

# PRIMERGY BX2580 M2

# System configurator and order-information guide

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**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.

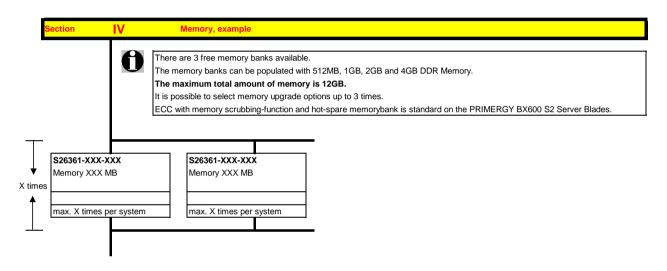
Please pay attention to the naming conventions:

BX2580 M2 Dual Server Blade M2

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.



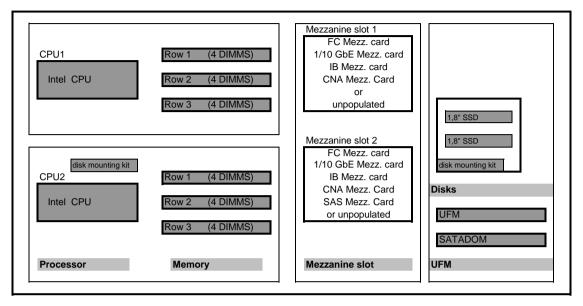
#### For further information see:

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 BX2580 M2

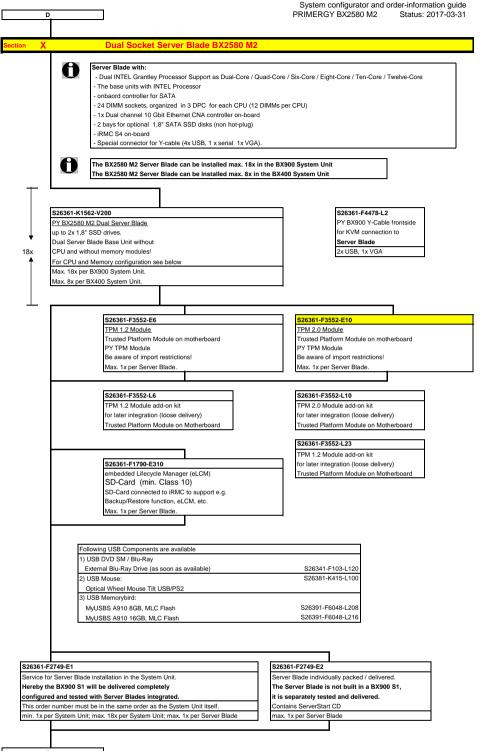


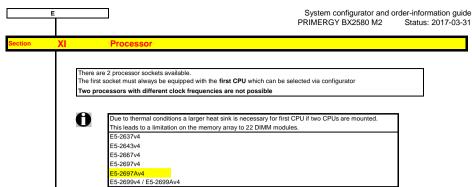
Key:

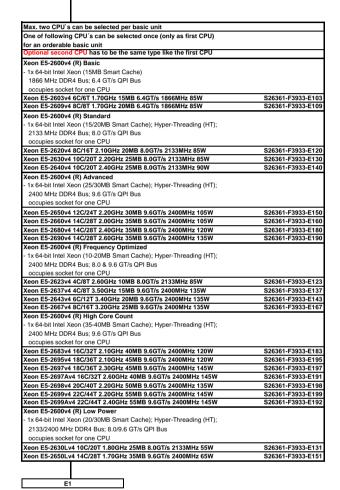
Included in basic unit Option

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) (DIMMS 1E 1F 1G 1H) first, then row 2 (DIMMs 2A, 2B, 2C 2D) (DIMMs 2E 2F 2G 2H) then row 3 (DIMMs 3A, 3B, 3C 3D) (DIMMs 3E 3F 3G 3H)









Max. DDR4 Bus Speed depends or - max. DDR4 Bus Speed from the CPU and max. DDR4 Memory Speed and max. memory modules on one me For CPUs which do not offer 1866 MHz support, (Basic, Standard & Low Power class), System Architect will not offer memory modules supporting this frequency.

E1

**S26361-F3849-E100**Cooling Kit 2nd CPU

One of following CRU's has to be collected as account CRU	
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 E5-2600v4 (R) Basic	
- 1x 64-bit Intel Xeon (15MB Smart Cache)	
1866 MHz DDR4 Bus; 6.4 GT/s QPI Bus	
occupies socket for one CPU	
Xeon E5-2603v4 6C/6T 1.70GHz 15MB 6.4GT/s 1866MHz 85W	S26361-F3933-E103
Xeon E5-2609v4 8C/8T 1.70GHz 20MB 6.4GT/s 1866MHz 85W	S26361-F3933-E10
Xeon E5-2600v4 (R) Standard	
- 1x 64-bit Intel Xeon (15/20MB Smart Cache); Hyper-Threading (HT);	
2133 MHz DDR4 Bus; 8.0 GT/s QPI Bus	
occupies socket for one CPU	
Xeon E5-2620v4 8C/16T 2.10GHz 20MB 8.0GT/s 2133MHz 85W	S26361-F3933-E120
Xeon E5-2630v4 10C/20T 2.20GHz 25MB 8.0GT/s 2133MHz 85W	S26361-F3933-E130
Xeon E5-2640v4 10C/20T 2.40GHz 25MB 8.0GT/s 2133MHz 90W	S26361-F3933-E140
Xeon E5-2600v4 (R) Advanced	
<ul> <li>1x 64-bit Intel Xeon (25/30MB Smart Cache); Hyper-Threading (HT);</li> </ul>	
2400 MHz DDR4 Bus; 9.6 GT/s QPI Bus	
occupies socket for one CPU	
Xeon E5-2650v4 12C/24T 2.20GHz 30MB 9.6GT/s 2400MHz 105W	S26361-F3933-E150
Xeon E5-2660v4 14C/28T 2.00GHz 35MB 9.6GT/s 2400MHz 105W	S26361-F3933-E16
Xeon E5-2680v4 14C/28T 2.40GHz 35MB 9.6GT/s 2400MHz 120W	S26361-F3933-E180
Xeon E5-2690v4 14C/28T 2.60GHz 35MB 9.6GT/s 2400MHz 135W	S26361-F3933-E190
Xeon E5-2600v4 (R) Frequency Optimized	
<ul> <li>1x 64-bit Intel Xeon (10-20MB Smart Cache); Hyper-Threading (HT);</li> </ul>	
2400 MHz DDR4 Bus; 8.0 & 9.6 GT/s QPI Bus	
occupies socket for one CPU	
Xeon E5-2623v4 4C/8T 2.60GHz 10MB 8.0GT/s 2133MHz 85W	S26361-F3933-E123
Xeon E5-2637v4 4C/8T 3.50GHz 15MB 9.6GT/s 2400MHz 135W	S26361-F3933-E137
Xeon E5-2643v4 6C/12T 3.40GHz 20MB 9.6GT/s 2400MHz 135W	S26361-F3933-E143
Xeon E5-2667v4 8C/16T 3.20GHz 25MB 9.6GT/s 2400MHz 135W	S26361-F3933-E167
Xeon E5-2600v4 (R) High Core Count	
<ul> <li>1x 64-bit Intel Xeon (35-40MB Smart Cache); Hyper-Threading (HT);</li> </ul>	
2400 MHz DDR4 Bus; 9.6 GT/s QPI Bus	
occupies socket for one CPU	
Xeon E5-2683v4 16C/32T 2.10GHz 40MB 9.6GT/s 2400MHz 120W	S26361-F3933-E183
Xeon E5-2695v4 18C/36T 2.10GHz 45MB 9.6GT/s 2400MHz 120W	S26361-F3933-E195
Xeon E5-2697v4 18C/36T 2.30GHz 45MB 9.6GT/s 2400MHz 145W	S26361-F3933-E197
Xeon E5-2697Av4 16C/32T 2.60GHz 40MB 9.6GT/s 2400MHz 145W Xeon E5-2698v4 20C/40T 2.20GHz 50MB 9.6GT/s 2400MHz 135W	S26361-F3933-E19 S26361-F3933-E19
Xeon E5-2699v4 20C/401 2.20GHz 50MB 9.6GT/s 2400MHz 135W  Xeon E5-2699v4 22C/44T 2.20GHz 55MB 9.6GT/s 2400MHz 145W	S26361-F3933-E198
Xeon E5-2699Av4 22C/44T 2.40GHz 55MB 9.6GT/s 2400MHz 145W	S26361-F3933-E193
Xeon E5-2600v4 (R) Low Power	020001-1 0000-L192
- 1x 64-bit Intel Xeon (20/30MB Smart Cache); Hyper-Threading (HT);	
2133/2400 MHz DDR4 Bus: 8.0/9.6 GT/s QPI Bus	
occupies socket for one CPU	
Xeon E5-2630Lv4 10C/20T 1.80GHz 25MB 8.0GT/s 2133MHz 55W	S26361-F3933-E13
Xeon E5-2650Lv4 14C/28T 1.70GHz 35MB 8.6GT/s 2400MHz 65W	S26361-F3933-E151
7.55 E5 25552 170/201 1.100112 55810 5.001/3 270081112 05W	020001-1 0000-E10



N
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5W

SATADOM is designed for use as a boot drive with the Endurance Spec. above.

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SATADOM does not support VMware

max. 1x per system



#### - There are 12 memory slots per CPU for max.

768GB LRDIMM (12x 64GB 4R)

384GB RDIMM (12x 32GB 2R)

#### => max. 1.536GB for two CPUs (768GB per CPU), using LRDIMM

#### => max. 3.072GB for two CPUs, using upcoming 8Rx4 LRDIMM technology with 128GB per module

- 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

#### 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 2400MHz will be supported

This is also valid for a dual LRDIMM configurations (2400MHz)

In a dual RDIMM configuration 2400MHz will be supported

All 3DPC configurations support 1866MHz

SDDC (Chipkill) is supported for registered and load reduced x4 organized memory modules

#### 1.) In the "Independent Channel Mode" the following configuration is 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.

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.

2.) "Rank Sparing Mode" configuration

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 maximum performance for memory.

Minimum configuration is four identical modules per CPU

#### 4.) "Mirrored Channel Mode" configuration

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 / B of CPU 1

In channel F / H is always the mirrored memory of channel E / G of CPU 2  $\,$ 

Minimum configuration is four identical modules per CPU

F1

F1

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-F1

**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.

1x per CPU

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

**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

**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

			KUIIVIIVI		LK	DIIVIIVI			
	8GB	1R	16GB 2R	32GB 2R	64GB 4F	128GB 8R			
1DPC					48GB	112GB			
2DPC	8GB		8GB		PC 8GB 24GB 48GB		48GB	112GB	240GB
3DPC	16GI	Ш	40GB	80GB	176GB	368GB			



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



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

Registered Memory (RDIMM) with SDDC (chipkill) support one DDR4 registered ECC memory Module, 1.2V Choose up to 12 order codes per CPU

8GB (1x8GB) 1Rx4 DDR4-2400 R ECC S26361-F3934-F611 16GB (1x16GB) 2Rx4 DDR4-2400 R ECC S26361-F3934-E612 32GB (1x32GB) 2Rx4 DDR4-2400 R ECC S26361-F3934-E615

Registered Memory (RDIMM 3DS)

S26361-F3934-E617 64GB (1x64GB) 4Rx4 DDR4-2400 3DS ECC

Registered Memory (RDIMM) without SDDC (chipkill) support one DDR4 registered ECC memory Module, 1.2V

Choose up to 12 order codes per CPU

3GB (1x8GB) 2Rx8 DDR4-2400 R ECC S26361-F3934-E614 16GB (1x16GB) 2Rx8 DDR4-2400 R ECC S26361-F3934-E613

Load Reduced Memory (LRDIMM) with SDDC (chipkill) support one DDR4 load reduced ECC memory Module, 1.2V

Choose up to 12 order codes per CPU

64GB (1x64GB) 4Rx4 DDR4-2400 LR ECC S26361-F3935-E616 128GB (1x128GB) 8Rx4 DDR4-2400 LR ECC S26361-F3935-E617 available from Q4/2017

on special release only

late availability expected

G

12x per

CPU, max.

3 modules

per channel

#### **Memory Configuration PRIMERGY BX2580 M2**

Each CPU offers 12 Slots for DDR4 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 DDR4 Memory Modules available: RDIMM and LRDIMM Mix of RDIMM and LRDIMM is not allowed.

Mode	de Configuration		RDIMM	Application
		RDIMM	LRDIMM	
		х8	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

<sup>\*)</sup> 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	1x64GB	with one CPU
Max. Memory per CPU	12 Modules / CPU	12x32GB	12x128GB	with one CPU
Max. Memory per System	24 Modules / System	768GB	3.072GB	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 (DP and voltage setting (BIOS)												
	-	RDIMN 100MF		_	RDIM 100MI								
Voltage setting (BIOS)		1.2V			1.2V								
	1	2	3	1	2	3							
	DPC	DPC	DPC	DPC	DPC	DPC							
CPU with 2400MHz DDR4 Bus	2400	2400	1866	2400	2400	1866							
CPU with 2133MHz DDR4 Bus	2133	2133	1866	2133	2133	1866							
CPU with 1866MHz DDR4 Bus	1866	1866	1866	1866	1866	1866							

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 II black sockets
Bank III 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)

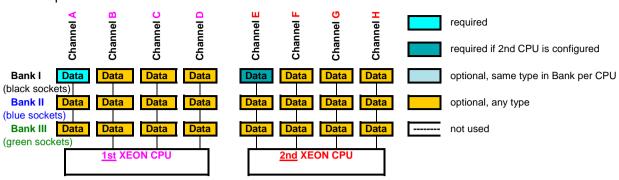
Bank I on CPU 1/2 up to 4 memory modules connected to Channel A - H on the 1st/2nd CPU

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

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

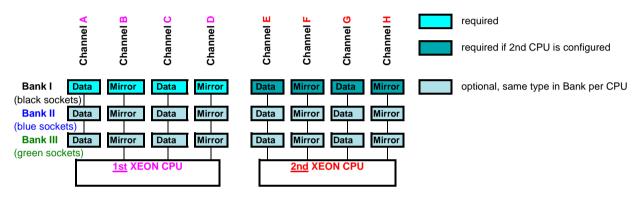
- See below and next page for a detailed descriptions of the memory configuration supported.

#### 1. Independent Channel Mode



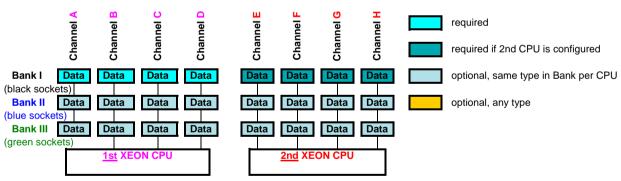
Independent Channel Mode allows all channels to be populated in any order Can run with differently rated DIMMs and use the settings of the slowest DIMM installed in the system

#### 2. Mirrored Channel Mode



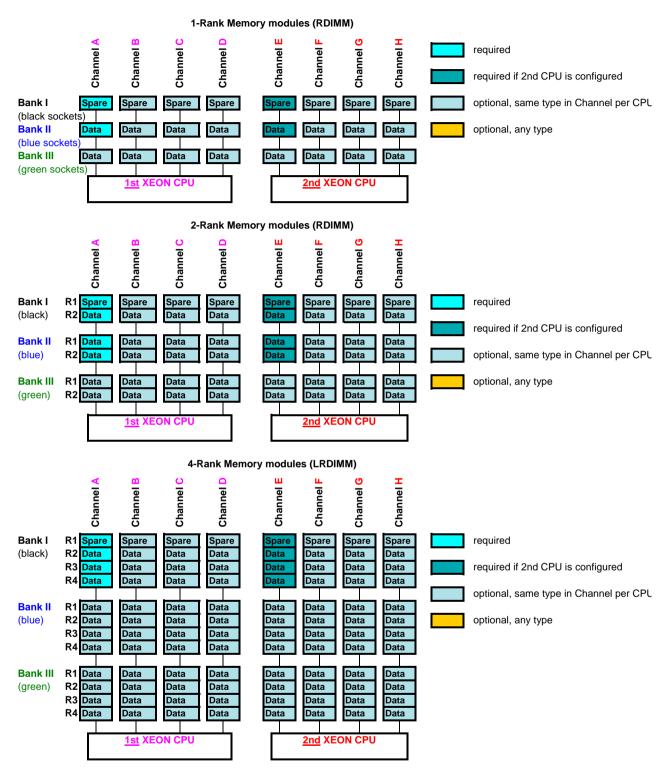
Mirrored Channel Mode requires identical modules on channel A,B, C, D (1st CPU) or channel E, F, G and H (2nd CPU) 50% of the capacity is used for the mirror => the available memory for applications is only half of the installed memory If this mode is used, a multiple of 4 identical modules has to be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



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

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"
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

Dato	Order number
Date	Order Humber
2019-03-21	S26361-F4480-E1
2019-03-21	S26361-F4008-E111/-L111
2019-02-28	S26361-F4008-E112/-L112
2018-12-10	S26361-F5706-E240/-E480
2018-12-10	S26361-F4008-E112/-L112
2018-05-17 2017-10-19	S26361-F5585-E240/480 S26361-F5523-*
2017-10-19	S26361-F5619-*
2017-03-14	S26361-F3934-E617
2017-02-07	S26361-F5619-*
2017-02-01	S26361-F3933-E192
2017-01-24	RAM
2016-12-22	Storage
2016-11-15	S26361-F3934-E617
2016-10-27	S26361-F3933-E192 S26361-F3934-E617
2016-06-23	S26361-F3934-E617 S26361-F5526-E200/E400
2016-06-16	S26361-F3552-L23
2016-06-15	S26361-F5523-E32
2016-02-15	S26361-F4534-E1
2016-02-26	S26361-F5582-*
2016-02-04	
2015-10-07	S26361-F3934-E614
2015-10-01	
2015-09-30	C0C204 F F040/F400
2015-08-28 2015-08-28	S26361-Fxxxx-E240/E480 S26361-F3933-F191
2015-08-14	320301-1 3933-1 191
2015-07-17	
2015-06-25	
2015-06-19	S26361-F3552-E10
2015-06-16	
2015-06-11	
2015-06-02	E5-2670v4
2015-05-20	
2015-01-29 2015-01-14	
2010 01 14	
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# **Change Report**

Changes
101011 0 1001
removed SAS Mezz. Card 6Gb removed PCH connection kit
sales release of PCH connection kit M.2
SSD M.2 SATA, 6 Gb/s, 240 (480) GB added
PCH connection kit M.2 added (for M.2 drives)
not available any more - noticed in configurator (replacement planned)
removed (EOL)
Endurance updated
comment added
added
released for BX2580 M2
Memory speed corrected
add comment about Warranty
now available added
added
removed 1.8" SSD(Mainstream Endurance)
added TPM 1.2 Module
SATADOM 32GB removed
PY IB CX3 Mezz Card 56Gb 2 Port removed
1.8" SSD added (3DWPD, 240GB, 480GB)
set E5-2697A to large heat sink device
8GB 2Rx8 Memory module added
added 8GB (1x8GB) 2Rx8 DDR4-2400 R ECC
CPU & TPM update
added new SSD SATA Mixed Use class
added CPU Xeon E5-2697Av4 16C/32T 2.60GHz 40MB 9.6GT/s 2400MHz 145W
UFM Support updated
Memory page updated Processor and Memory updated
TPM module V2.0 added
CPU configuration possibilities updated
Update of CPU and Memory definitions
E5-2670v4 processor option removed
SATADOM description updated.
E5-2600v3 CPU types removed
Draft Version