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PRIMERGY®

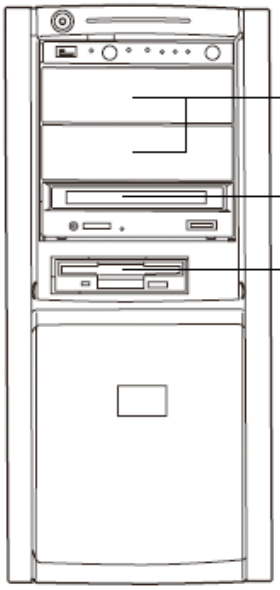
System Configuration and Order-information Guide

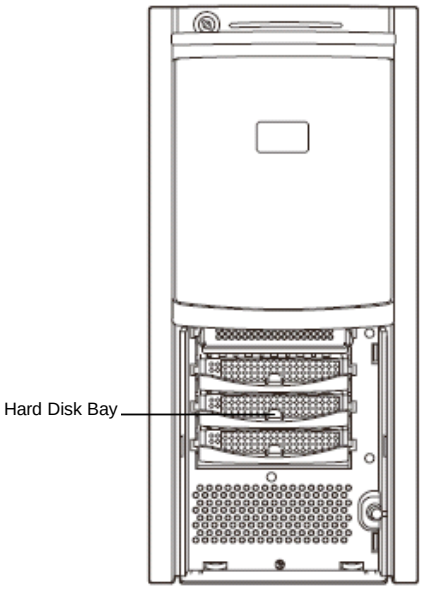
TX150 S6

March 2009

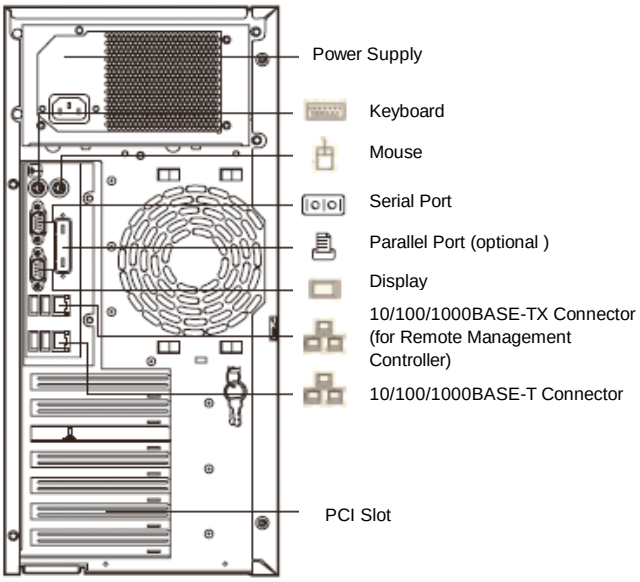
PRIMERGY TX150 S6

Front View

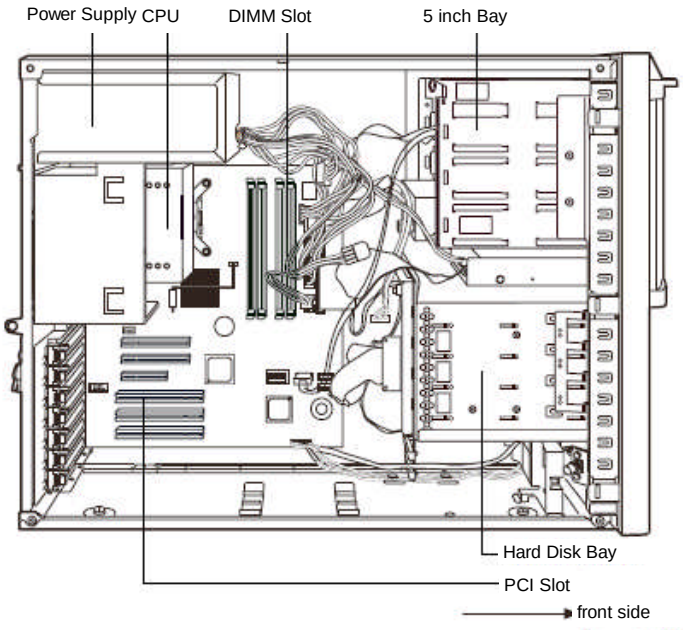




Back View



Inside View



PRIMERGY TX150 S6

Instruction

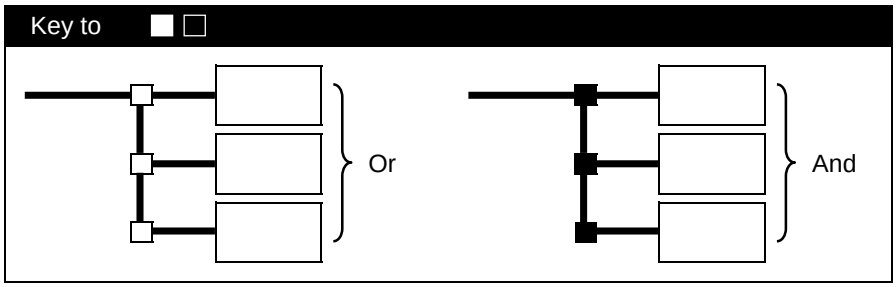
This document contains basic product and configuration information that will enable you to configure your system.

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 servers 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 TX150 S6

Data Sheet

Type		Mono-Processor Tower Server	
Model		3.5inch SAS model	3.5inch SATA model
Base Unit	Core™ 2 Duo E7300(2.66GHz)	PGUT1566A	PGUT1566B
CPU	Frequencies	Intel® Xeon® X3320(2.50GHz) *5 / X3220(2.40GHz) *6 / Intel® Xeon® E3120(3.16GHz) *7 / E3110(3GHz) *8 / Intel® Core™ 2 Duo E7300(2.66GHz)	
	Second-Level-Cache	2x4MB (Intel® Xeon® X3220(2.40GHz)) / 6MB (Intel® Xeon® X3320(2.50GHz) / Intel® Xeon® E3120(3.16GHz) / E3110(3GHz)) / 3MB (Intel® Core™ 2 Duo E7300(2.66GHz))	
	Number of processors	1 (max. 1)	
	Number of cores	4 per processor (Intel® Xeon® X3320(2.50GHz) / X3220(2.40GHz)) / 2 per processor (Intel® Xeon® E3120(3.16GHz) / E3110(3GHz) / Intel® Core™ 2 Duo E7300(2.66GHz))	
Front-Side-Bus		1333MHz (Intel® Xeon® X3320(2.50GHz) / Intel® Xeon® E3120(3.16GHz) / E3110(3GHz)) 1066MHz (Intel® Xeon® X3220(2.40GHz) / Intel® Core™ 2 Duo E7300(2.66GHz))	
Chipset		Intel® 3210	
TPM (Trusted Platform Module)		standard (onboard) *9	
Memory	Standard	1GB (1GB ECC DDR2 SDRAM DIMM x 1)	
	Maximum *1	8GB (2GB ECC DDR2 SDRAM DIMM x 4)	
Graphics Controller		incl. Remote Management Controller, VRAM : 8MB	
Resolution *2		640x480/800x600/1024x768/1280x1024 dot	
Internal Bays	Number of bays	4 (hot plug)	
3.5 inch HDD (SAS/SATA)	Available HDD *3	3.5inch, SAS, 15krpm, 73.4GB (PG-HDB75A) 3.5inch, SAS, 15krpm, 146.8GB (PG-HDB45A) 3.5inch, SAS, 15krpm, 300.0GB (PG-HDB35A) 3.5inch, SAS, 15krpm, 450.0GB (PG-HDB55A)	3.5inch, SATA, 7.2krpm, 80.0GB (PG-HDF87B) 3.5inch, SATA, 7.2krpm, 160.0GB (PG-HDF67B) 3.5inch, SATA, 7.2krpm, 500.0GB (PG-HDF57B)
	Maximum *3	1.8TB (450.0GB x 4) *10	2.0TB (500.0GB x 4)
Internal Bays 5inch		3 (1 free bay)	
DVD-ROM		Max 16 DVD-ROM / Max 40 CD-ROM (SATA)	
PCI Slots	PCI Express (x8) [x8]	2 (SAS Controller occupies one slot.)	
	PCI Express (x4) [x8]	1	
	PCI (32bit/33MHz) [5.0V]	3 (3 x Full Size)	
RAID		standard (SAS Controller, with RAID1 function) *10	Software RAID
SAS / SATA Interface		SAS x 4ports	SATA x 4ports
Internal FDD		3.5inch (1.44MB/720KB)	
Network Interface (onboard)		1 port (1000BASE-T/100BASE-TX/10BASE-T)	
Interfaces		Display (Analog RGB), Serial Port x 1(D-SUB 9pins) (2 when Serial Port (PG-COM04) is applied.) Parallel Port (optional D-SUB 25pins) Keyboard (PS/2type Mini DIN 6pins), Mouse (PS/2type Mini DIN 6pins), USB x 6 (ver. 2.0) (Internal : x 1,External : x 5)	
Server Management Software		ServerView (standard)	
Remote Service function		standard (onboard, Remote Management Controller)	
	connector	1 port (100BASE-TX/10BASE-T)	
Power supply	Voltage	AC 100-127V (50/60Hz) / AC 200-240V (50/60Hz) x 1 (max. 1)	
	Power consumption	280W /1008kJ/h (max.)	
	Redundant power supply	-	
Redundant Fan		-	
Dimensions (mm)		Tower: 205(W)x615(D)x444(H) Rackmount (when Rack Conversion kit (PG-R1CK22/PGBR1CK22) is applied.) : 440 (482 incl. protruding parts)(W)x562 (617 incl. protruding parts)(D)x221.2 (5U) (H)	
Weight		Tower: 26kg (max.) / Rackmount: 26kg (28kg incl. rack rails) (max.)	
Environmental Conditions		Temperature10-35°C / Humidity 20-80% (non condensing)	
OS Support *4		Windows Server® 2008 Standard (32-bit) / Windows Server® 2008 Standard (64-bit) Windows Server® 2003 R2, Standard Edition (SP2) / Windows Server® 2003, Standard Edition (SP2) Windows Server® 2003 R2, Standard x64 Edition (SP2) / Windows Server® 2003, Standard x64 Edition (SP2) Windows® Small Business Server 2003 R2 (SP2) / Windows® Small Business Server 2003 (SP2) Red Hat Enterprise Linux ES (v.4 for x86) *11 / Red Hat Enterprise Linux 5 (for x86) *11 *12 Red Hat Enterprise Linux ES (v.4 for EM64T) *11 / Red Hat Enterprise Linux 5 (for Intel64) *11 *12	
Attached tool (Standard)		ServerStart (Setup Support tool) *13	

*1. Available memory capacity will be changed by the type of OS. Please find more details 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 formulas 1GB=1000^3 byte and 1TB=1000^4 byte.

*4. 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/

*5. CPU Conversion kit: Core 2 Duo E7300(2.66GHz) -> Xeon X3320(2.50GHz) (PGBFU51N) is available for upgrading to Intel® Xeon® X3320(2.50GHz).

*6. CPU Conversion kit: Core 2 Duo E7300(2.66GHz) -> Xeon X3220(2.40GHz) (PGBFU51M) is available for upgrading to Intel® Xeon® X3220(2.40GHz).

*7. CPU Conversion kit: Core 2 Duo E7300(2.66GHz) -> Xeon E3120(3.16GHz) (PGBFU51L) is available for upgrading to Intel® Xeon® E3120(3.16GHz).

*8. CPU Conversion kit: Core 2 Duo E7300(2.66GHz) -> Xeon E3110(3GHz) (PGBFU51K) is available for upgrading to Intel® Xeon® E3110(3GHz).

*9. TPM is available for BitLockerTM Drive Encryption of Windows Server® 2008.

*10. In case that SAS Controller installed as standard is used for RAID configuration, only 2 HDDs of same capacity and same rpm can be connected.

*11. Regarding supported kernel versions of Linux, please refer to the following list.

http://www.fujitsu.com/downloads/PRMRGY/linux-os-kernel-compatibility-list.pdf

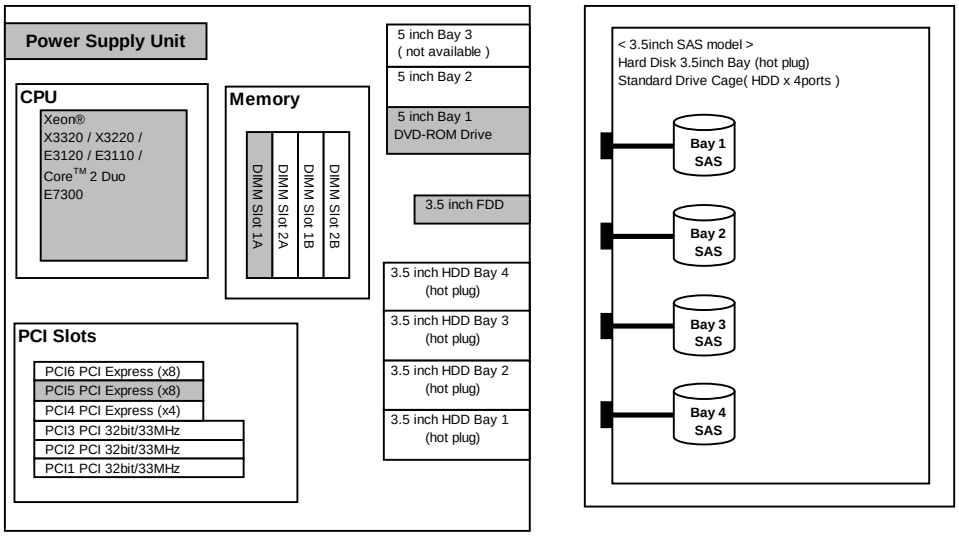
*12. VM (Virtual Machine) function is not supported.

*13. ServerStart doesn't support Linux.

*. Noise level is 34dB.

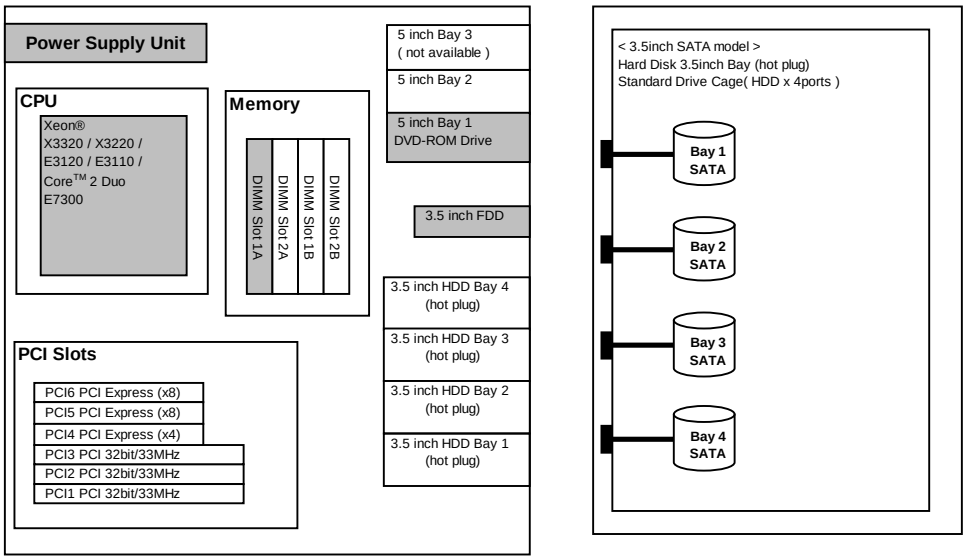
Configuration Diagram

[3.5inch SAS model]



*Components installed as standard configuration marked in grey.

[3.5inch SATA model]



*Components installed as standard configuration marked in grey.

Mountable I/O Options

[3.5inch SAS model]

Mount Priority	Mountable Cards		Bus	PCI Slot 1 (PCI 32bit/33MHz, Full Height, 5.0V)	PCI Slot 2 (PCI 32bit/33MHz, Full Height, 5.0V)	PCI Slot 3 (PCI 32bit/33MHz, Full Height, 5.0V)	PCI Slot 4 (PCI Express x4 lane, Full Height, x8 socket)	PCI Slot 5 (PCI Express x8 lane, Full Height, x8 socket)	PCI Slot 6 (PCI Express x8 lane, Full Height, x8 socket)	Max No.of Mount			Remarks
High	SAS RAID Ctrl (8ports / 256MB / without BBU)	PG-248B	PCI Express (x4)	-	-	-	-	[1]	-	1			Internal array
	SAS RAID Ctrl (8ports / 512MB / with BBU)	PG-248C	PCI Express (x4)	-	-	-	-	[1]	-	1			Internal array
	SAS Controller (4ports)	-	PCI Express (x4)	-	-	-	-	#	-	1			Standard, Internal array
	SCSI Ctrl U320	PG-2281	PCI Express (x4)	-	-	-	[2]	-	[1]	2	3	6	Internal/External SCSI Controller
	Eth. Ctrl 2x1Gbit PCI-E 1000-BASE-T	PG-2861	PCI Express (x4)	-	-	-	[2]	-	[1]	1			
	Eth. Ctrl 1x1Gbit PCI-E 1000-BASE-T	PG-289	PCI Express (x1)	-	-	-	[2]	-	[1]	2			
	Eth. Ctrl 1x1Gbit PCI-E 1000-BASE-T	PG-285	PCI Express (x1)	-	-	-	[2]	-	[1]	2			No AFT/ALB Support
Low	Eth. Ctrl 1x1Gbit PCI 1000-BASE-T	PG-1853	PCI/32bit	[3]	[2]	[1]	-	-	-	3	3		No AFT/ALB Support

* [n] : Installation Priority
* # : standard
* - : cannot be installed

[3.5inch SATA model]

Mount Priority	Mountable Cards		Bus	PCI Slot 1 (PCI 32bit/33MHz, Full Height, 5.0V)	PCI Slot 2 (PCI 32bit/33MHz, Full Height, 5.0V)	PCI Slot 3 (PCI 32bit/33MHz, Full Height, 5.0V)	PCI Slot 4 (PCI Express x4 lane, Full Height, x8 socket)	PCI Slot 5 (PCI Express x8 lane, Full Height, x8 socket)	PCI Slot 6 (PCI Express x8 lane, Full Height, x8 socket)	Max No.of Mount			Remarks
High	SAS RAID Ctrl (8ports / 256MB / without BBU)	PG-248B	PCI Express (x4)	-	-	-	-	[1]	-	1			Internal array
	SCSI Ctrl U320	PG-2281	PCI Express (x4)	-	-	-	[3]	[2]	[1]	2			Internal/External SCSI Controller
	Eth. Ctrl 2x1Gbit PCI-E 1000-BASE-T	PG-2861	PCI Express (x4)	-	-	-	[3]	[2]	[1]	1	3	6	
	Eth. Ctrl 1x1Gbit PCI-E 1000-BASE-T	PG-289	PCI Express (x1)	-	-	-	[3]	[2]	[1]	2			
	Eth. Ctrl 1x1Gbit PCI-E 1000-BASE-T	PG-285	PCI Express (x1)	-	-	-	[3]	[2]	[1]	2			No AFT/ALB Support
Low	Eth. Ctrl 1x1Gbit PCI 1000-BASE-T	PG-1853	PCI/32bit	[3]	[2]	[1]	-	-	-	3	3		No AFT/ALB Support

* [n] : Installation Priority
* - : cannot be installed

Notes on SATA HDD

1. TX150 S6 (3.5inch SATA model) can be used on a small scale without frequent data access about eight hours a day, for five years.
2. If you would like to use server 24 hours a day, every day, or for database with frequent data access, or for mission-critical tasks which require high reliability, please purchase another SAS model.
3. Please backup data on a regular basis to prevent loss of data.
4. Dump function of Linux is not available for TX150 S6 (3.5inch SATA model). If you would like to use dump function of Linux, please purchase another SAS model.

Connection Table

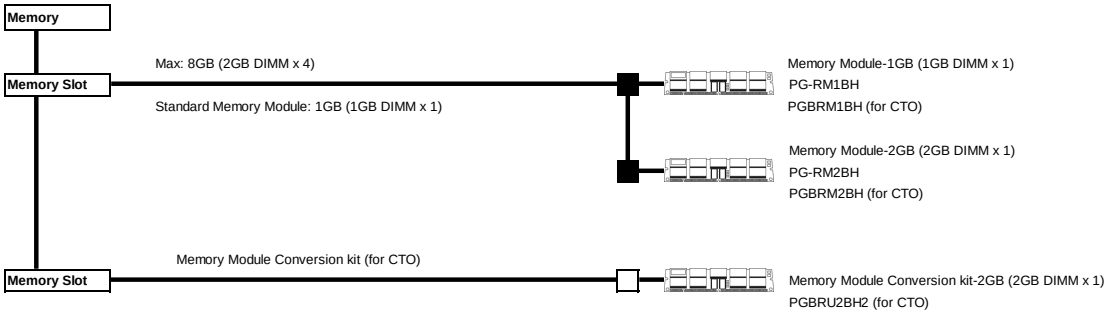
Form factor conversion (Tower to Rackmount)

Rack Conversion kit
(Tower to Rackmount (5U))
PG-R1CK22
PGBR1CK22 (for CTO)
*. In case that Rack Conversion kit is ordered by CTO, mouse is not attached with base unit.

*CPU Conversion Kit (available only for a Configure to Order (CTO) option; no separate shipment is possible)

Type	Product ID	Notes
CPU Conversion kit: Core 2 Duo E7300(2.66GHz) -> Xeon X3320(2.50GHz) (for CTO)	PGBFU51N	Intel® Core™ 2 Duo E7300(2.66GHz/3MB) -> Intel® Xeon® X3320(2.50GHz/6MB) 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: Core 2 Duo E7300(2.66GHz) -> Xeon X3220(2.40GHz) (for CTO)	PGBFU51M	Intel® Core™ 2 Duo E7300(2.66GHz/3MB) -> Intel® Xeon® X3220(2.40GHz/2x4MB) 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: Core 2 Duo E7300(2.66GHz) -> Xeon E3120(3.16GHz) (for CTO)	PGBFU51L	Intel® Core™ 2 Duo E7300(2.66GHz/3MB) -> Intel® Xeon® E3120(3.16GHz/6MB) 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: Core 2 Duo E7300(2.66GHz) -> Xeon E3110(3GHz) (for CTO)	PGBFU51K	Intel® Core™ 2 Duo E7300(2.66GHz/3MB) -> Intel® Xeon® E3110(3GHz/6MB) 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.)

PRIMERGY TX150 S6



*. Notes on installing memory

1. Memory is installed by one or more DIMMs.
2. The memory capacities of the slots should be in ascending order in the following sequence:
   1A -> 1B -> 2A -> 2B
3. 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	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) Windows® Small Business Server 2003 R2 (SP2) Windows® Small Business Server 2003 (SP2)	~2.0GB	Same as installed memory capacity
	2.0GB~4.0GB	2.0GB *1
Windows Server® 2008 Standard (64-bit) Windows Server® 2003 R2, Standard x64 Edition (SP2) Windows Server® 2003, Standard x64 Edition (SP2) Red Hat Enterprise Linux ES (v.4 for x86) Red Hat Enterprise Linux 5 (for x86) Red Hat Enterprise Linux ES (v.4 for EM64T) Red Hat Enterprise Linux 5 (for Intel64)	~8.0GB	Same as installed memory capacity

*1. If installed memory capacity is more than 2.0GB, 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 "NX Memory Protection" as "Enabled".

Connecting Internal HDD and Internal Backup Devices

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

Type of HDD connection			Internal Backup Devices PRIMERGY TX150 S6	
Model	Connection	Interface	USB ("1) Connection	SCSI Wide ("2) Connection
3.5inch SAS model	SAS / RAID	SAS Controller (standard) *. In case that SAS Controller installed as standard is used for RAID configuration, only 2 HDDs of same capacity and same rpm can be connected.	Onboard USB (internal port)	SCSI Card (PG-2281 / PGB2281) SCSI Cable (PG-CBLS027 / PGBCBLS027)
	RAID	SAS RAID Ctrl		
3.5inch SATA model	SATA / RAID	Onboard SATA		
	RAID	SAS RAID Ctrl		

("1) USB Backup Devices: PG-DT5041/PG-RD1021
("2) SCSI Wide Backup Devices: PG-LT302/PG-LT201/PG-LT102

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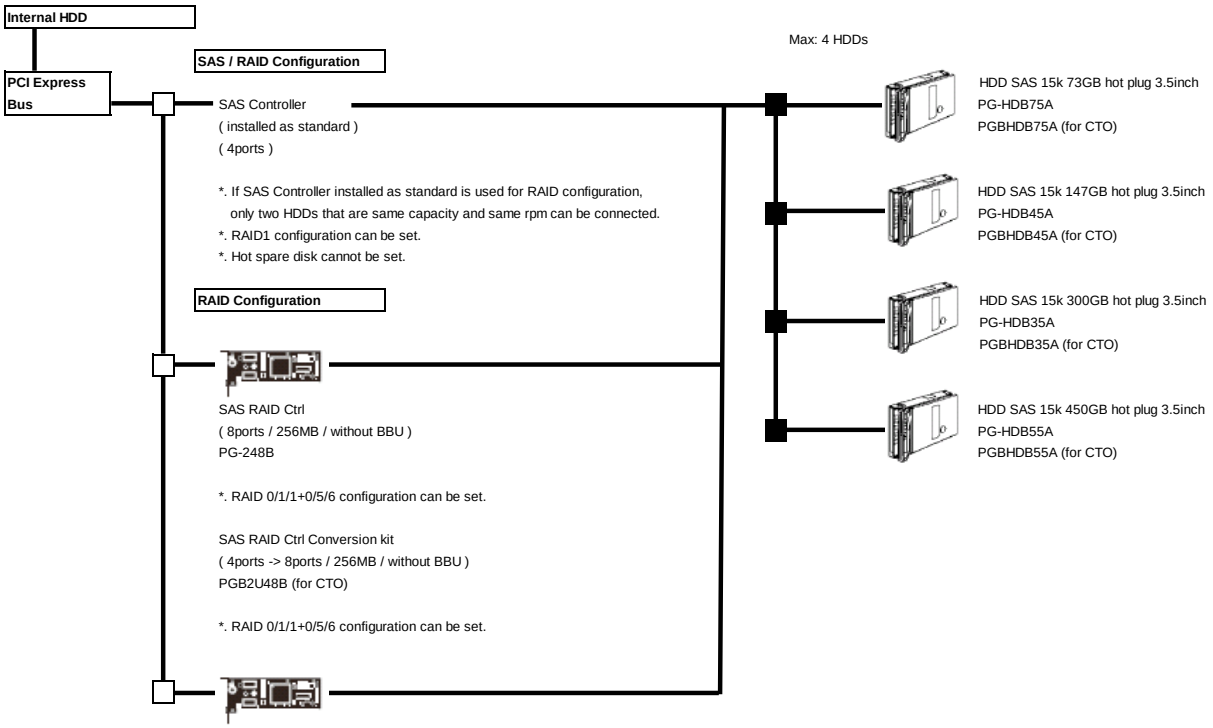
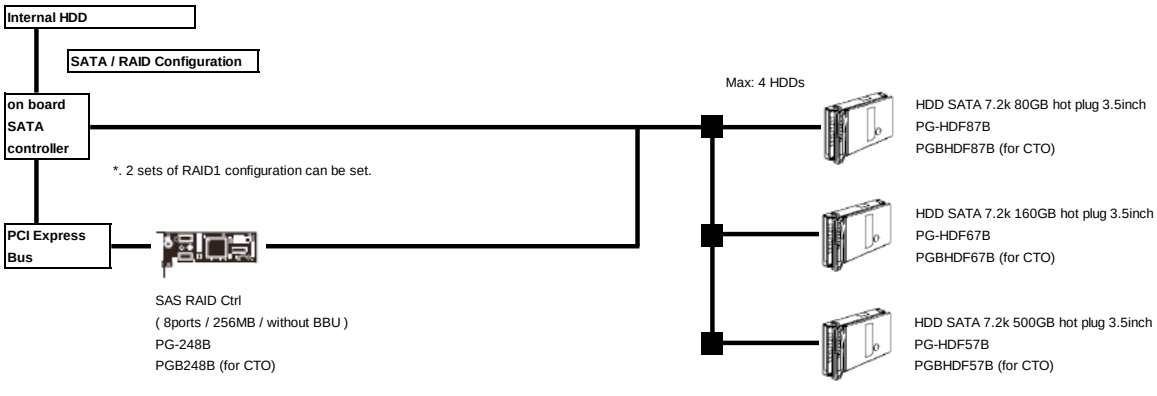
[3.5inch SAS model]



[3.5inch SATA model]



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Internal backup device (SCSI)

PCI Express Bus

SCSI Ctrl U320
PG-2281
PGB2281 (for CTO)

SCSI Cable
PG-CBLS027
PGBCBLS027 (for CTO)

*. In case that internal backup device is ordered by CTO,
both SCSI Ctrl U320 (PGB2281) and SCSI Cable (PGBCBLS027) should be ordered too.

1 slot / Max: 1

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

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.

Internal backup device (USB)

USB Interface (internal)

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

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

USB Interface

DVD-RAM / DVD-ROM / CD-ROM

USB Extension Cable
PG-CBLU002

Backup Device Cabinet (PRIMERGY SX10 S2)

*PRIMERGY SX10 S2 is available for rack install type.

PCI Express Bus

SCSI Ctrl U320
PG-2281

SCSI Cable
PG-CBLS034
SCSI Cable
PG-CBLS035

I/O Module
PGBIMS01 (for CTO)

PRIMERGY SX10 S2
(4bays)
PG-R2BC1

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

LAN Card

On-board LAN

PCI Express Bus

Eth. Ctrl 2x1Gbit PCI-E 1000-BASE-T
PG-2861
PGB2861 (for CTO)
* Dual Port

Twist Pair Cable (Category 5e)

Eth. Ctrl 1x1Gbit PCI-E 1000-BASE-T
PG-289
PGB289 (for CTO)

Eth. Ctrl 1x1Gbit PCI-E 1000-BASE-T
PG-285
PGB285 (for CTO)
* No AFT/ALB Support
*. Supported versions of Linux are 5.2 or later and 4.7 or later.

PCI Bus

Eth. Ctrl 1x1Gbit PCI 1000-BASE-T
PG-1853
PGB1853 (for CTO)
* No AFT/ALB Support

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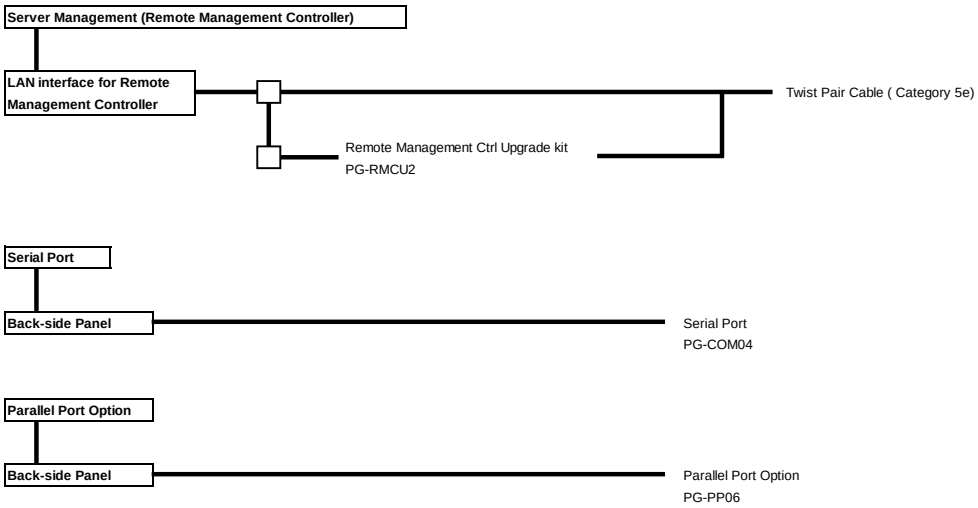

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