PRIMERGY BX2560 M1

System configurator and order-information guide

Contents

PRIMERGY Server

Instructions

This document contains basic product and configuration information that will enable you to configure your system via System-Architect.

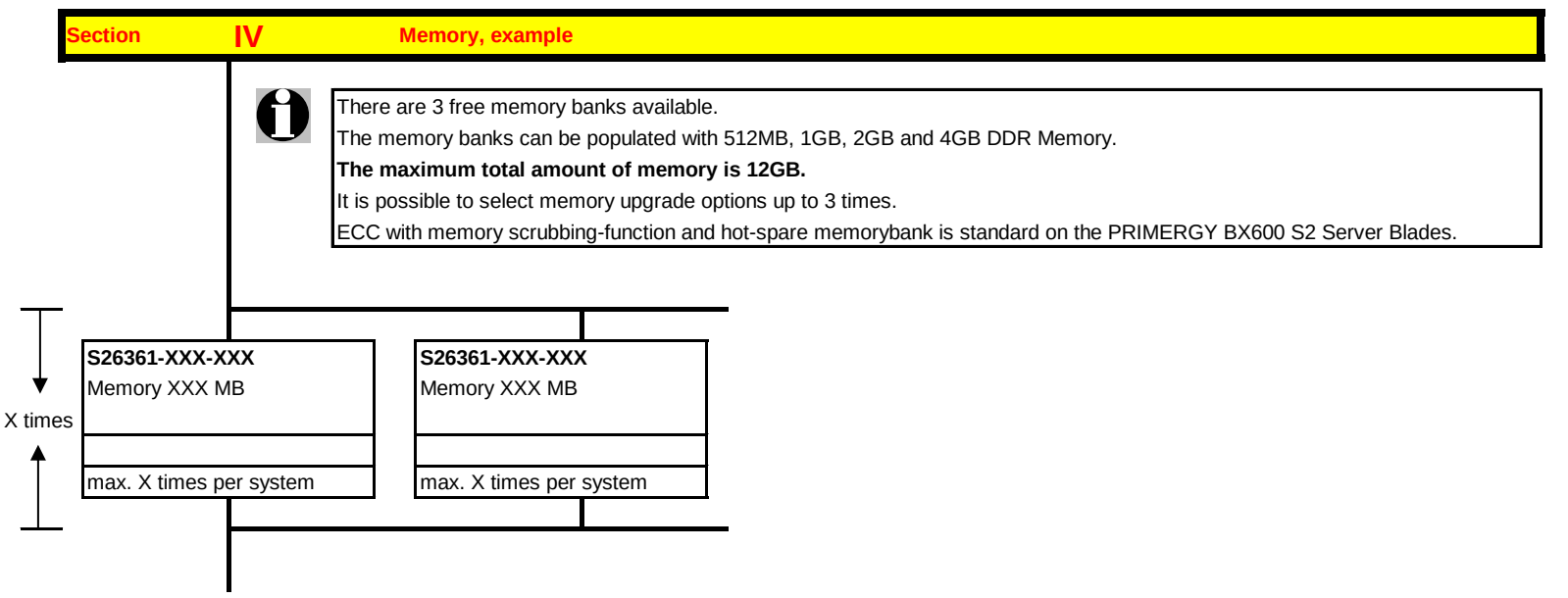
Only the tool "System-Arcitect" will ensure a fast and proper configuration of your PRIMERGY server or your complete PRIMERGY Rack system.

Please pay attention to the naming conventions: **BX2560 M1** Dual Server Blade M1

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-/ System-Architect.

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 3x) as the arrow indicates.

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

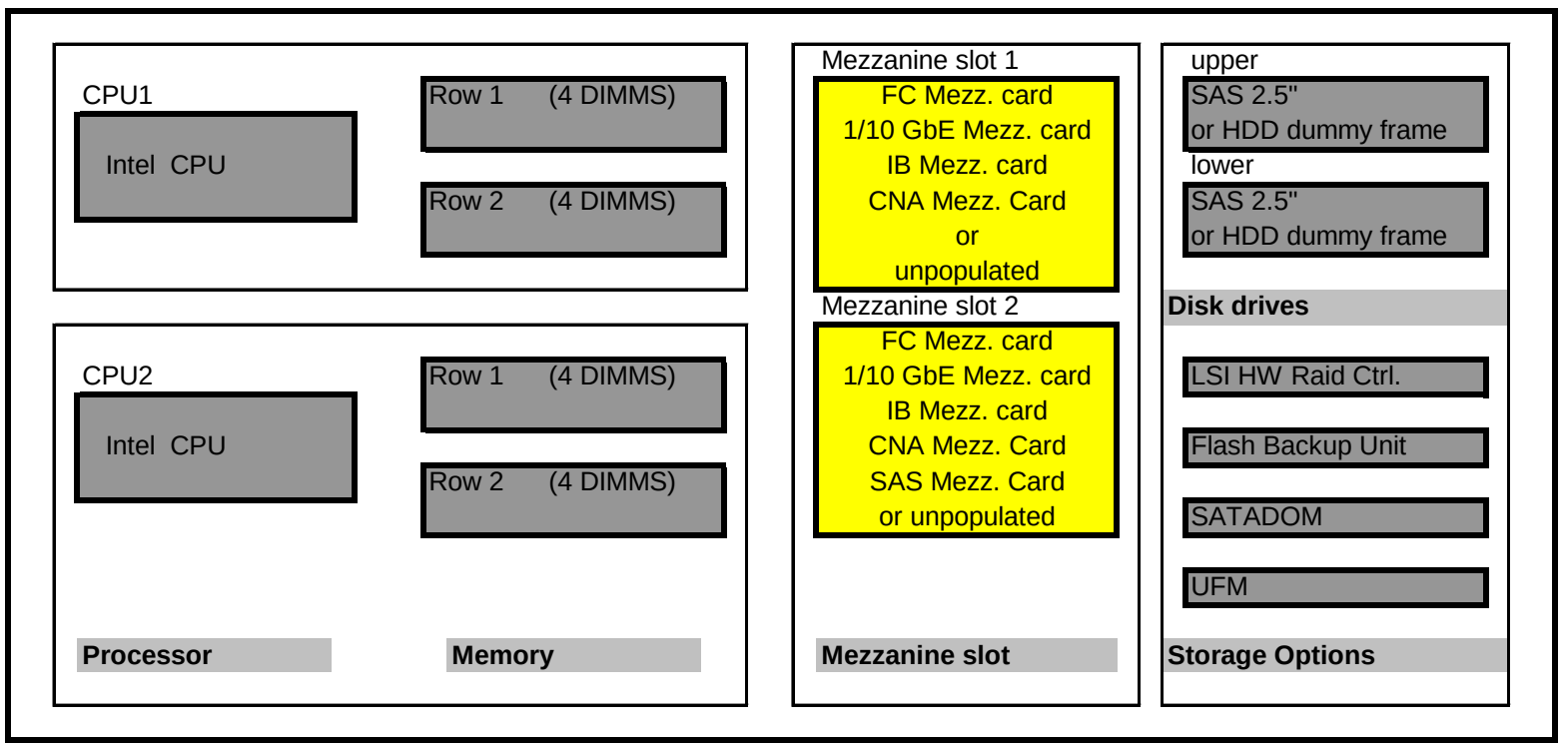
For further information see:

http://ts.fujitsu.com/products/standard_servers/index.html (internet)

https://partners.ts.fujitsu.com/com/order-supply/configurators/primergy_config/Pages/Currentconfigurators.aspx (extranet)

Prices and availability see price list and PC-/ System-Architect
Subject to change and errors excepted

Configuration diagram Dual Server Blade BX2560 M1



Key:

Included in basic unit Option

The population order for the CPU is: CPU1 first, then CPU2

The population order for the DIMMs: for each CPU, the DIMM row 1 (DIMMS 1A 1B 1C 1D) (DIMMS1E 1F 1G 1H) first, then row 2 (DIMMs 2A 2B 2C 2D) (DIMMs 2E 2F 2G 2H)

D

Section X Dual Socket Server Blade BX2560 M1

Server Blade with:
- Dual INTEL E5-26xxv3 Processor Support
- The base units with INTEL C610 chipset
- onbaord controller for SATA
- 16 DIMM sockets, organized in 2 DPC for each CPU (8 DIMMs per CPU)
- 1x Dual channel 10 Gbit Ethernet CNA controller on-board
- 2 bays for optional hot plug 2.5" SATA/ SAS HDD/ SSD or PCIe SSD
- iRMC S4 on-board
- Special connector for Y-cable (4x USB, 1 x serial 1x VGA).

The BX2560 M1 Server Blade can be installed max. 18x in the BX900 System Unit
The BX2560 M1 Server Blade can be installed max. 8x in the BX400 System Unit

18x

S26361-K1466-V200
PY BX2560 M1 Dual Server Blade
up to 2x 2.5" hot plug drives.
Dual Server Blade Base Unit without
CPU and without memory modules!
For CPU and Memory configuration see below
Max. 18x per BX900 System Unit.
Max. 8x per BX400 System Unit.

S26361-F4478-L2
PY BX900 Y-Cable frontside
for KVM connection to
Server Blade
2x USB, 1x VGA, 1x seriell

S26361-F3552-E6
TPM Module
Trusted Platform Module on motherboard
PY TPM Module
Be aware of import restrictions!
Max. 1x per Server Blade.

S26361-F1790-E310
embedded Lifecycle Manager (eLCM)
SD-Card (min. Class 10)
SD-Card connected to iRMC to support e.g.
Backup/Restore function, eLCM, etc.
Max. 1x per Server Blade.

Following USB Components are available

1) USB DVD SM / Blu-Ray	
External Blu-Ray Drive (as soon as available)	S26341-F103-L120
2) USB Mouse:	S26381-K415-L100
Optical Wheel Mouse Tilt USB/PS2	
3) USB Memorybird:	
MyUSBS A910 8GB, MLC Flash	S26391-F6048-L208
MyUSBS A910 16GB, MLC Flash	S26391-F6048-L216

S26361-F2749-E1
Service for Server Blade installation in the System Unit.
Hereby the BX900 S1 will be delivered completely configured and tested with Server Blades integrated.
This order number must be in the same order as the System Unit itself.
min. 1x per System Unit; max. 18x per System Unit; max. 1x per Server Blade

S26361-F2749-E2
Server Blade individually packed / delivered.
The Server Blade is not built in a BX900 S1, it is separately tested and delivered.
Contains ServerStart CD
max. 1x per Server Blade

E

Section XI Processor

There are 2 processor sockets available.
The first socket must always be equipped with the **first CPU** which can be selected via configurator
Two processors with different clock frequencies are not possible

For CPU types E5-2637v3, E5-2643v3, E5-2667v3, E5-2697v3 and E5-2699v3
a larger heat sink is necessary for first CPU due to thermal conditions.
This leads to a limitation of CPU1´s memory array to 6 DIMM modules.
This follows the memory array of a single CPU configuration is limited to 6 DIMM modules
and the memory array of a dual CPU configuration is limited to 14 DIMM modules.

Max. two CPU`s can be selected per basic unit
One of following CPU´s can be selected once (only as first CPU)
for an orderable basic unit
Optional second CPU has to be the same type like the first CPU

Xeon E5-2600v3 (R) Basic - 1x 64-bit Intel Xeon (15MB Smart Cache) 1600 MHz DDR4 Bus; 6.4 GT/s QPI Bus occupies socket for one CPU	
Xeon E5-2603v3 6C/6T 1.60GHz 15MB 6.4GT/s 1600MHz 85W	**S26361-F3849-E103**
Xeon E5-2609v3 6C/6T 1.90GHz 15MB 6.4GT/s 1600MHz 85W	**S26361-F3849-E109**
Xeon E5-2600v3 (R) Standard - 1x 64-bit Intel Xeon (15/20MB Smart Cache); Hyper-Threading (HT); 1866 MHz DDR4 Bus; 8.0 GT/s QPI Bus occupies socket for one CPU	
Xeon E5-2620v3 6C/12T 2.40GHz 15MB 8.0GT/s 1866MHz 85W	**S26361-F3849-E120**
Xeon E5-2630v3 8C/16T 2.40GHz 20MB 8.0GT/s 1866MHz 85W	**S26361-F3849-E130**
Xeon E5-2640v3 8C/16T 2.60GHz 20MB 8.0GT/s 1866MHz 90W	**S26361-F3849-E140**
Xeon E5-2600v3 (R) Advanced - 1x 64-bit Intel Xeon (25/30MB Smart Cache); Hyper-Threading (HT); 2133 MHz DDR4 Bus; 9.6 GT/s QPI Bus occupies socket for one CPU	
Xeon E5-2650v3 10C/20T 2.30GHz 25MB 9.6GT/s 2133MHz 105W	**S26361-F3849-E150**
Xeon E5-2600v3 (R) Frequency Optimized - 1x 64-bit Intel Xeon (10-20MB Smart Cache); Hyper-Threading (HT); 1866 & 2133 MHz DDR4 Bus; 8.0 & 9.6 GT/s QPI Bus occupies socket for one CPU	
Xeon E5-2623v3 4C/8T 3.00GHz 10MB 8.0GT/s 1866MHz 105W	**S26361-F3849-E123**
Xeon E5-2600v3 (R) Advanced - 1x 64-bit Intel Xeon (25/30MB Smart Cache); Hyper-Threading (HT); 2133 MHz DDR4 Bus; 9.6 GT/s QPI Bus occupies socket for one CPU	
Xeon E5-2660v3 10C/20T 2.60GHz 25MB 9.6GT/s 2133MHz 105W	**S26361-F3849-E160**
Xeon E5-2670v3 12C/24T 2.30GHz 30MB 9.6GT/s 2133MHz 120W	**S26361-F3849-E170**
Xeon E5-2680v3 12C/24T 2.50GHz 30MB 9.6GT/s 2133MHz 120W	**S26361-F3849-E180**
Xeon E5-2690v3 12C/24T 2.60GHz 30MB 9.6GT/s 2133MHz 135W	**S26361-F3849-E190**
Xeon E5-2600v3 (R) Frequency Optimized - 1x 64-bit Intel Xeon (10-20MB Smart Cache); Hyper-Threading (HT); 1866 & 2133 MHz DDR4 Bus; 8.0 & 9.6 GT/s QPI Bus occupies socket for one CPU	
Xeon E5-2637v3 4C/8T 3.50GHz 15MB 9.6GT/s 2133MHz 135W	**S26361-F3849-E137**
Xeon E5-2643v3 6C/12T 3.40GHz 20MB 9.6GT/s 2133MHz 135W	**S26361-F3849-E143**
Xeon E5-2667v3 8C/16T 3.20GHz 20MB 9.6GT/s 2133MHz 135W	**S26361-F3849-E167**
Xeon E5-2600v3 (R) High Core Count - 1x 64-bit Intel Xeon (35-40MB Smart Cache); Hyper-Threading (HT); 2133 MHz DDR4 Bus; 9.6 GT/s QPI Bus occupies socket for one CPU	
Xeon E5-2683v3 14C/28T 2.00GHz 35MB 9.6GT/s 2133MHz 120W	**S26361-F3849-E183**
Xeon E5-2695v3 14C/28T 2.30GHz 35MB 9.6GT/s 2133MHz 120W	**S26361-F3849-E195**
Xeon E5-2697v3 14C/28T 2.60GHz 35MB 9.6GT/s 2133MHz 145W	**S26361-F3849-E197**
Xeon E5-2698v3 16C/32T 2.30GHz 40MB 9.6GT/s 2133MHz 135W	**S26361-F3849-E198**
Xeon E5-2699v3 18C/36T 2.30GHz 45MB 9.6GT/s 2133MHz 145W	**S26361-F3849-E199**
Xeon E5-2600v3 (R) Low Power - 1x 64-bit Intel Xeon (20/30MB Smart Cache); Hyper-Threading (HT); 1866/2133 MHz DDR4 Bus; 8.0/9.6 GT/s QPI Bus occupies socket for one CPU	
Xeon E5-2630Lv3 8C/16T 1.80GHz 20MB 8.0GT/s 1866MHz 55W	**S26361-F3849-E131**
Xeon E5-2650Lv3 12C/24T 1.80GHz 30MB 9.6GT/s 2133MHz 65W	**S26361-F3849-E151**

Max. DDR4 Bus Speed depends on:
- max. DDR4 Bus Speed from the CPU and
- max. DDR4 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.

S26361-F3849-E100
Cooling Kit 2nd CPU

E1 E2

E1

E2

One of following CPU´s has to be selected as second CPU	
Optional second CPU has to be the same type like the first CPU	
Xeon E5-2600v3 (R) Basic - 1x 64-bit Intel Xeon (15MB Smart Cache) 1600 MHz DDR4 Bus; 6.4 GT/s QPI Bus occupies socket for one CPU	
Xeon E5-2603v3 6C/6T 1.60GHz 15MB 6.4GT/s 1600MHz 85W	**S26361-F3849-E103**
Xeon E5-2609v3 6C/6T 1.90GHz 15MB 6.4GT/s 1600MHz 85W	**S26361-F3849-E109**
Xeon E5-2600v3 (R) Standard - 1x 64-bit Intel Xeon (15/20MB Smart Cache); Hyper-Threading (HT); 1866 MHz DDR4 Bus; 8.0 GT/s QPI Bus occupies socket for one CPU	
Xeon E5-2620v3 6C/12T 2.40GHz 15MB 8.0GT/s 1866MHz 85W	**S26361-F3849-E120**
Xeon E5-2630v3 8C/16T 2.40GHz 20MB 8.0GT/s 1866MHz 85W	**S26361-F3849-E130**
Xeon E5-2640v3 8C/16T 2.60GHz 20MB 8.0GT/s 1866MHz 90W	**S26361-F3849-E140**
Xeon E5-2600v3 (R) Advanced - 1x 64-bit Intel Xeon (25/30MB Smart Cache); Hyper-Threading (HT); 2133 MHz DDR4 Bus; 9.6 GT/s QPI Bus occupies socket for one CPU	
Xeon E5-2650v3 10C/20T 2.30GHz 25MB 9.6GT/s 2133MHz 105W	**S26361-F3849-E150**
Xeon E5-2660v3 10C/20T 2.60GHz 25MB 9.6GT/s 2133MHz 105W	**S26361-F3849-E160**
Xeon E5-2670v3 12C/24T 2.30GHz 30MB 9.6GT/s 2133MHz 120W	**S26361-F3849-E170**
Xeon E5-2680v3 12C/24T 2.50GHz 30MB 9.6GT/s 2133MHz 120W	**S26361-F3849-E180**
Xeon E5-2690v3 12C/24T 2.60GHz 30MB 9.6GT/s 2133MHz 135W	**S26361-F3849-E190**
Xeon E5-2600v3 (R) Frequency Optimized - 1x 64-bit Intel Xeon (10-20MB Smart Cache); Hyper-Threading (HT); 1866 & 2133 MHz DDR4 Bus; 8.0 & 9.6 GT/s QPI Bus occupies socket for one CPU	
Xeon E5-2623v3 4C/8T 3.00GHz 10MB 8.0GT/s 1866MHz 105W	**S26361-F3849-E123**
Xeon E5-2637v3 4C/8T 3.50GHz 15MB 9.6GT/s 2133MHz 135W	**S26361-F3849-E137**
Xeon E5-2643v3 6C/12T 3.40GHz 20MB 9.6GT/s 2133MHz 135W	**S26361-F3849-E143**
Xeon E5-2667v3 8C/16T 3.20GHz 20MB 9.6GT/s 2133MHz 135W	**S26361-F3849-E167**
Xeon E5-2600v3 (R) High Core Count - 1x 64-bit Intel Xeon (35-40MB Smart Cache); Hyper-Threading (HT); 2133 MHz DDR4 Bus; 9.6 GT/s QPI Bus occupies socket for one CPU	
Xeon E5-2683v3 14C/28T 2.00GHz 35MB 9.6GT/s 2133MHz 120W	**S26361-F3849-E183**
Xeon E5-2695v3 14C/28T 2.30GHz 35MB 9.6GT/s 2133MHz 120W	**S26361-F3849-E195**
Xeon E5-2697v3 14C/28T 2.60GHz 35MB 9.6GT/s 2133MHz 145W	**S26361-F3849-E197**
Xeon E5-2698v3 16C/32T 2.30GHz 40MB 9.6GT/s 2133MHz 135W	**S26361-F3849-E198**
Xeon E5-2699v3 18C/36T 2.30GHz 45MB 9.6GT/s 2133MHz 145W	**S26361-F3849-E199**
Xeon E5-2600v3 (R) Low Power - 1x 64-bit Intel Xeon (20/30MB Smart Cache); Hyper-Threading (HT); 1866/2133 MHz DDR4 Bus; 8.0/9.6 GT/s QPI Bus occupies socket for one CPU	
Xeon E5-2630Lv3 8C/16T 1.80GHz 20MB 8.0GT/s 1866MHz 55W	**S26361-F3849-E131**
Xeon E5-2650Lv3 12C/24T 1.80GHz 30MB 9.6GT/s 2133MHz 65W	**S26361-F3849-E151**

Special Release only

Separate orderable CPU upgrade kits	
S26361-F3849-L603	Xeon E5-2603v3 6C/6T 1.60GHz 15MB 6.4GT/s 1600MHz 85W
S26361-F3849-L609	Xeon E5-2609v3 6C/6T 1.90GHz 15MB 6.4GT/s 1600MHz 85W
S26361-F3849-L620	Xeon E5-2620v3 6C/12T 2.40GHz 15MB 8.0GT/s 1866MHz 85W
S26361-F3849-L630	Xeon E5-2630v3 8C/16T 2.40GHz 20MB 8.0GT/s 1866MHz 85W
S26361-F3849-L640	Xeon E5-2640v3 8C/16T 2.60GHz 20MB 8.0GT/s 1866MHz 90W
S26361-F3849-L643	Xeon E5-2643v3 6C/12T 3.40GHz 20MB 9.6GT/s 2133MHz 135W
S26361-F3849-L650	Xeon E5-2650v3 10C/20T 2.30GHz 25MB 9.6GT/s 2133MHz 105W
S26361-F3849-L623	Xeon E5-2623v3 4C/8T 3.00GHz 10MB 8.0GT/s 1866MHz 105W

E3

E3

Section XII Storage / RAID Functionality on Server Blade

One UFM can be installed independent from the disk drives
Remark: UFM is part of the VMWare Embedded solution (26361-F2341-E433)

Configuration Hint - Second CPU needed for PCIe x4 Gen3 SSD/HDD Option
The PCIe HDD/SSD Option is only supported if the second CPU is installed

Please refer the following configuration matrix for your desired confuration.

	Controller Device	PCIe	PCH	PCH	PRAID EM400i	PRAID EM400i	PRAID EM400i	PRAID CM400i
	int. HDD/SSD	PCIe	SATA	SATA			SAS/SATA	SAS/SATA
	ext. HDD/SSD				SAS/SATA	SAS/SATA		
BTO Device								
PRAID EM400i	S26361-F3823-E410	no	no	mandatory		mandatory	mandatory	no
PRAID CM400i	S26361-F3823-E400	no	no	no		no	no	mandatory
PCH connection Kit	S26361-F4008-E100	no	mandatory	mandatory		no	no	no
PCIe x4 Gen3	S26361-F4008-E101	mandatory	no	no		no	no	no
PRAID EM400i FBU	S26361-F3823-E10	no	no	optional		optional	optional	no
PRAID EM400i Mezz	S26361-F3823-E30	no	no	mandatory		mandatory	no	no
PRAID EM400i BP	S26361-F3823-E20	no	no	no		no	mandatory	mandatory

S26361-F3823-E410
PRAID EM400i
- PY SAS 12G RAID HDD Module w/ 1 GB Cache
- MegaRAID
- RAID level 0/1/1E/10/5/50/6/60
- SAS 12 Gb/sec
- incl. PRAID EM400i Riser pluggable on the main board
- PCIe Gen3 interface
- 4x SAS links to midplane
- 2x SAS links to internal HDD's
- max. 1x per Server Blade

S26361-F3823-E400
PRAID CM400i
- PY SAS 12G RAID HDD Module w/o Cache
- MegaRAID
- RAID level 0/1/10
- SAS 12 Gb/sec
- incl. PRAID EM400i Riser pluggable on the main board
- PCIe Gen3 interface
- 2x SAS links to internal HDD's
- max. 1x per Server Blade

S26361-F4008-E100
PCH connection Kit
- supports up to 2 HDD/SSD connected to onboard PCH
- SATA interface
- 2x SATA links to int. HDD's
- max. 1x per Server Blade

SATA HDD / SSD

S26361-F4008-E101
PCIe x4 Gen3
- Hint: 2nd CPU is mandatory for this Option for this Option
- PCIe x4 Gen3 interface
- 2x PCIe x4 Gen3 links to internal HDD's
- max. 1x per Server Blade

PCIe-SSD / HDD

S26361-F3823-E10
PRAID EM400i FBU
- PY FBU03 Module Flash Backup Unit incl. FBU holder

S26361-F3823-E30
PRAID EM400i Mezz
- PY SAS Expander Mezzanine Card connection to SAS CB incl. SAS cable

S26361-F3823-E20
PRAID EM400i BP
- PY SAS 12G HDD Backplane
- 2 internal SAS links to PY SAS 12G RAID HDD Modul

S26361-F3823-E20
PRAID EM400i BP
- PY SAS 12G HDD Backplane
- 2 internal SAS links to PY SAS 12G RAID HDD Modul

G

Solid State Disk, Mainstream Endurance*

1 - 2x

SSD SAS 12Gb/s 2.5" with hot plug/hot replace tray	
200GB, Enterprise Performance	S26361-F5298-E200
400GB, Enterprise Performance	S26361-F5298-E400
800GB, Enterprise Performance	S26361-F5298-E800
1.6TB, Enterprise Performance	S26361-F5298-E160
max. 2x per system	

*) SSD Mainstream Endurance 10DWPD over 5y

Solid State Disk, Mainstream Endurance*

1 - 2x

SSD SATA 6Gb/s 2.5" with hot plug/hot replace tray	
100GB, Mainstream Performance	S26361-F3821-E100
200GB, Mainstream Performance	S26361-F3821-E200
400GB, Mainstream Performance	S26361-F3821-E400
800GB, Mainstream Performance	S26361-F3821-E800
max. 2x per system	

*) SSD Mainstream Endurance 10DWPD over 5y

Solid State Disk, Read-Intensive Endurance**

1 - 2x

SSD SATA 6Gb/s 2.5" with hot plug/hot replace tray	
120GB, Read-Intensive	S26361-F5525-E120
240GB, Read-Intensive	S26361-F5525-E240
480GB, Read-Intensive	S26361-F5525-E480
800GB, Read-Intensive	S26361-F5525-E800
max. 2x per system	

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

PCIe3.0 Solid State Disk, Mainstream Endurance*

1 - 2x

SSD PCIe3.0 2.5" with hot plug/hot replace tray	
800GB, MLC, NVMe, high Enterprise Performance	S26361-F5534-E800
1.6TB, MLC, NVMe, high Enterprise Performance	S26361-F5534-E161
2TB, MLC, NVMe, high Enterprise Performance	S26361-F5534-E201
max. 2x per system	

*) SSD Mainstream Endurance 10DWPD over 5y

1x

SSD SATA DOM	
32GB, Endurance=86 TBW (Seq. write)	S26361-F5523-E32
64GB, Endurance=172 TBW (Seq. write)	S26361-F5523-E64
128GB, Endurance=345 TBW (Seq. write)	S26361-F5523-E128
SATADOM is designed for use as a boot drive with the Endurance Spec. above.	
Vmware not supported.	
max. 1x per system	

1-2x

HDD SATA 6Gb/s 2.5" hot plug/hot replace	
250GB 7.200rpm,<9,5ms, 64MB Cache	S26361-F3816-E250
500GB 7.200rpm,<9,5ms, 64MB Cache	S26361-F3816-E500
1TB 7.200rpm,<9,5ms, 64MB Cache	S26361-F3816-E100
max. 1x per system	

1 - 2x

HDD SAS 6Gb/s 2.5" hot plug/hot replace	
146GB 15krpm,<4,5ms, 32MB Cache, 512n	S26361-F3818-E514
300GB 10000rpm,<4,5ms, 32MB Cache, 512n	S26361-F3818-E130
450GB 10000rpm,<4,5ms, 32MB Cache, 512n	S26361-F3818-E145
600GB 10000rpm,<4,5ms, 32MB Cache, 512n	S26361-F3818-E160
900GB 10000rpm,<4,5ms, 32MB Cache, 512n	S26361-F3818-E190
1.2TB 10000rpm,<4,5ms, 64MB Cache, 512n	S26361-F3818-E112
500GB 7.2krpm,<9,5ms, 64MB Cache, 512n	S26361-F3817-E500
1TB 7.2krpm,<9,5ms, 64MB Cache, 512n	S26361-F3817-E100
HDD SAS 12Gb/s 2.5" hot plug/hot replace	
450GB 10000rpm, 128MB Cache, 512e	S26361-F5543-E145
600GB 10000rpm, 128MB Cache, 512e	S26361-F5543-E160
900GB 10000rpm, 128MB Cache, 512e	S26361-F5543-E190
1.2TB 10000rpm, 128MB Cache, 512e	S26361-F5543-E112
1.8TB 10000rpm, 128MB Cache, 512e	S26361-F5543-E118
300GB 10000rpm, 128MB Cache, 512n	S26361-F5550-E130
600GB 10000rpm, 128MB Cache, 512n	S26361-F5550-E160
900GB 10000rpm, 128MB Cache, 512n	S26361-F5550-E190
1.2TB 10000rpm, 128MB Cache, 512n	S26361-F5550-E112
300GB 15krpm,<=3,1ms, 128MB Cache, 512n	S26361-F5531-E530
450GB 15krpm,<=3,1ms, 128MB Cache, 512n	S26361-F5531-E545
600GB 15krpm,<=3,1ms, 128MB Cache, 512n	S26361-F5531-E560
max. 2x per system	

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Section III Memory

- There are 8 memory slots per CPU for max.
512GB LRDIMM (8x 64GB 4R)
256GB RDIMM (8x 32GB 2R)
=> max. 1024GB for two CPU`s (512GB per CPU), using LRDIMM
- The memory area is divided into 4 channels per CPU with 2 slots per channel
- Slot 1 of each channel belongs to memory bank 1, slot 2 belongs to memory bank 2

Registered and Load Reduced DIMMs can be selected
No mix of registered and load reduced modules is allowed.
Memory will be operated at 1.2V.
Depending on the CPU following memory speeds will be reached:
In a single DIMM per channel configuration 2133MHz will be supported
This is also valid for dual DIMM configurations (2133MHz)
SDDC (Chipkill) is supported for registered and load redueced x4 organized memory modules

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 and load reduced modules is allowed.

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 DDR4 module per channel

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 four identical modules per CPU

4.) In the "Mirrored Channel Mode" is following configuration possible
Each memory bank can optionally be equipped with four registered or load reduced DDR4 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 / C 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

F1

F1

1x per CPU

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	
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.	
Requires min 2x 1R/2R or 1x 4R modules per CPU	
S26361-F3694-E2	**Performance Mode Installation**
BIOS Setup factory preinstalled for maximum Performance, 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	
S26361-F3694-E3	**Mirrored Channel Mode Installation**
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	
Multiple of 4 identical modules to be configured per CPU	

Effective Memory capacity / Rank Sparing Mode, 1 Channel populated

	RDIMM			LRDIMM	
	8GB 1R	16GB 2R	32GB 2R	32GB 4R	64GB 4R
1DPC				24GB	48GB
2DPC	8GB	24GB	48GB	56GB	112GB

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

Note 1)

Max. DDR4 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

8x per CPU, max. 2 modules per channel

Registered Memory (RDIMM) with SDDC (chipkill) support		
- one DDR4 registered ECC memory Module, 1.2V		
Choose up to 8 order codes per CPU		
8GB (1x8GB) 1Rx4 DDR4-2133 R ECC	S26361-F3843-E614	
16GB (1x16GB) 2Rx4 DDR4-2133 R ECC	S26361-F3843-E616	
32GB (1x32GB) 2Rx4 DDR4-2133 R ECC	S26361-F3843-E617	as soon as available
Registered Memory (RDIMM) no SDDC (chipkill) support		
- one DDR4 registered ECC memory Module, 1.2V		
Choose up to 8 order codes per CPU		
8GB (1x8GB) 2Rx8 DDR4-2133 R ECC	S26361-F3843-E615	
Load Reduced Memory (LRDIMM) with SDDC (chipkill) support		
- one DDR4 load reduced ECC memory Module, 1.2V		
Choose up to 8 order codes per CPU		
32GB (1x32GB) 4Rx4 DDR4-2133 LR ECC	S26361-F3844-E617	
64GB (1x64GB) 4Rx4 DDR4-2133 LR ECC	S26361-F3844-E618	as soon as available

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Memory Configuration PRIMERGY BX2560 M1

Each CPU offers 8 Slots for DDR4 Memory Modules organised in **2 Banks and 4 Channels.**
If you need more than 8 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 DDR4 Memory Modules available: RDIMM and LRDIMM
Mix of RDIMM and LRDIMM is not allowed.

Mode	Configuration	RDIMM	RDIMM / LRDIMM	Application
		x8	x4	
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	1x8GB	1x32GB	with one CPU
Max. Memory per CPU	8/12 Modules / CPU	8x32GB	8x64GB	with one CPU
Max. Memory per System	16/24 Modules / System	512GB	1024GB	if second CPU is configured

Memory-Speed:
Max. DDR4 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 2133MHz		LRDIMM 2133MHz	
Voltage setting (BIOS)	1.2V		1.2V	
	1 DPC	2 DPC	1 DPC	2 DPC
CPU with 2133MHz DDR4 Bus	2133	2133	2133	2133
CPU with 1866MHz DDR4 Bus	1866	1866	1866	1866
CPU with 1600MHz DDR4 Bus	1600	1600	1600	1600

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

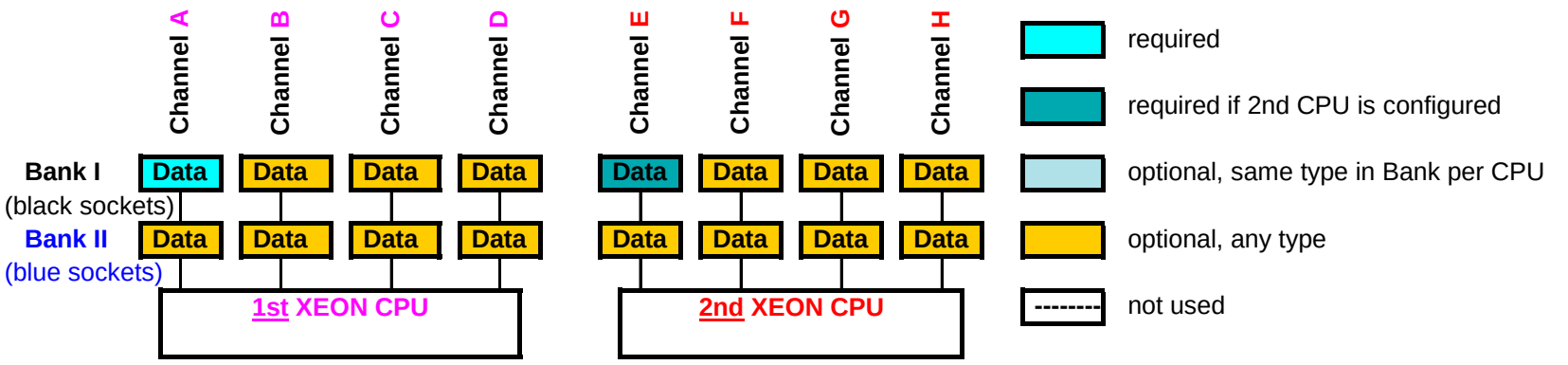
1DPC = 1 DIMM per Channel
2DPC = 2 DIMM per Channel

Configuration hints:

- The memory sockets on the systemboard offer a color coding:
  Bank I black sockets
  Bank II blue sockets

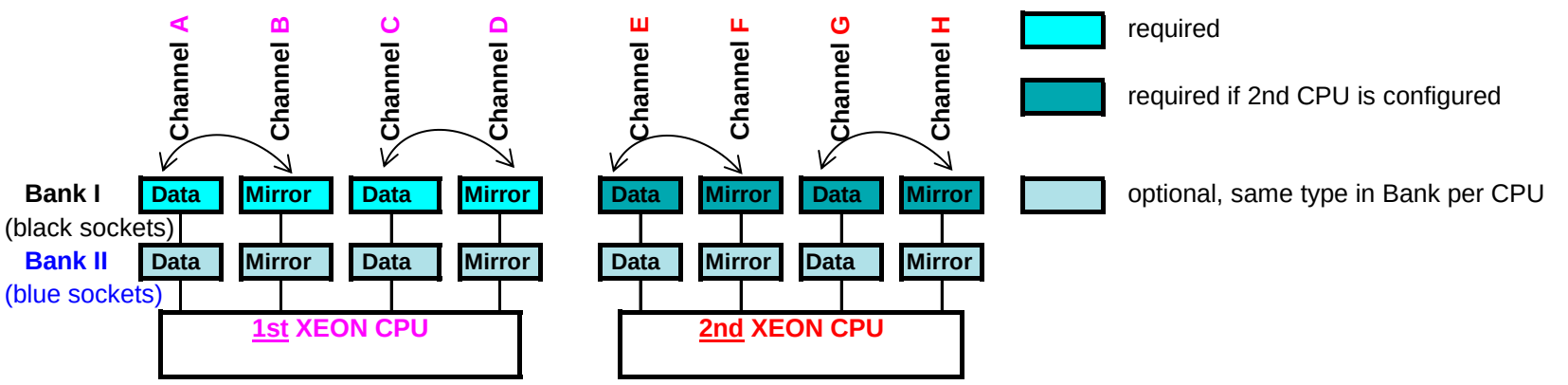
- A so called Bank consits of 1 memory module on every Channel available on one CPU (examples see below)
  Bank I on CPU 1/2 up to 4 memory modules connected to Channel A - H on the 1st/2nd CPU
  Bank II on CPU 1/2 up to 4 memory modules connected to Channel A - E on the 1st/2nd CPU
- See below and next page for a detailed descriptions of the memory configuration supported.

1. Independent Channel Mode



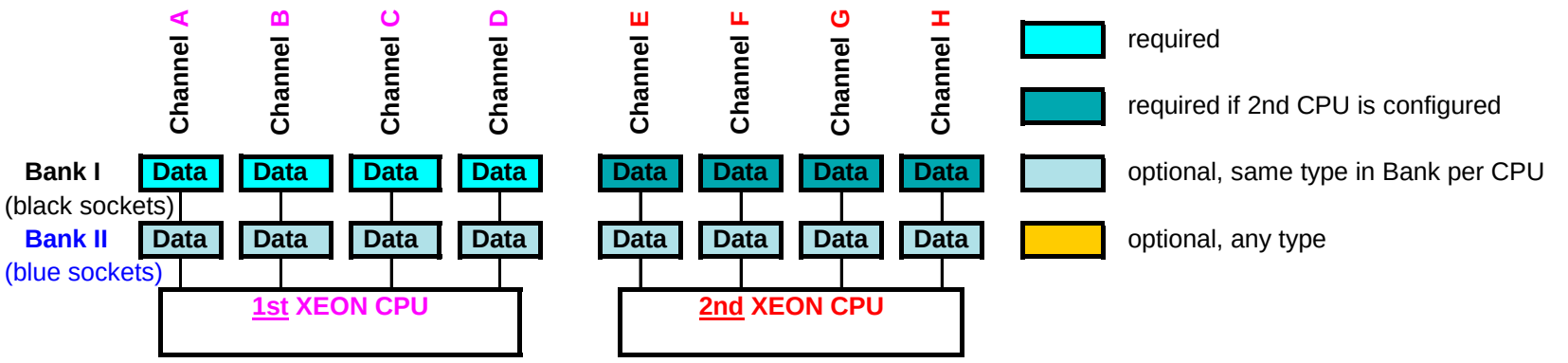
Independent Channel Mode allows all channels to be populated in any order
Can run with differently rated DIMMs and use the settings of the slowest DIMM installed in the system

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.

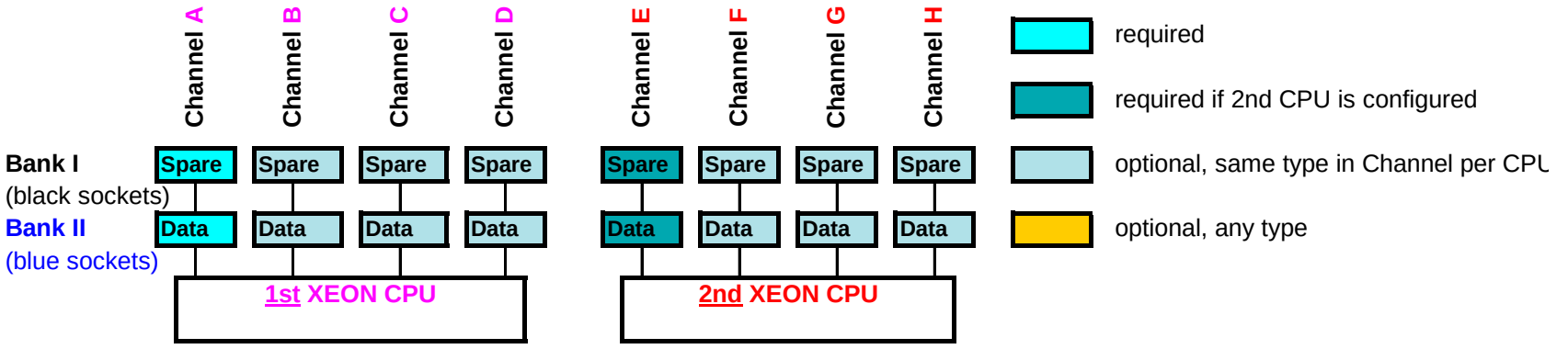
3. Performance Channel Mode



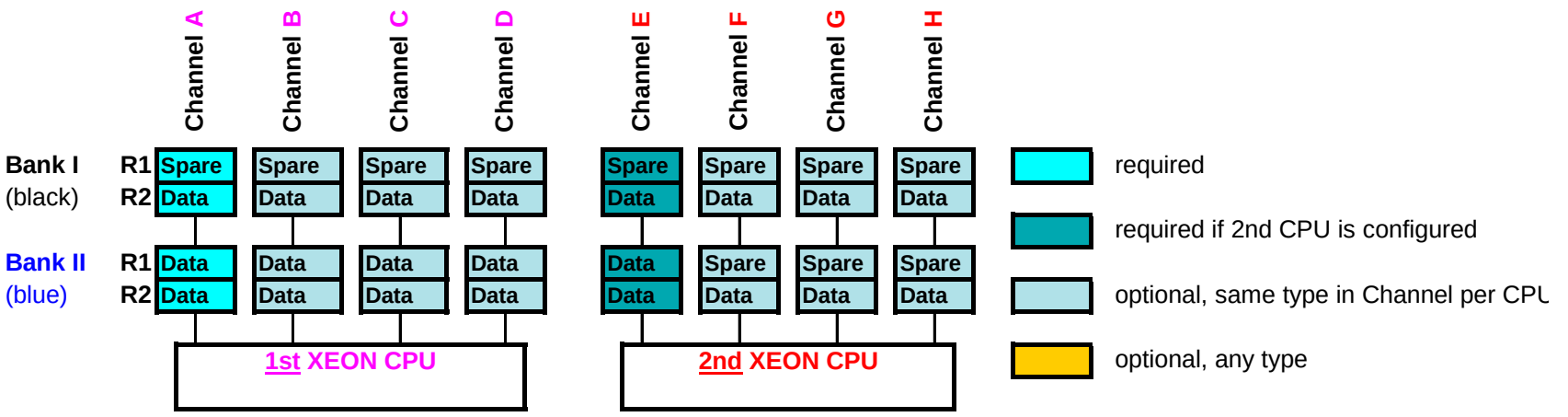
Performance Channel Mode requires identical modules on all channels of each Bank per CPU.
If this mode is used, a multiple of 4 identical modules has to be ordered.

4. Rank Sparing Mode

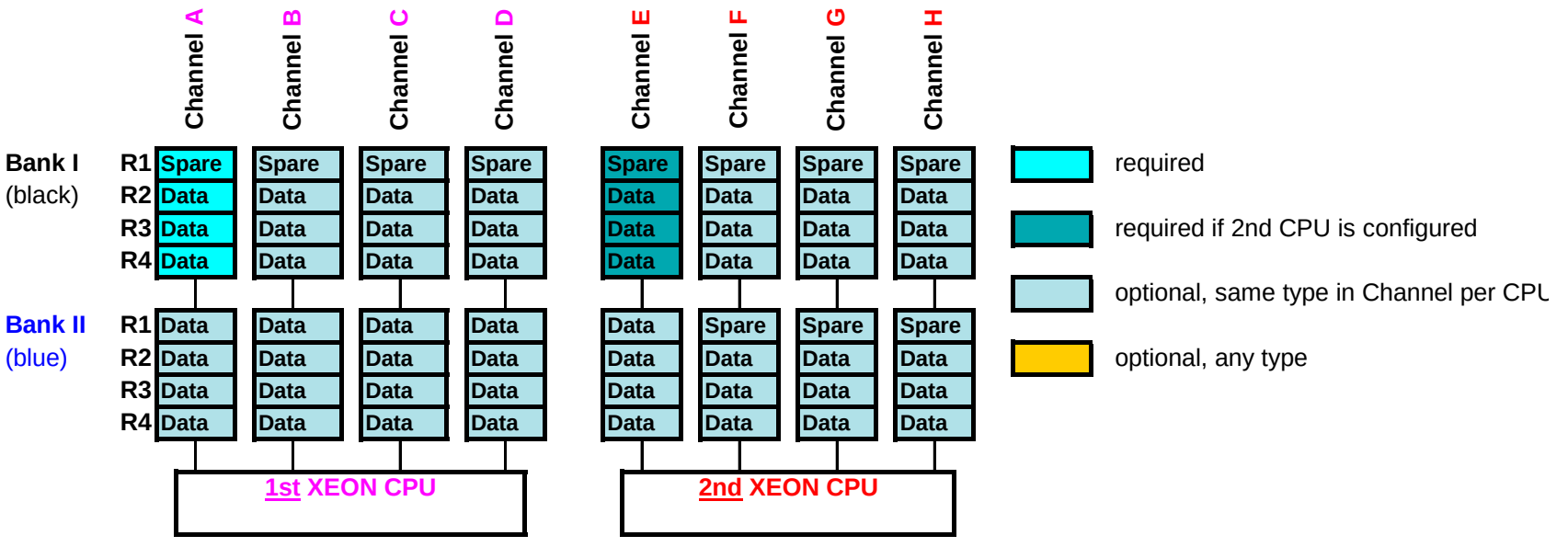
1-Rank Memory modules (RDIMM)



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. 8 DIMMs will be spread across two channels, each with 4DPC

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Section XIV iRMC S4, Graphics

Graphic Controller is part of the onboard Management Controller iRMC S4.
Other graphics are not possible.

The iRMC S4 advanced pack is included in the system delivery.
A corresponding license order is not necessary.

Section XV Mezzanine cards for Dual Socket Server Blade

The Dual Server Blade supports the following optional mezzanine cards.
A Fibre Channel Switch / Pass-Thru blade, an Ethernet LAN Switch / Pass-Thru blade,
respectively an InfiniBand switch is required in the system unit for this functionality.

1x

S26361-F4481-E1
PY SAS RAID Mezz Card 6Gb
MegaRAID SAS 2.0 pluggable on the main board
PCIe Gen2 interface
4x SAS links to midplane
Path redundancy is not supported!
max. 1x per Server Blade

S26361-F4480-E1
PY SAS HBA Mezz Card 6Gb
HBA SAS 2.0 pluggable on the main board
PCIe Gen2 interface
4x SAS links to midplane
max. 1x per Server Blade

SAS/HBA Mezz. Card
Only to be used in slot 2

Requires an Ethernet LAN Switch, IBP or Pass-Thru Blade for each channel.

Requires a Fibre Channel Switch for each channel.

Requires an InfiniBand Switch for each Mezz Card.

S26361-F3331-E1
PY Eth Mezz Card 1Gb 4 Port
2x Intel Zoar controller 4x 10/100/1000 Mbit/s. pluggable on the main board,
four channel 1Gbit/s
PCIe x4 Interface
max. 2x per Server Blade

S26361-F3874-E1
PY FC Mezz Card 8Gb 2 Port
Emulex LPe12002 compatible pluggable on the main board, MC-FC82E
Dual channel 8Gbit/s
PCIe x8 interface
max. 2x per Server Blade

S26361-F4534-E1
PY IB CX3 Mezz Card 56Gb 2 Port
Interface to midplane: 2x 10Gb/s(SDR), 2x 20Gb/s(DDR) 2x 40Gb/s(QDR) 2x 56Gb/s(FDR)
Dual channel 56Gbit/s each
PCIe x8 interface
max. 2x per Server Blade

0 - 2x

S26361-F3997-E1
PY Eth Mezz Card 10Gb 2 Port
Intel 82599EB LAN Controller 2x 10Gbit/s. pluggable on the main board,
Dual channel 10Gbit/s
PCIe x8 Interface iSCSI Boot (planned)
max. 2x per Server Blade

S26361-F4994-E402
PY FC Mezz Card 16Gb 2 Port
Emulex LPe12002 compatible pluggable on the main board, MC-FC162E
Dual channel 16Gbit/s
PCIe x8 interface
max. 2x per Server Blade

as soon as available

S26361-F3592-E532
PY CNA Mezz Card 10Gb 2 Port
Emulex OCe11102 compatible pluggable on the main board MC-CNA112E
Dual channel 10Gbit/s
PCIe x8 Interface
max. 2x per Server Blade

R S T U V

R: see separate BX900 System Unit configurator, sheet "1 GB Ethernet"
S: see separate BX900 System Unit configurator, sheet "10 GB Ethernet"
T: see separate BX900 System Unit configurator, sheet "Fibre Channel"
U: see separate BX900 System Unit configurator, sheet "InfiniBand"
V: see separate BX900 System Unit configurator, sheet "CB SAS"
https://partners.ts.fujitsu.com/com/order-supply/configurators/primergy_config/current/Pages/default.aspx

Change Report

Date	Order number	Changes
2016-02-18		Update of hint for CPU thermal restriction
2016-01-08		Memory description updated (page Memory; line 14 - 20)
2015-09-01	S26361-F3849-L643	Special Release CPU added
2015-07-21	S26361-F5550-*	Added 2.5" HDD SAS 12G 10Krpm 512n
2015-06-15		CPU configuration possibilites updated
2015-05-29	S26361-F5543-E*	Added 2.5" HDD SAS 12G 10Krpm 512e up to 1.8TB.
2015-04-02	S26361-F3823-E4x0	Bugfix in RAID level description
2015-01-21	S26361-F4481-E1	Bug fix; internal Links deleted
2015-01-14	S26361-F3823-E400	Puma 4 Lite connection corrected
2015-01-07	S26341-F103-L119	S36341-F103-L119 removed
2014-09-30		2DPC RDIMM configuration @ 2.133MHz available in 11/2014
2014-08-27	S26361-F3818-E5*	Added 2.5" HDD SAS 6G 15Krpm 300GB, 450GB, 600GB
2014-08-27	S26361-F3992-E2	IB QDR Mezz removed due to EOL of supplier
2014-08-25	S26361-F5523-E32	Added 32GB SATADOM
2014-08-25	S26361-F5531-E5*	Added 2.5" HDD SAS 12G 15Krpm 300GB, 450GB, 600GB
2014-08-25	S26361-F3818-E5*	Removed 2.5" HDD SAS 6G 15Krpm 300GB, 450GB, 600GB
2014-08-25	S26361-F5525-E080	Removed 2.5" 80GB Read-Intensive SSD
2014-08-15	CPU restrictions	added restictions for CPU heat sink.
2014-08-06	S26361-F1790-E310	added embeded Lifcycle Manager Module
2014-07-30	S26361-F3823-E20	correction in relation to PRAID Modules
2014-07-21	S26361-F3843-E617	32GB RDIMM available in Q1/2015 - comment added
2014-07-17	S26361-F3849-L603	Added lose CPU components
2014-07-07	S26361-F3823-E40	Riser card moved to Puma delivery unit (S26361-F3823-E400/E410)
2014-06-04	S26361-F2341-E432	Referenz to 4GB UFM Module added
2014-05-28	S26361-F3849-E143	corrected Cache on order number S26361-F3849-E143
2014-05-14	S26361-F4481-E1	Added hint for non supported redundant path
2014-05-06	S26361-F3849-E100	Processor segment updated
2014-05-05		Update from CPU Roadmap
2014-04-25		Update from CPU Roadmap
2014-04-22		HDD and SSD order numbers updated.
2014-03020	S26361-F4994-E402	Added 16 Gb FC Mezz Card
2014-03-04		Updatet Processor Section and Memory
2014-02-21		SD-Kart added
2013-12-05	S26361-F3552-E6	Changed TPM Module
2013-03-13		First release