

PRIMERGY R450

System configurator and order-information guide

November 2003

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Change report



PRIMERGY Server

Instructions

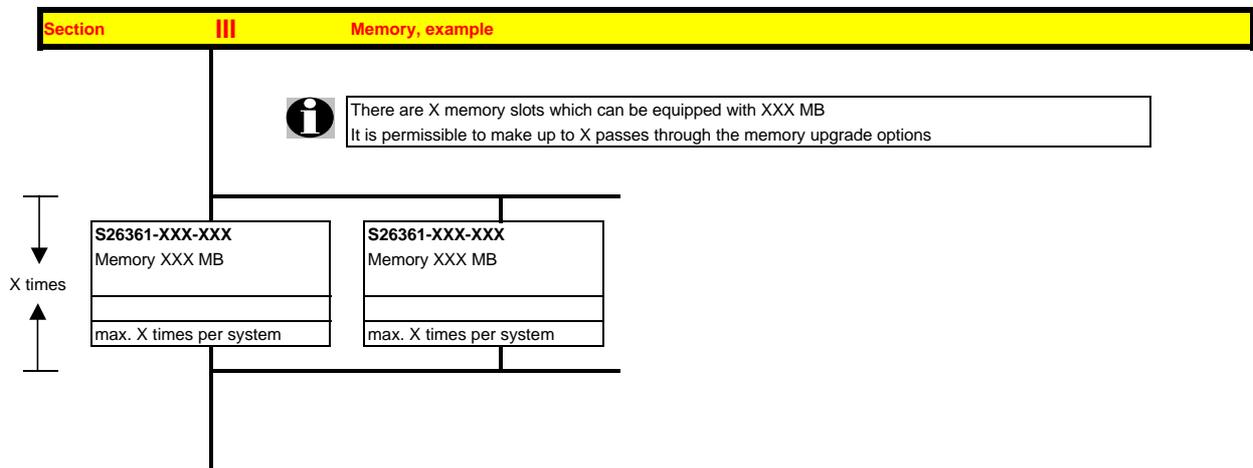
This document contains basic product and configuration information that will enable you to configure your system via PC-/ System-Architect.

Only these tools will ensure a fast and proper configuration of your PRIMERGY server or your complete PRIMERGY Rack system.

You can configure your individual PRIMERGY server in order to adjust your specific requirements.

The System configurator is divided into several chapters that are identical to the current price list and PC-/ System-Architect.

Please follow the lines. If there is a junction, you can choose which way or component you would like to take. Go through the configurator by following the lines from the top to the bottom.



In one chapter you can only select as many components (here 4x) as the arrow indicates



Please note that there are information symbols which indicate necessary information



Further information in the internet see:

<http://www.primergy.com> (internet)

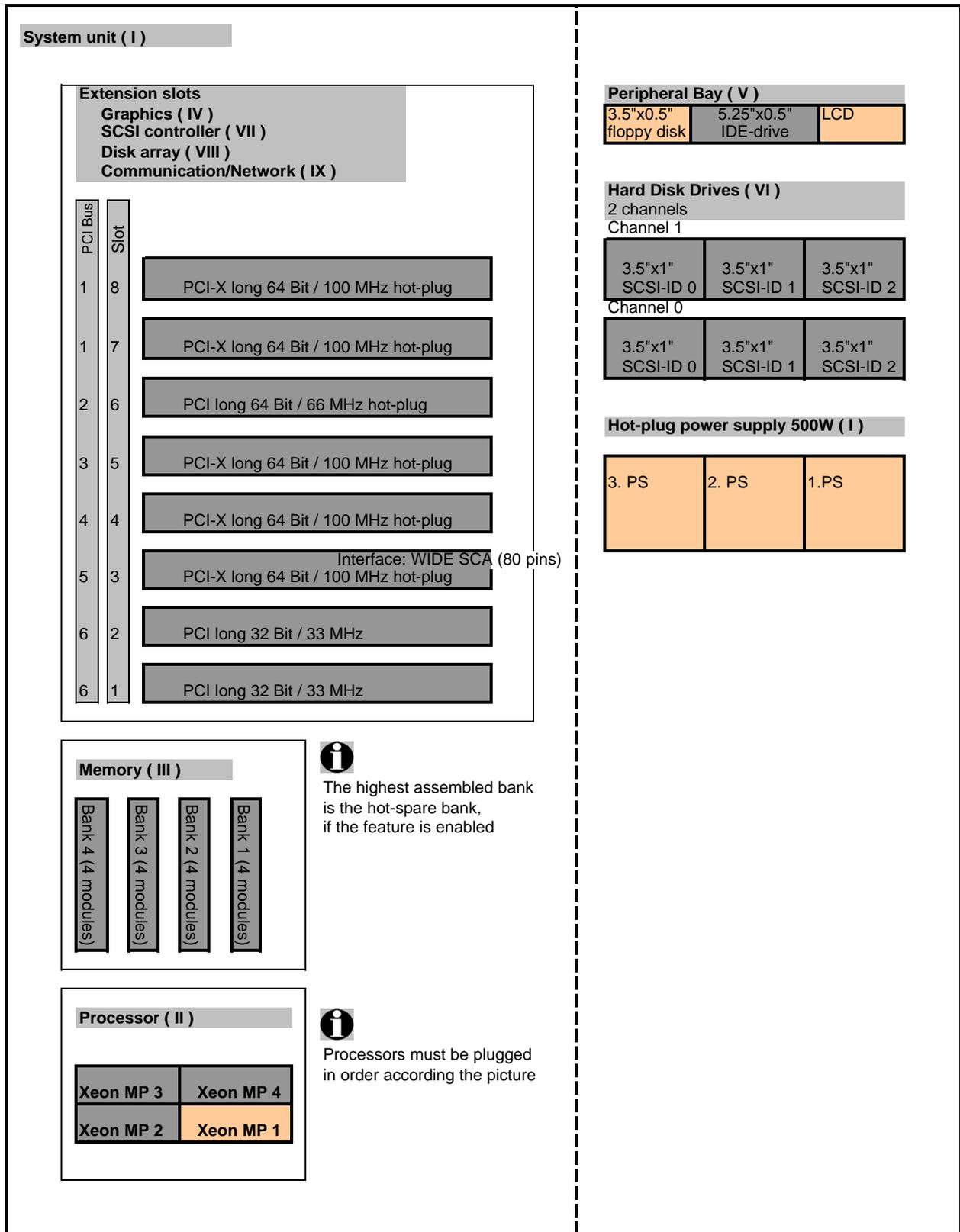
<http://extranet.fujitsu-siemens.com/primergy> (extranet)

Prices and availability see price list and PC-/ System-Architect.
 Subject to change and errors excepted.

Configuration diagram PRIMERGY R450

TOP VIEW

FRONT VIEW



Start "PRIMERGY R450"

SW Configurator

with OEM-Software
for PRIMERGY Server

without OEM-Software
for PRIMERGY Server

Vmware-Software
- ESX Server 1.5 (OEM)
- ESX Server 2.0 (OEM)(planned)
- Virtual SMP for ESX 2.0 (OEM)



Microsoft does not allow the use of OEM-software under ESX. Distributions-/ retailware is allowed.

Later use of OEM operating system software is not allowed, apart from OEM software by VMware and F5



For all SW products listed below please refer to the corresponding software configurator accessible via the Extranet under "PC Configurations, Configurator for PRIMERGY SW", URL see below

MS - Software: W **)
- NT 4.0 Server
- NT 4.0 Server Enterprise Edition
- NT 4.0 Server Terminal Server Edition
- Windows 2000 Server
- Windows 2000 Advanced Server
- Windows Server 2003, Standard Edition
- Enterprise Edition

Novell - Software: *)**
- NetWare 5.1
- NetWare 6
- NetWare 6.5 (planned)
- NetWare Cluster Services 1.6 and
- NetWare Cluster Services 1.7 (planned) with FibreCAT
CX200, CX400, CX600

PRIMECLUSTER *)
- Clustering
- Load Balancing

Linux - Software: **)
- SuSE Linux Enterprise Server: S
- SuSE Professional Linux
- Red Hat Enterprise Linux
- Red Hat Professional Linux

SCO - Software: **)
- UnixWare 7

CITRIX-Software für NT: W1
- Multiuser SW MetaFrame
- LoadBalancing
- additional User Lizenzen

MultiPath, Duplex Data Manager for NT; W2K; Linux

easy Mirror for Linux NT 4, WIN 2000

FSC System Management Software: V
- RemoteView Software
- RemoteView Service Board
- RemoteView Diagnosis



*) Pay attention to release information on datasheet under <http://www.primecluster.com>



***) Pay attention to release and order information in PRINCE -> Operating System http://vil.mch.fsc.net/vil/pc/vil/primergy/overview/prince/index_en.htm

Backup-Software: U
- ARCserve für NT



*) Supply over distribution or procurement from FSC VP BC Software

You'll find single software configurators and release lists (OS-matrix / system management / security) under following addresses:

for internal users: http://vil.mch.fsc.net/vil/oc/special/primergy/index_en.htm
 for partners: http://vilpart.fujitsu-siemens.de/vil/oc/special/primergy/index_en.htm

Continue with PRIMERGY HW configurator

Start PRIMERGY R450

Section | Basic unit

Rack basic unit 4U including
1 x Xeon MP CPU
2 channel

S26361-K845-V200	1,5GHz 1 MB TLC
S26361-K845-V201	1,9GHz 1 MB TLC
S26361-K845-V202	2 GHz 2 MB TLC

i The PRIMERGY R450 basic unit comes with:

- 3 power supply module, hot-plug redundant
- 2 channel HD PBay with 3 HD bays each
- 1 floppy disk drive 1,44MB
- 2 hot-replace and redundant fans
- a CPU Board for up to 4x Xeon CPUs
- a Memory Board for 16 memory slots
- I/O section with
 - System Management Processor
 - Dual LVD/U3W-SCSI controller (Adaptec 7899)
 - VGA graphics 8 MB ATI
 - LAN 10/100 Mbit with RJ45 connector (Intel 82559)
 - 5 64bit / 100 MHz PCI-x slots, 1 64bit / 66 MHz slot, all hot-plug
 - 2 32bit / 33 MHz long PCI slots
- ServerStart packet incl. ServerBooks CD, ServerSupport CD and ServerView

Mounting kit for PRIMERGY R450

- 1 pair of telescopic rails (730-810mm)
- 1 pair of carrier rails
- 1 bracket PC-Rack
- 1 cable management PC-racks

Mounting kit for mounting of servers in FSC 19" PRIMECENTER- racks and all server racks conforming to EIA standard EIA-310-D for 19" racks. Therefore the mounting kit is variable in depth from 730-810mm

PRIMERGY PRIMECENTER- Rack

SNP:SY-F1647E301-P

Installation ex works for one server or subsystem.
Hereby the rack will be delivered completely pre-mounted and all wired connections are tested.

With racks 12U, 24U, 38U:
Systems and components will be delivered installed in the rack

With racks 46U:
Systems and components will be delivered separately

To be ordered only together with a PRIMERGY-PRIMECENTER rack
e.g.:
S26361-K826-V10x

refer configurator PC-Rack
max. 1x per System

i **External Interfaces**

- 2 x RS-232-C (serial, 9 pin)
- 1x Centronics (parallel, 25 pin, EPP/ECP compatible)
- 1 x keyboard (PS/2)
- 1 x mouse (PS/2)
- 1 x VGA (15 pin)
- 1 x USB Frontside
- 2 x USB Backside
- 1 x RJ45 LAN

External Interfaces for ServerManagement

- 1 x RS-232-C (serial, 9 pin)
- 1 x RJ45 LAN
- 1 x Power Jack

i **"Rack-mounting ex factory"**

This service is to be ordered once per installable server/storage subsystem, in order to get the server/storage subsystem mounted into the PRIMERGY racks. In case of the 46 U PRIMERGY Rack, this service has to be ordered, to get the mounting kits and the cables installed

i **important notice !**

the mounting kit for PRIMERGY R450 is included the basic version and will be delivered with every R450

i **PRIMERGY 42/23U Rack**

This kit can be ordered, if it is planned to mount the rack version in an already available FSC 42/23U rack

S26361-F1331-L141

Mounting kit for 42/23U rack

- 1 pair of carrier rails
- 1 pair of telescopic rails
- 1 cable carrier

max. 1x per system

A

A



There are 3 bays for hot-plug power supplies, each with 500W
 Each basic unit contains 3 modules and provides redundancy
 for a fully equipped system

Section II Processor



A mix of processors with different clock frequency and different On-Chip cache cannot be used
 The multi-processor system premises a multi-processor operating system
 Terminators are not necessary

up to
3x

S26361-F2817-E151 XEON MP 1,5GHz with 1 MB TLC on Chip, heat sink and "Easy retention"
occupies slot for one CPU
max. 3x per system

S26361-F2817-E191 XEON MP 1,9GHz with 1 MB TLC on Chip, heat sink and "Easy retention"
occupies slot for one CPU
max. 3x per system

S26361-F2817-E202 XEON MP 2GHz with 2MB TLC on Chip, heat sink and "Easy retention"
occupies slot for one CPU
max. 3x per system

Section III Memory



There are 16 memory slots available (4 banks, 4 modules each)
 They can optionally be equipped with 128 MB, 256 MB, 512 MB or 1GB registered DDR-RAM modules (PC1600)
The maximal extension is 16 GB with today available 1GB modules!
 Any mix of modules within one memory bank is not allowed
 ECC with memory scrubbing and chipkill is standard
 Optional hot-spare memory functionality can be configured in the BIOS (redundant memory bank 3 + 1)

4x

S26361-F2550-E542 Main memory 512MB PC1600 registered DDR RAM
consisting of 4 modules
occupies one bank
max. 4x per system

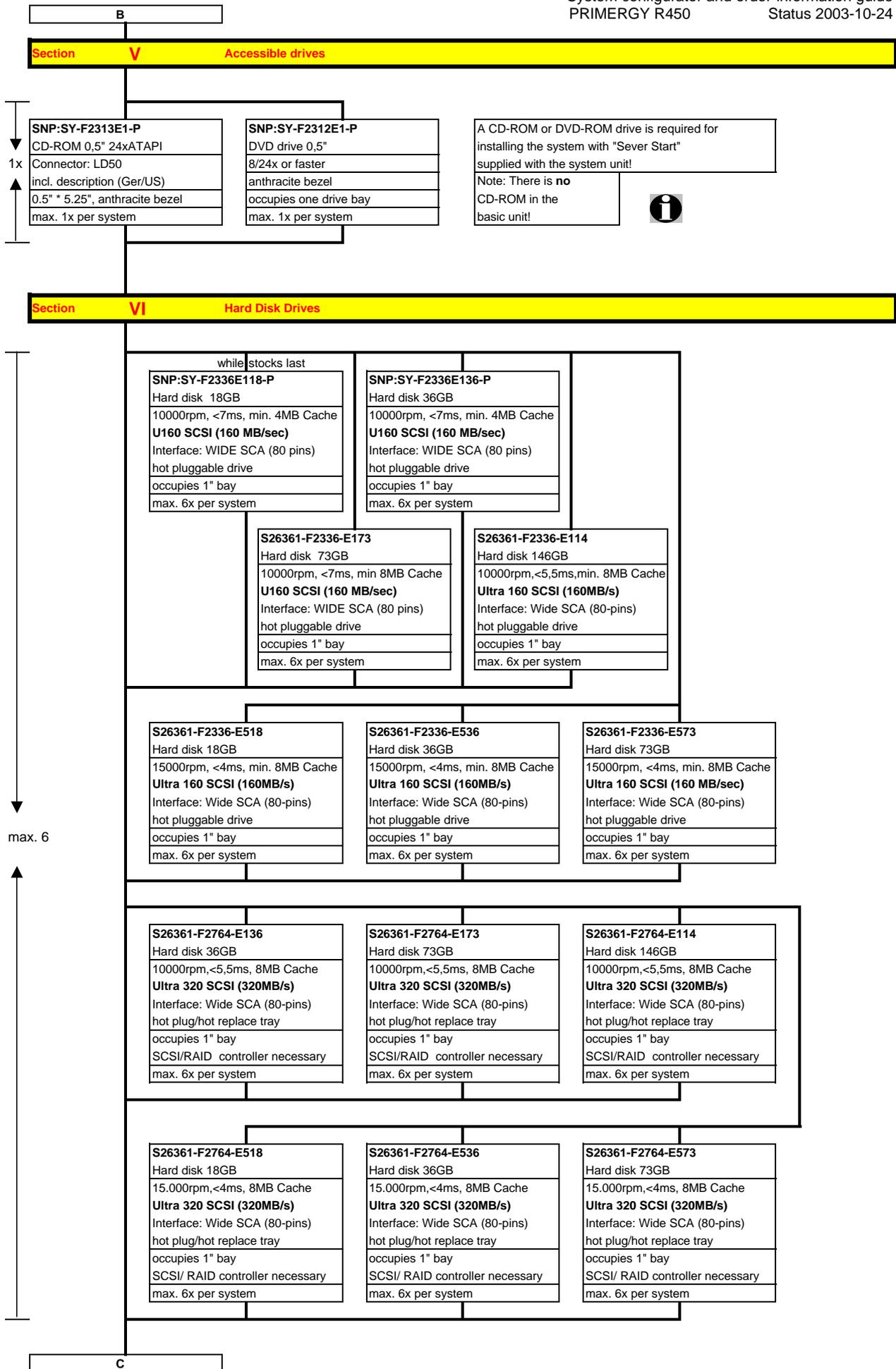
S26361-F2550-E543 Main memory 1024MB PC1600 registered DDR RAM
consisting of 4 modules
occupies one bank
max. 4x per system

S26361-F2550-E544 Main memory 2048MB PC1600 registered DDR RAM
consisting of 4 modules
occupies one bank
max. 4x per system

S26361-F2550-E545 Main memory 4096MB PC1600 registered DDR RAM
consisting of 4 modules
occupies one bank
max. 4x per system

Section IV Graphics

B



C

Section VII SCSI/Fibre-channel controller

A. on-board SCSI Controller for internal hard disks

2-channel U160-SCSI controller on-board; included as standard
 The following cabling is standard, if no Disk Array Controller is used
 1. **Channel A** of the U160 controller is connected to the 1st backplane for 3 HDs
 2. **Channel B** of the U160 controller is connected to the 2nd backplane for 3 HDs

S26361-F2287-E15
 External on-board SCSI Interface
 Cable and external connector interface
 max. 2x per system for external

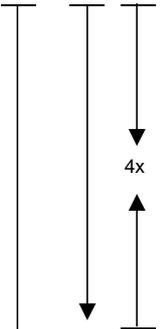
This interface is only configurable if a RAID Controller besides the 0-channel RAID Controller is used
 See section Disk Array Controller

B. SCSI - controller for external hard disk extensions and external peripheral devices.

while stocks last
SNP:SY-F1722E1-P
 SCSI Controller UW, DE
 Adaptec 2944UW (HBA)
 1 channel differential-ended
 max. 40MB/s; without cable
 32/33 PCI, min. 170mm
 int: LD50 + HD68, ext: HD68(S)
 SW:
 max. 2x per system

S26361-F2399-E1
 SCSI U160 Controller
 Adaptec SCSI card 29160
 1 channel: LVD+Fast/Ultra (decoup.)
 LVD con. for HD, without cable
 Fast/Ultra con. access. drives
 64/66 (32/33) PCI, min. 180mm
 int: Fast 50-pin or Ultra HD68 + LVD HD68; ext: HD68(LVD)
 SW:
 max. 2x per system

i Controller for the connection of a EMC Symmetrix (only available as option)
 Supported only in Microsoft Windows NT and Windows 2000 operating systems



C. Fibre Channel controller for subsystems and SAN

while stocks last
SNP:SY-F2244E1-P
 1Gbit/s FC Controller
 Qlogic
 QLA 2200
 1 Channel 1Gbit/sec FC Controller
 CU (copper) Interface
 incl. SW and description (Ger/US)
 PCI 64Bit / 66MHz, 175mm
 3.3V and 5V tolerant signaling
 max. 4x per system

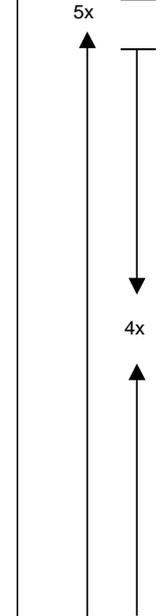
while stocks last
SNP:SY-F2244E2-P
 1Gbit/s FC Controller
 Qlogic
 QLA 2200F, full height bracket
 1 Channel 1Gbit/sec FC Controller
 MMF (Multimode Fibre) Interface
 incl. SW and description (Ger/US)
 PCI 64Bit / 66MHz, 175mm
 3.3V and 5V tolerant signaling
 max. 4x per system

S26361-F2843-E1
 2Gbit/s FC Controller
 Emulex
 LP9802
 1 Channel 2Gbit/sec FC Controller
 LC Interface for 50um Fiber
 PCI 64Bit / 133MHz, 170mm
 3.3V and 5V tolerant signaling
 max. 4x per system

while stocks last
S26361-F2624-E1
 2Gbit/s FC Controller
 Emulex
 LP9002L
 1 Channel 2Gbit/sec FC Controller
 LC Interface for 50um Fibre
 PCI 64Bit / 66MHz, 170mm
 3.3V and 5V tolerant signaling
 max. 4x per system

i suitable for 64Bit/66MHz PCI-Slot

Attention
 2Gbit/s FC Controller require other interface connectors for the optical cables than 1Gbit/s fibre channel.



SNP:SY-F1826L1-P
FC Ctrl for EMC2 Attachment
 Emulex LP8000
 1 channel 100MB/s
 MMF (Multimode Fibre) Interface
 Connector: Duplex SC
 without cable, order separately
 incl. SW a. description (Ger/US)
 PCI 64Bit/33MHz controller
 max. 4x per system

i Supported only in Microsoft Windows NT and Windows 2000 operating systems.

i Controller for the connection of a EMC Symmetrix, FibreCAT (only available as option)

i There are other components such as switches, GBICs or cables which can be ordered for fibre channel SAN attachments. (see price list)

i All controllers for the connection of external storage systems are delivered without cables
 For the configuration of external cabling see the configurator for external storage systems

to be continued on next page

D

D

Section VIII Disk Array

D. 0-channel Ultra RAID Controller

The following cabling is standard, if any Disk Array Controller is used

1. Channel A of the RAID Controller is connected to the 1st backplane for 3 HDs
2. Channel B of the RAID Controller is connected to the 2nd backplane for 3 HDs

S26361-F2728-E48
 Zero-channel RAID Controller
 Adaptec
 2000 S
 48MB SDRAM ECC Cache
 in combination with on-board
 U160 SCSI Controller
 without cable
 incl. SW and description (Ger/US)
 64/66 PCI Controller
 3.3V signaling
 max. 1x per system

i zero-channel RAID Controller Adaptec 2000S is always to be installed in slot 6

S26361-F2385-E32
 2-channel RAID Controller U160
 Adaptec
 3200 S
 32MB SDRAM ECC Cache
 BBU optional
 connector: int. 2x HD68;
 ext. 2x VHDCI
 without cable
 incl. SW and description (Ger/US)
 64/33 PCI Controller, 330mm
 3.3V and 5V tolerant signaling
 max. 4x per system

The cables for the connection of the RAID Controller to the disks in the system are included within the basic unit.
 The cables of the connection from the subsystems (SX30 / S60) to the RAID Controllers, see configurator SX30 / S60

S26361-F2569-E64
 2-channel RAID Controller U160
 Mylex / LSI
 AcceleRAID 352 (Leopard)
 64MB SDRAM ECC Cache
 BBU optional
 Connector: internal 2x HD68;
 external: 2x VHDCI
 without cable
 incl. SW and description (Ger/US)
 64/33 PCI Controller, 330mm
 3.3V and 5V tolerant signaling
 max. 4x per system

S26361-F2569-E10
 RAID Ctrl, Battery Backup Unit
 max. 1x per Controller

S26361-F2386-E32
 RAID Ctrl, Cache Upgrade 32MB
 32 MB SDRAM ECC Cache
 max. 1x per Controller

S26361-F2386-E10
 RAID Ctrl, Battery Backup Unit
 max. 1x per Controller

S26361-F2190-E128
 4-channel RAID Controller U160
 Mylex / LSI
 eXtremeRAID 2000 (Big Apple)
 128MB SDRAM ECC Cache
 BBU
 connector: internal: 2x HD 68;
 external: 4x VHDCI
 incl. SW and description (G/USA)
 64/33 PCI Controller, 330 mm
 3.3V and 5V tolerant signaling
 max. 4x per system

4x

4x

Max. 8 controllers in basic unit

to be continued on previous page

as soon as available

S26361-F2752-E128
 2-channel RAID Controller U320
 Adaptec
 2200S
 128MB SDRAM ECC Cache
 BBU optional
 plug: internal 2x HD68;
 external: 2x VHDCI
 without cable
 incl. SW and description (Ger/US)
 64/66 PCI controller, 180mm
 3.3V and 5V tolerant signaling
 max. 4x per system

S26361-F2752-E10
 Cache Battery Backup Unit
 max. 1x per controller

i The fitting connection cables can be found in the configurator "external storage systems"

E

E

Section IX Communication / Network

on-board LAN Controller

Fast Ethernet Contr. on-board
Intel Ethernet Express Pro100+ Server Adapter, Intel
ext: for RJ 45-connector
SW: AFT, VLAN, Fast Channel



The Intel LAN controllers 10/100TX, 1000SX, 1000TX can be used with the on-board controller in Teaming Mode.

A) Adapters with Teaming capability 10-1000TX/SX

4x

S26361-F2643-E1
Fast Ether. Contr. 10/100TX
Intel 100S Server Adapter
AFT unter NT, W2k, NW also with on-board LAN, WOL, load bal.
32/33 PCI , min 120 mm, hp
ext: for RJ45-connector
SW: VLAN, Fast Etherchannel
max. 4x per system

S26361-F2839-E1
Gigabit Ethernet Contr. 1000TX
Intel Pro/1000 MT Adapter
PCI 32 (33/66MHz), min 122 mm
ext: for RJ45-plug, Cat 5 connection with Cat 5 cabling
SW: VLAN, Fast Etherchannel
max. 4x per System

S26361-F2732-E1
Gigabit Ethernet Contr. 1000SX
Intel Pro/1000 XF Server Adapter
Adapter Teaming Support
PCI-X (all PCI slots), min 163 mm
ext: for Duplex SC-connector
SW: VLAN, Fast Etherchannel
max. 4x per system

S26361-F2730-E2
Gigabit Ethernet Contr.1000TX-G2
Intel Pro/1000 XT Server Adapter
Adapter Teaming Support
PCI-X (all PCI slots), min 163 mm
ext: for RJ45-Connector, Cat 5 Connection with Cat 5 cabling
SW: VLAN, Fast Etherchannel
max. 4x per system

B) Dual Port Adapter 100TX

S26361-F2606-E1
Fast Ethernet dual 10/100TX IPsec
Intel Pro 100S Dual Port Server Controller with IPsec 3DES
AFT under NT, W2k, NW also with on-board LAN, WOL, load bal.
64/66 bit PCI, min 120 mm, hp
ext: for 2 x RJ45-connector
SW: VLAN, Fast Etherchannel
max. 2x per system



IPsec with 3DES (156 bit key) has export restriction for several countries.
No restriction to countries of the EU and:

- Australia,
- Canada,
- Czech Republic,
- Hungary
- Japan,
- New Zealand,
- Norway,
- Poland,
- Switzerland,
- United States

C) Token Ring Adapter

2x

S26361-F2117-E502
Token Ring Controller
Smart Ringnode MK4
100/16/4 Mbit, Madge
AFT (NT4, W2K) with 2 Contr., 2 redundant rings with 4 contr.
32/33 PCI, min. 164 mm
ext: for RJ45 or SUB-D9-plug
SW:
max. 2x per system

F

F

Section X System Management Products (RemoteView)

S26361-F1790-E219
RemoteView Software V3.10
 remote maintenance software, manual

 without graphical console redirection

S26361-F2116-E8
RemoteView Diagnosis
 IDE Chipdisk
 at the on-board IDE-Controller
 occupies 1* IDE slot
 max. 1x pro System

RemoteView external Power Supply
S26361-F2425-L300
 incl. power cord (with cold device- and Euro plug)

S26361-F2425-E220
 RemoteView Battery Backup Unit
 for on-board
 System Management Processor
 max. 1x per system

Section XI Miscellaneous

S26361-F1652-L4
 Modem **external** 56kbps (V.90)
 MultiTech
 MT5643ZBA-Global
 international approval
 incl. 2m Telephon cord RJ11/RJ11
 Adapter Plug RJ11/TAE
 Serial Interface cable DB25m / DB9f
 AC-Adapter w. German Power Cord
 occupies one COM port
 max. 1x per system
needed for RemoteView

 In connection with rack configurations the install variant of the modem (S26361-F1652-E4) has to be ordered (see rack configurator)

Section XII National accessories packs

 **Options and other peripherals**
 For other options, refer to separate "Product specific options"
 These options are supplied lose with the shipment
 For suitable peripherals for this product, please refer to the section "Peripherals/communication"

 **Country specific power cords are not required for rack versions, except for USA&Canada. Power cords are shipped in a rack version with inlet connector for non-heating apparatus. Description in english. Both included in basic unit. (1x with Standard PSU, 3x with hot plug upgrade)**

 **T26139-Y1742-L10 USA, Canada**
 For shipments to USA&Canada, you have to order one power cord (1,8m, grey) per power supply.

End PRIMERGY R450

