



# PRIMEQUEST 3400E

## System Configuration Guide

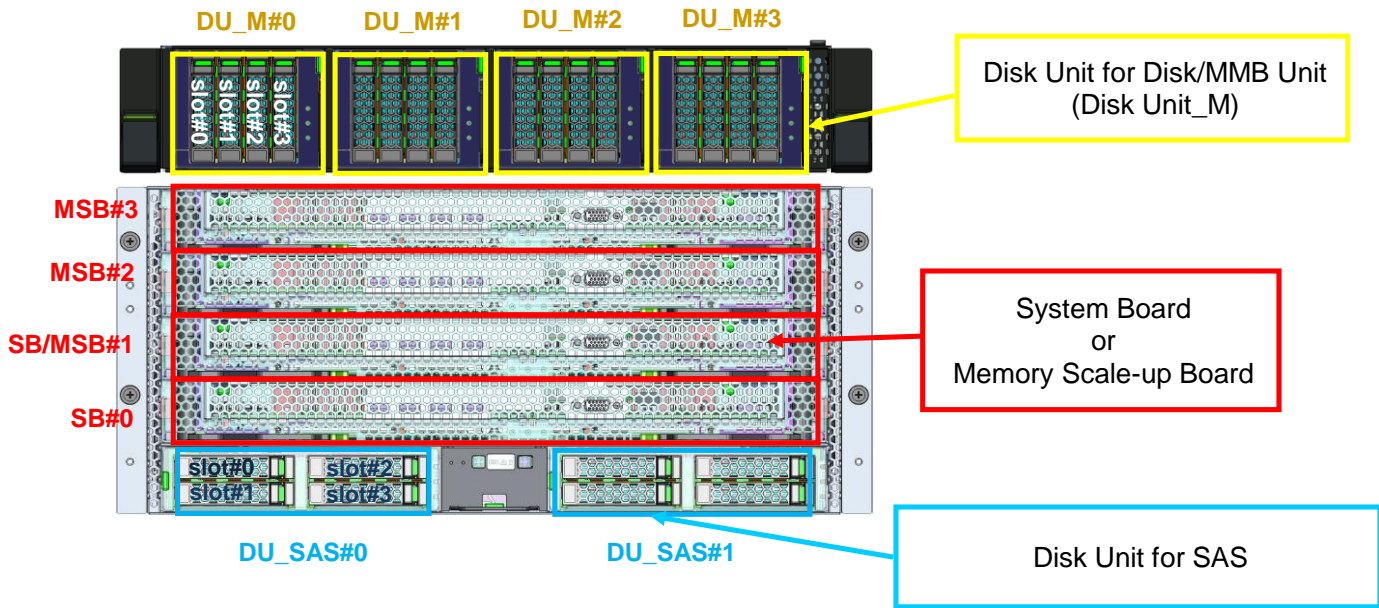
January 2020

### Contents

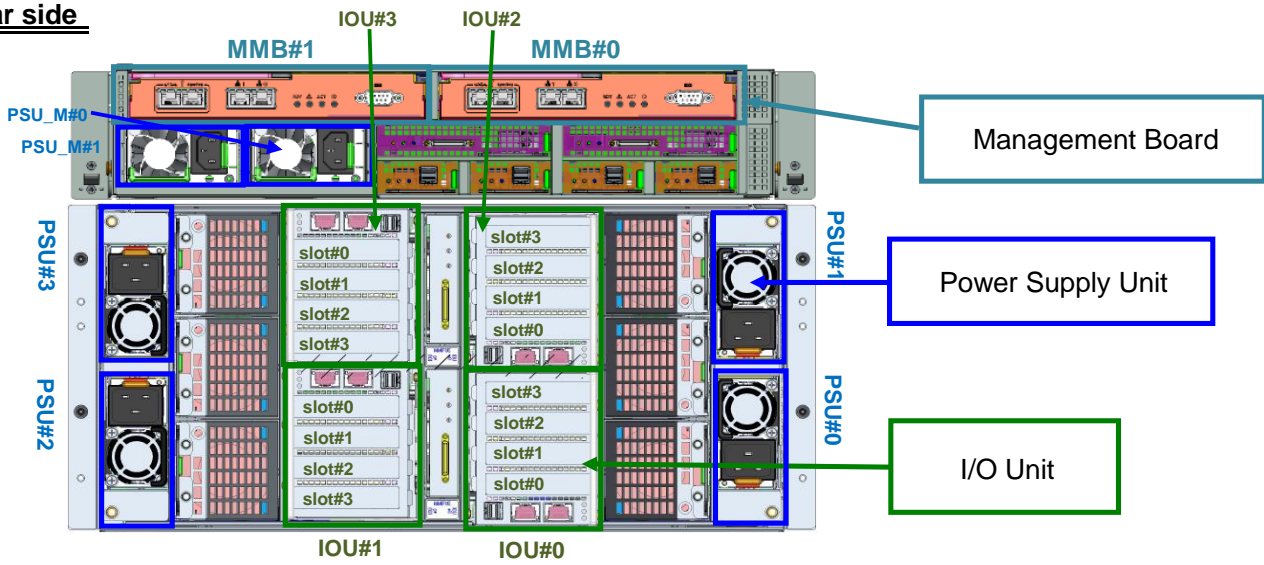
1. Overview
2. Base Unit
3. System Board (SB)
4. CPU
5. Memory
6. Management Board (MMB)
7. I/O Unit
8. Disk Unit (DU)
9. HDD / SSD
10. Power Supply Unit (PSU), Power Cords
11. PCI Box
12. PCI Cards
13. Rack Installation
14. Maximum Quantity of PCIe Cards
15. OS x Order Number Matrix
16. Restrictions  
Change Report

# 1. Overview

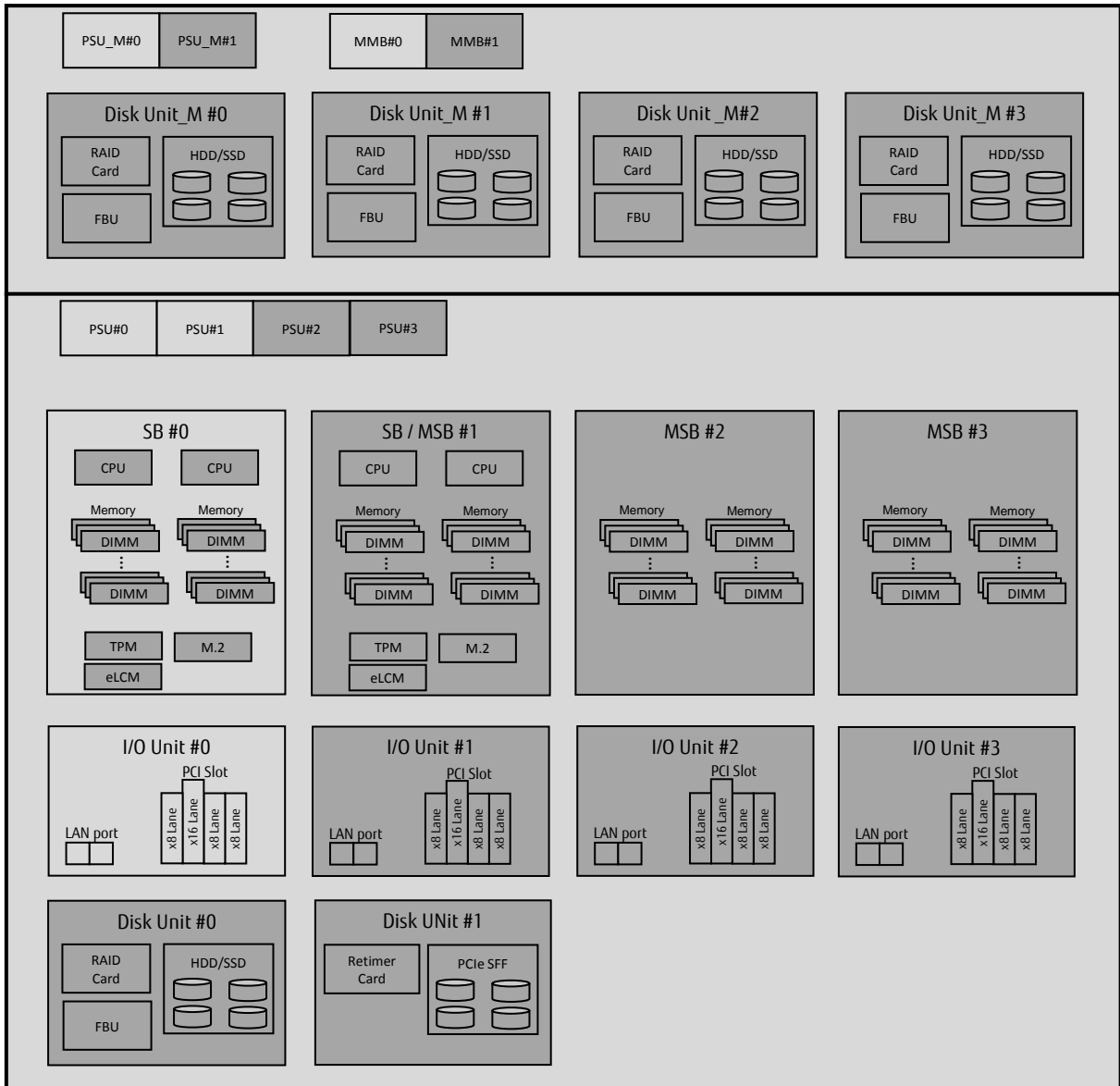
## Front side



## Rear side



### Configuration diagram



Light gray color components Included in a Base unit.

Dark gray color components are optional.

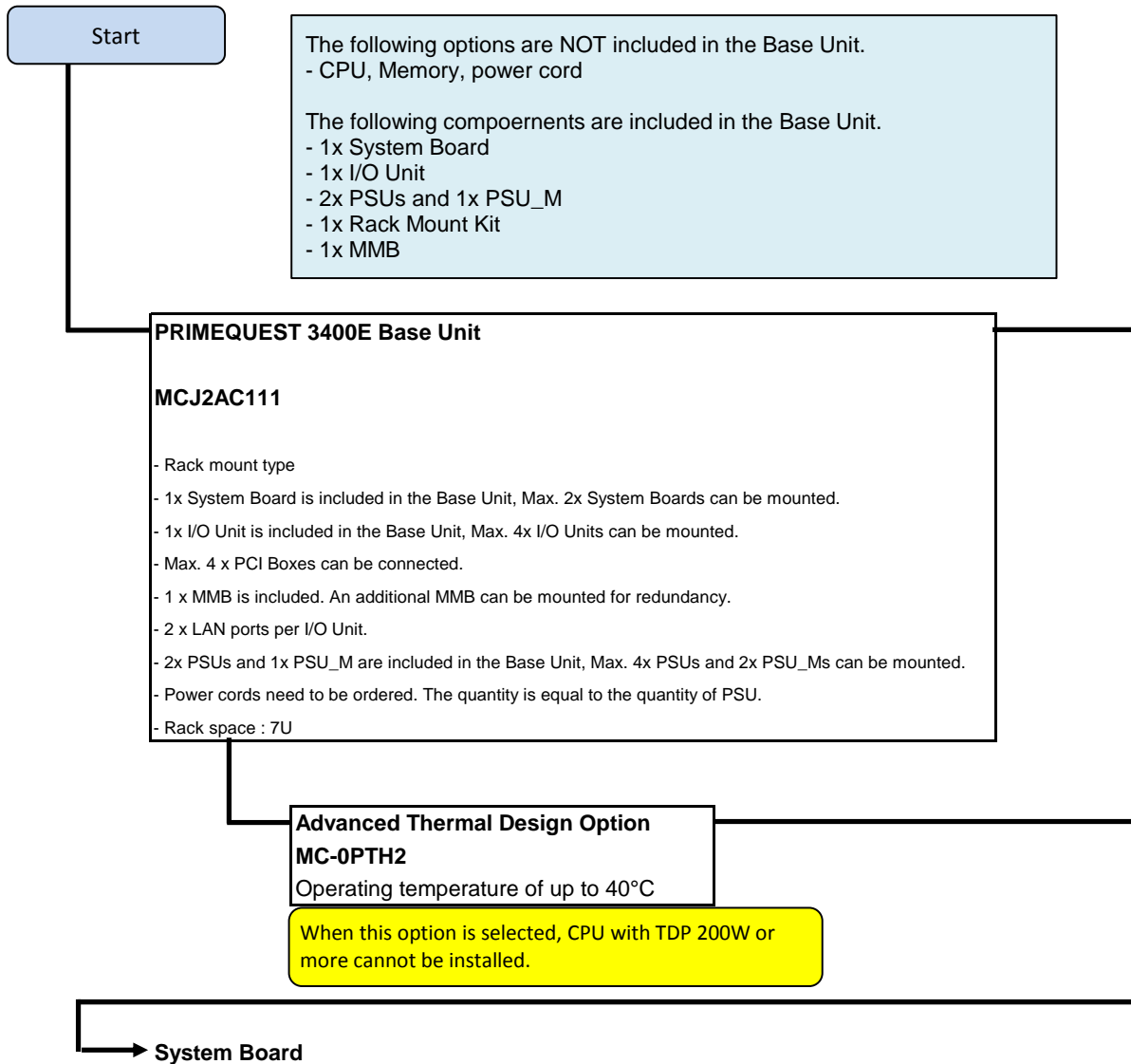
## 2.Base Unit

### Part Numbers Legend:

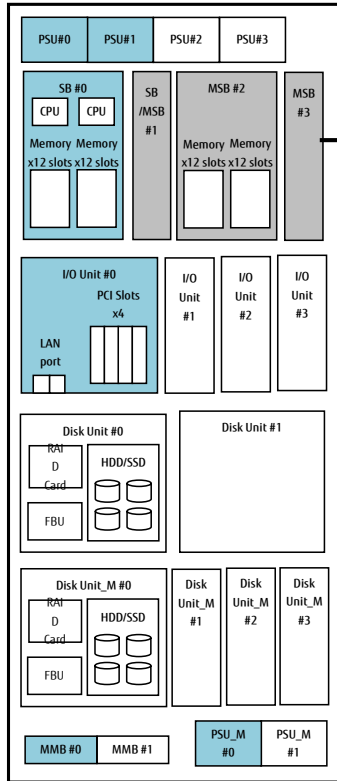
Part numbers:

**MC-\*\*\*\*\*** is a Build-to-Order (BTO) option to be assembled with a Base Unit

**MCX\*\*\*\*\*** is an option to be shipped separately from a Base Unit (Loose Delivery)



### 3. System Board (SB)



1x System Board is included in the Base unit,  
 Max. 2x System Boards can be mounted per Base unit.  
 Max. 4x units can be mounted in System Board and Memory Scale-up Board total.

**System Board**  
**MC-2HSBA1 / MCX2HSBA1 (LD)**

- Min. 1 x SB needs to be mounted. Max. 2 x SB can be mounted per Base Unit.
- The System Board does not include a security chip called TPM.
- Neither CPU nor memory module is included. CPU and memory need to be ordered separately.
- 1 or 2 CPUs need to be mounted on each System Board and more than 2 memory modules required for each CPU.
- Max. 12 x memory modules (24 x DIMMs) can be mounted.
- Refer to "1CPU/SB" installed condition.

**M.2 Flash Device (VMware, 250GB)**  
**MC-5FB741 / MCX5FB741 (LD)**

- M.2 SATA 250GB for VMware boot only
- 1 x M.2 Flash Devices can be mounted.
- DWPD : 1.5

**M.2 Flash Device 240GB**  
**MC-5FB771 / MCX5FB771 (LD)**

- M.2 SATA 240GB except VMware
- Max 2 x M.2 Flash Device can be mounted.
- DWPD : 1.5

**M.2 Flash Device 480GB**  
**MC-5FB771 / MCX5FB771 (LD)**

- M.2 SATA 480GB except VMware
- Max 2 x M.2 Flash Device can be mounted.
- DWPD : 1.5

**USB Flash Device 64GB Dual**  
**MC-5FA411 / MCX5FA411 (LD)**

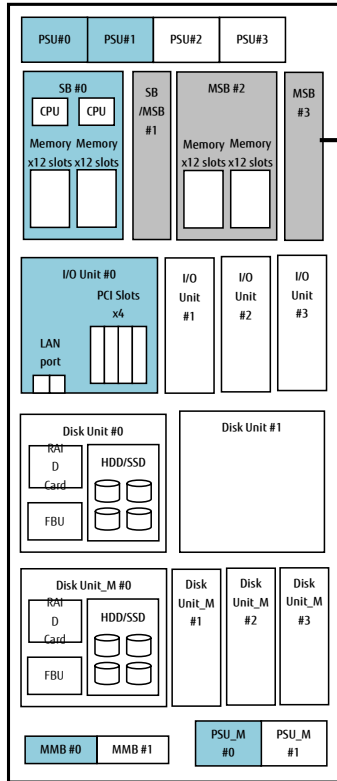
- USB 64GB boot device mounted on SB
- 2 x 64GB micro SD cards are mounted.
- 2 micro SD cards automatically configured RAID1.
- Cannot be mounted with M.2 Flash Device.

"1CPU / SB" installed condition

- "1CPU/SB" and "2CPU/SB" can not be mixed inside the cabinet.
- Only I/O Unit#0 and I/O Unit#1 are available from "1CPU/SB", I/O Unit#2 and I/O Unit#3 are not available.

System Board 2

### 3. System Board (SB)



1x System Board is included in the Base unit,  
 Max. 2x System Boards can be mounted per Base unit.  
 Max. 4x units can be mounted in System Board and Memory Scale-up Board total.

**eLCM Activation License (no load)**  
**MC-6KMA21 / MCX6KMA21 (LD)**  
 - For PRIMEQUEST 3800E2  
 - One License per system

**TPM module V2.0**  
 MC-6HTP31 / MCX6HTP31(LD)  
 - Available except for China  
 - One for System Board

The following functions are NOT available for the System Board with TPM.  
 - Reserved SB  
 - Dynamic Reconfiguration

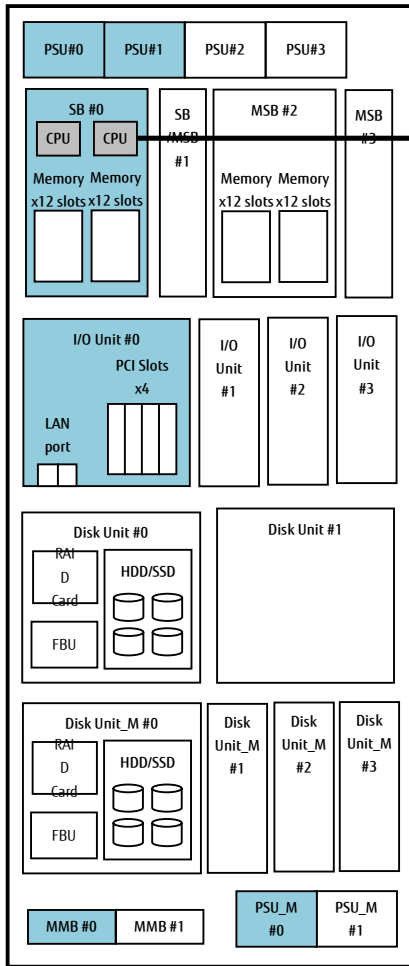
**Memory Scale-up Board**  
**MC-2HMSB1 / MCX2HMSB1 (LD)**  
 - Max. 3 x MSBs can be mounted per Base Unit on SB slot #1-#3.  
 - No Memory module is included.  
 - Min. 2x memory modules (4x DIMMs) need to be installed.  
 - Max. 12x memory modules (24x DIMMs) can be mounted.

"1CPU / SB" installed condition  
 - "1CPU/SB" and "2CPU/SB" can not be mixed inside the cabinet.  
 - Only I/O Unit#0 and I/O Unit#1 are available from "1CPU/SB", I/O Unit#2 and I/O Unit#3 are not available.

**At least 3 PSUs are required when MSB is installed.**  
**When MSB is used, 3 + 1 PSU configuration is available, but dual-power feed configuration (2+2) is not available.**  
**When MSB is selected, SystemArchitect will not display a warning message even though the configuration violates the configuration rule.**

→ CPU

# 4.CPU



- 1 or 2 CPUs required for one System board.
- Can not mix different CPUs in one partition.
- CPUs with number 'xxxxM' support up to 1.5TB of memory. Other CPUs support up to 768GB of memory.

\*(Number of cores / Frequency / Max. memory per CPU /

Intel® Xeon® Platinum 8180M Processor (28C/2.5GHz/1.5TB/205W) MC-2BFA11 / MCX2BFA11(LD)
Intel® Xeon® Platinum 8180 Processor (28C/2.5GHz/768GB/205W) MC-2BFA21 / MCX2BFA21(LD)
Intel® Xeon® Platinum 8176M Processor (28C/2.1GHz/1.5TB/165W) MC-2BFB11 / MCX2BFB11(LD)
Intel® Xeon® Platinum 8176 Processor (28C/2.1GHz/768GB/165W) MC-2BFB21 / MCX2BFB21(LD)
Intel® Xeon® Platinum 8170M Processor (26C/2.1GHz/1.5TB/165W) MC-2BFC21 / MCX2BFC21(LD)
Intel® Xeon® Platinum 8170 Processor (26C/2.1GHz/768GB/165W) MC-2BFC11 / MCX2BFC11(LD)
Intel® Xeon® Platinum 8164 Processor (26C/2GHz/768GB/150W) MC-2BFD11 / MCX2BFD11(LD)
Intel® Xeon® Platinum 8168 Processor (24C/2.7GHz/768GB/205W) MC-2BFE11 / MCX2BFE11(LD)
Intel® Xeon® Platinum 8160M Processor (24C/2.1GHz/1.5TB/150W) MC-2BFF11 / MCX2BFF11(LD)
Intel® Xeon® Platinum 8160 Processor (24C/2.1GHz/768GB/150W) MC-2BFF21 / MCX2BFF21(LD)
Intel® Xeon® Platinum 8153 Processor (16C/2.0GHz/768GB/125W) MC-2BFG11 / MCX2BFG11(LD)
Intel® Xeon® Platinum 8158 Processor (12C/3.0GHz/768GB/150W) MC-2BFH11 / MCX2BFH11(LD)
Intel® Xeon® Platinum 8156 Processor (4C/3.6GHz/768GB/105W) MC-2BFJ11 / MCX2BFJ11(LD)

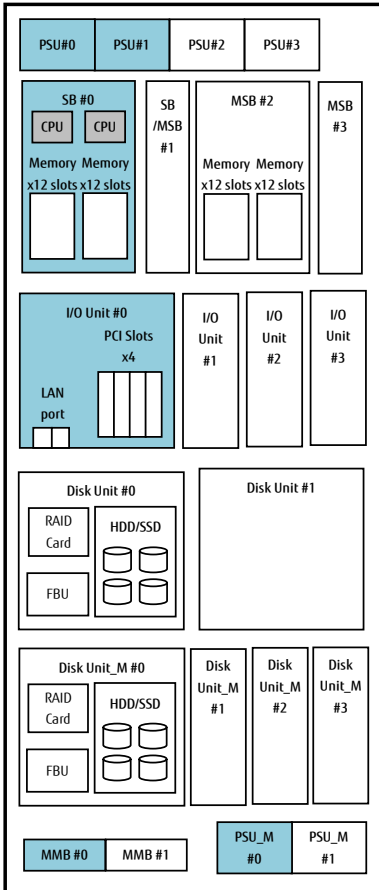
### CPU mounting condition

# of SBs in one partition	# of CPUs in one partition	
	1CPU/SB	2CPU/SB
1SB	1	2
2SB	2	4

- One or two CPUs can be mounted on one SB.
- Only the same kind of CPU can be installed in the partition.
- Different types of CPUs can be installed in the different partitions.
- "1CPU/SB" and "2CPU/SB" can not be mixed in the cabinet.

→ Next Page

CPU



- 2x CPUs required for one System board.
- Can not mix different CPUs in one partition.
- CPUs with number 'xxxxM' support up to 1.5TB of memory. Other CPUs support up to 768GB of memory.

\*(Number of cores / Frequency / Max. memory per CPU / TDP)

Intel® Xeon® Gold 6152 Processor (22C/2.1GHz/768GB/140W) MC-2BGA11 / MCX2BGA11(LD)
Intel® Xeon® Gold 6148 Processor (20C/2.4GHz/768GB/150W) MC-2BGB11 / MCX2BGB11(LD)
Intel® Xeon® Gold 6138 Processor (20C/2.0GHz/768GB/125W) MC-2BGC11 / MCX2BGC11(LD)
Intel® Xeon® Gold 6154 Processor (18C/3.0GHz/768GB/200W) MC-2BGD11 / MCX2BGD11(LD)
Intel® Xeon® Gold 6150 Processor (18C/2.7GHz/768GB/165W) MC-2BGE21 / MCX2BGE21(LD)
Intel® Xeon® Gold 6140M Processor (18C/2.3GHz/1.5TB/140W) MC-2BGF11 / MCX2BGF11(LD)
Intel® Xeon® Gold 6140 Processor (18C/2.3GHz/768GB/140W) MC-2BGF21 / MCX2BGF21(LD)
Intel® Xeon® Gold 6142M Processor (16C/2.6GHz/1.5TB/150W) MC-2BGG21 / MCX2BGG21(LD)
Intel® Xeon® Gold 6142 Processor (16C/2.6GHz/768GB/150W) MC-2BGG11 / MCX2BGG11(LD)
Intel® Xeon® Gold 6130 Processor (16C/2.1GHz/768GB/125W) MC-2BGH11 / MCX2BGH11(LD)
Intel® Xeon® Gold 6132 Processor (14C/2.6GHz/768GB/140W) MC-2BGJ11 / MCX2BGJ11(LD)
Intel® Xeon® Gold 6146 Processor (12C/3.2GHz/768GB/165W) MC-2BGK11 / MCX2BGK11(LD)
Intel® Xeon® Gold 6136 Processor (12C/3.0GHz/768GB/150W) MC-2BGL11 / MCX2BGL11(LD)
Intel® Xeon® Gold 6126 Processor (12C/2.6GHz/768GB/125W) MC-2BGM11 / MCX2BGM11(LD)
Intel® Xeon® Gold 6144 Processor (8C/3.5GHz/768GB/150W) MC-2BGN11 / MCX2BGN11(LD)
Intel® Xeon® Gold 6134M Processor (8C/3.2GHz/1.5TB/130W) MC-2BGP21 / MCX2BGP21(LD)
Intel® Xeon® Gold 6134 Processor (8C/3.2GHz/768GB/130W) MC-2BGP11 / MCX2BGP11(LD)
Intel® Xeon® Gold 6128 Processor (6C/3.4GHz/768GB/115W) MC-2BGQ11 / MCX2BGQ11(LD)

CPU mounting condition

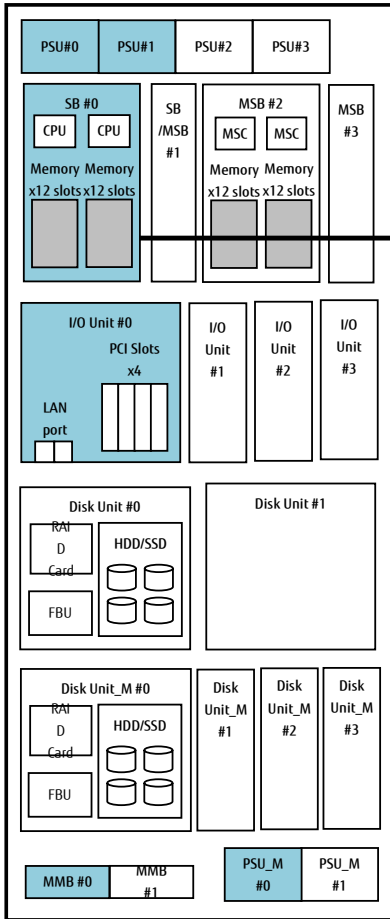
# of SBs in one partition	# of CPUs in one partition	
	1CPU/SB	2CPU/SB
1SB	1	2
2SB	2	4

- One or two CPUs can be mounted on one SB.
- Only the same kind of CPU can be installed in the partition.
- Different types of CPUs can be installed in the different partitions.
- "1CPU/SB" and "2CPU/SB" can not be mixed in the cabinet.

Memory



### 5.Memory



- At least one set of memory (2 DIMMs) must be installed for each CPU/MSB.  
 - Max 6 sets of memory (12 DIMMs) can be installed for each CPU/MSB.

<b>16GB memory ( 8GB DDR4 DIMM x 2 )</b> <b>MC-2CD531 / MCX2CD531 (LD)</b> - 2x 8GB 2666GHz 1Rx4 RDIMMs
<b>32GB memory ( 16GB DDR4 DIMM x 2 )</b> <b>MC-2CD641 / MCX2CD641 (LD)</b> - 2x 16GB 2666GHz 1Rx4 RDIMMs
<b>32GB memory ( 16GB DDR4 DIMM x 2 ) *1</b> <b>MC-2CD651 / MCX2CD651 (LD)</b> - 2x 16GB 2666GHz 2Rx4 RDIMMs
<b>64GB memory ( 32GB DDR4 DIMM x 2 )</b> <b>MC-2CD741 / MCX2CD741 (LD)</b> - 2x 32GB 2666GHz 2Rx4 RDIMMs
<b>128GB memory ( 64GB DDR4 DIMM x 2 )</b> <b>MC-2CD831 / MCX2CD831 (LD)</b> - 2x 64GB 2666GHz 4Rx4 RDIMMs
<b>128GB memory ( 64GB DDR4 DIMM x 2 )</b> <b>MC-2CC821 / MCX2CC821 (LD)</b> - 2x 64GB 2666GHz 4Rx4 LRDIMMs
<b>256GB memory ( 128GB DDR4 DIMM x 2 *2</b> <b>MC-2CD921 / MCX2CD921 (LD)</b> - 2x 128GB 2666GHz 8Rx4 RDIMMs

MSC: Memory Scale-up Controller on MSB.

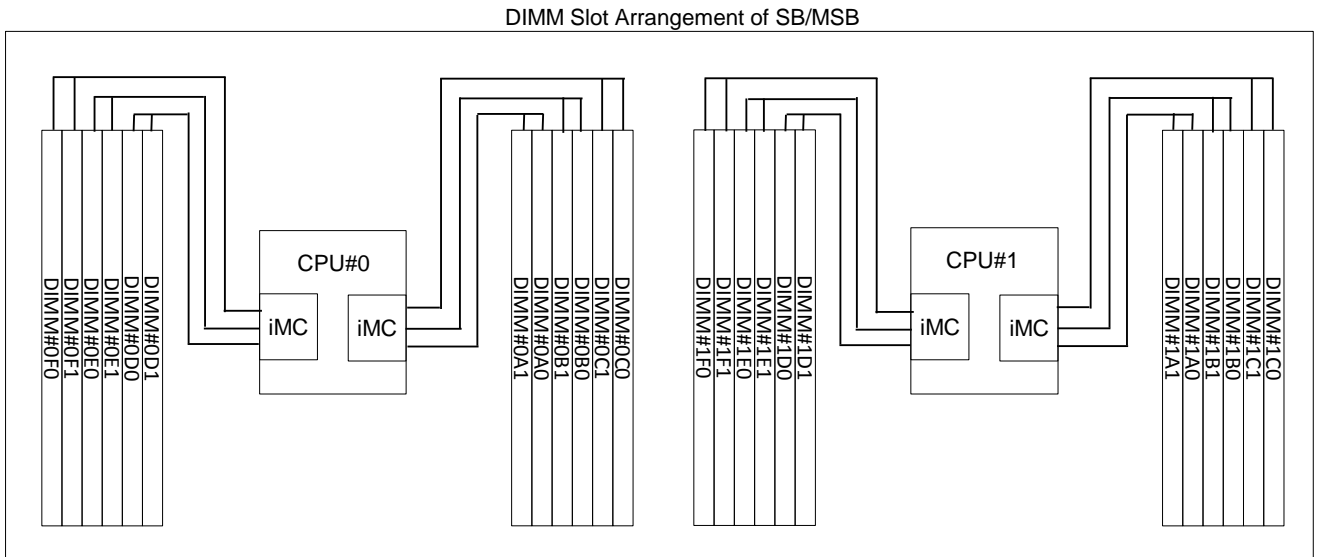
**\*1 Special release option.**  
 Please contact a local sales representative when needed.  
**\*2 Long lead time option.**  
 Please contact a local sales representative when needed.

→ Memory mounting

# Memory Mounting

## 1. Memory and DIMM slots

- (1) Memory module for PRIMEQUEST is composed of 2 x DIMMs.
- (2) At least 2 DIMMs have to be installed in one CPU (4 DIMMs in one SB) in Normal mode and Spare mode, 4 DIMMs have to be installed in one CPU (8 DIMMs in one SB) in Mirror mode.  
Memory mode can be selected from the menu displayed by right-clicking the partition in SystemArchitect.
- (3) Up to 12 DIMMs can be installed in each CPU.
- (4) DIMM Slot Arrangement of SB/MSB is shown below.  
DIMM#xx0 is farther Slots and DIMM#xx1 is nearer Slots among the six DIMM Slots connected to the iMC.



MSC : Memory Scale-up Controller on MSB  
iMC : Memory Controller

## 2. Maximum Memory Capacity

Operating System	Max. Memory Capacity (TB)
Microsoft® Windows Server® 2012 R2 (Standard/Datacenter) Microsoft® Hyper-V Server 2012 R2	4
Microsoft® Windows Server® 2016 (Standard / Datacenter) Microsoft® Hyper-V Server 2016	12
Red Hat® Enterprise Linux® 7.3 (incl. KVM)	12
SUSE® Linux Enterprise Server 12SP2 (incl. KVM/XEN)	12
Oracle® Linux 7.3	12
VMware vSphere® 6.5 Patch01	12

**Memory Installation Order**

## Memory Installation Order

## DIMM installation order on System Board

The order of DIMM installation is shown in the following tables. DIMMs are installed in order from one with small number. Memory Mode is set for each partition in the configuration menu of SystemArchitect.

Memory Mode	Lockstep	CPU#0 DIMM Slot						CPU#1 DIMM Slot						
		iMC#0			iMC#1			iMC#0			iMC#1			
		0A0	0B0	0C0	0D0	0E0	0F0	1A0	1B0	1C0	1D0	1E0	1F0	
		0A1	0B1	0C1	0D1	0E1	0F1	1A1	1B1	1C1	1D1	1E1	1F1	
Normal / Performance	Disabled	1	2	4(*1) 8	1	2	4(*1) 8	1	3	5(*1) 9	1	3	5(*1) 9	(*3)
		6	6(*2)	10	6	6(*2)	10	7	7(*2)	11	7	7(*2)	11	
Spare	Disabled	1	4	8	2	6	10	1	5	9	3	7	11	(*3)
		1	4	8	2	6	10	1	5	9	3	7	11	
Full Mirror / Address Range Mirror	Disabled / Enabled	1	1	4	1	1	4	1	1	5	1	1	5	
		2	2	4	2	2	4	3	3	5	3	3	5	
	Enabled	1	1	2	1	1	2	1	1	3	1	1	3	(*4)
		Not supported												
Not supported														

(\*1)(\*2) In the case of 4 DIMMs in one iMC, remove DIMM installed in (\*1) slot and then install DIMM to (\*2) slot.

(\*3) When the CPU whose memory capacity is 768GB is installed, 128GB DIMM can be installed up to number 5 and cannot be installed after number 6.

(\*4) Only when the CPU whose memory capacity is 768GB and 128GB DIMM are installed together, this installation order is applied.

### Memory Mixed Condition

Which size of DIMM can be installed together in a DDR CH or a SB/MSB and a Partition are shown in the following tables.  
When the partitions are different, there is no restriction on mixing of DIMMs with different capacity in a system.

#### DIMM mixed installation condition in a DDR channel.

	16GB Memory (8GB R-DIMM x2)	32GB Memory (16GB R-DIMM x2, 1Rx4)	32GB Memory (16GB R-DIMM x2, 2Rx4)	64GB Memory (32GB R-DIMM x2)	128GB Memory (64GB LR-DIMM x2)	128GB Memory (64GB R-DIMM x2, 3DS)	256GB Memory (128GB R-DIMM x2, 3DS)
16GB Memory (8GB R-DIMM x2)	Yes						
32GB Memory (16GB R-DIMM x2, 1Rx4)		Yes	Yes(B)				
32GB Memory (16GB R-DIMM x2, 2Rx4)			Yes				
64GB Memory (32GB R-DIMM x2)				Yes			
128GB Memory (64GB LR-DIMM x2)					Yes		
128GB Memory (64GB R-DIMM x2, 3DS)						Yes	
256GB Memory (128GB R-DIMM x2, 3DS)							Yes

Yes: Supported Blank: Not supported

(B): Using DIMM mixed installation Condition#B

#### DIMM mixed installation condition in a System Board, MSB and partition.

	16GB Memory (8GB R-DIMM x2)	32GB Memory (16GB R-DIMM x2, 1Rx4)	32GB Memory (16GB R-DIMM x2, 2Rx4)	64GB Memory (32GB R-DIMM x2)	128GB Memory (64GB R-DIMM x2)	128GB Memory (64GB LR-DIMM x2)	256GB Memory (128GB R-DIMM x2, 3DS)
16GB Memory (8GB R-DIMM x2)	Yes						
32GB Memory (16GB R-DIMM x2, 1Rx4)		Yes	Yes(B)	Yes (*1)(A)			
32GB Memory (16GB R-DIMM x2, 2Rx4)			Yes				
64GB Memory (32GB R-DIMM x2)				Yes			
128GB Memory (64GB LR-DIMM x2)					Yes		
128GB Memory (64GB R-DIMM x2, 3DS)						Yes	Yes (*2)(A)
256GB Memory (128GB R-DIMM x2, 3DS)							Yes

Yes: Supported Blank: Not supported

\*1 : Mixed installation with 16GB DIMM and 32GB DIMM is allowed only in the case of combination of 16GB-1R RDIMM and 32GB-2R RDIMM.

\*2 : Mixed installation with 128GB RDIMM and 64GB RDIMM is allowed.

(A): Using DIMM mixed installation Condition#A

(B): Using DIMM mixed installation Condition#B

## Memory Mixed Installation Condition

DIMM mixed installation conditions are shown in the following tables.  
 Same symbols mean to be able to install same DIMMs which is defined in the tables below.  
 Different symbols mean to be able to mix different DIMMs.

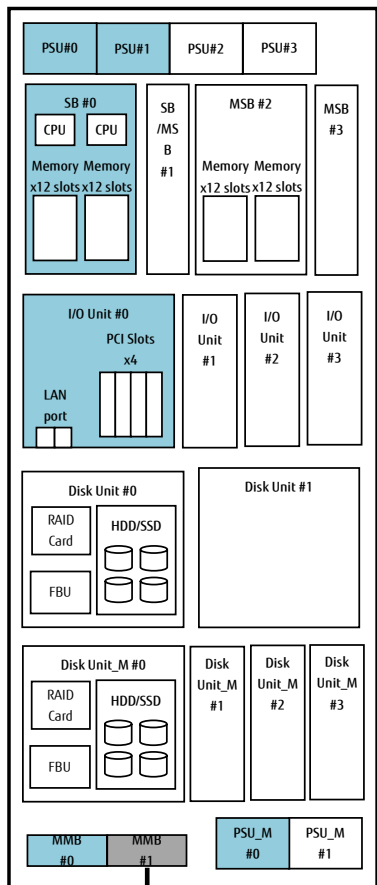
Condition#A : DIMMs cannot be mixed in a DDR channel.

Memory Mode		Lockstep		CPU#0 / MSC#0						CPU#1 / MSC#1					
				iMC#0			iMC#1			iMC#0			iMC#1		
				0A0	0B0	0C0	0D0	0E0	0F0	0A0	0B0	0C0	0D0	0E0	0F0
				0A1	0B1	0C1	0D1	0E1	0F1	0A1	0B1	0C1	0D1	0E1	0F1
Normal	Disabled	□	△	○	☆	▽	◇	■	▲	●	★	▼	◆		
		□	△	○	☆	▽	◇	■	▲	●	★	▼	◆		
Normal	Enabled	□	△	○	☆	▽	◇	■	▲	●	★	▼	◆		
		□	△	○	☆	▽	◇	■	▲	●	★	▼	◆		
Sparing	Disabled	□	△	○	☆	▽	◇	■	▲	●	★	▼	◆		
		□	△	○	☆	▽	◇	■	▲	●	★	▼	◆		
Sparing	Enabled	Not Supported													
		Not Supported													
Full Mirror / Address Range Mirror	Disabled	□	□	□	△	△	△	■	■	■	▲	▲	▲		
		□	□	□	△	△	△	■	■	■	▲	▲	▲		
Full Mirror / Address Range Mirror	Enabled	Not Supported													
		Not Supported													

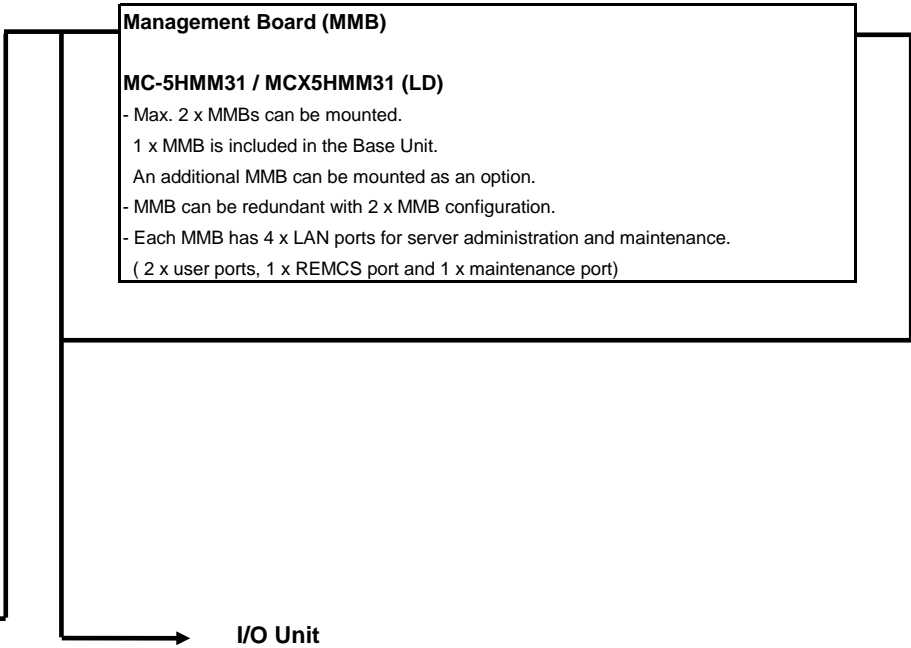
Condition#B : DIMMs can be mixed in a DDR channel.

Memory Mode		Lockstep		CPU#0 / MSC#0						CPU#1 / MSC#1					
				iMC#0			iMC#1			iMC#0			iMC#1		
				0A0	0B0	0C0	0D0	0E0	0F0	0A0	0B0	0C0	0D0	0E0	0F0
				0A1	0B1	0C1	0D1	0E1	0F1	0A1	0B1	0C1	0D1	0E1	0F1
Normal	Disabled	□	△	○	☆	▽	◇	■	▲	●	★	▼	◆		
		♠	♥	♣	♠	♥	♣	♠	♥	♣	♠	♥	♣		
Normal	Enabled	□	△	○	☆	▽	◇	■	▲	●	★	▼	◆		
		♠	♥	♣	♠	♥	♣	♠	♥	♣	♠	♥	♣		
Sparing	Disabled	□	△	○	☆	▽	◇	■	▲	●	★	▼	◆		
		♠	♥	♣	♠	♥	♣	♠	♥	♣	♠	♥	♣		
Sparing	Enabled	Not Supported													
		Not Supported													
Full Mirror / Address Range Mirror	Disabled	□	□	□	△	△	△	■	■	■	▲	▲	▲		
		○	○	○	☆	☆	☆	●	●	●	★	★	★		
Full Mirror / Address Range Mirror	Enabled	Not Supported													
		Not Supported													

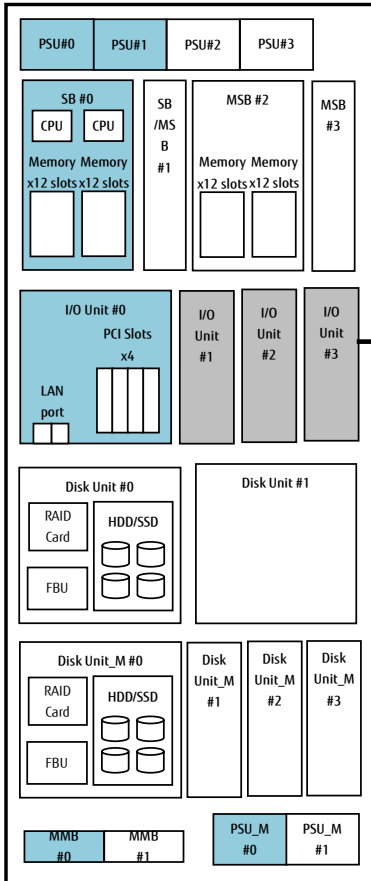
## 6.Management Board (MMB)



1x MMB is included in the Base Unit.  
Max. 2x MMBs can be mounted in a Base unit.



### 7.I/O UNIT



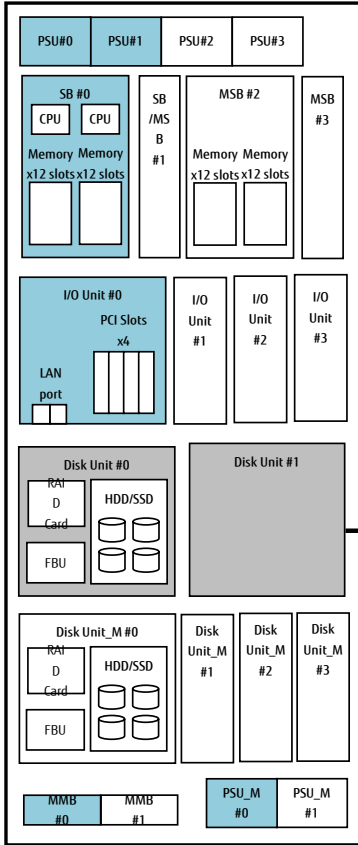
1x I/O Unit is included in the Base Unit.  
 Max. 4x I/O Units can be mounted in a Base unit.

**I/O Unit**  
**MC-5HUX61 / MCX5HUX61 (LD)**

- 1x I/O Unit is included in the Base unit, Max. 4 x I/O Units can be mounted.
- 2 x 10GBASE-T LAN ports per I/O Unit.
- 4x Low Profile PCIe slots per I/O Unit.
- PCI Express 3.0 x16 Lane x1 slot, x8 Lane x3 slots
- 12 PCIe slots in the PCI Box are available using PCI Box connection card.
- PCI hot plug is not supported. PCI hot plug is available on PCI Box.

→ **Disk Unit for SAS**

### 8.Disk Unit for SAS



Disk Unit for SAS

- Max. 2 of the following Disk Units can be mounted on the Base Unit.  
 - In order to mount Disk Unit #1, I/O Unit #1 is required.

**Disk Unit for SAS**  
**MC-5HDU71 / MCX5HDU71 (LD)**  
 - Max. 2x Disk Units per Base Unit.  
 - 1x RAID Controller card is required.  
 - Max 4x SAS HDD/SSD can be mounted per Disk Unit.

**SAS RAID Controll Card (2GB Cache)**  
**MC-0JSRA1 / MCX0JSRA1 (LD)**  
 - One RAID Controller card allows mounting of 4x disk drives such as HDD or SSD.  
 - 12Gbps for each disk drive. 2GB of cache memory  
 - RAID 0/1/1E/5/6/10 and hot spare supported

**RAID Advanced Software Options**  
**MC-0KLA51 / MCX0KLA51 (LD)**  
 License Activation Key for CacheCade 2.0

**Flash Back-up Unit**  
**MC-0JFB61 / MCX0JFB61 (LD)**  
 - Flash Backup Unit for RAID Controller (2GB Cache)

- Connection between I/O Unit and Disk Unit

I/O Unit	Disk Unit
I/O Unit #0	Disk Unit #0
I/O Unit #1	Disk Unit #1

**SAS RAID Controll Card (4GB Cache)** \*Please see Restrictions No.6.  
**MC-0JSR71 / MCX0JSR71 (LD)**  
 - One RAID Controller card allows mounting of 4x disk drives such as HDD or SSD.  
 - 12Gbps for each disk drive. 4GB of cache memory  
 - RAID 0/1/5/6/10 and hot spare supported  
 - No RAID Software License required.

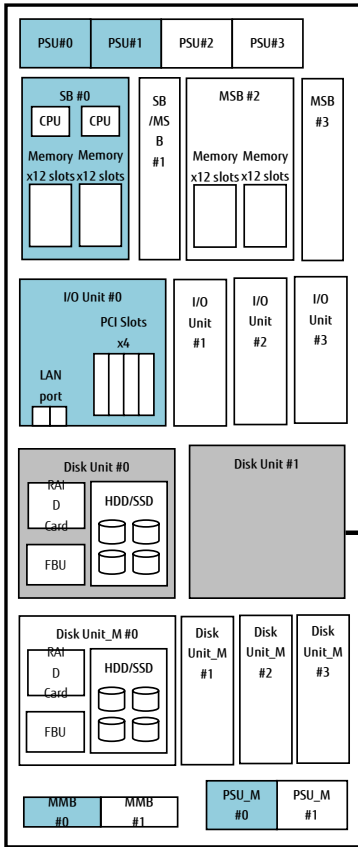
**SAS RAID Controll Card (8GB Cache)**  
**MC-0JSR81 / MCX0JSR81 (LD)**  
 - One RAID Controller card allows mounting of 4x disk drives such as HDD or SSD.  
 - 12Gbps for each disk drive. 8GB of cache memory  
 - RAID 0/1/5/6/10 and hot spare supported  
 - No RAID Software License required.

**Flash Back-up Unit**  
**MC-0JFB41 / MCX0JFB41 (LD)**  
 - Flash Backup Unit for RAID Controller (4GB/8GB Cache)

→ Disk for HDD or SSD



### Disk Unit for PCIe SFF



Disk

- Max. 2 of the following Disk Units can be mounted on the Base Unit.
- In order to mount Disk Unit #1, I/O Unit #1 is required.

**Disk Unit for PCIe SFF (DU\_PCIEA)**  
**MC-5HDU61 / MCX5HDU61 (LD)**

- Max. 2x Disk Units per Base Unit.
- 1x RAID Controller card is required.
- Max 4x PCIe SSD can be mounted per Disk Unit.

**SAS RAID Controll Card (4GB Cache)** \*Please see Restrictions No.6.  
**MC-0JSR71 / MCX0JSR71 (LD)**

- One RAID Controller card allows mounting of 4x disk drives such as PCIe-SSD .
- 12Gbps for each disk drive. 4GB of cache memory
- RAID 0/1/5/6/10 and hot spare supported
- No RAID Software License required.

---

**SAS RAID Controll Card (8GB Cache)**  
**MC-0JSR81 / MCX0JSR81 (LD)**

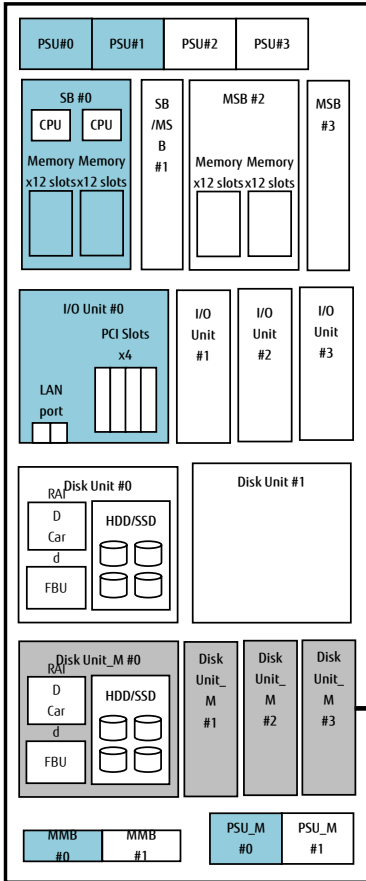
- One RAID Controller card allows mounting of 4x disk drives such asPCIe-SSD.
- 12Gbps for each disk drive. 8GB of cache memory
- RAID 0/1/5/6/10 and hot spare supported
- No RAID Software License required.

- Connection between I/O Unit and Disk Unit

I/O Unit	Disk Unit
I/O Unit #0	Disk Unit #0
I/O Unit #1	Disk Unit #1

→ Disk for PCIe-SSD

### Disk Unit for Disk/MMB Unit (Disk Unit\_M)



Disk Unit for Disk/MMB Unit

- Max. 4 Disk Units can be mounted on the Disk/MMB Unit  
 - In order to mount Disk Unit #1, #2 and #3, I/O Unit #1, #2 and #3 is required respectively.

**Disk Unit for Disk/MMB Unit**  
**MC-5HDU51 / MCX5HDU51 (LD)**  
 - Max. 4x Disk Units per Disk/MMB Unit.  
 - 1x RAID Controller card is required per Disk Unit.  
 - Max 4x SAS HDD/SSD can be mounted per Disk Unit.

**SAS RAID Controll Card (2GB Cache)**  
**MC-0JSRA1 / MCX0JSRA1 (LD)**  
 - One RAID Controller card allows mounting of 4x disk drives such as HDD or SSD.  
 - 12Gbps for each disk drive. 2GB of cache memory  
 - RAID 0/1/1E/5/6/10 and hot spare supported

**RAID Advanced Software Options**  
**MC-0KLA51 / MCX0KLA51 (LD)**  
 License Activation Key for CacheCade 2.0

**Flash Back-up Unit**  
**MC-0JFB61 / MCX0JFB61 (LD)**  
 - Flash Backup Unit for RAID Controller (2GB Cache)

- Connection between I/O Unit and Disk Unit\_M

I/O Unit	Disk Unit
I/O Unit #0	Disk Unit_M#0
I/O Unit #1	Disk Unit_M#1
I/O Unit #2	Disk Unit_M#2
I/O Unit #3	Disk Unit_M#3

**SAS RAID Controll Card (4GB Cache)** **\*Please see Restrictions No.6.**  
**MC-0JSR71 / MCX0JSR71 (LD)**

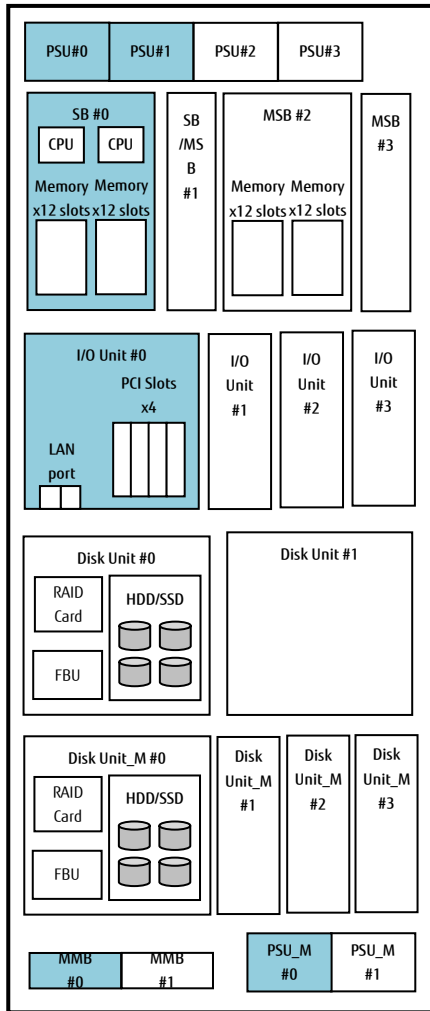
- One RAID Controller card allows mounting of 4x disk drives such as HDD or SSD.  
 - 12Gbps for each disk drive. 4GB of cache memory  
 - RAID 0/1/5/6/10 and hot spare supported  
 - No RAID Software License required.

**SAS RAID Controll Card (8GB Cache)**  
**MC-0JSR81 / MCX0JSR81 (LD)**  
 - One RAID Controller card allows mounting of 4x disk drives such as HDD or SSD.  
 - 12Gbps for each disk drive. 8GB of cache memory  
 - RAID 0/1/5/6/10 and hot spare supported  
 - No RAID Software License required.

**Flash Back-up Unit**  
**MC-0JFB41 / MCX0JFB41 (LD)**  
 - Flash Backup Unit for RAID Controller (4GB/8GB Cache)

→ Disk for HDD or SSD

### 9.HDD



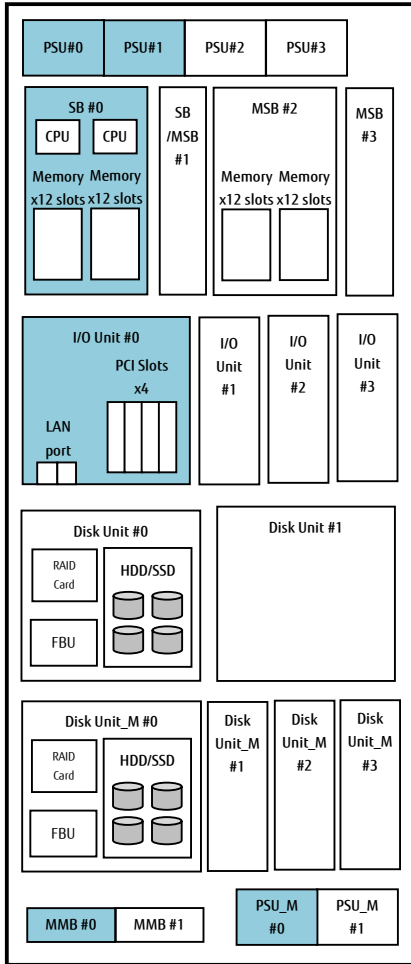
Max. 4 pcs of HDD/SSD can be mounted per the Disk Unit for SAS or the Disk Unit for Disk/MMB Unit.

#### Internal SAS HDD for Disk Unit

- 300GB Internal HDD (15,000rpm)**  
MC-5DS771 / MCX5DS771 (LD)  
- SAS 12Gbps, hot plug, 512n format
- 300GB Internal HDD (10,000rpm)**  
MC-5DS781 / MCX5DS781 (LD)  
- SAS 12Gbps, hot plug, 512n format
- 600GB Internal HDD (15,000rpm)**  
MC-5DS961 / MCX5DS961 (LD)  
- SAS 12Gbps, hot plug, 512n format
- 600GB Internal HDD (10,000rpm)**  
MC-5DS971 / MCX5DS971 (LD)  
- SAS 12Gbps, hot plug, 512n format
- 900GB Internal HDD (15,000rpm)**  
MC-5DSA51 / MCX5DSA51 (LD)  
- SAS 12Gbps, hot plug, 512n format
- 900GB Internal HDD (10,000rpm)**  
MC-5DSA61 / MCX5DSA61 (LD)  
- SAS 12Gbps, hot plug, 512n format
- 1.2TB Internal HDD (10,000rpm)**  
MC-5DSB41 / MCX5DSB41 (LD)  
- SAS 12Gbps, hot plug, 512n format
- 1.8TB Internal HDD (10,000rpm)**  
MC-5DSC21 / MCX5DSC21 (LD)  
- SAS 12Gbps, hot plug, 512e format
- 2.4TB Internal HDD (10,000rpm)**  
MC-5DSD11 / MCX5DSD11 (LD)  
- SAS 12Gbps, hot plug, 512e format

→ SSD

### 9.SSD



Max. 4 pcs of HDD/SSD can be mounted per the Disk Unit for SAS or the Disk Unit for Disk/MMB Unit.

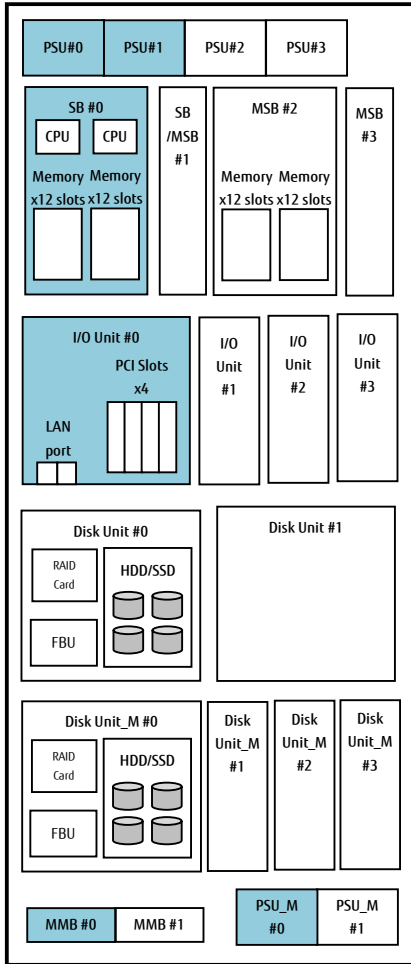
#### Internal SAS SSD for Disk Unit

<b>400GB SAS SSD</b> <b>MC-5DG821 / MCX5DG821 (LD)</b> - SAS 12Gbps, hot plug, DWPD : 10
<b>800GB SAS SSD</b> <b>MC-5DG921 / MCX5DG921 (LD)</b> - SAS 12Gbps, hot plug, DWPD : 10
<b>1.6TB SAS SSD</b> <b>MC-5DGA21 / MCX5DGA21 (LD)</b> - SAS 12Gbps, hot plug, DWPD : 10
<b>400GB SAS SSD</b> <b>MC-5DH821 / MCX5DH821 (LD)</b> - SAS 12Gbps, hot plug, DWPD : 3
<b>800GB SAS SSD</b> <b>MC-5DH921 / MCX5DH921 (LD)</b> - SAS 12Gbps, hot plug, DWPD : 3
<b>1.6TB SAS SSD</b> <b>MC-5DHA21 / MCX5DHA21 (LD)</b> - SAS 12Gbps, hot plug, DWPD : 3
<b>3.2TB SAS SSD</b> <b>MC-5DHB21 / MCX5DHB21 (LD)</b> - SAS 12Gbps, hot plug, DWPD : 3
<b>6.4TB SAS SSD</b> <b>MC-5DKG21 / MCX5DKG21 (LD)</b> - SAS 12Gbps, hot plug, DWPD : 3

As flash memory cells are wearing parts, an SSD can only tolerate a limited number of write jobs. DWPD (Drive Write Per Day) is an indicator which specifies write endurance of an SSD. Depending on how the product is used, the number of writing times may reach the end of write endurance. Product status can be confirmed by management tools such as iRMC Web-UI and Server View RAID Manager (SVRM).

→ PCIe-SSD

### 9.PCie-SSD



Max. 4 pcs of HDD/SSD can be mounted per the Disk Unit for PCIe SFF.

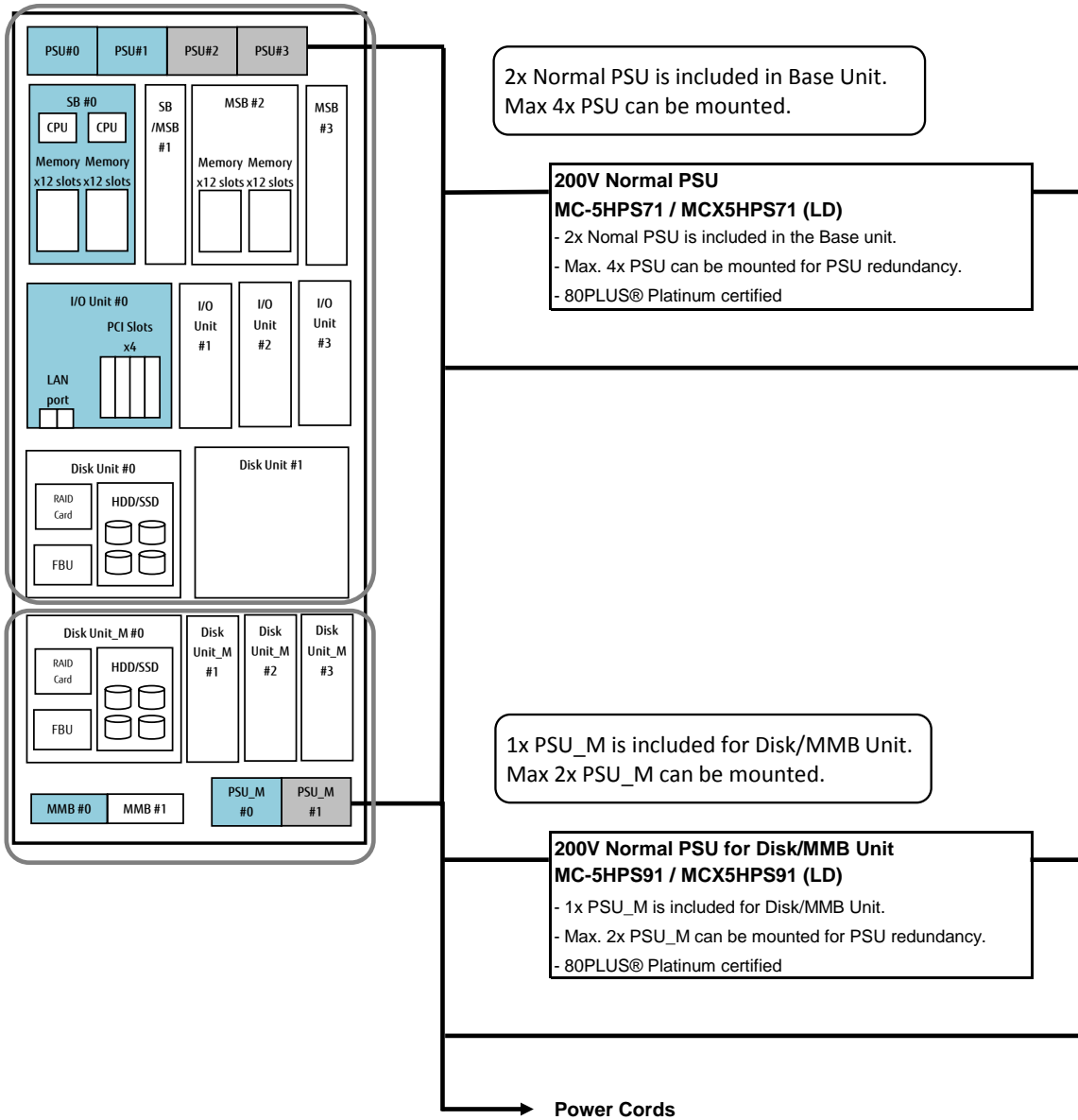
#### PCie-SSD for Disk Unit

<b>1.6TB Solid State Drive</b> PCIe-SSD SFF 1.6TB 3DWPD <b>MC-5DKD21 / MCX5DKD21 (LD)</b>
<b>3.2TB Solid State Drive</b> PCIe-SSD SFF 3.2TB 3DWPD <b>MC-5DKE21 / MCX5DKE21 (LD)</b>
<b>6.4TB Solid State Drive</b> PCIe-SSD SFF 6.4TB 3DWPD <b>MC-5DKF21 / MCX5DKF21 (LD)</b>

As flash memory cells are wearing parts, an SSD can only tolerate a limited number of write jobs. DWPD (Drive Write Per Day) is an indicator which specifies write endurance of an SSD. Depending on how the product is used, the number of writing times may reach the end of write endurance. Product status can be confirmed by management tools such as iRMC Web-UI and Server View RAID Manager (SVRM).

→ Power Supply Unit

### 10.Power Supply Unit (PSU)



AC Power input	MSB	Redundancy	# of PSU	Dual Power feed	# of PSU_M
240V	No (*1)	Not redundant	2	No	1
		redundant	2 + 1 (*3)	No	2 (*3)
		redundant	2 + 2 (*4)	Yes	2 (*4)
	Yes (*2)	Not redundant	3	No	1
		redundant	3 + 1 (*3)	No	2 (*3)

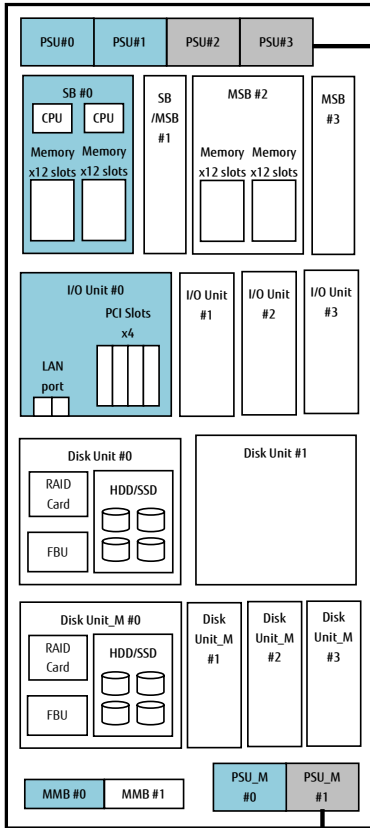
\*1: At least 2 PSUs and 1 PSU\_M are required.

\*2: At least 3 PSUs and 1 PSU\_M are required when MSB is installed. Dual power feed is not possible.

\*3: n + 1 redundant PSU configuration is resistant to failure of one power supply unit.

\*4: Dual power feed configuration is resistant to one data center power feed failure and PSU failure.

### Power Cords for APAC and Americas



power cord

\* The same quantity of Power Cords need to be ordered as that of PSU.

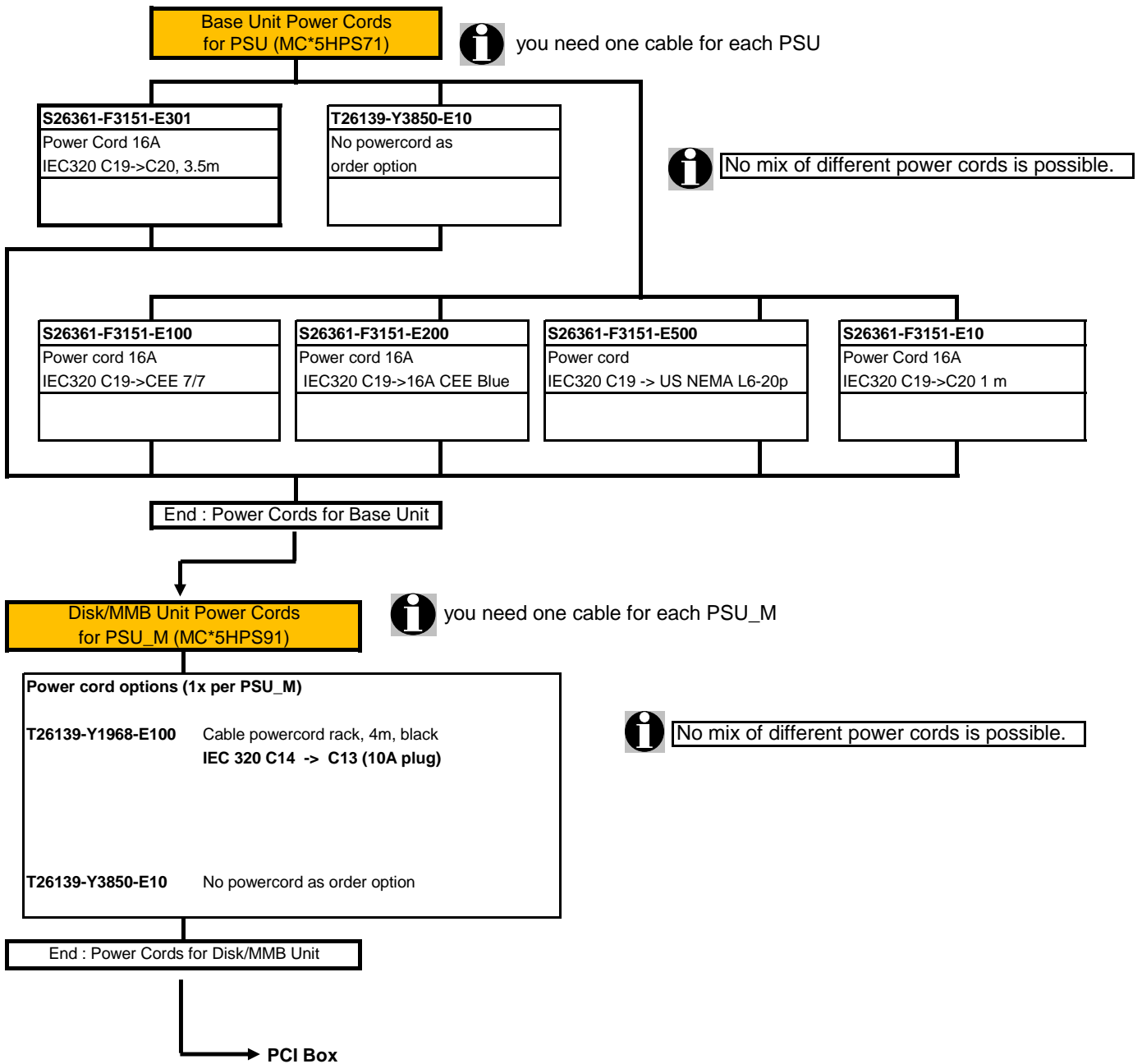
- IEC 200V AC Cable(3m)**  
**MC-0HCB13 / MCX0HCB13 (LD)**  
 - IEC60320 C20, 3m  
 - power cord x 1
- IEC 200V AC Cable(1m)**  
**MC-0HCB11 / MCX0HCB11 (LD)**  
 - IEC60320 C20, 1m  
 - power cord x 1

\* The same quantity of Power Cords need to be ordered as that of PSU\_M.

- IEC 200V AC Cable for Disk/MMB Unit(3m)**  
**MC-0HCB43 / MCX0HCB43 (LD)**  
 - IEC60320 C20, 3m  
 - power cord x 1
- IEC 200V AC Cable for Disk/MMB Unit(1m)**  
**MC-0HCB41 / MCX0HCB41 (LD)**  
 - IEC60320 C20, 1m  
 - power cord x 1

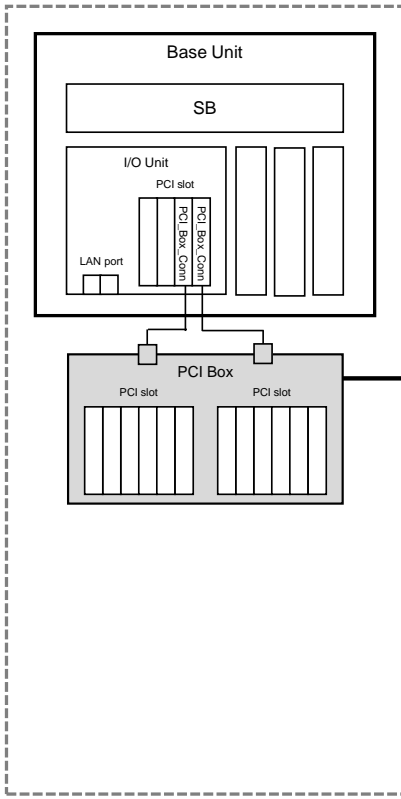
→ PCI Box

### Power Cords for EMEA & India





# 11.PCI Box



To connect a PCI Box, a PCI Box Connection Card needs to be ordered and mounted in an I/O Unit.

**PCI Box**  
**MC-0HPB32 / MCX0HPB32 (LD)**

- Max. 4 x PCI Boxes can be connected to I/O Units per Base Unit.
- 1 x PCI Box has 2 x connection ports to connect to PCI Box Connection Cards.
- 1 x connection port is used to support 6 x PCI Cards.
- If 2 x connection ports are used to connect 2 x PCI Box Connection Cards, max. 12 x PCI Cards can be mounted.
- No PSU is included. Min. 1 x PSU for PCI Box needs to be mounted.
- Fans are mounted with redundant configuration as default configuration.
- Rack space : 4U
- PCI cards are hot pluggable.
- 12 x PCI Card Cassettes are included.
- PCI Cards with Full Height bracket need to be chosen.

**PSU for PCI Box**  
**MC-0HPS51 / MCX0HPS51 (LD)**

- 1 x PSU is included.
- Max. 2 x PSUs can be mounted per PCI Box for redundancy.

**PCI Box Connection Card**  
**MC-0JPC21 / MCX0JPC21 (LD)**

- PCI Slots with Low Profile bracket are supported.
- 6 x PCI Cards in a PCI Box can be supported per connection port.
- 1 x PCI Box Connection Cable (2m long) is included.
- Max. 8 x PCI Box Connection Cards can be mounted per Base Unit.

→ next page

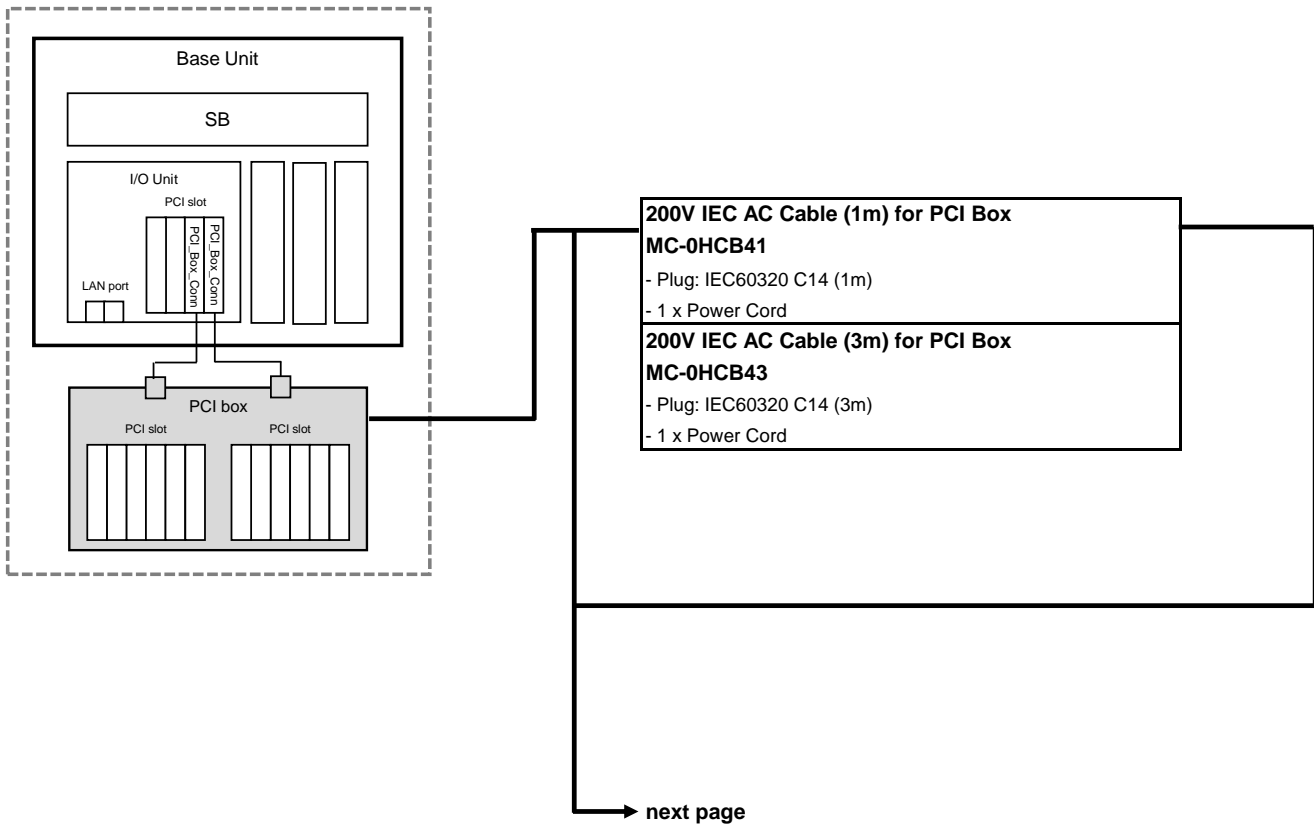
Base Units and PCI Boxes need to have the same power supply condition.

Input voltage	Power feed	Redundancy	# of PSU	Required quantity	
				PSU	Power cord
AC 200V	Single	Not available	1	1	1
		Available (*1)	1+1	2	2
	Dual	Available (*2)	1x2	2	2

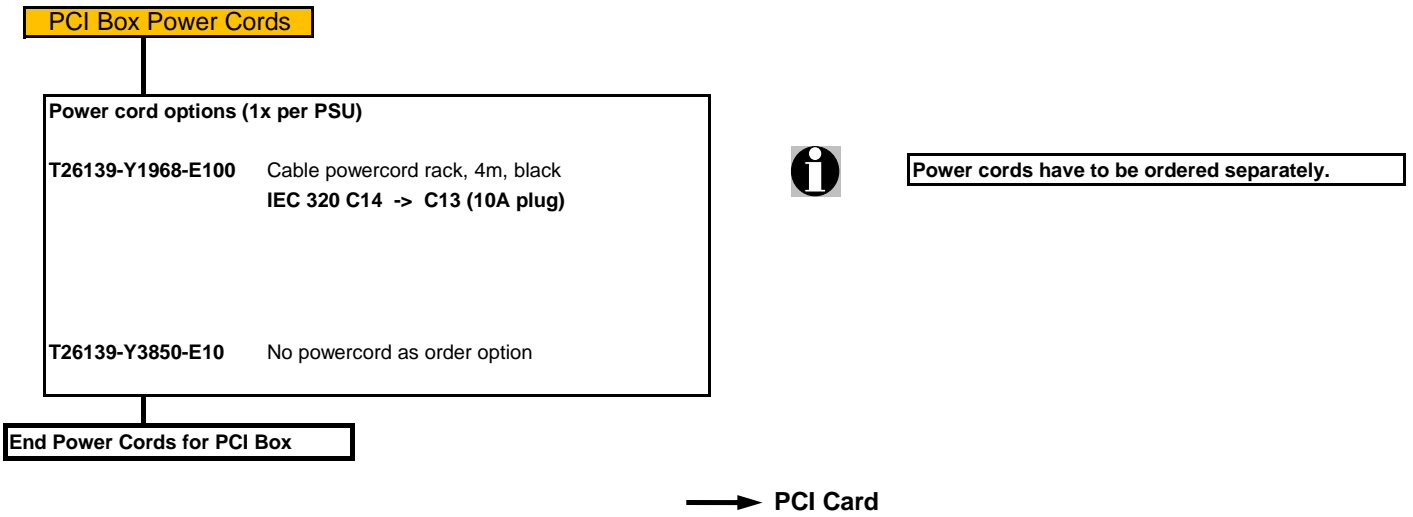
(\*1) Single power feed configuration will help to supply power even in the event of PSU failure.

(\*2) Dual power feed configuration will help to supply power even in the event of one Power feed failure or PSU failure.

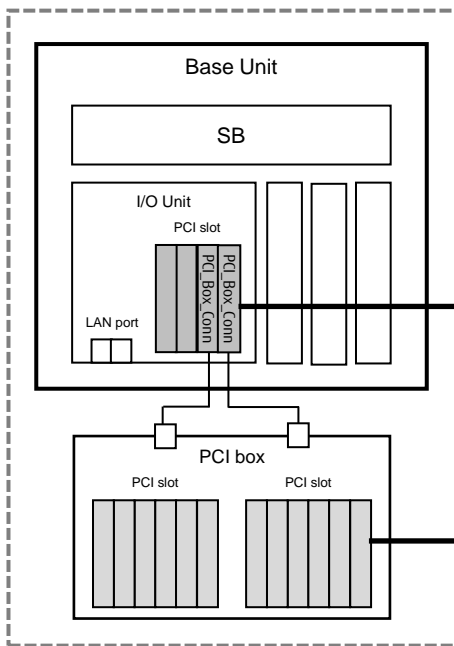
### Power Cords for PCI Box for APAC and Americas



## Power Cords for PCI Box for EMEA & India



## 12.PCI Cards

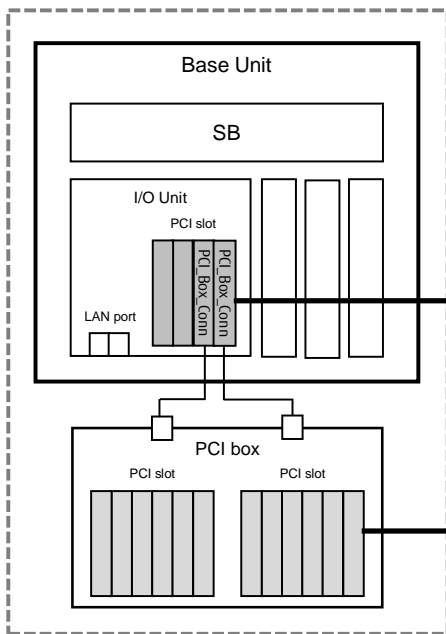


Max. 56 PCI cards(excluding PCI Box Connection Cards) can be mounted in I/O Units and PCI Boxes.  
 I/O Unit : Max. 4 cards can be mouted per I/O Unit  
 - 1x PCIe x16 (Low Profile)  
 - 3x PCIe x8 (Low Profile)  
 PCI Box : Max. 12 cards can be mouted per PCI Box  
 - 12x PCIe x8 (Full Height, hotpluggable slots)

<b>Single Channel Fibre Channel Card (16Gbps)</b> MC-0JFCF1 (Low Profile) MC-0JFCF2 (Full Height) MCX0JFCF1 (LD, LP/FH) FC 1x 16Gbps, Emulex LPe31000	*Please see Restrictions No.11.
<b>Dual Channel Fibre Channel Card (16Gbps)</b> MC-0JFCG1 (Low Profile) MC-0JFCG2 (Full Height) MCX0JFCG1 (LD, LP/FH) FC 2x 16Gbps, Emulex LPe31002	*Please see Restrictions No.11.
<b>Single Channel Fibre Channel Card (32Gbps)</b> MC-0JFCM1 (Low Profile) MC-0JFCM2 (Full Height) MCX0JFCM1 (LD, LP/FH) FC 1x 32Gbps, Emulex LPe32000	*Please see Restrictions No.11.
<b>Dual Channel Fibre Channel Card (32Gbps)</b> MC-0JFCN1 (Low Profile) MC-0JFCN2 (Full Height) MCX0JFCN1 (LD, LP/FH) FC 2x 32Gbps, Emulex LPe32002	*Please see Restrictions No.11.
<b>Single Channel Fibre Channel Card (16Gbps)</b> MC-0JFCP1 (Low Profile) MC-0JFCP2 (Full Height) MCX0JFCP1 (LD, LP/FH) FC 1x 32Gbps, QLogic QLE2690	
<b>Dual Channel Fibre Channel Card (16Gbps)</b> MC-0JFCQ1 (Low Profile) MC-0JFCQ2 (Full Height) MCX0JFCQ1 (LD, LP/FH) FC 2x 16Gbps, QLogic QLE2692	
<b>Single Channel Fibre Channel Card (32Gbps)</b> MC-0JFCK1 (Low Profile) MC-0JFCK2 (Full Height) MCX0JFCK1 (LD, LP/FH) FC 1x 32Gbps, QLogic QLE2740	
<b>Dual Channel Fibre Channel Card (32Gbps)</b> MC-0JFCL1 (Low Profile) MC-0JFCL2 (Full Height) MCX0JFCL1 (LD, LP/FH) FC 2x 32Gbps, QLogic QLE2742	

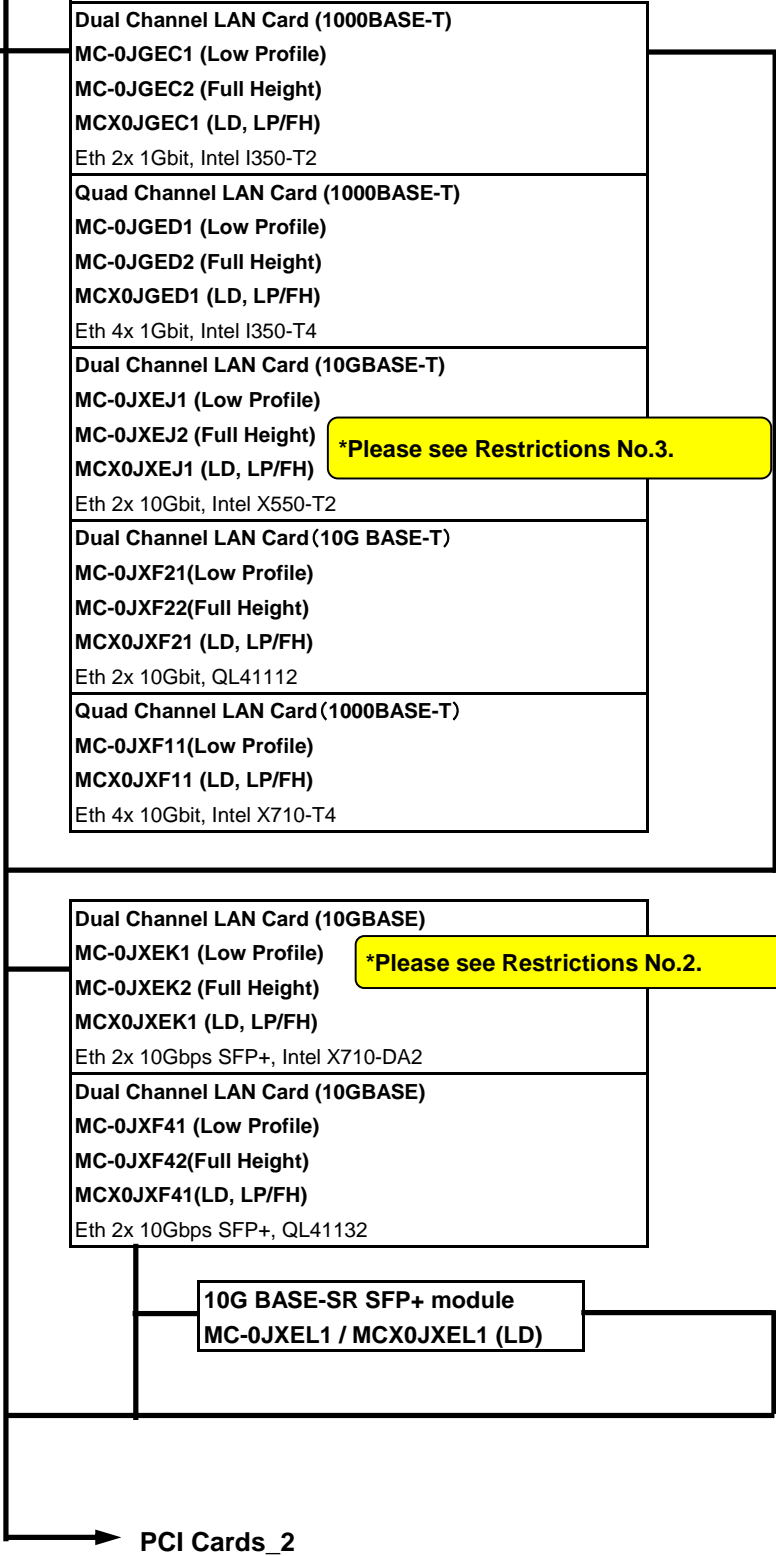
→ PCI Cards\_1

PCI Cards\_1

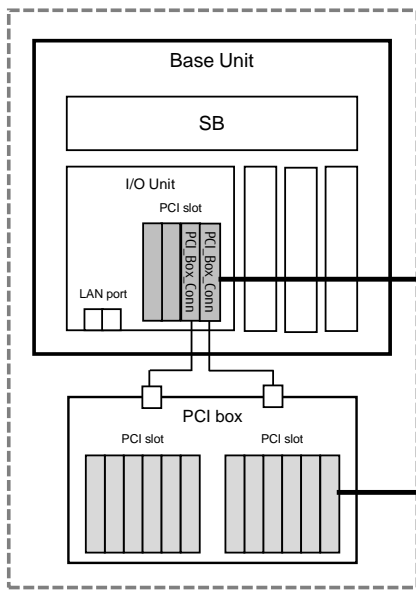


Max. 56 PCI cards(excluding PCI Box Connection Cards) can be mounted in I/O Units and PCI Boxes.  
 I/O Unit : Max. 4 cards can be mouted per I/O Unit  
 - 1x PCIe x16 (Low Profile)  
 - 3x PCIe x8 (Low Profile)  
 PCI Box : Max. 12 cards can be mouted per PCI Box  
 - 12x PCIe x8 (Full Height, hotpluggable slots)

**\* Please use the cable specified by the destination switch product.**



PCI Cards\_2



Max. 56 PCI cards(excluding PCI Box Connection Cards) can be mounted in I/O Units and PCI Boxes.  
 I/O Unit : Max. 4 cards can be mouted per I/O Unit  
 - 1x PCIe x16 (Low Profile)  
 - 3x PCIe x8 (Low Profile)  
 PCI Box : Max. 12 cards can be mouted per PCI Box  
 - 12x PCIe x8 (Full Height, hotpluggable slots)

**Dual Channel LAN Card (10GBASE-T)**  
 MC-0JXEM1 (Low Profile)  
 MC-0JXEM2 (Full Height)  
 MCX0JXEM1 (LD, LP/FH)  
 Eth 2x 10Gbit, Emulex OCe14102-NT

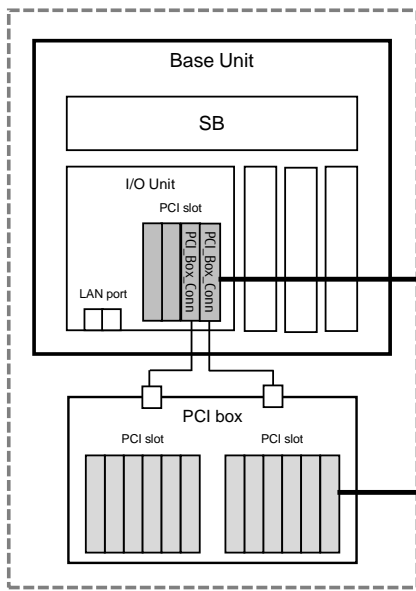
**\* Please use the cable specified by the destination switch product.**

**Dual Channel LAN Card (10GBASE)**  
 MC-0JXEN1 (Low Profile)  
 MC-0JXEN2 (Full Height)  
 MCX0JXEN1 (LD, LP/FH)  
 Eth 2x 10Gbit, Emulex OCe14102-NX

**10G BASE-SR SFP+ module**  
 MC-0JCEK1 / MCX0JCEK1 (LD)

→ PCI Cards\_3

PCI Cards\_3



Max. 56 PCI cards(excluding PCI Box Connection Cards) can be mounted in I/O Units and PCI Boxes.  
 I/O Unit : Max. 4 cards can be mouted per I/O Unit  
 - 1x PCIe x16 (Low Profile)  
 - 3x PCIe x8 (Low Profile)  
 PCI Box : Max. 12 cards can be mouted per PCI Box  
 - 12x PCIe x8 (Full Height, hotpluggable slots)

**\* Please use the cable specified by the destination switch product.**

**Dual Channel LAN Card (25G BASE)**  
**MC-0JFE11 (Low Profile)**  
**MCX0JFE11 (LD)**  
 Eth 2x 25Gbit SFP28, Mellanox MCX4121A-ACAT

(\*) **SFP28 25GbE module**  
**MC-0JFE21 / MCX0JFE21 (LD)**  
 SFP28 25G SR LC 850nm 100m

**Dual Channel LAN Card (25G BASE)**  
**MC-0JXEH1 (Low Profile)**  
**MCX0JXEH1 (LD)**  
 Eth 2x 25Gbit SFP28, Intel XXV710-DA2

**Dual Channel LAN Card (25G BASE)**  
**MC-0JFEA1 (Low Profile)**  
**MCX0JFEA1 (LD)**  
 Eth 2x 25Gbit SFP28, Cavium QL41212

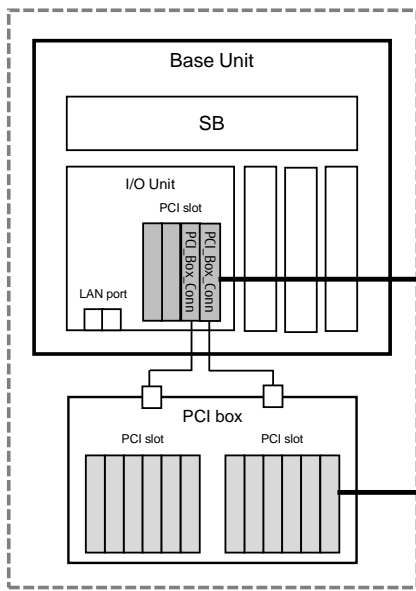
(\*) **SFP28 25GbE module**  
**MC-0JCEJ1 / MCX0JCEJ1 (LD)**  
 SFP28 Module Multi Mode Fiber 25GbE LLC

**Dual Channel LAN Card (40G BASE)**  
**MC-0JFE41 (Low Profile)**  
**MCX0JFE41 (LD)**  
 Eth 2x 40Gbit QSFP, Mellanox MCX416A-BCAT

(\*) **QSFP 40GbE module**  
**MC-0JFEC1 / MCX0JFEC1 (LD)**  
 QSFP 40G SR4 MPO 850nm 150m

→ **PCI Cards\_4**

PCI Cards\_4



Max. 56 PCI cards(excluding PCI Box Connection Cards) can be mounted in I/O Units and PCI Boxes.  
 I/O Unit : Max. 4 cards can be mouted per I/O Unit  
 - 1x PCIe x16 (Low Profile)  
 - 3x PCIe x8 (Low Profile)  
 PCI Box : Max. 12 cards can be mouted per PCI Box  
 - 12x PCIe x8 (Full Height, hotpluggable slots)

**\* Please use the cable specified by the destination switch product.**

**Single Channel LAN Card (100G BASE)**  
**MC-0JFE71 (Low Profile)**  
**MCX0JFE71 (LD)**  
 Eth 1x 100Gbit QSFP28, Mellanox MCX415A-CCAT

**Single Channel LAN Card (100G BASE)**  
**MC-0JFEB1 (Low Profile)**  
**MCX0JFEB1 (LD)**  
 Eth 1x 100Gbit QSFP28, Cavium QL45611HLCU

(\*)

**QSFP28 100GbE module**  
**MC-0JFE81 / MCX0JFE81 (LD)**  
 QSFP28 100G SR4 MPO 850nm 100m

**QSFP28 100GbE module**  
**MC-0JFE91 / MCX0JFE91 (LD)**  
 QSFP28 100G PSM4 1310nm 500m

**Dual Channel Converged Network Adapter (10Gbps)**  
**MC-0JCEL1 (Low Profile)**  
**MC-0JCEL2 (Full Height)**  
**MCX0JCEL1 (LD, LP/FH)**  
 CNA 2x 10Gbit, Emulex OCe14102

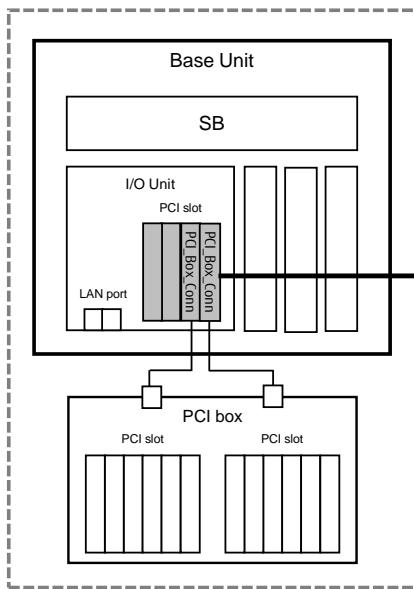
(\*)

**10G BASE-SR SFP+ module**  
**MC-0JCEK1 / MCX0JCEK1 (LD)**

→ **PCI Cards\_5**



PCI Cards\_5

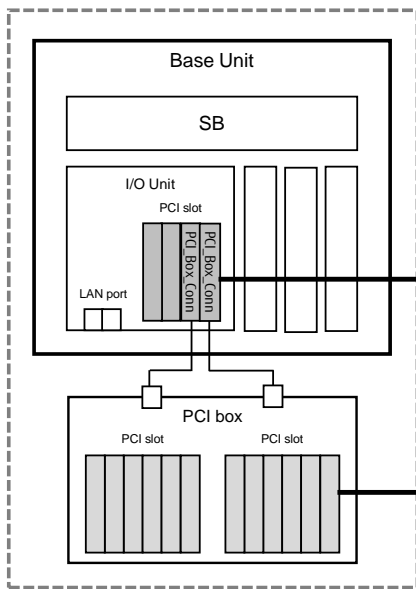


Max. 56 PCI cards(excluding PCI Box Connection Cards) can be mounted in I/O Units and PCI Boxes.  
 I/O Unit : Max. 4 cards can be mouted per I/O Unit  
 - 1x PCIe x16 (Low Profile)  
 - 3x PCIe x8 (Low Profile)  
 PCI Box : Max. 12 cards can be mouted per PCI Box  
 - 12x PCIe x8 (Full Height, hotpluggable slots)

<b>Single Channel IB HCA Card (56Gbps)</b> <b>MC-0JHC71 (Low Profile)</b> <b>MCX0JHC71 (LD)</b> IB HCA 56Gb 1port FDR	<b>*Please see Restrictions No.1.</b>
<b>Dual Channel IB HCA Card (56Gbps)</b> <b>MC-0JHC81 (Low Profile)</b> <b>MCX0JHC81 (LD)</b> IB HCA 56Gb 2port FDR	<b>*Please see Restrictions No.1.</b>
<b>Single Channel IB HCA Card (100Gbps)</b> <b>MC-0JHC91 (Low Profile)</b> <b>MCX0JHC91 (LD)</b> IB HCA 100Gb 1port EDR	<b>*Please see Restrictions No.1.</b>
<b>Dual Channel IB HCA Card (100Gbps)</b> <b>MC-0JHCA1 (Low Profile)</b> <b>MCX0JHCA1 (LD)</b> IB HCA 100Gb 2port EDR	<b>*Please see Restrictions No.1.</b>
<b>Single Channel IB HCA Card (100Gbps)</b> <b>MC-0JHCB1 (Low Profile)</b> <b>MCX0JHCB1 (LD)</b> IB HCA 100Gb 1 port HDR100	
<b>Single Channel Omni Path Card (100Gbps)</b> <b>MC-0JOP11 (Low Profile)</b> <b>MCX0JOP11 (LD)</b> 100Gb 1 port Omni Path	

→ **PCI Cards\_6**

PCI Cards\_6



Max. 56 PCI cards(excluding PCI Box Connection Cards) can be mounted in I/O Units and PCI Boxes.  
 I/O Unit : Max. 4 cards can be mouted per I/O Unit  
 - 1x PCIe x16 (Low Profile)  
 - 3x PCIe x8 (Low Profile)  
 PCI Box : Max. 12 cards can be mouted per PCI Box  
 - 12x PCIe x8 (Full Height, hotpluggable slots)

**Dual Channel SAS RAID Controller Card (12Gbps)**  
**MC-0JSRB1 (Low Profile)**  
**MC-0JSRB2 (Full Height)**  
**MCX0JSRB1 (LD, LP/FH)**  
 - 2x JX40 S2 Hard Disk Cabinet can be connected.

**RAID Software License**  
**MC-0KLA51 / MCX0KLA51 (LD)**  
 RAID Advanced SW Option CacheCade

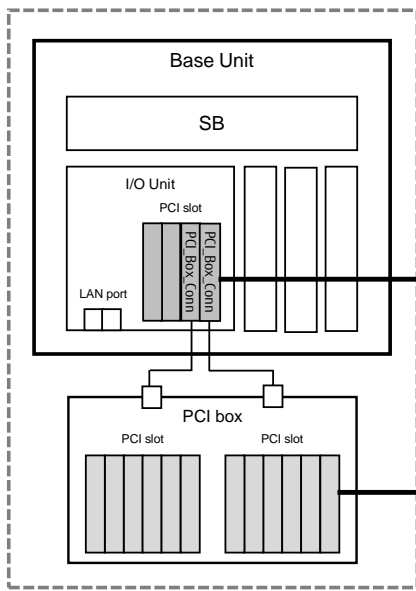
**Flash Backup Unit Mounting Kit**  
**MC-0HCK51 / MCX0HCK51 (LD)**  
 FBU Mounting Kit for I/O Unit  
 - Max. 4 FBU can be mounted.  
 - FBU can be connected only to the card in slot#0 of each I/O Unit.

**Flash Backup Unit**  
**MC-0JFB51 / MCX0JFB51 (LD)**  
 Max. 4 FBU can be mounted in FBU Mounting Kit.

**Dual Channel SAS Card (12Gbps)**  
**MC-0JSS41 (Low Profile)**  
**MC-0JSS42 (Full Height)**  
**MCX0JSS41 (LD, LP/FH)**  
 2ch SAS card (8 port) for external Backup Cabinet.

→ **PCI Cards\_7**

PCI Cards\_7



Max. 56 PCI cards(excluding PCI Box Connection Cards) can be mounted in I/O Units and PCI Boxes.  
 I/O Unit : Max. 4 cards can be mouted per I/O Unit  
 - 1x PCIe x16 (Low Profile)  
 - 3x PCIe x8 (Low Profile)  
 PCI Box : Max. 12 cards can be mouted per PCI Box  
 - 12x PCIe x8 (Full Height, hotpluggable slots)

**Dual Channel SAS RAID Controller Card (12Gbps)(4GBcash)**  
**MC-0JSRC1(Low Profile)**  
**MC-0JSRC2 (Full Height)**  
**MCX0JSRC1 (LD, LP/FH)**  
 - 2x JX40 S2 Hard Disk Cabinet can be connected.

**Flash Backup Unit kit E EP540e**  
**MC-0HCKB1 / MCX0HCKB1 (LD)**  
 FBU Kit  
 - Max. 4 FBU can be mounted.  
 - FBU can be connected only to the card in slot#0 of each I/O Unit.

**RAID Ctrl FBU option with 25cm cable**  
**MC-0JFB81 / MCX0JFB81 (LD)**  
 Max. 4 FBU can be mounted in FBU Mounting Kit.

→ PCI Cards\_8

### 13. Rack Installation for APAC and Americas

For the details of rack products, please refer to "19 inch Rack Handbook".  
<https://globalpartners.is.fujitsu.com/sites/primeweb/services/servers/primequest/document/Pages/dc-h-guide.aspx>

#### Rack for APAC & Americas

<b>Rack Units</b>	
Model 2724 Base Rack 19R-272A2 24U (Width 700mm x Depth 1,050mm x Height 1,200mm)	Expansion Rack 19R-273B2
Model 2737 Base Rack 19R-273A2 37U (Width 700mm x Depth 1,050mm x Height 1,792mm)	Expansion Rack 19R-274B2
Model 2742 Base Rack 19R-274A2 42U (Width 700mm x Depth 1,050mm x Height 2,000mm)	Expansion Rack 19R-274B2
Model 2616 Base Rack 19R-261A2 16U (Width 600mm x Depth 1,050mm x Height 845mm)	Expansion Rack 19R-264B2
Model 2624 Base Rack 19R-262A2 24U (Width 600mm x Depth 1,050mm x Height 1,200mm)	Expansion Rack 19R-264B2
Model 2642 Base Rack 19R-264A2 42U (Width 600mm x Depth 1,050mm x Height 2,000mm)	Expansion Rack 19R-264B2
<b>Tilt-Resistant Stabilizer</b>	
L-form Stabilizer 19R-27FS1 For Model 2724/2737/2742	
L-form Stabilizer 19R-26FS1 For Model 2616/2624/2642	
Pull out type Stabilizer 19R-26FS2 For Model 2724/2737/2742/2616/2624/2642	
<b>Earthquake-Proof Kit</b>	
Earthquake-proof Kit 19R-27ST1 For Base Rack for Model 2724/2737/2742 For front side, rear side, left side, and right side	
Earthquake-proof Kit 19R-27ST2 For Expansion Rack for Model 2724/2737/2742 For front side and rear side	
Earthquake-proof Kit 19R-26ST1 For Base Rack for Model 2616/2624/2642 For front side, rear side, left side, and right side	
Earthquake-proof Kit 19R-26ST2 For Expansion Rack for Model 2616/2624/2642 For front side and rear side	
<b>Blank Panel</b>	
Blank Panel (1U) 19R-26BP1	
Blank Panel (2U) 19R-26BP2	
Blank Panel (3U) 19R-26BP3	
<b>Side Cable Duct</b>	
Side Cable Duct 19R-27SD1 For Model 2724/2737/2742	
<b>Rack Tray</b>	
Rack Tray (Fixed Type) 19R-26TR1	
Rack Tray (Slide Type) 19R-26TR2	
Laptop PC Tray 19R-26TR3	
<b>Cable Holder</b>	
Cable Holder for front side 19R-27CM1 * For Model 2724/2737/2742	
Cable Holder for rear side 19R-27CM2 * For Model 2724/2737/2742	
Cable Holder for front side 19R-26CM1 * For Model 2616/2624	
Cable Holder for rear side 19R-26CM2 * For Model 2616/2624	
Cable Holder for front side 19R-26CM11 * For Model 2642	
Cable Holder for rear side 19R-26CM21 * For Model 2642	
<b>Screw kit</b>	
Screw kit 19R-26SC1 50 pcs of M6 screws and 50 pcs of M6 cage nuts	

End

**Rack Mount Kit:**  
 - can be used to mount PRIMEQUEST to Rack Units which are delivered from Fujitsu factories (Japan and Germany).  
 - is bundled with PRIMEQUEST Base Unit.

**Rack Units:**  
 - NOT include Stabilizer, Blank Panel or screw kits.  
 Please purchase them together with the Rack Unit, if necessary.

**Tilt-Resistant Stabilizer:**  
 - If racks are not fixed to the floor, stabilizers should be ordered and jointed to the racks.  
 - is NOT bundled with rack. Needs to be purchased.

**Earthquake-Proof Kit:**  
 - can fix racks to floor by anchoring racks to floor and using the kit holes.  
 - To fix Earthquake-Proof Kit, please consult constructors.

**Blank Panel:**  
 - is used to prevent outflow of heated air into a vacant space.  
 - space to joint Side Cable Duct, if they are not jointed, should be covered with Blank Panels.  
 For Model 2724: 2 spaces (1U)  
 For Model 2737/2742: 4 spaces (1U)  
 - is NOT bundled with racks. Needs to be purchased.

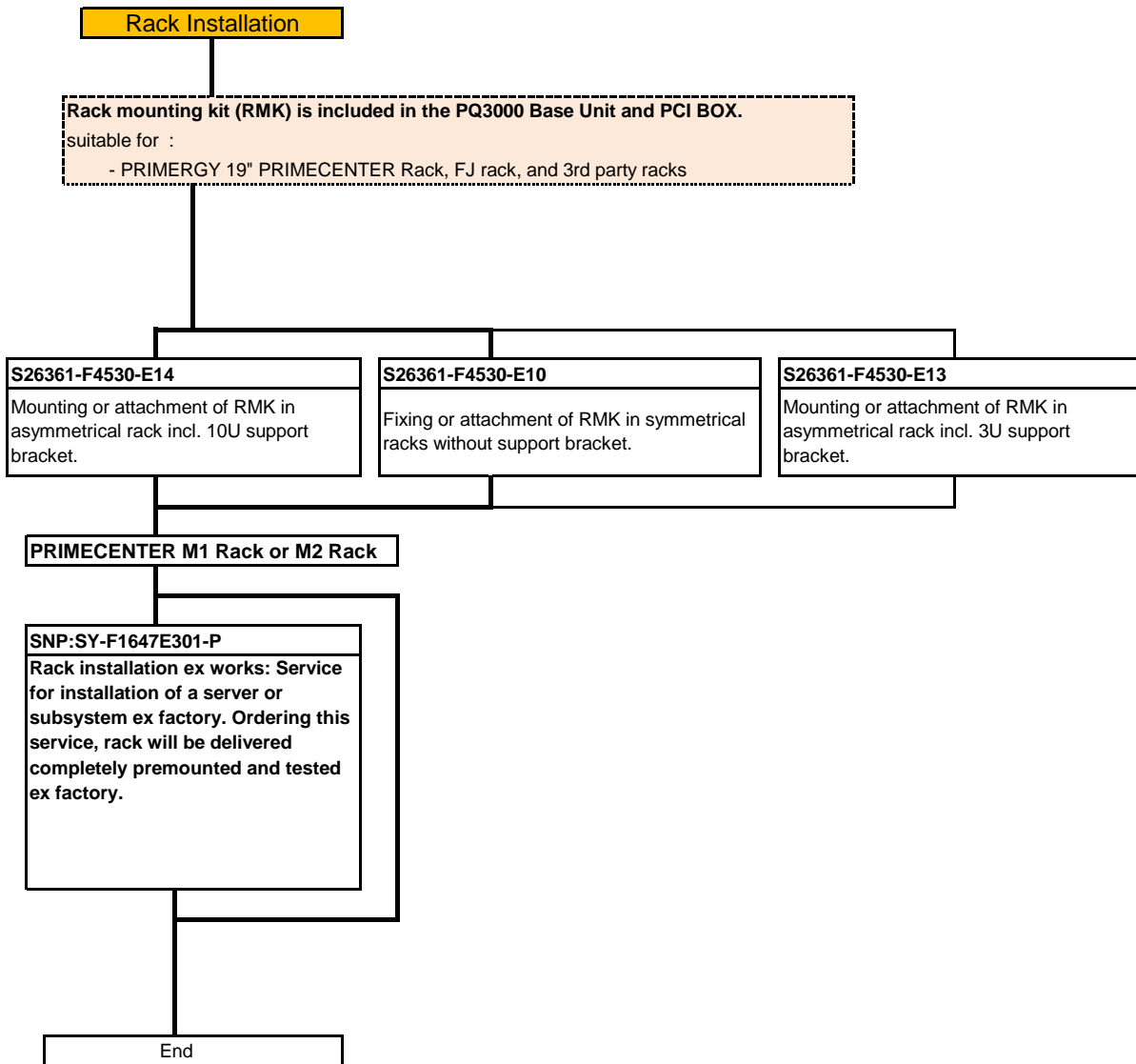
**Side Cable Duct:**  
 - is used to draw cables connected from the front side of equipments to the rear side of rack without occupying rack space by jointing the Side Cable Ducts to the apertures in the sides of racks.  
 Model 2724 : one aperture on each of left and right sides  
 Model 2737/2742: 2 apertures on each of left and right sides  
 - can accommodate around 90 cables with 5mm diameter.  
 - If one aperture is not jointed with Side Cable Duct, the aperture should be covered with one 1U Blank Panel (19R-26BP1), which needs to be purchased.

\* Cable holders bundled to each rack:  
 Model 2724: 6 pcs per Rack  
 Model 2737: 8 pcs per Rack  
 Model 2742: 10 pcs per Rack  
 Model 2616: 4 pcs per Rack  
 Model 2624: 6 pcs per Rack  
 Model 2642: 10 pcs per Rack

If the bundled quantity is insufficient, please purchase additional cable holders.

**Screw Kit:**  
 - Needs to be purchased if equipments do not include screws or nuts to be fixed in a rack.  
 - is NOT bundled with the 19 inch racks.

# Rack Installation for EMEA and India



For more configuration information, RACK COMPONENTS, PDU & KVM please see:  
<http://globalsp.ts.fujitsu.com/dmsp/Publications/public/cnfgPCM1rack.pdf>

## 14. Maximum Quantity of PCIe Cards

Maximum Quantity of PCI Cards that can be mounted.

per Partition / per System

Product Name	Order Number			3400E	
	BTO	BTO for PCI Box	LD	Max. Qty	
SAS RAID controller card	PRAID EP420i	MC-0JSRA1	Not mountable	MCX0JSRA1	
SAS RAID controller card	PRAID EP540i	MC-0JSR71	Not mountable	MCX0JSR71	
SAS RAID controller card	PRAID EP580i	MC-0JSR81	Not mountable	MCX0JSR81	
Dual channel 12Gbps SAS RAID controller card	PRAID EP420e	MC-0JSRB1	MC-0JSRB2	MCX0JSRB1	
Dual channel 12Gbps SAS Card	PSAS CP400e	MC-0JSS41	MC-0JSS42	MCX0JSS41	
Single Channel 16Gbps Fibre Channel Card	Broadcom LPe31000	*1 *2	MC-0JFCF1	MC-0JFCF2	MCX0JFCF1
Dual Channel 16Gbps Fibre Channel Card	Broadcom LPe31002	*1 *2	MC-0JFCG1	MC-0JFCG2	MCX0JFCG1
Single Channel 32Gbps Fibre Channel Card	Broadcom LPe32000	*1 *2	MC-0JFCM1	MC-0JFCM2	MCX0JFCM1
Dual Channel 32Gbps Fibre Channel Card	Broadcom LPe32002	*1 *2	MC-0JFCN1	MC-0JFCN2	MCX0JFCN1
Single Channel 16Gbps Fibre Channel Card	Qlogic QLE2690	*1	MC-0JFCP1	MC-0JFCP2	MCX0JFCP1
Dual Channel 16Gbps Fibre Channel Card	Qlogic QLE2692	*1	MC-0JFCQ1	MC-0JFCQ2	MCX0JFCQ1
Single Channel 32Gbps Fibre Channel Card	Qlogic QLE2740	*1	MC-0JFCK1	MC-0JFCK2	MCX0JFCK1
Dual Channel 32Gbps Fibre Channel Card	Qlogic QLE2742	*1	MC-0JFCL1	Not mountable	MCX0JFCL1
Dual Channel FCoE card (10Gbps)	Broadcom OCe14102	*1 *2	MC-0JCEL1	MC-0JCEL2	MCX0JCEL1
Dual Channel 1000BASE-T Card	Intel i350-T2		MC-0JGEC1	MC-0JGEC2	MCX0JGEC1
Quad Channel 1000BASE-T Card	Intel i350-T4		MC-0JGED1	MC-0JGED2	MCX0JGED1
Dual Channel 10G BASE-T Card	Intel X550-T2		MC-0JXEJ1	MC-0JXEJ2	MCX0JXEJ1
Dual Channel 10G BASE Card	Intel X710-DA2		MC-0JXEK1	MC-0JXEK2	MCX0JXEK1
Dual Channel 10G BASE-T Card	Broadcom OCe14102-NT	*2	MC-0JXEM1	MC-0JXEM2	MCX0JXEM1
Dual Channel 10G BASE Card	Broadcom OCe14102-NX	*2	MC-0JXEN1	MC-0JXEN2	MCX0JXEN1
Dual Channel 25G BASE Card	Intel XXV710-DA2		MC-0JXEH1	Not mountable	MCX0JXEH1
Dual Channel 25G BASE Card	Cavium QL41212		MC-0JFEA1	Not mountable	MCX0JFEA1
Dual Channel 40G BASE Card	Mellanox MCX416A-BCAT		MC-0JFE41	Not mountable	MCX0JFE41
Single Channel 100G BASE Card	Mellanox MCX415A-CCAT		MC-0JFE71	Not mountable	MCX0JFE71
Single Channel 100G BASE Card	Cavium QL45611		MC-0JFEB1	Not mountable	MCX0JFEB1
Single channel 56Gbps Infiniband HCA card			MC-0JHC71	Not mountable	MCX0JHC71
Dual channel 56Gbps Infiniband HCA card			MC-0JHC81	Not mountable	MCX0JHC81
Single channel 100Gbps Infiniband HCA card			MC-0JHC91	Not mountable	MCX0JHC91
Dual channel 100Gbps Infiniband HCA card			MC-0JHCA1	Not mountable	MCX0JHCA1
Single channel 100Gbps Omni Path card			MC-0JOP11	Not mountable	MCX0JOP11
PCIe SSD Card (2TB)	Intel P4600, 3DWPDP		MC-0JSDG1	Not mountable	MCX0JSDG1
PCIe SSD Card (4TB)	Intel P4600, 3DWPDP		MC-0JSDH1	Not mountable	MCX0JSDH1
PCI Box connection card			MC-0JPC21	Not mountable	MCX0JPC21

Notes:

Max. Qty : must satisfy the both limits of partition and system.

Mc / Nc max. M cards can be mounted per partition. / total N cards can be mounted in the system including PCI Boxes.

Pp / Qc the total number of ports of the same kind of cards is allowed up to P ports. / total Q cards can be mounted in the system including PCI Boxes.

\*1) Broadcom Fibre Channel Cards/FCoE (CNA) Cards and Qlogic Fibre Channel Cards CANNOT be used in the same partition.

\*2) Max total ports number of "Broadcom Fibre Channel Cards", "FCoE Cards (10Gbps)" and "LAN cards" per partition is 16 ports.

\*3) Max. number of Dual Channel LAN Card (10G BASE) (X710-DA2) per partition is 8. [Restriction No.2] Max. number for these products per system is 24.

\*4) Two connect cards are mountable per I/O units. Max. four connect cards are mountable to two I/O units as the maximum number of I/O units in a system.

15. OS x Order Number Matrix

\* Restrictions : Please see Restrictions.

- (1) Microsoft® Windows Server® 2012 R2 (Standard/Datacenter)
- (2) Microsoft® Windows Server® 2016 (Standard / Datacenter)
- (3) Microsoft® Windows Server® 2019 (Standard / Datacenter)
- (4) Red Hat® Enterprise Linux®
- (5) SUSE® Linux Enterprise Server
- (6) VMware ESXi
- (7) Oracle® Linux
- (8) Oracle® VM

Product name	Order number			OS							
	Build to Order	BTO for PCI Box	Loose Delivery	Windows (1)	Windows (2)	Windows (3)	RHEL (4)	SLES (5)	VMware (6)	Oracle Linux (7)	Oracle VM (8)
PRIMEQUEST 3400E Base Unit	MC2ZAC111		NA	A	A	A	A	A	A	A	A
System board of 3400E	MC-2HSBA1		MCX2HSBA1	A	A	A	A	A	A	A	A
Memory Scale-up Board	MC-2HMSB1		MCX2HMSB1	NA	NA	NA	A	NA	NA	NA	NA
TPM Module(v2.0)	MC-6HTP31		MCX6HTP31	NA	NA	NA	A	A	A	NA	NA
eLKM Activation License	MC-6KMA21		MCX6KMA21	A	A	A	A	A	A	A	A
Intel Xeon Platinum 8180M Processor (28C/2.5GHz/1.5TB/205W)	MC-2BFA11		MCX2BFA11	A	A	A	A	A	A	A	A
Intel Xeon Platinum 8180 Processor (28C/2.5GHz/768GB/205W)	MC-2BFA21		MCX2BFA21	A	A	A	A	A	A	A	A
Intel Xeon Platinum 8176M Processor (28C/2.1GHz/1.5TB/165W)	MC-2BFB11		MCX2BFB11	A	A	A	A	A	A	A	A
Intel Xeon Platinum 8176 Processor (28C/2.1GHz/768GB/165W)	MC-2BFB21		MCX2BFB21	A	A	A	A	A	A	A	A
Intel Xeon Platinum 8170M Processor (26C/2.1GHz/1.5TB/165W)	MC-2BFC21		MCX2BFC21	A	A	A	A	A	A	A	A
Intel Xeon Platinum 8170 Processor (26C/2.1GHz/768GB/165W)	MC-2BFC11		MCX2BFC11	A	A	A	A	A	A	A	A
Intel Xeon Platinum 8168 Processor (26C/2GHz/768GB/150W)	MC-2BFD11		MCX2BFD11	A	A	A	A	A	A	A	A
Intel Xeon Platinum 8168 Processor (24C/2.7GHz/768GB/205W)	MC-2BFE11		MCX2BFE11	A	A	A	A	A	A	A	A
Intel Xeon Platinum 8160M Processor (24C/2.1GHz/1.5TB/150W)	MC-2BFF11		MCX2BFF11	A	A	A	A	A	A	A	A
Intel Xeon Platinum 8160 Processor (24C/2.1GHz/768GB/150W)	MC-2BFF21		MCX2BFF21	A	A	A	A	A	A	A	A
Intel Xeon Platinum 8153 Processor (16C/2.0GHz/768GB/125W)	MC-2BFG11		MCX2BFG11	A	A	A	A	A	A	A	A
Intel Xeon Platinum 8158 Processor (12C/3.0GHz/768GB/150W)	MC-2BFH11		MCX2BFH11	A	A	A	A	A	A	A	A
Intel Xeon Platinum 8156 Processor (4C/3.6GHz/768GB/105W)	MC-2BFJ11		MCX2BFJ11	A	A	A	A	A	A	A	A
Intel Xeon Gold 6152 Processor (22C/2.1GHz/768GB/140W)	MC-2BGA11		MCX2BGA11	A	A	A	A	A	A	A	A
Intel Xeon Gold 6148 Processor (20C/2.4GHz/768GB/150W)	MC-2BGB11		MCX2BGB11	A	A	A	A	A	A	A	A
Intel Xeon Gold 6138 Processor (20C/2.0GHz/768GB/125W)	MC-2BGC11		MCX2BGC11	A	A	A	A	A	A	A	A
Intel Xeon Gold 6154 Processor (18C/3.0GHz/768GB/200W)	MC-2BGD11		MCX2BGD11	A	A	A	A	A	A	A	A
Intel Xeon Gold 6150 Processor (18C/2.7GHz/768GB/165W)	MC-2BGE21		MCX2BGE21	A	A	A	A	A	A	A	A
Intel Xeon Gold 6140M Processor (18C/2.3GHz/1.5TB/140W)	MC-2BGF11		MCX2BGF11	A	A	A	A	A	A	A	A
Intel Xeon Gold 6140 Processor (18C/2.3GHz/768GB/140W)	MC-2BGF21		MCX2BGF21	A	A	A	A	A	A	A	A
Intel Xeon Gold 6142M Processor (16C/2.6GHz/1.5TB/150W)	MC-2BGG21		MCX2BGG21	A	A	A	A	A	A	A	A
Intel Xeon Gold 6142 Processor (16C/2.6GHz/768GB/150W)	MC-2BGG11		MCX2BGG11	A	A	A	A	A	A	A	A
Intel Xeon Gold 6130 Processor (16C/2.1GHz/768GB/125W)	MC-2BGH11		MCX2BGH11	A	A	A	A	A	A	A	A
Intel Xeon Gold 6132 Processor (16C/2.6GHz/768GB/140W)	MC-2BGJ11		MCX2BGJ11	A	A	A	A	A	A	A	A
Intel Xeon Gold 6146 Processor (12C/3.2GHz/768GB/165W)	MC-2BGK11		MCX2BGK11	A	A	A	A	A	A	A	A
Intel Xeon Gold 6136 Processor (12C/3.0GHz/768GB/150W)	MC-2BGL11		MCX2BGL11	A	A	A	A	A	A	A	A
Intel Xeon Gold 6126 Processor (12C/2.6GHz/768GB/125W)	MC-2BGM11		MCX2BGM11	A	A	A	A	A	A	A	A
Intel Xeon Gold 6144 Processor (8C/3.5GHz/768GB/150W)	MC-2BGN11		MCX2BGN11	A	A	A	A	A	A	A	A
Intel Xeon Gold 6134M Processor (8C/3.2GHz/1.5TB/130W)	MC-2BGP21		MCX2BGP21	A	A	A	A	A	A	A	A
Intel Xeon Gold 6134 Processor (8C/3.2GHz/768GB/130W)	MC-2BGP11		MCX2BGP11	A	A	A	A	A	A	A	A
Intel Xeon Gold 6128 Processor (6C/3.4GHz/768GB/115W)	MC-2BGO11		MCX2BGO11	A	A	A	A	A	A	A	A
16GB Memory (8GB 1Rx4 DDR4 RDIMM x2)	MC-2CD531		MCX2CD531	A	A	A	A	A	A	A	A
32GB Memory (16GB 1Rx4 DDR4 RDIMM x2)	MC-2CD641		MCX2CD641	A	A	A	A	A	A	A	A
32GB Memory (16GB 2Rx4 DDR4 RDIMM x2)	MC-2CD651		MCX2CD651	A	A	A	A	A	A	A	A
64GB Memory (32GB 2Rx4 DDR4 RDIMM x2)	MC-2CD741		MCX2CD741	A	A	A	A	A	A	A	A
128GB Memory (64GB 4Rx4 DDR4 RDIMM 3DS x2)	MC-2CD831		MCX2CD831	A	A	A	A	A	A	A	A
128GB Memory (64GB 4Rx4 DDR4 LRDIMM x2)	MC-2CC821		MCX2CC821	A	A	A	A	A	A	A	A
256GB Memory (128GB 8Rx4 DDR4 RDIMM 3DS x2)	MC-2CD921		MCX2CD921	A	A	A	A	A	A	A	A
Disk Unit for SAS (SAS3.0)	MC-SHDU71		MCXSHDU71	A	A	A	A	A	A	A	A
Disk Unit for Disk/MMB Unit (DLU_M)	MC-SHDU51		MCXSHDU51	A	A	A	A	A	A	A	A
Disk Unit for PCIe SFF (DLU_PCIEA)	MC-SHDU61		MCXSHDU61	A	A	A	A	A	A	A	A
300GB Hard Disk Drive (512n/12Gbps/15,000rpm)	MC-SDS771		MCXSDS771	A	A	A	A	A	A	A	A
600GB Hard Disk Drive (512n/12Gbps/15,000rpm)	MC-SDS961		MCXSDS961	A	A	A	A	A	A	A	A
900GB Hard Disk Drive (512n/12Gbps/15,000rpm)	MC-SDSA51		MCXSDSA51	A	A	A	A	A	A	A	A
300GB Hard Disk Drive (512n/12Gbps/10,000rpm)	MC-SDS781		MCXSDS781	A	A	A	A	A	A	A	A
600GB Hard Disk Drive (512n/12Gbps/10,000rpm)	MC-SDS971		MCXSDS971	A	A	A	A	A	A	A	A
900GB Hard Disk Drive (512n/12Gbps/10,000rpm)	MC-SDSA61		MCXSDSA61	A	A	A	A	A	A	A	A
1.2TB Hard Disk Drive (512n/12Gbps/10,000rpm)	MC-SDSB41		MCXSDSB41	A	A	A	A	A	A	A	A
1.8TB Hard Disk Drive (512n/12Gbps/10,000rpm)	MC-SDSC21		MCXSDSC21	A	A	A	A	A	A	A	A
2.4TB Hard Disk Drive (512n/12Gbps/10,000rpm)	MC-SDSD11		MCXSDSD11	A	A	A	A	A	A	A	A
400GB Solid State Drive (512n/12Gbps/100WPD)	MC-SDK71		MCXSDK71	A	A	A	A	A	A	A	A
800GB Solid State Drive (512n/12Gbps/100WPD)	MC-SDK951		MCXSDK951	A	A	A	A	A	A	A	A
1.6TB Solid State Drive (512n/12Gbps/100WPD)	MC-SDKA51		MCXSDKA51	A	A	A	A	A	A	A	A
400GB Solid State Drive(512n/12Gbps/100WPD)	MC-SDG821		MCXSDG821	A	A	A	A	A	A	A	A
800GB Solid State Drive(512n/12Gbps/100WPD)	MC-SDG921		MCXSDG921	A	A	A	A	A	A	A	A
1.6TB Solid State Drive(512n/12Gbps/100WPD)	MC-SDGA21		MCXSDGA21	A	A	A	A	A	A	A	A
400GB Solid State Drive (512n/12Gbps/3WPD)	MC-SDH821		MCXSDH821	A	A	A	A	A	A	A	A
800GB Solid State Drive (512n/12Gbps/3WPD)	MC-SDH921		MCXSDH921	A	A	A	A	A	A	A	A
1.6TB Solid State Drive (512n/12Gbps/3WPD)	MC-SDHA21		MCXSDHA21	A	A	A	A	A	A	A	A
3.2TB Solid State Drive (512n/12Gbps/3WPD)	MC-SDHB21		MC-SDHB21	A	A	A	A	A	A	A	A
6.4TB Solid State Drive (512n/12Gbps/3WPD)	MC-SDSD11		MCXSDSD11	A	A	A	A	A	A	A	A
1.6TB Solid State Drive (SFF/3DWDPD)	MC-SDKD21		MCXSDKD21	A	A	A	P	15	6.7U2	7.6	NA
3.2TB Solid State Drive (SFF/3DWDPD)	MC-SDKE21		MCXSDKE21	A	A	A	P	15	6.7U2	7.6	NA
6.4TB Solid State Drive (SFF/3DWDPD)	MC-SDKF21		MCXSDKF21	A	A	A	P	15	6.7U2	7.6	NA
M.2 Flash Device (Vmmware, 240GB)	MC-SFB741		MCXSF741						6.5U1 6.5U2 6.5U3	NA	NA
M.2 Flash Device (240GB)	MC-SFB771		MCXSF771						6.7 6.7U1 6.7U2 6.7U3	NA	NA
M.2 Flash Device (480GB)	MC-SFB751		MCXSF751					7.3 7.4 7.5 7.6	12SP2 12SP3 12SP4 15 15SP1	NA	NA
USB Flash Device 64GB Dual	MC-SFA411		MCXSF411						6.5U1 6.5U2 6.5U3 6.7 6.7U1 6.7U2 6.7U3	NA	NA

A : Available  
NA : Not Available  
P : planned

\* special release

\* End of sale in May 2019.

\* End of sale in May 2019.

\* End of sale in May 2019.

## OS x Order Number Matrix

\* Restrictions : Please see Restrictions.

- (1) Microsoft® Windows Server® 2012 R2 (Standard/Datacenter)
- (2) Microsoft® Windows Server® 2016 (Standard / Datacenter)
- (3) Microsoft® Windows Server® 2019 (Standard / Datacenter)
- (4) Red Hat® Enterprise Linux®
- (5) SUSE® Linux Enterprise Server
- (6) VMware ESXi
- (7) Oracle® Linux
- (8) Oracle® VM

Product name	Order number			OS							
	Build to Order	BTO for PCI Box	Loose Delivery	Win2012 R2 (1)	Win2016 (2)	Win2019 (3)	RHEL (4)	SLES (5)	VMware (6)	Oracle Linux (7)	Oracle VM (8)
I/O Unit E	MC-5HUX61		MC53HUX61	A	A	A	A	A	A	A	A
SAS RAID controller card (4GB Cache) (EP540i)	MC-0JSR71		MCX0JSR71	A	A	A	7.3 7.4 7.5 8	12SP2 12SP3 12SP4 15	6.5U1 6.5U2 6.7 6.7U1 6.7U2 6.7U3	7.5 7.6 7.7	3.4.5 3.4.6
SAS RAID controller card (8GB Cache) (EP580i)	MC-0JSR81		MCX0JSR81	A	A	A	7.3 7.4 7.5 8	12SP2 12SP3 12SP4 15	6.5U1 6.5U2 6.7 6.7U1 6.7U2 6.7U3	7.5 7.6	3.4.5 3.4.6
SAS RAID controller card (2GB Cache) (EP420i)	MC-0JSRA1		MCX0JSRA1	A	A	A	7.3 7.4 7.5 7.6 7.7 8 8.1	12SP2 12SP3 12SP4 12SP5 15 15SP1	6.5U1 6.5U2 6.5U3 6.7 6.7U1 6.7U2 6.7U3	7.4 7.5 7.6 7.7	3.4.4 3.4.5 3.4.6
SAS RAID controller card (4GB Cache) (EP540e)	MC-0JSRC1	MC-0JSRC2	MCX0JSRC1	A	A	A	P	15	6.7U2 6.7U3	NA	NA
Flash Back-up Unit for EP420i	MC-0JFB61		MCX0JFB61	-	-	-	-	-	-	-	-
Flash Back-up Unit for EP5x0i	MC-0JFB41		MCX0JFB41	-	-	-	-	-	-	-	-
Flash Back-up Unit for EP540e	MC-0JFB81		MCX0JFB81	-	-	-	-	-	-	-	-
RAID Advanced Software Options	MC-0KLA51		MCX0KLA51	-	-	-	-	-	-	-	-
Dual channel 12Gbps SAS RAID controller card	MC-0JSRB1	MC-0JSRB2	MCX0JSRB1	A	A	A	7.3 7.4 7.5 7.6 7.7 8 8.1	12SP2 12SP3 12SP4 12SP5 15 15SP1	6.5U1 6.5U2 6.5U3 6.7 6.7U1 6.7U2 6.7U3	7.4 7.5 7.6 7.7	3.4.4 3.4.5
FBU for Ext. SAS RAID Card	MC-0JFB51		MCX0JFB51	-	-	-	-	-	-	-	-
FBU Mount Kit for IOUE	MC-0HCK51		MCX0HCK51	-	-	-	-	-	-	-	-
Flash Backup Unit kit E EP540e	MC-0HCKB1		MCX0HCKB1	-	-	-	-	-	-	-	-
Dual channel 12Gbps SAS Card	MC-0JSS41	MC-0JSS42	MCX0JSS41	A	A	P	7.3 7.4 7.5 7.6 7.7 8 8.1	12SP2 12SP3 12SP4 12SP5 15 15SP1	6.5U1 6.5U2 6.5U3 6.7 6.7U1 6.7U2 6.7U3	7.4 7.5 7.6 7.7	3.4.4 3.4.5 3.4.6
Single Channel 16Gbps Fibre Channel Card	MC-0JFCF1	MC-0JFCF2	MCX0JFCF1	A	A	A	7.3 7.4 7.5 7.6 7.7 8	12SP2 12SP3 12SP4 15 15SP1	6.5U1 6.5U2 6.5U3 6.7 6.7U1 6.7U2 6.7U3	7.4 7.5	3.4.4 3.4.5 3.4.6
Dual Channel 16Gbps Fibre Channel Card	MC-0JFCG1	MC-0JFCG2	MCX0JFCG1	A	A	A	7.3 7.4 7.5 7.6 7.7 8	12SP2 12SP3 12SP4 15 15SP1	6.5U1 6.5U2 6.5U3 6.7 6.7U1 6.7U2 6.7U3	7.4 7.5	3.4.4 3.4.5 3.4.6
Single Channel 32Gbps Fibre Channel Card	MC-0JFCM1	MC-0JFCM2	MCX0JFCM1	A	A	A	7.3 7.4 7.5 7.6 7.7 8	12SP2 12SP3 12SP4 15 15SP1	6.5U1 6.5U2 6.5U3 6.7 6.7U1 6.7U2 6.7U3	7.4 7.5	3.4.4 3.4.5 3.4.6
Dual Channel 32Gbps Fibre Channel Card	MC-0JFCN1	MC-0JFCN2	MCX0JFCN1	A	A	A	7.3 7.4 7.5 7.6 7.7 8	12SP2 12SP3 12SP4 15 15SP1	6.5U1 6.5U2 6.5U3 6.7 6.7U1 6.7U2 6.7U3	7.4 7.5	3.4.4 3.4.5 3.4.6
Single Channel 16Gbps Fibre Channel Card	MC-0JFCP1	MC-0JFCP2	MCX0JFCP1	A	A	A	7.3 7.4 7.5 7.6 8	12SP3 15SP1	6.5U1 6.5U2 6.5U3 6.7 6.7U1 6.7U2 6.7U3	7.4 7.5 7.7	3.4.4 3.4.5 3.4.6
Dual Channel 16Gbps Fibre Channel Card	MC-0JFCQ1	MC-0JFCQ2	MCX0JFCQ1	A	A	A	7.3 7.4 7.5 7.6 8	12SP3 15SP1	6.5U1 6.5U2 6.5U3 6.7 6.7U1 6.7U2 6.7U3	7.4 7.5 7.7	3.4.4 3.4.5 3.4.6

\* Restrictions No.15.

\* Restrictions No.15.

Broadcom LPe31000 \* Restrictions No.14.

Broadcom LPe31002 \* Restrictions No.14.

Broadcom LPe32000 \* Restrictions No.14.

Broadcom LPe32002 \* Restrictions No.14.

Qlogic QLE2690

Qlogic QLE2692



## OS x Order Number Matrix

\* Restrictions : Please see Restrictions.

- (1) Microsoft® Windows Server® 2012 R2 (Standard/Datacenter)
- (2) Microsoft® Windows Server® 2016 (Standard / Datacenter)
- (3) Microsoft® Windows Server® 2019 (Standard / Datacenter)
- (4) Red Hat® Enterprise Linux®
- (5) SUSE® Linux Enterprise Server
- (6) VMware ESXi
- (7) Oracle® Linux
- (8) Oracle® VM

Product name	Order number			OS								
	Build to Order	BTO for PCI Box	Loose Delivery	Win2012 R2 (1)	Win2016 (2)	Win2019 (3)	RHEL (4)	SLES (5)	VMware (6)	Oracle Linux (7)	Oracle VM (8)	
Single Channel 32Gbps Fibre Channel Card	MC-0JFCK1	MC-0JFCK2	MCX0JFCK1	A	A	A	7.3 7.4 7.5 7.6 8	12SP3 15SP1	6.5U1 6.5U2 6.5U3 6.7 6.7U1 6.7U2 6.7U3	7.4 7.5 7.7	3.4.4 3.4.5 3.4.6	* Qlogic QLE2740
Dual Channel 32Gbps Fibre Channel Card	MC-0JFCL1		MCX0JFCL1	A	A	A	7.3 7.4 7.5 7.6 8	12SP3 15SP1	6.5U1 6.5U2 6.5U3 6.7 6.7U1 6.7U2 6.7U3	7.4 7.5 7.7	3.4.4 3.4.5 3.4.6	* Qlogic QLE2742
Dual Channel LAN Card (1000BASE-T)	MC-0JGEC1	MC-0JGEC2	MCX0JGEC1	A	A	A	7.3 7.4 7.5 7.6 7.7 8 8.1	12SP2 12SP3 12SP4 12SP5 15 15SP1	6.5U1 6.5U2 6.5U3 6.7 6.7U1 6.7U2 6.7U3	7.4 7.5 7.6	3.4.4 3.4.5 3.4.6	* Intel I350-T2
Quad Channel LAN Card (1000BASE-T)	MC-0JGED1	MC-0JGED2	MCX0JGED1	A	A	A	7.3 7.4 7.5 7.6 7.7 8 8.1	12SP2 12SP3 12SP4 12SP5 15 15SP1	6.5U1 6.5U2 6.5U3 6.7 6.7U1 6.7U2 6.7U3	7.4 7.5 7.6	3.4.4 3.4.5 3.4.6	* Intel I350-T4
Dual Channel LAN Card (10G BASE-T)	MC-0JXEJ1	MC-0JXEJ2	MCX0JXEJ1	A	A	A	7.3 7.4 7.6 7.7 8 8.1	12SP2 12SP3 12SP4 15 15SP1	6.5U1 6.5U2 6.5U3 6.7 6.7U1 6.7U2 6.7U3	7.4 7.5 7.7	3.4.4 3.4.5 3.4.6	* Intel X550-T2
Dual Channel LAN Card (10G BASE-T)	MC-0JXF21	MC-0JXF22	MCX0JXF21	A	A	P	7.4 7.5	12SP3 15	6.5U2 6.7U1	NA	NA	* QL41112
Dual Channel LAN Card (10G BASE-T)	MC-0JXF41	MC-0JXF42	MCX0JXF41	A	A	P	7.4 7.5	12SP3 15	6.5U2 6.7U1	NA	NA	* QL41132
Quad Channel LAN Card (10G BASE-T)	MC-0JXF11		MCX0JXF11	A	A	A	7.6 7.7 8 8.1	12SP4 15 15SP1	6.5U3 6.7U2 6.7U3	NA	NA	* Intel X710-T4
Dual Channel LAN Card (10G BASE)	MC-0JXEK1	MC-0JXEK2	MCX0JXEK1	A	A	A	7.3 7.4 7.6 7.7 8 8.1	12SP2 12SP3 12SP4 15 15SP1	6.5U1 6.5U2 6.5U3 6.7 6.7U1 6.7U2 6.7U3	7.4 7.5 7.6 7.7	3.4.4 3.4.5 3.4.6	* Intel X710-DA2
SFP+ Module Multi Mode Fiber 10GbE LC	MC-0JXEL1		MCX0JXEL1	-	-	-	-	-	-	-	-	
Dual Channel LAN Card (10G BASE-T)	MC-0JXEM1	MC-0JXEM2	MCX0JXEM1	A	A	A	7.3 7.4 7.5 7.6	12SP2 12SP3 12SP4 15	6.5U1 6.5U2 6.5U3 6.7 6.7U1 6.7U2 6.7U3	7.4 7.5	3.4.4 3.4.5 3.4.6	* Broadcom OCe14102-NT
Dual Channel LAN Card (10G BASE)	MC-0JXEN1	MC-0JXEN2	MCX0JXEN1	A	A	A	7.3 7.4 7.5 7.6	12SP2 12SP3 12SP4 15	6.5U1 6.5U2 6.5U3 6.7 6.7U1 6.7U2 6.7U3	7.4 7.5	3.4.4 3.4.5 3.4.6	* Broadcom OCe14102-NX
SFP+ MMF Module for OCe14102	MC-0JCEK1		MCX0JCEK1	-	-	-	-	-	-	-	-	
Dual Channel LAN Card (25G BASE)	MC-0JFE11		MCX0JFE11	A	A	A	7.3 7.4 7.5 7.6	12SP2 12SP3 15	6.5U1 6.5U2 6.5U3 6.7U1 6.7U2 6.7U3	NA	NA	* Mellanox MCX4121A-ACAT * Restrictions No.19
SFP28 25G SR LC 850nm 100m	MC-0JFE21		MCX0JFE21	-	-	-	-	-	-	-	-	
Dual Channel LAN Card (25G BASE)	MC-0JXEH1		MCX0JXEH1	A	A	A	7.4 7.6 7.7 8 8.1	12SP3 12SP4 15 15SP1	6.5U2 6.5U3 6.7U1 6.7U2 6.7U3	NA	NA	* Intel XXV710-DA2 * Restrictions No.17.
Dual Channel LAN Card (25G BASE)	MC-0JFEA1		MCX0JFEA1	A	A	P	7.3 7.4 7.5	12SP2 12SP3 15	6.5U2 6.7 6.7U1	NA	NA	* Cavium QL41212 * Restrictions No.18.

## OS x Order Number Matrix

\* Restrictions : Please see Restrictions.

- (1) Microsoft® Windows Server® 2012 R2 (Standard/Datacenter)
- (2) Microsoft® Windows Server® 2016 (Standard / Datacenter)
- (3) Microsoft® Windows Server® 2019 (Standard / Datacenter)
- (4) Red Hat® Enterprise Linux®
- (5) SUSE® Linux Enterprise Server
- (6) VMware ESXi
- (7) Oracle® Linux
- (8) Oracle® VM

Product name	Order number			OS								
	Build to Order	BTO for PCI Box	Loose Delivery	Win2012 R2 (1)	Win2016 (2)	Win2019 (3)	RHEL (4)	SLES (5)	VMware (6)	Oracle Linux (7)	Oracle VM (8)	
SFP28 Module Multi Mode Fiber 25GbE LLC	MC-0JCEJ1		MCX0JCEJ1	-	-	-	-	-	-	-	-	
Dual Channel LAN Card (40G BASE)	MC-0JFE41		MCX0JFE41	A	A	A	7.3 7.4 7.5 7.6	12SP2 12SP3 15	6.5U1 6.5U2 6.5U3 6.7U1 6.7U2 6.7U3	NA	NA	* Mellanox MCX416A-BCAT * Restrictions No.20
QSFP 40G SR4 MPO 850nm 150m	MC-0JFEC1		MCX0JFEC1	-	-	-	-	-	-	-	-	
Single Channel LAN Card (100G BASE)	MC-0JFE71		MCX0JFE71	A	A	A	7.3 7.4 7.5 7.6	12SP2 12SP3 15	6.5U1 6.5U2 6.5U3 6.7U1 6.7U2 6.7U3	NA	NA	* Mellanox MCX415A-CCAT * Restrictions No.21
Single Channel LAN Card (100G BASE)	MC-0JFEB1		MCX0JFEB1	A	A	P	7.3 7.4 7.5	12SP2 12SP3 15	6.5U2 6.7 6.7U1	NA	NA	* Cavium QL45611 * Restrictions No.18.
QSFP28 100G SR4 MPO 850nm 100m	MC-0JFE81		MCX0JFE81	-	-	-	-	-	-	-	-	
QSFP28 100G PSM4 1310nm 500m	MC-0JFE91		MCX0JFE91	-	-	-	-	-	-	-	-	
Dual Channel FCoE card (10Gbps)	MC-0JCEL1	MC-0JCEL2	MCX0JCEL1	A	A	P	7.3 7.4 7.5 7.6	12SP2 12SP3 12SP4 15	6.5U1 6.5U2 6.5U3 6.7 6.7U1 6.7U2 6.7U3	7.4 7.5	3.4.4 3.4.5 3.4.6	* Broadcom OCe14102
Single channel 56Gbps Infiniband HCA card	MC-0JHC71		MCX0JHC71	A	A	P	7.3 7.4 7.5 7.6	12SP2 12SP3 12SP4	NA	NA	NA	
Dual channel 56Gbps Infiniband HCA card	MC-0JHC81		MCX0JHC81	A	A	P	7.3 7.4 7.5 7.6	12SP2 12SP3 12SP4	NA	NA	NA	
Single channel 100Gbps Infiniband HCA card	MC-0JHC91		MCX0JHC91	P	P	P	7.3 7.4 7.5 7.6	12SP2 12SP3 12SP4	NA	NA	NA	
Dual channel 100Gbps Infiniband HCA card	MC-0JHCA1		MCX0JHCA1	P	P	P	7.3 7.4 7.5 7.6	12SP2 12SP3 12SP4	NA	NA	NA	
Single Channel IB HCA Card (100Gbps)	MC-0JHCB1		MCX0JHCB1	P	P	P	7.6 8	12SP3 12SP4 15 15SP1	P	P	P	
Single channel 100Gbps Omni Path card	MC-0JOP11		MCX0JOP11	NA	NA	NA	7.3 7.4 7.5 7.6	12SP2 12SP3 12SP4 15	NA	NA	NA	* Restrictions No.8
PCI Box connection card	MC-0JPC21		MCX0JPC21	A	A	A	A	A	A	A	A	
Management Board	MC-5HMM31		MCX5HMM31	A	A	A	A	A	A	A	A	
200V normal PSU	MC-5HPS71		MCX5HPS71	-	-	-	-	-	-	-	-	
200V normal PSU for Disk/MMB Unit	MC-5HPS91		MCX5HPS91	-	-	-	-	-	-	-	-	
IEC AC(200V) Cable (1m)	MC-0HCB11		MCX0HCB11	-	-	-	-	-	-	-	-	
IEC AC(200V) Cable (3m)	MC-0HCB13		MCX0HCB13	-	-	-	-	-	-	-	-	
PCI Box	MC-0HPB32		MCX0HPB32	A	A	A	A	A	A	A	A	
PSU for PCI Box	MC-0HPS51		MCX0HPS51	-	-	-	-	-	-	-	-	
IEC AC(200V) Cable (1m) for PCI Box and Disk/MMB Unit	MC-0HCB11		MCX0HCB11	-	-	-	-	-	-	-	-	
IEC AC(200V) Cable (3m) for PCI Box and Disk/MMB Unit	MC-0HCB13		MCX0HCB13	-	-	-	-	-	-	-	-	
Advanced Thermal Design Option	MC-0PTH2		-	-	-	-	-	-	-	-	-	

## 16. Restrictions

The followin functions are restricted as of August 2019.

No.		
1		Infiniband HCA(56Gbps) [MC-0JHC71/MCX0JHC71/MC-0JHC81/MCX0JHC81] and Infiniband HCA(100Gbps) [MC-0JHC91/MCX0JHC91/MC-0JHCA1/MCX0JHCA1] can not be mixed.
2		Max. number of Dual Channel LAN Card (10G BASE) (X710-DA2) [MC-0JXEK2/MCX0JXEK1] per partition is 8.
3	released	When installing VMware ESXi 6.5, install a network device other than the Intel X550 LAN device [MC-0JXEJ2/MCX0JXEJ1/Onboard LAN]. This restriction was released on VMware ESXi 6.5u2.
4	released	Dynamic Reconfiguration of System Board is not supported.
5	released	Infiniband HCA(100Gbps) [MC-0JHC91/MCX0JHC91/MC-0JHCA1/MCX0JHCA1] can not be used.
6	released	SAS RAID controller card (4GB Cache) (EP540i) [MC-0JSR71/MCX0JSR71] can not be used.
7	released	TPM function is not supported on Windows Server.
8	released	100Gbps Omni Path card [MC-0JOP11/MCX0JOP11] can not be used.
9	released	Dual Channel LAN Card (10G BASE-T) (X550-T2) [MC-0JXEJ2/MCX0JXEJ1] can not be used in the PCI Box.
10	released	Dual Channel LAN Card (10G BASE) (X710-DA2) [MC-0JXEK2/MCX0JXEK1] can not be used in the PCI Box.
11		When adding an IOU with PCI Box by Dynamic Reconfiguration, do not install the following PCI cards in the PCI Box. These cards may not be recognized after OS reboot. MC*0JFCF* : Single Port Fibre Channel Card (16Gbps) Emulex MC*0JFCG* : Dual Port Fibre Channel Card (16Gbps) Emulex MC*0JFCM* : Single Port Fibre Channel Card (32Gbps) Emulex MC*0JFCN* : Dual Port Fibre Channel Card (32Gbps) Emulex
12	released	HTML5 can not be used in Video Redirection function.
13		Can not boot with OCE14102-NX/UX[MC-0JXEN1/M-0JXEN2/MC0JXEN1] and old firmware(before 10.2) in legacy mode.
14	released	Emulex Fiber Channel Card [MC-0JFC**] can not be used in OL7.4/OVM3.4. This restricion was released with firmware 11.2.210.13 or later.
15	released	SAS RAID controller card (4GB/8GB Cache) (EP540i/EP580i) [MC*0JSR71/MC*0JSR81] can not be used in OL7.4/OVM3.4.
16	released	Emulex and Mellanox PCI card can not be used in VMware ESXi6.7.
17		Dual Channel LAN Card (25G BASE) (XXV710-DA2) [MC-0JXEH1/MCX0JXEH1] cannot be used in Legacy mode.
18		Dual Channel LAN Card (25G BASE) (QL41212) [MC-0JFEA1/MCX0JFEA1] and Single Channel LAN Card (100G BASE) (QL45611) [MC-0JFEB1/MCX0JFEB1] can not be mixed in Windows.
19		Dual Channel LAN Card (25G BASE) (MCX4121A-ACAT) [MC-0JFE11/MCX0JFE11] cannot be mixed with Mellanox Infiniband HCA card (56Gbps, 100Gbps) [MC-0JHC*] or Omni Path card (100Gbps) [MC-0JOP11] in a partition.
20		Dual Channel LAN Card (40G BASE) (MCX416A-BCAT) [MC-0JFE41/MCX0JFE41] cannot be mixed with Mellanox Infiniband HCA card (56Gbps, 100Gbps) [MC-0JHC*] or Omni Path card (100Gbps) [MC-0JOP11] in a partition.
21		Single Channel LAN Card (100G BASE) (MCX415A-CCAT) [MC-0JFE71/MCX0JFE71] cannot be mixed with Mellanox Infiniband HCA card (56Gbps, 100Gbps) [MC-0JHC*] or Omni Path card (100Gbps) [MC-0JOP11] in a partition.
22		When mixed with X710-DAX and XXV710-DAX, please update the LAN card firmware (NVM) to latest (6.01 or later).
23		QLogic FC ( QLE2690, QLE2692, QLE2740, QLE2742) [MC-0JFCP1, MC-0JFCQ1, MC-0JFCK1, MC-0JFCL1] is supported with a total of up to 16 ports.
24		EP420i [MC-0JSRA1] and EP540i/580i [MC-0JSR71, MC-0JSR81] are not allowed to be populated together in the system.

Last updated: Jun. 10th, 2020

## Change Report

Date	Order number	Changes
Nov. 8th, 2017		1st Release
Jul. 31st, 2018	MC-0PMM5/MC-0PMM6/MC-0PMM7  MC-2HMSB1	Deleted. Because order code for memory mode is exclusive to PQ3800B, it is not necessary for other models.  MSB is available on RHEL only. (OS x Order Number Matrix)  Restriction No. 5,6,7,9 and 10 are released. Restriction No. 12,13,14,15,16 are added. Power Cords for PSU_M (EMEIA & India) is added. Component No. is added at overview. Correction of mistakes.
Nov. 30th, 2018	MC-5FA411/MCX5FA411 MC-0JSR81/MCX0JSR81 MC-0JXEH1/MCX0JXEH1 MC-0JFEA1/MCX0JFEA1 MC-0JCEJ1/MCX0JCEJ1 MC-0JFE71/MCX0JFE71 MC-0JFEB1/MCX0JFEB1 MC-0JFE81/MCX0JFE81/ MC-0JFE91/MCX0JFE91	USB Flash Device 64GB Dual is added. RAID Controller Card (EP580i) is added. Dual Channel LAN Card (25G BASE) (Intel XXV710-DA2) is added. Dual Channel LAN Card (25G BASE) (Cavium QL41212) is added. 25G BASE SFP28 module is added. Single Channel LAN Card (100G BASE) (Mellanox MCX415A-CCAT) is added. Single Channel LAN Card (100G BASE) (Cavium QL45611) is added. 100G BASE QSFP28 modules are added.  Restriction No. 3, 4, 12 and 15 are released. Restriction No. 17, 18, 19, 20, 21, 22, 23 and 24 are added. Correction of mistakes.
Feb. 20th, 2019	MC*5DG821/MC*5DG921/MC*5DGA21	add 400G/800G/1.6TB Solid State Drive (10DWPD) update support OS in "OS x Order number matrix"
Aug. 30th, 2019	MC*5FB741/MC*5FB751 MC*6KMA21 MC*5DSD11 MC*5DH821/5DH921/5DHA21/5DHB21/ 5DKG21	M.2 240GB eLCM 2.4TB HDD 3DWPD SAS SSD successor, 400GB/800GB/1.6TB/3.2TB/6.4TB.
Jun.10th,2020	MC*5HDU61 MC*5DKD21/MC*5DKE21/ MC*5DKF21 MC*0XJF21 MC*0JXF11 MC*0JXF41  MC-0JHCB1/MCX0JHCB1 MC-0JSRC1/MCX0JSRC1 MC-0JFB81/MCX0JFB81 MC-0HCKB1/MCX0HCKB1	Disk Unit for PCIe SFF  PCIe-SSD SFF 3DWPD,1.6TB/3.2TB/6.4TB  add Dual port 10GBASE-T LAN (QL41112) add Quad port 1000BASE-T LAN (X710-T4) add Dual port 10GBASE LAN (QL41132) Restrictions: Release: No. 8 and 16. Added: No. 23 and 24.  add IB HCA 100Gb 1 port HDR100 Dual Channel SAS RAID Controller Card (12Gbps)(4GBcash) Flash Back-up Unit for EP5x0i Flash Backup Unit kit E EP540e