PRIMERGY BX620 S3
2-way Server Blade

Operating Manual

Edition November 2006

Comments… Suggestions… Corrections…

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Fax forms for sending us your comments are included in the back of the manual.

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Certified documentation according to DIN EN ISO 9001:2000

To ensure a consistently high quality standard and user-friendliness, this documentation was created to meet the regulations of a quality management system which complies with the requirements of the standard DIN EN ISO 9001:2000.

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1 Preface

The PRIMERGY BX620 S3 Server-Blade is another model of the highly compact and powerful server blades that can be operated in the PRIMERGY BX600 S2 basic unit.

Figure 1: PRIMERGY BX620 S3 Server-Blade

The PRIMERGY BX620 S3 server blade offers several new forward-looking technologies such as dual-core processors, FBD memory modules with extended mirroring, modular hard disk controller configuration and 2.5-inch SAS or SATA hard disks. The new modular hard disk controller concept with four storage module variants allows you to create different configurations with SAS and SATA hard disks for different scenarios. The configuration options range from the low-cost-platform with SATA hard disks up to the high-end platform with SAS hard disks and an SAS storage module with RAID 5 and cache/iTBBU.

Security functions in the *BIOS setup* protect the data on the server blade from unauthorized manipulation.

The BX620 S3 server blade occupies one slot in the PRIMERGY BX600 S2 basic unit. It can be installed in combination with other server blade models.

1.1 Overview of the Documentation

PRIMERGY manuals are available in PDF format on the *ServerBooks CD*, which is part of the *ServerView Suite* provided with each server system.

These PDF files can also be downloaded from the Internet free of charge: At *http://manuals.fujitsu-siemens.com* you will find an overview page showing the online documentation available on the Internet. You can go to the PRIMERGY Server documentation by clicking on *industry standard servers*.

Concept and Target Groups

This operating manual shows you how to install the server blade in the basic unit, how to start up the server blade and how to operate it.

This manual is intended for those responsible for installing the hardware and ensuring that the system runs smoothly. It explains all you need to know to get your BX620 S3 server blade up and running.

For all information on installing and operating server blades that applies to all server blade models, see the manual "PRIMERGY BX600 S2 Basic Unit" (see “Related publications” on page 69).

To understand the various expansion options, you will need to be familiar with the fields of hardware and data transmission and you will require a basic knowledge of the underlying operating system.

Additional Documentation About the Server

The PRIMERGY BX620 S3 documentation comprises the following additional documents:

- “Quick Start Software - PRIMERGY ServerView Suite“ (flyer)
- The “Guarantee” manual (printed copy always supplied with the server; also available as a PDF file on the supplied *ServerBooks* CD)
- The “Security” manual (printed copy always supplied with the server; also available as a PDF file on the supplied *ServerBooks* CD)
- The “Ergonomics” manual (PDF file available on the supplied *ServerBooks* CD)
- “Returning used devices” (PDF file available on the supplied *ServerBooks* CD)
- “Helpdesk” (flyer containing worldwide helpdesk phone numbers)

– The “PRIMERGY BX620 S3 Server Blade Options Guide” manual (PDF file available on the supplied *ServerBooks* CD)
– The “ServerView Suite” contains the *ServerStart* CD and the *ServerBooks* CD as well as the printed version of the “PRIMERGY ServerView Suite - Server-Start” manual. The manual is also available as a PDF file on the *ServerBooks* CD.

You can order an additional copy of the *ServerBooks* CD by sending an e-mail to the following address, quoting your server data: *Reklamat-PC-LOG@fujitsu-siemens.com*

Further sources of information:

– Technical Manual for the relevant rack
– Manual for the monitor
– Manual on *ServerView* Server Management
– Manual for the PRIMERGY BX Blade Server RemoteView Management Blade
– Documentation for boards and drives
– Documentation for your operating system
– Information files on your operating system

(See also “Literatur” on page 63.)

1.2 Features

CPU

In the BX620 S3 Server-Blade, **one** (basic configuration) or **two** dual-core processors of type Intel® XEON® DC ensure extremely high data throughput and system performance. The following variants are available:
Dempsey 667 (2.83 GHz) and Dempsey 1066 (3.20 GHz, 3.73 GHz oder 3.20 GHz MV). The next processor generation Woodcrest and Clovertown is also supported. All variants have a 2x2 MB second-level cache (2 MB per core).

For how to upgrade processors see the Options Guide; for how to replace processors see the Service Supplement.

ATTENTION

It is not possible to use CPUs with different clock rates or cache capacities in the BX620 S3 Server-Blade.

The Clovertown processor is only comlpiant with server blades with part number A3C40083121.

Memory

The BX620 S3 Server-Blade has two memory banks (branches) with four slots each. These can be fitted with 512 MB, 1 GB, 2 GB or 4 GB fully buffered DIMM 533-MHz memory modules. This allows a maximum memory configuration of 32 GB if 4-GB modules are used. Memory Mirroring Mode and ChipKill™ are standard.

The standard base configuration has two memory modules so that the server has, depending on the DIMM size, 1, 2, 4 or 8 GB on board. As there is a total of eight slots available, up to six additional memory modules can therefore be added. Only memory modules of the same capacity can be installed in the same memory bank.

How to install memory modules is described in the Options Guide.

Hard Disk Drives

The BX620 S3 Server-Blade can accommodate up to two 2.5-inch hard disk modules (either SAS or SATA).

SATA offers 80-GB or 100-GB disks. This allows a maximum hard disk capacity of the BX620 S3 Server-Blade of 200 (2x100) GB.

SAS offers 36-GB or 73-GB disks. This allows a maximum hard disk capacity of 146 GB (2x73) GB.

The hard disk modules can be replaced or added while the system is running (hot-plug), without having to take off the server blade cover. How to install/replace hard disk modules is described in chapter “Hot-Plug Components” on page 59.

Storage Modules

The hard disks are controlled by a storage module (controller) that can be plugged into the motherboard and which may also have additional functions. SATA only offers **one** storage module variant, while SAS offers a total of **four** different variants: SAS, SAS/RAID, SAS/PCI-X and SAS/PCIe. The two PCI variants allow the installation of low-profile PCI modules.

Storage modules can be installed/replaced via the front of the server blade, without having to take off the housing cover. However, they cannot be replaced while the system is running (non-hot-plug) - the server blade must be switched off.

How to install/replace storage modules is described in the Options Guide.

LAN Availability

The BX620 S3 Server-Blade has an on-board LAN controller with TOE and iSCSI functionality which provides two 1-Gbit/s Ethernet channels. The Ethernet LAN connection can be implemented via switch blades or via pass-thru blades on the back of the PRIMERGY BX600 S2 basic unit. For more information see the Operating Manual for the basic unit.

Optional Fibre-Channel or Ethernet I/O Module (Daughter Card)

The BX620 S3 Server-Blade can be equipped with an I/O daughter card. The following I/O daughter cards are available for BX630 S3 server blade:

– 2Gbit/s Fibre Channel I/O mosule. This module is equipped with a QLogic ISP2312 chip and Qlogic QLA2342 compliant. It supports the storage subsystems S80, FibreCAT CXx00, AX100, Symmetrics and FC4700.

– Gigabit Ethernet I/O module (PCI-X)

– Gigabit Ethernet I/O module (PCIe), supports also TOE (TCP/IP Offload Engine) and iSCSI

To be able to use the additional I/O functionality, at least one FC pass-thru blade or switch blade, or Ethernet LAN pass-thru blade or switch blade, must be installed in slot NET3 of the PRIMERGY BX600 S2 basic unit.

How to install I/O modules is described in the Options Guide.

Graphics Controller

The BX620 S3 Server-Blade has a 16 MB on-board ATI ES1000 graphics controller. A monitor can be connected via the VGA port (via breakout cable) on the front of the server blade or via the KVM blade at the back of the basic unit.

Accessible Drives

Accessible drives (e.g. floppy disk or DVD drives) can be connected via the two USB ports (via breakout cable) on the front of the server blade while the system is running.

High Availability and Data Security

When memory data is accessed, 1-bit errors in the main memory are recognized and automatically corrected with the ECC (Error Correcting Code) method.

ASR&R (Automatic Server Reconfiguration and Restart) restarts the system in the case of an error and automatically "hides" the defective system components.

The PDA (Prefailure Detection and Analyzing) technology from Fujitsu Siemens Computers analyzes and monitors all components that are important for system reliability.

On the on-board SATA controller (ESB2), two SATA hard disks can be operated with software RAID 0 or 1. The on-board RAID controllers on the SAS RAID storage modules by default support RAID levels 0 and 1, thus increasing the system's availability.

SAS hard disk modules also allow the optional installation of a storage module with RAID level 0 or 1 with extended logging and BBU to further increase availability.

Server Management

Server management is implemented using the supplied *ServerView* software and PDA (Prefailure Detection and Analyzing) technology from Fujitsu Siemens Computers. PDA reports the threat of a system error or overloading early on, so that preventive measures can be taken.

ServerView allows the management of all PRIMERGY servers in the network via a central console. *ServerView* supports the following functions:

- Monitoring of the ambient and CPU temperature
- Watchdog timer for ASR&R if memory modules or processors fail
- Voltage monitoring
- End-of-life monitoring of the fans with prefailure notification
- Watchdog timer for operating system monitoring and application monitoring with ASR&R

The supplied deployment software simplifies and speeds up the installation of multiple servers. For further information see the relevant documentation (see "Related publications" on page 69).

Further information on the *ServerView* server management is provided in the associated documentation (see "Related publications" on page 69).

ServerStart

The enclosed *ServerStart* software allows you to configure your PRIMERGY server quickly according to your requirements. User-friendly menus guide you through the installation of the server operating systems.

Service and Support

PRIMERGY servers have a service-friendly, modular architecture which allows quick and simple maintenance. The flash-EPROM program supplied with the utilities from Fujitsu Siemens Computers enables fast BIOS updating via the USB interface. Global Flash also allows the BIOS and BMC firmware to be updated remotely.

The two redundant hot-pluggable management blades of the PRIMERGY BX600 S2 basic unit with independent LAN and COM ports for administration allow complete remote administration of the server blade. Together they allow remote diagnosis for system analysis, remote configuration and a remote restart even in the event of an operating system failure or hardware errors.

1.3 Notational Conventions

The following notational conventions are used in this manual:

Italics	indicate commands, menu items or software programs.
“quotation marks”	indicate names of chapters and terms that need to be emphasized.
►	indicates activities that must be performed in the order given.
 **ATTENTION!**	indicates that, if you ignore the information given at this point, your health, the correct functioning of your system or the security of your data may be at risk.
	indicates supplementary information, remarks and tips.

1.4 Technical Data

Electrical Specifications

Power consumption	~ 380 W (full configuration)
Thermal dissipation	Min. ~ 750 kJ/h, max. ~ 1000 kJ/h

Compliance Standards

Product safety and ergonomics	IEC 60950 / EN 60950, UL 1950 3rd. Ed., CAN/CSA 22.2 No. 60950 3rd. Ed.
Electromagnetic compatibility (standard power supply)	FCC class A VCCI class A /JEIDA CNS 13438 class A C-Tick class A
Emitted interference	EN 55022 class A
Harmonic current	EN 61000-3-2
Flicker	EN 61000-3-3
Noise immunity	EN 55024
CE certificate according to EU regulations:	Low-Voltage Directive 73/23/EEC Electromagnetic Compatibility 89/336/EEC

Certification

Product safety	
Global	CB
Europe	ENEC
Germany	GS, CE
USA/Canada	CSA_{US} / CSA_{C}
Japan	VCCI
China/Taiwan	BSMI

Mechanical Specifications

Width	286 mm
Depth	470 mm (520 mm incl. handles and plugs)
Height	43 mm (1 slot in basic unit)

Weight

Max. 7,0 kg (depending on the configuration).

Ambient Conditions

Environment class 3K2 Environment class 2K2	EN60721 / IEC 721 Part 3-3 EN 60721 / IEC 721 Part 3-2
Temperature:	
Operation (3K2)	5°C .... 35°C
Transport (2K2)	-20°C .... 60°C
Humidity	10% 85%

Condensation during operation must be avoided!

2 Overview: Installation Procedure

This chapter provides an overview of the steps you must perform to install your server blade in the PRIMERGY BX600 S2 basic unit. The links take you to the sections with more detailed descriptions of the individual steps.

For information on installing and operating the basic unit, see the "PRIMERGY BX600 S2 Basic Unit - Operating Manual" (see “Related publications” on page 69).

- First read the chapter “Important Notes” starting on page 17, in particular the section “Notes on Safety”.
- Unpack the server blade, check the delivery for damage sustained during transport and that the delivery corresponds to the specifications in the delivery note (see section 4.2 on page 25).
- Familiarize yourself with the control and display elements on the front of the server blade (see chapter “Installation and Operation” on page 33).
- Install the operating system and the applications on the server blade.

  To do this, you have the following options:

  – *Cloning the server blade from a remote image server using RemoteDeploy.*

    This is recommended if the following are available:

    – the *RemoteDeploy* software
    – a suitable clone image
    – a deployment server and a LAN connection

  – *Remote installation with ServerStart*

    This installation method is recommended if a LAN connection and a DHCP server (deployment server) are available but the requirements for cloning are not met.

– *Local installation with or without ServerStart*

The local installation is the least convenient method. It is only recommended if the requirements for a remote installation or cloning are not met.

If you want to use an operating system that is not supported by *ServerStart*, you can of course install it directly without *ServerStart*.

For more information on the remote or local installation of server blades see the *ServerStart* manual, which contains a Quick Start Guide and a detailed description of the individual installation options and wizards. A printed copy of the *ServerStart* manual is contained in the *ServerView Suite*, which is supplied with the BX600 S2 basic unit. A PDF version is available on the PRIMERGY *ServerBooks* CD.

For how to clone server blades see the RemoteDeploy manual (a printed copy is supplied with RemoteDeploy, and a PDF file is available on the PRIMERGY *ServerBooks* CD).

3 Important Notes

This chapter provides safety instructions which you must observe when handling your server blade.

3.1 Notes on Safety

The following safety instructions can also be found in the manual entitled “Safety”.

This device complies with the relevant safety regulations for data processing equipment.

If you have any questions as to whether you can set up the device in your particular environment, please contact your sales outlet or our customer service center.

ATTENTION!

The activities described in this manual may only be performed by specialist technical personnel. Equipment repairs must only be performed by qualified staff. Any unauthorized opening or improper repairs could endanger the user (through electric shock, energy hazard, fire hazard) or damage the equipment. Please note that any unauthorized opening of the device will result in the invalidation of the warranty and exclusion from all liability.

Before Setting Up

ATTENTION!

- During installation and before operating the device, read the instructions on environmental conditions for your device in the section “Technical Data” on page 13.
- If the device is brought in from a cold environment, condensation may form both inside and on the outside of the machine.

  Before operating the device, wait until it is absolutely dry and has reached approximately the same temperature as the installation site. Any failure to observe these guidelines could damage the equipment.
- Transport the device only in its original packaging or in packaging which protects it from knocks and jolts.

Installation and Operation

ATTENTION!

- Read the notes in the chapter “Installation and Operation” on page 33.

Batteries

ATTENTION!

- Incorrect replacement of batteries can lead to risk of explosion. The batteries may only be replaced with identical batteries or with a type recommended by the manufacturer (see Options Guide under “Related publications” on page 69).
- When replacing the lithium battery on the system board, always follow the instructions in the technical manual for the system board (see Options Guide under “Related publications” on page 69).

Notes on Handling CDs/DVDs and CD/DVD Drives

ATTENTION!

- To prevent data loss, damage to the server blade, or injuries, you should use only CDs/DVDs in good condition in the CD/DVD drive of your server.
- Therefore, check each CD/DVD for damage, cracks, breakage etc. before inserting it in the drive.

  Please note that any additional labels applied may change the mechanical properties of a CD/DVD and cause imbalance.

  Damaged and imbalanced CDs/DVDs can break at high drive speeds (data loss).

  Under certain conditions, sharp-edged pieces of broken CDs/DVDs can penetrate the cover of the drive (cause damage to the device) and be thrown out of the device (therefore causing injury to uncovered body parts, particularly the face or neck).

To protect the CD/DVD drive and prevent mechanical damage as well as premature wear and tear of the CDs/DVDs, you should observe the following advice:

- Only insert the CDs/DVDs in the drive when needed and remove them after use.
- Store the CDs/DVDs in suitable sleeves.
- Protect the CDs/DVDs from exposure to heat and direct sunlight.

Note on the Laser

The CD/DVD drive is classified in Laser Class 1, according to IEC 60825-1.

ATTENTION!

The CD/DVD drive contains a light-emitting diode (LED) which may generate a stronger laser beam than laser class 1. It is dangerous to look directly into the beam.

Never remove any parts of the housing of the CD/DVD drive!

Modules with Electrostatic-Sensitive Devices

Modules with electrostatic-sensitive devices are identified by the following sticker:

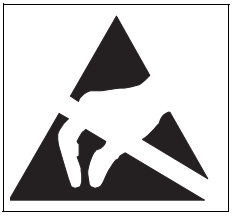

Figure 2: ESD label

When you handle components fitted with ESDs, you must always observe the following safety precautions:

- Remove the power plug from the power socket before inserting or removing components containing ESDs.
- Always discharge static build-up (e.g. by touching a grounded object) before working with such components.
- Wear a suitable grounding cable that connects you to the external chassis of the system unit.
- Any devices or tools that are used must be free of electrostatic charge.
- Always hold components with ESDs at the edges or at the points marked green (touch points).
- Do not touch any connectors or conduction paths on an ESD.
- Place all the components on a pad which is free of electrostatic charge.

For a detailed description of how to handle ESD components, see the relevant European or international standards (EN 61340-5-1, ANSI/ESD S20.20).

Please note the following

- When cleaning the system, read the notes in the Operating Manual for the BX600 S2 basic unit (see “Related publications” on page 69).
- Keep this Operating Manual and the additional documentation (e.g. Technical Manual, CD) with the device. If you pass the system on to someone else, you should also give them the complete documentation.

3.2 CE Conformity

The system complies with the requirements of the EC directives 89/336/EEC regarding “Electromagnetic Compatibility" and 73/23/EEC “Low-Voltage Directive". This is indicated by the CE certificate label (CE = Communauté Européenne).

3.3 Transporting the Server Blade

ATTENTION!

Transport the server blade only in its original packaging or other suitable packaging which will protect it against shock or impact. Unpack the server blade only at the place where you want to set it up.

3.4 Environmental Protection

Environmentally Friendly Product Design and Development

This product was designed in compliance with the Fujitsu Siemens Computers standard on ”environmentally friendly product design and development”. This means that the designers have taken into account crucial criteria such as durability, selection and labeling of materials, emissions, packaging, the ease with which the product can be dismantled and the extent to which it can be recycled.

This saves on resources and helps to protect the environment.

Notes on Saving Energy

Devices that do not have to be on permanently should not be switched on until they are needed and should be switched off during long breaks and when work is finished.

Notes on Packaging

Do not throw away the packaging as you may need it for future transport. If possible, the device should be transported in its original packaging.

Notes on Dealing with Consumables

Please dispose of printer consumables and batteries in accordance with local regulations.

Do not throw batteries into the trash can. They must be disposed of in accordance with local regulations on special waste.

Notes on Labeling Plastic Housing Parts

If possible, do not stick your own self-adhesive labels on plastic housing parts, as this can hamper the recycling process.

Returning Used Electrical and Electronic Devices

– Separate disposal

  Old electrical and electronic devices should be disposed of separately and not with household refuse. Separate disposal allows this old equipment to be reused or recycled, which helps conserve resources.

– Return and collection systems

  It may be possible to return old electrical/electronic devices from private households free of charge. Please use the country-specific return or collection systems available to you (see “Local Contacts” on page 24).

  The return of used devices which pose a health or safety risk for human beings due to soiling during use may be refused.

– Reuse and recycling

  By actively using any return or collection systems offered, you will be contributing to the reuse and recycling of electrical/electronic devices.

– Effects on the environment and human health

  Old electrical/electronic devices contain parts which must be handled selectively according to EU directives. Separate disposal and selective treatment are the basis for environment-friendly disposal and the protection of human health.

– Meaning of the symbol “Crossed out trash can on wheels"

  In accordance with EU directives, electrical (electronic) devices which are marked with one of the following symbols must not be disposed of with household refuse.

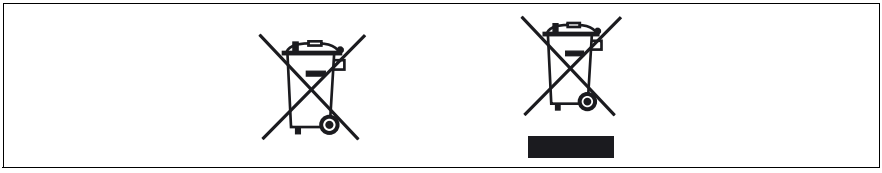

Figure 3: Symbols on electrical/electronic devices

Returning Batteries

According to EU directives, batteries which are marked with one of the following symbols must not be disposed of together with household refuse.

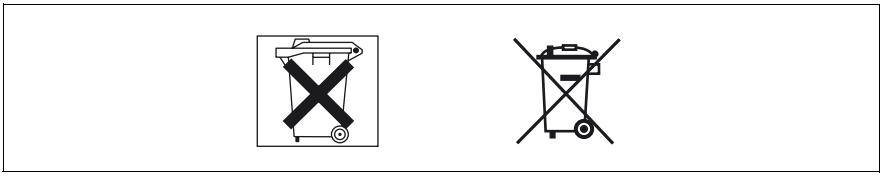

Figure 4: Symbols on batteries

With batteries containing harmful substances, the chemical symbol for the heavy metal contained is indicated below the trash can.

Cd Cadmium
Hg Mercury
Pb Lead

The following applies to Germany:

– Private consumers can return batteries at the point of sale or in the immediate vicinity thereof free of charge.

– The consumer is obligated to return defective or used batteries to the seller or to the return points established for this purpose.

Local Contacts

For details on take-back and reuse of devices and consumables within Europe, contact your Fujitsu Siemens Computers branch office/subsidiary or our recycling centre in Paderborn, Germany:

Fujitsu Siemens Computers
Recycling Center
33106 Paderborn
Germany

Tel. +49 5251 8180-10

Fax +49 5251 8180-15

Internet: www.fujitsu-siemens.com/recycling

4 Installing the Hardware

ATTENTION!

Make sure you observe the safety notes in the chapter “Important Notes” on page 17.
The server blade must not be exposed to extreme environmental conditions (see section “Technical Data” on page 13). It must be protected from dust, humidity and heat.

4.1 Installation Procedure

The following installation steps are described in detail in the following sections of this chapter:

- Unpacking the system (see 4.2 on page 25).
- Installing the server blade in the PRIMERGY BX600 S2 basic unit (see 4.3 on page 26).
- Connecting the server blade (see 4.4 on page 30).

4.2 Unpacking the Server Blade

ATTENTION!

Make sure you observe the safety notes in the chapter “Important Notes” starting on page 17.

Unpack the server blade only at the place where you want to set it up.

Keep the original packaging of the server blade. You may need it for future transport.

- ► Unpack all the individual parts.
- ► Check the delivery for damage sustained during transport.
- ► Check that the delivery corresponds to the specifications in the delivery note.

The type label is located at the front right on the underside of the BX620 S3 Server-Blade. If the delivery is damaged or does not match the delivery note, contact your supplier immediately!

4.3 Installing the Server Blade in the Basic Unit

The BX620 S3 Server-Blade occupies one slot in the PRIMERGY BX600 S2 basic unit. Up to ten server blades can be installed in a basic unit. You can also combine and operate different server blade models in a basic unit. For more information on the possible configurations see the "PRIMERGY BX600 S2 Basic Unit" manual (see “Related publications” on page 69).

ATTENTION!

Make sure you observe the safety notes and the information on handling electrostatic-sensitive devices in the section “Notes on Safety” on page 17.

Removing the Dummy Module

Any unused slots in the BX600 S2 basic unit are fitted with appropriate dummy modules to comply with the electromagnetic compatibility (EMC) regulations and ensure sufficient cooling of the system components.

To add a server blade, you must first remove the dummy module from the corresponding slot.

Figure 5: Removing the dummy module for a server blade

- ► Undo the locking mechanism of the handles by pressing the inside touch points of the two handles (1) at the same time. This undoes the locking handles of the dummy module.
- ► Swivel the top handle upward and the bottom handle downward (2) simultaneously until the locking mechanism of the dummy module disengages and releases the module.
- ► Pull the dummy module completely out of the slot (3).

ATTENTION!

Keep the dummy module for future use. If a server blade is removed again and not replaced with a new one, the dummy module must be reinstalled because of cooling, fire protection and EMC regulations.

Install the dummy module in the same way as the server blade (see page 28).

Installing a Server Blade

ATTENTION!

Make sure you observe the safety notes and the information on handling electrostatic-sensitive devices in the section “Modules with Electrostatic-Sensitive Devices” on page 19.

Figure 6: Inserting the server blade

- ► Undo the locking mechanism of the handles of the server blade by first pressing the green inside touch points of the two handles (1) at the same time.
- ► Then turn the locking handles outward (2) into the unlocked position.
- ► Hold the locking handles in the unlocked position and push the server blade as far as possible into the slot.

Make sure you install the server blade in the correct direction. The top narrow side (A) is labeled **TOP-SIDE**.

► Press the locking handles inward until the locking mechanism engages fully.

Figure 7: Final engaging of the locking mechanism

Removing the BX620 S3 Server-Blade

Remove the server blade in the same way as the dummy module (see “Removing the Dummy Module” on page 26).

ATTENTION!

If a server blade has been removed and no new blade is installed in its place, you must install a dummy module in the empty slot.

4.4 Connecting the BX620 S3 Server-Blade

All the connections required for operating the BX620 S3 Server-Blade are made via the midplane of the BX600 S2 basic unit. When you install the server blade in the blade server chassis, connections to the following modules on the back of the BX600 S2 basic unit are made automatically by means of plug connectors:

– Power supply units

– Management blade(s) for server administration

– KVM blade for connecting a monitor, keyboard and mouse

– Switch blade(s) for connecting to the LAN

– FC pass-thru blade, FC switch blade or Gigabit Ethernet pass-thru blade for a Fibre Channel connection or an additional Ethernet connection (optional, requires installation of an FC daughter card or an Ethernet daughter card in the server blade, see Options Guide)

4.4.1 Connecting External Devices

The BX620 S3 Server-Blade has a combined USB/VGA port on the front (1).

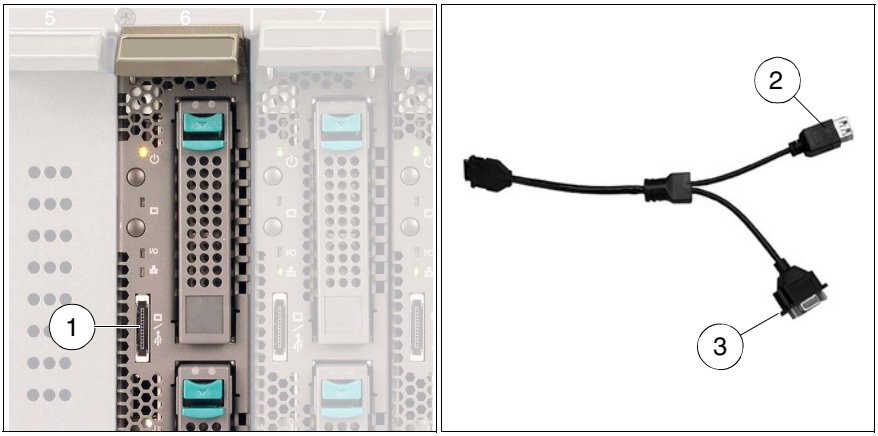

Figure 8: USB/VGA connection on the BX620 S3 Server-Blade and special cable

Connecting an external device via the USB/VGA port of the server blade requires a special cable with two USB plugs (2) and a VGA plug (3).

The USB/VGA cable is supplied with the PRIMERGY BX600 S2 basic unit.

For information on connecting external devices via the infrastructure module of the basic unit, see the manual “PRIMERGY BX600 S2 Basic Unit" (see “Related publications” on page 69).

5 Installation and Operation

ATTENTION!

Make sure you observe the safety notes in the chapter “Important Notes” on page 17.

This chapter explains how to set up and operate the BX620 S3 Server-Blade once you have installed it in the BX600 S2 basic unit.

– The position and function of the elements on the control and connection panel of the server blade are described in section 5.1 on page 34.

– The different possible ways of switching the server blade on and off are described in section 5.2 on page 37.

– Section 5.3 on page 38 explains how to configure the server blade with *ServerStart*.

– Section 5.4 on page 40 explains how to update the server blade firmware.

5.1 Control and Connection Panel

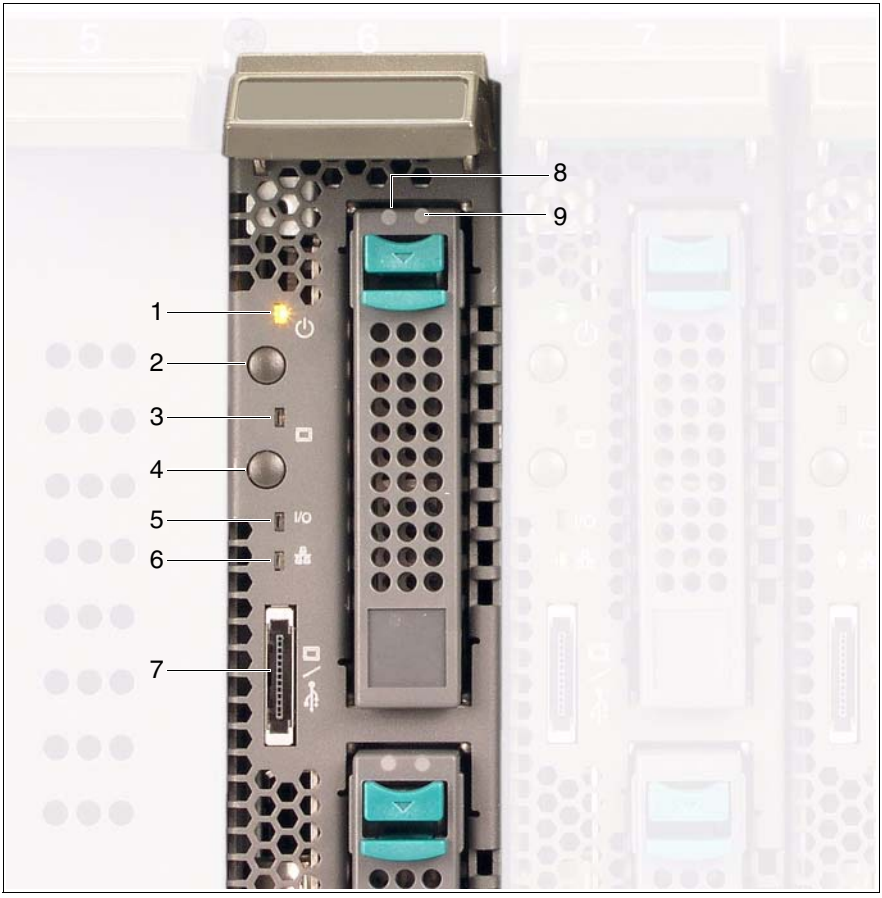

Figure 9: BX620 S3 Server-Blade: control panel

The following display, control and connection elements are available (figure 9 on page 34):

1	**Voltage/Selection indicator (two-color LED)**	
	Dark:	The BX600 S2 basic unit is off, 5 V standby voltage is not present, or the server blade is not installed properly.
	Glows green:	Server blade is running.
	Glows orange:	Server blade is off but basic unit is running (5 V standby voltage is present).
	Flashes green:	Server blade is switched on and selected for identification, or this server blade is in a critical state.
	Flashes orange:	Server blade is switched off and selected for identification, or this server blade is in a critical state.
	Flashes green-orange	Server blade is in standby mode (ACPI function) or in a critical state.
	Flashes green-dark-orange	Server blade is in standby mode (ACPI function) and selected for identification, or this server blade is in a critical state.
2	**On/Off button** fully compatible with the Advanced Configuration Power Interface (ACPI)	
⏻	If you press the On/Off button when the BX600 S2 basic unit is on (5 V standby voltage is present) and the server blade is switched off, the *power_up* command is sent to the management blade and the server blade is switched on.	
	If you press the On/Off button for less than 4 seconds when the server blade is running, the *power_off* command is sent to the management blade and the server blade is switched off by the management blade (*graceful shutdown*).	
	If you press the On/Off button for more than 4 seconds when the server blade is running, the server blade is switched off immediately.	

3	**KVM/MP error indicator (two-color LED)** Dark: KVM has not been activated for this server blade. Glows green: KVM has been activated for this server blade. Flashes orange: KVM has not been activated for this server blade, and this blade has been deactivated to save energy. Flashes green-orange: KVM has been activated for this server blade, and this blade has been deactivated to save energy.
4	**KVM button (keyboard/video/mouse)** Pressing this button switches the keyboard, monitor and mouse to this server blade.
5 **I/O**	**I/O status of the optional I/O module (green LED)** Dark: System is off or signal synchronization has failed. Green: System is switched on and online.
6	**NIC indicator (green LED)** Dark: System or server blade is off and LAN interface is not active. Glows green: Existing LAN connection. Flashes green: Active LAN.
7	**USB/VGA connector** Connector for adapter cable with two USB ports for external devices (e.g. floppy disk drive, CD/DVD drive or hard disk drive, mouse or keyboard) and a VGA port. A special cable is required! (See figure 8 on page 31)
8	**Hard disk access (green LED)** Dark: Hard disk drive not active. Glows green: Hard disk drive active.

9	**Hard disk drive indicator (orange LED)**	
	Dark:	No error
	Glows orange:	Server blade is on and hard disk drive has an error.
	Flashes slowly (1Hz)	Reconstruction (RAID message)
	Flashes quickly (3Hz)	Identification of hard disk localization (RAID message)

5.2 Switching the Server Blade On/Off

ATTENTION!

If you switch the server blade on and the connected monitor only displays flickering stripes, switch it off again immediately (see chapter “Trouble-shooting and Tips” on page 57).

This section describes how to switch the BX620 S3 Server-Blade on and off via the server blade control panel when the BX600 S2 basic unit is running.

With the BX600 S2 basic unit, you can also switch the installed server blades on an off via the control panel of the overall system as well as via the Web interface of the management blade. For detailed information see the "PRIMERGY BX600 S2 Basic Unit" manual (see “Related publications” on page 69).

Switching the Server Blade On/Off via the Control Panel

The BX600 S2 basic unit must be switched on.

You can switch the server blade on or off using one of the following methods:

– To switch the server blade on, press the On/Off button of the server blade (position 2 in figure 9 on page 34).

  To switch the server blade off, press the On/Off button of the server blade (position 2 in figure 9 on page 34) for 4 seconds.

– Defined **switch-on/switch-off time**

  The server blade is switched on or off at the time defined in *ServerView*.

– **After power failure**

A server blade that was already on when the power failed, automatically switches on again when power resumes (depending on the BIOS setting, see chapter “BIOS Setup” on page 41).

5.3 Configuring the Server Blade

Server blades can be set up using one of the following methods:

– Local installation with or without *ServerStart*

– Remote installation, see the section *ServerStart* Remote Installation in the *ServerStart* manual on the *ServerBooks* CD.

– Copying the clone images from a remote image repository to the relevant server blades (for further information see the RemoteDeploy manual on the *ServerBooks* CD (version 5.210 or later)).

> **i** The optional RemoteDeploy software package can be obtained from the Fujitsu Siemens customer service center (order number U15000-C180).

Reference Installation

A reference installation of a server blade performed using *ServerStart* is used as the basis for a clone image. The image is created and then used by *RemoteDeploy* for fast installation and configuration of other server blades.

> **i** For details on using *ServerStart,* see the operating manual for *ServerStart* on the PRIMERGY *ServerBooks* CD, which is part of the *PRIMERGY ServerView Suite* provided with each server system.

Preparing the Hardware

To perform an initial installation of a server blade with *ServerStart* or make changes later, you must connect a CD-ROM drive and a floppy disk drive to the relevant server blade via the USB/VGA port (see section “Connecting the BX620 S3 Server-Blade” on page 30). In addition, a monitor, keyboard and mouse must be connected to the KVM blade on the back of the BX600 S2 basic unit and must be switched to the relevant server blade by pressing the KVM button.

Connecting a CD-ROM drive and floppy disk drive to the server blade via USB

- Connect the breakout cable to the USB/VGA port on the front of the relevant server blade (figure 8 on page 31).
- Connect the data cable of the CD-ROM drive and, if required, also the floppy disk drive to the USB ports of the breakout cable (see figure 8 on page 31).
- Make sure that the BX600 S2 basic unit is switched on.
- To switch the server blade on, press the On/Off button on the control panel (position 2 in figure 9 on page 34).
- If the CD-ROM drive and the floppy disk drive are not supplied with power via the USB ports of the breakout cable, connect them directly to the mains.
- Connect the monitor, keyboard and mouse to the KVM blade on the rear of the BX600 S2 basic unit. For information see the "PRIMERGY BX600 S2 Basic Unit" manual (see “Related publications” on page 69).
- Press the KVM button (position 4 in figure 9 on page 34) on the control panel of the server blade to switch the keyboard, mouse and the monitor of the KVM blade to the server blade.

Preparing the Software

Booting from the CD-ROM drive

Boot the relevant server blade from the *ServerStart* CD to install the operating system. In some cases this may require that you change a few settings:

- Insert the *ServerStart* CD in the CD-ROM drive and press the On/Off button (position 2 in figure 9 on page 34) on the control panel of the server blade.
- Press the KVM button (position 4 in figure 9 on page 34) on the control panel of the server blade to switch the keyboard, mouse and the monitor of the KVM blade to the server blade. Wait a few seconds for the monitor to be activated.
- When prompted, press F2 to call up the BIOS setup of the server blade.
- In the BIOS setup menu select the *Boot* submenu and enable *Boot from CD-ROM Drive*.
- Press ESC twice and select *Exit Saving Changes* from the Exit menu.

Once the server blade has booted from the *ServerStart* CD, the startup screen is displayed.

5.4 Updating the Firmware (BIOS and BMC)

All the files required for updating the PRIMERGY BX600 S2 components are available from http://download.fujitsu-siemens.com.

You can update both the firmware of the server blade BIOS and the firmware of the server blade BMC.

BMC stands for **B**aseboard **M**anagement **C**ontroller. The BMC on the server blade collects management information and sends it to the management blade.

There are two possible ways of updating the firmware of the server blade BIOS and the server blade BMC:

– Updating the firmware of the server blade with TFTP.

  For detailed information see the "PRIMERGY BX600 S2 Basic Unit" manual (see “Related publications” on page 69).

– Updating the firmware of the server blade from a USB floppy disk drive.

To update the firmware of the BX620 S3 Server-Blade from a USB floppy disk drive, proceed as follows:

- Create a boot floppy disk and copy the required BIOS and/or BMC files to this disk.
- Connect the breakout cable to the relevant server blade. Connect the USB floppy disk drive to the other end of the breakout cable.
- Switch on the server blade or restart it. The firmware update is performed automatically.

  You may have to change the order of the boot devices in the BIOS to enable booting from the floppy disk. For more information see chapter “BIOS Setup” on page 41 *ServerStart* user manual (s. “Related publications” on page 69).

6 BIOS Setup

In the BIOS Setup you can set the system functions and the hardware configuration of a server blade.

The scope of the displayed BIOS parameters may differ depending on the configuration.

The server blade comes with default settings in effect. You can change these settings in the BIOS Setup. Your changes take effect as soon as you save them and quit the BIOS setup.

The following lists illustrate the structure of the BIOS Setup menus. The numbers in brackets refer to the pages on which the individual functions are described.

Main – System Overview

- Version [45]
- Build Date [45]
- BIOS Version [45]
- BMC F/W Version [45]
- System Time / System Date [45]
- Sync RTC with Mgmt. Blade [46]
- Size [46]

Advanced – Advanced Settings

- Reset Configuration Data [46]
- Peripheral Configuration [46]
  - Serial 1 [47]
  - Serial Port 1 Address [47]
  - USB Configuration [47]
    - USB Devices Enabled [47]
    - USB Functions [47]
    - USB 2.0 Controller [47]
    - Legacy USB Support [47]
- PCI Configuration [47]
- CPU Configuration [47]

Security – Security Settings

- Supervisor Password / User Password [49]
- Change Supervisor Password [49]
- Change User Password [49]
- Clear User Password [49]
- Password Check [50]
- Supervisor Password Lock [50]

Server – Server Configuration

- ASR&R [51]
  - OS Boot Watchdog Timer [52]
  - Boot Retry Counter [52]
  - ASR&R Boot Delay (Minute) [52]
  - After Power Failure [52]
- CPU Status [51]
  - CPUx Status [53]
  - Hyper Threading Technology [53]
  - USB Configuration [47]
- Memory Status [51]
  - Memory Mirror [54]
  - DIMM x,y [54]
- Console Redirection [51]
  - Port [54]
  - Protocol [54]
  - Flow Control [54]
  - Mode [54]

Boot – Boot Settings

- Bootup Num-Lock [55]
- Boot Device Priority [55]
- Hard Disk Drives [55]

Exit – Exit Options

- Save Changes and Exit [56]
- Discard Changes and Exit [56]
- Load Previous Value [56]
- Get Default Values [56]

The following sections describe how to call up and use the BIOS setup as well as the individual menus and possible settings.

6.1 Entering the BIOS Setup

- ► Start the server blade (cold or warm start).
- ► Press the F2 function key.
- ► Enter the Setup password (if defined) and confirm your entry by pressing Enter.

6.2 Navigating in the BIOS Setup

The BIOS Setup screen has the following structure:

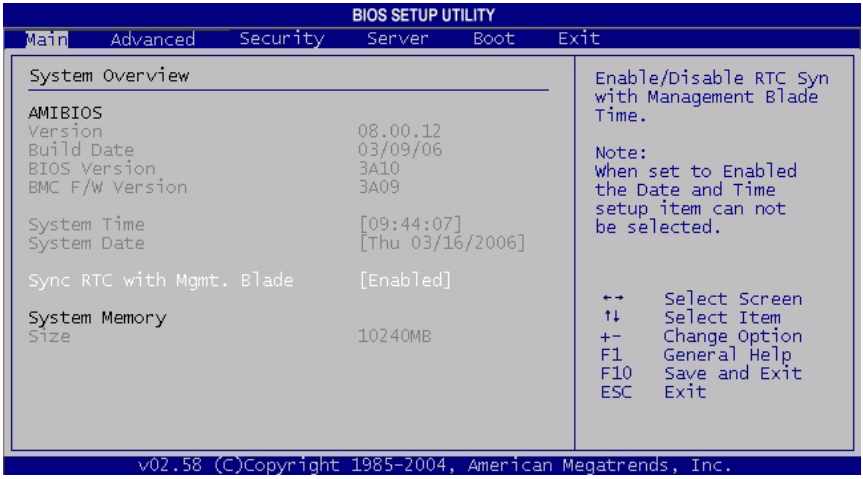

Figure 10: Main menu

Menu bar

Use the → and ← cursor keys to select a menu *Main*, *Advanced*, ...).

Workspace

The workspace (left part of the screen) contains the information for the selected menu and the settings you can make. Use the ↑ and ↓ cursor keys to select a menu item.

A □►] in the left margin indicates that a menu item contains submenus. To display a submenu, select the relevant menu item and press Enter. Pressing ESC returns you from the submenu to the superordinate menu.

Square brackets ([ ]) enclosing a parameter value indicate that this value can be be changed with the + and - keys. If a parameter consists of multiple input areas, e.g. with time or date specifications, you can move between the individual areas with the Tab key.

An asterisk (*) in front of a menu item indicates configuration conflicts that must be resolved.

Information area

The information area (right part of the screen) displays brief information on the selected menu item and on navigating in the BIOS Setup.

6.3 Main Menu

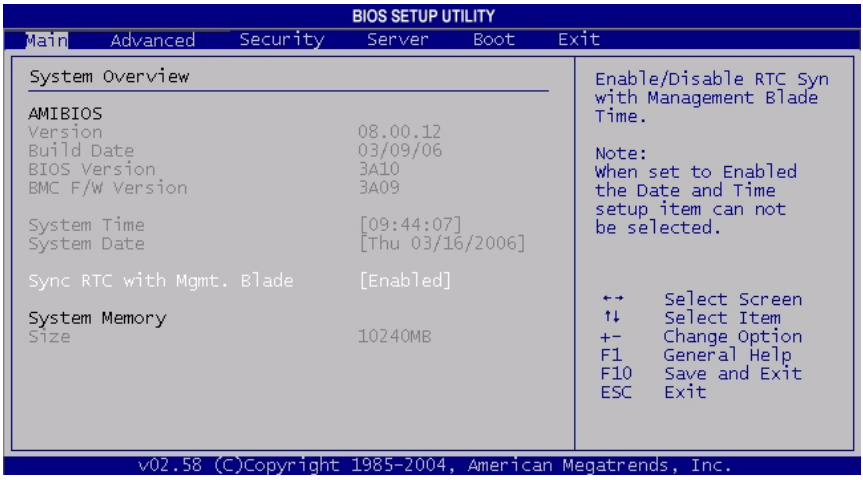

Figure 11: Main menu

Version
: Indicates the basic AMI version.

Build Date
: Indicates the creation date of the BIOS version.

BIOS Version
: Indicates the BIOS version.

BMC F/W Version
: Indicates the firmware version of the baseboard management controller.

System Time / System Date
: Sets the system time and date.

The system time has the format *HH*:*MM*:*SS*, and the system date has the format *day of the week*MM/DD/YYYY. Use the tab keys to position the cursor in the individual input fields.

If the system time and date are incorrect after you switch the system off and back on again, the lithium battery is empty and needs to be replaced.

Sync RTC with Mgmt. Blade

Switches synchronization of the real-time clock with the time of the management blade on (*Enabled*) or off (*Disabled*).

Size

Indicates the size of the available main memory.

6.4 Advanced Menu

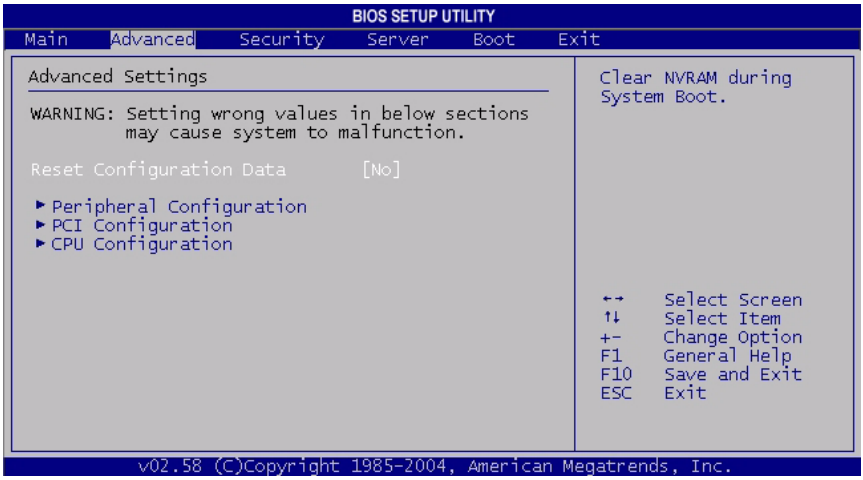

Figure 12: Advanced menu

Reset Configuration Data

Defines whether the configuration data is reinitialized when the server blade is started.

Yes After the server blade is started, the plug&play functionality identifies the new configuration data, initializes the installed boards and drives, and the resets this field to *No*.

No After the server blade is started, the plug&play functionality initializes the installed boards and drives with the configuration data that is currently in effect.

Peripheral Configuration

Calls a submenu for setting up the interfaces and controllers (see section “Peripheral Configuration” on page 47).

PCI Configuration
: Calls a submenu for setting up the PCI slots and PCI components on the system board (see section “PCI Configuration” on page 48).

CPU Configuration
: Calls a submenu for defining the CPU settings.

6.4.1 Peripheral Configuration

The Peripheral Configuration submenu contains the following items:

Serial 1
: This field allows you to set up the serial port SER1.

Serial Port 1 Address
: Defines the basic I/O address and the interrupt of the serial interface (*3F8h/IRQ4*, *2F8h/IRQ3*, *3E8h/IRQ4*, *2E8h/IRQ3*).

USB Configuration
: Calls a submenu for defining the USB settings.

6.4.1.1 USB Configuration

The USB Configuration submenu contains the following items:

USB Devices Enabled
: Indicates the number of the connected USB devices. If no USB device is connected, this field shows *None*.

USB Functions
: Defines whether the USB hardware is switched on (*4 USB Ports*) or off (*Disabled*). If this menu item shows *Disabled*, the USB controller is not recognized by an operating system and you cannot operate any USB devices.

USB 2.0 Controller
: Defines whether the USB (Universal Serial Bus) controller of the system board is operated according to specification 2.0 (*Enabled*) or according to specification 1.1 (*Disabled*). If this menu item is set to *Enabled*, the system BIOS defines the system resources to be used (interrupts, addresses).

Legacy USB Support
: Defines whether the USB keyboard and mouse emulation is *Enabled* or *Disabled*. When the *Auto* setting is selected, the USB emulation is enabled automatically when USB devices are connected.

This emulation is also required if you want to start the operating system from a USB device.

If emulation is enabled, the USB keyboard or the USB mouse can also be used with operating systems that do not support USB. The operating system can be started from a USB device if this is also supported by the operating system.

With emulation disabled, the USB keyboard or mouse can only be used if supported by the operating system. The operating system cannot be started from a USB device.

6.4.2 PCI Configuration

The menu items in this submenu are used to define whether the BIOS of the relevant devices is started during the POST (*Enabled*) or not (*Disabled*).

If you want to boot from one of these devices, the corresponding BIOS must be started.

6.4.3 CPU Configuration

The menu items in this submenu allow you to define the CPU settings.

6.5 Security menu

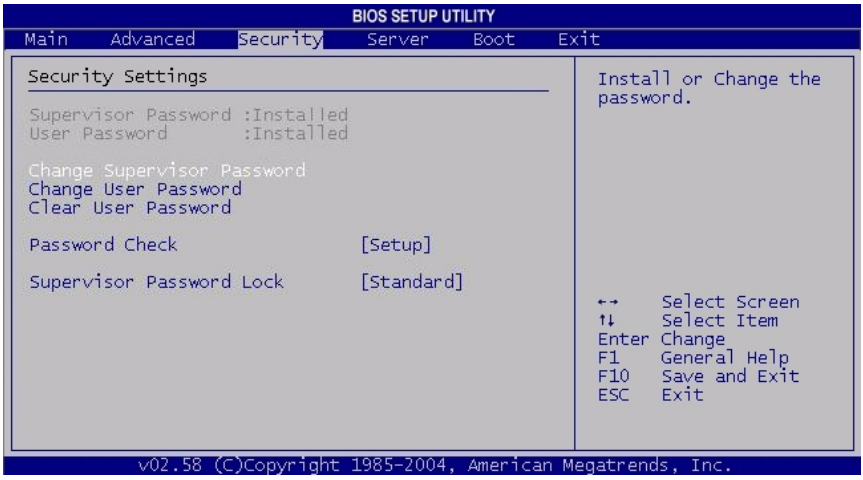

Figure 13: Security menu

Supervisor Password / User Password

Indicates whether a supervisor or user password has been defined (*Installed*) or not (*Not installed*).

Change Supervisor Password

When you press Enter, a window is opened in which you can define a supervisor password. The supervisor password ensures that only authorized users are granted write access to the BIOS Setup.

To delete a supervisor password, open the password definition window and press Enter twice.

Change User Password

When you press Enter, a window is opened in which you can define a user password. Users with a user password only have read-access to the BIOS Setup. As a "user", you can only change or delete the user password in this menu (see *Clear User Password*).

Clear User Password

When you press Enter, a window is opened in which you can delete the user password.

Password Check

Defines whether a password must be entered when the system is started. When the BIOS Setup is called up, a password is always requested if one has been defined. You can enter either the supervisor password or the user password (if defined).

Setup A password is requested when you call up the BIOS Setup.

Always

A password is requested when you start the system and when you call up the BIOS Setup.

Supervisor Password Lock

Defines whether the keyboard is locked during the installation of adapter cards (*Enabled* or not (*Disabled*).

If there is a supervisor password but no user password has been defined or an existing user password has been deleted and

– *Password Check* is set to *Setup*, you can only access the BIOS Setup as a supervisor.

– *Password Check* is set to *Always*, you can only start the system as a supervisor.

If there is a user password but no supervisor password has been defined, you can only access the BIOS Setup with the user password. To enable full write access, you must delete the user password. Then you should define a supervisor password for security reasons, because, if there is no password defined, any user can start the system and write-access the BIOS Setup.

6.6 Server Menu

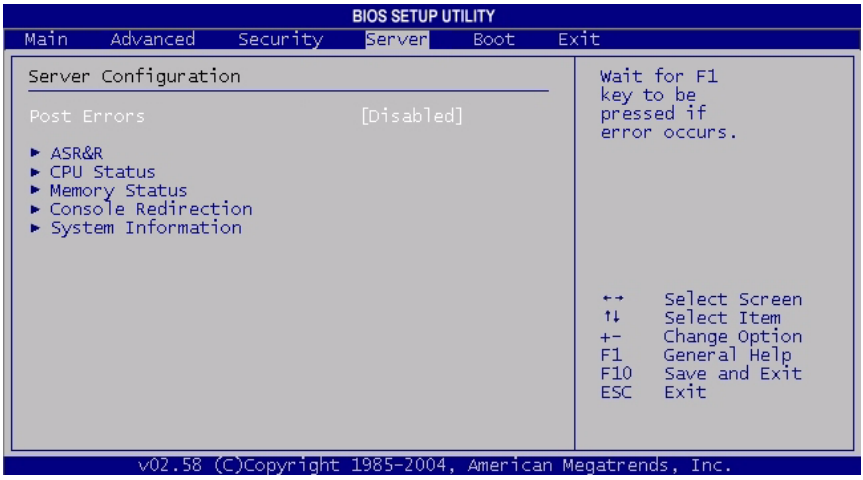

Figure 14: Server menu

ASR&R
: Opens a submenu for defining the restart behavior after a shutdown due to an error.

CPU Status
: Opens a submenu for setting the CPU status.

Memory Status
: Opens a submenu for activating and deactivating memory modules.

Console Redirection
: Opens a submenu for setting up terminal communication.

System Information
: Opens a submenu which contains information on the CPU and the MAC addresses.

6.6.1 ASR&R

The ASR&R submenu contains the following items:

OS Boot Watchdog Timer
: Defines whether the system is restarted (*Enabled*) or not (*Disabled*) if the operating system cannot establish a connection to the server management process within a defined period of time. In this case, the server management firmware assumes a system startup error.

If the operating system has no server management process, you must set this parameter to *Disabled* to prevent the server management firmware from initiating a restart by mistake. The watchdog timer and the server management process (agent) are installed with *ServerView*.

Timer Count Down Value
: Defines the time in minutes to be waited when *OS Boot Watchdog Timer* is set to *Enabled*.

Timer Count Action
: Defines the behavior when *OS Boot Watchdog Timer* is set to *Enabled* (*Power Cycle*; *No Action*; *Reset*; *Power Off*)

Boot Retry Counter
: Defines the maximum number of attempts (1-7 or *No Retry*) to start the operating system. This parameter depends, on the one hand, on the setting of the *OS Boot Watchdog Timer* parameter. On the other hand, other critical system errors can lead to a restart of the system and thus to a drop in the counter value. After the last attempt, the system is finally shut down.

ASR&R Boot Delay (Minute)
: Defines the delay of the system restart after a shutdown due to an error (1 - 30 minutes). The restart is performed after the set waiting time has elapsed.

After Power Failure
: Defines the state the system is to resume after a power failure.

6.6.2 CPU Status

The CPU Status submenu contains the following items:

CPU*x* Status

Defines whether the selected CPU can be used for booting (*Enabled*) or not (*Disabled*). The current boot CPU is marked by an asterisk (*).

You should only disable a CPU if it has reported an internal error. The error is recorded in the system event log, which you can view with the *SCU* (Server Configuration Utility) or the *RemoteView* or *ServerView* programs.

If there is only one CPU, this parameter has no effect; the CPU is always used when the system is started. If all CPUs are installed and set to *Disabled*, the first CPU is used. Even if only one of the two possible CPUs is installed, the status indicators are displayed for all possible CPUs.

Hyper Threading Technology

Defines whether the operating system can use all the logical processors within a physical processor (*Enabled*) or only the first logical processor (*Disabled*).

The hyper-threading technology makes a single physical processor appear as a number of logical processors. This technology allows the operating system to make better use of the internal processor resources. The advantages of this technology can only be utilized by an operating system which supports hyper-threading. This setting has no effect on operating systems that do not support hyper-threading.

6.6.3 Memory Status

The Memory Status submenu contains the following items:

Memory Mirror
: Switches memory mirroring on (*Mirror*) or off (*Disabled*). Mirroring occurs between two branches.

DIMM *x,y*
: Sets the current status of the memory modules:

  Enabled
  : If the bank is fitted, the memory module is used by the system.

  Disabled
  : The memory module is not used by the system.

If a non-correctable error occurs or if too many errors have been corrected by the system, the status of the relevant memory bank is automatically set to *Disabled*.

6.6.4 Console Redirection

The Console Redirection submenu contains the following items:

Port Defines the port used for communication with the terminal (*On-board COM A* or *Disabled*). The *Disabled* setting switches off the terminal functionality, and makes the other parameters of this submenu disappear.

Protocol
: Defines the transfer protocol.

Flow Control
: Defines how transfer via the port is controlled. This setting must be the same both on the terminal and on the server.

Mode
: Defines whether communication with the terminal is also possible while the operating system is being loaded (*Enhanced*) or not (*Standard*).

6.7 Boot Menu

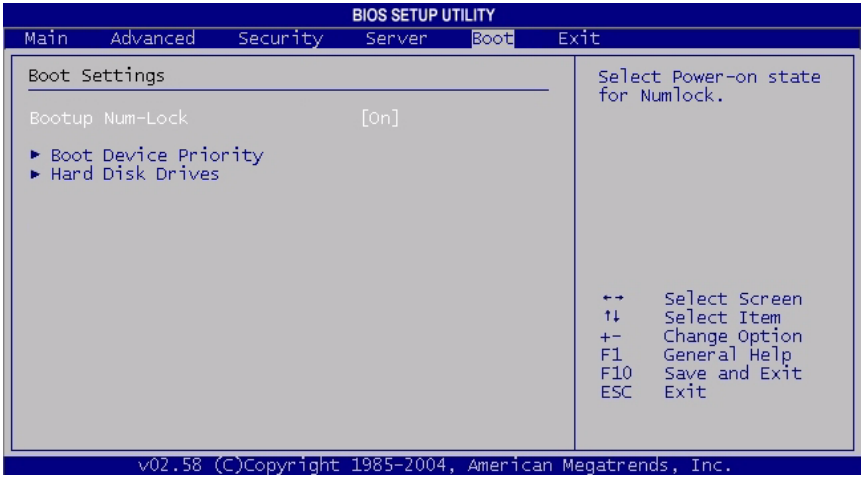

Figure 15: Boot menu

Bootup Num-Lock

If *Num-Lock* is set to *On*, the keyboard is set to *Num Lock* after booting (the *Num* LED glows).

Boot Device Priority

Opens a submenu for defining the order in which the existing devices are searched for the system files that the system BIOS requires for booting.

Hard Disk Drives

Opens a submenu for defining the order in which the existing hard disk drives are searched for the system files that the system BIOS requires for booting.

6.8 Exit Menu

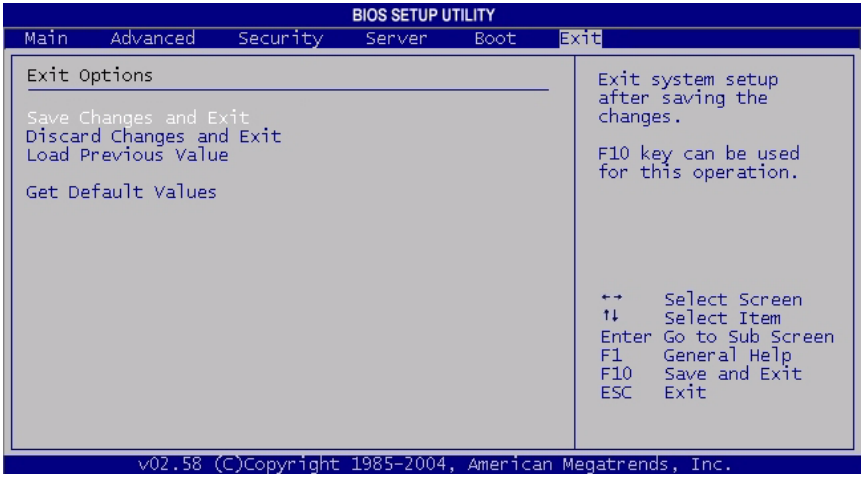

Figure 16: Exit menu

Save Changes and Exit
: Saves all parameter changes and terminates the BIOS Setup.

Discard Changes and Exit
: Discards all parameter changes and terminates the BIOS Setup.

Load Previous Value
: Resets all the parameters to the values that were in effect when the BIOS Setup was called up.

Get Default Values
: Resets all the parameters to their default values.

7 Troubleshooting and Tips

ATTENTION!

Make sure you observe the safety notes in the chapter “Important Notes” on page 17.

How to handle errors that may occur while operating server blades in the basic unit is described in the manual “PRIMERGY BX600 S2 Basic Unit" (see “Related publications” on page 69).

If a fault occurs, try to correct it as described

– in the chapter "Troubleshooting and Tips" in the manual PRIMERGY BX600 S2 Basic Unit (see “Related publications” on page 69),
– in the chapters for the installed components,
– in the documentation for the connected devices,
– in the help systems of the individual programs used.

If you are unable to correct the problem, proceed as follows:

► Make a note of the steps you have taken and the situation in which the fault occurred. Also make a note of the error messages displayed.

► Switch off the defective server blade or the system.

► Contact customer service.

8 Hot-Plug Components

This chapter describes how to replace or add hot-plug components in your BX620 S3 Server-Blade while the system is running.

ATTENTION

Only hard disk modules can be added or replaced while the system is running. For **all** other system components, the server blade must be switched off and in most cases must also be removed from the basic unit (except when installing a storage module) so that the cover can be opened. For a detailed description of the required procedure see the Options Guide or the Service Supplement.

8.1 Hard Disk Drives

You can install up to two hot-pluggable 2.5 inch SAS or SATA hard disk modules in a BX620 S3 Server-Blade. Defective hard disk modules can also be replaced while the system is running.

Attention

A mixed configuration of SAS and SATA hard disk modules is not possible.

As a rule, the two disks are mirrored in a RAID-1 configuration to save the data fault-tolerantly.

8.1.1 Installing a Hard Disk Module

Removing the Dummy Module

Empty bays contain dummy modules which must be removed before installing a hard disk module:

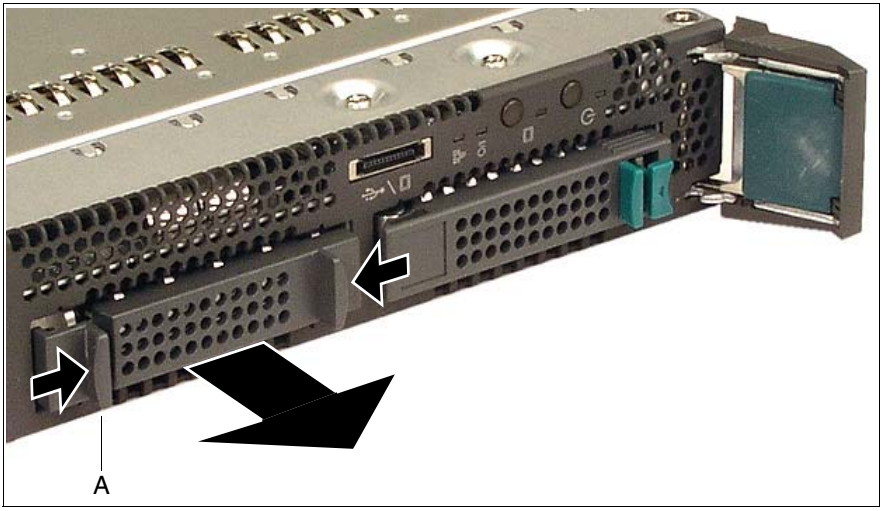

Figure 17: Dummy module

– Press together the two tabs on the dummy module until the locking mechanism (A) is released, and pull the dummy module out of the bay.

ATTENTION!

Keep the dummy module for future use. If the hard disk module is removed again and not replaced with a new one, the dummy module must be reinstalled to comply with EMC regulations, cooling requirements and fire protection measures.

To reinstall the dummy module later, simply push it into the bay as far as it will go.

Installing the Hard Disk Module

Figure 18: Hot-pluggable hard disk module

– Press the green ejection tab (1) to the left and open the locking lever (2).

– Keeping the locking lever open, push the hard disk module as far as possible into the bay of the server blade.

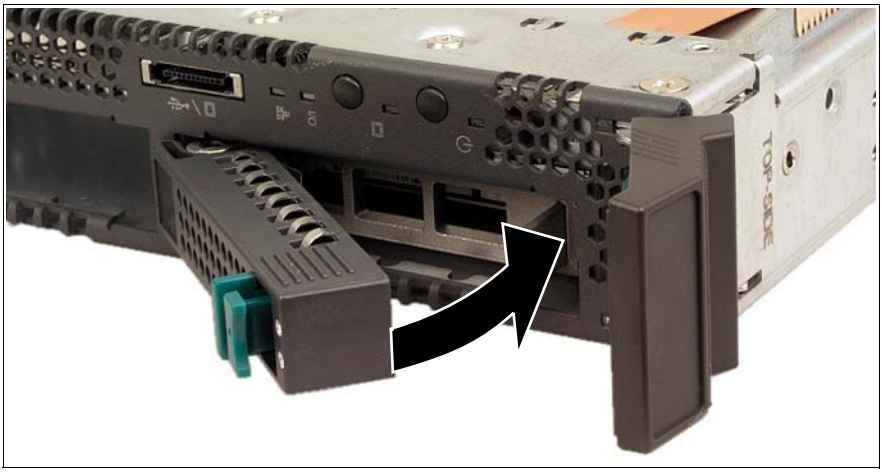

Figure 19: Inserting and engaging the hard disk module

– Swivel the locking lever toward the housing in the direction of the arrow and press on it until it engages. Make sure you do not press on the ejection tab with the punched-out triangle.

8.1.2 Replacing a Hard Disk Module

You can only replace a hard disk module during operation if the orange LED on the hard disk module is glowing continuously, i.e. when an error has occurred.

ATTENTION!

Never remove a hard disk module during operation if you are not sure that the hard disk module belongs to a disk array that operates at RAID level 1, i.e. the disks are mirrored.

To replace a hard disk module during operation, proceed as follows:

► Press on the green ejection tab in the direction of the punched-out triangle and pull the defective hard disk module out a few centimeters, holding it by the opened lever.

► Wait at least 60 seconds so that the RAID controller can recognize that a hard disk module has been removed and the hard disk can come to a standstill.

► With the locking lever open, pull out the hard disk module completely.

► Install the new hard disk module as described under “Installing the Hard Disk Module” on page 61.

ATTENTION!

If you have removed the hard disk module and do not replace it with a new one, the dummy module must be reinstalled to comply with EMC regulations, cooling requirements and fire protection measures. Make sure that the dummy module engages properly in the bay.

Abbreviations

ASR&R
Automatic Server Reconfiguration and Restart

BIOS
Basic Input-Output System

CD
Compact Disk

COM
Communication

CPU
Central Processing Unit

DBMS
Database Management System

DC
Dual Core

DDR
Double Data Rate (RAM)

DIMM
Dual Inline Memory Module

DVD
Digital Versatile Disk

ECC
Error Correcting Code

EDC
Error Detection Code

EMC
Electromagnetic Compatibility

ESD
Electrostatic Discharge

FBD
Fully Buffered DIMMs

FC
Fibre Channel

FSB
Front Side Bus

GAM
Global Array Manager

HDD
Hard Disk Drive

HU
Height Unit

I/O
Input/Output

ID
Identification

IDE
Integrated Drive Electronics

IP
Internet Protocol

iSCSI
Internet Small Computer System Interface over IP

LAN
Local Area Network

LCD
Liquid Crystal Display

LED
Light-Emitting Diode

MRL
Manually Retention Latch

NIC
Network Interface Card

NMI
Non Maskable Interrupt

PCI
Peripheral Component Interconnect

PDA
Prefailure Detection and Analyzing

POST
Power On Self Test

PSU
Power Supply Unit

RAID
Redundant Arrays of Independent Disks

ROM
Read-Only Memory

SAN
Storage Area Network

SAS
Serial Attached SCSI

SATA
Serial Advanced Technology Attachment

SCA
Single Connector Attachment

SCSI
Small Computer System Interface

SCU
Server Configuration Utility

SFP
Small Form Factor Pluggable

TOE
TCP/IP Offload Engine

USB
Universal Serial Bus

VGA
Video Graphics Adapter

VPD
Vital Product Data

WOL
Wakeup on LAN

Related publications

The current versions of the manuals can be downloaded from the Internet free of charge: At *http://manuals.fujitsu-siemens.com* you will find an overview page showing the online documentation available on the Internet. You can go to the PRIMERGY Server documentation by clicking on *industry standard servers*.

[1] **Sicherheit**

[2] **Ergonomie**

[3] **Garantie**

[4] **DataCenter Rack**
Technisches Handbuch/Technical Manual

[5] **PRIMECENTER Rack**
Technisches Handbuch/Technical Manual

[6] **PRIMERGY BX600 S2** Basic Unit
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[7] **PRIMERGY BX620 S3**
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Comments
Suggestions
Corrections

Submitted by

Comments on PRIMERGY BX620 S3
2-way Server Blade