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PRIMERGY®

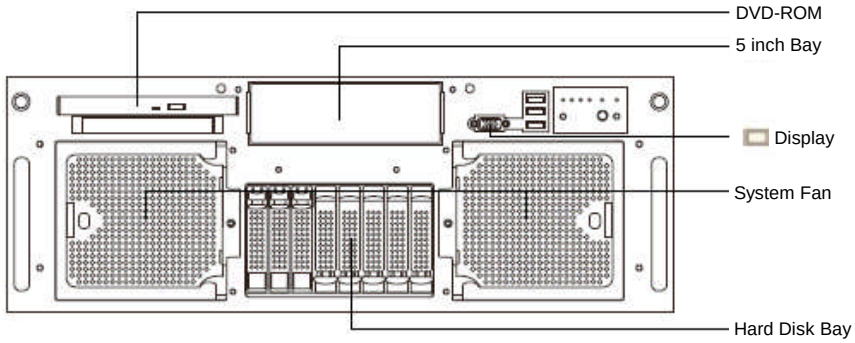
System Configuration and order-information Guide

RX600 S4

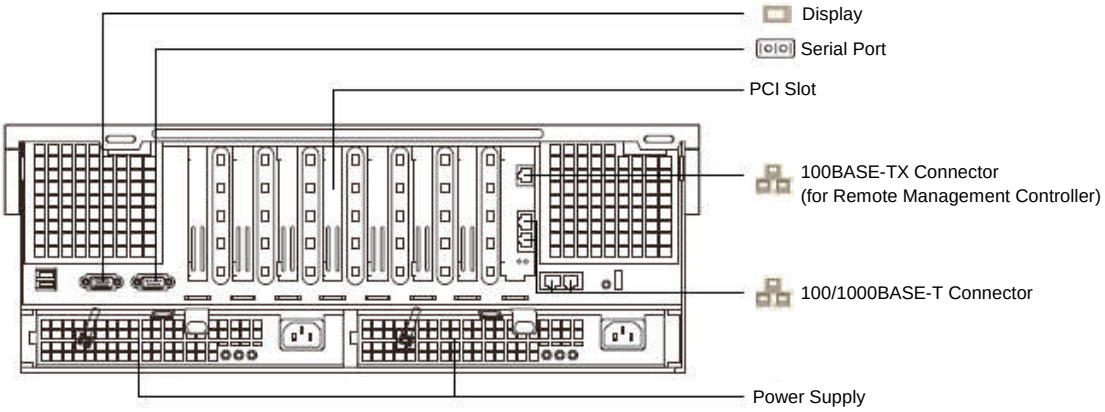
March 2009

PRIMERGY RX600 S4

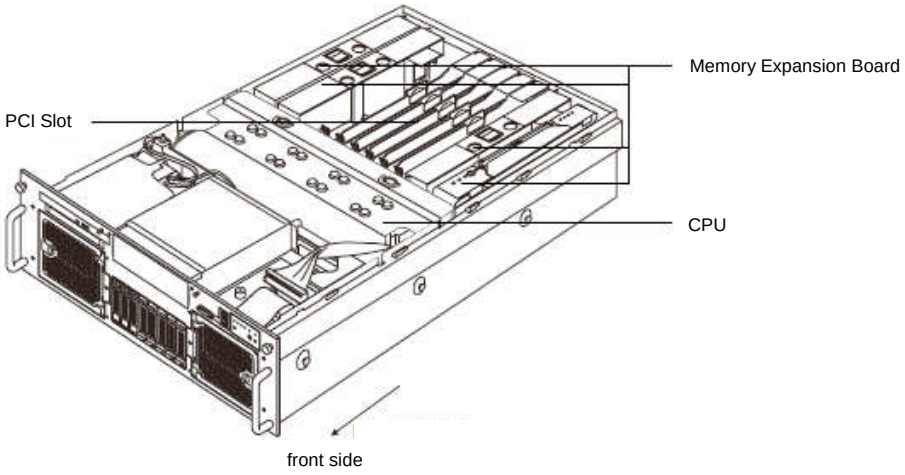
Front View



Back View



Inside View



PRIMERGY RX600 S4

Instruction

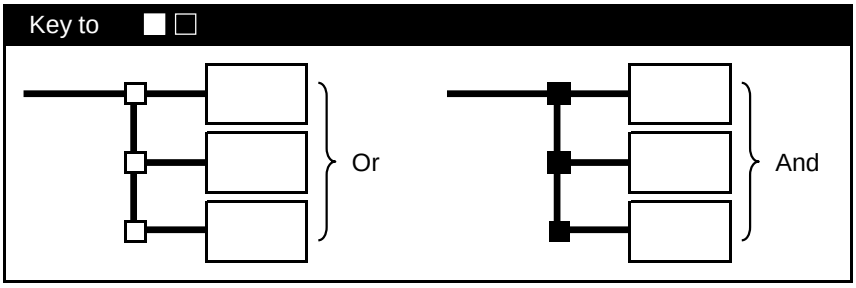
This document contains basic product and configuration information that will enable you to configure your system.

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 meet your specific requirements.

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.

The color of the junction means as follows.



PRIMERGY RX600 S4

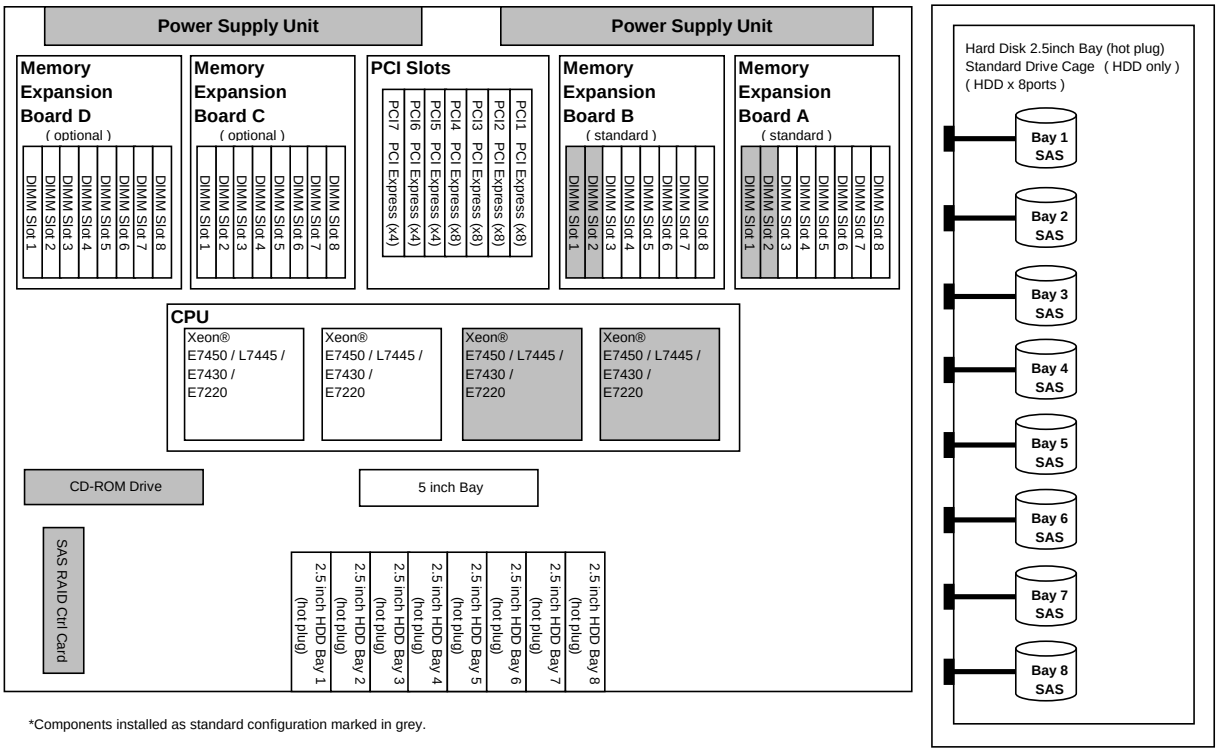
Data Sheet

Type		4-Way Processor Rack Server
Model		2.5inch SAS model
Base Unit	Xeon® L7445(2.13GHz)	PGUR604DA3
	Xeon® E7220 (2.93GHz)	PGUR6042A3
CPU	Frequencies	Intel® Xeon® E7450(2.40GHz) *6 / L7445(2.13GHz) / E7430(2.13GHz) *7 / E7220 (2.93GHz)
	Second-Level-Cache	3x3MB (Intel® Xeon® E7450(2.40GHz)) / 2x3MB (Intel® Xeon® L7445(2.13GHz) / E7430(2.13GHz)) / 8MB (Intel® Xeon® E7220 (2.93GHz))
	Third-Level-Cache	12MB (Intel® Xeon® E7450(2.40GHz) / L7445(2.13GHz) / E7430(2.13GHz)) / - (Intel® Xeon® E7220 (2.93GHz))
	Number of processors	2 (max. 4)
	Number of cores	6 per processor (Intel® Xeon® E7450(2.40GHz)) / 4 per processor (Intel® Xeon® L7445(2.13GHz) / E7430(2.13GHz)) / 2 per processor (Intel® Xeon® E7220 (2.93GHz))
Front-Side-Bus		1066MHz
Chipset		Intel® 7300
TPM (Trusted Platform Module)		standard (onboard) *8
Memory	Standard	4GB (1GB ECC DDR2 SDRAM Fully Buffered DIMM x 4, PC2 5300F) (SDDC(Single Device Data Correction) supported)
	Maximum *1	128GB (4GB ECC DDR2 SDRAM Fully Buffered DIMM x 32, PC2 5300F) (Intel® Xeon® E7450(2.40GHz) / E7430(2.13GHz) / E7220 (2.93GHz)) *9 64GB (4GB ECC DDR2 SDRAM Fully Buffered DIMM x 16, PC2 5300F) (Intel® Xeon® L7445(2.13GHz)) *9
Graphics Controller		incl. Remote Management Controller, VRAM : 8MB
Resolution *2		640x480/800x600/1024x768/1280x1024 dot
Internal Bays	Number of bays	8 (hot plug)
2.5 inch HDD (SAS)	Available HDD *3 *4	2.5inch, SAS, 10krpm, 73.4GB (PG-HDD71B) 2.5inch, SAS, 10krpm, 146.8GB (PG-HDD41B) 2.5inch, SAS, 15krpm, 73.4GB (PG-HDD75B)
	Maximum *3 *4	1174.4GB
Internal Bays 5inch		1 (1 free bay)
DVD-ROM		Max 8 DVD-ROM / Max 24 CD-ROM (SATA)
PCI Slots	PCI Express (x8) [x8]	4 (hot plug)
	PCI Express (x4) [x8]	3 (non hot plug)
RAID		standard (SAS RAID Ctrl, 512MB Cache, with BBU, with RAID0/1/1+0/5/6 function)
SAS / SATA Interface		SAS x 8ports (Installed as standard)
FDD		- *10
Network Interface (onboard)		4 ports (1000BASE-T/100BASE-TX)
Interfaces		Display x 2 (Analog RGB) *11, Serial Port (D-SUB 9pins) x 1, USB x 6(ver. 2.0) (Internal : x 1, External : x 5 *12)
Server Management Software		ServerView (Standard)
Remote Service function		standard (onboard, Remote Management Controller)
	connector	1 port (100BASE-TX)
Power supply	Voltage	AC 200-240V (50/60Hz) (NEMA L6-15) x 2 (max. 2)
	Power consumption	1215W / 4374kJ/h (max.) (Intel® Xeon® E7450(2.40GHz) / E7430(2.13GHz) / E7220 (2.93GHz)) 920W / 3312kJ/h (max.) (Intel® Xeon® L7445(2.13GHz))
	Redundant power supply	standard (hot plug)
Redundant Fan		standard (hot plug)
Dimensions (W x D x H (mm))		447 (482.6 incl. protruding parts)(W) x 706 (737 incl. protruding parts)(D) x 176 (4U) (H)
Weight		43kg (51.2kg incl. rack rails) (max.)
Environmental Conditions		Temperature10-35°C / Humidity 20-80% (non condensing)
OS Support *5		Windows Server® 2008 Standard (32-bit) / Windows Server® 2008 Enterprise (32-bit) Windows Server® 2008 Standard (64-bit) / Windows Server® 2008 Enterprise (64-bit) Windows Server® 2008 Datacenter (64-bit) Windows Server® 2003 R2, Standard Edition (SP2) / Windows Server® 2003 R2, Enterprise Edition (SP2) Windows Server® 2003, Standard Edition (SP2) / Windows Server® 2003, Enterprise Edition (SP2) Windows Server® 2003 R2, Standard x64 Edition (SP2) / Windows Server® 2003 R2, Enterprise x64 Edition (SP2) Windows Server® 2003, Standard x64 Edition (SP2) / Windows Server® 2003, Enterprise x64 Edition (SP2) Red Hat Enterprise Linux AS (v.4 for x86) *13 / Red Hat Enterprise Linux 5 (for x86) *13 Red Hat Enterprise Linux AS (v.4 for EM64T) *13 / Red Hat Enterprise Linux 5 (for Intel64) *13
Attached tool (Standard)		ServerStart (Setup Support tool) *14

*1. Available memory capacity will change with OS. More details can be found in Notes[Memory OS Compatibility List].
*2. Resolution is determined by functions of the display monitor and OS.
*3. HDD capacity is calculated according to the formula 1GB=1000^3 byte.
*4. All internal HDD must be configured as RAID structure.
*5. Drivers for Linux are not attached. Please download and use drivers of the following URL.
http://www.fujitsu.com/global/services/computing/server/ia/driver/
*6. CPU Conversion kit: Xeon E7220(2.93GHz) -> Xeon E7450(2.40GHz) (PGBFU40E) is available for upgrading to Intel® Xeon® E7450(2.40GHz) x 2.
*7. CPU Conversion kit: Xeon E7220(2.93GHz) -> Xeon E7430(2.13GHz) (PGBFU40D) is available for upgrading to Intel® Xeon® E7430(2.13GHz) x 2.
*8. TPM is available for BitLocker™ Drive Encryption of Windows Server® 2008.
*9. This is the maximum memory capacity when Memory Expansion Board (PG-RB109) is applied.
*10. One USB-FDD is required as a minimum in multiple servers.
It is necessary to procure USB-FDD separately.
*11. Front and rear display connector cannot be used at the same time.
*12. Keyboard and mouse can be connected to base unit through KVM switch(4/8 ports) with USB-KVM cable.
*13. Regarding supported kernel versions of Linux, please refer to the following list.
http://www.fujitsu.com/downloads/PRMRGY/linux-os-kernel-compatibility-list.pdf
*14. ServerStart doesn't support Linux.

*. Noise level is 51dB.

Configuration Diagram



*Components installed as standard configuration marked in grey.

Mountable I/O Options

Mount Priority	Mountable Cards		Bus	PCI Slot 1 (x8 lane, Full Height, x8 socket)	PCI Slot 2 (x8 lane, Full Height, x8 socket)	PCI Slot 3 (x8 lane, Full Height, x8 socket)	PCI Slot 4 (x4 lane)	PCI Slot 5 (x8 lane, Full Height, x8 socket)	PCI Slot 6 (x4 lane)	PCI Slot 7 (x8 lane, Full Height, x8 socket)	Max No. of Mount			Remarks
High	SAS RAID Ctrl (8ports / 512MB / with BBU)	PG-248G1	PCI Express (x4)	-	-	-	[2]	-	-	[1]	2		7	External array
↑	SAS Ctrl (4ports)	PG-228B	PCI Express (x4)	[1]	[2]	[3]	-	-	-	-	3	3		External SAS Controller
	SAS Ctrl (4ports)	PG-224B	PCI Express (x4)	[1]	[2]	[3]	-	-	-	-	1			Internal SAS Controller
	SCSI Ctrl U320	PG-2281	PCI Express (x4)	[1]	[2]	[3]	[4]	[5]	-	-	2			Internal/External SCSI Controller
	Fibre Channel Controller (4Gbps)	PG-FC202	PCI Express (x4)	[1]	[2]	[3]	[4]	[5]	[6]	[7]	4 (*1)			
	Fibre Channel Controller (8Gbps)	PG-FC203	PCI Express (x8)	[1]	[2]	[3]	[4]	[5]	[6]	[7]	4 (*1)			
	Eth. Ctrl 2x1Gbit PCI-E 1000-BASE-T	PG-2861	PCI Express (x4)	[1]	[2]	[3]	[4]	[5]	[6]	[7]	4	4		
	Eth. Ctrl 1x1Gbit PCI-E 1000BASE-SX	PG-288	PCI Express (x4)	[1]	[2]	[3]	[4]	[5]	[6]	[7]	4			
Low	Eth. Ctrl 1x1Gbit PCI-E 1000-BASE-T	PG-289	PCI Express (x1)	[1]	[2]	[3]	[4]	[5]	[6]	[7]	4			

* [n] : Installation Priority
* - : cannot be installed
(*1) Fibre Channel Controller(PG-FC202) and Fibre Channel Controller (PG-FC203) cannot be installed at a time.

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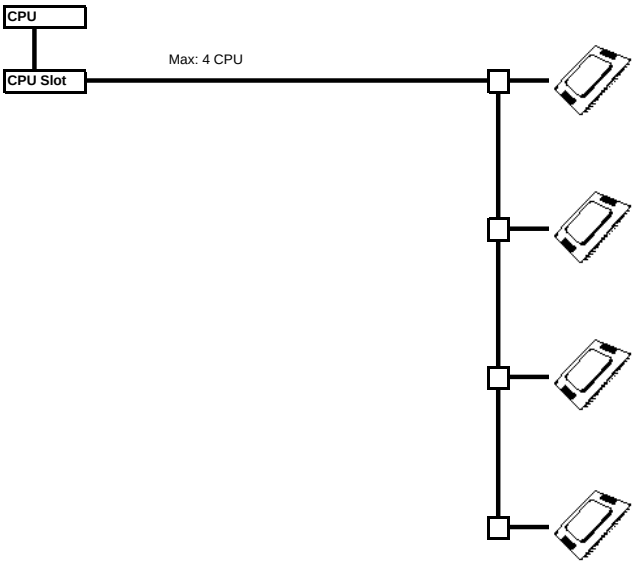
Connection Table



Processor Xeon E7450(2.40GHz)
PG-FG40E
PGBFG40E (for CTO/ for 1st additional CPU)
PGBFG40E2 (for CTO / for 2nd additional CPU)
*. This option is available when CPU Conversion kit:
Xeon E7220(2.93GHz) -> Xeon E7450(2.40GHz) (PGBFU40E) is applied.

Processor Xeon E7430(2.13GHz)
PG-FG40D
PGBFG40D (for CTO/ for 1st additional CPU)
PGBFG40D2 (for CTO / for 2nd additional CPU)
*. This option is available when CPU Conversion kit:
Xeon E7220(2.93GHz) -> Xeon E7430(2.13GHz) (PGBFU40D) is applied.

Processor Xeon E7220(2.93GHz)
PG-FG40A
PGBFG40A (for CTO/ for 1st additional CPU)
PGBFG40A2 (for CTO / for 2nd additional CPU)
*. This option is available when the processors of the base unit
are Processor Xeon E7220(2.93GHz).

Processor Xeon L7445(2.13GHz)
PG-FG40F
PGBFG40F (for CTO/ for 1st additional CPU)
PGBFG40F2 (for CTO / for 2nd additional CPU)
*. This option is available when the processors of the base unit
are Processor Xeon L7445(2.13GHz).

*CPU Conversion kit (available only as a Configure To Order (CTO) option; no separate shipment is possible)

Type	Product ID	Remarks
CPU Conversion kit: Xeon E7220(2.93GHz) -> Xeon E7450(2.40GHz) (for CTO)	PGBFU40E	Intel® Xeon® E7220(2.93GHz/8MB/-) x 2 -> Intel® Xeon® E7450(2.40GHz/3x3MB/12MB) x 2 Convert the CPU installed as standard in the base unit to the other. (Note: This option can be ordered only as coupled with the base unit. A separate shipment is not possible.)
CPU Conversion kit: Xeon E7220(2.93GHz) -> Xeon E7430(2.13GHz) (for CTO)	PGBFU40D	Intel® Xeon® E7220(2.93GHz/8MB/-) x 2 -> Intel® Xeon® E7430(2.13GHz/2x3MB/12MB) x 2 Convert the CPU installed as standard in the base unit to the other. (Note: This option can be ordered only as coupled with the base unit. A separate shipment is not possible.)

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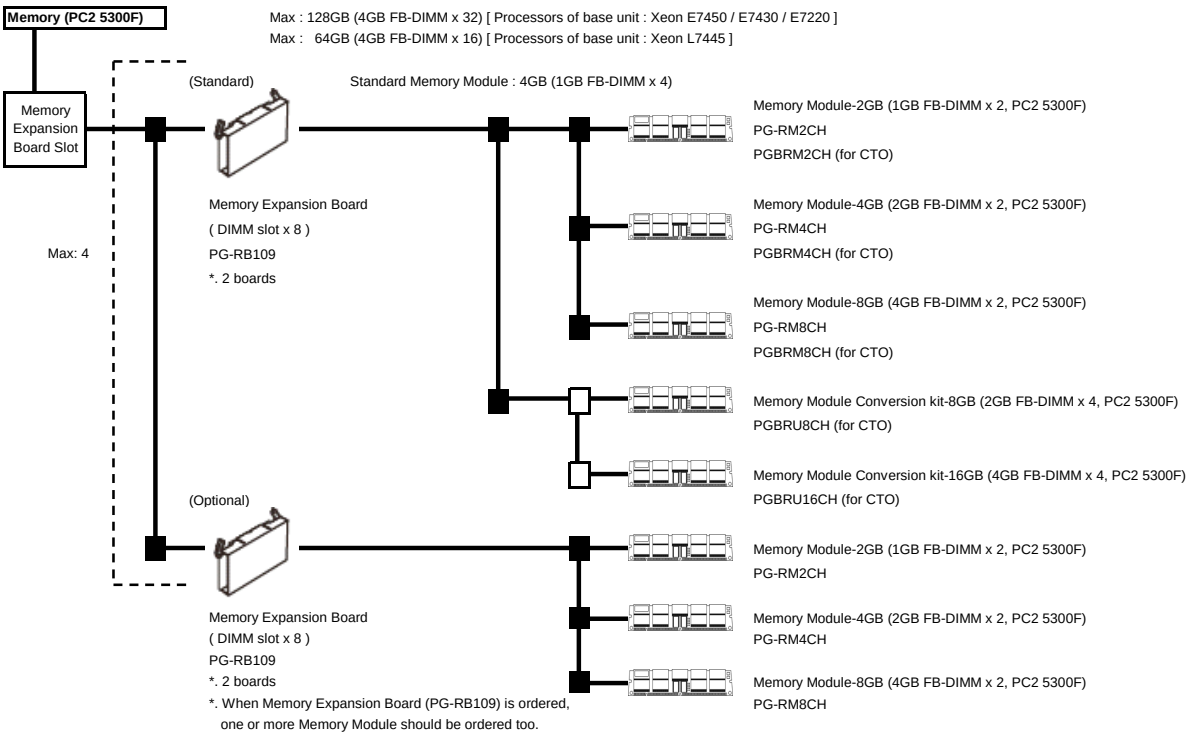

* Notes on installing memory

1. The installation order of Memory Expansion Board is as following.
   Memory Expansion Board A / B(standard) -> Memory Expansion Board C / D (PG-RB109)

2. Memory is installed by pairs of FB-DIMMs of the same capacity. Installation of one FB-DIMM or a mixed-capacity pair is impossible.

3. The memory capacities of the slots should be in descending order in the following sequence:

   (1) In case of 2 x Memory Expansion Board (standard)

   DIMM slot 1 (Memory Expansion Board A, B) -> DIMM slot 2 (Memory Expansion Board A, B)
   -> DIMM slot 3 (Memory Expansion Board A, B) -> DIMM slot 4 (Memory Expansion Board A, B)
   -> DIMM slot 5 (Memory Expansion Board A, B) -> DIMM slot 6 (Memory Expansion Board A, B)
   -> DIMM slot 7 (Memory Expansion Board A, B) -> DIMM slot 8 (Memory Expansion Board A, B)

   The following patterns of memory installation are available.

standard															
Memory Expansion Board A								Memory Expansion Board B							
Bank1	Bank2	Bank3	Bank4	Bank5	Bank6	Bank7	Bank8	Bank1	Bank2	Bank3	Bank4	Bank5	Bank6	Bank7	Bank8
Slot1	Slot2	Slot3	Slot4	Slot5	Slot6	Slot7	Slot8	Slot1	Slot2	Slot3	Slot4	Slot5	Slot6	Slot7	Slot8
0	0	-	-	-	-	-	-	0	0	-	-	-	-	-	-
0	0	0	-	-	-	-	-	0	0	0	-	-	-	-	-
0	0	0	0	-	-	-	-	0	0	0	0	-	-	-	-
0	0	0	0	0	-	-	-	0	0	0	0	0	-	-	-
0	0	0	0	0	0	-	-	0	0	0	0	0	0	-	-
0	0	0	0	0	0	0	-	0	0	0	0	0	0	0	-
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

   0 : Memory is installed. - : Memory is not installed.

   (2) In case of 4 x Memory Expansion Board (when Memory Expansion Board (PG-RB109) is applied)

   DIMM slot 1 (Memory Expansion Board A, B) -> DIMM slot 1 (Memory Expansion Board C, D)
   -> DIMM slot 2 (Memory Expansion Board A, B) -> DIMM slot 2 (Memory Expansion Board C, D)
   -> DIMM slot 3 (Memory Expansion Board A, B) -> DIMM slot 3 (Memory Expansion Board C, D)
   -> DIMM slot 4 (Memory Expansion Board A, B) -> DIMM slot 4 (Memory Expansion Board C, D)
   -> DIMM slot 5 (Memory Expansion Board A, B) -> DIMM slot 5 (Memory Expansion Board C, D)
   -> DIMM slot 6 (Memory Expansion Board A, B) -> DIMM slot 6 (Memory Expansion Board C, D)
   -> DIMM slot 7 (Memory Expansion Board A, B) -> DIMM slot 7 (Memory Expansion Board C, D)
   -> DIMM slot 8 (Memory Expansion Board A, B) -> DIMM slot 8 (Memory Expansion Board C, D)

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The following patterns of memory installation are available.

(a) Processors of base unit : Xeon E7450 / E7430 / E7220

standard																optional (PG-RB109)																
Memory Expansion Board A								Memory Expansion Board B								Memory Expansion Board C								Memory Expansion Board D								
Bank1	Bank2	Bank3	Bank4	Bank5	Bank6	Bank7	Bank8	Bank1	Bank2	Bank3	Bank4	Bank5	Bank6	Bank7	Bank8	Bank1	Bank2	Bank3	Bank4	Bank5	Bank6	Bank7	Bank8	Bank1	Bank2	Bank3	Bank4	Bank5	Bank6	Bank7	Bank8	
Slot1	Slot2	Slot3	Slot4	Slot5	Slot6	Slot7	Slot8	Slot1	Slot2	Slot3	Slot4	Slot5	Slot6	Slot7	Slot8	Slot1	Slot2	Slot3	Slot4	Slot5	Slot6	Slot7	Slot8	Slot1	Slot2	Slot3	Slot4	Slot5	Slot6	Slot7	Slot8	
0	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	*1
0	0	-	-	-	-	-	-	0	0	-	-	-	-	-	-	0	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	
0	0	-	-	-	-	-	-	0	0	-	-	-	-	-	-	0	0	-	-	-	-	-	-	0	0	-	-	-	-	-	-	
0	0	0	-	-	-	-	-	0	0	0	-	-	-	-	-	0	0	-	-	-	-	-	-	0	0	-	-	-	-	-	-	
0	0	0	-	-	-	-	-	0	0	0	-	-	-	-	-	0	0	0	-	-	-	-	-	0	0	0	-	-	-	-	-	
0	0	0	0	-	-	-	-	0	0	0	0	-	-	-	-	0	0	0	-	-	-	-	-	0	0	0	-	-	-	-	-	
0	0	0	0	-	-	-	-	0	0	0	0	-	-	-	-	0	0	0	0	-	-	-	-	0	0	0	0	-	-	-	-	
0	0	0	0	0	-	-	-	0	0	0	0	0	-	-	-	0	0	0	0	-	-	-	-	0	0	0	0	-	-	-	-	
0	0	0	0	0	-	-	-	0	0	0	0	0	-	-	-	0	0	0	0	0	-	-	-	0	0	0	0	0	-	-	-	
0	0	0	0	0	0	-	-	0	0	0	0	0	0	-	-	0	0	0	0	0	-	-	-	0	0	0	0	0	0	-	-	
0	0	0	0	0	0	0	-	0	0	0	0	0	0	0	-	0	0	0	0	0	0	-	-	0	0	0	0	0	0	0	-	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

0 : Memory is installed. - : Memory is not installed.

*1. In this case, it is necessary to uninstall the memories of DIMM slot 2 of Memory Expansion Board A, B and install them in DIMM slot 1 of Memory Expansion Board C, D.

(b) Processors of base unit : Xeon L7445

standard																optional (PG-RB109)																
Memory Expansion Board A								Memory Expansion Board B								Memory Expansion Board C								Memory Expansion Board D								
Bank1	Bank2	Bank3	Bank4	Bank5	Bank6	Bank7	Bank8	Bank1	Bank2	Bank3	Bank4	Bank5	Bank6	Bank7	Bank8	Bank1	Bank2	Bank3	Bank4	Bank5	Bank6	Bank7	Bank8	Bank1	Bank2	Bank3	Bank4	Bank5	Bank6	Bank7	Bank8	
Slot1	Slot2	Slot3	Slot4	Slot5	Slot6	Slot7	Slot8	Slot1	Slot2	Slot3	Slot4	Slot5	Slot6	Slot7	Slot8	Slot1	Slot2	Slot3	Slot4	Slot5	Slot6	Slot7	Slot8	Slot1	Slot2	Slot3	Slot4	Slot5	Slot6	Slot7	Slot8	
0	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	*1
0	0	-	-	-	-	-	-	0	0	-	-	-	-	-	-	0	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	
0	0	-	-	-	-	-	-	0	0	-	-	-	-	-	-	0	0	-	-	-	-	-	-	0	0	-	-	-	-	-	-	
0	0	0	-	-	-	-	-	0	0	0	-	-	-	-	-	0	0	-	-	-	-	-	-	0	0	-	-	-	-	-	-	
0	0	0	-	-	-	-	-	0	0	0	-	-	-	-	-	0	0	0	-	-	-	-	-	0	0	0	-	-	-	-	-	
0	0	0	0	-	-	-	-	0	0	0	0	-	-	-	-	0	0	0	-	-	-	-	-	0	0	0	-	-	-	-	-	
0	0	0	0	-	-	-	-	0	0	0	0	-	-	-	-	0	0	0	0	-	-	-	-	0	0	0	0	-	-	-	-	

0 : Memory is installed. - : Memory is not installed.

*1. In this case, it is necessary to uninstall the memories of DIMM slot 2 of Memory Expansion Board A, B and install them in DIMM slot 1 of Memory Expansion Board C, D.

If processors of base unit are Xeon L7445, Slot5, Slot6, Slot7 and Slot8 are not available.

4. Spare Memory Function

In case of using Spare Memory function, the following conditions are required.

(1) Three or more DIMM cards the Memory capacity of which are same should be installed in each Memory Expansion Board.

(2) All Memory Expansion Boards should be set Memory spare structure.

(3) Memory Mirroring Function is not available when Spare Memory Function is available.

(4) Available memory capacity is (n-1)/n because 1bank is used for spare memory.
("n" is the number of installed memory.)

The following patterns of memory installation are available for Spare Memory function.

(a) In case of 2 x Memory Expansion Board (standard)

standard															
Memory Expansion Board A								Memory Expansion Board B							
Bank1	Bank2	Bank3	Bank4	Bank5	Bank6	Bank7	Bank8	Bank1	Bank2	Bank3	Bank4	Bank5	Bank6	Bank7	Bank8
Slot1	Slot2	Slot3	Slot4	Slot5	Slot6	Slot7	Slot8	Slot1	Slot2	Slot3	Slot4	Slot5	Slot6	Slot7	Slot8
0	0	0	-	-	-	-	-	0	0	0	-	-	-	-	-
0	0	0	0	-	-	-	-	0	0	0	0	-	-	-	-
0	0	0	0	0	-	-	-	0	0	0	0	0	-	-	-
0	0	0	0	0	0	-	-	0	0	0	0	0	0	-	-
0	0	0	0	0	0	0	-	0	0	0	0	0	0	0	-
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 : Memory is installed. - : Memory is not installed.

(b) In case of 4 x Memory Expansion Board (when Memory Expansion Board (PG-RB109) is applied)

[1] Processors of base unit : Xeon E7450 / E7430 / E7220

standard																optional (PG-RB109)															
Memory Expansion Board A								Memory Expansion Board B								Memory Expansion Board C								Memory Expansion Board D							
Bank1	Bank2	Bank3	Bank4	Bank5	Bank6	Bank7	Bank8	Bank1	Bank2	Bank3	Bank4	Bank5	Bank6	Bank7	Bank8	Bank1	Bank2	Bank3	Bank4	Bank5	Bank6	Bank7	Bank8	Bank1	Bank2	Bank3	Bank4	Bank5	Bank6	Bank7	Bank8
Slot1	Slot2	Slot3	Slot4	Slot5	Slot6	Slot7	Slot8	Slot1	Slot2	Slot3	Slot4	Slot5	Slot6	Slot7	Slot8	Slot1	Slot2	Slot3	Slot4	Slot5	Slot6	Slot7	Slot8	Slot1	Slot2	Slot3	Slot4	Slot5	Slot6	Slot7	Slot8
0	0	0	-	-	-	-	-	0	0	0	-	-	-	-	-	0	0	0	-	-	-	-	-	0	0	0	-	-	-	-	-
0	0	0	0	-	-	-	-	0	0	0	0	-	-	-	-	0	0	0	0	-	-	-	-	0	0	0	0	-	-	-	-
0	0	0	0	0	-	-	-	0	0	0	0	0	-	-	-	0	0	0	0	0	-	-	-	0	0	0	0	0	-	-	-
0	0	0	0	0	0	-	-	0	0	0	0	0	0	-	-	0	0	0	0	0	0	-	-	0	0	0	0	0	0	-	-
0	0	0	0	0	0	0	-	0	0	0	0	0	0	0	-	0	0	0	0	0	0	0	-	0	0	0	0	0	0	0	-
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 : Memory is installed. - : Memory is not installed.

[2] Processors of base unit : Xeon L7445

standard																optional (PG-RB109)															
Memory Expansion Board A								Memory Expansion Board B								Memory Expansion Board C								Memory Expansion Board D							
Bank1	Bank2	Bank3	Bank4	Bank5	Bank6	Bank7	Bank8	Bank1	Bank2	Bank3	Bank4	Bank5	Bank6	Bank7	Bank8	Bank1	Bank2	Bank3	Bank4	Bank5	Bank6	Bank7	Bank8	Bank1	Bank2	Bank3	Bank4	Bank5	Bank6	Bank7	Bank8
Slot1	Slot2	Slot3	Slot4	Slot5	Slot6	Slot7	Slot8	Slot1	Slot2	Slot3	Slot4	Slot5	Slot6	Slot7	Slot8	Slot1	Slot2	Slot3	Slot4	Slot5	Slot6	Slot7	Slot8	Slot1	Slot2	Slot3	Slot4	Slot5	Slot6	Slot7	Slot8
0	0	0	-	-	-	-	-	0	0	0	-	-	-	-	-	0	0	0	-	-	-	-	-	0	0	0	-	-	-	-	-
0	0	0	0	-	-	-	-	0	0	0	0	-	-	-	-	0	0	0	0	-	-	-	-	0	0	0	0	-	-	-	-

0 : Memory is installed. - : Memory is not installed.

If processors of base unit are Xeon L7445, Slot5, Slot6, Slot7 and Slot8 are not available.

5. Memory Mirroring Function

In case of using Memory Mirroring function, the following conditions are required.
(1) Memory Expansion Board (PG-RB109) should be installed.
(2) Memory capacity of same bank no. of each Memory Expansion Board should be same.
(3) Spare Memory Function is not available when Memory Mirroring Function is available.
(4) Available memory capacity is half of installed memory because half of installed memory is used for mirroring.

The following patterns of memory installation are available for Memory Mirroring function.

(a) Processors of base unit : Xeon E7450 / E7430 / E7220

standard																optional (PG-RB109)															
Memory Expansion Board A								Memory Expansion Board B								Memory Expansion Board C								Memory Expansion Board D							
Bank1	Bank2	Bank3	Bank4	Bank5	Bank6	Bank7	Bank8	Bank1	Bank2	Bank3	Bank4	Bank5	Bank6	Bank7	Bank8	Bank1	Bank2	Bank3	Bank4	Bank5	Bank6	Bank7	Bank8	Bank1	Bank2	Bank3	Bank4	Bank5	Bank6	Bank7	Bank8
Slot1	Slot2	Slot3	Slot4	Slot5	Slot6	Slot7	Slot8	Slot1	Slot2	Slot3	Slot4	Slot5	Slot6	Slot7	Slot8	Slot1	Slot2	Slot3	Slot4	Slot5	Slot6	Slot7	Slot8	Slot1	Slot2	Slot3	Slot4	Slot5	Slot6	Slot7	Slot8
0	0	-	-	-	-	-	-	0	0	-	-	-	-	-	-	0	0	-	-	-	-	-	-	0	0	-	-	-	-	-	-
0	0	0	-	-	-	-	-	0	0	0	-	-	-	-	-	0	0	0	-	-	-	-	-	0	0	0	-	-	-	-	-
0	0	0	0	-	-	-	-	0	0	0	0	-	-	-	-	0	0	0	0	-	-	-	-	0	0	0	0	-	-	-	-
0	0	0	0	0	-	-	-	0	0	0	0	0	-	-	-	0	0	0	0	0	-	-	-	0	0	0	0	0	-	-	-
0	0	0	0	0	0	-	-	0	0	0	0	0	0	-	-	0	0	0	0	0	0	-	-	0	0	0	0	0	0	-	-
0	0	0	0	0	0	0	-	0	0	0	0	0	0	0	-	0	0	0	0	0	0	0	-	0	0	0	0	0	0	0	-
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 : Memory is installed. - : Memory is not installed.

(b) Processors of base unit : Xeon L7445

standard																optional (PG-RB109)															
Memory Expansion Board A								Memory Expansion Board B								Memory Expansion Board C								Memory Expansion Board D							
Bank1	Bank2	Bank3	Bank4	Bank5	Bank6	Bank7	Bank8	Bank1	Bank2	Bank3	Bank4	Bank5	Bank6	Bank7	Bank8	Bank1	Bank2	Bank3	Bank4	Bank5	Bank6	Bank7	Bank8	Bank1	Bank2	Bank3	Bank4	Bank5	Bank6	Bank7	Bank8
Slot1	Slot2	Slot3	Slot4	Slot5	Slot6	Slot7	Slot8	Slot1	Slot2	Slot3	Slot4	Slot5	Slot6	Slot7	Slot8	Slot1	Slot2	Slot3	Slot4	Slot5	Slot6	Slot7	Slot8	Slot1	Slot2	Slot3	Slot4	Slot5	Slot6	Slot7	Slot8
0	0	-	-	-	-	-	-	0	0	-	-	-	-	-	-	0	0	-	-	-	-	-	-	0	0	-	-	-	-	-	-
0	0	0	-	-	-	-	-	0	0	0	-	-	-	-	-	0	0	0	-	-	-	-	-	0	0	0	-	-	-	-	-
0	0	0	0	-	-	-	-	0	0	0	0	-	-	-	-	0	0	0	0	-	-	-	-	0	0	0	0	-	-	-	-

0 : Memory is installed. - : Memory is not installed.

If processors of base unit are Xeon L7445, Slot5, Slot6, Slot7 and Slot8 are not available.

6. Available memory capacity depends on the type of OS and some memory area is used for PCI resource management.
The following table shows installed memory capacity and available memory capacity.

OS	Processors of base unit	Installed Memory Capacity	Available Memory Capacity
Windows Server® 2008 Standard (32-bit) Windows Server® 2003 R2, Standard Edition (SP2) Windows Server® 2003, Standard Edition (SP2)	Xeon E7450 Xeon L7445 Xeon E7430 Xeon E7220	~3.0GB	Same as installed memory capacity
		3.0GB~4.0GB	3.0GB *1
Red Hat Enterprise Linux AS (v.4 for x86) Red Hat Enterprise Linux 5 (for x86)	Xeon E7450 Xeon L7445 Xeon E7430 Xeon E7220	~12.0GB	Same as installed memory capacity
Windows Server® 2008 Standard (64-bit) Windows Server® 2003 R2, Standard x64 Edition (SP2) Windows Server® 2003, Standard x64 Edition (SP2)	Xeon E7450 Xeon L7445 Xeon E7430 Xeon E7220	~32.0GB	Same as installed memory capacity
Windows Server® 2008 Enterprise (32-bit) Windows Server® 2003 R2, Enterprise Edition (SP2) Windows Server® 2003, Enterprise Edition (SP2)	Xeon E7450 Xeon L7445 Xeon E7430 Xeon E7220	~3.0GB	Same as installed memory capacity
		3.0GB~62.0GB	3.0GB *1
Windows Server® 2008 Enterprise (64-bit) Windows Server® 2008 Datacenter (64-bit) Windows Server® 2003 R2, Enterprise x64 Edition (SP2) Windows Server® 2003, Enterprise x64 Edition (SP2) Red Hat Enterprise Linux AS (v.4 for EM64T) Red Hat Enterprise Linux 5 (for Intel64)	Xeon L7445	~64.0GB	Same as installed memory capacity
	Xeon E7450 Xeon E7430 Xeon E7220	~128.0GB	Same as installed memory capacity

*1. If installed memory capacity is more than 3.0GB, it is necessary to set "PAE (Physical Address Extension)" of OS.
The following (1) and (2) are the ways to set "PAE" of OS, and Fujitsu recommends (1).

(1) Set "PAE" of OS.
Regarding setting "PAE" of OS, please refer to website of Microsoft.

(2) Set "DPE (Data Execution Prevention)" of CPU.
If "DPE" of CPU is set as "available" by executing the following procedure, "PAE" of OS is set automatically.

[1] Execute "BIOS setup utility".
[2] Select "Advanced" menu.
[3] Select "Advanced Processor" submenu.
[4] Set "Execute Disable Bit" as "Enabled".

Connecting Internal HDD and Internal Backup Devices

If you would like to order internal HDDs and internal backup devices, please order optional cards/cables according to the following table.

Type of HDD connection		PRIMERGY RX600 S4 Internal Backup Devices				PRIMERGY SX10 S2 Internal Backup Devices
Connection	Interface	USB ("1) Connection	SCSI Wide ("2) Connection	SCSI Wide ("3) Connection	SAS ("4) Connection	SCSI Wide ("5) Connection
RAID	SAS RAID Controller (standard)	USB Cable (PG-CBLU004/ PGBCBLU004)	SCSI Card (PG-2281/ PGB2281) SCSI Cable (PG-CBLS030/ PGBCBLS030)	SCSI Card (PG-2281/ PGB2281) SCSI Cable (PG-CBLS031/ PGBCBLS031)	SAS Card (PG-224B/ PGB224B) SAS Cable (PG-CBLA004/ PGBCBLA004)	SCSI Card (PG-2281 / PGB2281) SCSI Cable (PG-CBLS034 / PG-CBLS035)

("1) USB Backup Devices : PG-DT5041 / PG-RD1021
("2) SCSI Wide Backup Devices : PG-LT201 / PG-LT102
("3) SCSI Wide Backup Devices : PG-LT302
("4) SAS Backup Device: PG-LT401
("5) SCSI Wide Backup Devices : PG-DT501 / PG-LT302 / PG-LT201 / PG-LT102

Internal HDD

on board

RAID Configuration

SAS RAID Ctrl
(installed as standard)
(8ports / 512MB / with BBU)

*. RAID 0/1/1+0/5/6 configuration can be set.

*. SAS RAID Ctrl includes a battery as standard equipment.
The battery lifetime is 3 years.
Please purchase the following spare battery and replace the old battery with new one before the battery runs out.

Battery Backup Unit
PG-BBU3

Max: 8 HDDs

HDD SAS 10k 73GB hot plug 2.5inch
PG-HDD71B
PGBHDD71B (for CTO)

HDD SAS 10k 147GB hot plug 2.5inch
PG-HDD41B
PGBHDD41B (for CTO)

HDD SAS 15k 73GB hot plug 2.5inch
PG-HDD75B
PGBHDD75B (for CTO)

PRIMERGY RX600 S4

Internal backup device (SCSI)

PCI Express Bus

SCSI Ctrl U320
PG-2281
PGB2281 (for CTO)

SCSI Cable
PG-CBLS031
PGBCBLS031 (for CTO)

Tape Drv LTO3 Ultrium3/Ultrium2 400GB
PG-LT302
PGBLT302 (for CTO)
*. One internal backup device can be mounted.

SCSI Cable
PG-CBLS030
PGBCBLS030 (for CTO)

Tape Drv LTO2 Ultrium2 200GB
PG-LT201
PGBLT201 (for CTO)
*. One internal backup device can be mounted.

Tape Drv LTO Ultrium1 100GB
PG-LT102
PGBLT102 (for CTO)
*. One internal backup device can be mounted.

*. If internal backup device (SCSI) is ordered by CTO,
both SCSI Ctrl U320 (PGB2281) and SCSI Cable (PGBCBLS031/PGBCBLS030)
should be ordered too.

1 slot / Max: 1

Internal backup device (SAS)

PCI Express Bus

SAS Ctrl
PG-224B
PGB224B (for CTO)

SAS Cable
PG-CBLA004
PGBCBLA004 (for CTO)

Tape Drv LTO4 Ultrium4/Ultrium3/Ultrium2 800GB
PG-LT401
PGBLT401 (for CTO)

*. One internal backup device can be mounted.

*. If internal backup device (SAS) is ordered by CTO,
both SAS Ctrl (PGB224B) and SAS Cable (PGBCBLA004)
should be ordered too.

Internal backup device (USB)

USB Interface (internal)

USB Cable
PG-CBLU004
PGBCBLU004 (for CTO)

Tape Drv DAT72 36GB internal
PG-DT5041
PGBDT5041 (for CTO)
*. One internal backup device can be mounted.

Internal Data Cartridge Drive Unit
PG-RD1021
PGBRD1021 (for CTO)
*. One internal backup device can be mounted.
*. If you would like to purchase data cartridges,
please refer to the following web site.
http://www.tandbergdata.com/sales-apac.html

*. If internal backup device (USB) is ordered by CTO,
USB Cable (PGBCBLU004) should be ordered too.

External DVD-RAM/DVD-ROM/CD-ROM

USB Interface

DVD-RAM / DVD-ROM / CD-ROM

USB Extension Cable
PG-CBLU002

Hard Disk Cabinet (PRIMERGY SX35)

PCI Express Bus

SAS RAID Ctrl
(8ports / 512MB / with BBU)
PG-248G1
PGB248G1 (for CTO)

SAS Cable
PG-CBLA005

PRIMERGY SX35
(12bays)
PG-R2DC2

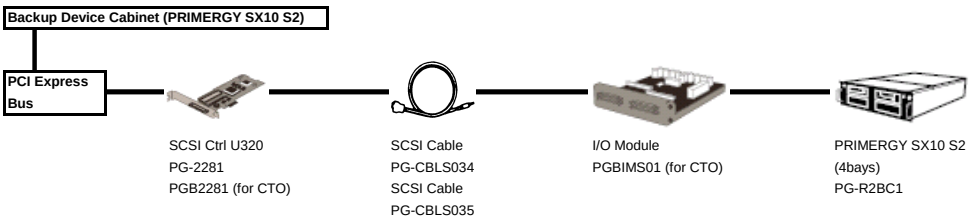
*. RAID 0/1/1+0/5/6 configuration can be set.

*. SAS RAID Ctrl includes a battery as standard equipment.
The battery lifetime is 3 years.
Please purchase the following spare battery and replace the old battery with new one
before the battery runs out.

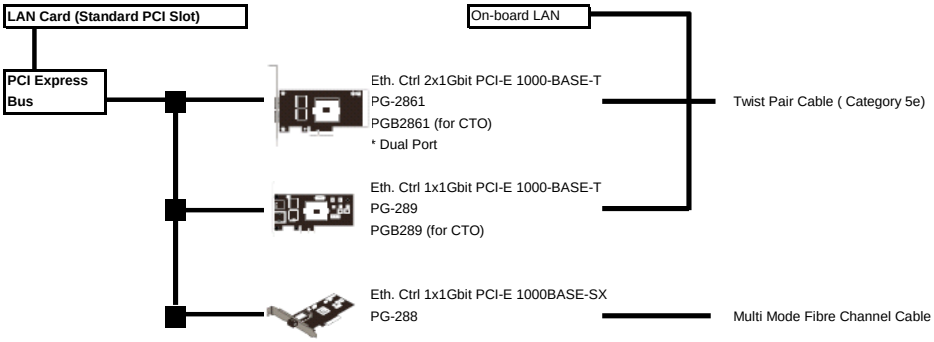
Battery Backup Unit
PG-BBU5

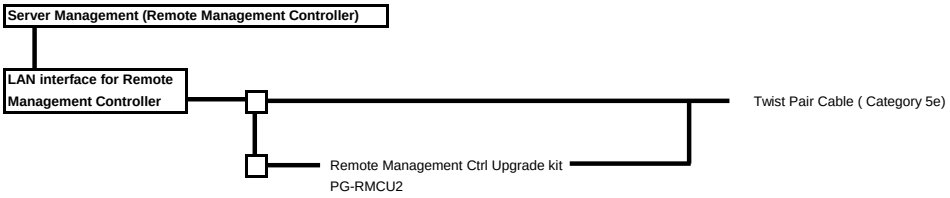
*. Please find more details in Rackmount [Hard Disk Cabinet (PRIMERGY SX35)].

PRIMERGY RX600 S4



*. Please find more details in Rackmount [Backup Device Cabinet (PRIMERGY SX10 S2)].





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