware vSphere® ESXi 6.5, 6.7

The following hypervisor platforms are supported to run on PRIMEQUEST based Application Units (AU87, DBU87, AUQ38E, DBU38E):

- Microsoft Windows Hyper-V Server (Version upon request)
- Oracle VM Server 3.4 ¹⁾
- VMware vSphere® ESXi 6.5, 6.7

¹⁾ With Oracle VM Manager up to version 3.4.6

The PRIMEQUEST model PQ3800E can also be ordered as appliance installed and maintained by Fujitsu running Oracle VM Server 3.4 (as AU of type DBU38E). On an additional AU of type AU25 the Oracle VM Manager is preinstalled and integrated in the SE Manager.

Additional operating systems and virtualization products can be qualified for Application Units upon request.

Application Units: Embedding in the SE Manager

Hints concerning PRIMEQUEST AUs:

- If an already configured PRIMEQUEST AU is extended by an additional partition, the AU must be registered again in SE Manager. Please ask your service technician for support.
- In SE Manager the access to MMB's WEB-UI is linked via the unencrypted HTTP protocol. This link can only be used if access via HTTP protocol is enabled in MMB's configuration.

As a prerequisite for embedding an AU in the SE Manager and in the remote service concept of the SE Server, ServerView components must be installed in the operating system of the AU. The required software will either be shipped with the SE Server or can be downloaded from Fujitsu's support pages via the following link: <http://support.ts.fujitsu.com>

See the online help of the SE Manager for further information.

OracleVM Server

For linking the Oracle VM Manager with the SE Manager, the FQDN (fully qualified domain name) and the port number must be entered in SE Manager by means of a user-defined management application of type OVM Manager (OVMM). For additional information see manual „FUJITSU Server BS2000 SE Operation and Administration“, section "Managing user-defined management applications".

VMware vSphere

In order to install an ESXi Server on an AU the corresponding Fujitsu Custom ISO image for ESXi must be used, because the necessary ServerView components for SE integration are already contained in this image. Information about Fujitsu Custom ISO images can be viewed on the internet pages of Fujitsu Support (<http://support.ts.fujitsu.com>).

Application Units: Limitations:

- A maximum number of 32 Application Units are supported per SE Server. Thereof up to 5 PRIMEQUEST models (PQ2800E2 or PQ3800E) are supported.
- The physical partitioning into up to 4 partitions is supported for PRIMEQUEST AUs. Extended partitioning is not supported.
- The SE Manager is able to represent up to 1500 virtual machines running on Application Units.

Please consult your sales representative if you need to run a configuration which exceeds these limitations.

REWAS as subsystem in BS2000 for BS2000 functionality in the SE Manager

The subsystem REWAS realizes the BS2000 specific functions for Server Units in the SE Manager. For this purpose the subsystem REWAS must be running on each BS2000 system.

As a prerequisite for the communication between REWAS and SE Manager a BCAM configuration which is based on the provided templates must be activated on the BS2000 systems and on the VM2000 monitor system.

Special note regarding the 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.

BS2000 operating using the Linux shell

In addition to the terminals which are integrated in the SE Manager, the commands bs2Console, bs2Dialog and svpConsole are available in the Linux shell of the Management Unit. If called with suitable parameters these commands open the corresponding terminal instances at the specified Server Unit.

We recommend to use the SSH-client PuTTY for accessing the shell on the Management Unit. You may use PuTTY as of version 0.72.
If you use a different tool the functionality of bs2Console, bs2Dialog and svpConsole cannot be guaranteed.

Shell commands for the roles operator and BS2000 administrator:

- For accounts of the roles operator and BS2000 administrator the connection to BS2000 console, BS2000 dialog and SVP console is possible via the commands bs2Console, bs2Dialog and svpConsole which are intended to be executed as "remote command" in PuTTY (in case of operator accounts depending on the individual rights).
The use of PuTTY is described in the manual "FUJITSU Server BS2000 SE Administration and Operation".

Connecting the NetUnit to the customer LAN

For the uplink ports of the public networks (e.g. MANPU, DANPU<nn>) no spanning tree protocol should be configured at the switch on customer site.

3.5 Obsolete (and discontinued) functions

SW configuration:

- OSD/XC V9.5 is no longer supported.

3.6 Incompatibilities

Accessing the SVP console

On a SE Server with SU /390 the SVP console can be accessed in SE Manager via page "Systems -> <SU /390> -> SVP console".

3.7 Restrictions

- AU running VMware ESXi:
The assignment to a private management network (e.g. MONPR01) isn't possible via automatic IPv6 configuration. Instead a static IPv6 address must be assigned manually and explicitly entered when registering the AU.
This restriction doesn't apply to the registration of AU's iRMC.

- EDGE browser
Depending on the used version and update of Edge, a warning message referring to ssl certificate is being displayed when opening SEM pages. The certificate has to be approved each time.
As workaround the CA certificate of this MU has to be imported into MS Edge under "Trusted Root Certification Authorities".
The CA certificate of the MU can be downloaded via SEM's main window "Authorizations -> Certificates -> <mu> (MU)".
As an alternative an official certificate signed by a trusted certification authority (CA) can be uploaded and activated via the same SEM page.

In some situations the message "session has expired" is displayed erroneously when opening a SEM page. In this case all Edge instances must be closed and Edge must be restarted.

3.8 Procedure in the event of errors

General instructions for creating documents

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 analysed with diagnostic tools. For reproducible errors the user should include detailed information on how to generate the error condition.

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 in menu
Hardware -> Units (SEnnn) -> <Name> (MU) -> 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)

Hints regarding browser consoles:

Browser	Keyboard shortcut
Firefox 63	Ctrl+Shift+I, F12
Edge	F12
IE 11	F12

4 Hardware requirements

M2000 V6.3A is intended to be installed only on Management Units of the BS2000 SE Servers.

4.1 Supported Application Units

The following Application Units are supported in M2000 V6.3A:

<i>AU model</i>	<i>HW basis</i>
AU25	Primergy RX2530 M1-L / M4 Primergy RX2540 M4 ¹⁾ / M5
AU47	Primergy RX4770 M1 / M2 / M3 / M5
AU87 / DBU87 ²⁾	PrimeQuest PQ2800E2
AUQ38E / DBU38E ²⁾	PrimeQuest PQ3800E

1) Upon special release

2) The PRIMEQUEST models can also be ordered as appliance installed and maintained by Fujitsu as DBU87 and DBU38E.

5 Firmware levels

The following minimum firmware levels should be used on the Management Unit. 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.

MU M1 with HW basis RX200 S8

Component	FW version
BIOS	V4.6.5.4 - R1.20
iRMC / sdr	9.20F_sdr3.62
SAS RAID Ctrl SAS 6G 5/6 512MB (D2616)	2.130.403-4660
Fibre Channel LPe12002	2.02a1

MU M2 with HW basis RX2530 M1

Component	FW version
BIOS	V5.0.0.9 - R1.39
iRMC / sdr	9.21F_sdr3.13
SAS RAID Ctrl PRAID EP420i	4.680.00-8417
Fibre Channel LPe12002	2.02A3
Fibre Channel LPe16002	11.2.210.13

MU M3 with HW basis RX2530 M5

Component	FW version
BIOS	V5.0.0.14 - R1.15.0
iRMC / sdr	02.50P_sdr03.13
SAS RAID Ctrl PRAID EP420i	4.680.00-8417-1.0.0
Fibre Channel LPe31002	12.0.261.33
LAN PLAN EP X710-DA4 4x10Gb SFP+	1.32.20.30
LAN PLAN EP X710-T4 4x10GBASE-T	1.32.20.30

Firmware levels of Application Units (minimum levels)

PRIMERGY based Application Units:

<i>AU model</i>	<i>HW basis</i>	<i>BIOS</i>	<i>iRMC / sdr</i>
AU25	PY RX2530 M1-L	R1.39	9.21F_sdr03.13
	PY RX2530 M4	R1.39	2.46P_sdr03.50
	PY RX2540 M4	R1.39	2.46P_sdr03.82
	PY RX2540 M5	R1.15	2.50P_sdr03.43
AU47	PY RX4770 M3	R1.20	9.20F_sdr03.21
	PY RX4770 M5	R1.15	2.50P_sdr03.08

PRIMEQUEST based Application Units:

<i>AU model</i>	<i>HW basis</i>	<i>Unified Firmware Version</i>
AU87 / DBU87	PQ PQ2800E2	BB19101
AUQ38E / DBU38E	PQ PQ3800E	PA19091