

# PRIMERGY BX900 Server Blades

## *System configurator and order-information guide*

March 2010

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## Instructions

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

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

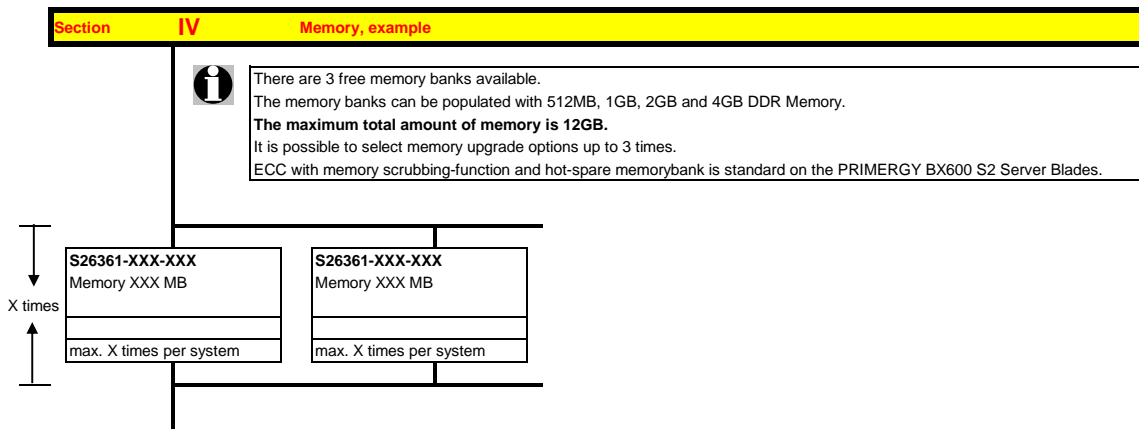
**Please pay attention to the naming conventions:**

<b>BX900 S1</b>	System unit 1nd generation
<b>BX920 S1</b>	Dual Server Blade S1
<b>SX940 S1</b>	Storage Blade Disk
<b>SX910 S1</b>	Storage Tape Blade

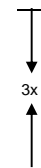
You can configure your individual PRIMERGY server in order to adjust your specific requirements.

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.



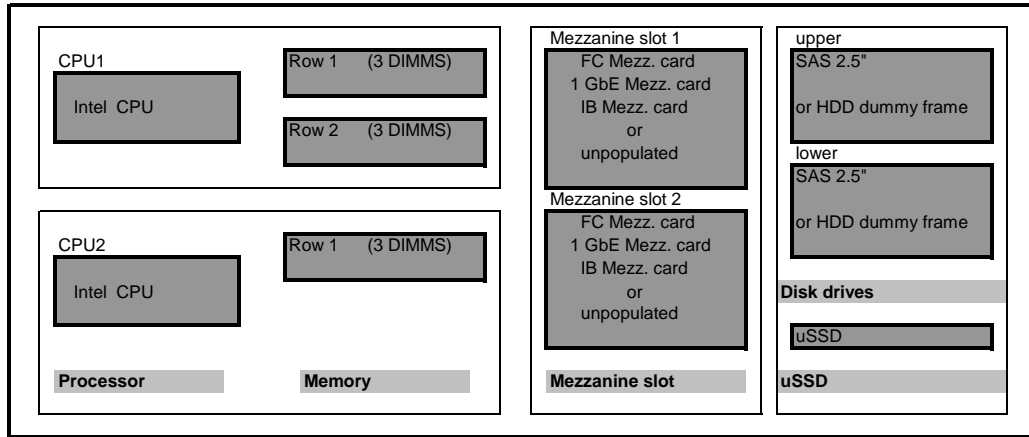
**For further information see:**

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

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

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

### Configuration diagram Dual Server Blade BX920 S1



## Memory Configuration PRIMERGY BX920 S1

The first CPU offers 6 Slots for DDR3 Memory Modules organised in 2 Banks and 3 Channels.

If you need more than 6 Slots you have to configure the 2nd CPU.

The second CPU offers 3 Slots for DDR3 Memory Modules organised in 1 Banks and 3 Channels.

Depending on the amount of memory configured you can decide between 3 basic modes of operation (see explanation below).

There are 2 different kinds of DDR3 Memory Modules available: UDIMM and RDIMM.

UDIMM and RDIMM offer different functionality.

Mode	Configuration	UDIMM	RDIMM	Application
chip kill support	any	n.a.	yes	detect multi-bit errors
Independant Channel Mode	1, 2 or 3 Modules per Bank	x	x	offers max. flexibility, upgradeability, capacity use UDIMM modules for lowest cost
Mirrored Channel Mode	2 identical Modules / Bank	**)	x	offers maximum security
Performance Mode *)	3 identical Modules / Bank	**)	x	offers maximum performance and capacity

\*) = Performance Mode and Spare mode use different BIOS settings.

\*\*\*) = technically possible but no Order Numbers available, use at your own risk

x = order codes available

Configuration hints:

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

**Bank I** black sockets

**Bank II** blue sockets

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

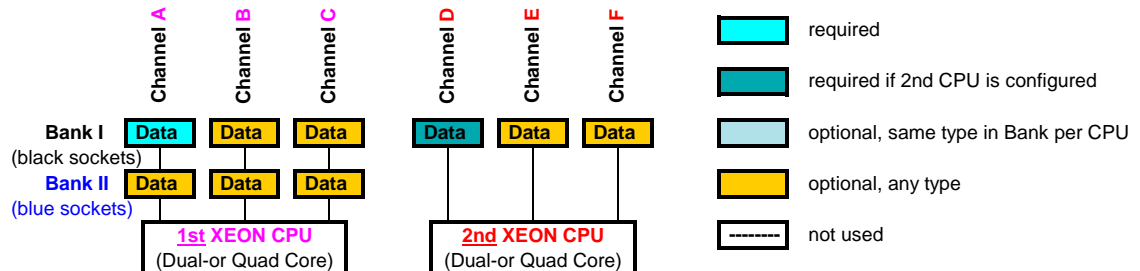
**Bank I on CPU 1** up to 3 memory modules connected to Channel A, B and C on the first CPU

**Bank II on CPU 1** up to 3 memory modules connected to Channel A, B and C on the first CPU

**Bank I on CPU 2** up to 3 memory modules connected to Channel D, E and F on the second CPU

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

### 1. Independent Channel Mode

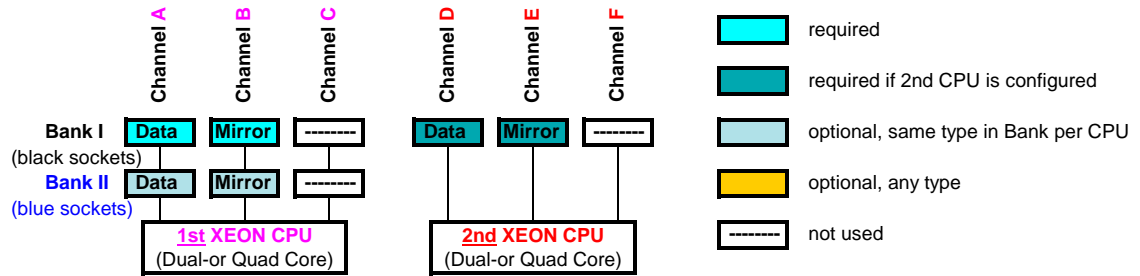


Independent Channel Mode allows all channels to be populated in any order

Can run with differently rated DIMMs and use the settings of the slowest DIMM installed in the system

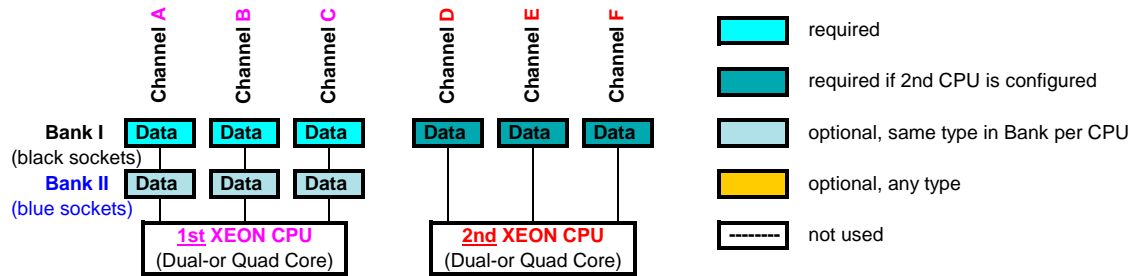
Independent Channel Mode is supported using UDIMM or RDIMM memory modules

## 2. Mirrored Channel Mode

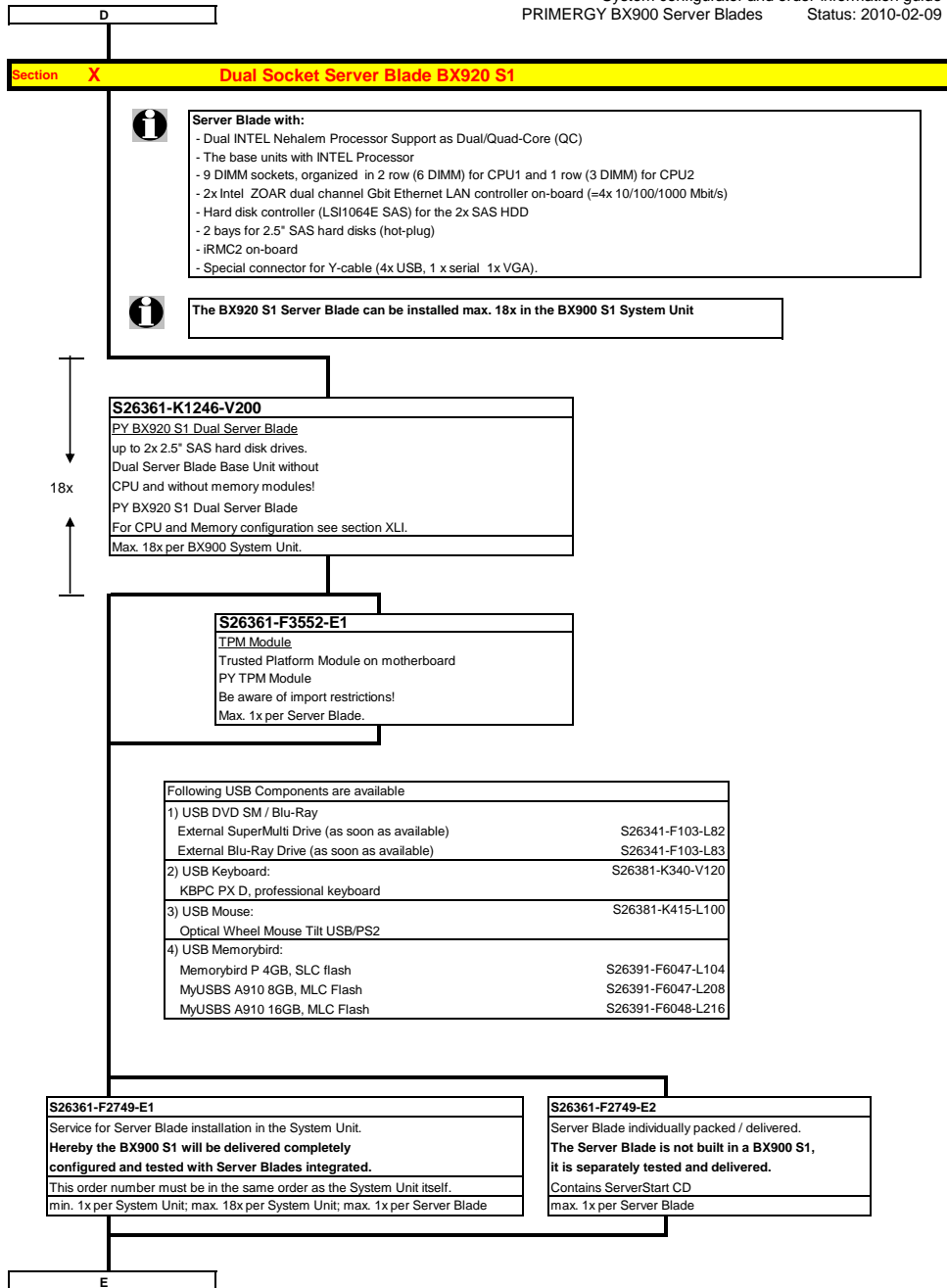


Mirrored Channel Mode requires identical modules on channel A and B (1st CPU) or channel D and E (2nd CPU)  
 50% of the capacity is used for the mirror => the available memory for applications is only half of the installed memory  
 channel C (1st CPU) or channel F (2nd CPU) are not usable in Mirrored Channel Mode  
 Mirrored Channel Mode is supported using RDIMM memory modules

## 3. Performance Channel Mode



Performance Channel Mode requires identical modules on all channels of each Bank per CPU  
 Performance Channel Mode is supported using RDIMM memory modules



**Server Blade with:**

- Dual INTEL Nehalem Processor Support as Dual/Quad-Core (QC)
- The base units with INTEL Processor
- 9 DIMM sockets, organized in 2 row (6 DIMM) for CPU1 and 1 row (3 DIMM) for CPU2
- 2x Intel ZODAR dual channel Gbit Ethernet LAN controller on-board (=4x 10/100/1000 Mbit/s)
- Hard disk controller (LSI1064E SAS) for the 2x SAS HDD
- 2 bays for 2.5" SAS hard disks (hot-plug)
- iRMC2 on-board
- Special connector for Y-cable (4x USB, 1 x serial 1x VGA).

**The BX920 S1 Server Blade can be installed max. 18x in the BX900 S1 System Unit**

18x

**S26361-K1246-V200**  
 PY BX920 S1 Dual Server Blade  
 up to 2x 2.5" SAS hard disk drives.  
 Dual Server Blade Base Unit without  
 CPU and without memory modules!  
 PY BX920 S1 Dual Server Blade  
 For CPU and Memory configuration see section XLI.  
 Max. 18x per BX900 System Unit.

**S26361-F3552-E1**  
 TPM Module  
 Trusted Platform Module on motherboard  
 PY TPM Module  
 Be aware of import restrictions!  
 Max. 1x per Server Blade.

Following USB Components are available	
1) USB DVD SM / Blu-Ray External SuperMulti Drive (as soon as available)	S26341-F103-L82
External Blu-Ray Drive (as soon as available)	S26341-F103-L83
2) USB Keyboard: KBPC PX D, professional keyboard	S26381-K340-V120
3) USB Mouse: Optical Wheel Mouse Tilt USB/PS2	S26381-K415-L100
4) USB Memorybird: Memorybird P 4GB, SLC flash	S26391-F6047-L104
MyUSBS A910 8GB, MLC Flash	S26391-F6047-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 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**  
 For the second CPU there are different order numbers, due to the different Heatsink.  
**Two processors with different clock frequencies are not possible**  
 A multi-processor operating system is required for a dual-processor system.

<b>Max. two CPU's can be selected per basic unit</b>	
One of following CPU's has to be selected as <b>first CPU</b> for an orderable basic unit	
Optional <b>second CPU</b> has to be the same type like the first CPU	
<b>Dual-Core CPU with max. DDR3 Bus Speed 800MHz</b> - 1x 64-bit Intel Xeon DP (4MB shared TLC = Second Level Cache ) and passive heat sink occupies socket for one CPU	
<b>Xeon DP E5502 (1,86GHz/4M/4,8GT) / 80W</b>	<a href="#">S26361-F3965-E186</a>
<b>Quad-Core CPU's with max. DDR3 Bus Speed 800MHz</b> - 1x 64-bit Intel Xeon DP (4MB shared TLC = Second Level Cache ) and passive heat sink occupies socket for one CPU	
<b>Xeon DP E5504 (2,00GHz/4M/4,8GT) / 80W</b>	<a href="#">S26361-F3966-E200</a>
<b>Xeon DP E5506 (2,13GHz/4M/4,8GT) / 80W</b>	<a href="#">S26361-F3966-E213</a>
<b>Turbo Quad-Core CPU's with max. DDR3 Bus Speed 1066MHz</b> - 1x 64-bit Intel Xeon DP (8MB shared TLC = Second Level Cache ) and passive heat sink occupies socket for one CPU	
<b>Xeon DP E5520 (2,26GHz/8M/5,86GT) / 80W</b>	<a href="#">S26361-F3967-E226</a>
<b>Xeon DP E5530 (2,40GHz/8M/5,86GT) / 80W</b>	<a href="#">S26361-F3967-E240</a>
<b>Xeon DP E5540 (2,53GHz/8M/5,86GT) / 80W</b>	<a href="#">S26361-F3967-E253</a>
<b>Turbo Quad-Core CPU's with max. DDR3 Bus Speed 1333MHz</b> - 1x 64-bit Intel Xeon DP (8MB shared TLC = Second Level Cache ) and passive heat sink occupies socket for one CPU	
<b>Xeon DP X5550 (2,66GHz/8M/6,4GT) / 95W</b>	<a href="#">S26361-F3968-E266</a>
<b>Xeon DP X5560 (2,80GHz/8M/6,4GT) / 95W</b>	<a href="#">S26361-F3968-E280</a>
<b>Xeon DP X5570 (2,93GHz/8M/6,4GT) / 95W</b>	<a href="#">S26361-F3968-E293</a>
<b>Low Voltage Quad-Core CPU with max. 800MHz DDR3 speed ( 4.8GT/s)</b> - 1x 64-bit Intel Xeon DP (4MB shared TLC = Second Level Cache ) with passive heat sink, occupies socket for one CPU	
<b>Xeon LV DP L5506 (2,13GHz/4M/4,8GT) / 60W</b>	<a href="#">S26361-F3969-E213</a>
<b>Low Voltage Turbo Quad-Core CPU's with max. DDR3 Bus Speed 1066MHz</b> - 1x 64-bit Intel Xeon DP (8MB shared TLC = Second Level Cache ) and passive heat sink occupies socket for one CPU	
<b>Xeon LV DP L5520 (2,26GHz/8M/5,86GT) / 60W</b>	<a href="#">S26361-F3969-E226</a>
<b>Xeon LV DP L5530 (2,4GHz/8M/5,86GT) / 60W</b>	<a href="#">S26361-F3969-E240</a>

**Note: 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

<b>Max. two CPU's can be selected per basic unit</b>	
One of following CPU's can to be selected as <b>second CPU</b> for an orderable basic unit	
Optional <b>second CPU</b> has to be the same type like the first CPU	
<b>Dual-Core CPU with max. DDR3 Bus Speed 800MHz</b> - 1x 64-bit Intel Xeon DP (4MB shared TLC = Second Level Cache ) and passive heat sink occupies socket for one CPU	
<b>Xeon DP E5502 (1,86GHz/4M/4,8GT) / 80W</b>	<a href="#">S26361-F3971-E186</a>
<b>Quad-Core CPU's with max. DDR3 Bus Speed 800MHz</b> - 1x 64-bit Intel Xeon DP (4MB shared TLC = Second Level Cache ) and passive heat sink occupies socket for one CPU	
<b>Xeon DP E5504 (2,00GHz/4M/4,8GT) / 80W</b>	<a href="#">S26361-F3972-E200</a>
<b>Xeon DP E5506 (2,13GHz/4M/4,8GT) / 80W</b>	<a href="#">S26361-F3972-E213</a>
<b>Turbo Quad-Core CPU's with max. DDR3 Bus Speed 1066MHz</b> - 1x 64-bit Intel Xeon DP (8MB shared TLC = Second Level Cache ) and passive heat sink occupies socket for one CPU	
<b>Xeon DP E5520 (2,26GHz/8M/5,86GT) / 80W</b>	<a href="#">S26361-F3973-E226</a>
<b>Xeon DP E5530 (2,40GHz/8M/5,86GT) / 80W</b>	<a href="#">S26361-F3973-E240</a>
<b>Xeon DP E5540 (2,53GHz/8M/5,86GT) / 80W</b>	<a href="#">S26361-F3973-E253</a>
<b>Turbo Quad-Core CPU's with max. DDR3 Bus Speed 1333MHz</b> - 1x 64-bit Intel Xeon DP (8MB shared TLC = Second Level Cache ) and passive heat sink occupies socket for one CPU	
<b>Xeon DP X5550 (2,66GHz/8M/6,4GT) / 95W</b>	<a href="#">S26361-F3974-E266</a>
<b>Xeon DP X5560 (2,80GHz/8M/6,4GT) / 95W</b>	<a href="#">S26361-F3974-E280</a>
<b>Xeon DP X5570 (2,93GHz/8M/6,4GT) / 95W</b>	<a href="#">S26361-F3974-E293</a>
<b>Low Voltage Quad-Core CPU with max. 800MHz DDR3 speed ( 4.8GT/s)</b> - 1x 64-bit Intel Xeon DP (4MB shared TLC = Second Level Cache ) with passive heat sink, occupies socket for one CPU	
<b>Xeon LV DP L5506 (2,13GHz/4M/4,8GT) / 60W</b>	<a href="#">S26361-F3975-E213</a>
<b>Low Voltage Turbo Quad-Core CPU's with max. DDR3 Bus Speed 1066MHz</b> - 1x 64-bit Intel Xeon DP (8MB shared TLC = Second Level Cache ) and passive heat sink occupies socket for one CPU	
<b>Xeon LV DP L5520 (2,26GHz/8M/5,86GT) / 60W</b>	<a href="#">S26361-F3975-E226</a>
<b>Xeon LV DP L5530 (2,4GHz/8M/5,86GT) / 60W</b>	<a href="#">S26361-F3975-E240</a>

F

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Section **XII** Memory



- 6 / 3 memory slots available for CPU 1 / CPU 2  
either for registered (reg) DDR3 RAM available with 2/4/8 GB RDIMMs  
or for unbuffered (ub) DDR3 RAM available with 1/2 GB UDIMMs  
=> max. 72 GB registered or 18 GB unbuffered RAM for two CPU's possible  
( For explanation of following terms refer to section "Memory Configurations"  
- The memory area is divided into 3 channels per CPU with 1/2 slots per channel  
- Slot 1 of each channel belongs to memory bank 1, the slot 2 belongs to memory bank 2

Registered and unbuffered memory modules can be selected  
No mix of registered and unbuffered modules allowed.  
DDR3 1066 and 1333MHz modules can be mixed, but run always with the slower speed.  
With two DIMMs per channel only 1066MHz is possible independent of the module speed.  
SDDC (Chipkill) is supported only for registered memory modules.

1.) In the "Independent Channel Mode" is following configuration possible  
- Each slot can optionally be equipped either with registered x4 organized DDR3 modules:  
2GB single rank, 4GB and 8GB dual rank, 8GB quad rank  
or with unbuffered x8 organized DDR3 modules: 1GB single rank and 2GB dual rank

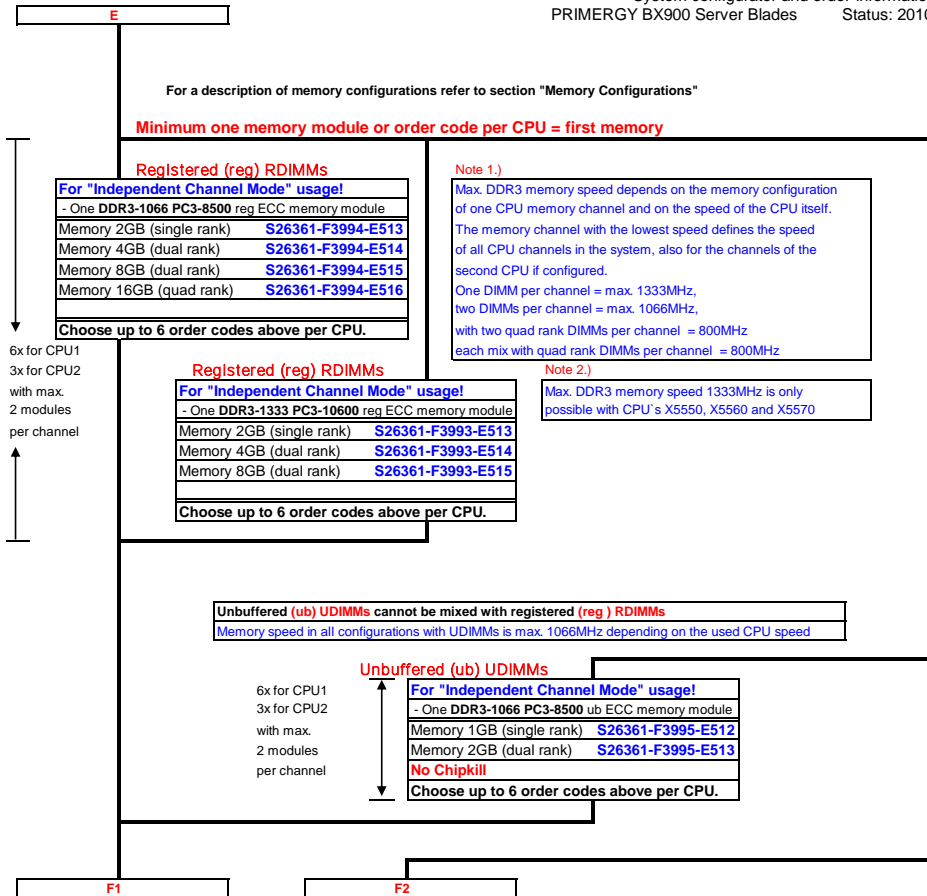
2.) In the "Mirrored Channel Mode" is following configuration possible  
- Each memory bank can optionally be equipped with 2x2GB single rank,  
2x4GB and 2x8GB dual rank DDR3 modules or with 2x8GB quad rank DDR3 modules  
In each memory bank channel A and B of CPU 1 or channel D and E of CPU 2 have to be equipped with  
identical modules for mirrored channel mode. Channel C of CPU 1 and channel F of CPU 2 is not equipped  
In channel B is always the mirrored memory of channel A of CPU 1  
In channel E is always the mirrored memory of channel D of CPU 2  
No special order codes with UDIMMs are offered for this mode

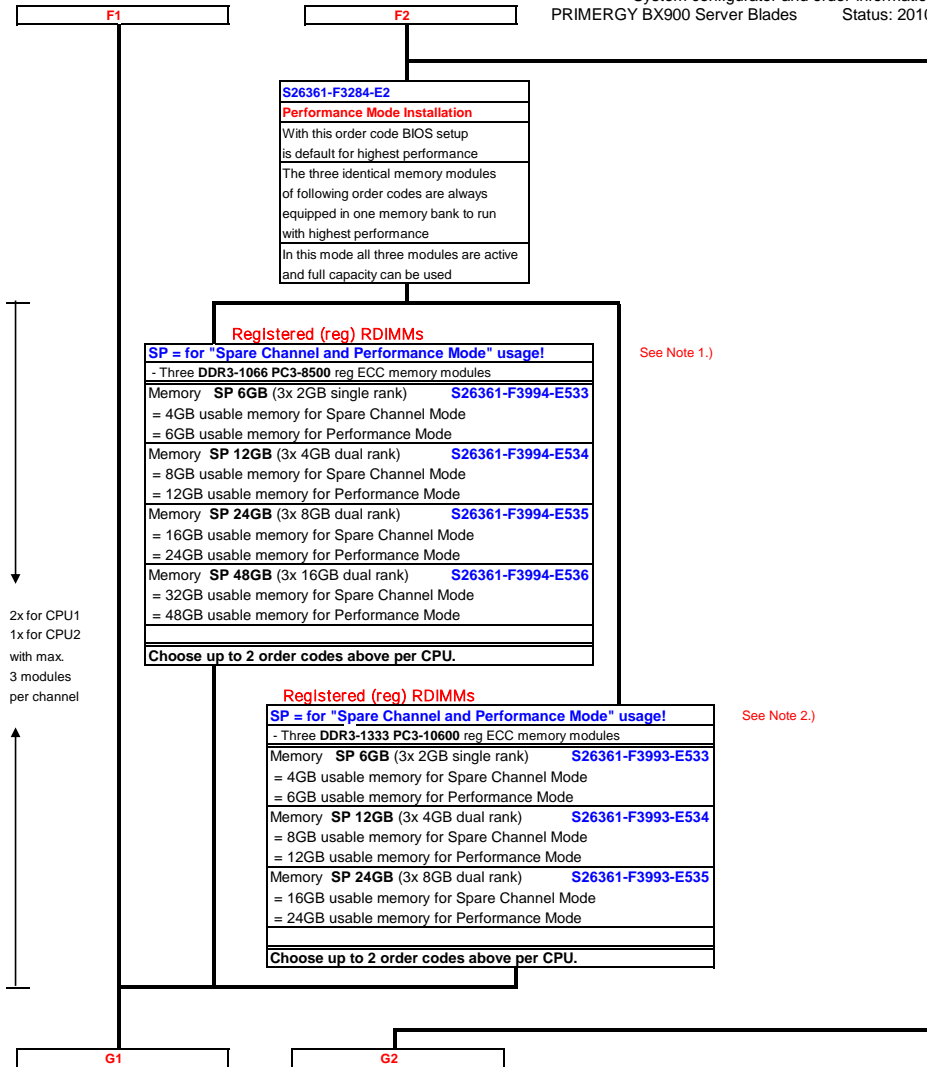
3.) In the "Performance Channel Mode" is following configuration possible  
Each slot of one bank has to be equipped with identical modules for performance channel mode  
No special order codes with UDIMMs are offered for this mode

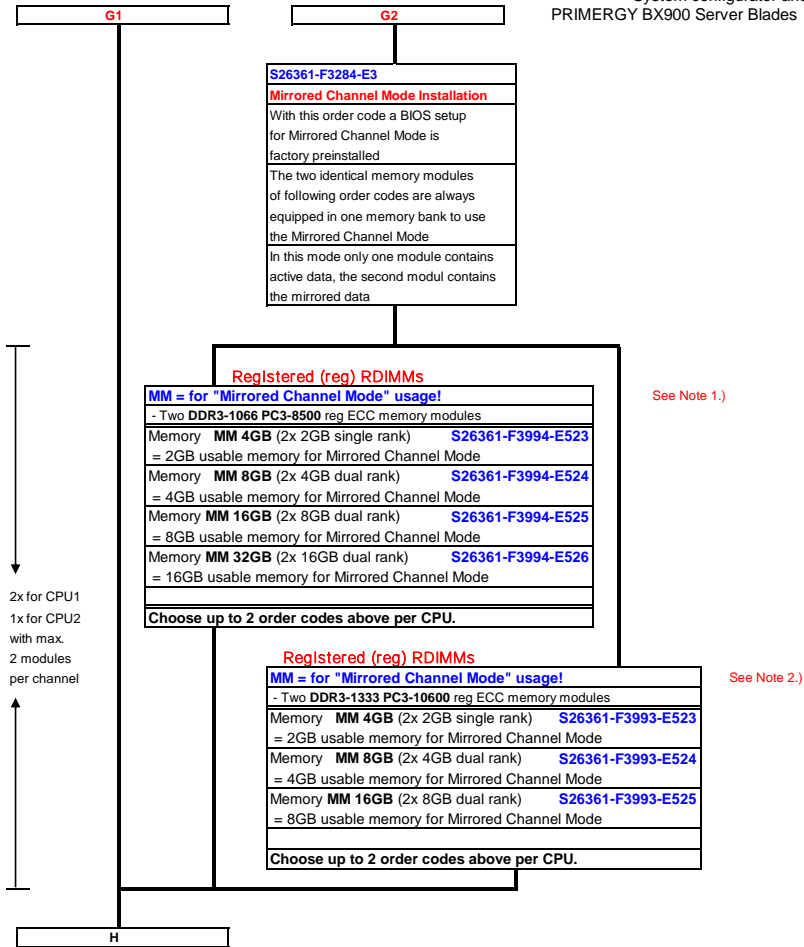
- For each CPU minimum 1 memory module has to be configured In Independent Channel Mode  
(=> Additional memory extensions can still be configured up to five times per CPU ) or  
one bank has to be equipped with two modules (channel A+B for CPU 1 or D+E for CPU 2) In  
Mirrored Channel Mode  
(=> Additional memory extensions can still be configured up to one time per CPU ) or  
one bank has to be equipped with three modules (channel A+B+C for CPU 1 or D+E+F for CPU 2)  
In Performance Mode  
(=> Additional memory extensions can still be configured up to one time per CPU )

E

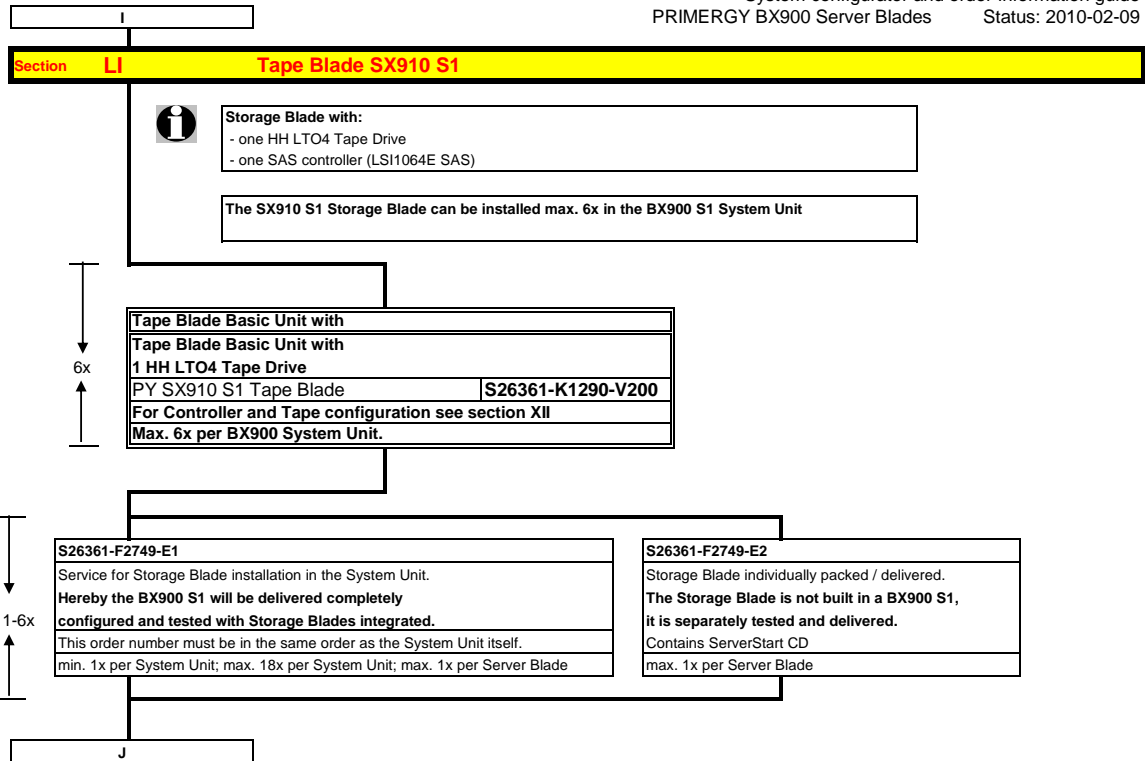














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**Section LII SAS Controller**

 The tape is connected to the left adjacent Server Blade  
**One SAS controller must be configured!**

<b>S26361-F3257-E4</b>
4 port SAS RAID Controller
LSI
MegaRAID SAS 1064
no Cache, no BBU
RAID 0, 1 & 1E
SAS 3Gb/sec
4 internal ports
PCIe x4, 160mm
max. 1x per tape storage blade

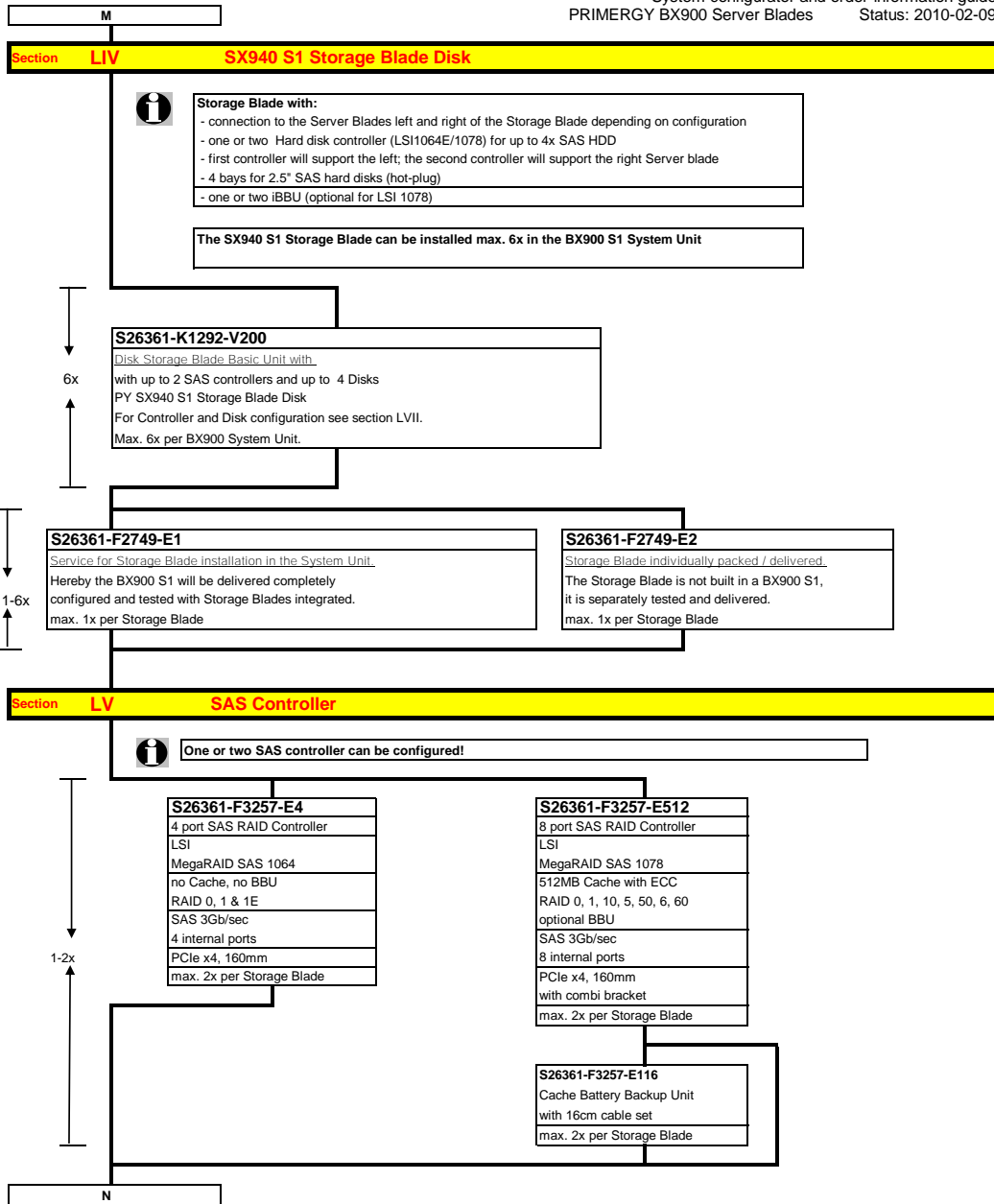
**Section LIII SAS Tape Drive**

 The tape is connected to the left adjacent Server Blade  
**One SAS tape drive can be configured!**

<b>S26361-F3963-E4</b>
Tape drive LTO4HH Ultrium
800GB, 120MB/s, SAS 3Gb
Connector: SATA
incl. SAS cable
incl. description (Ger/US)
data and cleaning cartridge
1.6 * 5.25", black bezel
1x per Server Blade

<b>S26361-F3561-E4</b>
Tape drive LTO3HH Ultrium SAS
400GB, 60MB/s, SAS 3Gb
Connector: mini-SAS
incl. SAS cable
incl. description (Ger/US)
data and cleaning cartridge
1.6 * 5.25", black bezel
1x per Server Blade

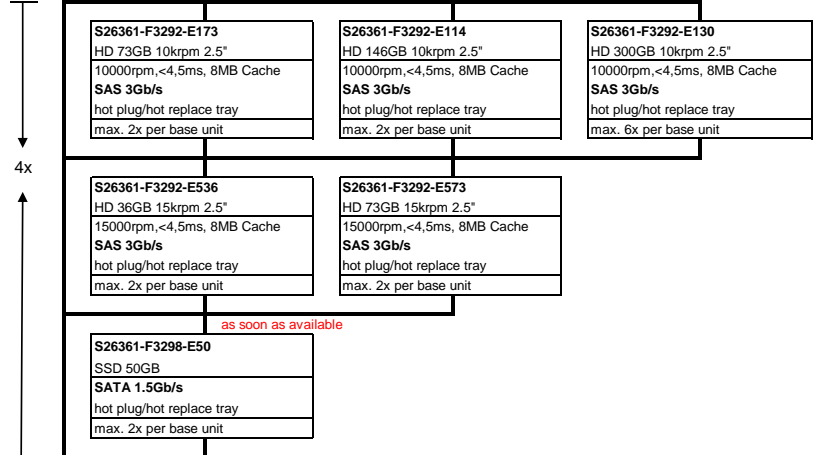
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**Section LVI SX940 Quad Disk Blade**

**i** Four disks can be plugged in and connected to the controllers.  
 The first controller is connected to the left Server Blade  
 The second controller is connected to the right Server Blade  
 Configurations with one controller have all disks connected to the left Server Blade  
 Configurations with two controllers have two disks connected to each Server Blade



[Back to System Configurator](#)



