THE POSSIBILITIES ARE INFINITE FUJITSU
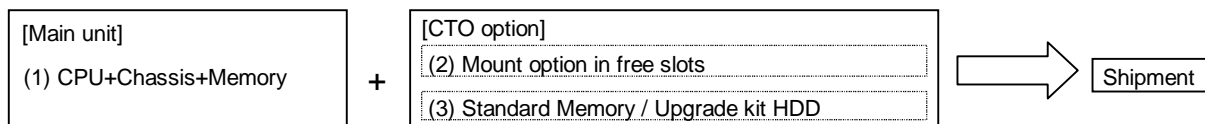
PRIMERGY®

System Configuration and Order-information Guide
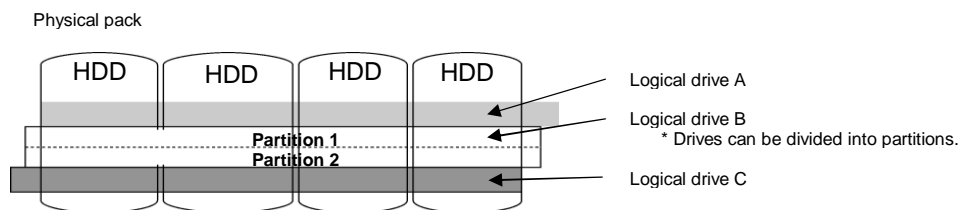
Notes

Configuration To Order

Configuration To Order (CTO) is available with PRIMERGY.
Products are delivered with options (HDD, Memory, Backup device, etc.) already mounted as per customer requirements.

1. How shipped

[Main unit]		[CTO option]		Shipment
(1) CPU+Chassis+Memory	+	(2) Mount option in free slots (3) Standard Memory / Upgrade kit HDD	⟹	

Disk array configuration

- Physical pack · · · A collection of physical HDDs composing a RAID.
- Logical drive · · · The logical drive (e.g. D:) as seen by the Operating System.
- Partition · · · One of the logical access units into which a logical drive is divided.

Physical pack

Logical drive A
Logical drive B
  * Drives can be divided into partitions.
Logical drive C

Partition 1
Partition 2

<Restrictions>

(1) Each physical pack must contain the same Product IDs of HDDs.

(2) If the size of logical drive of boot is set as more than 2TB, hardware doesn't work normally because of restriction of System BIOS and OS.
  So please set the size of logical drive of boot as less than or equal to 2TB.
  If the size of logical drive of data area is set as more than 2TB, some OSs require additional setting (e.g. GPT partition).

(3) The number of HDDs composing a physical pack is as shown below.

RAID Level	Description	HDDs	Capacity of logical drives
RAID 0	The data is broken down into blocks, each on a separate disk drive	1~32	The capacity of logical drive is same as the capacity of connected HDD.
RAID 1	Duplicates the disk and writes the same data onto two disks.	2	The capacity of the logical drive is half the capacity of connected HDD.
RAID 1+0	Duplicates the disk and breaks data down into blocks, each on a separate disk.	4~32	The capacity of each logical drive is the half the capacity of connected HDD.
RAID 5	The data is broken down into blocks and each block is written together with one parity bit on separate disk drives.	3~32	The capacity of each logical drive is the number of connected HDDs - 1).
RAID 6	The data is broken down into blocks and each block is written together with two parity bits on separate disk drives.	3~32	The capacity of each logical drive is the number of connected HDDs - 2).

(4) The same RAID level must be used when dividing a physical pack into a number of logical drives.

(5) A physical pack must contain only HDDs which are connected by the same RAID Controller.

(6) A RAID Controller can support several physical packs under the following conditions.
   - Physical pack should consist of HDDs of same product ID.
   - In the case that several physical pack configured with HDDs of same capacity, product ID of all HDDs should be same.

(7) A RAID Controller can support several different RAID levels under the following conditions.
   - RAID level of logical drives in physical pack should be same.
   - Several logical drives (Max:8) can be supported in one physical pack.

(8) HDD of same product ID in physical pack should be set as hot spare disk.

(9) In order to configure a spare disk environment with multiple physical packs,
   each pack must contain one or more hot spare disks with the same product ID as the rest of the pack.

(10) In case that the same capacity HDDs are connected to the same RAID Controller, these HDDs must also have the same
   rpm speed.

SAS RAID Controller / SAS Controller / SATA Controller / SCSI Controller

● **Restrictions and Notes of SAS RAID Controller, SAS Controller and SATA Controller**
Here are the restrictions and notes of RAID Controller Cards. Please be sure to use products
along with these conditions as follows;

[SAS RAID Controller (RX600 S4)]
1. SAS RAID Controller is used for the connection with internal HDD.
2. For RAID0/1/5/6, when one logical drive exists in physical pack, physical pack expansion capability is available.
   (only if OS is Windows Server® 2008, Windows Server® 2003 R2 x64 Editions, Windows Server® 2003 R2, Windows Server® 2003 x64 Editions
   or Windows Server® 2003 and partition style is MBR (Master Boot Record))

[SAS RAID Controller (RX300 S4)]
1. Only one SAS RAID Controller Card can be mounted for the connection with internal HDD.
2. For RAID0/1/5/6, when one logical drive exists in physical pack, physical pack expansion capability is available.
   (only if OS is Windows Server® 2008, Windows Server® 2003 R2 x64 Editions, Windows Server® 2003 R2, Windows Server® 2003 x64 Editions
   or Windows Server® 2003 and partition style is MBR (Master Boot Record))

[On board SAS Controller (TX120/RX100 S5(3.5inch SAS model)/BX620 S4)]
1. On board SAS Controller is used for the connection with internal HDD.
2. In case that On board SAS Controller is used for RAID configuration, only 2 HDDs of same capacity and same rpm can be connected.
3. On board SAS Controller can make only one logical drive.

[On board SATA Controller (ECONEL 100 S2/TX150 S6(3.5inch SATA model)/RX100 S5(3.5inch SATA model)/RX200 S4(3.5inch SATA model))]
1. On board SATA Controller is used for the connection with internal HDD.
2. In case that On board SATA Controller is used for RAID configuration, 2 sets of RAID1 configuration can be set.

[SAS Controller (TX150 S6(3.5inch SAS model)/TX300 S4(3.5inch SAS model)/RX200 S4(3.5inch SAS model/2.5inch SAS model))]
1. SAS Controller can be connected to up to 4 internal HDDs.
2. In case that SAS Controller is used for RAID configuration, only 2 HDDs of same capacity and same rpm can be connected.
3. SAS Controller can make only one logical drive.

[SAS RAID Controller Card [PG-248B/PG-248BC/PG-248C/PG-248C1/PG-248CL/TX300 S4(2.5inch SAS model)/3.5inch SATA model)]]
1. Only one SAS RAID Controller Card can be mounted for the connection with internal HDD.
2. For RAID0/1/5/6, when one logical drive exists in physical pack, physical pack expansion capability is available.
   (only if OS is Windows Server® 2008, Windows Server® 2003 R2 x64 Editions, Windows Server® 2003 R2, Windows Server® 2003 x64 Editions
   or Windows Server® 2003 and partition style is MBR (Master Boot Record))

[SAS RAID Controller Card [PG-248G/PG-248G1/PG-248G1L/PG-248G2L]]
1. SAS RAID Controller Card is used for the connection with SX35.
2. For RAID0/1/5/6, when one logical drive exists in physical pack, physical pack expansion capability is available.
   (only if OS is Windows Server® 2008, Windows Server® 2003 R2 x64 Editions, Windows Server® 2003 R2, Windows Server® 2003 x64 Editions
   or Windows Server® 2003 and partition style is MBR (Master Boot Record))

[SAS RAID Controller Card [PG-248FL/PG-248GL]]
1. SAS RAID Controller Card is used for the connection with SX650.
2. For RAID0/1/5/6, when one logical drive exists in physical pack, physical pack expansion capability is available.
   (only if OS is Windows Server® 2008, Windows Server® 2003 R2 x64 Editions, Windows Server® 2003 R2, Windows Server® 2003 x64 Editions
   or Windows Server® 2003 and partition style is MBR (Master Boot Record))

Combination matrix of SAS RAID Controller Cards (1/2)

		PG-248B (SAS, 8ports, without BBU)	PG-248BC (SAS, 8ports, without BBU)	PG-248C (SAS, 8ports, with BBU)	PG-248C1 (SAS, 8ports, with BBU)	PG-248CL (SAS, 8ports, with BBU)
		Internal HDD	Internal HDD	Internal HDD	Internal HDD	Internal HDD
ECONEL 100 S2		x	o	x	x	x
TX120		x	x	x	x	x
TX150 S6	3.5inch SAS model	o	x	o	x	x
	3.5inch SATA model	o	x	x	x	x
TX300 S4	3.5inch SAS model	o	x	x	o	x
	2.5inch SAS model	o	x	x	o	x
	3.5inch SATA model	x	x	x	x	x
RX100 S5		x	x	x	x	x
RX200 S4	3.5inch SAS model	o	x	o	x	x
	2.5inch SAS model	o	x	o	x	x
	3.5inch SATA model	x	x	x	x	x
RX300 S4	3.5inch SAS model	x	x	x	x	o
RX600 S4		x	x	x	x	x
BX620 S4		x	x	x	x	x

* o: Supported
x: Not Supported

Combination matrix of SAS RAID Controller Cards (2/2)

		PG-248G (SAS, 8ports, with BBU)	PG-248G1 (SAS, 8ports, with BBU)	PG-248G1L (SAS, 8ports, with BBU)	PG-248G2L (SAS, 8ports, with BBU)	PG-248FL (SAS, 8ports, without BBU)	PG-248GL (SAS, 8ports, with BBU)
		External HDD (SX35)	External HDD (SX35)	External HDD (SX35)	External HDD (SX35)	External HDD (SX650)	External HDD (SX650)
ECONEL 100 S2		x	x	x	x	x	x
TX120		x	x	x	x	x	x
TX150 S6	3.5inch SAS model	x	x	x	x	x	x
	3.5inch SATA model	x	x	x	x	x	x
TX300 S4	3.5inch SAS model	o	x	x	x	x	x
	2.5inch SAS model	o	x	x	x	x	x
	3.5inch SATA model	o	x	x	x	x	x
RX100 S5		x	x	x	x	x	x
RX200 S4	3.5inch SAS model	x	x	o	x	x	x
	2.5inch SAS model	x	x	o	x	x	x
	3.5inch SATA model	x	x	o	x	x	x
RX300 S4	3.5inch SAS model	x	x	x	o	x	x
RX600 S4		x	o	x	x	x	x
BX620 S4		x	x	x	x	o	o

* o: Supported
x: Not Supported

- **Restrictions and Notes of SCSI Controller and SAS Controller**

  [SCSI Controller Card [PG-1301L/PG-2281/PG-2281L]]
  1. One SCSI Controller Card cannot be used for the connection with internal SCSI devices and the connection with external SCSI devices at a time.
     In case of that, SCSI Controller Cards must be separated.

  [SAS Controller Card [PG-228B/PG-228BL/PG-224B]]
  1. One SAS Controller Card cannot be used for the connection with internal SAS devices and the connection with external SAS devices at a time.
     In case of that, SAS Controller Cards must be separated.

Maximum number of connectable HDD Cabinets

HDD Cabinet	Product ID	SCSI / SAS	ECONEL 100 S2	TX120	TX150 S6	TX300 S4	RX100 S5	RX200 S4	RX300 S4	RX600 S4	BX620 S4
PRIMERGY SX35 (Rackmount)	PG-R2DC2	SAS	-	-	-	4	-	2	2	4	-

OS Compatibility List of SAS RAID Controller Cards (1/2)

OS	SAS RAID Controller Cards				
	PG-248B	PG-248BC	PG-248C	PG-248C1	PG-248CL
Windows Server® 2008 Standard (32-bit)	o	o	o	o	o
Windows Server® 2008 Enterprise (32-bit)	o	x	o	o	o
Windows Server® 2008 Standard (64-bit)	o	o	o	o	o
Windows Server® 2008 Enterprise (64-bit)	o	x	o	o	o
Windows Server® 2008 Datacenter (64-bit)	x	x	x	x	x
Windows Server® 2003 R2, Standard Edition	o	o	o	o	o
Windows Server® 2003 R2, Enterprise Edition	o	x	o	o	o
Windows Server® 2003 R2, Standard x64 Edition	o	o	o	o	o
Windows Server® 2003 R2, Enterprise x64 Edition	o	x	o	o	o
Windows Server® 2003, Standard Edition	o	o	o	o	o
Windows Server® 2003, Enterprise Edition	o	x	o	o	o
Windows Server® 2003, Standard x64 Edition	o	o	o	o	o
Windows Server® 2003, Enterprise x64 Edition	o	x	o	o	o
Windows® Small Business Server 2003 R2	o	o	o	x	x
Windows® Small Business Server 2003	o	o	o	x	x
Red Hat Enterprise Linux ES (v.4 for x86)	o	o	o	o	o
Red Hat Enterprise Linux AS (v.4 for x86)	o	x	o	o	o
Red Hat Enterprise Linux 5 (for x86)	o	o	o	o	o
Red Hat Enterprise Linux ES (v.4 for EM64T)	o	o	o	o	o
Red Hat Enterprise Linux AS (v.4 for EM64T)	o	x	o	o	o
Red Hat Enterprise Linux 5 (for Intel64)	o	o	o	o	o

* o: Supported
x: Not Supported

OS Compatibility List of SAS RAID Controller Cards (2/2)

OS	SAS RAID Controller Cards					
	PG-248G	PG-248G1	PG-248G1L	PG-248G2L	PG-248FL	PG-248GL
Windows Server® 2008 Standard (32-bit)	o	o	o	o	o	o
Windows Server® 2008 Enterprise (32-bit)	o	o	o	o	o	o
Windows Server® 2008 Standard (64-bit)	o	o	o	o	o	o
Windows Server® 2008 Enterprise (64-bit)	o	o	o	o	o	o
Windows Server® 2008 Datacenter (64-bit)	x	o	x	x	x	x
Windows Server® 2003 R2, Standard Edition	o	o	o	o	o	o
Windows Server® 2003 R2, Enterprise Edition	o	o	o	o	o	o
Windows Server® 2003 R2, Standard x64 Edition	o	o	o	o	o	o
Windows Server® 2003 R2, Enterprise x64 Edition	o	o	o	o	o	o
Windows Server® 2003, Standard Edition	o	o	o	o	o	o
Windows Server® 2003, Enterprise Edition	o	o	o	o	o	o
Windows Server® 2003, Standard x64 Edition	o	o	o	o	o	o
Windows Server® 2003, Enterprise x64 Edition	o	o	o	o	o	o
Windows® Small Business Server 2003 R2	x	x	x	x	x	x
Windows® Small Business Server 2003	x	x	x	x	x	x
Red Hat Enterprise Linux ES (v.4 for x86)	o	o	o	o	o	o
Red Hat Enterprise Linux AS (v.4 for x86)	o	o	o	o	o	o
Red Hat Enterprise Linux 5 (for x86)	o	o	o	o	o	o
Red Hat Enterprise Linux ES (v.4 for EM64T)	o	o	o	o	o	o
Red Hat Enterprise Linux AS (v.4 for EM64T)	o	o	o	o	o	o
Red Hat Enterprise Linux 5 (for Intel64)	o	o	o	o	o	o

* o: Supported
x: Not Supported

Memory OS Compatibility List

OS	Memory Capacity
Windows Server® 2008 Standard (32-bit)	4GB
Windows Server® 2008 Enterprise (32-bit)	64GB *1
Windows Server® 2008 Standard (64-bit)	32GB
Windows Server® 2008 Enterprise (64-bit)	2TB
Windows Server® 2008 Datacenter (64-bit)	2TB
Windows Server® 2003 R2, Standard Edition	4GB
Windows Server® 2003 R2, Enterprise Edition	64GB *1
Windows Server® 2003 R2, Standard x64 Edition	32GB
Windows Server® 2003 R2, Enterprise x64 Edition	1TB
Windows Server® 2003, Standard Edition	4GB
Windows Server® 2003, Enterprise Edition	32GB
Windows Server® 2003, Enterprise Edition (SP1/SP2)	64GB *1
Windows Server® 2003, Standard x64 Edition	32GB
Windows Server® 2003, Enterprise x64 Edition	1TB
Windows® Small Business Server 2003 R2	4GB
Windows® Small Business Server 2003	4GB
Red Hat Enterprise Linux ES (v.4 for x86)	12GB
Red Hat Enterprise Linux AS (v.4 for x86)	12GB
Red Hat Enterprise Linux 5 (for x86)	12GB
Red Hat Enterprise Linux ES (v.4 for EM64T)	16GB
Red Hat Enterprise Linux AS (v.4 for EM64T)	128GB
Red Hat Enterprise Linux 5 (for Intel64)	128GB

*1. 62GB in case of RX600 S4

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