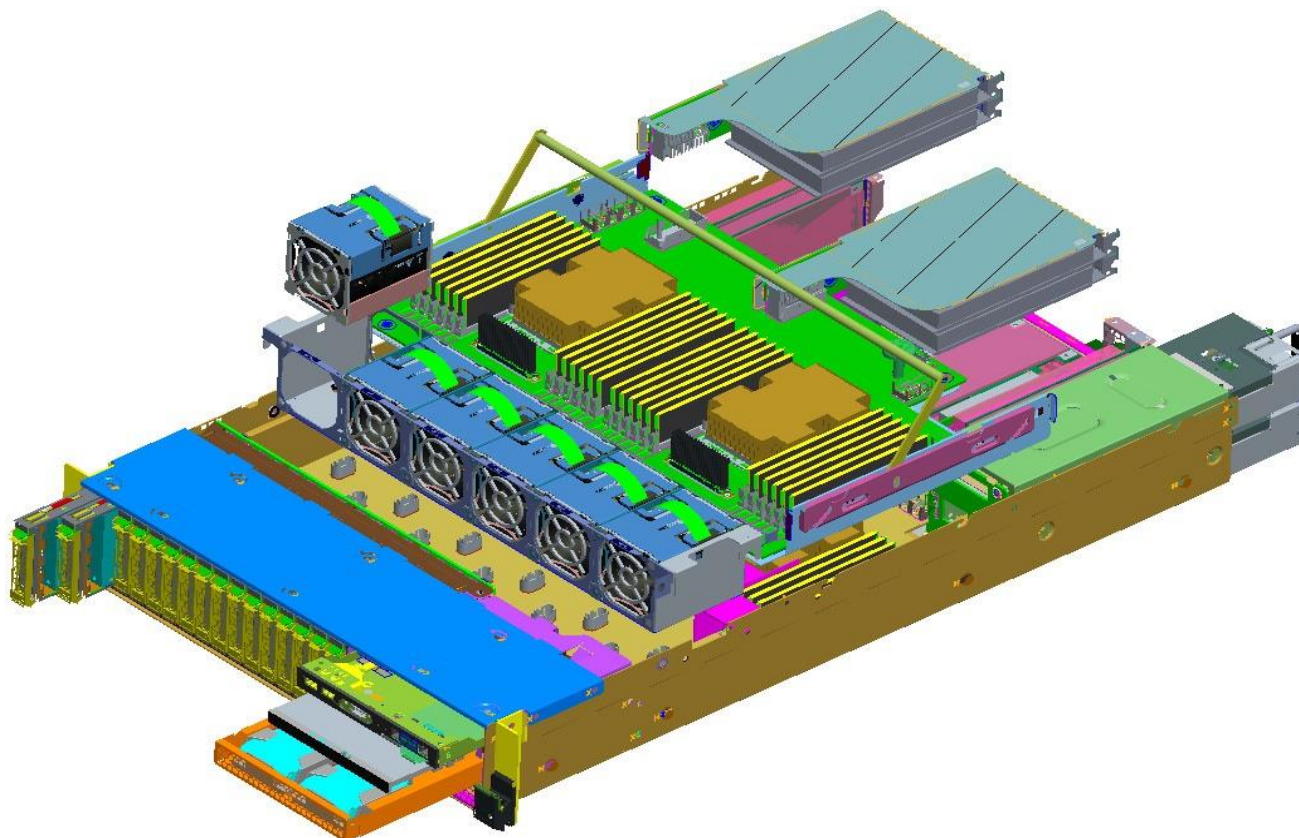
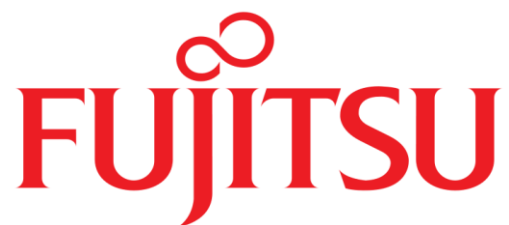


## PRIMERGY RX4770 M4 4-way / 2U Rack Server



Chapter	Folder	Content
1	Base	Base Unit
2	Rack	Rack Architecture
3	CPU	CPU
4	RAM	DDR4 System memory
5	RAID	SAS / RAID Controller
6	ODD	Optical Disk Drives
7	HDD	Hard Disk Drives
8	SSD	Solid State Drives
9	LAN	LAN Components
10	FC	Fibre Channel Controller
11	IB	Infiniband Controllers
12	OMNI	OMNI Path Controllers
13	PSU	Power supply unit, power cable
14	USB	iRMC, eLCM, Cool-safe, TPM, Region Kits
15	Others	Accessories



## Instructions

This document contains basic product and configuration information that supports you in more complicated configurations. In any case we recommend to use the PC-/SystemArchitect to make sure, that you configure a valid system.

This System configurator is divided into several chapters. They are identical to the current price list and PC-/SystemArchitect.

Please follow this document step by step from the top to the bottom.

### Chapter xx - description of chapter

Text fields with grey color offer extra information for related topics (e.g prerequisites, technical back ground, configuration rules, limitations, ...)

<b>S26361-F4610-E2</b>
<b>S26361-F4610-L3</b>
PLAN 2x1Gb Ethern. Controller
i350-T2 chip (based on Intel Powerville) offers 2x1Gb RJ45 connectors
PCIe Gen2 x4 full height card
max. 6x per system

<-- order code E-part (bold) --

<-- order code L-part (bold)

<-- "name" of this part

<--description of this part, in same cases as well description of content

<--requires a free PCIe slot --> means total amount of PCIe slots reduced

<--indicates how often this part can be configured in the related Server

#### For further information see:

Link to datasheet:

[http:// xxx](http://xxx)

[http://ts.fujitsu.com/products/standard\\_servers/index.html](http://ts.fujitsu.com/products/standard_servers/index.html)

(internet)

[https://partners.ts.fujitsu.com/com/order-supply/configurators/primergy\\_config/Pages/default.aspx](https://partners.ts.fujitsu.com/com/order-supply/configurators/primergy_config/Pages/default.aspx)

(extranet)

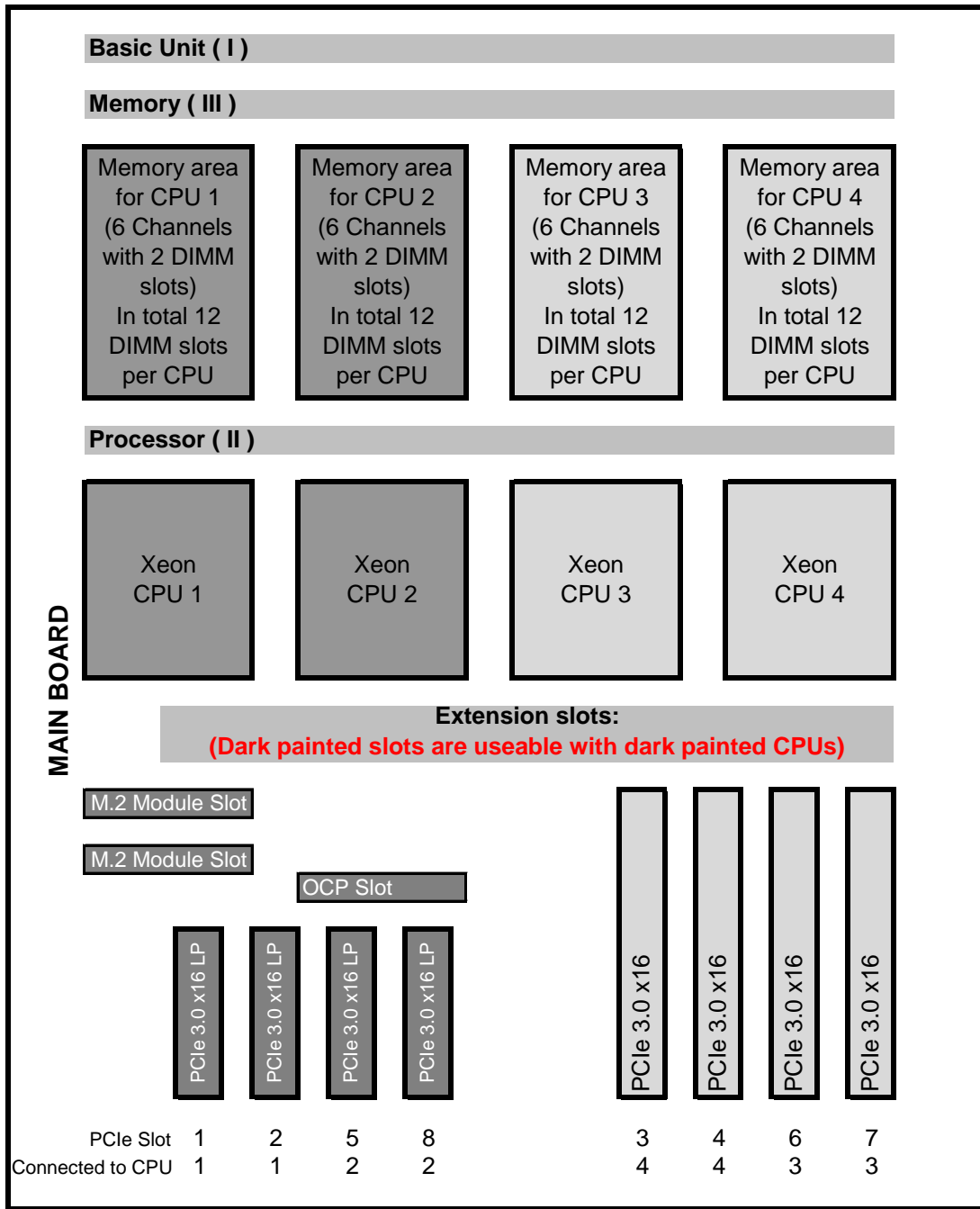
Fujitsu is providing the content of this document with very high accuracy. In case you identify a mistake, we would kindly encourage you to inform us. We kindly ask for understanding, that errors still may occur and that Fujitsu may change this document without notice



# Abbreviations

SAS	Drives, RAID	Serial attached SCSI Device (HDD, SSD, LTO drives); SAS2.0 = 6GBit/s; SAS3.0 = 12GBit/s
SATA	Drives, RAID	Serial ATA (HDD, SSD) current SATA speed = 6GBit/s
HDD	Drives	Hard disk drive (Non volatile storage device), 2.5" (SFF) or 3.5" (LFF)
SSD	Drives	Solid state disk (Non volatile storage device), 2.5" (SFF)
SFF	Drives	small form factor (=2.5")
CPU	Processor	central processing unit ("processor")
RAID	Drives, RAID	RAID 0 = max speed, RAID 1 = mirroring, RAID 5 = 1 out of x drives is spare
Spaces	OS	Microsoft spaces, optimized in Win2012 R2 offers software RAID and storage tiering
vSAN	OS	
storage tiering	RAID	offers optimized storage allocation (fast area for "hot data"; slower area for "cold data")
hot data	Drives	Data which are currently being processed
cold data	Drives	Data which are currently not processed (only stored)
ODD	Drives	optical disk drive (i.e. DVD-player, DVD-burner, Blu ray player, blu ray burner)
OS	operating system	OS=operating system - required for running, organize and administrating the server
E-Part	"Einbau-Part"	"e.g. S26361-F1234- <u>E</u> 240" ordercode with "E" means it is either integrated into to Server (CPU, Mem, ..) or integrated in the shipping box /Keyboard, Mouse, ..)
L-Part	"Lose Lieferung-Part"	"e.g. S26361-F1234- <u>L</u> 240" ordercode with "L" means, the part is an upgrade component and will be shipped with extra package, may be as well with extra shipment

Configuration diagram PRIMERGY RX4770 M4



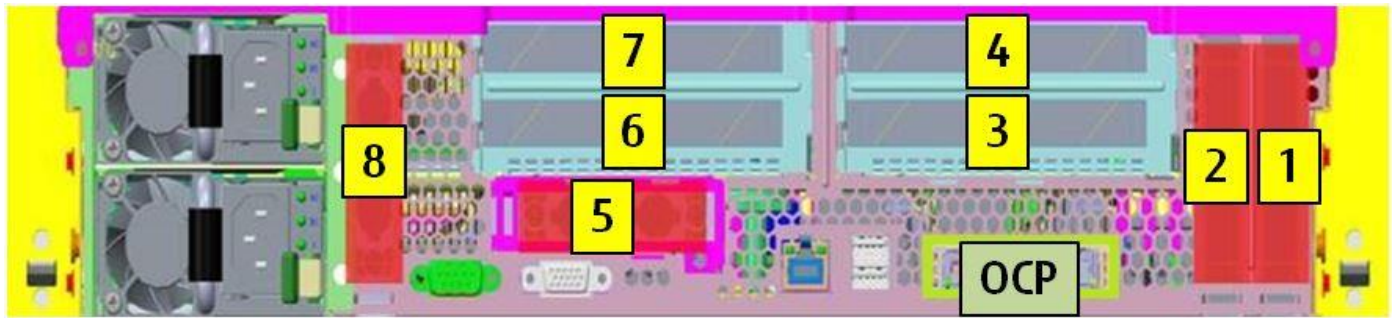
**PCIe slot restrictions on high TDP CPUs used in Performance base unit:**

If CPUs > 165W TDP are in use PCI slot 1 & 2 cannot be equipped with PCI cards (needed for improved air flow)  
This configuration is also reduced if on slot 3 and 6 a PCI card with 75W is in use!  
Only 2 PCI slots out of 4 (4, 5, 7, 8) are available then.

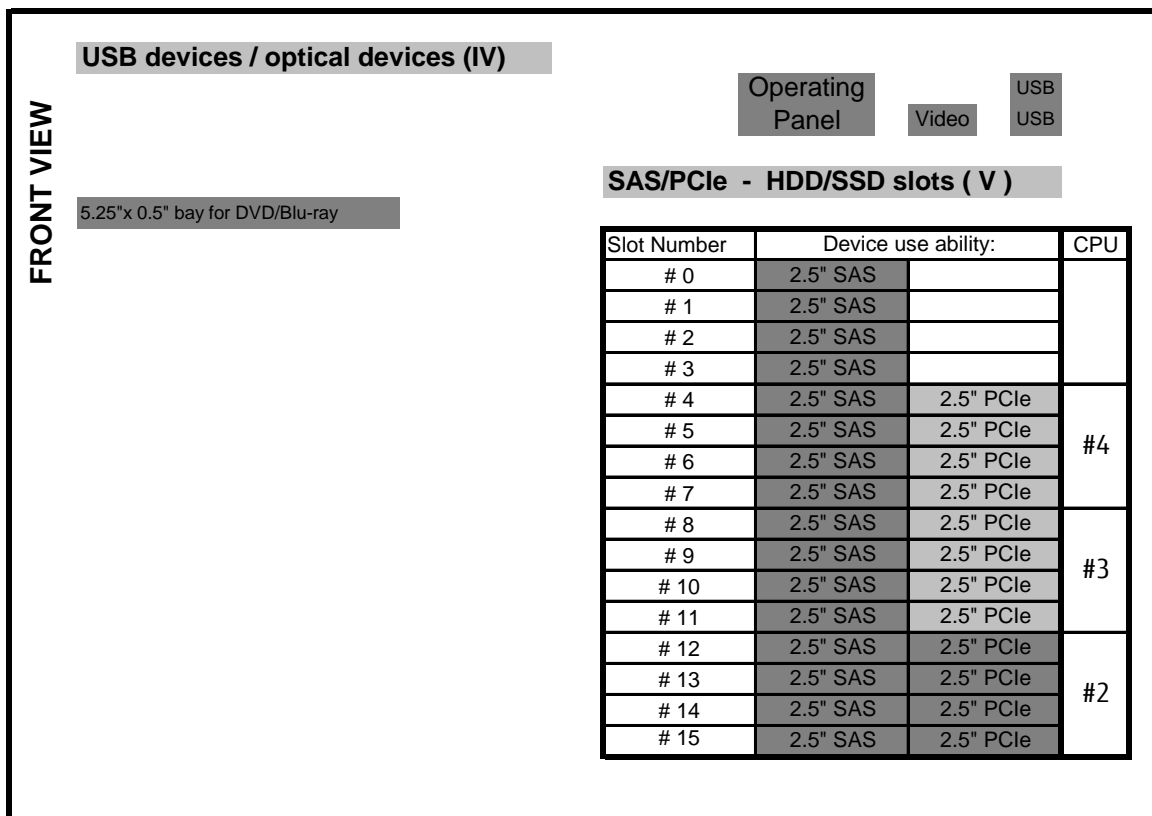
**PCIe slot restrictions while using liquid cooled base unit:**

While using liquid cooled base unit PCI slot 5, 6 & 7 are occupied.

RX4770 M4 Back view



Configuration diagram PRIMERGY RX4770 M4

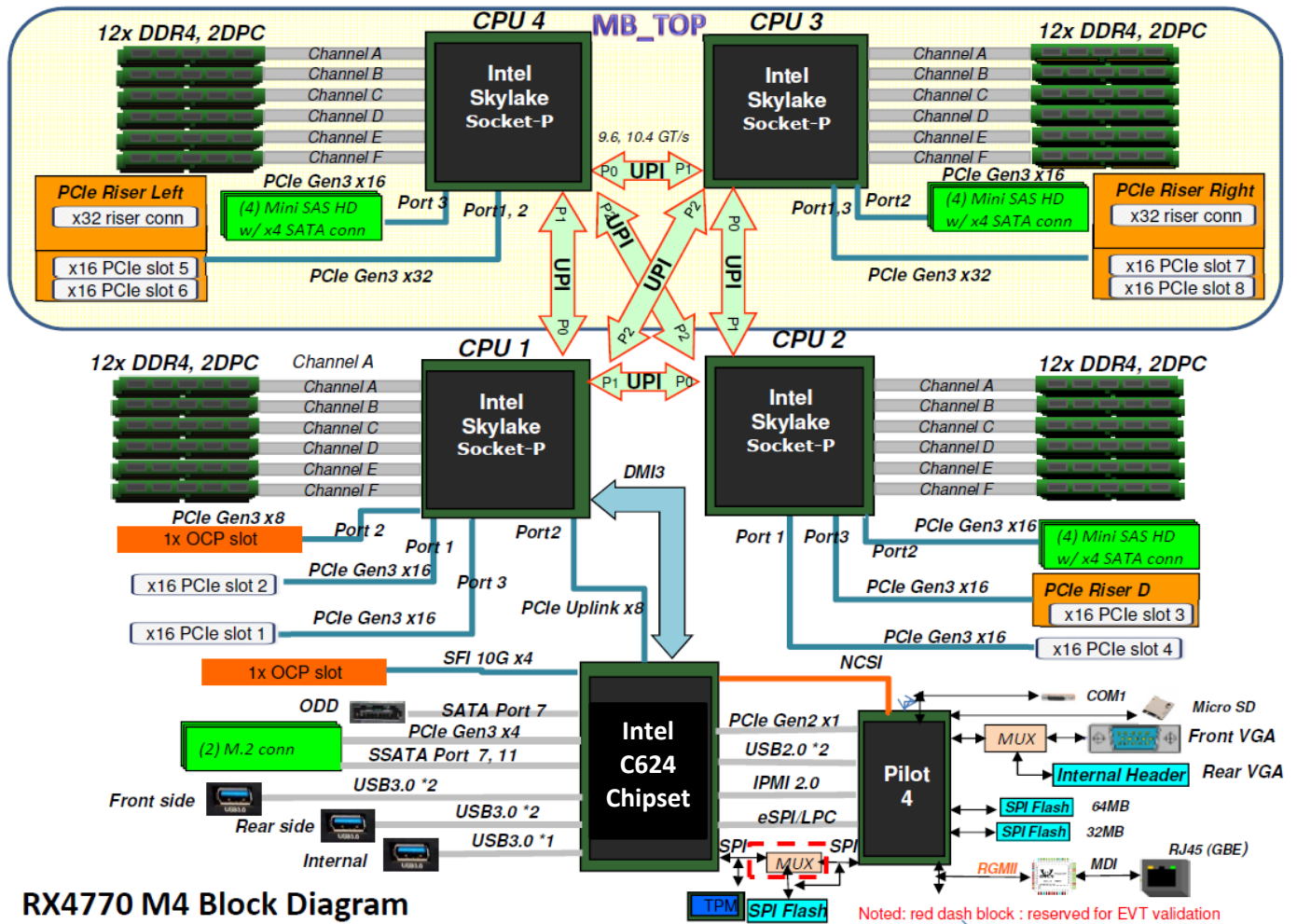


Key:  Light colored slots are use able with Light colored CPUs

Dark colored slots are use able with dark colored CPUs

min. components for RX4770 M4	#
Base Unit (includes 2x PSU)	1x
Processor	2x
.....Memory Mode installation	2x
DDR4 DIMM Order (according CPUs installed)	2x
Region kit APAC/EMEA/India or other	1x
iRMC S5 advanced pack (recommended)	1x
Dynamic LoM OCP PHY interface (recommended)	1x

RX4770 M4 Architecture



RX4770 M4 Block Diagram



## RX4770 M4 Processor Information's and Rules

Two CPU must be configured as minimum, maximum 4 CPU's are possible too.  
Memory area defined to not used CPU slots are not use able too.  
Only 2 CPU or 4 CPU configurations are allowed, only same version, no mix!  
Later upgrading to a 4 processor system is also possible, but may require adding Memory modules.

## RX4770 M4 Memory Information's and Rules

### RAS Features defined by Intel POR are required!

Subject to change by Intel POR!

#### RAS (Reliability, Availability, Serviceability)

##### Reliability

- System attributes to ensure Data integrity.
- capability to prevent, detect, correct and contain faults over a given time interval.

##### Availability

- System attributes to help stay operational in the presence of faults in the system.
- Capability to map out failed units, ability to operate in a degraded mode.

##### Serviceability

- System attributes to help system service, repair.
- Capability to identify failed units, and facilitates repair.

#### Elements of RAS

1. Fault Avoidance
2. Fault Detection
3. Fault Correction/Recovery
4. Failure Identification and reconfiguration

## Advanced RAS Features

KEY  
• New Features  
• Enhancements

Feature Name	Category* (R, A or S)	Benefit
Advanced Error Detection and Correction (AEDC)	R	Enhanced fault coverage within processor cores, and attempt to recover via instruction retry
Vital Mode of error containment	R	Enhanced error containment to improve data integrity, complimentary to corrupt data containment mode
MCA Recovery-Execution path	R	OS layer assisted recovery from uncorrectable data errors to prevent system reset
MCA Recovery-Non execution path	R	OS layer assisted recovery from uncorrectable data errors detected by Patrol scrubber or LLC Explicit Write Back.
Local Machine Check (LMCE) based Recovery	R	Enhances MCA recovery-Execution path event, and increases the possibility of recovery
SDDC +1, Adaptive DDDC (MR) +1	R	Adaptive virtual lockstep delivers up to two DRAM Device corrections. Also supports Single DRAM correction, as well as single bit correction post final DRAM device map out.
PCI Express Live Error Recovery	R	PCI-e root port error containment, and the opportunity to dynamically recover from the error
Intel® UPI Protocol Protection via 32 bit Rolling CRC check and Link level retry	R	Detection of transient data errors over Intel UPI interconnects, via 32Bit rolling crc, and the ability to retry the failed transactions
Intel® UPI Dynamic Link width reduction	A	Enables interconnect to continue operation in presence of Interconnect link persistent failure
Addressed range/Partial Memory Mirroring	R	OS managed memory mirroring of selective ranges, increases data integrity at efficient cost.
MCA 2.0 Recovery (as per eMCA gen2 architecture)	R	Firmware first model enables a reliable error sourcing capability with the ability to write to the MSR

\*: Multiple RAS vectors can be associated to a given feature. The table is only suggesting one of the potential attributes.  
Intel® Run Sure Technology RAS features are a subset of Advanced RAS and explained on subsequent slides.

## Standard RAS Features (Page 1)

KEY  
 • New Features  
 • Enhancements

Feature Name	Category* (R, A or S)	Benefit
Error Detection and Correction	R	Extensive Error detection and correction capability across the silicon, and the interconnects.
Corrupt Data containment-Core	R	Uncorrectable data explicitly marked and delivered synchronously to the consuming core to assist error containment and increase system reliability
Corrupt Data containment-UnCore	R	Uncorrectable data explicitly marked and delivered synchronously to the requestor, to assist error containment and increase system reliability
SDDC, Adaptive Data Correction (SR)	R	Adaptive virtual lockstep delivers single DRAM Device corrections, at bank granularity. Also supports Single DRAM correction.
PCIe "Stop and Scream"	R	PCI-e root port corrupt data containment feature, increases data integrity
Power up, Post Package Repair	S	The capability allows platform map out failing DDR4 DRAM Rows, replace it with the spare ROWs in DDR4.
Memory Mirroring- Intra iMC	R	Increase data integrity by creating a redundant/mirrored copy of data in system DRAM
DDR4 memory Multi RANK Sparing	R	Reserved/spare DRAM RANKs are utilized to dynamically map out the failing DRAM RANK into the spare Ranks.
Predictive Failure Analysis	S	Extensive error logs to assist software in predicting failures
Failed DIMM Isolation	S	Extensive error logs to help software identify the failing DIMM
Virtual (soft) Partitioning	R	Virtual Machin Monitor ability to make use of hardware recovery , signaling and error logs
Error reporting via IOMCA	S	Unified error reporting of the IIO logic to the OS

\*: Multiple RAS vectors can be associated to a given feature. The table is only suggesting one of the potential attributes.

## Standard RAS Features (Page 2)

KEY  
 • New Features  
 • Enhancements

Feature Name	Category* (R, A or S)	Benefit
Error reporting through MCA 2.0 (eMCA gen2)	S	Firmware first model enables a reliable error sourcing capability
Error reporting through eMCA gen1	S	Firmware first model enables reliable error sourcing capability
PCIe Card Surprise Hot Plug	S	Dynamic PCIe board FRU replacement
PCIe Card Hot Plug (Add/Remove/Swap)	s	Dynamic PCIe board FRU replacement
PCI Express ECRC	R	PCI Express End to end CRC checking, increasing system reliability
PCIe Corrupt Data Containment (Data Poisoning)	R	PCIe corrupt data mode of operation, synchronous signaling of the corrupted data along with data, increases system reliability
PCIe Link CRC Error Check and Retry	R	PCIe link CRC error check and retry, system reliability and recovery from transient errors
PCIe Link Retraining and Recovery	R	PCIe link retraining and attempted recovery from persistent link transient errors
Mem SMBus hang recovery	R	Software ability to reset memory SMBus interface to recover from hang condition

\*: Multiple RAS vectors can be associated to a given feature. The table is only suggesting one of the potential attributes.

## Standard RAS Features (Page 3)

KEY  
 • New Features  
 • Enhancements

Feature Name	Category* (R, A or S)	Benefit
DDR4 Wr Data CRC check/retry	R	DDR4 write data CRC check and request retry in the event of errors.
DDR4 Command/Address Parity Check and Retry	R	DDR4 Address and command parity check and retry in the event of errors
Time-out timer Schemes	S	Hierarchy of transaction time outs to assist system debug and reliable error sourcing.
Intel® UPI Link Level Retry	R	Intel UPI link's ability to perform CRC check and retry on errors for higher degree of system reliability
Intel® UPI Protocol Protection via 16 bit Rolling CRC	R	Detection of transient data errors over Intel UPI interconnects, via 16bit CRC error checking
Processor BIST	S	At power up, Processor's built in self test engine performs test on the internal cache structure for and provides the results to the system BIOS
Socket disable for FRB	A	The capability to selectively disable socket at the boot time, and therefore allowing system to power-on in a failover configuration
Core disable for FRB	A	The capability to disable failing cores at boot time, map out the failing core
PIOM for System Information Storage	S	On package Processor Information ROM

\*: Multiple RAS vectors can be associated to a given feature. The table is only suggesting one of the potential attributes.

### SkylakeScalable Processor: Intel® Run Sure Technology Features

#### Resilient System Technologies

integrate processor, firmware, and software layers that allow the system to diagnose and/or recover from previously fatal errors

- Advanced Error Detection and Correction (AEDC)
- MCA 2.0 Recovery (as per eMCAgen2 architecture)
- MCA Recovery-Execution Path
- MCA Recovery-Non Execution Path
- Local Machine Check (LMCE) based recovery

#### Resilient Memory Technologies

ensured data integrity & enables system to keep running reliably over a longer period of time, reducing the frequency of service calls

- SDDC + 1, Adaptive DDDC (MR) + 1
- Addressed range/Partial Memory Mirroring

### Intel® Run Sure Technology

Designed to Reduce the Frequency & Cost of Downtime

#### Error Prevention

- Quality Assurance
- Hardened circuits
- Thermal controls

#### Error Detection / Correction

- Parity / CRC
- Error correction

#### Error Isolation / Recovery

- Error Containment
- Redundancy Failover
- Self-Healing Modes

#### Software Assisted Recovery

- Integrated OS / VMM/ DBMS recovery

**Chapter 1 - Base Unit**

**Start**

**Base Unit, System Boards and Chipsets**

The two Rack Units high Base Unit includes by default:

- Base Mother boards with 2 CPU slots and 24 DIMM slots and Top Motherboard with additional 2 CPU slots and 24 DIMM slots. Intel C624 Chipset.
- Two direct attached hot plug (redundant and DPF) power supply units of 1600W each, with up to 96% efficiency.
- Place for 3 FBU for Raid Controller connection.
- One SAS expander module to support all hot plug SAS/SATA devices.
- Device Backplane for up to 16 SAS devices or up to 12 PCIe devices (a PCIe device occupies a SAS device slot and vice versa)
- Eight PCI slots (PCIe 3.0 with 16 lanes each) inclusive necessary riser cards.
- One slot for SATA ODD.
- All FANs.
- Front panel.
- All necessary cables for SAS device slots, PCIe device slots, and so on.

**Server Management**

iRMC S5 (integrated Remote Management Controller) on-board with dedicated (or shared) 10/100/1000 Service LAN-port and integrated graphics controller. With the integrated onboard indicators and controls You can highlight easily failed components via LEDs. The LEDs can be displayed during service even without mains connection by simply pressing the "indicate CSS" button.

**Platform**

Fujitsu Systemboard D3753 based on Intel® C624 chipset  
> 3 serial UPI links Universal Path Interconnect)  
> Up to four Xeon Bronze, Silver, Gold and Platinum x1xx series CPUs

**Slots:**

- Within 2 CPU populated
  - OCP slot for LoM / LAN board are active.
  - 4x PCIe card slots are on Board active.
  - 16x 2.5" SAS device slots and/or 4x PCIe 2.5" device slots are active.  
(SAS Expander module for SAS device slots #9 up to #16 are defaultly included in Base Unit!)
- Within 4 CPU populated
  - 8x PCIe card slots are on Board active.
  - 16x 2.5" SAS device slots and/or 12x PCIe 2.5" device slots are active.

Please see schematics in "description" too.

Internal SAS RAID Controller (- supports modular RAID functions) @ to first CPU  
All PCIe card Slot are PCIe-Gen3 x16

**System RAM up to DDR4 2666 MT/s**

12x DDR4 DIMM slots each CPU, connected by 6 Memory Channels each 2 DIMMs.  
Each Memory Line can be populated by 2 DIMMs **or** by 1 DIMM plus 1 AEP Flash DIMM  
48 memory slots for max. 6TB DDR4 RAM available (12 slots per CPU). Memory speed depends on CPU and configuration.

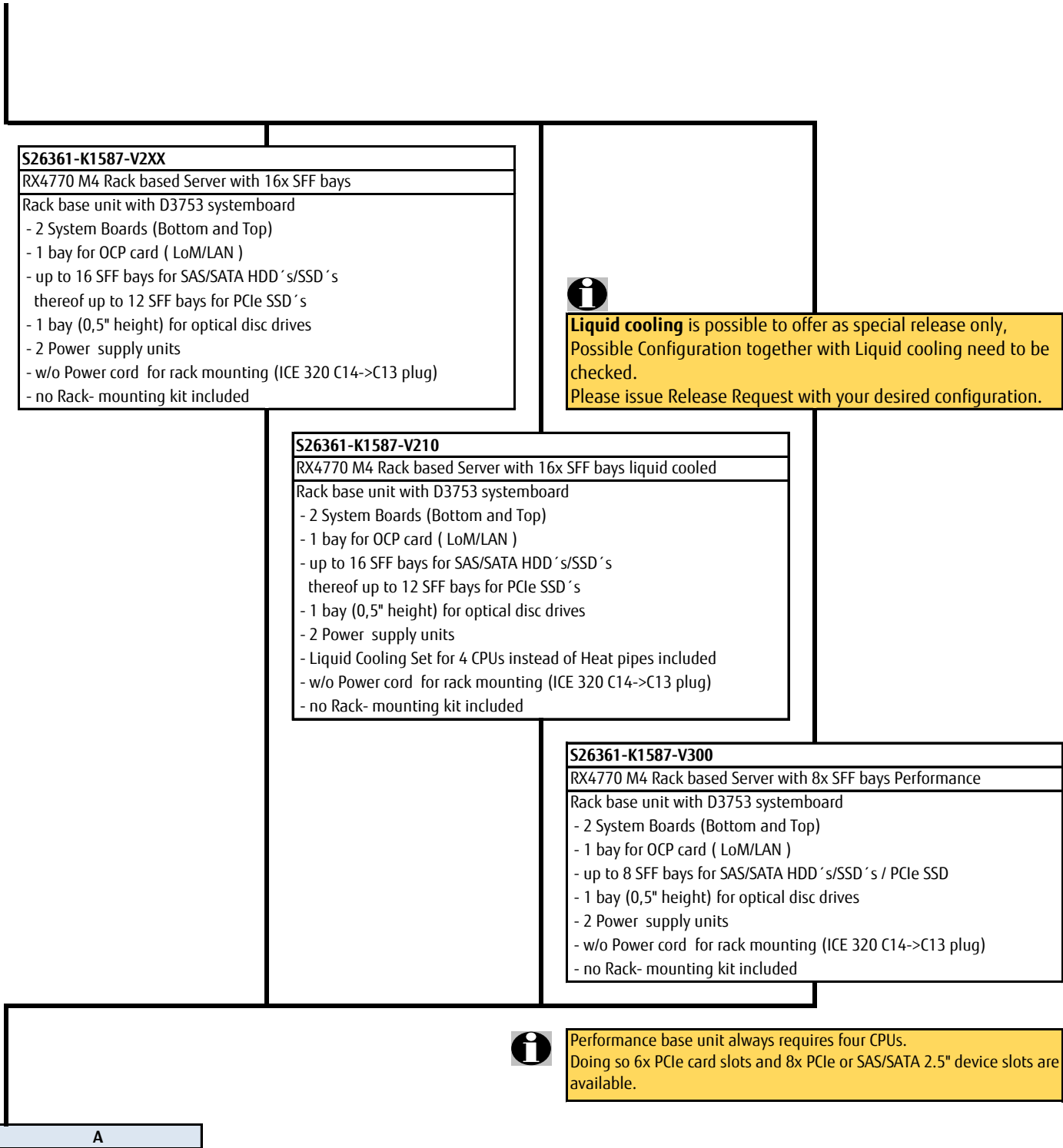
**LAN**

LAN on Motherboard based on OCP card.  
Different OCP cards are available (Copper or optic, 1 or 10 Gbit, 2 port or 4 port).

**Software**

\* ServerView Suite Software incl. ServerStart, ServerBooks, Management Software and Updates

Connectivity	
<p><u>Interfaces at rear side</u></p> <ul style="list-style-type: none"> <li>- 1 service LAN RJ45 (1 Gbit)</li> <li>- 1 service serial COM</li> <li>- 1x VGA (15 pins)</li> <li>- 2x USB 3.0 on, no USB wakeup</li> <li>- LoM with OCP card (optional)</li> </ul> <p><u>Interfaces at front</u></p> <ul style="list-style-type: none"> <li>- 2x USB 3.0 no USB wakeup</li> <li>- 1x VGA (15 pins)</li> </ul>	<p><u>Interfaces internal</u></p> <ul style="list-style-type: none"> <li>- 2x internal M.2 connectors (SATA &amp; PCIe)</li> <li>- 1x SATA for OOD device</li> <li>- 1x USB 3.0 for ROC device (BU100)</li> <li>- 1x TPM module</li> <li>- 1x Micro SD</li> </ul>



## Chapter 2 - Rack Architecture

A

Rack Architecture		Remark			
No RMK	1x	Only with loose server order	S26361-F2735-E111	n/a	no mounting in rack
Rack Mount Kit F1 CMA QRL LV	1x	RMK for server w/max. 2U, w/CMAAdapter	S26361-F2735-E175	S26361-F2735-L175	precondition for CMArm
Bracket 1U for asymmetrical rack	1x	Mounting or enclose of RMK in asym.rack incl.1U bracket	S26361-F4530-E11	n/a	for asymmetrical rack
Mounting of RMK in symmetrical rack	1x	Mounting or enclose of RMK in symmetrical racks w/o support bracket	S26361-F4530-E10	n/a	for symmetrical rack
Rack Mount Kit F1 LV	1x	For server max. 2 height units (U) or max. 35 kg, w/o CMAAdapter	S26361-F2735- E176n/a	S26361-F2735-L176	best choice for 3rd party racks -E176 will be available from Sep.-18.
Rack Cable Arm 2U	1x	Cable mgmt. arm for 2U or higher	S26361-F2735-E82	S26361-F2735-L82	RMK with CMAAdapter needed
Cable mgmt. lateral for asym.racks	1x	For server/storage subsyst.2U or higher	S26361-F2735-E71	S26361-F2735-L7	occupies 1U above RMK
Cable arm 2U PCR and 3rd party racks	1x	To be mounted at right or left rack pillar behind servers higher oder equal 2U	n/a	S26361-F2201-L20	mounted above RMK -F2735-L176
Rack installation ex works	1x	Rack will be delivered completely premounted and tested ex factory	SNP:SY-F1647E301-P	n/a	to be ordered 1x per installed rack server
Adapter angle	1x	For asymm. rack, 1U, up to 15kg	n/a	S26361-F2735-L10	needed for mounting of RMK in asym. rack

B

**Chapter 3 - CPU**

B			Base Units		
			Standard (-V200)	Liquid Cooled (-V210)	Performance (-V300)
There are 4 processor sockets available. Please configure 2 or 4 Processors (step of 1 & 3 is not released). >> All processors have to be the same type. >> With <b>two</b> processors LOM, iRMC, 4x PCIe 2.5" device, 4x PCIe card slots and 24x DIMM slots are available >> With <b>four</b> processors all 48x DIMM slots, 8x PCIe card slots and 12x PCIe 2.5" device slots are available. >> <b>Performance base unit always requires four CPUs. 6x PCIe card slots and 8x PCIe 2.5" device slots are available</b> >> To configure 3rd and 4th CPU an additional cooler kit is required. >> Each empty CPU slot have to be filled up with a CPU Dummy!					
<b>Xeon Gold 5100 - Advanced (Shelf 3)</b>					
64-bit Intel Xeon processor supporting HT*, DDR4 @ 2400 MHz & QPI Bus @ 10.4 GT/s					
Xeon Gold 5115 10C 2.4GHz 85W	S26361-F4051-E115	S26361-F4051-L115	X	X	
Xeon Gold 5118 12C 2.3GHz 105W	S26361-F4051-E118	S26361-F4051-L118	X	X	
Xeon Gold 5120 14C 2.2GHz 105W	S26361-F4051-E120	S26361-F4051-L120	X	X	
<b>Xeon Gold 5100 - Frequency Optimized (Shelf 3)</b>					
64-bit Intel Xeon processor supporting HT*, DDR4 @ 2666 MHz & QPI Bus @ 10.4 GT/s					
Xeon Gold 5122 4C 3.6GHz 105W	S26361-F4051-E222	S26361-F4051-L222	X	X	
<b>Xeon Gold 6100 - Advanced (Shelf 4)</b>					
64-bit Intel Xeon processor supporting HT*, DDR4 @ 2666 MHz & QPI Bus @ 10.4 GT/s					
Xeon Gold 6130 16C 2.1GHz 125W	S26361-F4051-E130	S26361-F4051-L130	X	X	
Xeon Gold 6140 18C 2.3GHz 140W	S26361-F4051-E140	S26361-F4051-L140	X	X	
Xeon Gold 6138 20C 2.0GHz 125W	S26361-F4051-E138	S26361-F4051-L138	X	X	
Xeon Gold 6148 20C 2.4GHz 150W	S26361-F4051-E148	S26361-F4051-L148	X	X	
Xeon Gold 6152 22C2.1GHz 140W	S26361-F4051-E152	S26361-F4051-L152	X	X	
<b>Xeon Gold 6100 - Frequency Optimized (Shelf 4)</b>					
64-bit Intel Xeon processor supporting HT*, DDR4 @ 2666 MHz & QPI Bus @ 10.4 GT/s					
Xeon Gold 6128 6C 3.4GHz 115W	S26361-F4051-E228	S26361-F4051-L228	X	X	
Xeon Gold 6134 8C 3.2GHz 130W	S26361-F4051-E234	S26361-F4051-L234	X	X	
Xeon Gold 6126 12C 2.6GHz 125W	S26361-F4051-E226	S26361-F4051-L226	X	X	
Xeon Gold 6136 12C 3.0GHz 150W	S26361-F4051-E236	S26361-F4051-L236	X	X	
Xeon Gold 6132 14C 2.6GHz 140W	S26361-F4051-E232	S26361-F4051-L232	X	X	
Xeon Gold 6142 16C 2.6GHz 150W	S26361-F4051-E242	S26361-F4051-L242	X	X	
Xeon Gold 6144 8C 3.5GHz 150W	S26361-F4051-E244	S26361-F4051-L244	X	X	Remark: No ATD
Xeon Gold 6146 12C 3.2GHz 165W	S26361-F4051-E246	S26361-F4051-L246	X	X	Remark: No ATD
Xeon Gold 6150 18C 2.7GHz 165W	S26361-F4051-E250	S26361-F4051-L250	X	X	
Xeon Gold 6154 18C 3.0GHz 200W	S26361-F4051-E254	S26361-F4051-L254	X	X	X
<b>Xeon Platinum 8100 Advanced (Shelf 4)</b>					
64-bit Intel Xeon processor supporting HT*, DDR4 @ 2666 MHz & QPI Bus @ 10.4 GT/s					
Xeon Platinum 8153 16C 2.0GHz 125W	S26361-F4051-E153	S26361-F4051-L153	X	X	
Xeon Platinum 8160 24C 2.1GHz 150W	S26361-F4051-E160	S26361-F4051-L160	X	X	
Xeon Platinum 8164 26C 2.0GHz 150W	S26361-F4051-E164	S26361-F4051-L164	X	X	
Xeon Platinum 8170 26C 2.1GHz 165W	S26361-F4051-E170	S26361-F4051-L170	X	X	
Xeon Platinum 8176 28C 2.1GHz 165W	S26361-F4051-E176	S26361-F4051-L176	X	X	
Xeon Platinum 8180 28C 2.5GHz 205W	S26361-F4051-E180	S26361-F4051-L180	X	X	X
<b>Xeon Platinum 8100 - Frequency optimized</b>					
64-bit Intel Xeon processor supporting HT*, DDR4 @ 2666 MHz & QPI Bus @ 10.4 GT/s					
Xeon Platinum 8156 4C 3.6GHz 105W	S26361-F4051-E256	S26361-F4051-L256	X	X	
Xeon Platinum 8158 12C 3.0GHz 150W	S26361-F4051-E258	S26361-F4051-L258	X	X	
Xeon Platinum 8168 24C 2.7GHz 205W	S26361-F4051-E268	S26361-F4051-L268	X	X	X
<b>Xeon Gold 6100M - Advanced (Shelf 4; 1.5TB p. Socket)</b>					
64-bit Intel Xeon processor supporting HT*, DDR4 @ 2666 MHz & QPI Bus @ 10.4 GT/s					
Xeon Gold 6134M 8C 3.2GHz 130W	S26361-F4051-E334	S26361-F4051-L334	X	X	
Xeon Gold 6140M 18C 2.3GHz 140W	S26361-F4051-E340	S26361-F4051-L340	X	X	
Xeon Gold 6142M 16C 2.6GHz 150W	S26361-F4051-E342	S26361-F4051-L342	X	X	
<b>Xeon Platinum 8100M - Advanced (1.5TB p. Socket)</b>					
64-bit Intel Xeon processor supporting HT*, DDR4 @ 2666 MHz & QPI Bus @ 10.4 GT/s					
Xeon Platinum 8160M 24C 2.1GHz 150W	S26361-F4051-E360	S26361-F4051-L360	X	X	
Xeon Platinum 8170M 26C 2.1GHz 165W	S26361-F4051-E370	S26361-F4051-L370	X	X	
Xeon Platinum 8176M 28C 2.1GHz 165W	S26361-F4051-E376	S26361-F4051-L376	X	X	
Xeon Platinum 8180M 28C 2.5GHz 205W	S26361-F4051-E380	S26361-F4051-L380	X	X	X
<b>Cooler Kit (see comment above; please order for every additional CPU 1 additional cooler kit)</b>					
Cooler Kit for 3rd & 4th CPU	S26361-F4051-E4				
Cooler Upgrade Kit		S26361-F4051-L870			

C

**Chapter 4 - DDR4 System memory**

**C**

Each CPU offers 12 Slots for DDR4 Memory Modules organised in 2 Banks and 6 Channels with 2 Memory Controllers (3 Channels each). If you need more than 12 Slots you have to configure the 2nd CPU.  
Depending on the amount of memory configured you can decide between 4 basic modes of operation (see explanation below).

There are 3 different kinds of DDR4 Memory Modules available: RDIMM, RDIMM 3DS (also known as TSV) and LRDIMM  
Mix of these different kind of memories is not allowed.

Supported memory capacities per CPU:  
384 GB DDR4 RDIMM (12x 32GB 2Rx4)  
1.536 GB DDR4 RDIMM 3DS (12x 128GB 8Rx4) - **Special CPU type with a "M" at the end is required while using 128GB modules!**

Supported memory capacities per System:  
768GB using RDIMM  
3.072GB using RDIMM 3DS technology with 128GB per module

The memory speed is independent from the configuration (1DPC or 2DPC) but restricted by the CPU SKU (max. 2.666 MT/s).  
DDR4 memory is operated at 1.2V

<b>S26361-F3694-E10</b>	Independent Mode Installation
Independent Channel Mode allows all channels to be populated in any order. No specific Memory RAS features are defined	
Requires minimum 1 memory Module per CPU	
<b>S26361-F3694-E1</b>	Rank Sparing Mode Installation
BIOS Setup factory preinstalled to this mode. One Rank is spare of other ranks on the same channel. Spare Rank is not shown in System Memory. For effective capacity within a channel, please have a look below.	
Requires minimum 2x 1R/2R or 1x 4R/8R modules per CPU	
<b>S26361-F3694-E2</b>	Performance Mode Installation
BIOS Setup factory preinstalled for maximum Performance, six identical memory modules will be equipped in one memory bank to achieve highest memory performance. All six modules are active and full capacity can be used.	
Multiple of 6 identical modules to be configured per CPU	
<b>S26361-F3694-E3</b>	Mirrored Channel Mode Installation
BIOS preconfiguration for Mirror mode. Two or three identical memory modules are always equipped at one memory controller to use the mirrored channel mode. Half of the modules contain active data, the remaining modules contain mirrored data. See details below.	
Multiple of 6 identical modules to be configured per CPU	



Resulting memory capacity / Rank Sparing Mode, 1 Channel populated												
	RDIMM						RDIMM 3DS				LRDIMM	
	16GB	1R	16GB	2R	32GB	2R	64GB	4R	128GB	8R	64GB	4R
1DPC	8GB		16GB		32GB		64GB		128GB		48GB	
2DPC	16GB		24GB		48GB		96GB		192GB		112GB	



Apparently 3DS-DIMMs don't behave like 4Rx4 modules but as 2Rx4; same situation for 8Rx4 organized modules (=> 2Rx4). Result is, that in rank-sparing mode the memory loss is half of one module capacity. This is shown in table above.

Registered Memory (RDIMM) without DDC (chipkill) support			
8GB (1x8GB) 2Rx8 DDR4-2666 R ECC	S26361-F4026-E118	S26361-F4026-L118	special release only
16GB (1x16GB) 2Rx8 DDR4-2666 R ECC	S26361-F4026-E116	S26361-F4026-L116	special release only
Registered Memory (RDIMM) with DDC (chipkill) support			
8GB (1x8GB) 1Rx4 DDR4-2666 R ECC	S26361-F4026-E208	S26361-F4026-L208	
16GB (1x16GB) 2Rx4 DDR4-2666 R ECC	S26361-F4026-E226	S26361-F4026-L226	special release only
16GB (1x16GB) 1Rx4 DDR4-2666 R ECC	S26361-F4026-E216	S26361-F4026-L216	
32GB (1x32GB) 2Rx4 DDR4-2666 R ECC	S26361-F4026-E232	S26361-F4026-L232	
Registered Memory (RDIMM) 3DS with DDC (chipkill) support			
64GB (1x64GB) 4Rx4 DDR4-2666 3DS ECC	S26361-F4026-E364	S26361-F4026-L364	
128GB (1x128GB) 8Rx4 DDR4-2666 3DS ECC	S26361-F4026-E328	S26361-F4026-L328	
Registered Memory (RDIMM) LR with DDC (chipkill) support			
64GB (1x64GB) 4Rx4 DDR4-2666 LR ECC	S26361-F4026-E464	S26361-F4026-L464	

**D**



Detailed information

Min. - Max. Memory DIMM basics:

Minimum Memory DIMM basics:

- Each CPU DIMM population should be homogenous.
- Each CPU offers 6 Memory Lanes, each Memory Lane 2 DIMM slots.
- Per CPU max. 12 DIMM slots use able
- with 2 CPU = max. 24 DIMM slots use able
- with 4 CPU = max. 48 DIMM slots use able
- on each CPU must be populated a minimum of Memory defined by Intel rules.

Mode	Configuration	RDIMM		Use case, advantage
		RDIMM	LRDIMM	
		x8	x4	
SDDC (chipkill) support	any	no	yes	supports detecting multi-bit errors
Independant channel mode	1 or 2 Modules per Bank	yes	yes	offers max. flexibility, upgradeability, capacity
Mirrored channel mode *)	6 identical Modules / Bank	no	yes	offers maximum security
Performance mode	6 identical Modules / Bank	yes	yes	offers maximum performance and capacity
Rank sparing mode *)	min. 2 Ranks / Channel	no	yes	balances performance and capacity

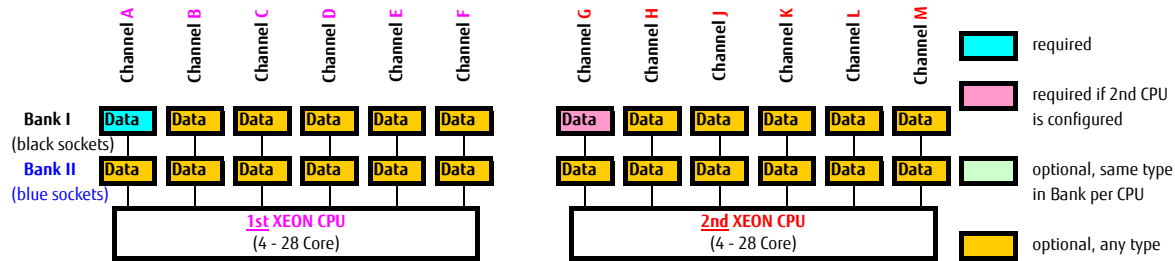
\*) For the delivery ex factory the system will be prepared with dedicated BIOS setting.

Capacity	Configuration	RDIMM	RDIMM 3DS	Notes
Min. Memory per CPU	1 Module / CPU	1x8GB	1x64GB	with one CPU
Max. Memory per CPU	12 Modules / CPU	12x32GB	24x128GB	with two CPU
Max. Memory per System	48 Modules / System	1.536GB	6.144GB	with four CPU

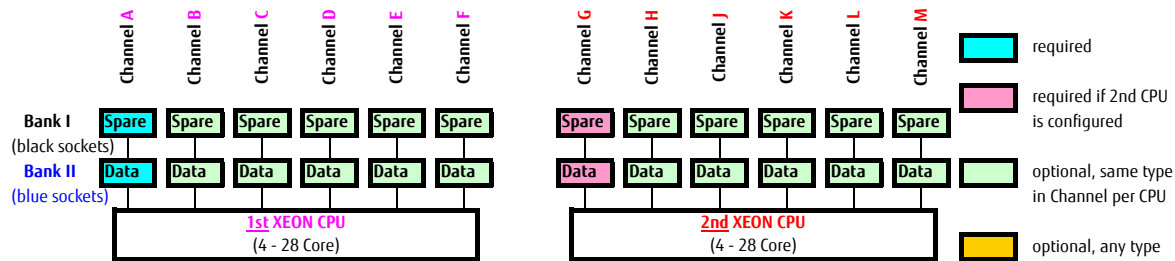
The memory sockets on the Systemboards are color coded

<b>Bank I</b>	black sockets	<b>Bank II</b>	blue sockets
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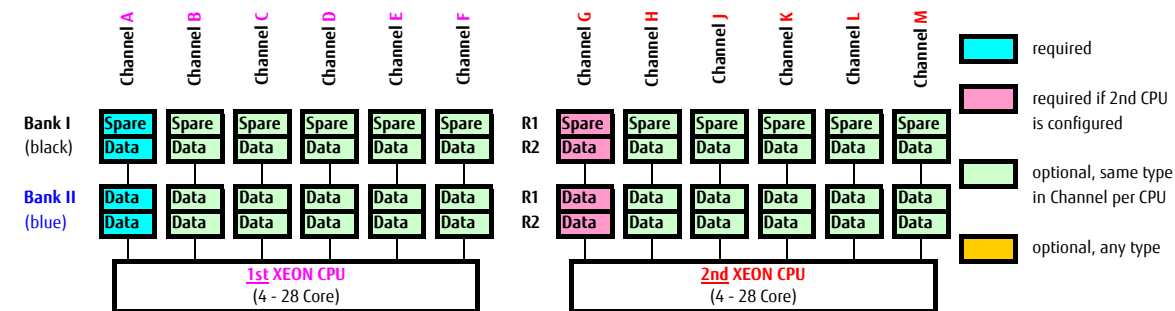
Independant channel mode



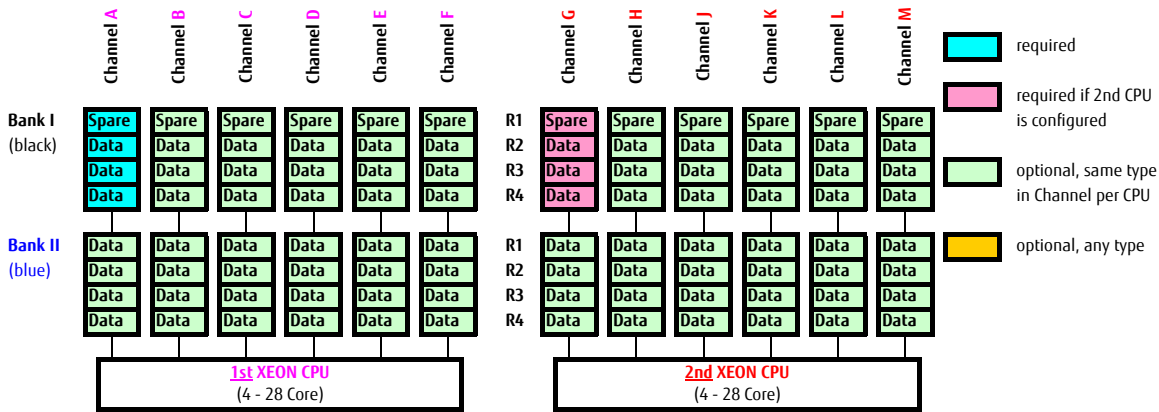
Rank sparing mode --- 1-Rank Memory modules (RDIMM)



Rank sparing mode --- 2-Rank Memory modules (RDIMM)

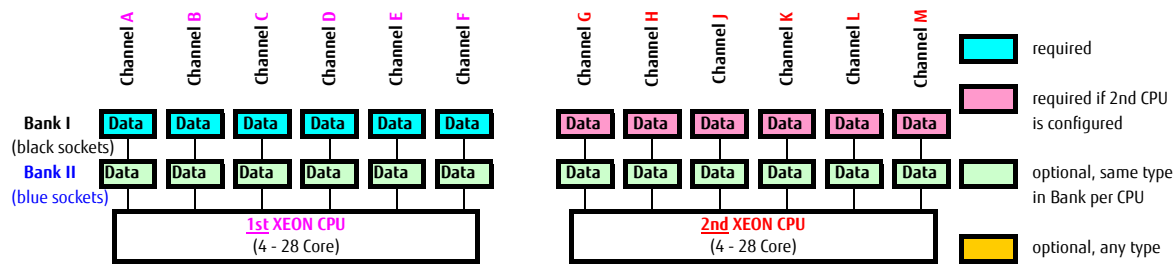


Rank sparing mode --- 4-Rank Memory modules (RDIMM 3DS)

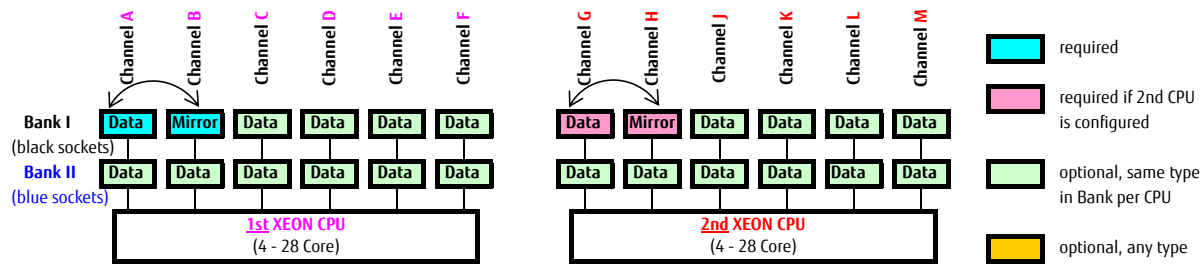


Rank Sparing Mode requires identical modules (same capacity and technology) within the same channel. The available memory for applications will vary depending on configuration. Please refer to the spreadsheet above "Effective Memory capacity with active Rank Sparing Mode". Population rule for Rank sparing mode is to achieve max. available memory, e.g. 4 DIMMs will be spread across two channels, each with 2DPC

Performance Channel Mode

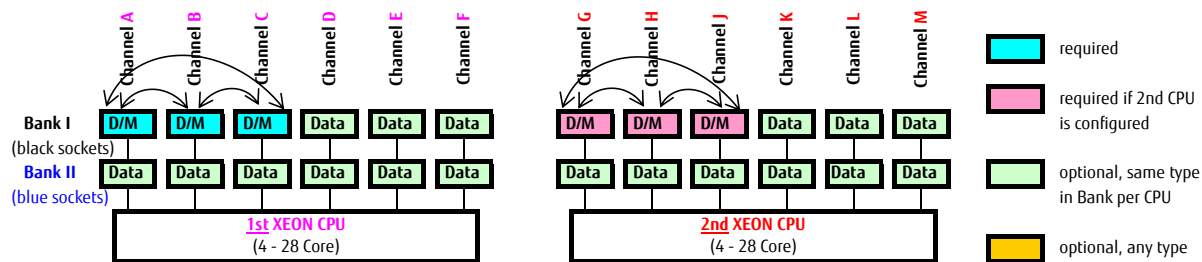


Mirror Channel Mode (2 DIMMS per CPU)



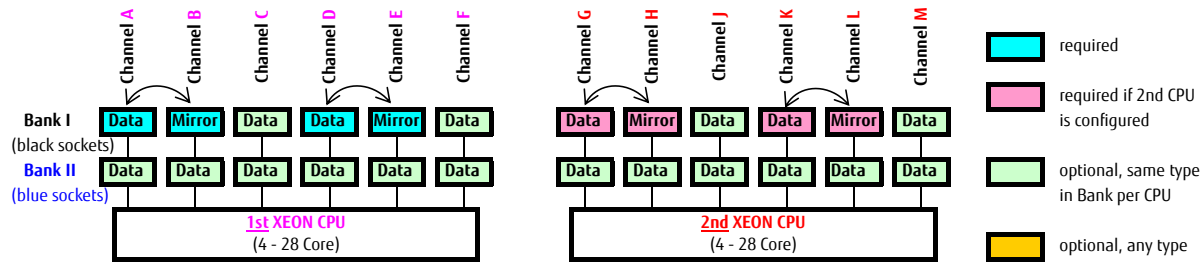
Mirrored Channel Mode (2 DIMMS per CPU) requires identical modules on channel A & B (1st CPU) or channel G & H (2nd CPU) 50% of the capacity is used for the mirror => the available memory for applications is only half of the installed memory. If this mode is used, a multiple of 2 identical modules has to be ordered.

Mirror Channel Mode (3 DIMMS per CPU)



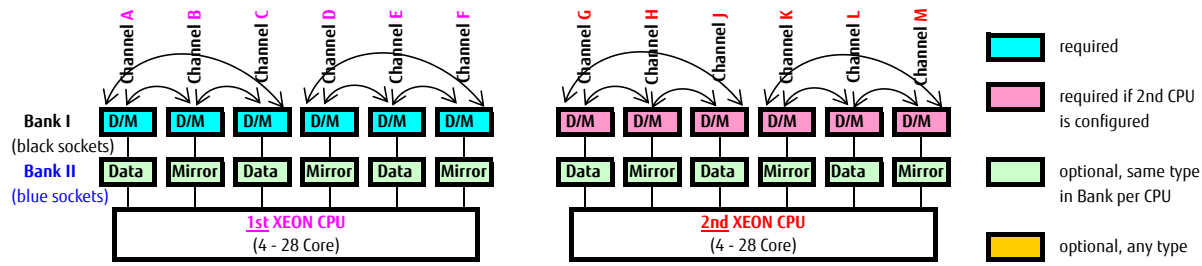
Mirrored Channel Mode (3 DIMMS per CPU) requires identical modules on channel A, B & C (1st CPU) or channel G, H & I (2nd CPU) 50% of the capacity is used for the mirror => the available memory for applications is only half of the installed memory. If this mode is used, a multiple of 3 identical modules has to be ordered.

Mirror Channel Mode (4 DIMMS per CPU)



Mirrored Channel Mode (4 DIMMS per CPU) requires identical modules on channel A, B, D & E (1st CPU) or channel G, H, K & L (2nd CPU) 50% of the capacity is used for the mirror => the available memory for applications is only half of the installed memory. If this mode is used, a multiple of 4 identical modules has to be ordered.

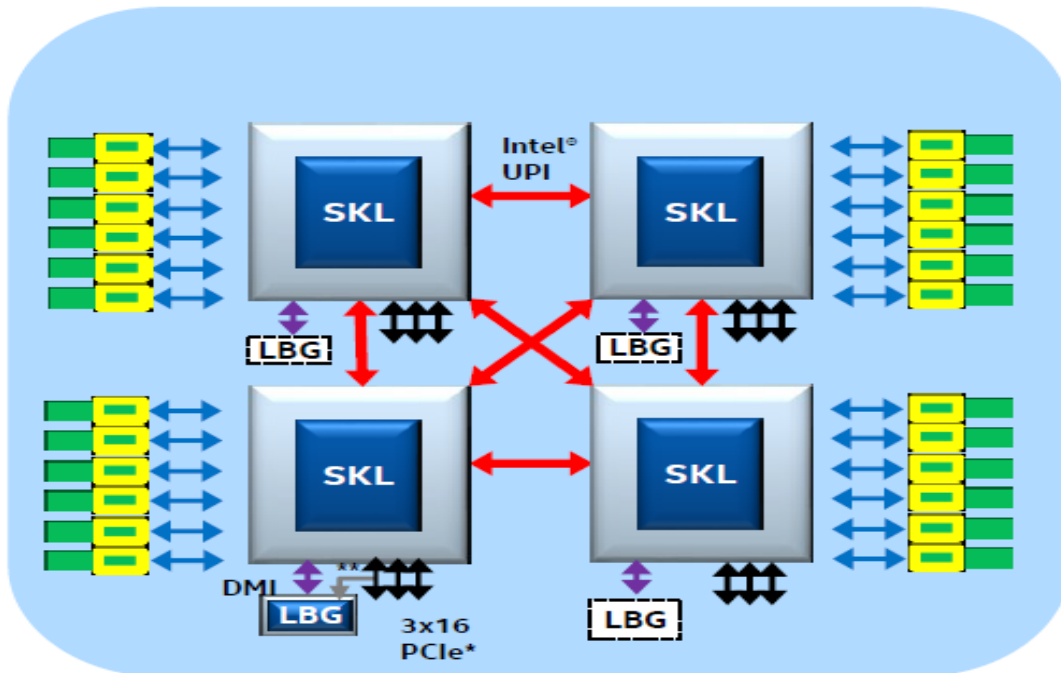
Mirror Channel Mode (6 DIMMS per CPU)



Mirrored Channel Mode requires identical modules on channel A, B, C, D, E, F (1st CPU) or channel G, H, J, K, L and M (2nd CPU) 50% of the capacity is used for the mirror => the available memory for applications is only half of the installed memory. If this mode is used, a multiple of 6 identical modules has to be ordered.

4Socket Purley Platform; CPU, Memory and AEP Configuration Example

## Typical 4S Configuration Cross Bar



- DDR4 DIMMs
- DDR4/Apache Pass
- LBG Optional
- PCIe\* uplink connection for Intel® QuickAssistTechnology and Intel® Ethernet
- Example DIMM population shown; please look up Apache Pass customer collateral for specific rules on
- \*\* DDR4/Apache Pass DIMM populations

**Chapter 7 - SAS / RAID Controller**

F

The internal RAID controller have to be installed on PCIe slot #8  
In addition 2 external RAID controllers can be installed on PCIe slot #5, #6 or #7.  
All installed RAID controllers can have an optional FBU.

**Internal HBA and RAID controller, no 2nd Level cache**

**Internal drive RAID / HBA controllers for SAS, SATA HDD or SSD drives**

<b>PRAID CP400i RAID Contr.</b>	No Cache	RAID 0, 1, 1E, 10, 5, 50	1x	S26361-F3842-E1	S26361-F3842-L501
<b>PSAS CP400i HBA SAS Contr.</b>	No Cache	HBA + RAID 0, 1	1x	S26361-F3842-E2	S26361-F3842-L502

8 ports 3, 6 & 12Gb/s SAS/SATA HDD/ SSD, supports up to 8 devices without expander  
requires 1x LP PCIe 3.0 x8 (int.) slot, based on LSI SAS3008

**Internal RAID controller with 2nd Level cache 1GB, 2GB**

**Internal drive RAID / SAS, SATA controllers with Cache and opt. TFM module + Flash Backup Unit and opt. Advanced SW Options**

<b>PRAID EP400i RAID Contr.</b>	1GB Cache	RAID 0,1,1E,10,5,50,6,60	1x	S26361-F5243-E11	S26361-F5243-L11
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8 ports 3, 6 & 12Gb/s SAS/SATA HDD/ SSD, supports up to 8 devices without expander  
requires 1x LP PCIe 3.0 x8 (int.) slot, based on LSI SAS3108

optional Licence Activation Key, a free of charge test licence is available at PRIMERGY-PM, FastPath is included in Controller FW

<b>RAID Advanced SW Option CacheCade®Broadcom: SSD-cache-based HDD acceleration</b>			1x	S26361-F5243-E670	S26361-F5243-L670
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optional Transportable Flash module (TFM) and Flash Backup Unit (FBU), both components required

<b>TFM module for 1GB Cache</b>	NV-RAM & FBU control logic		1x	S26361-F5243-E100	S26361-F5243-L100
<b>FBU Option for PRAID EP4xx:</b>	Supercap securing the power supply of the RAID controller in case of power failure including cable with 70cm length		1x	S26361-F5243-E171	S26361-F5243-L113

<b>PRAID EP420i RAID Contr.</b>	2GB Cache	RAID 0,1,1E,10,5,50,6,60	1x	S26361-F5243-E12	S26361-F5243-L12
<b>PRAID EP420i for SafeStore R. Contr.</b>	2GB Cache	RAID 0,1,1E,10,5,50,6,60	1x	S26361-F5243-E14*	S26361-F5243-L14*

8 ports 3, 6 & 12Gb/s SAS/SATA HDD/ SSD, supports up to 8 devices without expander  
requires 1x LP PCIe 3.0 x8 (int.) slot, based on LSI SAS3108

optional Licence Activation Key, a free of charge test licence is available at PRIMERGY-PM, FastPath is included in Controller FW

<b>RAID Advanced SW Option CacheCade®Broadcom: SSD-cache-based HDD acceleration</b>			1x	S26361-F5243-E670	S26361-F5243-L670
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optional TFM module and Flash Backup Unit (FBU), both components required

<b>TFM module for 2GB Cache</b>	NV-RAM & FBU control logic		1x	S26361-F5243-E200	S26361-F5243-L200
<b>FBU Option for PRAID EP4xx:</b>	Supercap securing the power supply of the RAID controller in case of power failure including cable with 70cm length		1x	S26361-F5243-E171	S26361-F5243-L113

**Internal SAS, SATA RAID controller with 2nd Level cache 2GB, 4GB, 8GB**

Remark: NVMe drives in this system are always connected directly to the CPU, not the controller

**Internal drive RAID / SAS controllers for E91 and SAS, SATA HDD or SSD drives**

<b>PRAID EP540i RAID Contr. LP</b>	4GB Cache	RAID 0, 1, 1E, 10, 5, 50, 6, 60	1x	S26361-F4042-E204	S26361-F4042-L504
<b>PRAID EP580i RAID Contr. LP</b>	8GB Cache	RAID 0, 1, 1E, 10, 5, 50, 6, 60	1x	S26361-F4042-E208	S26361-F4042-L508

16 ports 3, 6 & 12Gb/s SAS/SATA HDD/ SSD, based on LSI SAS3516, supports up to 16 devices without expander or  
16 ports 8Gb/s NVMe PCIe, supports up to 4 x4 NVMe devices (not supported in this system)  
includes Fastpath and SafeStore Advanced SW-Licence, CacheCade is no longer supported  
requires 1x LP PCIe 3.0 x8 (int.) slot, based on LSI SAS3516

optional Flash Backup Unit (FBU), Transportable Flash module (TFM) is already included

<b>FBU Option for PRAID EP5xx:</b>	Supercap securing the power supply of the RAID controller in case of power failure including cable with 70cm length		1x	S26361-F4042-E171	S26361-F4042-L113
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Up to 2x FBU can be integrated per System

**Expander configurations:** Use PRAID EPxxi for optimal performance,  
PRAID CP400i is not released for expander configurations

**Advanced SW options:**  
simultaneous operation of SafeStore or CacheCade + FastPath is supported,  
simultaneous operation of Safestore + CacheCade is not supported  
\* It is strongly recommended to order SafeStore (SED) RAID controller with SED HDD or SSD devices for SafeStore (SED) functionality

G

**external SAS controller**

**HBA controller for ext. drives SAS, SATA HDD or SSD drives**

<b>PSAS CP400e HBA SAS Contr. LP / FH</b>	No Cache	HBA, no RAID	2x	S26361-F3845-E1/E201	S26361-F3845-L501
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8 ports 3, 6 & 12Gb/s SAS/SATA HDD/ SSD, 2x SFF8644 (external Mini-SAS HD)  
requires 1x FH PCIe 3.0 x8 (int.) slot, based on LSI SAS3008

**external SAS, RAID controller with 2nd Level cache 2GB**

**RAID / SAS, SATA controllers for external drives with Cache and opt. TFM module + Flash Backup Unit and opt. Advanced SW Options**

<b>PRAID EP420e RAID Contr. LP / FH</b>	2GB Cache	RAID 0,1,1E,10,5,50,6,60	2x	S26361-F3847-E2/E201	S26361-F3847-L502
<b>PRAID EP420e for SafeStore LP / FH</b>	2GB Cache	RAID 0,1,1E,10,5,50,6,60	2x	S26361-F3847-E4/E204	S26361-F3847-L504

8 ports 3, 6 & 12Gb/s SAS/SATA HDD/ SSD, 2x SFF8644 (external Mini-SAS HD)  
requires 1x FH PCIe 3.0 x8 (int.) slot, based on LSI SAS3108

optional Licence Activation Key, a free of charge test licence is available at PRIMERGY-PM, FastPath is included in Controller FW

<b>RAID Advanced SW Option CacheCade®Broadcom: SSD-cache-based HDD acceleration</b>			2x	S26361-F5243-E670	S26361-F5243-L670
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optional TFM module and Flash Backup Unit (FBU), both components required

<b>TFM module for 2GB Cache</b>	NV-RAM & FBU control logic		2x	S26361-F5243-E200	S26361-F5243-L200
<b>FBU Option for PRAID EP4xx:</b>	Supercap securing the power supply of the RAID controller in case of power failure including cable with 70cm length		2x	S26361-F5243-E171	S26361-F5243-L113

**external SAS, RAID controller with 2nd Level cache 4GB**

Available on special release

**RAID / SAS, SATA controllers for external drives with Cache and opt. Flash Backup Unit**

<b>PRAID EP540e RAID Contr. LP</b>	4GB Cache	RAID 0,1,1E,10,5,50,6,60	2x	S26361-F4063-E4/E204	S26361-F4063-L504
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8 ports 3, 6 & 12Gb/s SAS/SATA HDD/ SSD, 2x SFF8644 (external Mini-SAS HD)  
includes Fastpath and SafeStore Advanced SW-Licence  
requires 1x FH PCIe 3.0 x8 (int.) slot, based on LSI SAS3516

optional Flash Backup Unit (FBU), Transportable Flash module (TFM) is already included

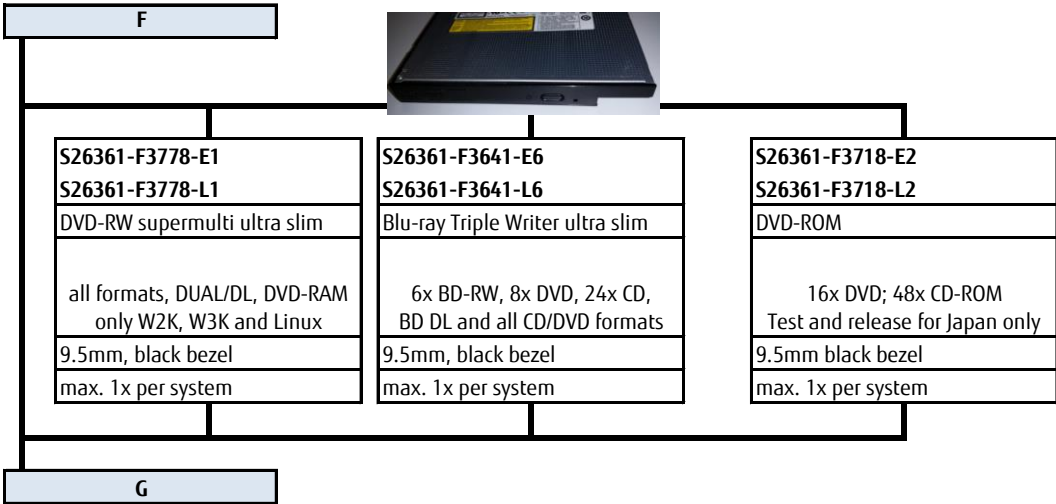
<b>FBU Option for PRAID EP5xx:</b>	Supercap securing the power supply of the RAID controller in case of power failure including cable with 55cm length		2x	S26361-F4042-E171	S26361-F4042-L113
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**onboard Ocu Link Connector, from CPU to Backplane for internal 2,5" NVMe SSD PCIe SSD SFF (2,5" NVMe PCIe)**

12/8 ports 8Gb/s PCIe x4	Intel CPU	No Cache		12x	onboard
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H

**Chapter 6 - Optical Disk Drives**



**Chapter 7 - Hard Disk Drives**

**G**

SAS drives and SATA drives can be mixed, but cannot be used in one logical RAID volume.  
 SAS & SATA drives require a dedicated SAS or RAID Controller  
 Hard Disk Sector Format Information:  
 512n HDD: 512 byte sectors on the drive media.  
 512e (e=emulation) HDD: 4K physical sectors on the drive media with 512 byte logical configuration.  
 512e HDD Disk Drives: VMware 6.0 or earlier is not supported.  
 SED (=Self Encrypting Drives) require either a RAID controller with \*SafeStore (SED) support or an HBA and in addition a software instance, supporting SED Key Management.  
 It is strongly recommended to order SafeStore (SED) RAID controller with SED HDD or SSD devices for SafeStore (SED) functionality.  
 HDD Classes:  
 Business-Critical (BC) -SATA=Nearline SATA Enterprise Drives / 7.2Krpm, SATA 6G.  
 Business-Critical (BC) -SAS=Nearline SAS Enterprise Drives / 7.2Krpm, SAS 12G .  
 Mission-Critical (MC)=SAS 10K and SAS 15K Enterprise Drives with max. performance and reliability.

**2.5" (SFF) Hard drives**

**HDD SAS 2.5" 15K (SFF) Enterprise Mission Critical with hot plug/hot replace tray**

Capacity	RPM	Interface	Sector	order code E-part	order code L-part
300GB	15 000	SAS 12Gb/s	512n	S26361-F5531-E530	S26361-F5531-L530
450GB	15 000	SAS 12Gb/s	512n	S26361-F5531-E545	S26361-F5531-L545
600GB	15 000	SAS 12Gb/s	512n	S26361-F5531-E560	S26361-F5531-L560
900GB	15 000	SAS 12Gb/s	512n	S26361-F5531-E590	S26361-F5531-L590

max. 8/16x - depending on base unit & configuration

**HDD SAS 2.5" 10K 512n (SFF) Enterprise Mission Critical with hot plug/hot replace tray**

Capacity	RPM	Interface	Sector	order code E-part	order code L-part
300GB	10 000	SAS 12Gb/s	512n	S26361-F5550-E130	S26361-F5550-L130
600GB	10 000	SAS 12Gb/s	512n	S26361-F5550-E160	S26361-F5550-L160
900GB	10 000	SAS 12Gb/s	512n	S26361-F5550-E190	S26361-F5550-L190
1.2TB	10 000	SAS 12Gb/s	512n	S26361-F5550-E112	S26361-F5550-L112
300GB	10 000	SAS 12Gb/s	512n	SED S26361-F5581-E130	S26361-F5581-L130
600GB	10 000	SAS 12Gb/s	512n	SED S26361-F5581-E160	S26361-F5581-L160
1.2TB	10 000	SAS 12Gb/s	512n	SED S26361-F5581-E112	S26361-F5581-L112

max. 8/16x - depending on base unit & configuration

**HDD SAS 2.5" 10K 512e (SFF) Enterprise Mission Critical with hot plug/hot replace tray**

Capacity	RPM	Interface	Sector	order code E-part	order code L-part
600GB	10 000	SAS 12Gb/s	512e	S26361-F5543-E160	S26361-F5543-L160
900GB	10 000	SAS 12Gb/s	512e	S26361-F5543-E190	S26361-F5543-L190
1.2TB	10 000	SAS 12Gb/s	512e	S26361-F5543-E112	S26361-F5543-L112
1.8TB	10 000	SAS 12Gb/s	512e	S26361-F5543-E118	S26361-F5543-L118
2.4TB	10 000	SAS 12Gb/s	512e	S26361-F5543-E124	S26361-F5543-L124
1.8TB	10 000	SAS 12Gb/s	512e	SED S26361-F5582-E118	S26361-F5582-L118
2.4TB	10 000	SAS 12Gb/s	512e	SED S26361-F5582-E124	S26361-F5582-L124

max. 8/16x - depending on base unit & configuration

**HDD SAS 2.5" 7.2K 512n (SFF) Enterprise Business Critical with hot plug/hot replace tray**

Capacity	RPM	Interface	Sector	order code E-part	order code L-part
1TB	7 200	SAS 12Gb/s	512n	S26361-F5600-E100	S26361-F5600-L100
2TB	7 200	SAS 12Gb/s	512n	S26361-F5600-E200	S26361-F5600-L200

max. 8/16x - depending on base unit & configuration

**HDD SAS 2.5" 7.2K 512e (SFF) Enterprise Business Critical with hot plug/hot replace tray**

Capacity	RPM	Interface	Sector	order code E-part	order code L-part
1TB	7 200	SAS 12Gb/s	512e	S26361-F5573-E100	S26361-F5573-L100
2TB	7 200	SAS 12Gb/s	512e	S26361-F5573-E200	S26361-F5573-L200

max. 8/16x - depending on base unit & configuration

**HDD SATA 2.5" 7.2K 512n (SFF) Enterprise Business Critical with hot plug/hot replace tray**

Capacity	RPM	Interface	Sector	order code E-part	order code L-part
1TB	7 200	SATA 6Gb/s	512n	S26361-F3956-E100	S26361-F3956-L100
2TB	7 200	SATA 6Gb/s	512n	S26361-F3956-E200	S26361-F3956-L200

max. 8/16x - depending on base unit & configuration

The HDDs not released with PRAID EP5x0i (S26361-F4042-E204/E208)

**HDD SATA 2.5" 7.2K 512e (SFF) Enterprise Business Critical with hot plug/hot replace tray**

Capacity	RPM	Interface	Sector	order code E-part	order code L-part
1TB	7 200	SATA 6Gb/s	512e	S26361-F3907-E100	S26361-F3907-L100
2TB	7 200	SATA 6Gb/s	512e	S26361-F3907-E200	S26361-F3907-L200

max. 8/16x - depending on base unit & configuration

**H**

**Chapter 8 - Solid State Drives**

**H**

SAS drives and SATA drives can be mixed, but cannot be used in one logical RAID volume.  
 SAS & SATA drives require a dedicated SAS / RAID Controller  
 When using SSDs with VMware ESXi, select the SSDs that meet the endurance requirement described in KB2145210 below.  
<https://kb.vmware.com/kb/2145210>  
 DWPD: Drive Writes Per Day over 5 years.  
 SED (=Self Encrypting Drives) require either a RAID controller with \*SafeStore (SED) support or an HBA and in addition a software instance, supporting SED Key Management.  
 It is strongly recommended to order SafeStore (SED) RAID controller with SED HDD or SSD devices for SafeStore (SED) functionality.  
**Warranty:**  
 SSDs have a built-in Wear-Out indicator. In this case the warranty for such a component, as an exception to the system warranty, is restricted to the time period until the indicator reaches the exhaust level.

**2.5" (SFF) SAS and SATA SSD**

**SSD SAS 2.5" Write Intensive (SFF) Enterprise with hot plug/hot replace tray**

Capacity	Formfactor	Interface	Endurance	DWPD		order code E-part	order code L-part
400GB	2.5" (SFF)	SAS 12Gb/s	Write Intensive	10	as soon as available	S26361-F5710-E400	S26361-F5710-L400
800GB	2.5" (SFF)	SAS 12Gb/s	Write Intensive	10	as soon as available	S26361-F5710-E800	S26361-F5710-L800
1.6TB	2.5" (SFF)	SAS 12Gb/s	Write Intensive	10	as soon as available	S26361-F5710-E160	S26361-F5710-L160
400GB	2.5" (SFF)	SAS 12Gb/s	Write Intensive	10	SED as soon as available	S26361-F5711-E400	S26361-F5711-L400
800GB	2.5" (SFF)	SAS 12Gb/s	Write Intensive	10	SED as soon as available	S26361-F5711-E800	S26361-F5711-L800
1.6TB	2.5" (SFF)	SAS 12Gb/s	Write Intensive	10	SED as soon as available	S26361-F5711-E160	S26361-F5711-L160

max. 8/16x - depending on base unit & configuration

**SSD SAS 2.5" Write Intensive (SFF) Enterprise with hot plug/hot replace tray**

Capacity	Formfactor	Interface	Endurance	DWPD		order code E-part	order code L-part
400GB	2.5" (SFF)	SAS 12Gb/s	Write Intensive	10		S26361-F5608-E400	S26361-F5608-L400
800GB	2.5" (SFF)	SAS 12Gb/s	Write Intensive	10		S26361-F5608-E800	S26361-F5608-L800
1.6TB	2.5" (SFF)	SAS 12Gb/s	Write Intensive	10		S26361-F5608-E160	S26361-F5608-L160
400GB	2.5" (SFF)	SAS 12Gb/s	Write Intensive	10	SED	S26361-F5611-E400	S26361-F5611-L400
800GB	2.5" (SFF)	SAS 12Gb/s	Write Intensive	10	SED	S26361-F5611-E800	S26361-F5611-L800
1.6TB	2.5" (SFF)	SAS 12Gb/s	Write Intensive	10	SED	S26361-F5611-E160	S26361-F5611-L160

max. 8/16x - depending on base unit & configuration

**SSD SAS 2.5" Mixed Use (SFF) Enterprise with hot plug/hot replace tray**

Capacity	Formfactor	Interface	Endurance	DWPD		order code E-part	order code L-part
400GB	2.5" (SFF)	SAS 12Gb/s	Mixed Use	3	as soon as available	S26361-F5713-E400	S26361-F5713-L400
800GB	2.5" (SFF)	SAS 12Gb/s	Mixed Use	3	as soon as available	S26361-F5713-E800	S26361-F5713-L800
1.6TB	2.5" (SFF)	SAS 12Gb/s	Mixed Use	3	as soon as available	S26361-F5713-E160	S26361-F5713-L160
3.2TB	2.5" (SFF)	SAS 12Gb/s	Mixed Use	3	as soon as available	S26361-F5713-E320	S26361-F5713-L320

max. 7x - depending on base unit & configuration

**SSD SAS 2.5" Mixed Use (SFF) Enterprise with hot plug/hot replace tray**

Capacity	Formfactor	Interface	Endurance	DWPD		order code E-part	order code L-part
400GB	2.5" (SFF)	SAS 12Gb/s	Mixed Use	3		S26361-F5666-E400	S26361-F5666-L400
800GB	2.5" (SFF)	SAS 12Gb/s	Mixed Use	3		S26361-F5666-E800	S26361-F5666-L800
1.6TB	2.5" (SFF)	SAS 12Gb/s	Mixed Use	3		S26361-F5666-E160	S26361-F5666-L160
3.2TB	2.5" (SFF)	SAS 12Gb/s	Mixed Use	2.3		S26361-F5666-E320	S26361-F5666-L320

max. 8/16x - depending on base unit & configuration

**SSD SAS 2.5" Read Intensive (SFF) Enterprise with hot plug/hot replace tray**

Capacity	Formfactor	Interface	Endurance	DWPD		order code E-part	order code L-part
480GB	2.5" (SFF)	SAS 12Gb/s	Read Intensive	1	as soon as available	S26361-F5715-E480	S26361-F5715-L480
960GB	2.5" (SFF)	SAS 12Gb/s	Read Intensive	1	as soon as available	S26361-F5715-E960	S26361-F5715-L960
1.92TB	2.5" (SFF)	SAS 12Gb/s	Read Intensive	1	as soon as available	S26361-F5715-E192	S26361-F5715-L192
3.84TB	2.5" (SFF)	SAS 12Gb/s	Read Intensive	1	as soon as available	S26361-F5715-E384	S26361-F5715-L384
7.68TB	2.5" (SFF)	SAS 12Gb/s	Read Intensive	1	as soon as available	S26361-F5715-E768	S26361-F5715-L768

max. 7x - depending on base unit & configuration

**SSD SAS 2.5" Read Intensive (SFF) Enterprise with hot plug/hot replace tray**

Capacity	Formfactor	Interface	Endurance	DWPD		order code E-part	order code L-part
480GB	2.5" (SFF)	SAS 12Gb/s	Read Intensive	1		S26361-F5670-E480	S26361-F5670-L480
960GB	2.5" (SFF)	SAS 12Gb/s	Read Intensive	1		S26361-F5670-E960	S26361-F5670-L960
1.92TB	2.5" (SFF)	SAS 12Gb/s	Read Intensive	1		S26361-F5670-E192	S26361-F5670-L192
3.84TB	2.5" (SFF)	SAS 12Gb/s	Read Intensive	1		S26361-F5670-E384	S26361-F5670-L384
7.68TB	2.5" (SFF)	SAS 12Gb/s	Read Intensive	0.9		S26361-F5670-E768	S26361-F5670-L768

max. 8/16x - depending on base unit & configuration

**SSD SATA 2.5" Mixed Use (SFF) Enterprise with hot plug/hot replace tray**

Capacity	Formfactor	Interface	Endurance	DWPD		order code E-part	order code L-part
240GB	2.5" (SFF)	SATA 6Gb/s	Mixed Use	3.6		S26361-F5675-E240	S26361-F5675-L240
480GB	2.5" (SFF)	SATA 6Gb/s	Mixed Use	3.6		S26361-F5675-E480	S26361-F5675-L480
960GB	2.5" (SFF)	SATA 6Gb/s	Mixed Use	3		S26361-F5588-E960	S26361-F5588-L960
1.92TB	2.5" (SFF)	SATA 6Gb/s	Mixed Use	3		S26361-F5588-E192	S26361-F5588-L192
3.84TB	2.5" (SFF)	SAS 12Gb/s	Write Intensive	3.6	as soon as available	S26361-F5588-E384	S26361-F5588-L384

max. 8/16x - depending on base unit & configuration

**SSD SATA 2.5" Mixed Use S4600 (SFF) Enterprise with hot plug/hot replace tray**

Capacity	Formfactor	Interface	Endurance	DWPD		order code E-part	order code L-part
240GB	2.5" (SFF)	SATA 6Gb/s	Mixed Use	3.1		S26361-F5694-E240	S26361-F5694-L240
480GB	2.5" (SFF)	SATA 6Gb/s	Mixed Use	3.3		S26361-F5694-E480	S26361-F5694-L480
960GB	2.5" (SFF)	SATA 6Gb/s	Mixed Use	3.0		S26361-F5694-E960	S26361-F5694-L960
1.92TB	2.5" (SFF)	SATA 6Gb/s	Mixed Use	3.0		S26361-F5694-E192	S26361-F5694-L192

max. 8/16x - depending on base unit & configuration

**SSD SATA 2.5" Read Intensive (SFF) Enterprise with hot plug/hot replace tray**

Capacity	Formfactor	Interface	Endurance	DWPD		order code E-part	order code L-part
240GB	2.5" (SFF)	SATA 6Gb/s	Read Intensive	1		S26361-F5632-E240	S26361-F5632-L240
480GB	2.5" (SFF)	SATA 6Gb/s	Read Intensive	1		S26361-F5632-E480	S26361-F5632-L480
800GB	2.5" (SFF)	SATA 6Gb/s	Read Intensive	1		S26361-F5632-E800	S26361-F5632-L800
960GB	2.5" (SFF)	SATA 6Gb/s	Read Intensive	1		S26361-F5632-E960	S26361-F5632-L960
1.2TB	2.5" (SFF)	SATA 6Gb/s	Read Intensive	1		S26361-F5632-E120	S26361-F5632-L120
1.6TB	2.5" (SFF)	SATA 6Gb/s	Read Intensive	1		S26361-F5632-E160	S26361-F5632-L160

max. 8/16x - depending on base unit & configuration

**SSD SATA 2.5" Read Intensive (SFF) Enterprise with hot plug/hot replace tray**

Capacity	Formfactor	Interface	Endurance	DWPD		order code E-part	order code L-part
240GB	2.5" (SFF)	SATA 6Gb/s	Read Intensive	1.4		S26361-F5701-E240	S26361-F5701-L240
480GB	2.5" (SFF)	SATA 6Gb/s	Read Intensive	0.9		S26361-F5701-E480	S26361-F5701-L480

960GB	2.5" (SFF)	SATA 6Gb/s	Read Intensive	0.9		S26361-F5701-E960	S26361-F5701-L960
1.92TB	2.5" (SFF)	SATA 6Gb/s	Read Intensive	0.9		S26361-F5701-E192	S26361-F5701-L192
3.84TB	2.5" (SFF)	SATA 6Gb/s	Read Intensive	1.0		S26361-F5701-E384	S26361-F5701-L384
7.68TB	2.5" (SFF)	SATA 6Gb/s	Read Intensive	0.5		S26361-F5701-E768	S26361-F5701-L768
max. 8/16x - depending on base unit & configuration							

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M.2 SATA SSD

Capacity	Formfactor	Interface	Endurance	DWPD	Category	order code E-part	order code L-part
150GB	M.2	SATA 6Gb/s			Boot	S26361-F5655-E150	S26361-F5655-L150
240GB	M.2	SATA 6Gb/s			Boot	S26361-F5707-E240	S26361-F5707-L240

M.2 drive is designed for use as a VMware ESXi boot drive.  
 2x M.2 drive for any Hypervisor by the onboard chipset Software RAID is not supported.  
 max. 1x per Server; connector located on Motherboard (Port1: 2242 or 2280; Port2: 2280 or 22110). VMware ESXi is only supported.

M.2 drive for VMware ESXi and for other OSs cannot be mixed

Capacity	Formfactor	Interface	Endurance	DWPD	Category	order code E-part	order code L-part
150GB	M.2	SATA 6Gb/s		1.5	Boot	S26361-F5656-E150	S26361-F5656-L150
240GB	M.2	SATA 6Gb/s		1.4	Boot	S26361-F5706-E240	S26361-F5706-L240
480GB	M.2	SATA 6Gb/s		1.4	Boot	S26361-F5706-E480	S26361-F5706-L480

M.2 drive is designed for use as a boot drive with the Endurance Spec. above.  
 2x M.2 drive for any Hypervisor by the onboard chipset Software RAID is not supported.  
 max. 1x per Server; connector located on Motherboard (Port1: 2242 or 2280; Port2: 2280 or 22110). VMware is not supported.

Dual M.2

Dual microSD, PDUAL AP200 and M.2 drive cannot be mixed

Capacity	Formfactor	Interface	Endurance	DWPD	Category	order code E-part	order code L-part
n/a	AIC	PCIe			Boot LP	S26361-F4064-E201	S26361-F4064-L501
n/a	AIC	PCIe			Boot FH	S26361-F4064-E1	S26361-F4064-L501

PDUAL AP200 is a carrier card for 2x M.2 SATA modules, which is connected to the controller PSAS CP400i and offers RAID1 with 2x M.2 modules.  
 \*PDUAL AP200 + 2x M.2 modules + PSAS CP400i\* is designed for use as a Hardware-mirrored (RAID1) boot device for Hypervisor, which cannot be supported by M.2 via the onboard chipset Software RAID.  
 Supported RAID level: RAID1 only, Supported M.2 Modules: SSD SATA M.2 240GB (S26361-F5706-E240/L240 or S26361-F5707-E240/L240 for VMware ESXi), 2x M.2 modules (S26361-F5706-E240/L240 or S26361-F5707-E240/L240) and additional PSAS CP400i (S26361-F3842-E22/L502) need to be ordered separately. An existing PSAS CP400i for data drives cannot support simultaneously the M.2 Boot media with PDUAL AP200.  
 A separate PSAS CP400i for PDUAL AP200 is required to support a separation for boot and data.  
 max. 1x per Server

Dual microSD

Dual microSD, PDUAL AP200 and M.2 drive cannot be mixed

Capacity	Formfactor	Interface	Endurance	DWPD	Category	order code E-part	order code L-part
64GB	microSD	USB			Boot	S26361-F4045-E64	S26361-F4045-L64

Dual microSD is designed for use as a VMware ESXi boot drive. Only the standardly equipped microSD are supported.  
 Dual microSD offers Hardware-mirrored (RAID1) flash boot device for VMware ESXi, which cannot be supported by M.2.  
 vSAN can be booted in case ESXi host has 512 GB of memory or less. Even in case 512 GB or more, if vSAN is 6.5 or later, it can be booted by resizing the core dump partition on ESXi hosts. For more information, see the VMware knowledge base article at <http://kb.vmware.com/kb/2147881>.  
 max. 1x per Server; connector located on Motherboard. VMware ESXi is only supported.

2.5" (SFF) PCIe-SSD

\*hot plug support : as soon as available

Capacity	Formfactor	Interface	Endurance	DWPD	Category	order code E-part	order code L-part
1.6TB	2.5" (SFF)	PCIe3.0 x4	Mixed Use	3.0		S26361-F5648-E160	S26361-F5648-L160
3.2TB	2.5" (SFF)	PCIe3.0 x4	Mixed Use	3.1		S26361-F5648-E320	S26361-F5648-L320
6.4TB	2.5" (SFF)	PCIe3.0 x4	Mixed Use	3.2		S26361-F5648-E640	S26361-F5648-L640

max. 8/12x - depending on base unit & configuration

Capacity	Formfactor	Interface	Endurance	DWPD	Category	order code E-part	order code L-part
500GB	2.5" (SFF)	PCIe3.0 x4	Read Intensive	0.7		S26361-F5649-E50	S26361-F5649-L50
1TB	2.5" (SFF)	PCIe3.0 x4	Read Intensive	1.0		S26361-F5649-E100	S26361-F5649-L100
2TB	2.5" (SFF)	PCIe3.0 x4	Read Intensive	0.6		S26361-F5649-E200	S26361-F5649-L200
4TB	2.5" (SFF)	PCIe3.0 x4	Read Intensive	0.6		S26361-F5649-E400	S26361-F5649-L400

max. 8/12x - depending on base unit & configuration

AIC PCIe-SSD

PCIe-SSD (occupies one PCIe slot)	
S26361-F5650-L200 S26361-F5650-E200 PACC EP P4600 AIC 2TB P4600 series, NVMe 3.0 DWPD PCIe3.0 x4, Low Profile max. 4x per system	S26361-F5650-L400 S26361-F5650-E400 PACC EP P4600 AIC 4TB P4600 series, NVMe 3.1 DWPD PCIe3.0 x4, Low Profile max. 4x per system

PCIe-SSD (occupies one PCIe slot)	
S26361-F5697-L375 S26361-F5697-E375 PACC EP P4800X AIC 375GB P4800X series, NVMe 30 DWPD PCIe3.0 x4, Low Profile max. 4x per system	S26361-F5697-L750 S26361-F5697-E750 PACC EP P4800X AIC 750GB P4800X series, NVMe 30 DWPD PCIe3.0 x4, Low Profile max. 4x per system

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## Chapter 9 - LAN Components

Default: 1x RJ45 for 1Gbit Server Management LAN is available!

### Dynamic LoM OCP PHY interface cards

#### Interface card to provide the external connectors for on-board LAN

PLAN EM 4x 1Gb T OCP interface Intel	4x RJ45 plug for 1000BASE-T	S26361-F3953-E401	S26361-F3953-L401
PLAN EM 2x 10Gb T OCP interface Intel	2x RJ45 plug for 10GBASE-T	S26361-F3953-E210	S26361-F3953-L210
PLAN EM 2x 10Gb SFP+ OCP interface Intel	2x SFP+ cages for SFP+ optical transceivers or twinax cables	S26361-F3953-E211	S26361-F3953-L211
PLAN EM 4x 10Gb SFP+ OCP interface Intel	4x SFP+ cages for SFP+ optical transceivers or twinax cables	S26361-F3953-E411	S26361-F3953-L411

#### Optional for products with SFP+ cages: SFP+ optical transceiver modules or twinax cables

SFP+ Optical Transceiver 10G/1G Dual Rate SR	2x .. 4x	LC, MMF / SR SFP+ module, up to 400m, <b>Intel</b>	S26361-F3986-E5	S26361-F3986-L5
SFP+ Optical Transceiver 10G/1G Dual Rate LR	2x .. 4x	LC, SMF / LR SFP+ module, up to 10km, <b>Intel</b>	S26361-F3986-E6	S26361-F3986-L6
SFP+ Optical Transceiver 10G Single Rate SR	2x .. 4x	LC, MMF / SR SFP+ module, up to 400m, <b>Finisar</b>	S26361-F3986-E3	S26361-F3986-L3
SFP+ Optical Transceiver 10G Single Rate LR	2x .. 4x	LC, SMF / LR SFP+ module, up to 10km, <b>Finisar</b>	S26361-F3986-E4	S26361-F3986-L4
Twinax Anschlussplatz Primergy	2x .. 4x	virtual connector for twinax cables	V:TWX CONNECTOR-PY	
SFP+ active Twinax Cable Fujitsu	2x .. 4x	customized cable length	S26361-F3989-E600	see table at the bottom of this page
SFP+ active Twinax Cable Brocade	2x .. 4x	(best fitting cable length is defined during rack installation at the factory)	S26361-F3873-E500	
SFP+ passive Twinax Cable Cisco - <b>Sold Out</b>	2x .. 4x		S26361-F4571-E500	

max. 1x per cage

required 1x per system

### 10/1Gb Ethernet network components

#### 10GBASE-T

#### 10/1Gb Ethernet network adapters with RJ45 interface (10GBASE-T)

Dual speed support, auto-sense: supports 10Gbps and 1Gbps line rate per-port.

Only Cavium adapters provide Universal RDMA capabilities, both iWARP and RoCE. Intel adapters don't provide any. Emulex adapters are close to end of sales.

PLAN EP QL41112 2x10GBASE-T FH	4x	2 port NIC with Universal RDMA, <b>Cavium</b> QL41112HLRJ	S26361-F4068-E2	S26361-F4068-L502
PLAN EP QL41112 2x10GBASE-T LP	4x	2 port NIC with Universal RDMA, <b>Cavium</b> QL41112HLRJ	S26361-F4068-E202	S26361-F4068-L502
PLAN EP QL41134 4x10GBASE-T FH	4x	<b>4 port</b> NIC with Universal RDMA, <b>Cavium</b> QL41134HLRJ	S26361-F4068-E4	S26361-F4068-L504
PLAN EP QL41134 4x10GBASE-T LP	4x	<b>4 port</b> NIC with Universal RDMA, <b>Cavium</b> QL41134HLRJ	S26361-F4068-E204	S26361-F4068-L504
PLAN EP X550-T2 2x10GBASE-T FH	4x	2 port NIC, <b>Intel</b> X550-T2	S26361-F3948-E2	S26361-F3948-L502
PLAN EP X550-T2 2x10GBASE-T LP	4x	2 port NIC, <b>Intel</b> X550-T2	S26361-F3948-E202	S26361-F3948-L502
PLAN EP X710-T4 4x10GBASE-T FH	4x	<b>4 port</b> NIC, <b>Intel</b> X710-T4	S26361-F3948-E4	S26361-F3948-L504
PLAN EP X710-T4 4x10GBASE-T LP	4x	<b>4 port</b> NIC, <b>Intel</b> X710-T4	S26361-F3948-E204	S26361-F3948-L504
PLAN EP OCe14102 2x 10GBase-T FH	4x	2 port NIC, <b>Emulex</b> OCe14102	S26361-F5557-E1	S26361-F5557-L501
PLAN EP OCe14102 2x 10GBase-T LP	4x	2 port NIC, <b>Emulex</b> OCe14102	S26361-F5557-E201	S26361-F5557-L501

max. 8 adapters per server system

#### 10G SFP+

#### 10/1Gb Ethernet network adapters with SFP+ cage. Adapter ships with empty cages.

Each cage consumes 1x optical SFP+ transceiver per port, or 1x twinax cable per port, or 1x DAC cable per port.

Dual rate 10G/1G support requires 10G/1G Dual Rate SFP+ Optical Transceiver Modules.

Only Cavium adapters provide Universal RDMA capabilities, both iWARP and RoCE. Intel adapters don't provide any.

For Converged Network Adapter features such as iSCSI, iSCSI Offload, FCoE please select the PCNA EP QL41262 from the Converged Ethernet network adapters section

PLAN EP QL41132 2x10Gb SFP+ FH	4x	2 port NIC with Universal RDMA, <b>Cavium</b> QL41132HLCU	S26361-F4069-E2	S26361-F4069-L502
PLAN EP QL41132 2x10Gb SFP+ LP	4x	2 port NIC with Universal RDMA, <b>Cavium</b> QL41132HLCU	S26361-F4069-E202	S26361-F4069-L502
PLAN EP X710-DA2 2x10Gb SFP+ FH	4x	2 port NIC, <b>Intel</b> X710-DA2	S26361-F3640-E2	S26361-F3640-L502
PLAN EP X710-DA2 2x10Gb SFP+ LP	4x	2 port NIC, <b>Intel</b> X710-DA2	S26361-F3640-E202	S26361-F3640-L502
PLAN EP X710-DA4 4x10Gb SFP+ FH	4x	<b>4 port</b> NIC, <b>Intel</b> X710-DA4	S26361-F3640-E4	S26361-F3640-L504

PLAN EP X710-DA4 4x10Gb SFP+ LP	4x	4 port NIC, Intel X710-DA4	S26361-F3640-E204	S26361-F3640-L504
<b>Optional, 10Gb SFP+ optical transceiver module, select one per cage</b>				
SFP+ Optical Transceiver 10G Single Rate SR	2x ,, 4x	LC, MMF / SR SFP+ module, up to 400m, <b>Finisar</b>	S26361-F3986-E3	S26361-F3986-L3
SFP+ Optical Transceiver 10G Single Rate LR	2x ,, 4x	LC, SMF / LR SFP+ module, up to 10km, <b>Finisar</b>	S26361-F3986-E4	S26361-F3986-L4
SFP+ Optical Transceiver 10G/1G Dual Rate SR	2x ,, 4x	LC, MMF / SR SFP+ module, up to 400m, <b>Intel</b>	S26361-F3986-E5	S26361-F3986-L5
SFP+ Optical Transceiver 10G/1G Dual Rate LR	2x ,, 4x	LC, SMF / LR SFP+ module, up to 10km, <b>Intel</b>	S26361-F3986-E6	S26361-F3986-L6
"Virtual Connector" for Twinax cables	2x .. 4x	Enablement for System Architect	<b>V:TWX CONNECTOR-PY</b>	
SFP+ active Twinax Cable Fujitsu	2x .. 4x	Customized length. Best fitting length selected at rack factory installation.	S26361-F3989-E600	see table at the bottom of this page
SFP+ active Twinax Cable Brocade	2x .. 4x		S26361-F3873-E500	
<i>Max. 2x SFP+, DAC, or Twinax Cable per 2 port adapter. Max. 4x SFP+, DAC, or Twinax Cable per 4 port adapter.</i>				
max. 8 adapters per server system				

<b>10Gb Ethernet controller with SFP+ interface (for SFP+ modules or twinax cables, Emulex)</b>				
Emulex adapters are close to end of sales.				
For Converged Network Adapter features such as iSCSI, iSCSI Offload, FCoE please select the PCNA EPOCe14102 from the Converged Ethernet network adapters section.				
PLAN EP OCe14102 2x10Gb FH	4x	2 port NIC, <b>Emulex</b> OCe14102	S26361-F5536-E2	S26361-F5536-L502
PLAN EP OCe14102 2x10Gb LP	4x	2 port NIC, <b>Emulex</b> OCe14102	S26361-F5536-E202	S26361-F5536-L502
<b>optional 10Gb SFP+ module with LC connector for Emulex controller</b>				
PCNA SFP+ MMF Modul OCe14102	4x	MMF / SR SFP+ module, up to 400m, <b>Emulex</b>	S26361-F5250-E110	S26361-F5250-E110
Twinax Anschlussplatz Primergy	4x	virtual connector for twinax cables	<b>V:TWX CONNECTOR-PY</b>	
SFP+ active Twinax Cable Fujitsu	4x	customized cable length (best fitting cable length is defined during rack installation at the factory)	S26361-F3989-E600	see table at the bottom of this page
SFP+ active Twinax Cable Brocade	4x		S26361-F3873-E500	
<i>max. 2x SFP+ or Twinax Cable per controller</i>				
max. 8 Controller per system				

10Gb Converged Ethernet network components

25Gb Converged Ethernet network components

10G SFP+

25G SFP28

<b>10/25Gb Converged Ethernet network adapters with SFP+/SFP28 cages. Adapter ships with empty cages.</b>				
10G: Each cage consumes 1x optical SFP+ transceiver per port, or 1x twinax cable per port, or 1x DAC cable per port. Dual rate 10G/1G transceivers will work at 10G line rate only.				
25G: Each cage consumes 1x optical SFP28 transceiver per port, or 1x 25G DAC cable per port. 25G transceivers will work at 25G line rate only.				
iSCSI and iSCSI Offload support will not be included in the initial hardware release. If you wish to get support for FCoE please submit a Release Request with the desired PRIMERGY server system configuration SAR/XLSX file attachment as described in the process.				
PCNA EP QL41262 2x10/25Gb SFP+/SFP28 FH	4x	2 port <b>CNA</b> with FCoE, iSCSI Offload, Universal RDMA, <b>Cavium</b> QL41262HLCU	S26361-F4070-E2	S26361-F4070-L502
PCNA EP QL41262 2x10/25Gb SFP+/SFP28 LP	4x	2 port <b>CNA</b> with FCoE, iSCSI Offload, Universal RDMA, <b>Cavium</b> QL41262HLCU	S26361-F4070-E202	S26361-F4070-L502
<b>Optional, 10Gb SFP+ optical transceiver module, one per cage or port</b>				
SFP+ Optical Transceiver 10G Single Rate SR	2x	LC, MMF / SR SFP+ module, up to 400m, <b>Finisar</b>	S26361-F3986-E3	S26361-F3986-L3
SFP+ Optical Transceiver 10G Single Rate LR	2x	LC, SMF / LR SFP+ module, up to 10km, <b>Finisar</b>	S26361-F3986-E4	S26361-F3986-L4
SFP+ Optical Transceiver 10G/1G Dual Rate SR	2x	LC, MMF / SR SFP+ module, up to 400m, <b>Intel</b>	S26361-F3986-E5	S26361-F3986-L5
SFP+ Optical Transceiver 10G/1G Dual Rate LR	2x	LC, SMF / LR SFP+ module, up to 10km, <b>Intel</b>	S26361-F3986-E6	S26361-F3986-L6
"Virtual Connector" for Twinax cables	2x	Enablement for System Architect	<b>V:TWX CONNECTOR-PY</b>	
SFP+ active Twinax Cable Fujitsu	2x	Customized length. Best fitting length selected at rack factory installation.	S26361-F3989-E600	see table at the bottom of this page
SFP+ active Twinax Cable Brocade	2x		S26361-F3873-E500	
<i>Max. 2x SFP+, DAC, or Twinax Cable per adapter</i>				
<b>Optional, 25Gb SFP28 optical transceiver module with LC connector, each cage consumes one.</b>				
SFP28 Optical Transceiver 25G SR MMA2P00-AS LC	2x	MMF / SR SFP28 module, Mellanox. Max reach supported 100m	S26361-F4054-E701	S26361-F4054-L701
SFP28 Optical Transceiver 25G SR E25GSFP28SR LC	2x	MMF / SR SFP28 module, Intel. Max reach supported 30m	S26361-F4055-E701	S26361-F4055-L701
"Virtual Connector" for DAC/AOC cables	2x	Enablement for System Architect	<b>V:DAC/AOC-CONNECTOR-25</b>	
25G DAC - Brocade	2x	DAC are not in Fujitsu's portfolio yet. Thus, test only and purchase from switch vendors.		
25G DAC - Cisco	2x			
25G DAC - Intel	2x			
25G AOC - Brocade	2x	AOC are not in Fujitsu's portfolio yet. Thus, test only and purchase from switch vendors.		
25G AOC - Cisco	2x			
25G AOC - Intel	2x			
<i>Max. 2x SFP28, 25G DAC, or 25G AOC per adapter</i>				

max. 8x adapters per system				
<b>10Gb Ethernet controller with SFP+ interface (for SFP+ modules or twinax cables, Emulex)</b>				
PCNA EP OCe14102 2x 10Gb FH	4x	2 port CNA with FCoE & RDMA, <b>Emulex</b>	S26361-F5250-E1	S26361-F5250-L501
PCNA EP OCe14102 2x 10Gb LP	4x	2 port CNA with FCoE & RDMA, <b>Emulex</b>	S26361-F5250-E201	S26361-F5250-L501
<b>optional 10Gb SFP+ module with LC connector for Emulex controller, each cage consumes one.</b>				
PCNA SFP+ MMF Modul OCe14102	2x	MMF / SR SFP+ module, up to 400m, <b>Emulex</b>	S26361-F5250-E110	S26361-F5250-E110
Twinax Anschlussplatz Primergy	2x	virtual connector for twinax cables	<b>V:TWX CONNECTOR-PY</b>	
SFP+ active Twinax Cable Fujitsu	2x	(best fitting cable length is defined during rack installation at the factory)	S26361-F3989-E600	see table at the bottom of this page
SFP+ active Twinax Cable Brocade	2x		S26361-F3873-E500	
<i>max. 2x SFP+ or Twinax Cable per controller</i>				
max. 8 Controller per system				

**25/10Gb Ethernet network components**

10G SFP+

25G SFP28

<b>25/10Gb Ethernet network adapter with 2x SFP28 cages (requires twinax cables or optical transceiver SFP28 or SFP+ modules)</b>				
Dual speed support, auto-sense - supports 25Gbps and 10Gbps line rate per-port. Your choice of optical transceiver decides about the actual line rate.				
Only Cavium adapters provide Universal RDMA capabilities, both iWARP and RoCE. Mellanox adapters provide RoCE RDMA only. Intel adapters don't provide any.				
PLAN EP QL41212 25Gb 2p SFP28 FH	4x	2 port NIC with Universal RDMA: iWARP & RoCE, <b>Cavium QL41212</b>	S26361-F4056-E2	S26361-F4056-L502
PLAN EP QL41212 25Gb 2p SFP28 LP	4x	2 port NIC with Universal RDMA: iWARP & RoCE, <b>Cavium QL41212</b>	S26361-F4056-E202	S26361-F4056-L502
PLAN EP MCX4-LX 25Gb 2p SFP28 FH	4x	2 port NIC with RDMA: RoCE, <b>Mellanox ConnectX4-LX</b>	S26361-F4054-E2	S26361-F4054-L502
PLAN EP MCX4-LX 25Gb 2p SFP28 LP	4x	2 port NIC with RDMA: RoCE, <b>Mellanox ConnectX4-LX</b>	S26361-F4054-E202	S26361-F4054-L502
PLAN EP XXV710-DA2 2x25Gb FH	4x	2 Port NIC, <b>Intel XXV710-DA2</b>	S26361-F4055-E2	S26361-F4055-L502
PLAN EP XXV710-DA2 2x25Gb LP	4x	2 Port NIC, <b>Intel XXV710-DA2</b>	S26361-F4055-E202	S26361-F4055-L502
<b>Optional, 25Gb SFP28 optical transceiver module with LC connector, each cage consumes one.</b>				
SFP28 Optical Transceiver 25G SR MMA2P00-AS LC	2x	MMF / SR SFP28 module, Mellanox. Max reach supported 100m	S26361-F4054-E701	S26361-F4054-L701
SFP28 Optical Transceiver 25G SR E25GSFP28SR LC	2x	MMF / SR SFP28 module, Intel. Max reach supported 30m	S26361-F4055-E701	S26361-F4055-L701
"Virtual Connector" for DAC/AOC cables	2x	Enablement for System Architect	<b>V:DAC/AOC-CONNECTOR-25</b>	
25G DAC - Brocade	2x	DAC are not in Fujitsu's portfolio yet. Thus, test only and purchase from switch vendors.		
25G DAC - Cisco	2x			
25G DAC - Intel	2x			
25G AOC - Brocade	2x	AOC are not in Fujitsu's portfolio yet. Thus, test only and purchase from switch vendors.		
25G AOC - Cisco	2x			
25G AOC - Intel	2x			
<i>Max. 2x SFP28, 25G DAC, or 25G AOC per adapter</i>				
<b>Optional, 10Gb SFP+ optical transceiver module, each cage consumes one.</b>				
SFP+ Optical Transceiver 10G Single Rate SR	2x	LC, MMF / SR SFP+ module, up to 400m, <b>Finisar</b>	S26361-F3986-E3	S26361-F3986-L3
SFP+ Optical Transceiver 10G Single Rate LR	2x	LC, SMF / LR SFP+ module, up to 10km, <b>Finisar</b>	S26361-F3986-E4	S26361-F3986-L4
SFP+ Optical Transceiver 10G/1G Dual Rate SR	2x	LC, MMF / SR SFP+ module, up to 400m, <b>Intel</b>	S26361-F3986-E5	S26361-F3986-L5
SFP+ Optical Transceiver 10G/1G Dual Rate LR	2x	LC, SMF / LR SFP+ module, up to 10km, <b>Intel</b>	S26361-F3986-E6	S26361-F3986-L6
"Virtual Connector" for Twinax cables	2x	Enablement for System Architect	<b>V:TWX CONNECTOR-PY</b>	
SFP+ active Twinax Cable Fujitsu	2x	Customized length. Best fitting length selected at rack factory installation.	S26361-F3989-E600	see table at the bottom of this page
SFP+ active Twinax Cable Brocade	2x		S26361-F3873-E500	
<i>Max. 2x SFP+, DAC, or Twinax Cable per adapter</i>				
max. 8x adapters per system				

<b>25/10Gb Ethernet controller with 2x SFP28 cages (for twinax cables or optical transceiver SFP+ modules)</b>				
Dual speed support, auto-sense - supports 25Gbps and 10Gbps line rate per-port.				
<b>Note: This is not the most current product. The successor product is PLAN EP QL41212.</b>				
PLAN EP QL45212 2x25Gb FH	4x	Dual Port NIC, RoCE RDMA, WS2016, <b>Qlogic</b>	S26361-F5622-E2	S26361-F5622-L502
PLAN EP QL45212 2x25Gb LP	4x	Dual Port NIC, RoCE RDMA, WS2016, <b>Qlogic</b>	S26361-F5622-E202	S26361-F5622-L502
<b>optional 25G DAC</b>				
<i>max. 2x 25G DAC per controller</i>				
<b>optional 10Gb SFP+ module with LC connector for Fujitsu / Intel / Qlogic based controller</b>				
SFP+ Transceiver Module MMF 10GbE LC	4x	MMF / SR SFP+ module, up to 400m	S26361-F3986-E3	S26361-F3986-L3
SFP+ Transceiver Module SMF 10GbE LC	4x	SMF / LR SFP+ module, up to 10km	S26361-F3986-E4	S26361-F3986-L4

Twinax Anschlussplatz Primergy	4x	virtual connector for twinax cables	<b>V:TWX CONNECTOR-PY</b>	
SFP+ active Twinax Cable Fujitsu	4x	customized cable length (best fitting cable length is defined during rack installation at the factory)	<b>S26361-F3989-E600</b>	see table at the bottom of this page
SFP+ active Twinax Cable Brocade	4x		<b>S26361-F3873-E500</b>	
<i>max. 2x SFP+ or Twinax Cable per controller</i>				
max. 8 Controller per system				

**40Gb Ethernet network components**

<b>40Gb Ethernet controller with QSFP cage (requires DAC, AOC cables or optical transceiver QSFP modules)</b>				
Supports 40Gbps line rate per-port				
PLAN EP MCX4-EN 40Gb 2p QSFP FH	4x	Dual Port NIC, RoCE RDMA, <b>Mellanox</b>	<b>S26361-F4053-E2</b>	<b>S26361-F4053-L502</b>
PLAN EP MCX4-EN 40Gb 2p QSFP LP	4x	Dual Port NIC, RoCE RDMA, <b>Mellanox</b>	<b>S26361-F4053-E202</b>	<b>S26361-F4053-L502</b>
<b>Optional, 40Gb QSFP Optical Transceiver module with MPO connector for PLAN EP MCX4-EN 40Gb 2p QSFP</b>				
QSFP 40G SR4L MPO 850nm 30m MC2210411-SR4L	2x	MMF / SR4L QSFP module, Mellanox. Max reach supported 30m	<b>S26361-F4053-E701</b>	<b>S26361-F4053-L701</b>
QSFP 40G SR4 MPO 850nm 150m MC2210411-SR4	2x	MMF / SR4 QSFP module, Mellanox. Max reach supported 150m	<b>S26361-F4053-E702</b>	<b>S26361-F4053-L702</b>
"Virtual Connector" for DAC/AOC cables	2	Enablement for System Architect	<b>V:DAC/AOC-CONNECTOR-40</b>	
40G DAC - Cisco	2x	DAC are not in Fujitsu's portfolio yet. Thus, test only and purchase from switch vendors.		
40G DAC - Mellanox	2x			
40G AOC - Cisco	2x	AOC are not in Fujitsu's portfolio yet. Thus, test only and purchase from switch vendors.		
40G AOC - Mellanox	2x			
<i>max. 2x QSFP or DAC, AOC per PLAN EP MCX4-EN 40Gb 2p QSFP</i>				
max. 4x PLAN EP MCX4-EN 40Gb 2p QSFP				

**100Gb Ethernet network components**

<b>100Gb Ethernet controller with 1x QSFP28 cage (requires twinax cables or optical transceiver QSFP28 modules)</b>				
Supports 100Gbps line rate				
PLAN EP QL45611 100Gb 1p QSFP28 FH	4x	Single Port NIC, RoCE RDMA, <b>Cavium</b>	<b>S26361-F4057-E1</b>	<b>S26361-F4057-L501</b>
PLAN EP QL45611 100Gb 1p QSFP28 LP	4x	Single Port NIC, RoCE RDMA, <b>Cavium</b>	<b>S26361-F4057-E201</b>	<b>S26361-F4057-L501</b>
<b>Optional, 100Gb QSFP28 Optical Transceiver module with MPO connector for PLAN EP QL45611 100Gb 1p QSFP28</b>				
QSFP28 100G SR4 MPO 850nm 100m MMA1B00-C100D	1x	MMF / SR4 QSFP28 module, Mellanox. Max reach supported 100m	<b>S26361-F4052-E701</b>	<b>S26361-F4052-L701</b>
QSFP28 100G PSM4 1310nm 500m MMS1C10-CM	1x	MMF / SR QSFP28 module, Mellanox. Max reach supported 500m	<b>S26361-F4052-E801</b>	<b>S26361-F4052-L801</b>
"Virtual Connector" for DAC/AOC cables	1x	Enablement for System Architect	<b>V:DAC/AOC-CONNECTOR-100</b>	
100G DAC - Cisco	1x	DAC are not in Fujitsu's portfolio yet. Thus, test only and purchase from switch vendors.		
100G DAC - Mellanox	1x			
100G AOC - Cisco	1x	AOC are not in Fujitsu's portfolio yet. Thus, test only and purchase from switch vendors.		
100G AOC - Mellanox	1x			
<i>Max. 1x QSFP28 or DAC/AOC Cable per PLAN EP QL45611 100Gb 1p QSFP28</i>				
max. 8x PLAN EP QL45611 100Gb 1p QSFP28				

<b>100Gb Ethernet controller with 1x QSFP28 cage (requires twinax cables or optical transceiver QSFP28 modules)</b>				
Supports 100Gbps line rate				
PLAN EP MCX4-EN 100Gb 1p QSFP28 FH	4x	Single Port NIC, RoCE RDMA, <b>Mellanox</b>	S26361-F4052-E1	S26361-F4052-L501
PLAN EP MCX4-EN 100Gb 1p QSFP28 LP	4x	Single Port NIC, RoCE RDMA, <b>Mellanox</b>	S26361-F4052-E201	S26361-F4052-L501
<b>Optional, 100Gb QSFP28 Optical Transceiver module with MPO connector for PLAN EP MCX4-EN 100Gb 1p QSFP28</b>				
QSFP28 100G SR4 MPO 850nm 100m MMA1B00-C100D	1x	MMF / SR4 QSFP28 module, Mellanox. Max reach supported 100m	S26361-F4052-E701	S26361-F4052-L701
QSFP28 100G PSM4 1310nm 500m MMS1C10-CM	1x	MMF / SR QSFP28 module, Mellanox. Max reach supported 500m	S26361-F4052-E801	S26361-F4052-L801
"Virtual Connector" for DAC/AOC cables	1x	Enablement for System Architect	V:DAC/AOC-CONNECTOR-100	
100G DAC - Cisco	1x	DAC are not in Fujitsu's portfolio yet. Thus, test only and purchase from switch vendors.		
100G DAC - Mellanox	1x			
100G AOC - Cisco	1x	AOC are not in Fujitsu's portfolio yet. Thus, test only and purchase from switch vendors.		
100G AOC - Mellanox	1x			
<i>Max. 1x QSFP28 or DAC/AOC Cable per PLAN EP MCX4-EN 100Gb 1p QSFP28</i>				
max. 4x PLAN EP MCX4-EN 100Gb 1p QSFP28				

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**Network cables for later upgrade**

<b>Fujitsu active SFP+ Twinax 10Gb cable</b>	
SFP+ active Twinax Cable Fujitsu 2m	S26361-F3989-L102
SFP+ active Twinax Cable Fujitsu 5m	S26361-F3989-L105
SFP+ active Twinax Cable Fujitsu 10m	S26361-F3989-L110
<b>Brocade active SFP+ Twinax 10Gb cable</b>	
SFP+ active Twinax Cable Brocade 1m	S26361-F3873-L501
SFP+ active Twinax Cable Brocade 3m	S26361-F3873-L503
SFP+ active Twinax Cable Brocade 5m	S26361-F3873-L505

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## Chapter 10 - Fibre Channel Controller

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**32Gb Fibre Channel controller generation 6 with LC interface for 50µm optical cables (OM4 or OM3)**

These components ship with optical transceiver modules equipped for all ports. Supported line rates: 32, 16, and 8Gbps.

PFC EP LPe32002 2x 32Gb	7x	2 ports, full height, Broadcom/Emulex	S26361-F4044-E2	S26361-F4044-L502
PFC EP LPe32002 2x 32Gb LP	7x	2 ports, low profile, Broadcom/Emulex	S26361-F4044-E202	S26361-F4044-L502
PFC EP LPe32000 1x 32Gb	7x	1 port, full height, Broadcom/Emulex	S26361-F4044-E1	S26361-F4044-L501
PFC EP LPe32000 1x 32Gb LP	7x	1 port, low profile, Broadcom/Emulex	S26361-F4044-E201	S26361-F4044-L501
PFC EP QLE2742 2x 32Gb	7x	2 ports, full height, Cavium/Qlogic	S26361-F4043-E2	S26361-F4043-L502
PFC EP QLE2742 2x 32Gb LP	7x	2 ports, low profile, Cavium/Qlogic	S26361-F4043-E202	S26361-F4043-L502
PFC EP QLE2740 1x 32Gb	7x	1 port, full height, Cavium/Qlogic	S26361-F4043-E1	S26361-F4043-L501
PFC EP QLE2740 1x 32Gb LP	7x	1 port, low profile, Cavium/Qlogic	S26361-F4043-E201	S26361-F4043-L501

**16Gb Fibre Channel controller generation 6 with LC interface for 50µm optical cables (OM4 or OM3)**

These components ship with optical transceiver modules equipped for all ports. Supported line rates: 16, 8, and 4Gbps.

PFC EP LPe31002 2x 16Gb	7x	2 ports, full height, Broadcom/Emulex	S26361-F5596-E2	S26361-F5596-L502
PFC EP LPe31002 2x 16Gb LP	7x	2 ports, low profile, Broadcom/Emulex	S26361-F5596-E202	S26361-F5596-L502
PFC EP LPe31000 1x 16Gb	7x	1 port, full height, Broadcom/Emulex	S26361-F5596-E1	S26361-F5596-L501
PFC EP LPe31000 1x 16Gb LP	7x	1 port, low profile, Broadcom/Emulex	S26361-F5596-E201	S26361-F5596-L501
PFC EP QLE2692 2x 16Gb	7x	2 ports, full height, Cavium/Qlogic	S26361-F5580-E2	S26361-F5580-L502
PFC EP QLE2692 2x 16Gb LP	7x	2 ports, low profile, Cavium/Qlogic	S26361-F5580-E202	S26361-F5580-L502
PFC EP QLE2690 1x 16Gb	7x	1 port, full height, Cavium/Qlogic	S26361-F5580-E1	S26361-F5580-L501
PFC EP QLE2690 1x 16Gb LP	7x	1 port, low profile, Cavium/Qlogic	S26361-F5580-E201	S26361-F5580-L501

max. 7 Controller per system

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**Chapter 11 - Infiniband Controllers**

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<b>S26361-F4533-E102</b>
<b>S26361-F4533-L102</b>
IB HCA 56Gb 1channel FDR
56Gbit 1channel Infiniband Controller with FDR technology
Q-SFP+ connector
PCIe x8 full height Card, 170mm
max. 4x per system

<b>S26361-F4533-E202</b>
<b>S26361-F4533-L202</b>
IB HCA 56Gb 2channel FDR
56Gbit 2channel Infiniband Controller with FDR technology
Q-SFP+ connector
PCIe x8 full height Card, 170mm
max. 4x per system

Max. 4x IB Controller per System (configuration of different Controllers NOT supported )

The following card can not be mixed Infiniband card(S26361-F4533-E102/S26361-F4533-E202/S26361-F5540-E102/E202)

S26361-F4054-E302/S26361-F4052-E201/S26361-F4052-E1/S26361-F4053-E2/S26361-F4053-E202  
S26361-F4054-E2/S26361-F4054-E202

only within a rack configuration

<b>S26361-F3996-E556</b>
InfiniBand Cu Cable 56Gb customized. QSFP, 1m and 3m

only loose delivery

Cables for 56Gbit Controller:
<b>S26361-F3996-L561</b>
InfiniBand Cu Cable 56Gb QSFP, 1m
<b>S26361-F3996-L563</b>
InfiniBand Cu Cable 56Gb QSFP, 3m

<b>S26361-F5540-E102</b>
<b>S26361-F5540-L102</b>
IB HCA 100Gb 1channel EDR with PCI riser
100Gbit 1channel Infiniband Controller EDR technology (8.0GT/s) with PCI short riser
1x Q-SFP+ connector
PCIe Gen3 x16 Full Hight Card, 170mm
max. 4x per system

<b>S26361-F5540-E202</b>
<b>S26361-F5540-L202</b>
IB HCA 100Gb 2channel EDR with PCI riser
100Gbit 2channel Infiniband Controller EDR technology (8.0GT/s) with PCI short riser
2x Q-SFP+ connector
PCIe Gen3 x16 Full Hight Card, 170mm
max. 4x per system

For loose delivery and in Rack customizing

Cables for Mellanox 100Gbit Controller:
S26361-F5549-L561/ -E561
MELLANOX COP. CABLE, 100GB/S, QSFP, LSZH, 1M
S26361-F5549-L563/ -E563
MELLANOX COP. CABLE, 100GB/S, QSFP, LSZH, 3M

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**Chapter 12 - OMNI Path Controllers**

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<b>S26361-F5562-E10 / -L10</b>
POP EP 100Gb 1port Omni Path
100Gbit 1channel HFI Card
Q-SFP+ connector
PCIe Gen3 x16 Card
max. 4 per system

Max. 4x Omni Path Card per System (configuration of different Controllers NOT supported )

The following card can not be mixed with Infiniband card(S26361-F5562-E10)

S26361-F4054-E302/S26361-F4052-E201/S26361-F4052-E1/S26361-F4053-E2/S26361-F4053-E202  
S26361-F4054-E2/S26361-F4054-E202

<b>Cables for Omni Path 100Gbit Controller:</b>
S26361-F5563-L150 / -E150 Omni Passive Copper Cable , 100GB/S, QSFP, 1.5M
S26361-F5563-L200 / -E200 Omni Passive Copper Cable , 100GB/S, QSFP, 2M
S26361-F5563-L300 / -E300 Omni Passive Copper Cable , 100GB/S, QSFP, 3M

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**Chapter 13 - Power supply unit, power cable**

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<b>no order number required</b>
<b>no order number required</b>
1600W platinum power supply unit
1600W PSU module platinum 1st or 2nd PSU for redundancy and DPF.
94% efficiency
100-240V, 50-60Hz
hot plug
<b>2 pieces available in BU</b>

<b>S26113-F574-E477I-L477</b>
<b>Dummy module instead PSU</b>
Dummy module for closing the 2nd PSU hole, in case only 1 PSU is required, max. 1x per system
<b>On special release request only</b>

**Rack**

<b>Power cord option for Rack Server, 4m, grey (1x per PSU)</b>	
<b>T26139-Y1968-E100</b>	Powercord for rack, IEC 320 C14 connector
<b>T26139-Y1741-E90</b>	USA, Canada, 1.8m, black, 15A
<b>T26139-Y1757-E/L10</b>	Taiwan, 1.8m
<b>T26139-Y3850-E10</b>	Option "no powercord", for Countries without specific cable orderable like e.g. China

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**Chapter 14 - iRMC, eLCM, Cool-safe, TPM, Region Kits**

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**i** iRMC S5 (integrated Remote Management Controller) onboard server management with dedicated 10/100/1000 LAN-port and integrated graphics controller.

**S26361-F1790-E243**  
**iRMC S4 advanced pack**  
 integrated remote management controller activation key for Advanced Video Redirection (AVR) and Remote Media  
 max. 1x per system

**i** Loose delivery  
 iRMC S4 advanced pack (Node Locked License)  
**S26361- F1790-L244**

**i** Executing system updates, controlling the hardware setup or running diagnostic tests on components are frequent tasks of IT administrators to ensure a continuous 24x7 server operation. ServerView embedded Lifecycle Management (eLCM) for Fujitsu PRIMERGY servers greatly supports such routine tasks by consolidating and enhancing management functions directly available ("embedded") within the server.

**S26361-F1790-E311**  
**embedded Lifecycle Management (eLCM)**  
 Server Online Update  
 OS driver Update  
 Hardware firmware update  
 Server Offline Update  
 Hardware update via Update Manager Express  
 PrimeCollect  
 Autonomous creation of Primecollect archives  
 Creation and use of PrimeCollect archives over AIS connect  
 Custom Image (Jukebox function)  
 Automatic and manual download of CD and DVD Images  
 Automatic and manual start of CD and DVD Images  
 max. 1x per system

**i** Loose delivery  
 eLCM Activation Pack (Node Locked License)  
**BDL:ELCM-PACK**  
**options contains:**  
 - 16GB SD card  
 - Paper with TAN for Licensekey

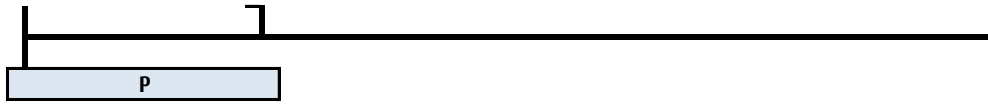
**S26361-F3301-E241**  
 E-Star Fam1  
 Limits Configuration in accordance with Energy Star requirements if needed.  
 this setting can be activated ex factory only  
 max. 1x per system

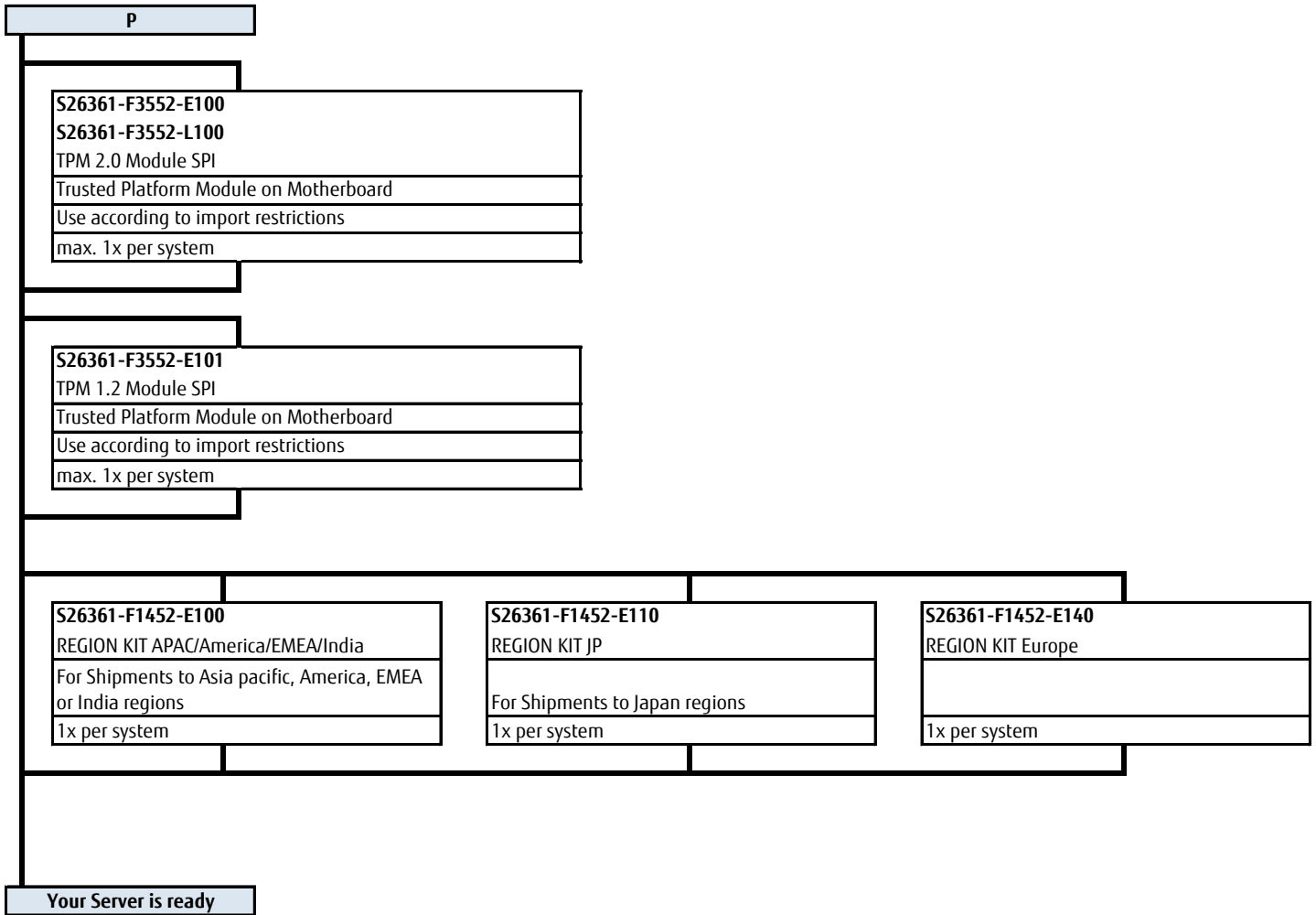
Today there are no limitations for E-Star Fam1 certification.

Advanced Thermal design 45°C can be combined with LC base unit (S26361-K1587-V210) only!

**S26361-F3776-E440**  
 Cool-safe® Advanced Thermal design 40°C  
 enables the PRIMERGY Server to cope with temperatures from 5-40° in operating mode due to extended Fan settings  
 this setting can be activated ex factory only  
 max. 1x per system

**S26361-F3776-E445**  
 Cool-safe® Advanced Thermal design 45°C  
 enables the PRIMERGY Server to cope with temperatures from 5-45° in operating mode due to extended Fan settings  
 this setting can be activated ex factory only  
 max. 1x per system





You would like to add some customer specific solutions?



With our made4you service we fulfill any individual requirement and wish of our customers perfectly - e.g.

- > special hardware configurations,
- > staging services ex factory,
- > extended lifecycle management,
- > customer specific logos, component,
- > BIOS fixes and many more.

For further information please contact us via [customer.projects@ts.fujitsu.com](mailto:customer.projects@ts.fujitsu.com).



### Fujitsu Portfolio

Build on industry standards, Fujitsu offers a full portfolio of IT hardware and software products, services, solutions and cloud offering, ranging from clients to datacenter solutions and includes the broad stack of Business Solutions, as well as the full stack of Cloud offering. This allows customers to leverage from alternative sourcing and delivery models to increase their business agility and to improve their IT operation's reliability.

**Chapter 15 - Accessories**

<http://www.fujitsu.com/fts/products/computing/peripheral/accessories/index-facts.html>

**USB Mouse:**

Mouse M520 Black	<b>S26381-K467-E100</b>	<b>S26381-K467-L100</b>
Mouse M520 Grey	<b>S26381-K467-E101</b>	<b>S26381-K467-L101</b>
Mouse M530 Black	n/a	<b>S26381-K468-L100</b>
Mouse M530 Grey	n/a	<b>S26381-K468-L101</b>



**USB sticks (FOR PROJECTS ONLY) - no standard release**

ADATA USB 3.0 Flash Stick UE700 – 32GB		<b>S26391-F6048-L332</b>
ADATA USB 3.0 Flash Stick UE700 – 64GB		<b>S26391-F6048-L364</b>



**USB Keyboards for Tower Servers for following countries:**

USB professional Keyboard KBPC PX ECC	Country version	FUJITSU Keyboard KB521 USB (grey)
	S/ int 105 keys (UK keyboard + US int. Layout)	<b>S26381-K521-E102</b>
<b>S26381-K341-E104</b>	Czech/Slovak	<b>S26381-K521-E104</b>
<b>S26381-K341-E110</b>	US 104 keys (US keyboard + US layout)	<b>S26381-K521-E110</b>
<b>S26381-K341-E120</b>	Germany	<b>S26381-K521-E120</b>
<b>S26381-K341-E122</b>	Germany / Int	<b>S26381-K521-E122</b>
<b>S26381-K341-E140</b>	France	<b>S26381-K521-E140</b>
<b>S26381-K341-E154</b>	Sweden / Finland	<b>S26381-K521-E154</b>
<b>S26381-K341-E165</b>	United Kingdom	<b>S26381-K521-E165</b>
<b>S26381-K341-E170</b>	Switzerland	<b>S26381-K521-E170</b>
<b>S26381-K341-E180</b>	Spain	<b>S26381-K521-E180</b>
<b>S26381-K341-E185</b>	Italy	<b>S26381-K521-E185</b>

**USB Optical Disc Drive**

External Ultra Slim Portable DVD Writer (Hit	<b>S26341-F103-L142</b>
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Please find the layout of all Fujitsu keyboards here: <http://abg0355a.abg.fsc.net/>



Date of change	Folder / order code / description	Name	What has been changed / comment
02.09.2016		Klaus-Dieter Ruf	Minor description change on RAM page
05.09.2016	LAN, FC	Ulrich Lösch	Ethernet, Fibre Channel
08.09.2016		Klaus-Dieter Ruf	Removed 1Gbit Ethernet cards
08.09.2016		Klaus-Dieter Ruf	Removed Emulex 10Gbit Ethernet for PAN
08.09.2016		Klaus-Dieter Ruf	8 Gbit FC Controller removed
15.09.2016		Klaus-Dieter Ruf	Description updates
20.09.2016		Klaus-Dieter Ruf	PCIe numbering updated
26.09.2016		Klaus-Dieter Ruf	PCIe slot restrictions added
11.10.2016		Fabian Seil	added memory order codes
11.10.2016	SSD	Klaus-Dieter Ruf	Added M.2 SATA device table
12.10.2016	Cover	Klaus-Dieter Ruf	Picture on cover page updated
20.10.2016	HDD / SSD	Tatsuya Sudo	updated
03.11.2016	S26341-F103-L140	Fabian Seil	changed to new USB Optical Disc Drive
06.11.2016	LAN, FC	Ulrich Lösch	25GbE, 32GFC
09.11.2016	SSD	Klaus-Dieter Ruf	Added PCIe SSDs (Draft to be updated)
10.11.2016	IB,OMNI	Shinho Hayashi	modify Omni path (add -Loose delivery order code)
17.11.2016	S26361-F4026-E208/L208	Fabian Seil	added
22.11.2016	RAM	Fabian Seil	Mirrored Channel Mode text modified
23.11.2016	RAM	Klaus-Dieter Ruf	RAM page update based on latest roadmap
24.11.2016	Base	Klaus-Dieter Ruf	Order code for Performance base unit defined
28.11.2016	Description, Base	Klaus-Dieter Ruf	Chipset No update
01.12.2016	RAID	Klaus-Dieter Ruf	Description update on RAID page
05.12.2016	SSD / S26361-F5632-*	Tatsuya Sudo	added
08.12.2016	RAID Controller	Johannes Linne	max number changed to 1
09.12.2016	RAID	Klaus-Dieter Ruf	max number of external RAID controllers changed to 2
09.12.2016	LAN	Klaus-Dieter Ruf	Only 1Gb Ethernet for iRMC available as default
09.12.2016	Base	Klaus-Dieter Ruf	Description in base updated
12.12.2016	Others	Klaus-Dieter Ruf	iRMC advanced pack added
13.12.2016	RAID	Klaus-Dieter Ruf	Update of upgrade component for EP400i
15.12.2016	Rack	Klaus-Dieter Ruf	New Rack Architecture implemented
21.12.2016	Base	Klaus-Dieter Ruf	Added liquid cooled base unit
26.12.2016	HDD, SSD / SED	Tatsuya Sudo	added
06.01.2017	SSD / S26361-F5592-*/ F5588-E120/L120	Tatsuya Sudo	removed
20.01.2017	SSD / S26361-F5648/F5649/F5650-*	Tatsuya Sudo	added
27.01.2017	HDD & SSD	Klaus-Dieter Ruf	Text updates
07.02.2017	HDD & SSD / SED / S26361-F5632-L240	Tatsuya Sudo	note for SED updated / order code corrected
08.02.2017	FC	Ulrich Lösch	32GFC, 16GFC
17.02.2017	complete RAID folder substituted	Johannes Linne	
07.03.2017	RAID Ctrl. EP420e	Johannes Linne	changed S26361-F3847-E502 / E504 to E202 / E204
09.03.2017	CPU	Fabian Seil	specifications and order codes added
09.03.2017	S26361-F4051-E4	Fabian Seil	Cooler kit added
16.03.2017	RAM	Fabian Seil	Mirrored Channel Mode updated
24.03.2017	HDD & SSD / Note / M.2 SSD	Tatsuya Sudo	updated
24.03.2017	HDD & SSD / S26361-F5583-*/ F5648-*	Tatsuya Sudo	removed / Capacity changed
28.03.2017	PRAID EP540i, 580i	Fabian Seil	CacheCade deleted
29.03.2017	CPU	Klaus-Dieter Ruf	Page update
30.03.2017	S26361-F5243-E14/L14	Fabian Seil	comment added
04.04.2017	RAM	Fabian Seil	Mirrored Channel Mode text modified
11.04.2017	Others / S26361-F1790-E311	Klaus-Dieter Ruf	New order code for embedded Lifecycle Management
11.04.2017	Description	Klaus-Dieter Ruf	Add CPU# to PCI Slot number
18.04.2017	CPU	Klaus-Dieter Ruf	Added CPU vs. Base unit matrix
18.04.2017	LAN	Ulrich Lösch	Order number typo for PLAN EP X550: F3948
18.04.2017	LAN	Ulrich Lösch	Dual Rate 10G/1G Optical Transceiver SFP+ added
19.04.2017	Description	Klaus-Dieter Ruf	Description change concerning occupied PCI slots
27.04.2017	T26139-Y1757-E/L10	Fabian Seil	powercord for Taiwan added
27.04.2017	USB Devices	M.Maridakis	New ext. ODD added
27.04.2017	PLAN EP QL45212	U.Lösch	Updated
09.05.2017	S26361-F3552-E101	Fabian Seil	added
09.05.2017	RAM	Fabian Seil	new order codes added
11.05.2017	Base	Klaus-Dieter Ruf	Performance base unit only allowed with 4 CPUs
11.05.2017	Others	Klaus-Dieter Ruf	Removed ATD45 support
21.05.2017	Description & Base	Klaus-Dieter Ruf	Minor change on descriptions
21.05.2017	LAN	Klaus-Dieter Ruf	Removed capsule optimized 40Gb controller
22.05.2017	IB,OMNI	Shinho Haayshi	Added the Comment (gray box)
24.05.2017	RAID	Fabian Seil	FBU order codes changed
06.06.2017	SSD / Note / F5666/F5670-*	Tatsuya Sudo	updated / added
06.06.2017	Description	Klaus-Dieter Ruf	Added CPU# to SFF PCIe slots
08.06.2017	CPU	Fabian Seil	order codes of loose components added
12.06.2017	CPU	L. Meszaros	order code of upgrade cooling kits added
13.06.2017	RAID	Fabian Seil	descriptions of FBU options changed
16.06.2017	SSD / F5614/F5617-*	Tatsuya Sudo	removed
10.07.2017	ATD order code update to -E440	Sven Pilz	

11.07.2017	T26139-Y1741-E90	Johannes Linne	new 15A USA/CA power cable
18.07.2017	LAN	U.Lösch	Removed PLAN EP OCe14401 40GbE
18.07.2017	LAN	U.Lösch	Removed all 40GbE cables for later upgrades
19.07.2017	LAN	U.Lösch	Added: 25/40/100GbE Ethernet Adapters, Mellanox
20.07.2017	SSD / S26361-F5648-* / PCIe SSD	Tatsuya Sudou	codes modified / DWPD corrected
20.07.2017	LAN	U.Lösch	Added: 10GbE Ethernet Adapter X710-DA4 4-Port, Intel
24.07.2017	HDD / S26361-F5531-E590	Tatsuya Sudou	added
24.07.2017	SSD / S26361-F5675-*	Tatsuya Sudou	added
07.08.2017	S26361-F3953-E411	Klaus-Dieter Ruf	Description of LAN Adapter changed (4x instead of 2x)
07.08.2017	S26361-F3694-E3	Klaus-Dieter Ruf	Update of memory mirrored mode description
11.08.2017	RAM	Klaus-Dieter Ruf	Memory description table updated
15.08.2017	PSU	Klaus-Dieter Ruf	Update on PSU page (2 PSU available in BU)
05.09.2017	HDD / SSD / Note	Tatsuya Sudou	removed for 2.5" 7.2K/15K HDD / added for M.2 drive
05.09.2017	LAN	U. Lösch	Dynamic LoM: rephrased cages and optical transceivers
06.09.2017	PSU	Klaus-Dieter Ruf	PSU Dummy added
27.09.2017	SSD / F5650-E640 / F5588-E240/E480	Tatsuya Sudou	removed / removed(EOL)
19.10.2017	SSD / S26361-F4045-E64	Tatsuya Sudou	added
24.10.2017	LAN	U.Lösch	Added: 25GbE Ethernet Adapter, Intel
25.10.2017	RAID	A. Spörl	note in Z50S51 changed
13.11.2017	SSD	Tatsuya Sudou	note for Dual microSD and DWPD for PCIe-SSD modified
26.11.2017	Others	Klaus-Dieter Ruf	ATD45 for LC base unit only added
04.10.2018	LAN	U.Lösch	Max = 4 for Ethernet Adapters, Mellanox
15.01.2018	HDD / S26361-F5543/F5582-E124	Tatsuya Sudou	added
15.01.2018	SSD / S26361-F5694-*	Tatsuya Sudou	added
05.02.2018	CPU	Klaus-Dieter Ruf	Added Gold 6144 and 6145 to std base unit
13.02.2018	LAN	U.Lösch	PLAN EP QL41212 & QL45611 added
14.02.2018	RAM	A. Spörl	Rank sparing capa @ 3DS DIMMs updated
02.03.2018	SSD / S26361-F5701/F5706/F5697-*	Tatsuya Sudou	added
21.03.2018	FC	U.Lösch	All FC HBA Max = 7, up from 4
21.03.2018	LAN	U.Lösch	SFP28 S26361-F4055-E/L701 added for PLAN EP QL41212
29.03.2018	SSD / Note for PCIe-SSD	Tatsuya Sudou	"hot plug support : as soon as possible" added
12.04.2018	RAM	Klaus-Dieter Ruf	NVDIMM lines removed
19.04.2018	LAN	U.Lösch	Added: PLAN EP X710-T4 4x10GBASE-T
27.04.2018	CPU	C. Fey	Added Remark for Xeon 6144 and 6146 -> No ATD
16.05.2018	RAID	C. Fey	Remark to clarify NVMe drive connection /w EP540i
16.05.2018	SSD / F4064-* / Dual M.2	Yuichi Sugiyama	added the Dual M.2
18.05.2018	Rack Mount Kit	Kouji Takahashi	added the comment of S26361-F2735-E176
23.05.2018	SSD / F4064-* / Dual M.2	Yuichi Sugiyama	revised the description for VMware
25.06.2018	SSD / F5707-* / M.2 for VMware	Yuichi Sugiyama	added
04.07.2018	RAID	Johannes Linne	added PRAID EP540e on special release, edited comments
01.08.2018	SSD / Dual M.2	Tatsuya Sudou	Notes updated
07.08.2018	SSD / S26361-F5710/F5711-*	Tatsuya Sudou	added
31.08.2018	LAN / S26361-F4068-E2, E202, L502	Ulrich Lösch	Added: PLAN EP QL41112 2x10GBASE-T LP
31.08.2018	LAN / S26361-F4068-E4, E204, L504	Ulrich Lösch	Added: PLAN EP QL41134 4x10GBASE-T LP
31.08.2018	LAN / S26361-F4069-E2, E202, L502	Ulrich Lösch	Added: PLAN EP QL41132 2x10Gb SFP+ LP
31.08.2018	LAN / S26361-F4070-E2, E202, L502	Ulrich Lösch	Added: PCNA EP QL41262 2x10/25Gb SFP+/SFP28 LP
31.08.2018	LAN	Ulrich Lösch	Cosmetic changes: 25G Ethernet section
12.10.2018	SSD / S26361-F5588-E384 / added	Yuichi Sugiyama	added: SSD SATA 2.5" Mixed-Use 3.84TB
29.10.2018	SSD / S26361-F5713/F5715-*	Yuichi Sugiyama	added: SSD SATA 2.5" Mixed-Use 3.84TB
08.02.2019	IB	Takaoka Masanori	Add the limitation for Mellanox Infiniband/Ether.
08.02.2019	OMNI	Takaoka Masanori	Add the limitation for Intel OMNI/Mellanox Ether.
13.02.2019	HD_SSD / S26361-F3907-* / added the exclusion	Yuichi Sugiyama	added the exclusion for HDD SATA 2.5" 7.2K 512e and PRAID EP5
18.02.2019	Others	Christian Fey	added Estar Fam1 Info in "Others"
07.03.2019	Raid	Christian Fey	Removed FBU restriction for ATD

**Chapter 6 - ODD optical disk drives**

The base units with 12x 3.5" or 24x 2.5" HDD do not offer 1x 9.5mm optical drive bay!

