

PRIMERGY RX500 S7

System configurator and order-information guide

August 2014

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Change report

PRIMERGY Server

Instructions

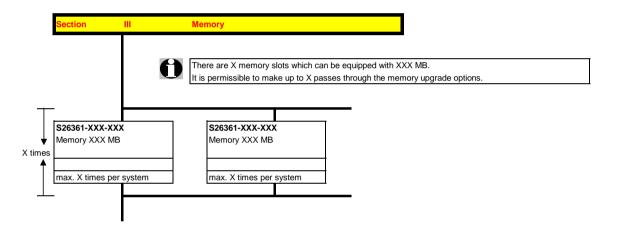
This document contains basic product and configuration information that will enable you to configure your system via PC-/SystemArchitect.

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)

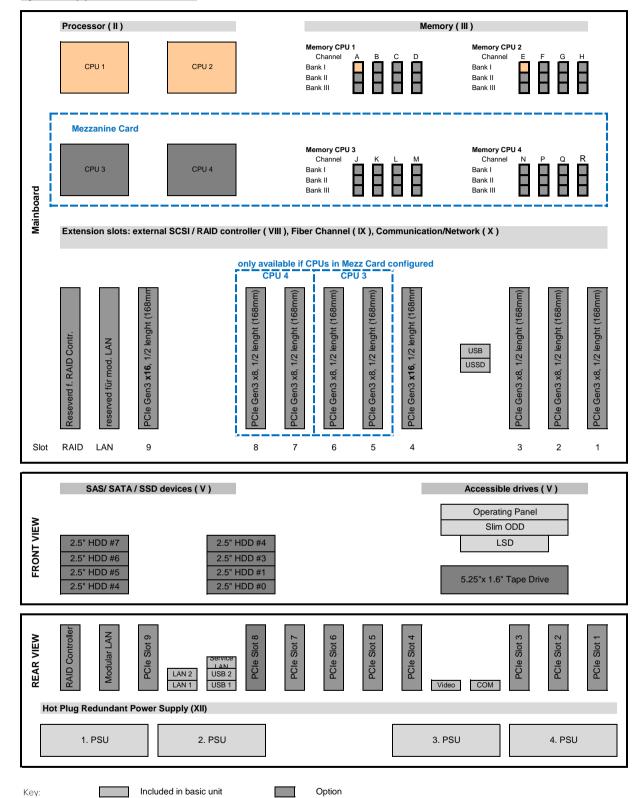
https://partners.ts.fujitsu.com/com/order-supply/configurators/primergy_config/current/Pages/default.aspx

(extranet)

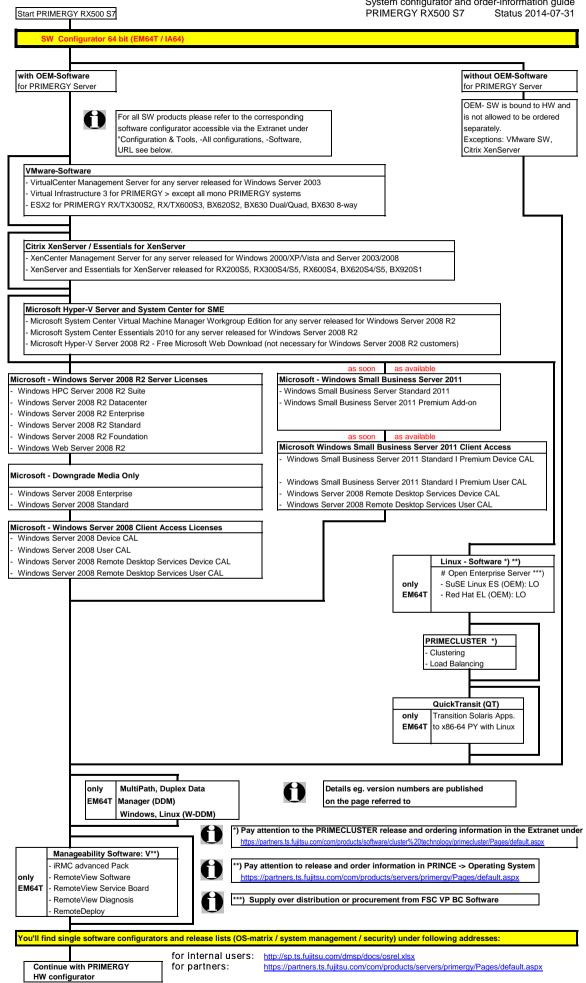
Prices and availability see price list and PC-/SystemArchitect. Subject to change and errors excepted.

Configuration diagram PRIMERGY RX500 S7

System unit (1)

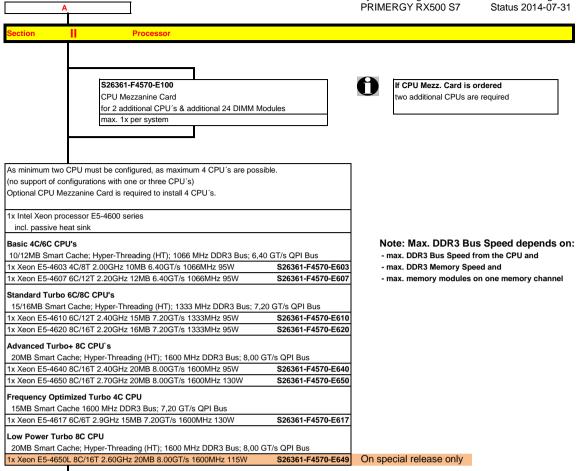


Two CPU, one memory per CPU has to be selected for an orderable basic unit.



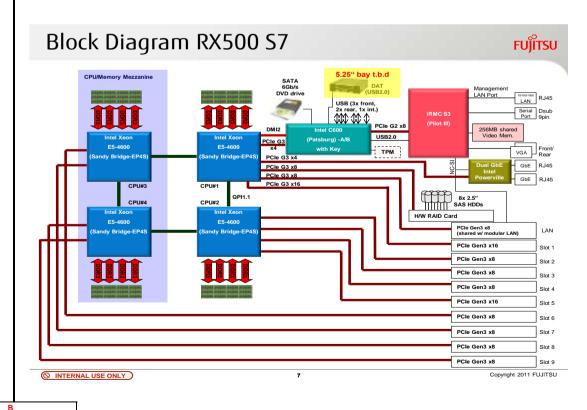
PRIMERGY RX500 S7 Systemboard with 2x socket for Xeon E5-46xx processor Rack unit 4U with Chipset Intel® C600 Series (Patsburg) 7 PCI-Express Slots 4x fan(redunant) 4x PCIe 3.0 x8 (half lengt, full hight) - LCD-Display for LocalView (Service Display) 2x PCle 3.0 x16 (half length, full hight) - 1 bay for optical disc drives (0,5" height) 1x PCle 3.0 x8 (reserved for RAID 5/6 controller) - 1x 5.25" bays FH (1,6" high) for accessible drives (reserved for additional LAN options) 1x PCle 3.0 x8 - 8 bays for 2.5" SAS/SATA HDD`s 12 memory DIMMs per CPU => Total 24 DIMMs for two CPU's - w/o Power Supply Modules SATA controller on-board (for ODD) w/o Power cord for rackmounting (ICE 320 C14->C13 plug) iRMC S3 (integrated Remote Management Controller) w/o rack mounting kit with graphics controller and 10/100Mbit Service LAN-port Dual-Port 10/100/1000 GBit LAN Controller on-board ServerView Suite Software package S26361-K1425-V200 Base Unit incl. ServerStart, ServerBooks, Management Software and Updates Optional Mezzanine Bord with 2x socket for additional 3./4. Xeon E5-46xx processor 4x PCIe 3.0 x8 (half lengt, full hight) - 12 memory DIMMs per CPU => Total 48 DIMMs for four CPU's Interfaces: Front side - 2x USB 2.0 (UHCI) with 480MBit/s, no USB wakeup - 1x VGA (15 pin) as option - 1x Service-LAN RJ45 as option Rear Side - 2x USB 2.0 (UHCI) with 480MBit/s, no USB wakeup - 1x VGA (15 pin) - 1x RS-232-C (serial, 9 pin) - 2x LAN RJ45, 1x Service LAN RJ45 Internal S26361-F2735-E111 S26361-F2735-E285 - 1x internal USB Interfaces for backup device No Rackmount-Kit option Rack Mount Kit F2-C S7 LV - 1x internal port for uSSD Module (Embedded vSphere ESXi 4.0) Only for loose deliveries elescopic rails, full extraction, - 1x USB 2.0 with 480MBit/s for dongle funcionality, no USB wakeup No mounting in Racks possible toolless mounting for RMK and CMA consisting of max. 1x per system 1 pair of drop-in rails with CMA Adapter lenth variable (559mm- 860mm) 1x per system S26361-F4530-E13 S26361-F4530-E10 Bracket 3U in asymmetrical racks Mounting of RMK in symmetrical racks Rack Mount Kit F2-C S7 LV (no support brackets needed) length variable (559mm- 860mm) for loose delivery S26361-F2735-E71 S26361-F2735-E82 S26361-F2735-E82 with CMA adapter Cable management Cable management arm 2U Cable management arm 2U S26361-F2735-L285 lateral f. PRIMECENTER Racks for asym. and sym. racks for asym. and sym. racks without CMA adapter - for asymmetrical FJ racks 1x per system 1x per system S26361-F2735-L286 or PRIMECENTER racks not for 3rd party racks 1x per system Sideways cable management arm for mounting in asymmetrical FJ racks. Has to be mounted above the RMK. S26361-F2735-I 7 PRIMECENTER M1 Racks Support bracket 3U S26361-F2735-L31 has to be ordered for loose delivery S26361-F2735-L31 SNP:SY-F1647E301-P Installation ex works for one Cable management arm 2U for asym. and sym. racks server or subsystem. S26361-F2735-L82 Hereby the rack will be delivered completely pre-mounted and all wired connections are tested. With PCR S2 12U, 24U, 38U and Cable management arm PRC M1 16U, 24U, 42U: for symetrical racks Systems and components Has to be mounted above the RMK. will be delivered installed in the rack S26361-F2201-L20 With PCR S2 racks 46U: Systems and components "Rack-mounting ex factory' will be delivered separately This service is to be ordered once To be ordered only together with per installable server/storage a PRIMECENTER rack subsystem, in order to get the PCR S2 e.g. S26361-K826-V10x server/storage subsystem new PCR M1 e.g. S26361-K827-Vxxx mounted into the racks. refer PCR S2 or M1 rack configurator In case of the 46U PCR S2 max. 1x per System this service has to be ordered, to get the mounting kits and the cables installed.

Basic units





Later upgrading to 4 processor system is also possible, but may require adding of PSU modules. Extension CPUs must be identical to the already installed CPU's.



В

Section III Memor



- There are 12 memory slots per CPU for max.

=> max. 1536GB for four CPU's (384GB per CPU), using LRDIMM

The memory area is divided into 4 channels per CPU with 3 slots per channel For detailed information, please check "Memory Configuraion Rules" chapter

Registered and LR DIMMs modules can be selected

Memory can be operated at 1.5V or 1.35V (BIOS setting, 1.5V is default)

In a 2 DIMMs per channel configuration, following frequencies are supported:

- 1.5V 1600MHz max (depending on CPU)
- 1.35V 1333MHz max (depending on CPU)
- In a 3 DIMMs per channel configuration, memory will operate at 1.5V only.

S26361-F3694-E10 Independent Mode

Requires min 1 memory Module per CPU.

Independent Channel Mode allows all channels to be populated in any order. No specific Memory RAS features are defined.

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 timing (RAS latency, CAS latency, and so forth)

S26361-F3694-E1 Rank Sparing Mode Installation

Requires min 2x 1R/2R or 1x 4R modules per CPU (channel)

BIOS Setup factory preinstalled to this mode. One Rank is spare of other ranks on the same channel.

1x per CPU The Spare Rank is held in reserve and is not available as system memory.

For effective capacity within a channel, please have a look to sheet "Effective Memory capacity / Rank Sparing Mode".

S26361-F3694-E2 Performance Mode Installation

Requires multiple of 4 identical modules to be configured per CPU

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.

S26361-F3694-E3 Mirrored Channel Mode Installation

Requires multiple of 4 identical modules to be configured per CPU.

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 per CPU contain active data (channel A, C / E, G), the remain two modules (channel B, D / F, H) contain the mirrored data

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

Note 1

Registered Memory (RDIMM) no SDDC (chipkill) support

- one DDR3 registered ECC mem. Module, 1.35V

No mix with any other types of memory modules possible

Choose up to 12x for 1R/2R per CPU

For performance reasons, we do not recommend

to configure more than 8 DIMMs per CPU (2DPC)

4GB (1x4GB) 2Rx8 L DDR3-1600 R ECC \$26361-F3695-E514

Registered Memory (RDIMM) with SDDC (chipkill) support

one DDR3 registered ECC mem. Module, 1.35V

1600MHz supported with up to 2DPC (8 modules/CPU) at 1.5V

Choose up to 12 order codes per CPU

4GB (1x4GB) 1Rx4 L DDR3-1600 R ECC	S26361-F3697-E514
3GB (1x8GB) 2Rx4 L DDR3-1600 R ECC	S26361-F3697-E515
16GB (1x16GB) 2Rx4 L DDR3-1600 R ECC	S26361-F3697-E516

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

Choose up to 12 order codes per or o	
16GB (1x16GB) 4Rx4 L DDR3-1333 LR ECC	S26361-F3698-E516
32GB (1x32GB) 4Rx4 L DDR3-1333 LR ECC	S26361-F3698-E517

Max. DDR3 memory speed depends on the memory configuration (No of mem modules per channe) 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

Mix of memory modules is only possible within the same group

12x per CPU, max.

3 modules per channel

Memory Configuration PRIMERGY RX500 S7

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 2 different kinds of DDR3 Memory Modules available: RDIMM and LRDIMM Mix of RDIMM / LRDIMM is not alloved.

Mode	Configuration	RDIMM	RDIMM	Application			
		KDIIVIIVI	LRDIMM				
		х8	х4				
SDDC (chipkill) support	any	no	yes	detect multi-bit errors			
Independant Channel Mode	1, 2 or 3 Modules per Bank	yes	yes	offers max. flexibility, upgradeability, capacity			
Mirrored Channel Mode *)	4 identical Modules / Bank	no	yes	offers maximum security			
Performance Mode	4 identical Modules / Bank	yes	yes	offers maximum performance and capacity			
Rank Sparing Mode *)	min. 2 Ranks / Channel	no	yes	balances security and capacity			

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

Capacity	Configuration	RDIMM	LRDIMM	Notes
Min. Memory per CPU	1 Module / CPU	1x4GB	1x 16GB	with one CPU
Max. Memory per CPU	8/12 Modules / CPU	12x16GB	12x 32GB	with one CPU
Max. Memory per System	16/24 Modules / System	768GB	1536GB	if all CPUs are configured

Ef	Effective Memory capacity / Rank Sparing Mode, 1 Channel populated											
			RDIMM LRDIMM							DIMM		
			4GB	1R	8GB	2R	16GB	2R	16GB 4F	32GB 4R		
1DPC			na		na		na na		12GB	24GB		
2DPC			4GB		12GB		28GB		28GB	56GB		
3DPC			8GB		20GB		8GB 20GB 44GB 40GB		44GB		40GB	80GB

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)											
	RDIMM 1600MHz				LRD	MMIC	1333	MHz				
Voltage setting (BIOS)	1.5V [default]			1.35V			1.5V [default]			1.35V		
	1	2	3	1	2	3	1	2	3	1	2	3
	DPC	DPC	DPC	DPC	DPC	DPC	DPC	DPC	DPC	DPC	DPC	DPC
CPU with 1600MHz DDR3 Bus	1600	1600	1066	1333	1333	-	1600	1600	1066	1333	1333	-
CPU with 1333MHz DDR3 Bus	1333	1333	1066	1333	1333	-	1333	1333	1066	1066	1066	-
CPU with 1066MHz DDR3 Bus	1066	1066	1066	1066	1066	-	1066	1066	1066	1066	1066	

1R - Single Rank

2R - Dual Rank

4R - Quad 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 consits of 1 memory module on every Channel available on one CPU (examples see below)

Bank I on CPU 1/2/3/4

Bank II on CPU 1/2/3/4

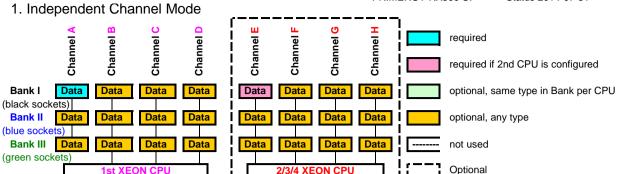
Bank III on CPU 1/2/3/4

Bank III on CPU 1/2/3/4

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

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

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

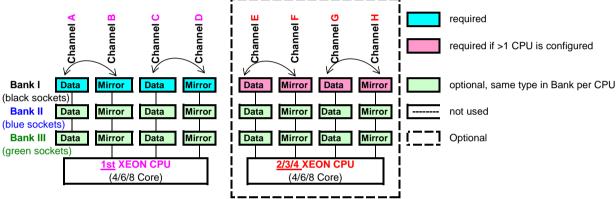


(4/6/8 Core)

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

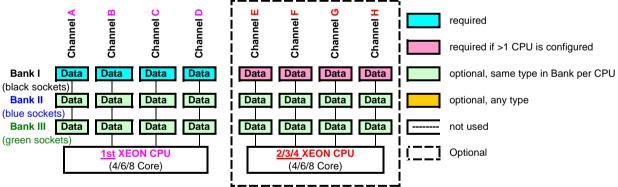
2. Mirrored Channel Mode

(4/6/8 Core)



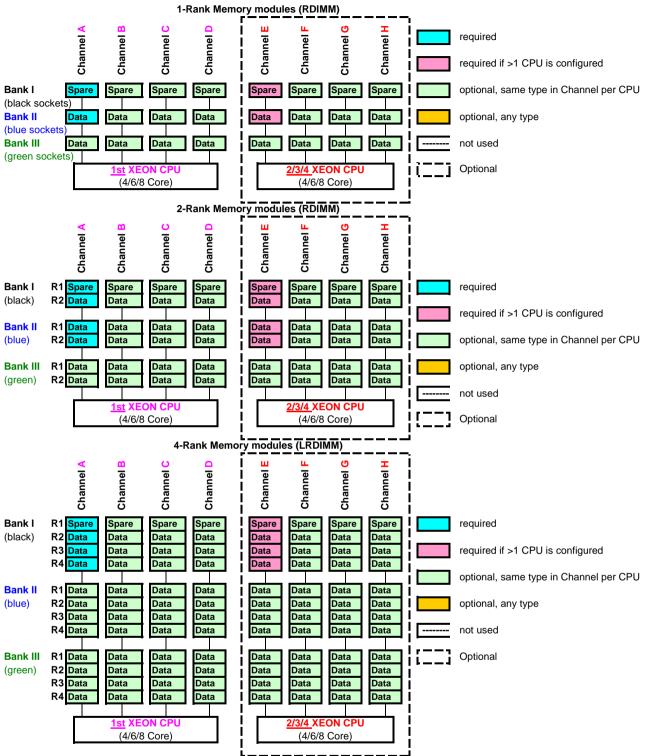
Mirrored Channel Mode requires identical modules on channel A,B, C, D (1st CPU) or channel E, F, G and H (2nd CPU) 50% of the capacity is used for the mirror => the available memory for applications is only half of the installed memory If this mode is used, a multiple of 4 identical modules has to be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

3. Performance Channel Mode



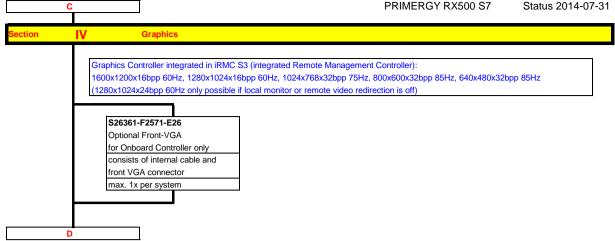
Performance Channel Mode requires identical modules on all channels of each Bank per CPU. If this mode is used, a multiple of 4 identical modules has to be ordered.

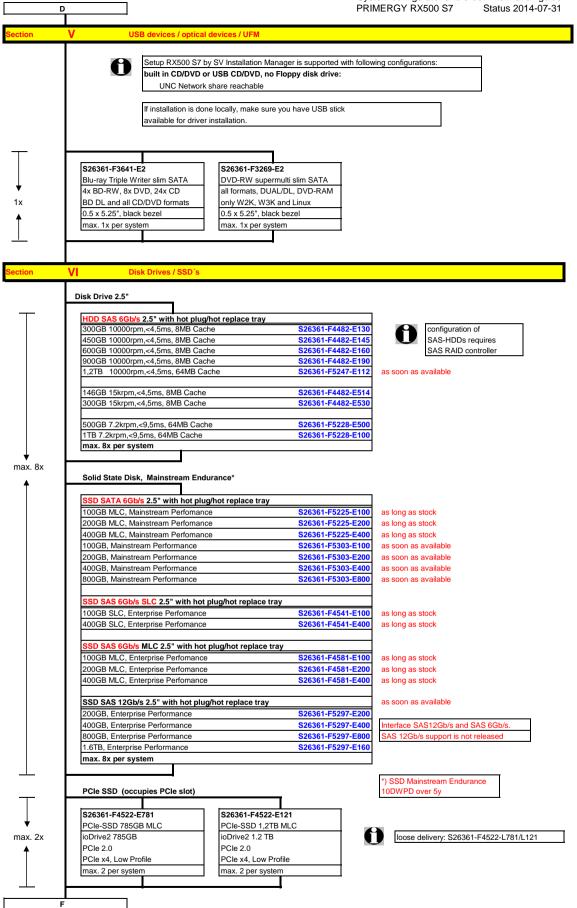
4. Rank Sparing Mode

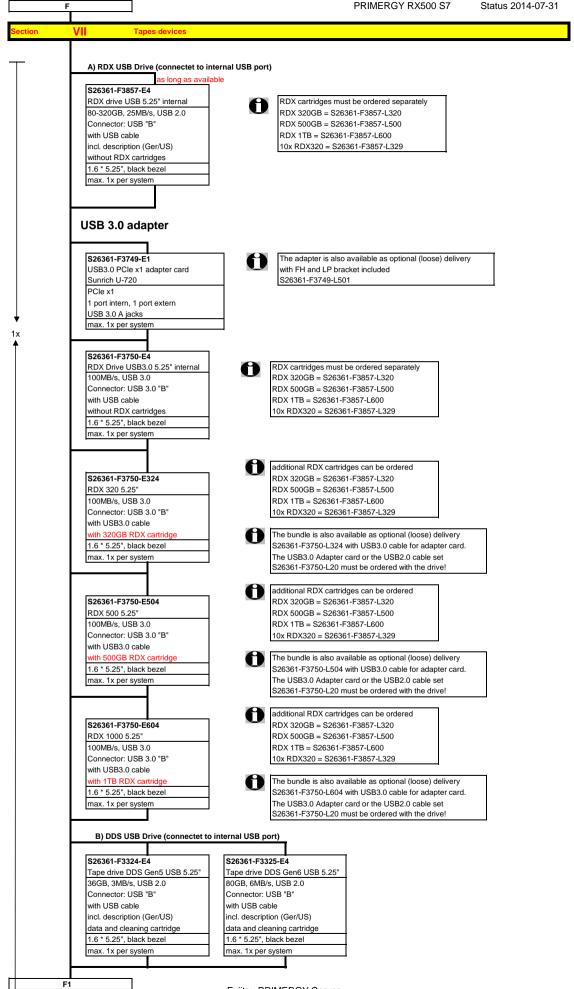


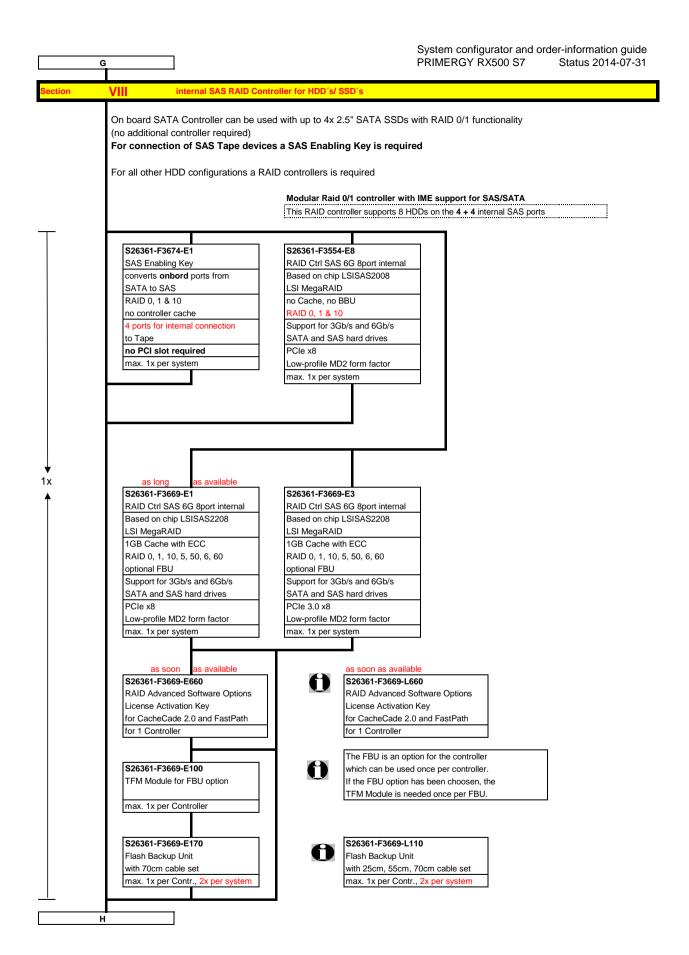
Rank Sparing Mode requires identical modules (same capacity and technology) within the same channel.

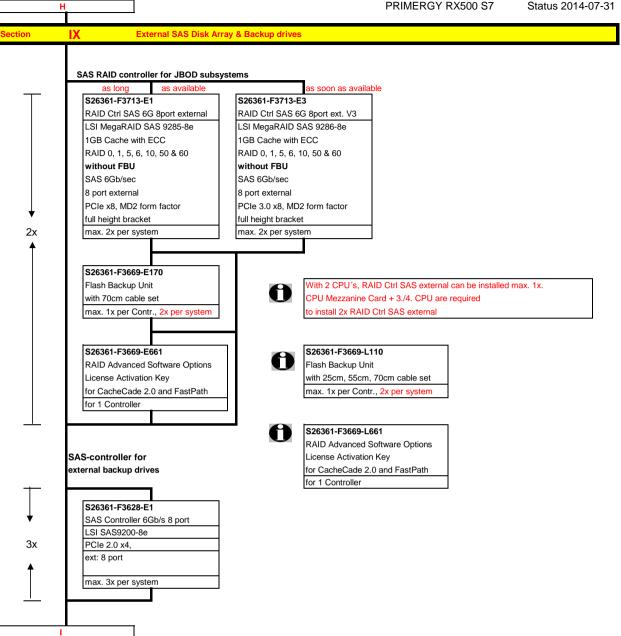
The available memory for applications will vary depending on configuration. Please refer to the spreadsheet above "Effective Memory capacity with active Rank Sparing Mode". Population rule for Rank sparing mode is to achieve max. available memory, e.g. 6 DIMMs will be spread across two channels, each with 3DPC

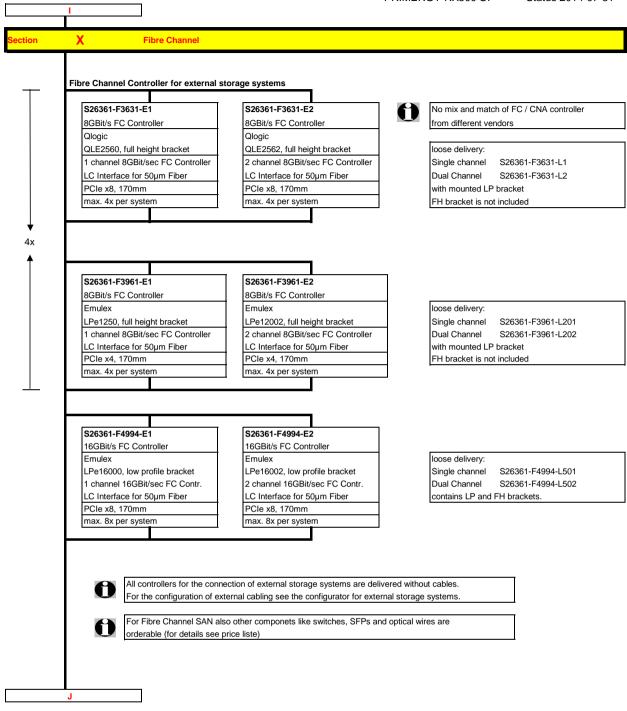


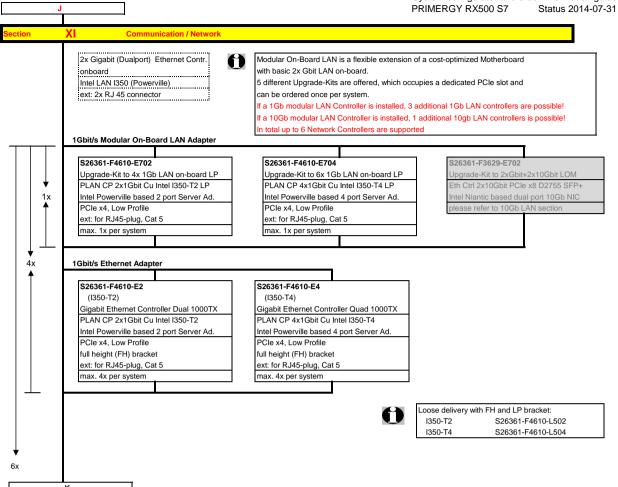


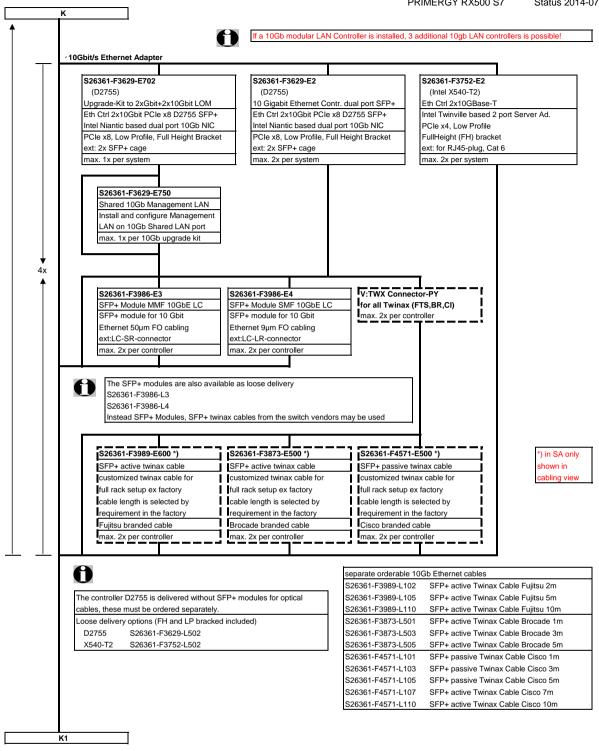


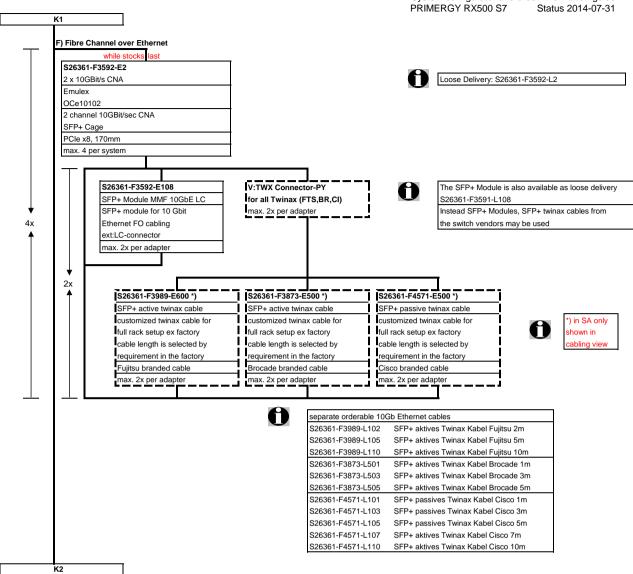


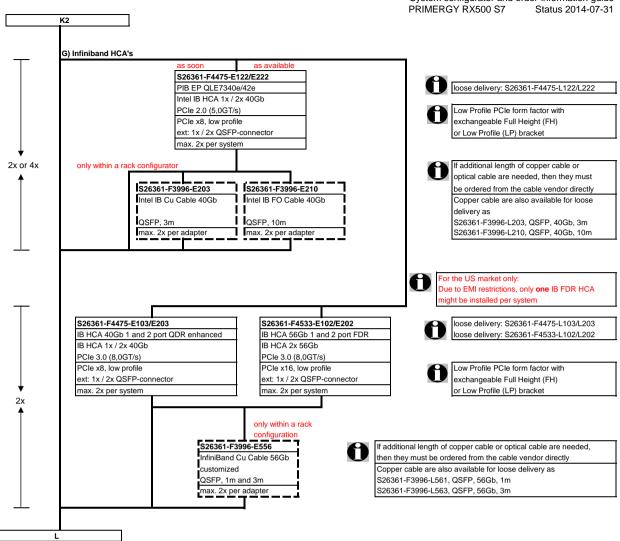


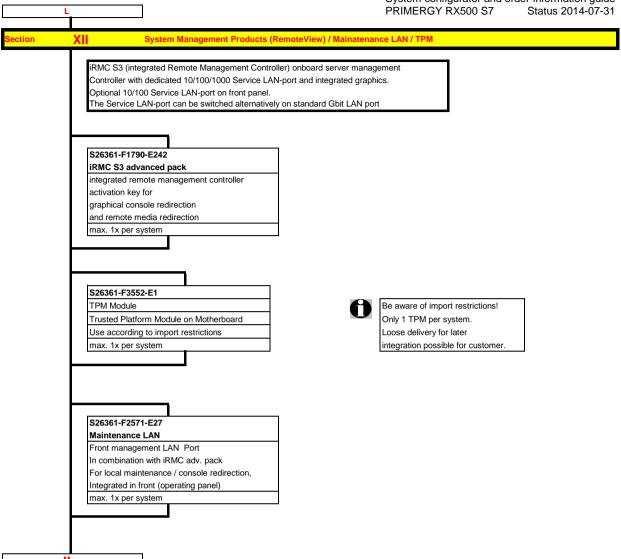


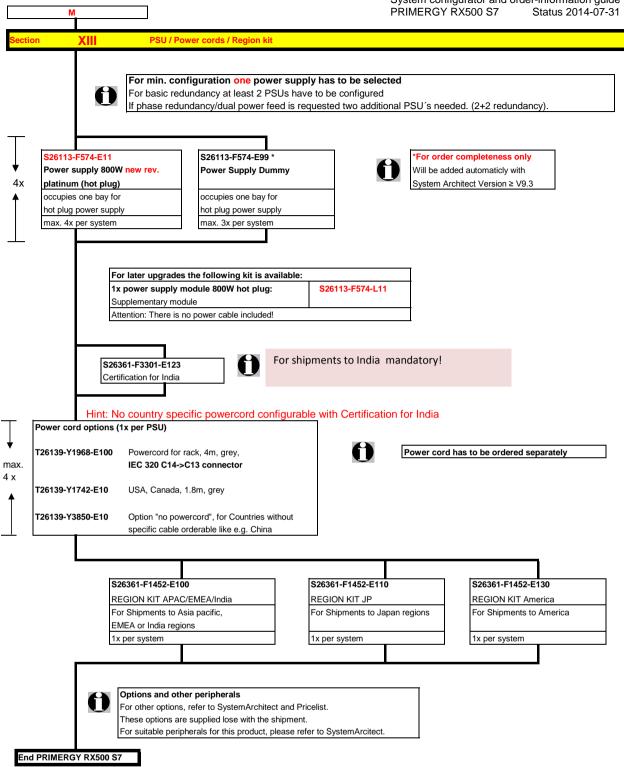












Change Report

Date	Order number	Changes
2014-06-30	S26361-F3301-E123	Added certification for India
2014-06-16	S26361-F3592-E2	phase out OCe10102
2014-06-16	S26361-F3739-xxx	EOL D3045
2014-06-16	S26361-F3740-xxx	EOL D3035
2014-06-16	S26361-F3242-xxx	EOL Sheepshead Bay
2014-03-19	S26361-F4610-E4	added Intel I350-T4
2014-03-19	S26361-F4610-E2	added Intel I350-T2
2014-03-18	S26361-F3739-E201	phase out
2014-03-18	S26361-F3740-E201	phase out
2014-03-18	S26361-F3610-E202	EOL
2014-02-26	S26361-F4475-E102/L102	IB HCA 40Gb 1 port QDR" removed
2014-01-31	S26361-F5247-E112	New 1.2TB 2.5" SAS 10K HDD added
2014-01-31	S26361-F5303-*	New SATA SSDs added
2014-01-31	S26361-F5297-*	New SAS SSDs added
2013-10-18	Optional USB Comps	no longer available
2013-05-22	S26361-F3669-E3	RAID Ctrl SAS 6G 8port internal (V3) released
2013-07-05	S26361-F3713-E3	RAID Ctrl SAS 6G 8Port ex 1GB LSI V3
2013-04-23	S26361-F3629-E2	Number of D2755 reduced to two
2013-03-25	S26361-F3669-E661/L661	RAID advanced SW options added - for RAID Ctrl SAS 6G 8port external
2013-03-25	S26361-F3669-E660/L660	RAID advanced SW option added - for RAID Ctrl SAS 6G 1GB (D3116C)
2013-03-25	S26361-F3669-E3	RAID Ctrl SAS 6G 1GB (D3116C) added
2013-03-15	S26361-F3750-E324/504/E604	RDX & Cartridge bundles added
2013-02-26	S26361-F5228-E500/E100	2.5" BC-SAS 500GB/1TB added
2012-12-18	S26361-F4475-E102/E202	number of controller reduced to max. 2x
2012-11-22	F3749-E4 and F3750-E4	"as soon as available" removed
2012-11-22	S26361-F3857-E4	"as long as available" added
2012-10-08	S26361-F3749-Exx	Added USB3.0 Adapter
2012-10-08	S26361-F3750-Ex	Added RDX Drive
2012-09-28	S26361-F4541-E200	EOL: 200GB SSD SAS SLC
2012-09-21	S26361-F3740-E1/701 S26361-F3739-E1/701	added new LAN Controller (D3035 / D3045) incl. LAN upgrade kits
2012-09-21	S26361-F4522-Exxx	release of PCIe-SSD's
2012-07-25	S26361-F4581-Exxx	Add SSD SAS MLC
2012-07-13	S26361-F3857-L160/L169	RDX Cartridge 160GB is EOL => removed
2012-07-01		First Release