

PRIMERGY RX200 S8

System configurator and order-information guide

October 2015

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4x 2.5" Hot-plug HDD or SSD



8x 2.5" Hot-plug HDD or SSD



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Change report

PRIMERGY Server

Instructions

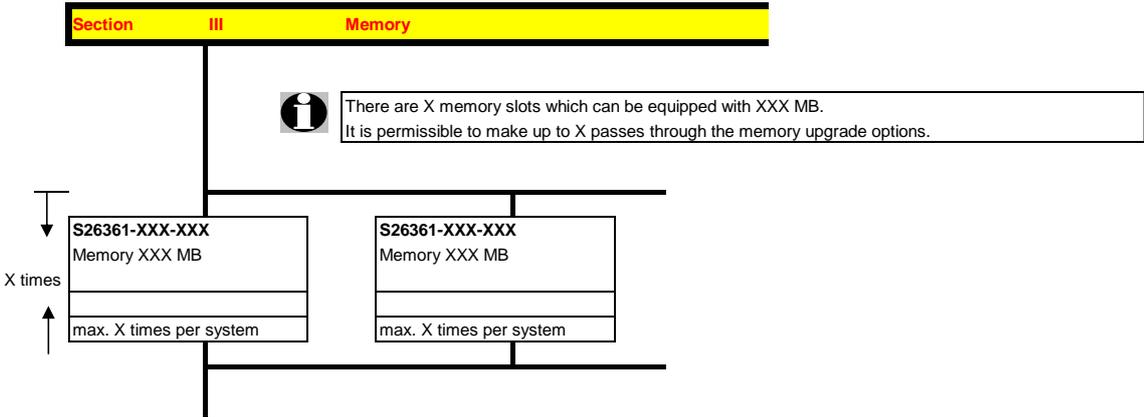
This document contains basic product and configuration information that will enable you to configure your system via PC-/SystemArchitect.

Only these tools will ensure a fast and proper configuration of your PRIMERGY server or your complete PRIMERGY Rack system.

You can configure your individual PRIMERGY server in order to adjust your specific requirements.

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

Please follow the lines. If there is a junction, you can choose which way or component you would like to take. Go through the configurator by following the lines from the top to the bottom.



In one chapter you can only select as many components (here 4x) as the arrow indicates.



Please note that there are information symbols which indicate necessary information.



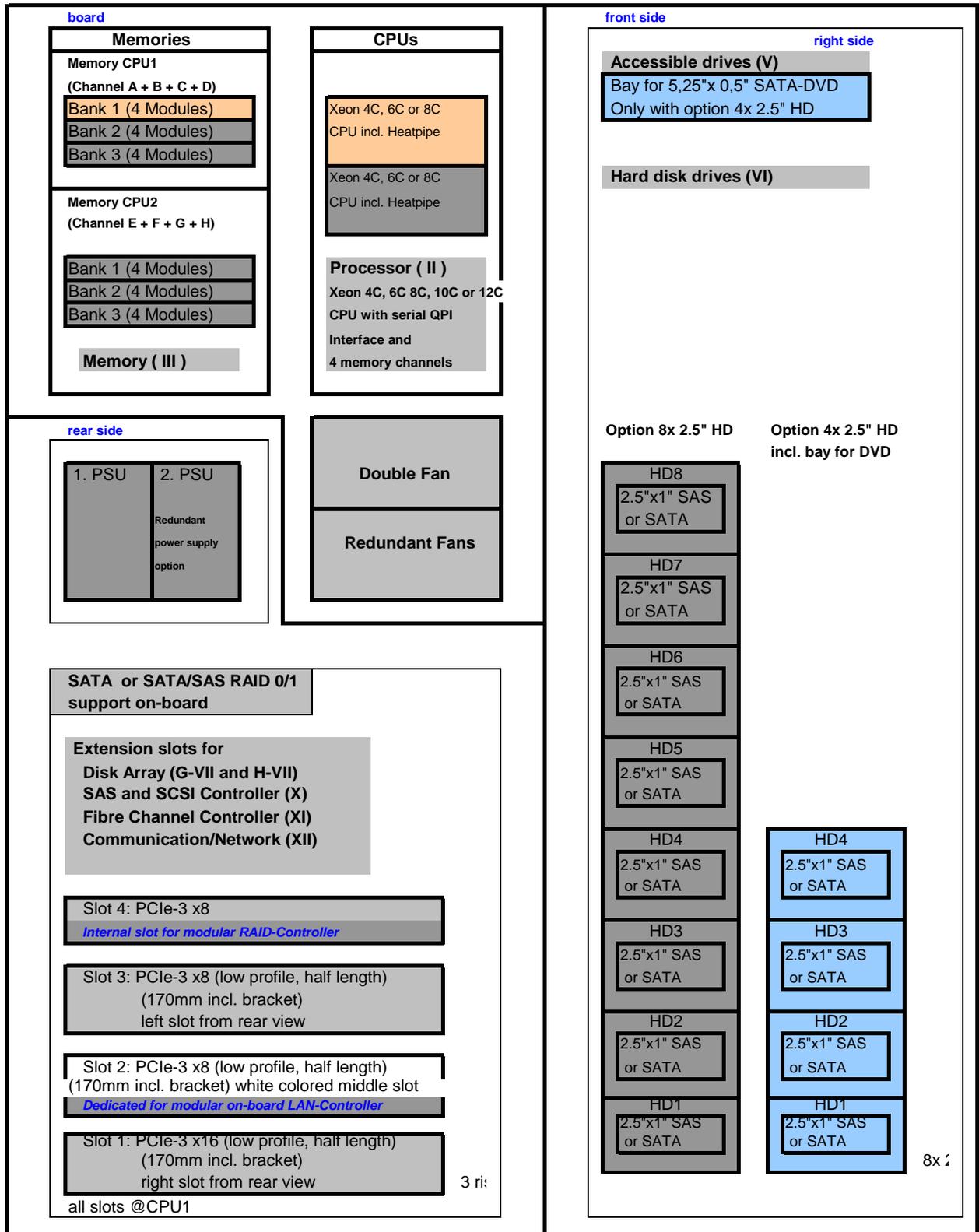
For further information see:

- http://ts.fujitsu.com/products/standard_servers/index.html (internet)
- https://partners.ts.fujitsu.com/com/order-supply/configurators/primergy_config/Pages/default.aspx (extranet)

Prices and availability see price list and PC-/SystemArchitect. Subject to change and errors excepted.

Configuration diagram PRIMERGY RX200 S8

System unit (I)



Key: Included in basic unit or = Option

One CPU (first CPU) and one memory (first memory) has to be selected for an orderable basic unit.

Start PRIMERGY RX200 S8

Section I Basic unit



System unit consisting of:

- * **1U Housing without power supply modules**
(PSU has to be configured min 1x)
- * **Fans**
 - Redundant and hot plug system double-fans **4x** for 1 CPU / **6x** for 2 CPU configuration (n+1 redundancy)
- * **SAS Backplanes for 4x or 8x 2.5" HDD**
with cable connection to on-board or modular RAID Controller
- * **Drives / Bays**
 - **4x 2.5" SAS / SATA HDD or 8x 2.5" SAS / SATA HDD option**
 - 1 bay SATA DVD-ROM 0,5" height (option if 4x 2.5" HDD only)
- * **Integrated ServerView Diagnostics Technology (Diagnosis LED's) for indication of internal failed components**

Systemboard D3302 with:

- * **Up to two Xeon DP CPU's (Socket-R)**
with 2 serial QPI links (Quick Path Interconnect) and four memory channels per CPU
First CPU has to be selected for an orderable basic unit,
- * **Chipset Intel® C600 Series (codenamed Patsburg)**
- * **4 PCIe slots**
 - 2x PCIe-3 x8 (Low Profile cards)
 - 1x PCIe-3 x16 (Low Profile cards)
 - 1x PCIe-3 x8 internal for modular RAID controller only
- * **24 memory slots for max. 1.536GB RAM DDR3 available**
 - Memory is divided into 12 DIMMs per CPU (4 channels with 3 slots per channel)
Possible max. configurations are:
24x 64GB LRDIMM (eight rank modules) = 1536GB
16x 16GB RDIMM quad rank modules) = 384GB
16x 8GB UDIMM (dual rank modules) = 128GB (on special Release only)
First Memory (one module) has to be selected for an orderable basic unit per CPU
 - Memory upgrade is possible module wise
 - Memory mirroring is supported with 2 identical modules in channel A+B/C+D CPU 1 or E+F/G+H CPU 2
 - Rank sparing mode is supported with min. 2x 1R/2R or 1x 4R modules for RDIMM or LRDIMM
 - SDDC (Chipkill) is supported for RDIMMs (except x8 organisation) and LRDIMMs,
- * **Dual Port 10/100/1000 x4 PCI Express* Gigabit Ethernet Intel LAN controller Powerville on-board**
- * **iRMC S4 (integrated Remote Management Controller) on-board server management controller with dedicated 10/100/1000 Service LAN-port and integrated graphics controller.**
The Service LAN-port can be switched alternatively on standard Gbit LAN port 1
- * **Graphics Controller integrated in iRMC S4 (integrated Remote Management Controller):**
1600x1200x16bpp 60Hz, 1280x1024x16bpp 60Hz, 1024x768x32bpp 75Hz, 800x600x32bpp 85Hz,
640x480x32bpp 85Hz
(1280x1024x24bpp 60Hz only possible if local monitor or remote video redirection is off)

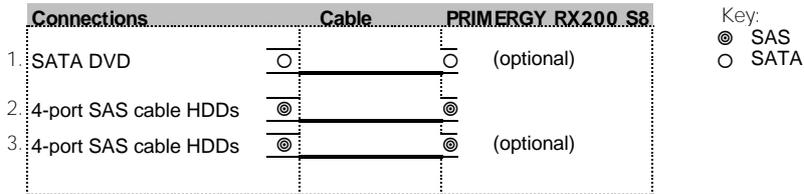
A

A

| |
|---|
| <p>Interfaces at the rear:</p> <ul style="list-style-type: none"> * 1x VGA (15 pins) * 3x USB 2.0 (UHCI) with 480MBit/s, no USB wakeup * 2x LAN RJ45, 1x Service-LAN RJ45 |
| <p>Interfaces on the front:</p> <ul style="list-style-type: none"> * 2x USB 2.0 (UHCI) with 480MBit/s, no USB wakeup * 1x VGA (15 pins) as an option * 1x Service-LAN RJ45 as an option |
| <p>Interfaces internal:</p> <ul style="list-style-type: none"> * 1x USB 2.0 (UHCI) with 480MBit/s for dongle functionality (uSSD memory), no USB wakeup * 1x SATA interface for DVD (only usable with 4x 2.5" HDD baseunit + DVD Option) * 4x SATA/SAS interface for 4 SATA/SAS HD's (only usable for 4x 2.5" HDD baseunit) * 2x USB 2.0 ports for internal USB redirection connected to BMC |
| <p>Software:</p> <ul style="list-style-type: none"> - ServerView Suite Software package incl. ServerStart, ServerBooks, Management Software and Updates - Documentation engl. (multilingual on CD) |

Note: Rack Mounting kit and Power Cord for RX200S8 is not included in the basic unit and has to be configured separately

Cables included in basic unit



Conditions for SATA cable and one ore two 4-port SAS cables see description "Cables" above

B

B

Rack version for 19" racks with
No PSU included in Base Unit
 For an orderable basic unit one CPU = first CPU,
 one memory = first memory
 one PSU = first PSU as well as

| | |
|--|-------------------|
| Basic unit with 4x 2,5" HDD + ODD Bay | S26361-K1455-V101 |
| Basic unit with 8x 2,5" HDD bays, no ODD bay | S26361-K1455-V201 |



Full redundancy cannot be guaranteed for a max. config. with e.g. two 130W CPUs with 450W PSUs. In this case SysArch will generate a warning and PowerSafeguard will throttle CPUs and memory in case of a PSU failure. So, power consumption will be limited to 450W.

| |
|---|
| S26113-F575-E12 450W PSU module platinum 1st or 2nd PSU for redundancy 94% efficiency (platinum) uses hot plug PSU slot min. 1 / max. 2x per system |
|---|

| |
|---|
| S26113-F574-E12 800W PSU module platinum 1st or 2nd PSU for redundancy 94% efficiency (platinum) uses hot plug PSU slot min. 1 / max. 2x per system |
|---|

| |
|--|
| S26113-F615-E10* 800W PSU module titanium 1st or 2nd PSU for redundancy 96% efficiency (titanium) uses hot plug PSU slot min. 1 / max. 2x per system |
|--|

* 110V range not supported

| |
|---|
| S26113-F574-E99 * Power Supply Dummy must be ordered if 1x PSU only occupies one bay for hot plug power supply max. 1x per system |
|---|

| | |
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| For later redundancy upgrade the following kit is available: | |
| One 450W power supply module hot plug no power cable included!!! | S26113-F575-L12 |
| One 800W power supply module hot plug no power cable included!!! | S26113-F574-L12 |
| One 800W power supply module titanium no power cable included!!! | S26113-F615-L10 |
| Please order appropriate power cord additionally: Powercord for rack, 4m, grey, IEC320 C13->C14 connector Power Cord USA / Canada, 1.8m, grey | |
| | T26139-Y1968-L10 T26139-Y1742-L10 |



* For order completeness only
 Not shown in system architect
 Version > V9.2



Be aware of import restrictions!
 Loose delivery for later
 integration possible for customer.

| |
|--|
| S26361-F3552-E1 TPM Module Trusted Platform Module on Motherboard Use according to import restrictions max. 1x per system |
|--|



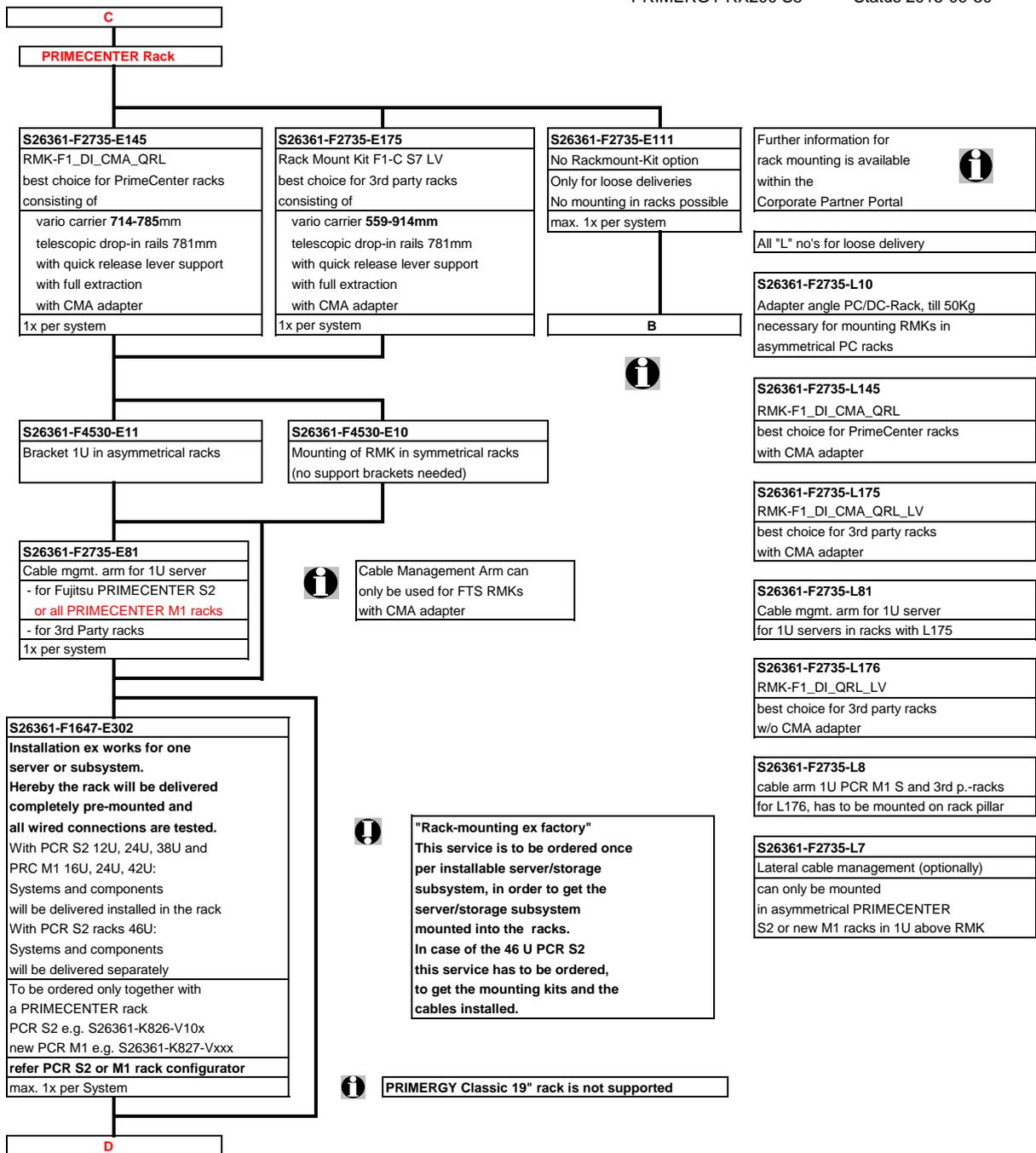
| |
|---|
| S26361-F3552-L1 TPM Module add-on kit for later integration (loose delivery) Trusted Platform Module on Motherboard Use according to import restrictions max. 1x per system |
|---|

| |
|--|
| S26361-F1386-E120 Hot Plug Fan kit (2 double fans) Fan upgrade kit for CPU mandatory, if 2nd CPU or 1st CPU (115W or 130W) or Cool-safe ATD is configured ex factory max. 1x per system |
|--|



For later upgrade to 2nd CPU (bulk delivery) two fans are included in CPU upgrade kit

C



D

Section Processor



There are 2 processor sockets available.
 The first socket is always equipped with the **first CPU** which can be selected via configurator
 It is also possible to upgrade a dual-processor system later on with a **second CPU**
Two processors with different type are not possible
If 1CPU with a TDP >= 115W is used, the hot plug redundant fan kit (S26361-F1386-E120) is required.
If 2CPUs are used, the hot plug redundant fan kit (S26361-F1386-E120) is required.
If Cool-safe Advanced Thermal Design is used, the hot plug redundant fan kit (S26361-F1386-E120) is required.
 A multi-processor operating system is required for a dual-processor system.

| | |
|---|-------------------|
| Max. two CPU's can be selected per basic unit | |
| One of following CPU's has to be selected as first CPU for an orderable basic unit | |
| Optional second CPU has to be the same type like the first CPU | |
| Basic 4C CPU's | |
| - 1x 64-bit Intel Xeon (10MB Smart Cache) 1333 MHz DDR3 Bus; 6,40 GT/s QPI Bus and passive heat sink occupies socket for one CPU | |
| Xeon E5-2603v2 4C/4T 1.80GHz 10MB 6.40GT/s 1333MHz 80W | S26361-F3800-E180 |
| Xeon E5-2609v2 4C/4T 2.50GHz 10MB 6.40GT/s 1333MHz 80W | S26361-F3800-E250 |
| Standard Turbo 6C/8C CPU's | |
| - 1x 64-bit Intel Xeon (15/20MB Smart Cache); Hyper-Threading (HT); 1600 MHz DDR3 Bus; 7,20 GT/s QPI Bus and passive heat sink occupies socket for one CPU | |
| Xeon E5-2620v2 6C/12T 2.10GHz 15MB 7.20GT/s 1600MHz 80W | S26361-F3801-E210 |
| Xeon E5-2630v2 6C/12T 2.60GHz 15MB 7.20GT/s 1600MHz 80W | S26361-F3801-E260 |
| Xeon E5-2640v2 8C/16T 2.00GHz 20MB 7.20GT/s 1600MHz 95W | S26361-F3801-E200 |
| Advanced Turbo+ 8C/10C CPU's | |
| - 1x 64-bit Intel Xeon (20/25MB Smart Cache); Hyper-Threading (HT); 1866 MHz DDR3 Bus; 8,00 GT/s QPI Bus and passive heat sink occupies socket for one CPU | |
| Xeon E5-2650v2 8C/16T 2.60GHz 20MB 8.00GT/s 1866MHz 95W | S26361-F3802-E260 |
| Xeon E5-2660v2 10C/20T 2.20GHz 25MB 8.00GT/s 1866MHz 95W | S26361-F3802-E220 |
| Xeon E5-2670v2 10C/20T 2.50GHz 25MB 8.00GT/s 1866MHz 115W | S26361-F3802-E250 |
| Xeon E5-2680v2 10C/20T 2.80GHz 25MB 8.00GT/s 1866MHz 115W | S26361-F3802-E280 |
| Xeon E5-2690v2 10C/20T 3.00GHz 25MB 8.00GT/s 1866MHz 130W | S26361-F3802-E300 |
| Segment Optimized CPU's | |
| - 1x 64-bit Intel Xeon (15/25/30MB Smart Cache); Hyper-Threading (HT); 1866 MHz DDR3 Bus; 8,00 GT/s QPI Bus and passive heat sink occupies socket for one CPU | |
| Xeon E5-2637v2 4C/8T 3.50GHz 15MB 8.00GT/s 1866MHz 130W | S26361-F3803-E350 |
| Xeon E5-2643v2 6C/12T 3.50GHz 25MB 8.00GT/s 1866MHz 130W | S26361-F3803-E330 |
| Xeon E5-2667v2 8C/16T 3.30GHz 25MB 8.00GT/s 1866MHz 130W | S26361-F3803-E300 |
| Xeon E5-2695v2 12C/24T 2.40GHz 30MB 8.00GT/s 1866MHz 115W | S26361-F3803-E240 |
| Xeon E5-2697v2 12C/24T 2.70GHz 30MB 8.00GT/s 1866MHz 130W | S26361-F3803-E270 |
| Low Power 6C/10C CPU's | |
| - 1x 64-bit Intel Xeon (15/25MB Smart Cache); Hyper-Threading (HT); 1600 MHz DDR3 Bus; 7,20/8,00 GT/s QPI Bus and passive heat sink occupies socket for one CPU | |
| Xeon E5-2630Lv2 6C/12T 2.40GHz 15MB 7.20GT/s 1600MHz 60W | S26361-F3804-E240 |
| Xeon E5-2650Lv2 10C/20T 1.70GHz 25MB 8.00GT/s 1600MHz 70W | S26361-F3804-E170 |



Max. DDR3 Bus Speed depends on:
 - max. DDR3 Bus Speed from the CPU and
 - max. DDR3 Memory Speed and
 - max. memory modules on one memory channel
 For CPUs which do not offer 1866 MHz support, (Basic, Standard & Low Power class), System Architect will not offer memory modules supporting this frequency.

E

E

Section III Memory



| |
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| <p>- There are 12 memory slots per CPU for max. 768GB LRDIMM (12x 64GB 8R) 192GB RDIMM (12x 16GB 2R) 64GB UDIMM (8x 8GB) on special Release only => max. 1.536GB for two CPU's (768GB per CPU), using LRDIMM</p> <p>- The memory area is divided into 4 channels per CPU with 3 slots per channel - Slot 1 of each channel belongs to memory bank 1, the slot 2 belongs to memory bank 2, slot 3 belongs to memory bank 3</p> |
| <p>Registered, LR DIMMs and unbuffered memory modules can be selected No mix of registered, load reduced and unbuffered modules allowed. Memory can be operated at 1.5V or 1.35V, even if the modules are of low voltage type. Memory operating voltage can be set within BIOS (1.5V is default setting for max. speed). In a single DIMM per channel configuration, following frequencies are supported: - 1.5V - 1866MHz max (depending on CPU) - 1.35V - 1600MHz max (depending on CPU, up to two LRDIMM per channel) - 1.35V - 1333MHz max (up to two UDIMM or RDIMM per channel) In a 3 DIMMs per channel configuration, memory will operate at 1.35V or 1.5V (no UDIMM allowed). SDDC (Chipkill) is supported for registered / load reduced x4 organized memory modules only</p> |
| <p>1.) In the "Independent Channel Mode" is following configuration possible Channels can be populated in any order in Independent Channel Mode. All four channels may be populated in any order and have no matching requirements. All channels must run at the same interface frequency but individual channels may run at different DIMM timings (RAS latency, CAS latency, and so forth) No mix of registered, load reduced and unbuffered modules allowed.</p> |
| <p>2.) "Rank Sparing Mode" configuration - Within a memory channel, one rank is a spare of the other ranks. The Spare Rank is held in reserve and is not available as system memory For the effective memory capacity, please refer to the spreadsheet below. The BIOS is set to the rank sparing setting. Minimum configuration is: 2x 1R, 2x 2R or 1x4R DDR3 module per channel This mode is not supported by unbuffered memory modules</p> |
| <p>3.) "Performance Mode" configuration - In this configuration, the memory module population ex factory is spread across all channels. The BIOS is set to the max. performance for memory. Minimum configuration is: 4x identical modules per CPU</p> |
| <p>4.) In the "Mirrored Channel Mode" is following configuration possible - Each memory bank can optionally be equipped with 4x registered or load reduced or unbuffered DDR3 modules In each memory bank channel A and B / C and D of CPU 1 or channel E and F / G and H of CPU 2 have to be equipped with identical modules for mirrored channel mode. In channel B / D is always the mirrored memory of channel A / B of CPU 1 In channel F / H is always the mirrored memory of channel E / G of CPU 2 Minimum configuration is: 4x identical modules per CPU This mode is not supported by unbuffered memory modules</p> |

1x per CPU

| |
|--|
| <p>S26361-F3694-E10 Independent Mode Independent Channel Mode allows all channels to be populated in any order. No specific Memory RAS features are defined Requires min 1 memory Module per CPU</p> |
| <p>S26361-F3694-E1 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. Supported for RDIMM / LRDIMM only. Requires min 2x 1R/2R or 1x 4R modules per CPU</p> |
| <p>S26361-F3694-E2 Performance Mode Installation BIOS Setup factory preinstalled for max. Performance, LV memory might be set to 1.5V operation. Four identical memory modules will be equipped in one memory bank to achieve highest memory performance. All four modules are active and full capacity can be used. Multiple of 4 identical modules to be configured per CPU</p> |
| <p>S26361-F3694-E3 Mirrored Channel Mode Installation currently not available; will be released in January 2015 BIOS Setup factory preinstalled to this mode. Four identical memory modules are always equipped in one memory bank to use the Mirrored channel Mode. Only two modules contain active data, the remain two modules contain mirrored data Supported for RDIMM / LRDIMM only. Multiple of 4 identical modules to be configured per CPU</p> |

F

F



Effective Memory capacity / Rank Sparing Mode, 1 Channel populated

| | RDIMM | | | | LRDIMM | |
|------|--------|--------|--------|---------|---------|---------|
| | 4GB 1R | 8GB 1R | 8GB 2R | 16GB 2R | 32GB 4R | 64GB 8R |
| 1DPC | na | na | na | na | 24GB | 48GB |
| 2DPC | 4GB | 8GB | 12GB | 28GB | 56GB | 112GB |
| 3DPC | 8GB | 16GB | 20GB | 44GB | 80GB | 160GB |



Minimum one memory module or order code per CPU = first memory

8/12x per CPU, max. 2/3 modules per channel

| | |
|---|-----------------------------|
| <p>Unbuffered Memory (UDIMM) no SDDC (chipkill) support - one DDR3 unbuffered ECC mem. Module, 1.35V Choose up to 8 order codes per CPU 8GB (1x8GB) 2Rx8 L DDR3-1600 U ECC S26361-F3807-E515</p> | <p>special release only</p> |
| <p>Registered Memory (RDIMM) with SDDC (chipkill) support - one DDR3 registered ECC mem. Module, 1.35V 1333MHz supported with up to 2DPC (8 modules/CPU) and 1.35V 1600MHz supported with up to 2DPC (8 modules/CPU) and 1.5V Choose up to 12 order codes per CPU 4GB (1x4GB) 1Rx4 L DDR3-1600 R ECC S26361-F3781-E514 8GB (1x8GB) 1Rx4 L DDR3-1600 R ECC S26361-F3781-E515 16GB (1x16GB) 2Rx4 L DDR3-1600 R ECC S26361-F3781-E516</p> | |
| <p>Registered Memory (RDIMM) with SDDC (chipkill) support - one DDR3 registered ECC mem. Module, 1.5V 1866MHz supported with up to 2DPC (8 modules/CPU) Choose up to 12 order codes per CPU 16GB (1x16GB) 2Rx4 DDR3-1866 R ECC S26361-F3793-E516</p> | |
| <p>Registered Memory (RDIMM) no SDDC (chipkill) support - one DDR3 registered ECC mem. Module, 1.5V No mix with any other types of memory modules possible 1866MHz supported with up to 2DPC (8 modules/CPU) Choose up to 12 order codes per CPU 8GB (1x8GB) 2Rx8 DDR3-1866 R ECC S26361-F3793-E515</p> | |
| <p>Load Reduced Memory (LRDIMM) with SDDC (chipkill) support - one DDR3 load reduced ECC mem. Module, 1.35V Choose up to 12 order codes per CPU 32GB (1x32GB) 4Rx4 L DDR3-1600 LR ECC S26361-F3782-E517 64GB (1x64GB) 8Rx4 L DDR3-1333 LR ECC S26361-F3783-E518</p> | |

special release only



Note 1)

Max. DDR3 memory speed depends on the memory configuration (No of mem modules per channel) as well as on the CPU type. The memory channel with the lowest speed defines the speed of all CPU channels in the system, also for the channels of the second CPU if configured. For real memory speed (depending on memory type / population), please check the spreadsheet "Memory speed" below



Note 2)

Mix of memory modules is only possible within the same group

as soon as available

G

Memory Configuration PRIMERGY RX200 S8

Each CPU offers 12 Slots for DDR3 Memory Modules organised in **3 Banks and 4 Channels**.

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 DDR3 Memory Modules available: UDIMM / RDIMM and LRDIMM

UDIMM / RDIMM / LRDIMM offer different functionality. Mix of UDIMM / RDIMM / LRDIMM is not allowed.

If 1.5V and 1.35V DIMMs are mixed, the DIMMs will run at 1.5V

| Mode | Configuration | UDIMM | RDIMM | RDIMM LRDIMM | Application |
|--------------------------|----------------------------|-------|-------|-----------------|---|
| | | x8 | x8 | x4 | |
| SDDC (chipkill) support | any | no | no | yes | detect multi-bit errors |
| Independent Channel Mode | 1, 2 or 3 Modules per Bank | yes | yes | yes | offers max. flexibility, upgradeability, capacity use UDIMM modules for lowest cost |
| Mirrored Channel Mode *) | 4 identical Modules / Bank | no | no | yes | offers maximum security |
| Performance Mode | 4 identical Modules / Bank | yes | yes | yes | offers maximum performance and capacity |
| Rank Sparing Mode *) | min. 2 Ranks / Channel | no | no | yes | balances security and capacity |

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

| Capacity | Configuration | UDIMM | RDIMM | LRDIMM | Notes |
|------------------------|------------------------|-------|---------|---------|-----------------------------|
| Min. Memory per CPU | 1 Module / CPU | 1x4GB | 1x4GB | 1x32GB | with one CPU |
| Max. Memory per CPU | 8/12 Modules / CPU | 8x4GB | 12x16GB | 12x64GB | with one CPU |
| Max. Memory per System | 16/24 Modules / System | 64GB | 384GB | 1536GB | if second CPU is configured |

Memory-Speed:

Max. DDR3 memory speed depends on the memory configuration on one memory channel and the speed of the CPU

The memory channel with the lowest speed defines the speed of all CPU channels in the system

| Mem. Speed provided by CPU | Real maximum memory-bus speed depending on CPU type, memory configuration (DPC) and voltage setting (BIOS) | | | | | | | | | | | | | | | | | |
|----------------------------------|--|------|-----|-------|------|-----|----------------|------|------|-------|------|-----|-------------------|------|------|-------|------|------|
| | UDIMM 1866MHz | | | | | | RDIMM 1866MHz | | | | | | LRDIMM 4R 1866MHz | | | | | |
| | 1.5V [default] | | | 1.35V | | | 1.5V [default] | | | 1.35V | | | 1.5V [default] | | | 1.35V | | |
| | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 |
| | DPC | DPC | DPC | DPC | DPC | DPC | DPC | DPC | DPC | DPC | DPC | DPC | DPC | DPC | DPC | DPC | DPC | |
| CPU with 1866MHz DDR3 Bus | 1866 | 1600 | - | 1333 | 1333 | - | 1866 | 1866 | 1066 | 1333 | 1333 | 800 | 1866 | 1600 | 1066 | 1600 | 1600 | 1066 |
| CPU with 1600MHz DDR3 Bus | 1600 | 1600 | - | 1333 | 1333 | - | 1600 | 1600 | 1066 | 1333 | 1333 | 800 | 1600 | 1600 | 1066 | 1600 | 1600 | 1066 |
| CPU with 1333MHz DDR3 Bus | 1333 | 1333 | - | 1333 | 1333 | - | 1333 | 1333 | 1066 | 1333 | 1333 | 800 | 1333 | 1333 | 1066 | 1333 | 1333 | 1066 |

1R - Single Rank 4R - Quad Rank
2R - Dual Rank 8R - Eight Rank

1DPC = 1 DIMM per Channel
2DPC = 2 DIMM per Channel
3DPC = 3 DIMM per Channel

Configuration hints:

- The memory sockets on the systemboard offer a color coding:

Bank I black sockets
Bank II blue sockets
Bank III green sockets

- A so called Bank consists of 1 memory module on every Channel available on one CPU (examples see below)

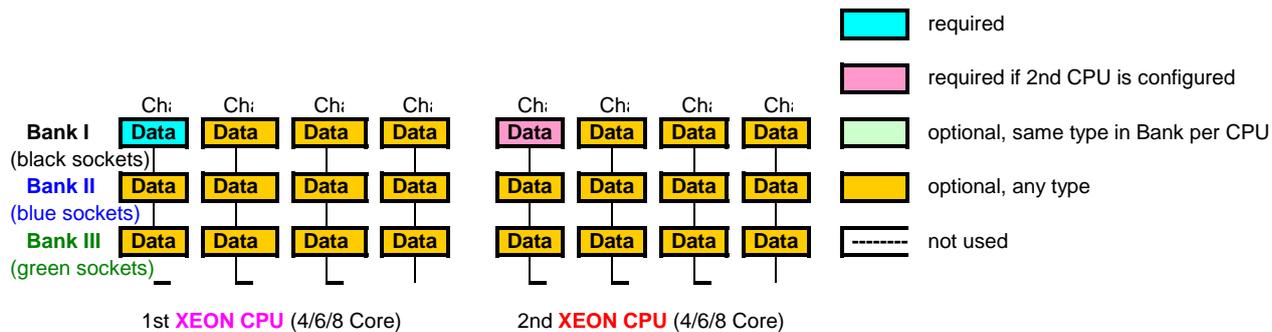
Bank I on CPU 1/2 up to 4 memory modules connected to Channel A - H on the 1st/2nd CPU

Bank II on CPU 1/2 up to 4 memory modules connected to Channel A - E on the 1st/2nd CPU

Bank III on CPU 1/2 up to 4 memory modules connected to Channel A - E on the 1st/2nd CPU
(can not be populated by UDIMM or 4R RDIMM memory modules)

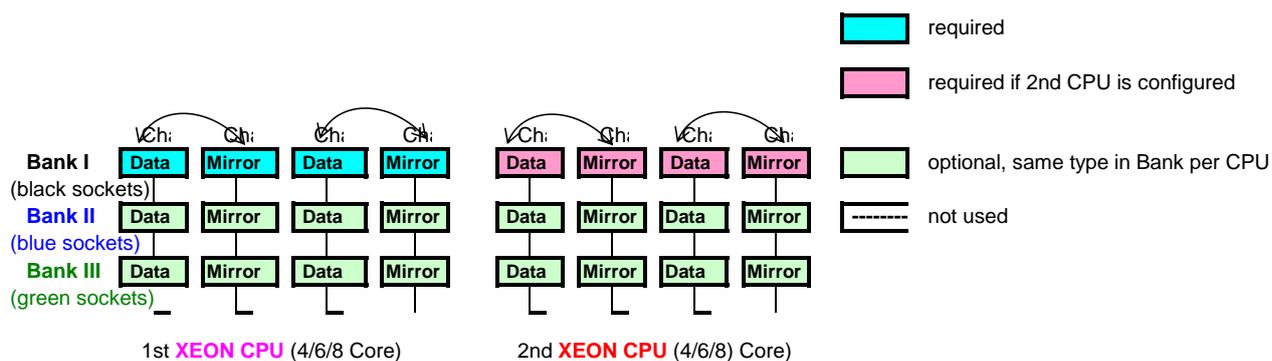
- See below and next page for a detailed descriptions of the memory configuration supported.

1. Independent Channel Mode



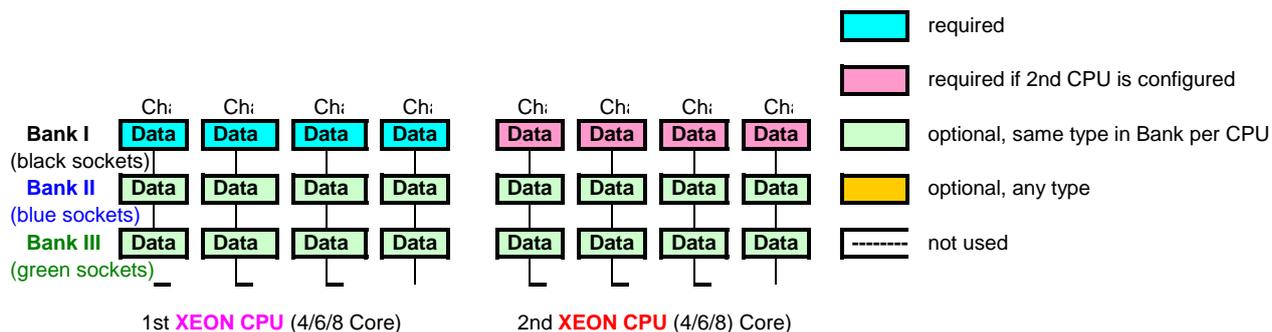
Independent Channel Mode allows all channels to be populated in any order
 Can run with differently rated DIMMs and use the settings of the slowest DIMM installed in the system

2. Mirrored Channel Mode



Mirrored Channel Mode requires identical modules on channel A,B, C, D (1st CPU) or channel E, F, G and 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 4 identical modules has to be ordered.

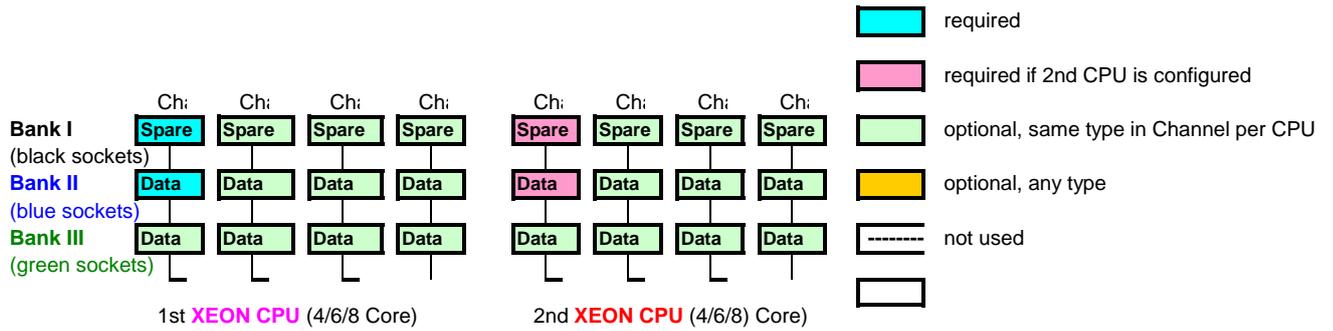
3. Performance Channel Mode



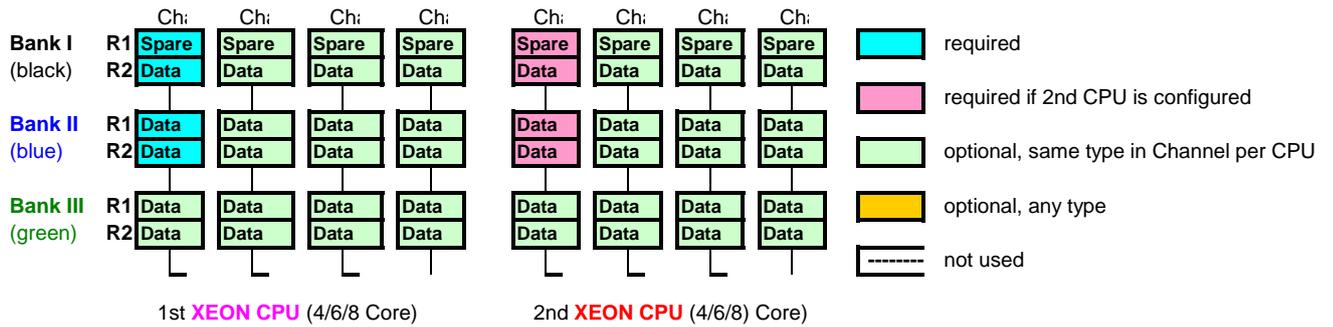
Performance Channel Mode requires identical modules on all channels of each Bank per CPU.
 If this mode is used, a multiple of 4 identical modules has to be ordered.

4. Rank Sparing Mode

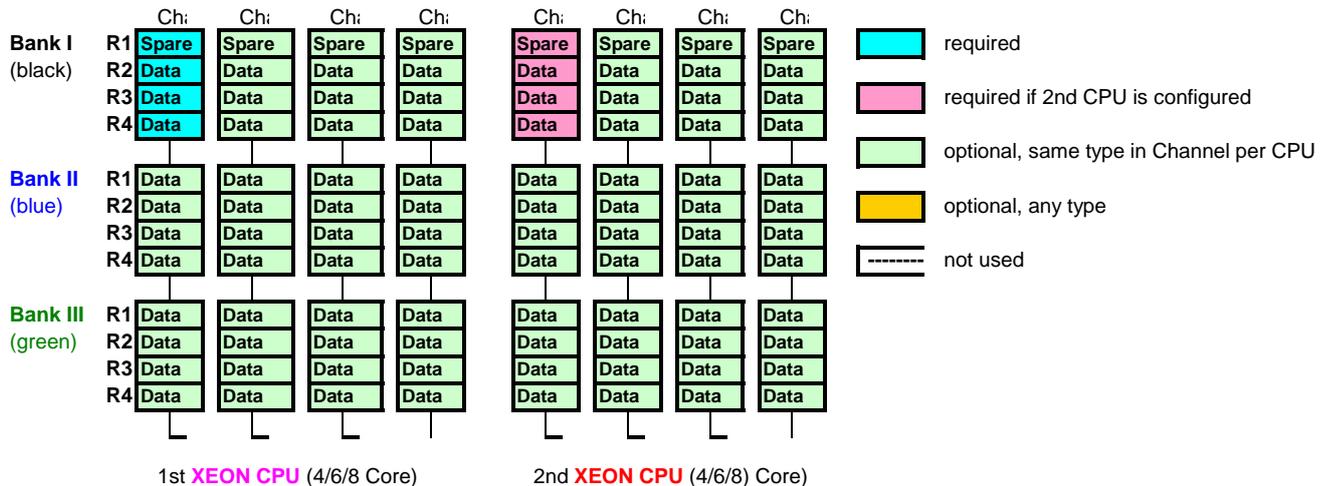
1-Rank Memory modules (RDIMM)



2-Rank Memory modules (RDIMM)



4-Rank Memory modules (LRDIMM)



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. 6 DIMMs will be spread across two channels, each with 3DPC

G

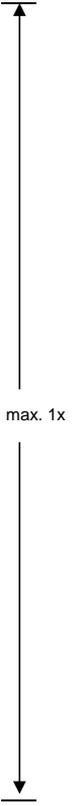
Section IV Graphics

Graphics Controller integrated in iRMC S4 (integrated Remote Management Controller):
 1600x1200x16bpp 60Hz, 1280x1024x16bpp 60Hz, 1024x768x32bpp 75Hz, 800x600x32bpp 85Hz, 640x480x32bpp 85Hz
 (1280x1024x24bpp 60Hz only possible if local monitor or remote video redirection is off)

S26361-F2571-E26
 Optional Front-VGA
 for Onboard Controller only
 consists of internal cable and
 front VGA connector
 max. 1x per system



The high end optional NVIDIA NVS300 graphic card offers dual head operation and fully 3D video support.
 The cables for either two times DVI-I or VGA (cable kit) connections are part of the delivery.
 Optional Front-VGA S26361-F2571-E26 cannot be ordered if NVS300 is required.
Remote Video direction via iRMC must be disabled.
 This PCIe-x1 card can also be installed in any PCIe-x4, x8 or x16 slot.
 Only one card per server is allowed.



S26361-F2748-E637
 PY VGA LP card 256MB PCI-e x1
 NVIDIA NVS300
 512 MB PCI-e-x1
 Connectors: 1x LFH 59
 cable kit for 2x DVI or 2x VGA
 cable kits included
 Dual head + professional 2-D + 3-D
 supported for Windows OS
 native driver support for Linux OS
 low profile bracket
 max. 1x per system



S26361-F2748-L637
 PY VGA LP card 512MB PCI-e x1
 for loose delivery

I

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Section V Accessible drives

i Setup by ServerStart is supported with following configurations:

| |
|--|
| no DVD, no CD: remote installation only (PXE service & DHCP server required) |
| built in DVD or USB DVD: UNC Network share reachable or USB Floppy or MemoryBird connected |

i If installation is done locally, make sure you have USB stick available for driver installation.

1x

| |
|---|
| S26361-F3269-E2 DVD-RW supermulti slim SATA all formats, DUAL/DL, DVD-RAM only W2K, W3K and Linux 0.5 x 5.25", black bezel max. 1x per system |
|---|

| |
|--|
| S26361-F3641-E2 Blu-ray Triple Writer slim SATA 6x BD-RW, 8x DVD, 24x CD BD DL and all CD/DVD formats 0.5 x 5.25" max. 1x per system |
|--|

USB 3.0 adapter

| |
|---|
| S26361-F3749-E201 USB3.0 PCIe x1 adapter card lp Sunrich U-720 PCIe x1 1 port intern, 1 port extern USB 3.0 A jacks max. 1x per system |
|---|

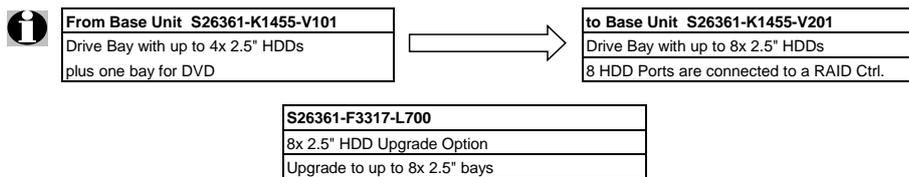
i The adapter is also available as optional (loose) delivery with FH and LP bracket included
 S26361-F3749-L501

i Configurations of DVD Drive are only possible for the **Base Unit S26361-K1455-V101 (4x 2.5" HDD + DVD Option)**
 With onboard SATA/SAS controller, max. 4x SATA/SAS HD's and one DVD are configurable.

J

J

Section VI Drive Bay for Upgrade from 4x2.5" to 8x2.5" HD Basic Unit



Section VII Modular Raid 0/1, Raid5 for 4x / 8x 2.5" SAS or SATA HD's. On-board Controller for 4x 2.5" SATA or SAS HD's

On board SATA Controller with 3 Gb/s and up to 4x 2.5" SATA HDDs (no additional controller required)
For all other HDD configurations a modular RAID-controllers is required

Following optional onboard SAS RAID can be selected for 4x2.5" base unit V101

| |
|------------------------------------|
| S26361-F3674-E1 |
| SAS enabling key for onboard ports |
| LSI - Patsburg B |
| no Cache, no BBU |
| RAID 0, 1 & 10 |
| SAS 1.0 (3Gb/s) |
| 4 internal ports for SAS HD |
| PCIe x4 |
| no PCI slot required |
| max. 1x per system |



only for V101

For 8x2.5" V201 base unit one of the following modular RAID-controllers is required (optional for 4x2.5" base unit)

Modular Raid 0/1 controller with IME support for SAS/SATA
This RAID controller supports 8 HDDs on the 4 + 4 internal SAS ports

Modular Raid 5 controller for SAS/SATA
RAID levels 0, 1, 10, 5, 50, 6 and 60 are supported.
This RAID controller supports 8 HDDs on the 4 + 4 internal SAS ports



The FBU is an option for the controller which can be used once per controller. If the FBU option has been chosen, the TFM Module is needed once per FBU.

only for V101

| |
|---------------------------------|
| S26361-F3554-E8 |
| RAID Ctrl SAS 6G 8port internal |
| Based on chip LSI SAS2008 |
| LSI MegaRAID |
| no Cache, no BBU |
| RAID 0, 1 & 10 |
| Support for 3Gb/s and 6Gb/s |
| SATA and SAS hard drives |
| PCIe x8 |
| Low-profile MD2 form factor |
| max. 1x per system |

| |
|---------------------------------|
| S26361-F3554-E512 |
| RAID Ctrl SAS 6G 8port internal |
| Based on chip LSI SAS2108 |
| LSI MegaRAID |
| 512MB Cache with ECC |
| RAID 0, 1, 10, 5, 50, 6, 60 |
| optional BBU |
| Support for 3Gb/s and 6Gb/s |
| SATA and SAS hard drives |
| PCIe x8 |
| Low-profile MD2 form factor |
| max. 1x per system |

| |
|---------------------------------|
| S26361-F3669-E4 |
| RAID Ctrl SAS 6G 8port internal |
| Based on chip LSI SAS2208 |
| LSI MegaRAID |
| 1GB Cache with ECC |
| RAID 0, 1, 10, 5, 50, 6, 60 |
| optional FBU |
| Support for 3Gb/s and 6Gb/s |
| SATA and SAS hard drives |
| PCIe 3.0 x8 |
| Low-profile MD2 form factor |
| max. 1x per system |



only Gen2 for RX200 S8

| |
|---------------------------|
| S26361-F3257-E216 |
| Cache Battery Backup Unit |
| max. 1x per Controller |

| |
|--|
| S26361-F3669-E660 |
| RAID Advanced Software Options |
| License Activation Key for CacheCade 2.0 and FastPath for 1 Controller |

Raid Adv. SW Opt free test licence at PRIMERGY-PM

Lose delivery options

| |
|--|
| S26361-F3669-L660 |
| RAID Advanced Software Options License Activation Key for CacheCade 2.0 and FastPath for 1 RAID Ctrl S26361-F3669-xx |

| |
|---------------------------|
| S26361-F3669-L100 |
| TFM Module for FBU option |
| max. 1x per Controller |

| |
|---|
| S26361-F3669-E100 |
| TFM Module for FBU option (flash and FBU control logic) |
| max. 1x per Controller |

| |
|---|
| S26361-F3669-L110 |
| Flash Backup Unit with 17cm, 47cm, 62cm cable set |
| max. 1x per Controller |

| |
|---------------------------------------|
| S26361-F3669-E125 |
| Flash Backup Unit with 17cm cable set |
| max. 1x per Controller |



BBU / FBU max. 1x per system possible

K

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Section VIII 4x / 8x 2.5" SAS / SATA Hard disk drives

All combinations of SSD and SAS are possible - but not in same logical drive (RAID array)
For basic units V1xx up to 4x SATA / SAS 2.5" hard disks plus ODD can be configured.
SAS support for V1xx only via optional selectable Patsburg upgrade kit
For basic units V2xx up to 8 SATA / SAS 2.5" hard disks can be configured.

Solid State Disk, Mainstream Endurance*

| SSD SATA 6Gb/s 2.5" with hot plug/hot replace tray | |
|--|-------------------|
| 100GB MLC, Mainstream Performance | S26361-F5225-E100 |
| 200GB MLC, Mainstream Performance | S26361-F5225-E200 |
| 400GB MLC, Mainstream Performance | S26361-F5225-E400 |
| 100GB, Mainstream Performance | S26361-F5303-E100 |
| 200GB, Mainstream Performance | S26361-F5303-E200 |
| 400GB, Mainstream Performance | S26361-F5303-E400 |
| 800GB, Mainstream Performance | S26361-F5303-E800 |
| 120GB, Read-Intensive Endurance** | S26361-F5524-E120 |
| 240GB, Read-Intensive Endurance** | S26361-F5524-E240 |
| 480GB, Read-Intensive Endurance** | S26361-F5524-E480 |
| 800GB, Read-Intensive Endurance** | S26361-F5524-E800 |
| SSD SAS 6Gb/s 2.5" with hot plug/hot replace tray | |
| 100GB MLC, Enterprise Performance | S26361-F4581-E100 |
| 200GB MLC, Enterprise Performance | S26361-F4581-E200 |
| SSD SAS 12Gb/s 2.5" with hot plug/hot replace tray | |
| 200GB, Enterprise Performance | S26361-F5297-E200 |
| 400GB, Enterprise Performance | S26361-F5297-E400 |
| 800GB, Enterprise Performance | S26361-F5297-E800 |
| 1.6TB, Enterprise Performance | S26361-F5297-E160 |
| max. 4 / 8x per system | |

as long as stock
as long as stock
as long as stock
as soon as available
as soon as available
as soon as available
as soon as available

as long as stock
as long as stock

as soon as available

Interface SAS12Gb/s and SAS 6Gb/s.
SAS 12Gb/s support is not released

*) SSD Mainstream Endurance
10DWPD over 5y

**) SSD Read-Intensive Endurance
0.3DWPD over 5y

SAS Disk Drive 2.5"

| HDD SAS 6Gb/s 2.5" with hot plug/hot replace tray | |
|--|-------------------|
| 300GB 10000rpm,<4,5ms, 32MB Cache | S26361-F5247-E130 |
| 450GB 10000rpm,<4,5ms, 32MB Cache | S26361-F5247-E145 |
| 600GB 10000rpm,<4,5ms, 32MB Cache | S26361-F5247-E160 |
| 900GB 10000rpm,<4,5ms, 32MB Cache | S26361-F5247-E190 |
| 1,2TB 10000rpm,<4,5ms, 64MB Cache | S26361-F5247-E112 |
| | |
| 146GB 15krpm,<4,5ms, 32MB Cache | S26361-F4482-E514 |
| 300GB 15krpm,<4,5ms, 32MB Cache | S26361-F4482-E530 |
| 450GB 15krpm,<4,5ms, 32MB Cache | S26361-F4482-E545 |
| 600GB 15krpm,<4,5ms, 32MB Cache | S26361-F4482-E560 |
| | |
| 500GB 7.2krpm,<9,5ms, 64MB Cache | S26361-F5228-E500 |
| 1TB 7.2krpm,<9,5ms, 64MB Cache | S26361-F5228-E100 |
| HDD SAS 12Gb/s 2.5" with hot plug/hot replace tray | |
| 300GB 10000rpm,128MB Cache, 512n | S26361-F5551-E130 |
| 600GB 10000rpm,128MB Cache, 512n | S26361-F5551-E160 |
| 900GB 10000rpm, 128MB Cache, 512n | S26361-F5551-E190 |
| 1.2TB 10000rpm,128MB Cache, 512n | S26361-F5551-E112 |
| 1.8TB 10000rpm,128MB Cache, 512e | S26361-F5544-E118 |
| max. 4 / 8x per system | |

SATA Disk Drive 2.5"

| HDD SATA 6Gb/s 2.5" with hot plug/hot replace tray | |
|--|-------------------|
| 250GB 7.2krpm,<9,5ms, 64MB Cache | S26361-F3708-E250 |
| 500GB 7.2krpm,<9,5ms, 64MB Cache | S26361-F3708-E500 |
| 1TB 7.2krpm,<9,5ms, 64MB Cache | S26361-F3708-E100 |
| max. 4 / 8x per system | |

2.5" SATA 7.2Krpm with CPU S26361-F3803-E330
is not released. The configuration is not allowed.

S26361-F3837-L64
SATA DOM 64GB, 3G, Mainstream Endurance, non-hot plug
Special Release



4x /
8x

L

L

Section IX External SAS Disk Array & Backup drives

SAS RAID controller for JBOD subsystems

| |
|---------------------------------|
| S26361-F3713-E203 |
| RAID Ctrl SAS 6G 8port external |
| LSI MegaRAID SAS 9286-8e |
| 1GB Cache with ECC |
| RAID 0, 1, 5, 6, 10, 50 & 60 |
| without FBU |
| SAS 6Gb/sec |
| 8 port external |
| PCIe 3.0 x8, MD2 form factor |
| low profile bracket |
| max. 1x per system |



Loose delivery options

| |
|---------------------------------|
| S26361-F3713-L203 |
| RAID Ctrl SAS 6G 8port external |
| LSI MegaRAID SAS 9286-8e |
| 1GB Cache with ECC |
| RAID 0, 1, 5, 6, 10, 50 & 60 |
| without FBU |
| SAS 6Gb/sec |
| 8 port external |
| PCIe 3.0 x8, MD2 form factor |
| low profile bracket |
| max. 1x per system |

1x

| |
|--------------------------|
| S26361-F3669-E155 |
| Flash Backup Unit |
| with 47cm cable set |
| max. 1x per Controller |

| |
|---------------------------|
| S26361-F3669-L110 |
| Flash Backup Unit |
| with 17, 47, 62 cable set |
| max. 1x per Controller |

| |
|--------------------------------|
| S26361-F3669-E661 |
| RAID Advanced Software Options |
| License Activation Key |
| for CacheCade 2.0 and FastPath |
| for 1 Controller |

| |
|----------------------------------|
| S26361-F3669-L661 |
| RAID Advanced Software Options |
| License Activation Key |
| for CacheCade 2.0 and FastPath |
| for 1 RAID Ctrl S26361-F3713-xxx |

Raid Adv. SW Opt
 free test licence
 at PRIMERGY-PM

BBU / FBU max. 1x per system possible

SAS controller (for external backup drives released; for HDDs/SSDs as soon as available)

| |
|--------------------------------|
| S26361-F3628-E201 |
| SAS Controller 6Gb/s 8 port LP |
| LSI SAS9200-8e LP |
| PCIe 2.0 |
| ext: 8 port |
| PCIe x4, Low Profile |
| max. 2x per system |

2x

PCIe SSD (occupies one PCIe slot)

| |
|--------------------------|
| S26361-F4522-E351 |
| PCIe-SSD 365GB MLC |
| ioDrive2 365GB |
| PCIe 2.0 |
| 25nm Lithography |
| PCIe x4, Low Profile |
| max. 1x per system |

| |
|--------------------------|
| S26361-F4522-E781 |
| PCIe-SSD 785GB MLC |
| ioDrive2 785GB |
| PCIe 2.0 |
| 25nm Lithography |
| PCIe x4, Low Profile |
| max. 1x per system |

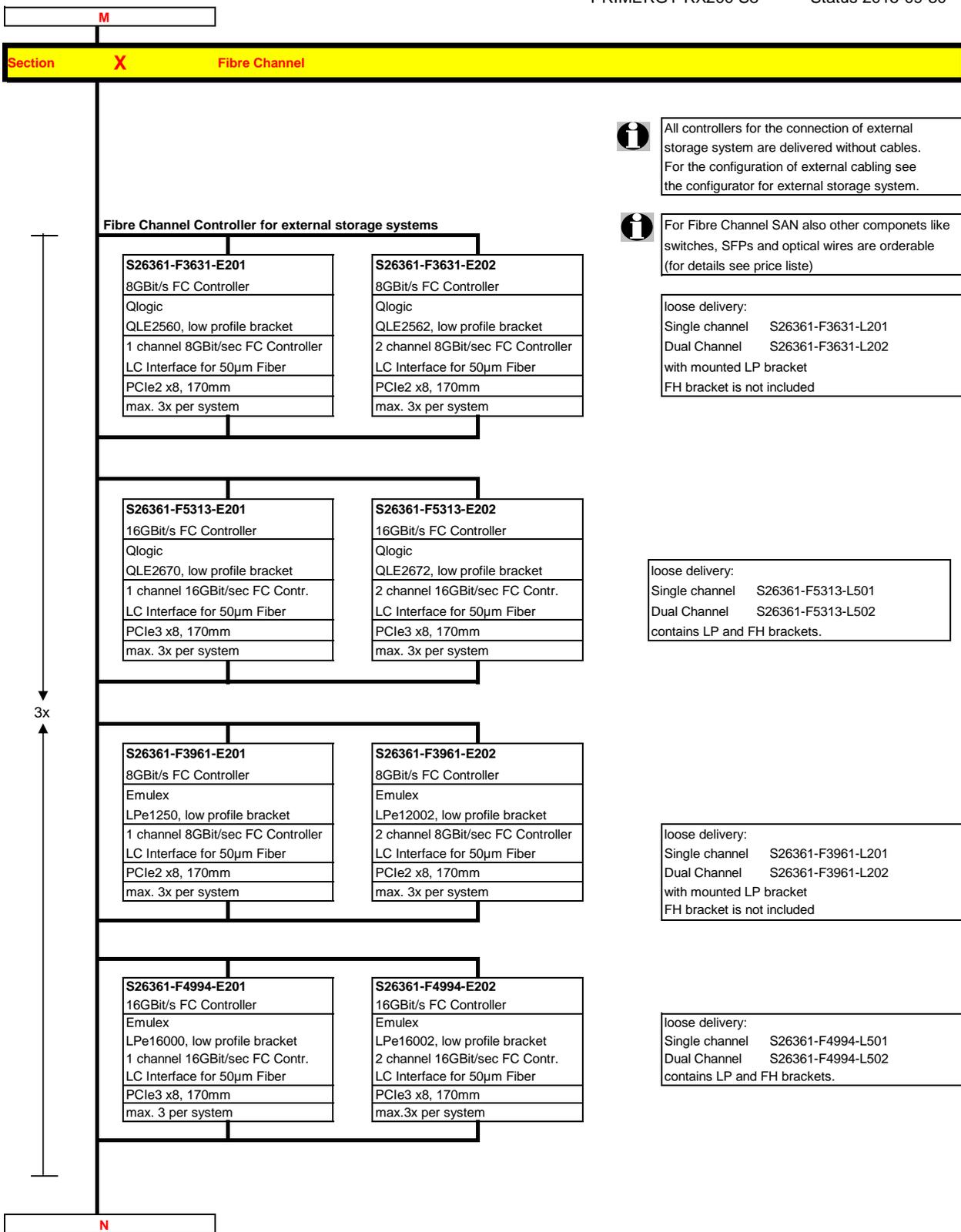
| |
|--------------------------|
| S26361-F4522-E121 |
| PCIe-SSD 1.2TB MLC |
| ioDrive2 1.2TB |
| PCIe 2.0 |
| 25nm Lithography |
| PCIe x4, Low Profile |
| max. 1x per system |

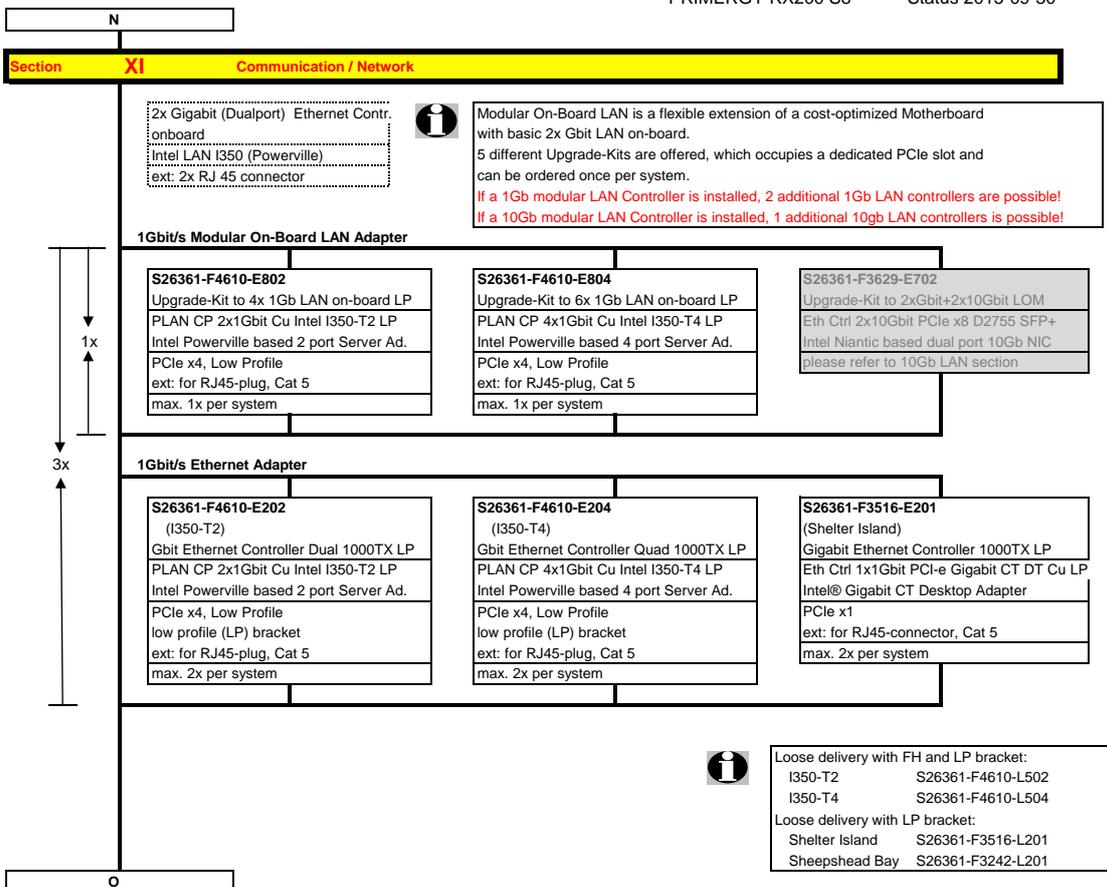


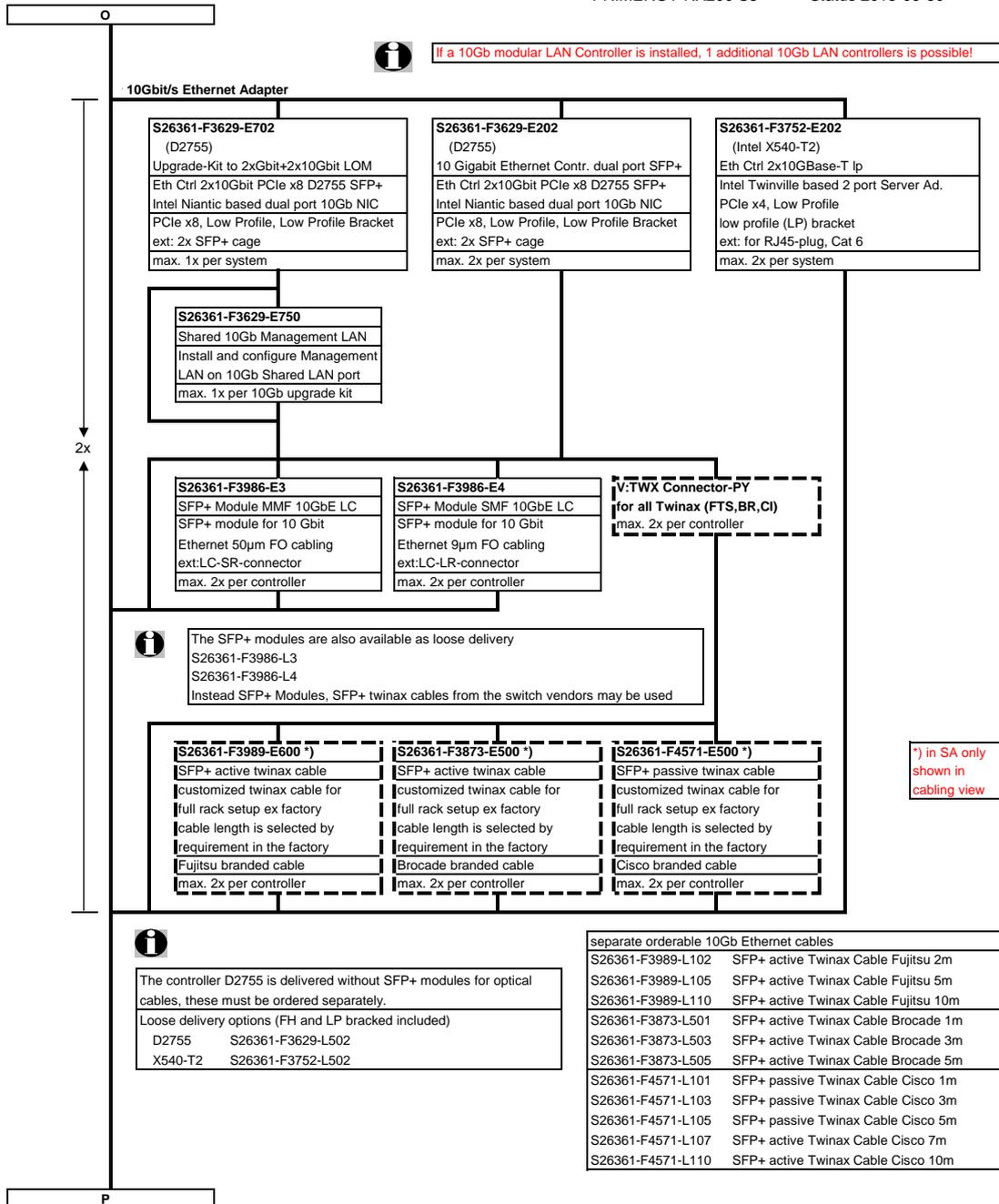
loose delivery:
-L351/L781/L121

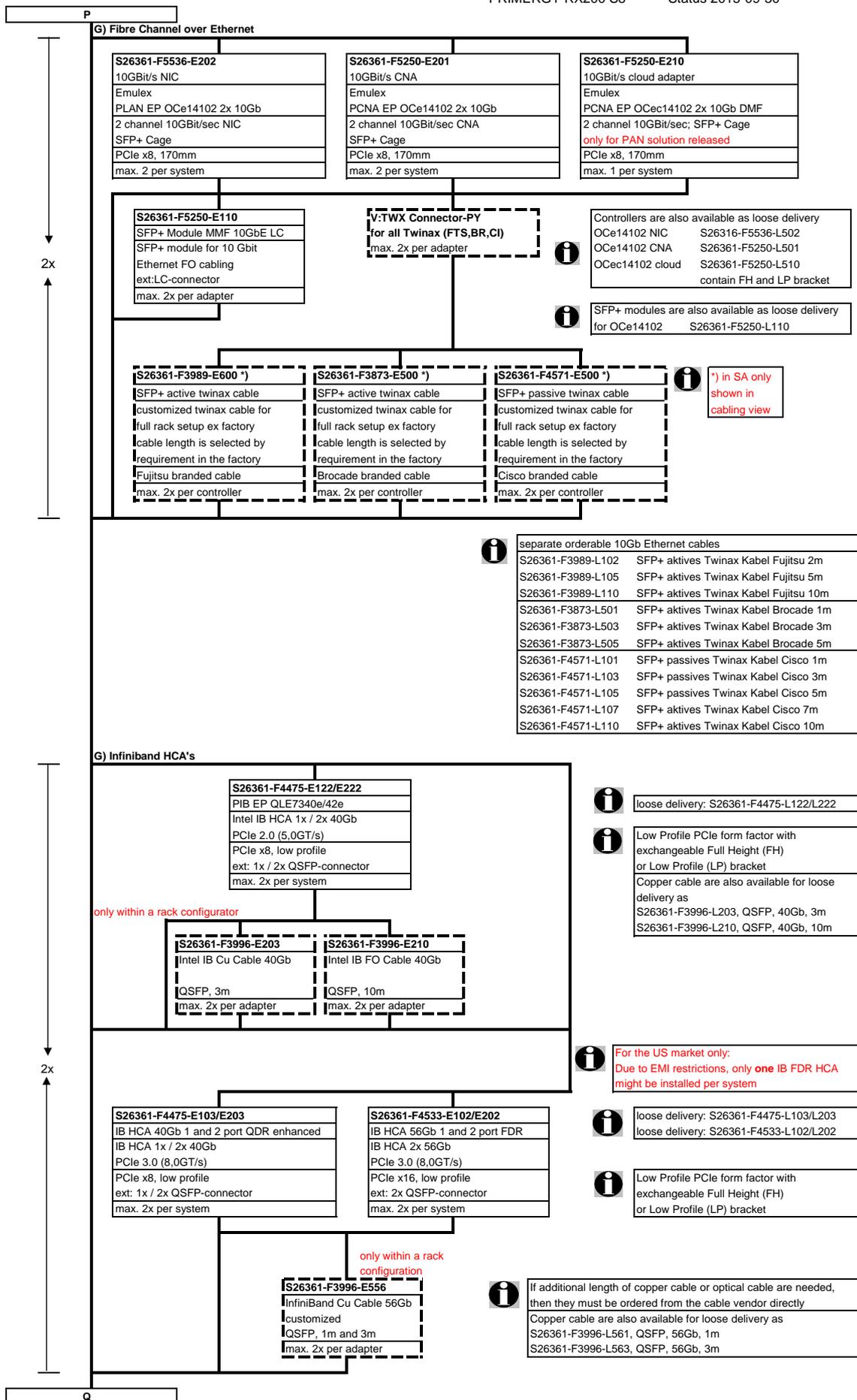
1x

M









Q

Section XII System Management Products (Remote Management)

iRMC S4 (integrated Remote Management Controller) onboard server management with dedicated 10/100/1000 LAN-port and integrated graphics controller
 Optional 10/100 Service LAN-port on front panel.
 The Service LAN-port can be switched alternatively on standard Gbit LAN port



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



Loose delivery with:
 S26361-F1790-L243

S26361-F2557-E301
 HDD&RAID OOB monitoring by iRMC
 Out of Band Status Monitoring for HDD
 w/o OS running
 Cable between HDD BP and Mobo
 max. 1x per system



Loose delivery with:
 S26361-F2557-L301

S26361-F2571-E27
Maintenance LAN
 Front management LAN Port
 In combination with iRMC adv. pack
 For local maintenance / console redirection,
 Integrated in front (operating panel)
 max. 1x per system

Section XIII Miscellaneous

S26361-F3120-E3
 Serial Port Option
 RS-232-C
 Cable with 9-pin plug
 for a RS-232-C Serial Port
 Interface
 occupies PCI slot
 max. 1x per system

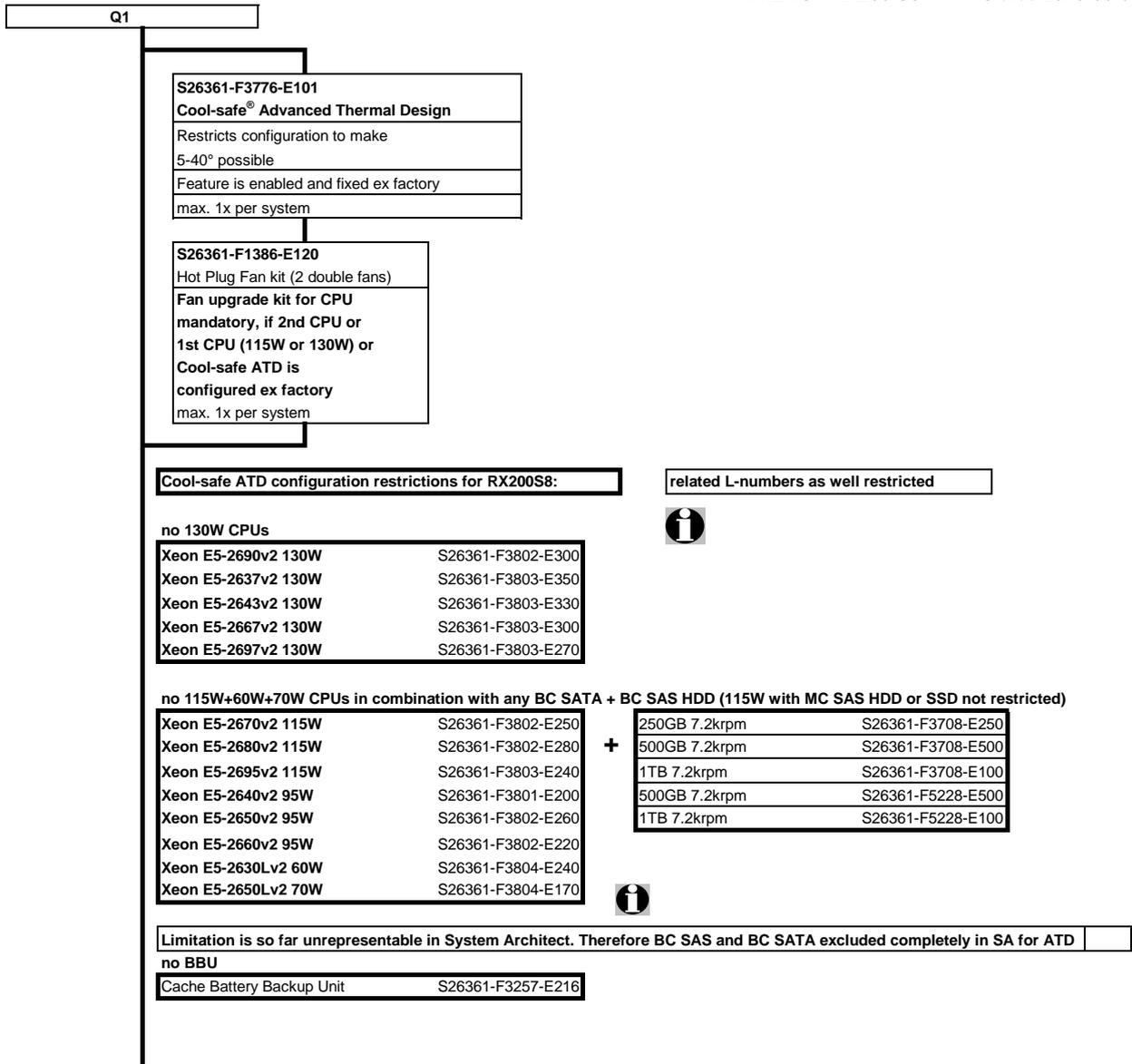


serial port bracket can be plugged-in in every of the rear slots
 assembly priority; slot3, slot 2, slot 1

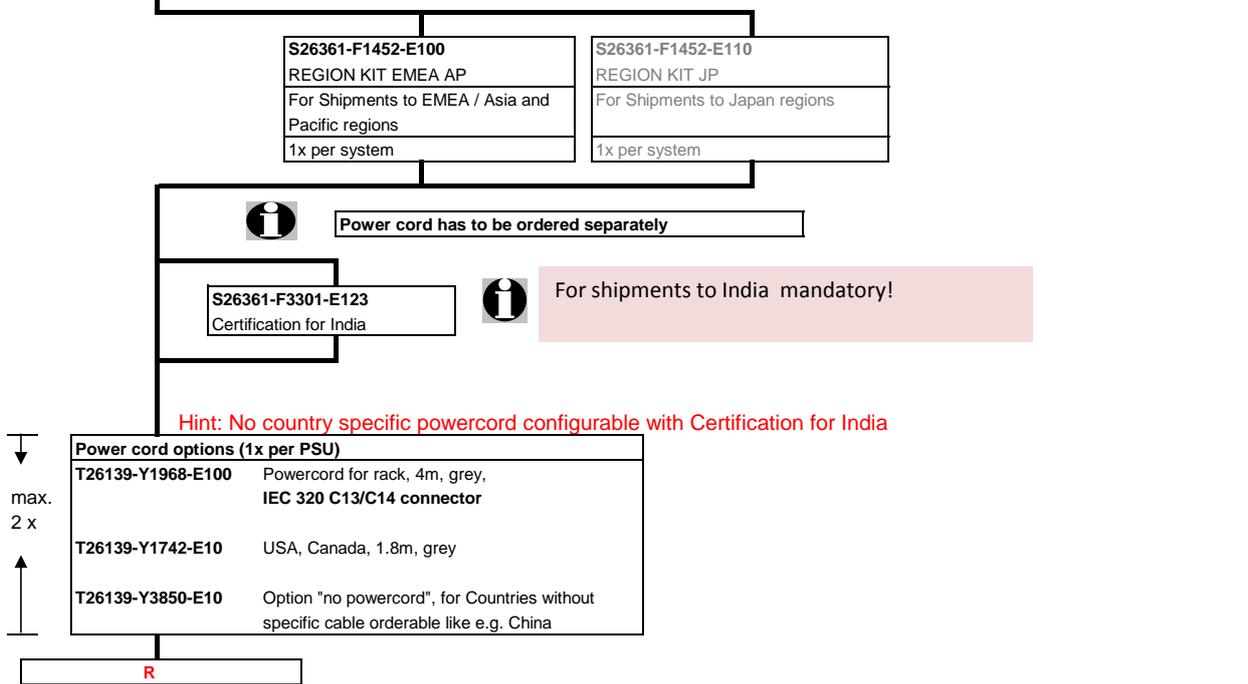


Options and other peripherals
 For other options, refer to SystemArchitect and Pricelist.

Q1



Section XIV Country specific power cord



R

Section XVI CCC exclusions

S26361-F3301-E120
 CCC Certification for China
 Limits configuration in accordance
 with CCC exclusions
 max. 1x per system

The following order components out of the specific sections are NOT allowed together with CCC Certification for China:



| | |
|---|-------------------|
| Front-VGA Interface | S26361-F2571-E26 |
| PCIe-SSD 365GB MLC | S26361-F4522-E351 |
| PCIe-SSD 785GB MLC | S26361-F4522-E781 |
| PCIe-SSD 1.2TB MLC | S26361-F4522-E121 |
| RAID Ctrl SAS 6G 8Port ex 1GB LP LSI V3 | S26361-F3713-E203 |
| SFP+ Module Multi Mode Fiber 10GbE LC | S26361-F3986-E3 |
| SFP+ Module Single Mode Fiber 10GbE LC | S26361-F3986-E4 |
| SFP+ Modul Multi Mode Fibre 10Gb FCoE | S26361-F3592-E108 |
| IB HCA 40Gb 1 port QDR | S26361-F4475-E102 |
| PIB EP QLE7342e | S26361-F4475-E222 |
| Shared 10Gb Management LAN Kit | S26361-F3629-E750 |
| IB HCA 56Gb 1 Kanal FDR | S26361-F4533-E102 |
| IB HCA 56Gb 2 Kanal FDR | S26361-F4533-E202 |
| Modulare SV 800W titanium hp | S26113-F615-E10 |
| Cable powercord rack, 4m, grey | T26139-Y1968-E100 |
| Leitung Netzanschluss (USA), 1,8m, grau | T26139-Y1742-E10 |
| Serial Port Option | S26361-F3120-E3 |
| TPM Modul | S26361-F3552-E1 |

End PRIMERGY RX200 S8

