

PRIMERGY BX900 System Unit

System configurator and order-information guide

June 2012

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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 System-Architect.

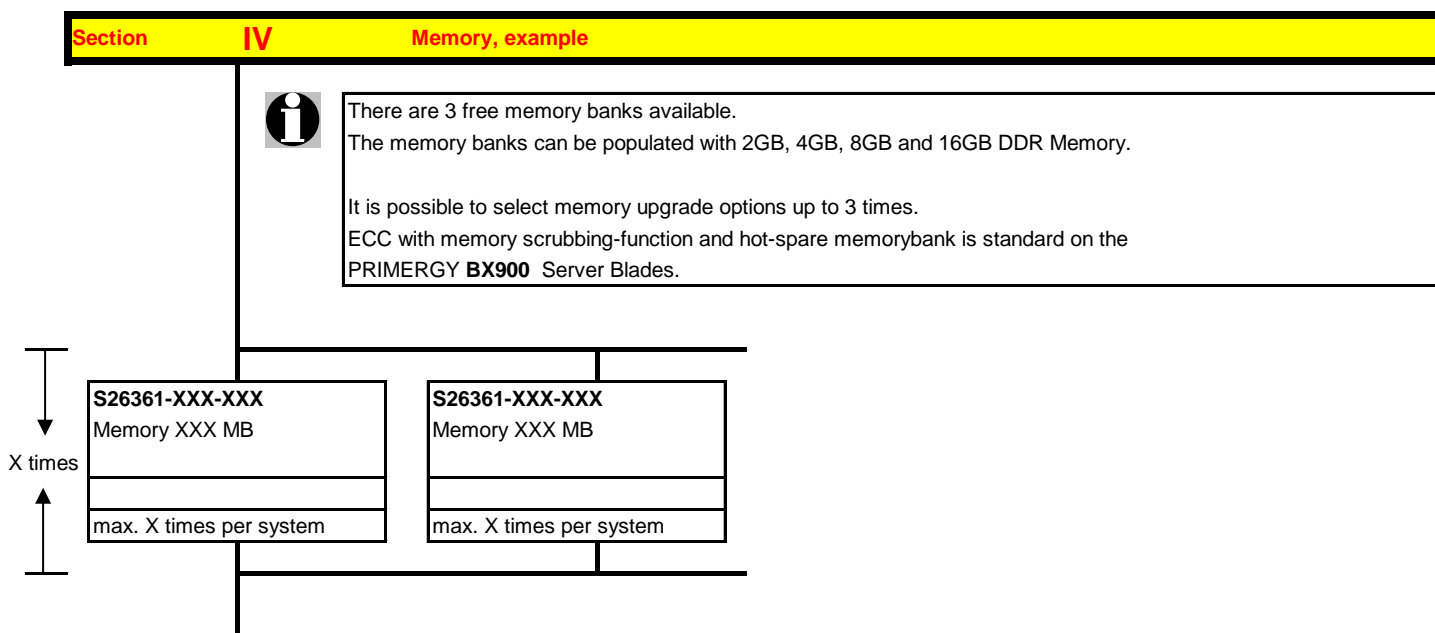
Only the tool "System-Arcitect" will ensure a fast and proper configuration of your PRIMERGY server or your complete PRIMERGY Rack system.

Please pay attention to the naming conventions: **BX900 S1** System unit 1st generation

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:

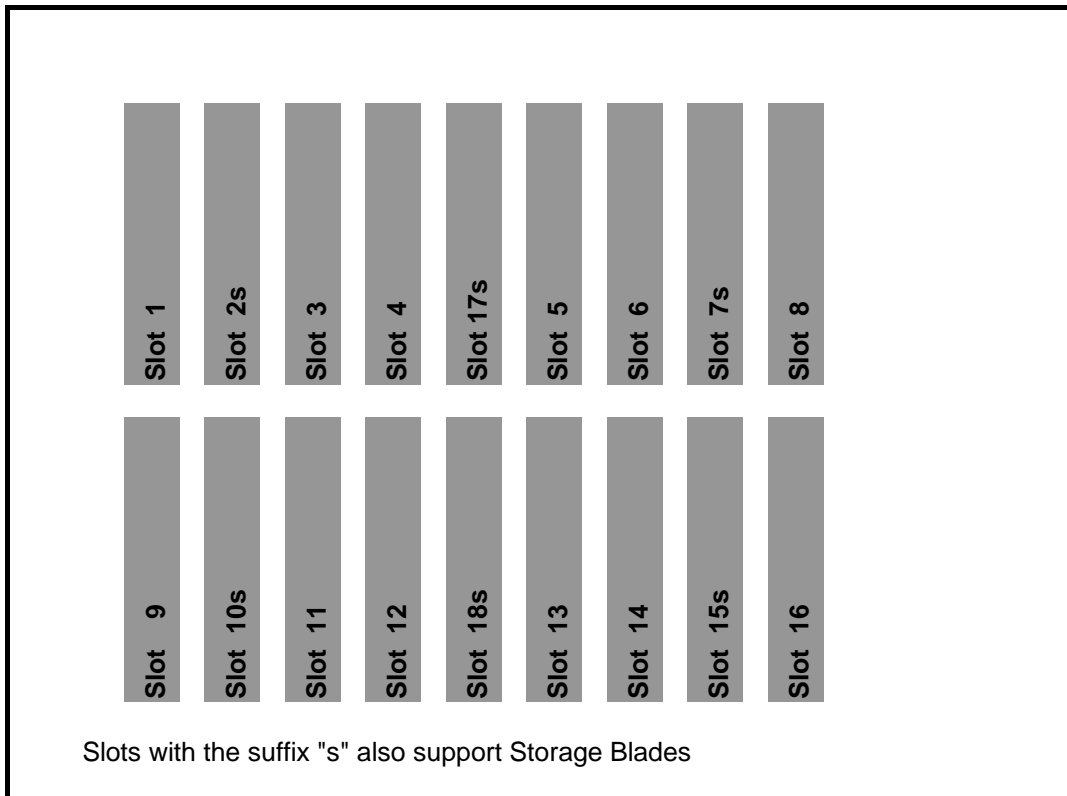
http://ts.fujitsu.com/products/standard_servers/index.html (internet)

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

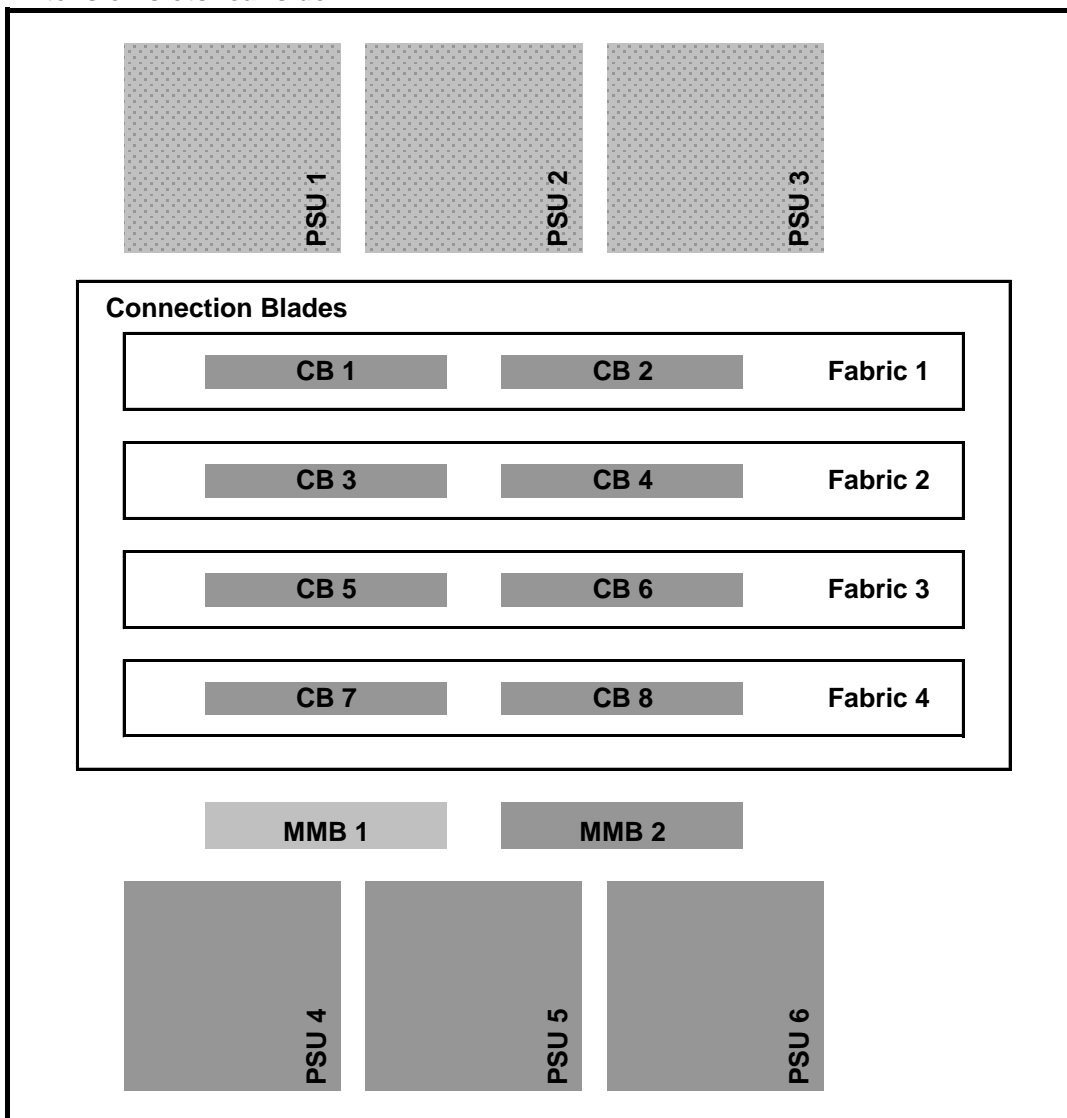
Prices and availability see price list and PC-/ System-Architect
 Subject to change and errors excepted

Configuration diagram BX900 S1 System Unit

Extension slots front side



Extension slots rear side



Key:

 Included in basic unit

 Option

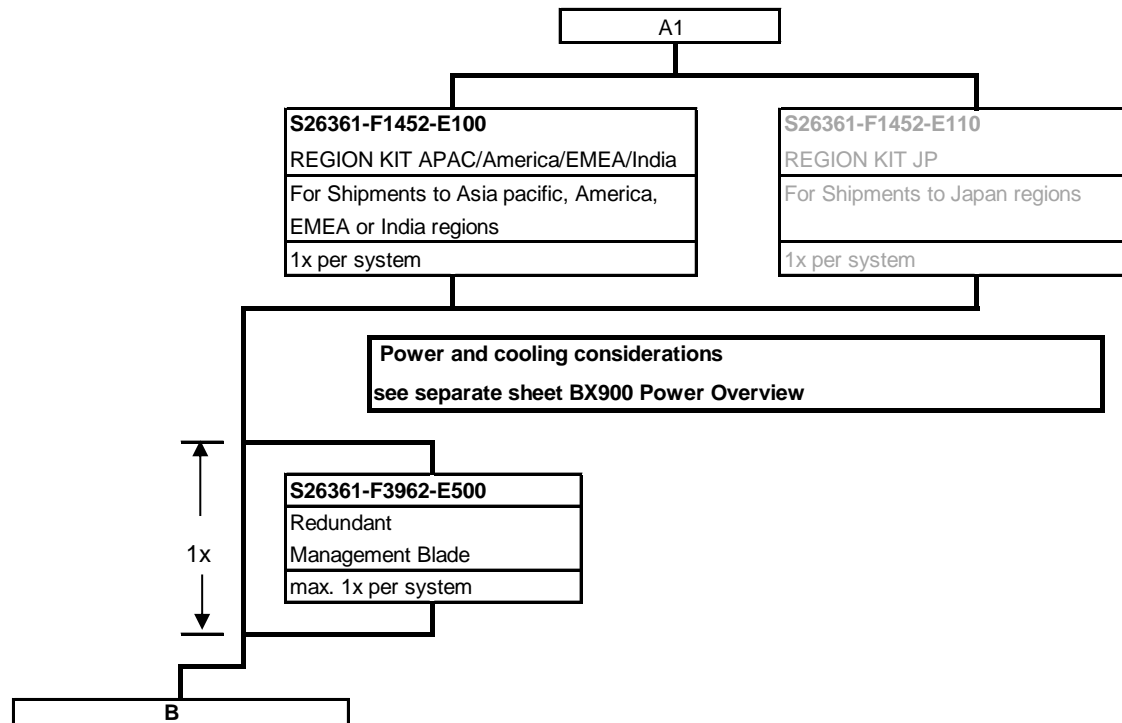
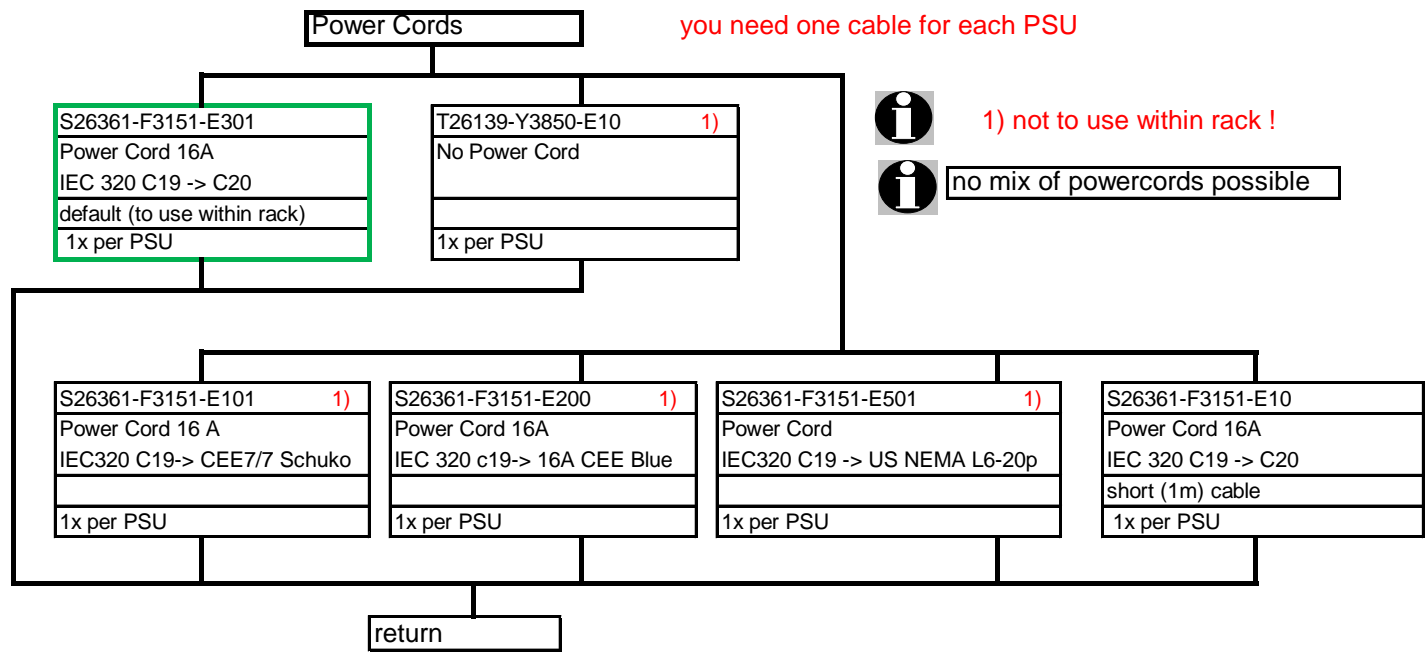
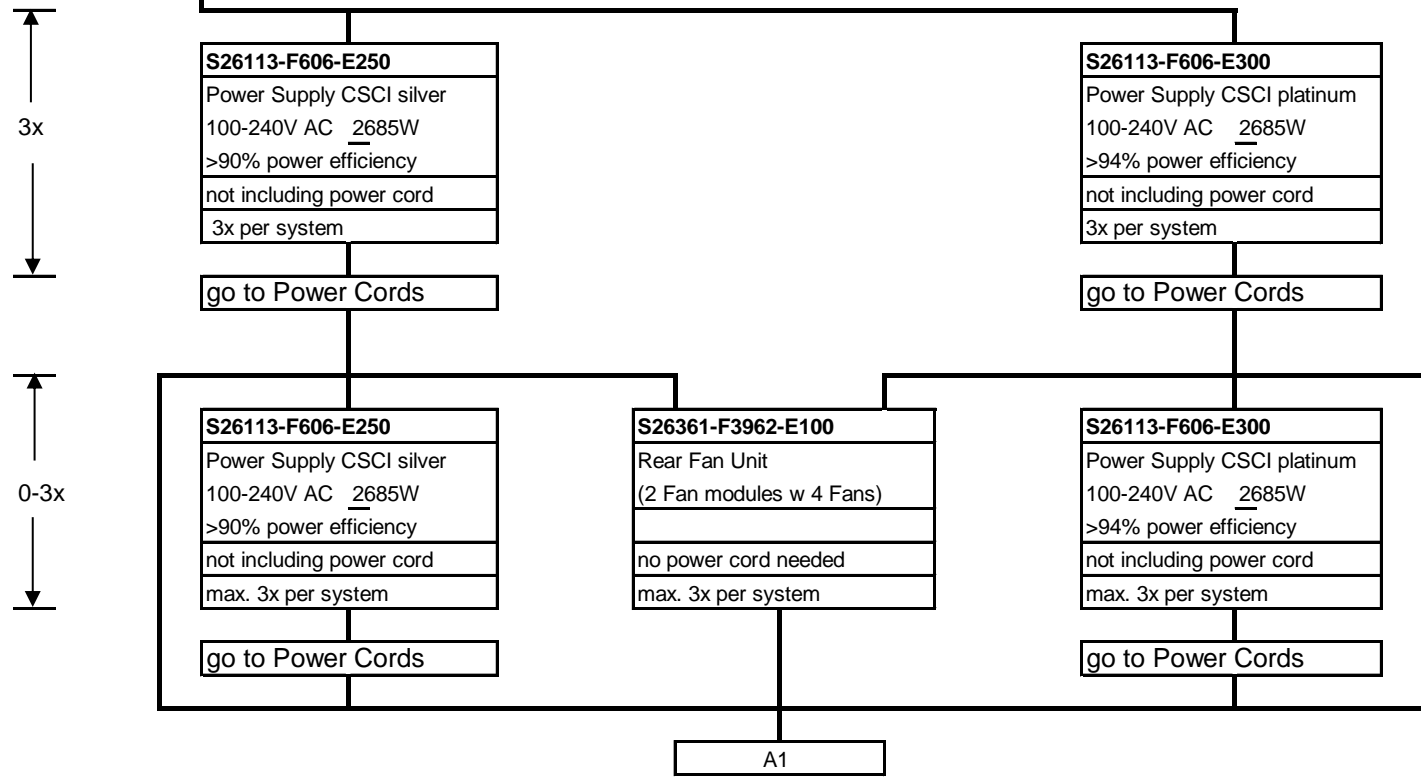
PSU slots may also be equipped with Rear Fan Modules
 (see next page for details on power and cooling)

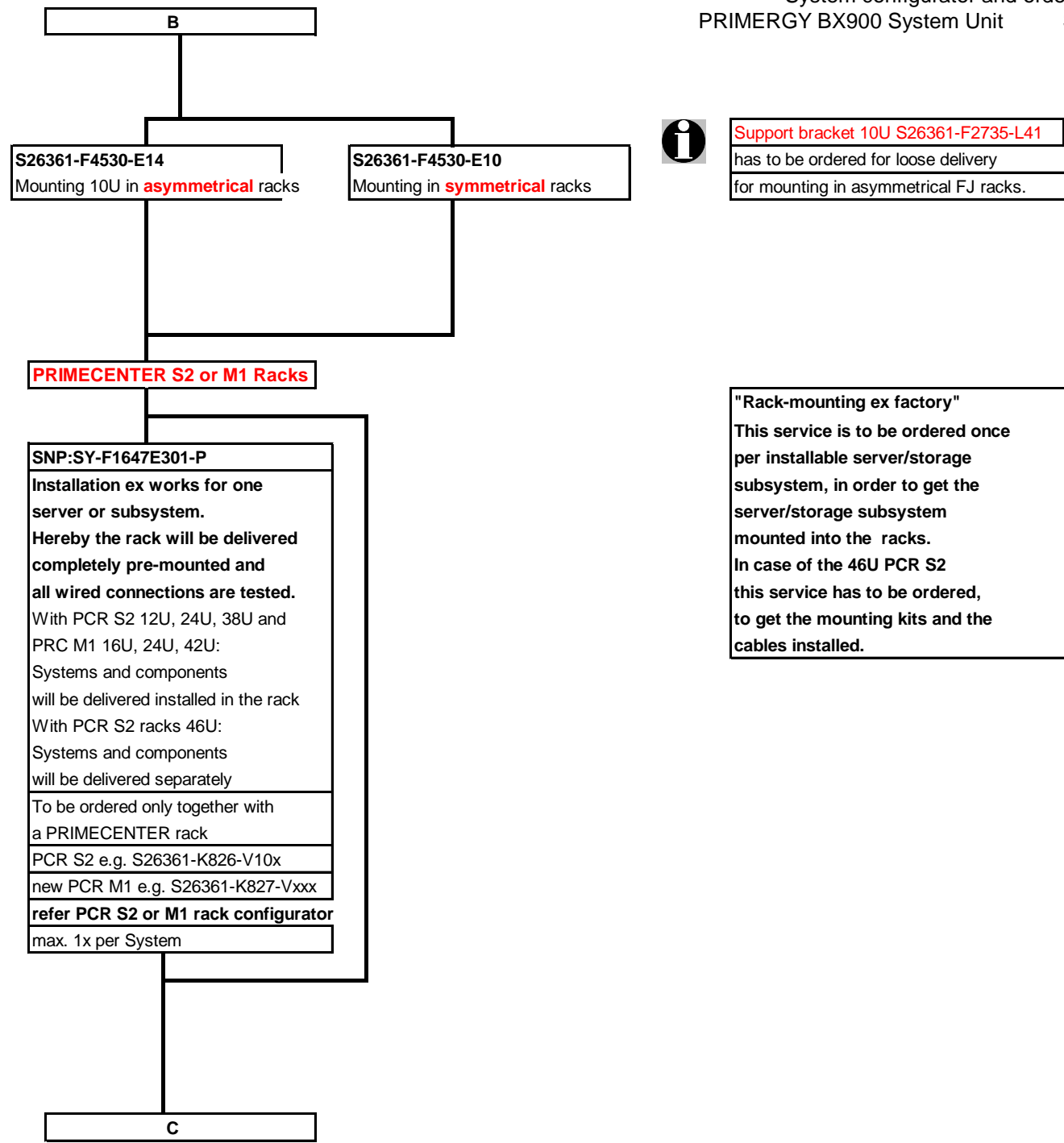
Section I System Unit BX900 S1

S26361-K1245-V300
 The System Unit BX900 S1 without PSU consists of:
 * 10U chassis including
 * Rack mounting kit suitable for
 - PRIMERGY 19" PRIMECENTER Rack, FJ new rack and 3rd party racks (e.g. Rittal)
 - 1 pair of carrier rails and 1 bracket for DC-Rack
 * Drives / bays / slots
 - 18 empty slots for 18 hot-plug Blades at front side.
 - 8 empty slots for Connection Blades at rear side
 - 6 empty slots for hot-plug power supplies at rear side
 * 1 hot-plug Management Blade
 * ServerView Local service Panel for Blades
External Interfaces:
 - 1x RS-232-C (serial, 9 pin) per Management Blade
 - 2x 1Gb Ethernet per Management Blade
 - 2x USB per Management Blade
 - 1x VGA, 1x serial and 4x USB at front side of each Server Blade via special cable
Cables (shipped with each System Unit):
 - 1x special cable with 4x USB for external CD/FD, serial RS232 and 1x VGA for Server Blade front side connection.
Software:
 - ServerView Suite Software package incl. ServerStart, ServerBooks, Management Software and Updates

Note: Server Blades can also be ordered for further extension later!
 But at least one Server Blade must be integrated in the System Unit ex works.

The System Unit BX900 S1 includes no PSUs and no power cords!
Different power cords can be ordered.
 (S26361-F3151-E301: 16A IEC320 C19 -> 16A IEC320 C20)
 (S26361-F3151-E100 or -E200 or -E300 or -E500).
 The power cords can be used for the socket strips S26361-F2262-E132 (1x3 16A IEC320)
 or S26361-F2262-E332 (3x3 16A IEC320) and to different PRIMERGY UPS systems.
Note: UPS must provide at least one 16A IEC320 C20 socket and it must support min. 3200W.
 For further details, see PRIMERGY UPS configurator sheets.
 For connections out of the rack, there are 3 power cords available (S26361-F3151-L100 or -L200 or -L500).





i For more configuration information see the separate Server Blade configurator at:
https://partners.ts.fujitsu.com/com/order-supply/configurators/primergy_config/current/Pages/default.aspx

Section II BX900 Power Overview

Configuration Overview

A BX900 chassis has 6 slots for power supplies (PSUs) or Fan Units (RFNs). Limiting factors for mounting blades are available power from PSUs but also cooling which is assured by PSUs or RFNs. As a result there are mounting rules to be followed for servers if less than 6 units (PSUs or RFNs) are used in a BX900 chassis. Also available PSU power has to be considered.

Power table BX900

PSU 2685 W / 100 V AC				PSU 2685 W / 230 V AC	
Number of installed		Max. number		Max. number	
PSU	Fan	Max. Dual Server Blades	PSU redundancy	Max. Dual Server Blades	PSU redundancy
3	0	7	3+0	7	3+0
	1			10	
	2			14	
	3			18	
4	0	10	4+0	10	3+1
	1			14	
	2			18	
5	0	16	5+0	14	3+2
	1			18	
6	0	18	5+1	18	3+3
	0		6+0	18	

E.g. 3+1 means there are 3 base PSUs and 1 redundant unit given.
 2nd column shows the number of additional Rear Fan Units (RFNs). They are needed to provide cooling to additional server blade slots.
 Finally there are further columns showing the different server blades. Here is shown their maximum count which can be operated with the PSU / RFN configuration given on the left.
 Not all configurations may make sense, recommended ones are highlighted green.

Shown here is a configuration with one kind of server blade, only, no mixed configuration.!

Example: A BX900 with 3 standard PSUs at 230VAC and one RFN can support a maximum of 10 BX920 servers.

Connection Blades:

Above tables are calculated with the assumption that 6 Connection Blades (50W each) are mounted

Remark:

Basically mixed configurations of blades are possible. Because of the manifold of possible combinations extra calculations are required to show configuration limits.

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Section II Server Blades in System Unit BX900 S1



All described Server Blades can be mixed in on System Unit with the explained exceptions.
For more configuration information see the separate Server Blade configurator at:
https://partners.ts.fujitsu.com/com/order-supply/configurators/primergy_config/current/Pages/default.aspx

S26361-K1353-V200
BX920 S2 Dual Server Blade
INTEL Processor based dual socket Server Blade.
max. 18x per system unit

S26361-K1247-V200
BX922 S2 Dual Server Blade
INTEL Processor based dual socket Server Blade.
max. 18x per system unit

S26361-K1341-V200
BX924 S2 Dual Server Blade
INTEL Processor based dual socket Server Blade.
max. 18x per system unit

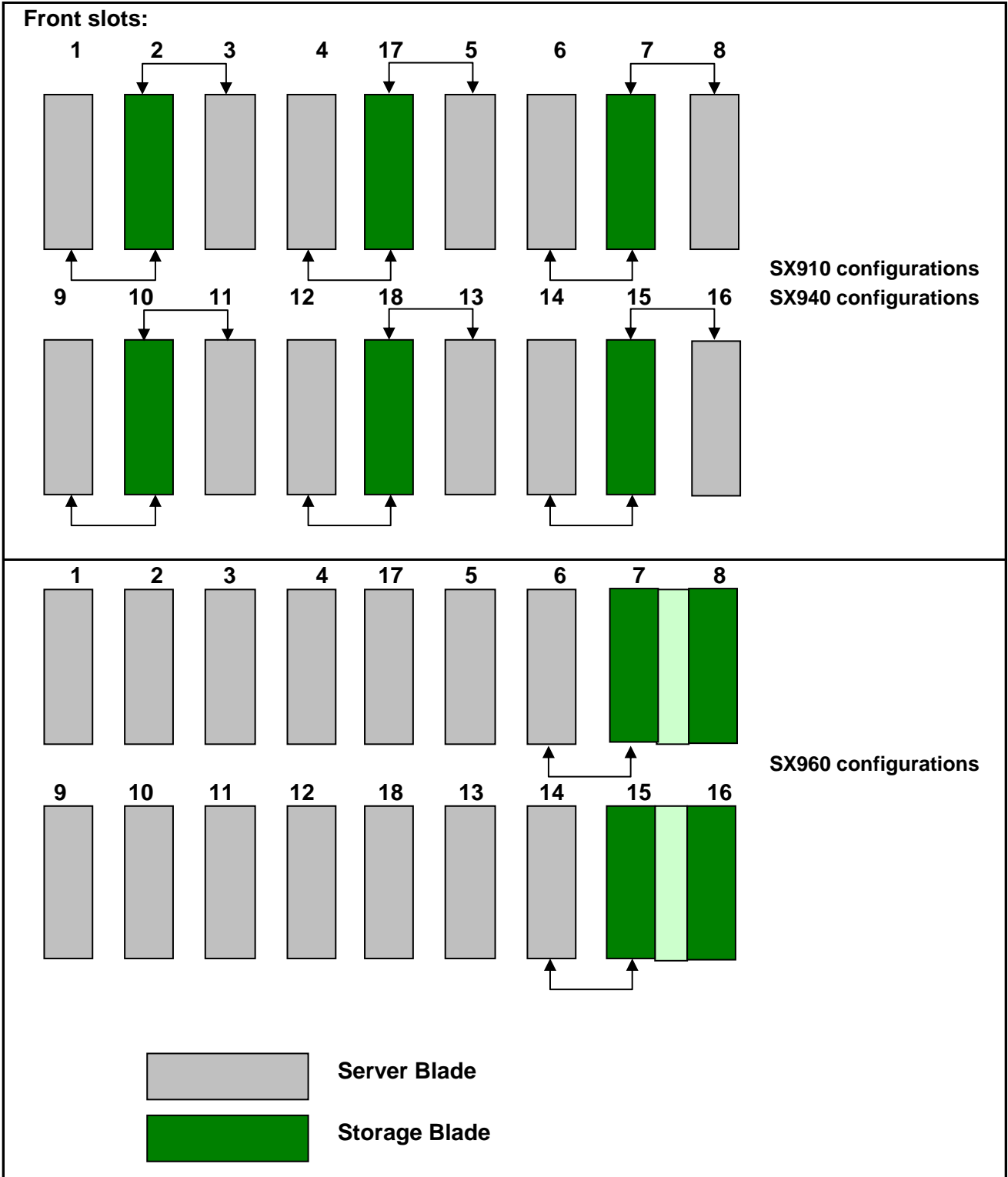
S26361-K1293-V200
BX960 S1 Quad Server Blade
INTEL Processor based quad socket Server Blade.
max. 9x per system unit

S26361-K1406-V200
BX920 S3 Dual Server Blade
INTEL Processor based dual socket Server Blade.
max. 18x per system unit

S26361-K1407-V200
BX924 S3 Dual Server Blade
INTEL Processor based quad socket Server Blade.
max. 9x per system unit

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Section III Storage Blades in System Unit BX900 S1



All described Storage Blades can be inserted into the designated slots of the System Unit.
For more configuration information see the separate Server Blade configurator at:
https://partners.ts.fujitsu.com/com/order-supply/configurators/primergy_config/current/Pages/default.aspx

max. 6x 	S26361-K1292-V200 PY SX940 S1 Storage Blade Disk 1x or 2x PCIe Controller up to 4x SAS/SATA HDD max. 6x per system unit	S26361-K1290-V200 PY SX910 S1 Storage Tape Blade 1x PCIe Controller 1x SAS LTO Drive max. 6x per system unit	S26361-K1383-V210 PY SX980 S1 JBOD Blade up to 10x SAS HDD max. 6x per system unit
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max. 2x 	S26361-K1382-V202 PY SX960 S1 Storage Blade Disk 1x SAS RAID Controller up to 10x SAS/SATA HDD max. 2x per system unit
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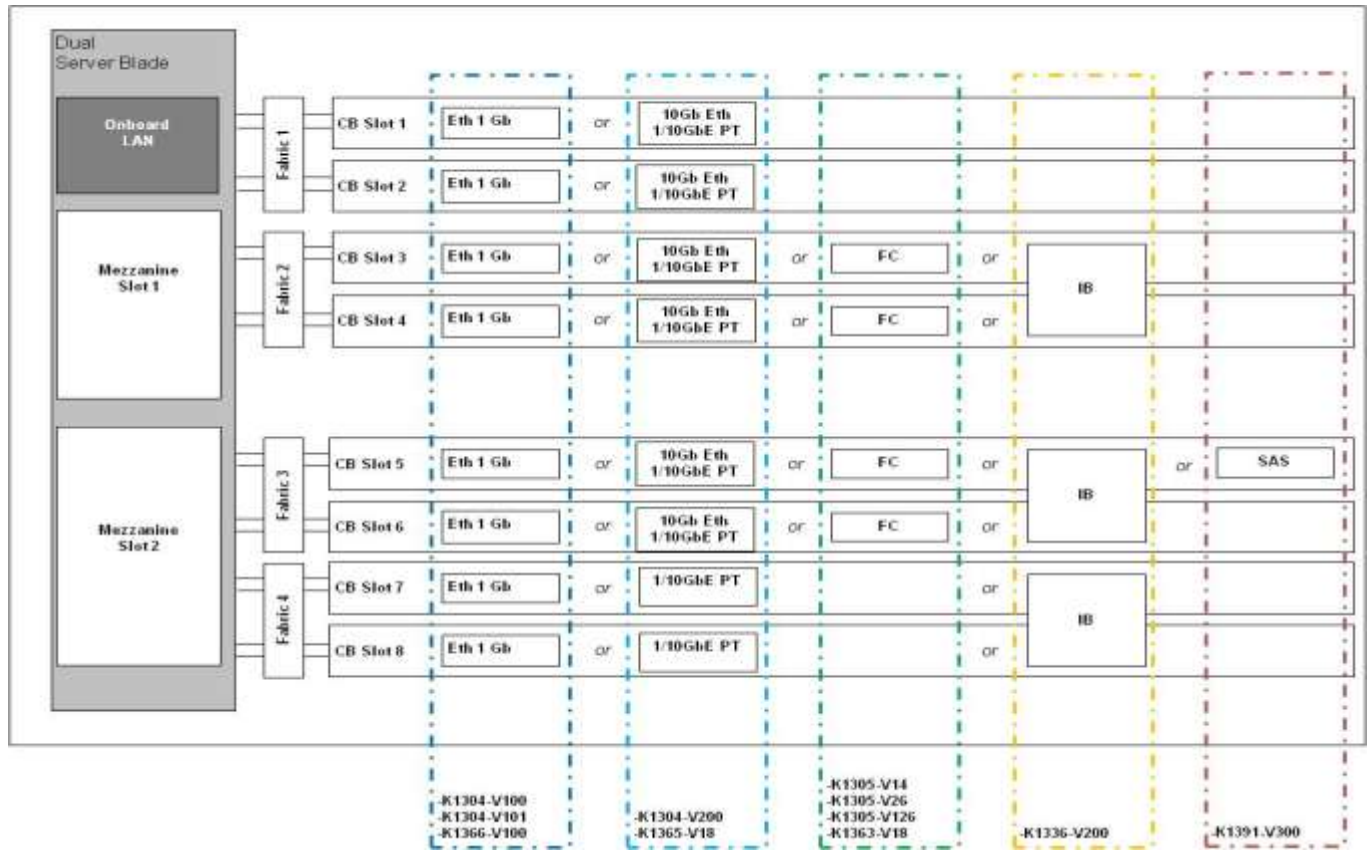
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Section IV Connection Blade Overview

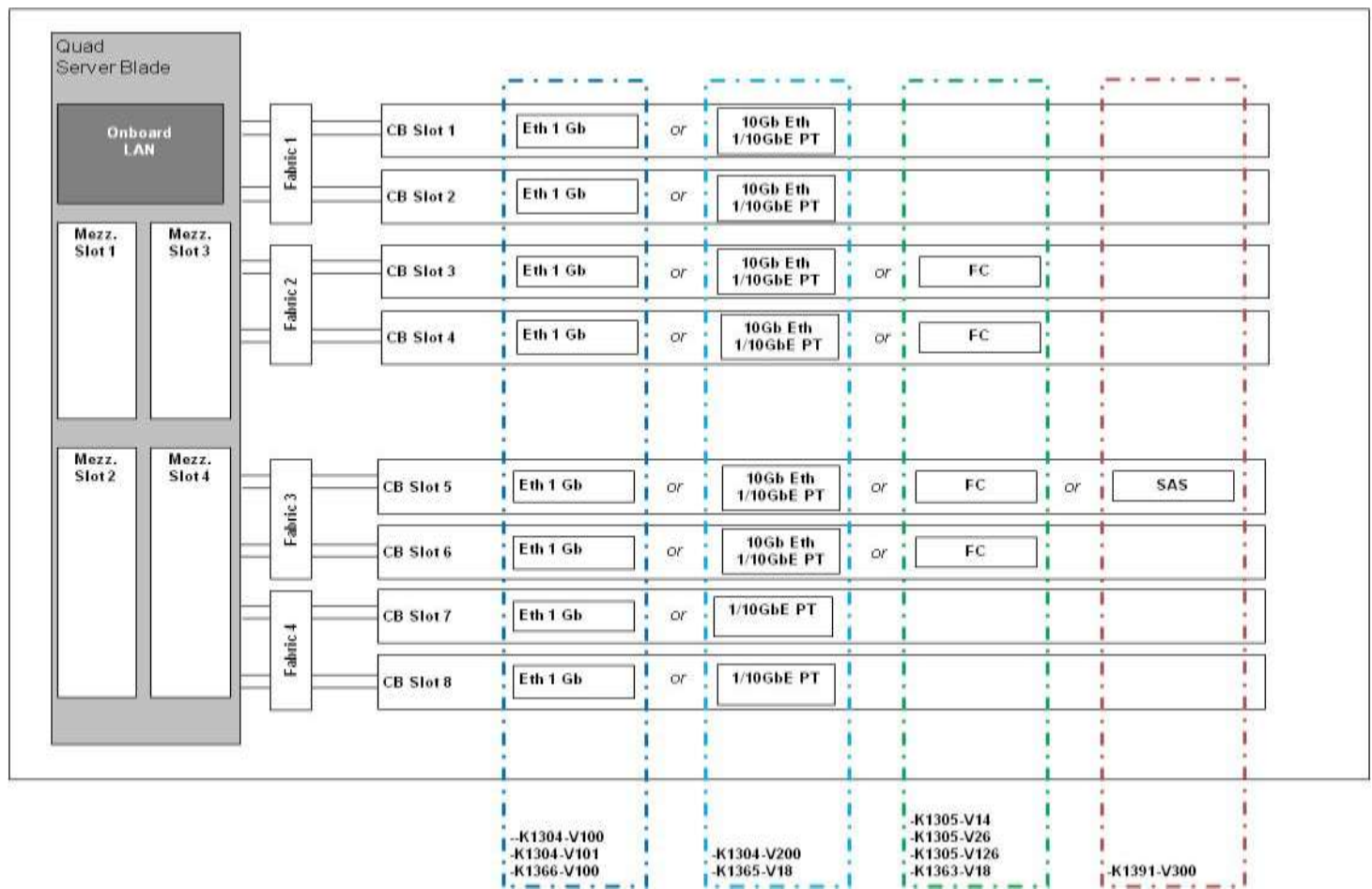


Each PRIMERGY BX900 Server Blade comes with onboard Ethernet LAN channels and special connectors for the optional mezzanine cards.
 Example BX920 S2: 4 x 1GbE onboard and 2 x Mezzanine slots

Dual Server Blade Connectivity



Quad Server Blade Connectivity



Mezzanine Cards released for BX9xx Server Blades

System	onboard LAN ports	Mezzanine Slots	Mezzanine Card Options					SAS RAID Mezz S26361-F4481-E1
			Eth 1Gb 4 Port S26361-F3331-E1	FC 8Gb 2 Port S26361-F3874-E1	IB 40Gb 2 Port S26361-F3992-E2	Eth 10Gb 2 Port S26361-F3997-E1	SAS HBA Mezz S26361-F4480-E1	
BX920 S1	4x 1GbE	2	x	x	x	x		
BX920 S2	4x 1GbE	2	x	x	x	x	x	x
BX922 S2	4x 1GbE	2	x	x	x	x	x	x
BX924 S2	2x 10GbE	2	x	x	x	x	x	x
BX960 S1	4x 10GbE	4	x	x		x		

R1

Connection Blades released for BX900 S1 System Unit :

Order number	Connection Blade Type	installable in CB Slot	Downlink ports (internal)	Uplink ports (external)
S26361-K1304-V100	PY CB Eth Switch/IBP 1Gb 36/12	1/2 3/4 5/6 7/8	36x 1Gb Eth	8x 1Gb Eth (RJ45) 4x 1Gb Eth (SFP)
S26361-K1304-V101	PY CB Eth Switch/IBP 1Gb 36/8+2	1/2 3/4 5/6 7/8	36x 1Gb Eth	8x 1Gb Eth (RJ45) 2x 10Gb Eth (SFP+)
S26361-K1366-V100	PY CB Eth Switch/IBP 1Gb 18/6	1/2 3/4 5/6 7/8	18x 1Gb Eth	6x 1Gb Eth (RJ45)
S26361-K1304-V200	PY CB Eth Switch/IBP 10Gb 18/8	1/2 3/4 5/6	18x 10Gb Eth	8x 10Gb Eth (SFP+)
S26361-K1305-V14	PY FC Switch 8Gb 18/8 14 Port (Brocade)	3/4 5/6	18x 8Gb FC	8x 8Gb FC (SFP+)
S26361-K1305-V126	PY FC SW 8G 18/8 26 Perform (Brocade)	3/4 5/6	18x 8Gb FC	8x 8Gb FC (SFP+)
S26361-K1305-V26	PY FC SW 8G 18/8 26 Port (Brocade)	3/4 5/6	18x 8Gb FC	8x 8Gb FC (SFP+)
S26361-K1363-V18	PY CB FC Pass Thru 8G 18/18	3/4 5/6	18x 4 / 8Gb FC	18x 8Gb FC (SFP+)
S26361-K1365-V18	PY CB Eth Pass Thru 10Gb 18/18	1/2 3/4 5/6 7/8	18x 10Gb Eth	18x 10Gb Eth (SFP+)
S26361-K1336-V200	PY CB IB Switch 40Gb 18/18	3/4 5/6 7/8	18x 40Gb IB	18x 40Gb IB (QSFP)
S26361-K1391-V300	PY CB SAS Switch 6Gb 18/6	5	18x 6Gb SAS	6x 6Gb SAS (SFF8088)



There is no Connection Blade included in the System Unit.

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Section V a Connection Blades Ethernet 10Gb

6x

S26361-K1304-V200
S26361-K1304-V303 *)
PY CB Eth Switch/IBP 10Gb 18/8
L2+ Switch or IBP
18x downlink / 8x uplink 10GbE
external:
8x SFP+ / SFP
Port LEDs: link, activity.
Switch LEDs: power, status
max. 6x per System Unit

i *) for separate delivery, without blade chassis

S26361-F2749-E1
Service for Blade installation in the System Unit.
Hereby the BX900 S1 will be delivered completely configured and tested with the Blade integrated.
1x per Switch Blade

i the below listed copper cables (active twinax) are also released

S26361-F3989-L102	SFP+ active Twinax Cable 2m
S26361-F3989-L105	SFP+ active Twinax Cable 5m
S26361-F3989-L110	SFP+ active Twinax Cable 10m

8x

S26361-F3986-E3	S26361-F3986-E4	S26361-F3986-E2	S26361-F3986-E1
SFP+ Module MMF 10GbE LC	SFP+ Module SMF 10GbE LC	SFP Module 1000Base-SX	SFP Module 1000Base-T
SR SFP+ module for 10 Gbit	LR SFP+ module for 10 Gbit	SFP module for 1 Gbit	SFP module for 1 Gbit
max. 300m with OM3 fiber	max. 10km with 9µm fiber	max. 550m with OM3 fiber	max. 100m
850 nm laser	1310 nm laser	850 nm laser	
Ethernet FO cabling	Ethernet FO cabling	Ethernet FO cabling	Ethernet CU cabling (RJ45)
max. 8x per switch	max. 8x per switch	max. 8x per switch	max. 8x per switch

Section V b Connection Blades Ethernet Pass Thru 10Gb

6x

S26361-K1365-V18
S26361-K1365-V318 *)
PY CB Eth Pass Thru 10Gb 18/18
Ethernet Pass Thru
18x downlink / 18x uplink
external:
18x SFP+ / SFP
Port LEDs: link, activity.
Switch LEDs: power, status
max. 6x per System Unit

i *) for separate delivery, without blade chassis

S26361-F2749-E1
Service for Blade installation in the System Unit.
Hereby the BX900 S1 will be delivered completely configured and tested with the Blade integrated.
1x per Switch Blade

i the below listed copper cables (active twinax) are also released

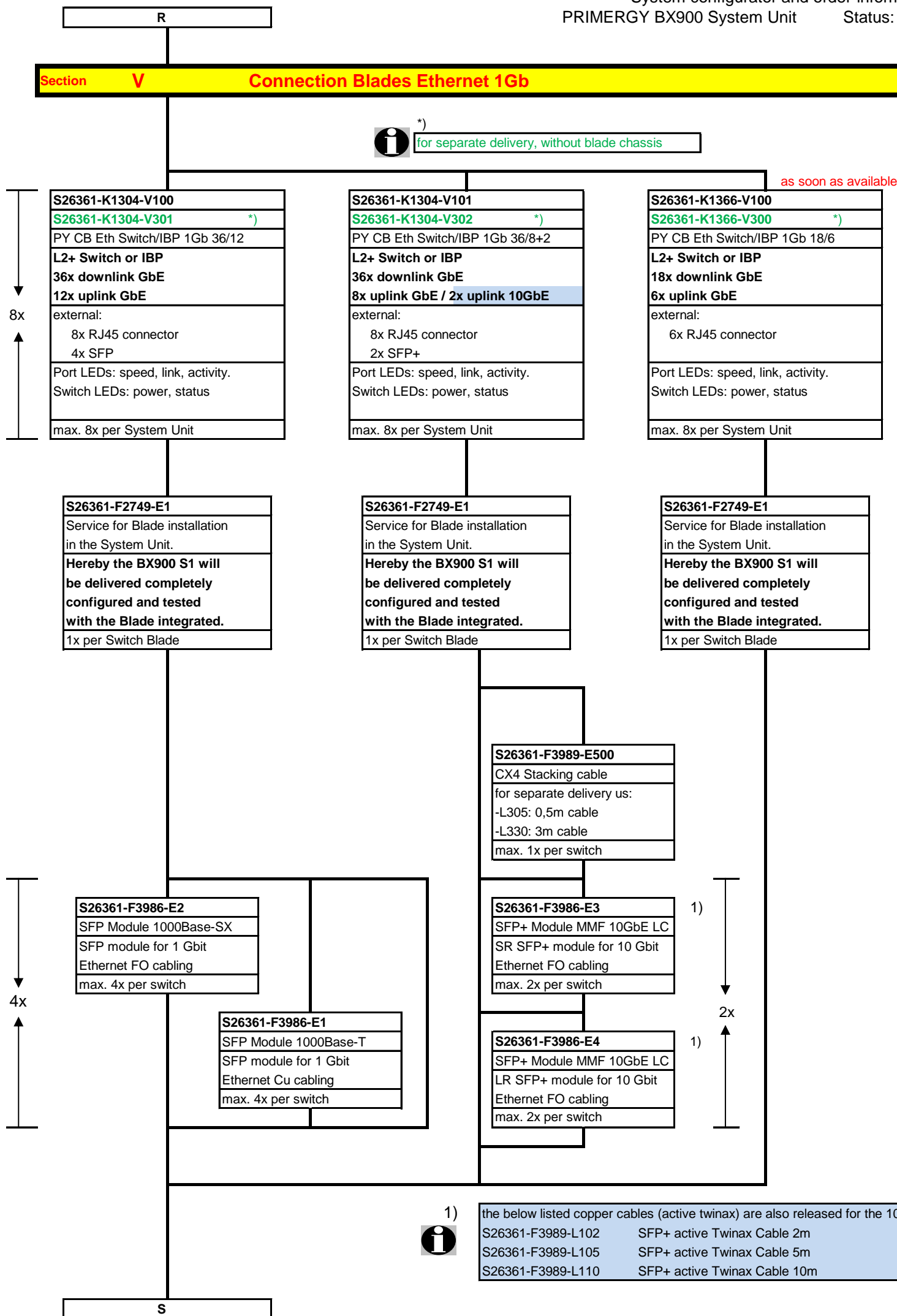
S26361-F3989-L102	SFP+ active Twinax Cable 2m
S26361-F3989-L105	SFP+ active Twinax Cable 5m
S26361-F3989-L110	SFP+ active Twinax Cable 10m

i only the below listed SFP+ modules will be supported by the connection blade.

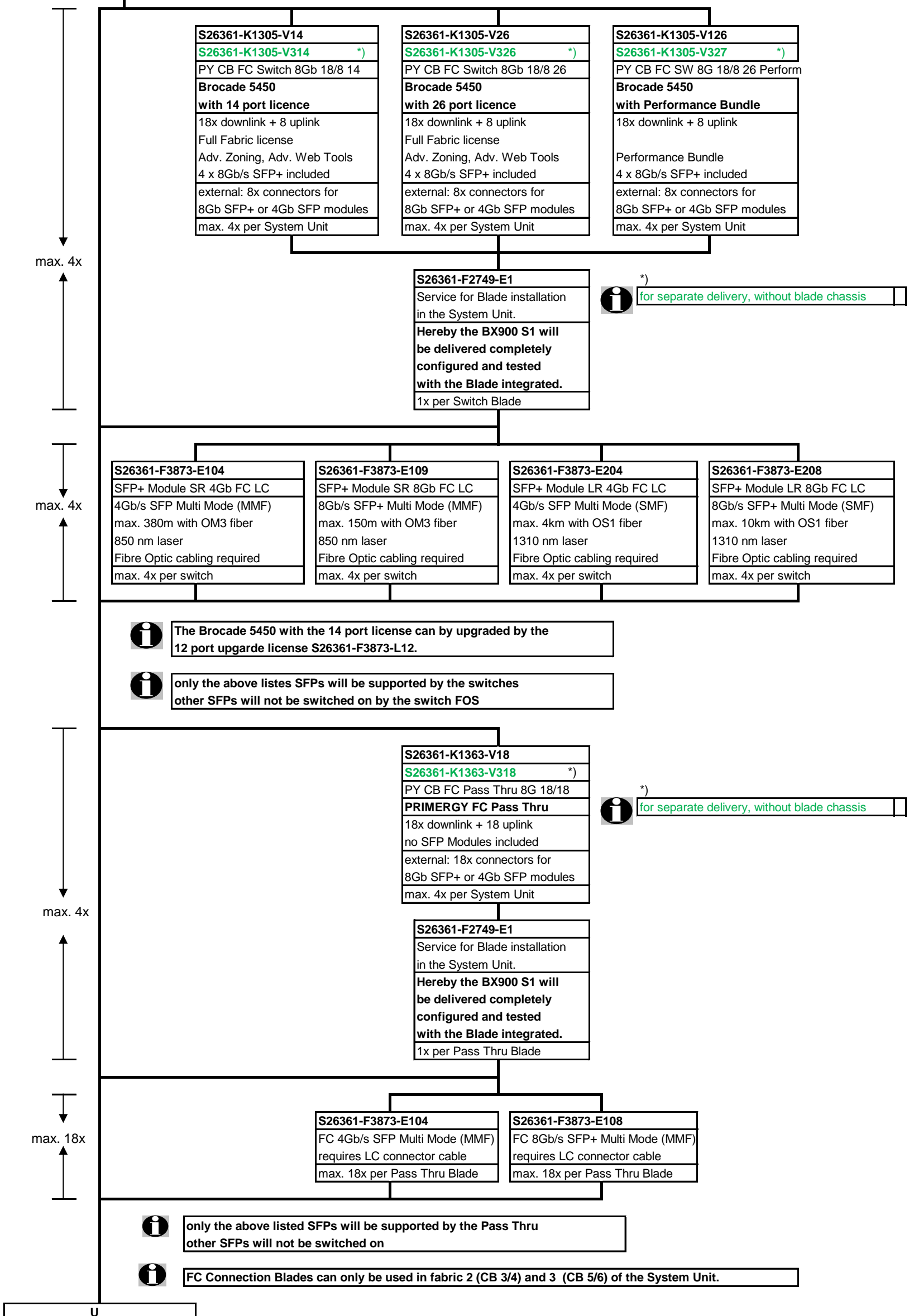
18x

S26361-F3986-E3	S26361-F3986-E2	S26361-F3986-E1
SFP+ Module MMF 10GbE LC	SFP Module 1000Base-SX	SFP Module 1000Base-T
SFP+ module for 10 Gbit	SFP module for 1 Gbit	SFP module for 1 Gbit
max. 300m with OM3 fiber	max. 550m with OM3 fiber	max. 100m
850 nm laser	850 nm laser	
Ethernet FO cabling	Ethernet FO cabling	Ethernet CU cabling (RJ45)
max. 18x per Pass Thru Blade	max. 18x per Pass Thru Blade	max. 18x per Pass Thru Blade

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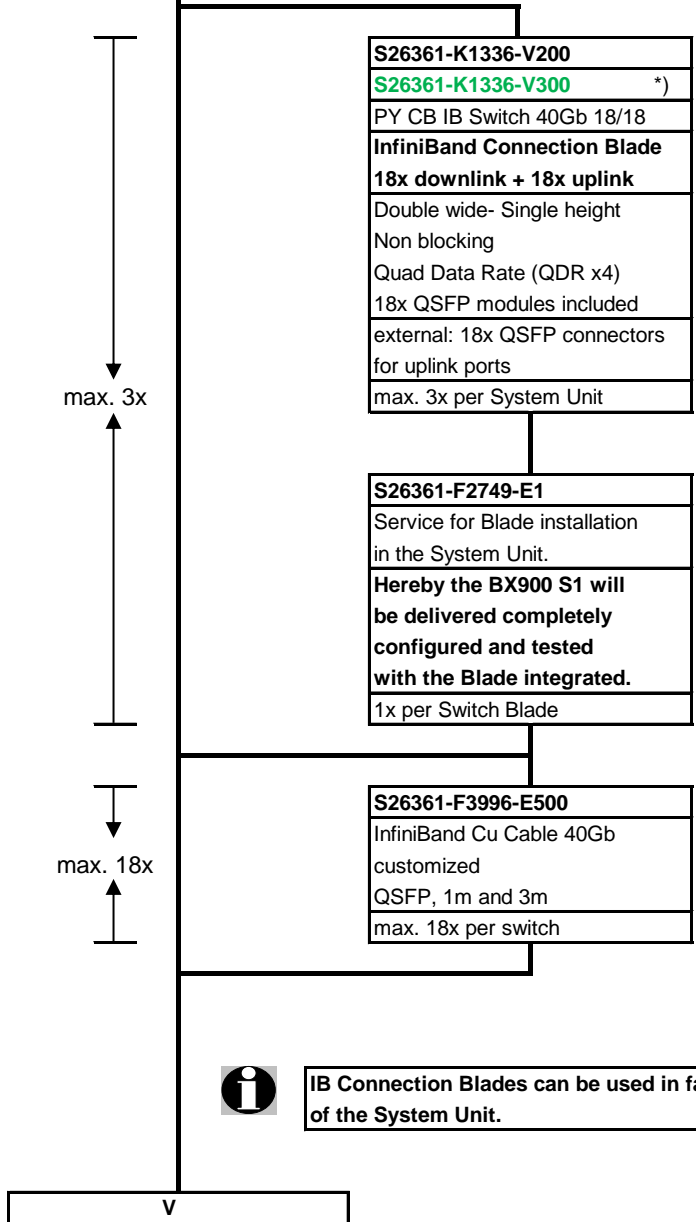


Section VI Connection Blades Fibre Channel



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Section VII Connection Blade InfiniBand



S26361-K1336-V200
S26361-K1336-V300 *)
PY CB IB Switch 40Gb 18/18
InfiniBand Connection Blade
18x downlink + 18x uplink
Double wide- Single height
Non blocking
Quad Data Rate (QDR x4)
18x QSFP modules included
external: 18x QSFP connectors for uplink ports
max. 3x per System Unit

i *) for separate delivery, without blade chassis

S26361-F2749-E1
Service for Blade installation in the System Unit.
Hereby the BX900 S1 will be delivered completely configured and tested with the Blade integrated.
1x per Switch Blade

S26361-F3996-E500
InfiniBand Cu Cable 40Gb customized
QSFP, 1m and 3m
max. 18x per switch

i If additional length of copper cable or optical cable are needed, then they must be ordered from the cable vendor directly
 Copper cable are also available for loose delivery as
 S26361-F3996-L101, QSFP, 40Gb, 1m
 S26361-F3996-L103, QSFP, 40Gb, 3m

i IB Connection Blades can be used in fabric 2 (CB 3/4), 3 (CB 5/6) and 4 (CB 7/8) of the System Unit.

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Section VIII Connection Blade SAS

max. 1x

S26361-K1391-V300
S26361-K1391-V400 *)
PY CB SAS Switch 6Gb 18/6
SAS Connection Blade
18 ports internal
6 ports external (SFF8088)
Single wide - Single height
1x per SX980 S1

i *) for separate delivery, without blade chassis

S26361-F2749-E1
Service for Blade installation in the System Unit.
Hereby the BX900 S1 will be delivered completely configured and tested with the Blade integrated.
1x per Switch Blade

i The SAS Connection Blade can only be used in fabric 3 (CB slot 5) of the System Unit

End BX900 System Unit

Change Report

Date	Order number	Changes
2012-01-23		Updated power section ,added 1m Cable
2011-12-15		Added S3 Server Blades
2011-10-21		Updated Power Overview
2011-10-13		Updated CB List - LAN CB corrected
2011-10-07		Cabel update E101 E501
2011-07-19		Updated CB List - Uwe O added SAS , Ewald updated LAN PT for slot 7/8
2011-03-02		Corrected SX940 positioning and count from 8x -> 6x
2011-01-31	S26361-K13xx-V3xx	new Connection Blades for loose delivery added
2010-06-28		Server Blades BX920S1 - no longer available
2010-06-28		New Server Blades BX924S2 and BX960 added
2010-06-01		Server Blades BX920S2 - now available
2009-10-01		CX4 Stacking cable for SB11 - correction
2009-09-23		CX4 Stacking cable for SB11 added
2009-07-31		SX910 - now available
2009-06-30		SX910 - as soon as available
2009-06-02		SB11, SFP+ Modules and Twinax cables added in CB Eth 1Gb; Connection Blade Overview updated
2009-04-22		SX940 delay - as soon as available added.
2009-03-31		First release