MT	Model	Description	T-Shirt Sizes (example) Mfg Config #1	Solution Rule Min	Max	Comments
xxxx	xxx	Solution MTM				n/a

Customized Personality : S821C Server Config 1 ..etc.

MT	Model	Description	Mfg Config #1	Min	Max	Comments
8348	**21C**	ServerConfig-S821LC	1	1	1	This section Defined the Common config of the Server node (in group servers) -- **Next** / **Section :** Defined any unique config that you may need (Optional)
	Solution ID	Complete Server Config - Specify Code (e.g..)				
	Pod Type	Complete Server Type 2- Specify Code	1	1	1	Optional FC -- used to specify node type/ config .. Need econfig support
	Processor	EP0A 8W P8 3.325/3.857GHZ PROC 190W/247W (VENICE W/TURISMO)	2	2	2	Optional FC -- used to specify Solution specific config .. Need econfig support
	Memory	EM5C 16GB 2-RANK DDR3 1.35V I5 DIMMS 1600MHZ (1333MHz max in system)	16	16	16	12 LFF HDDs/SSDs Assembly
	Bezel	n/a	1	1	1	Build-in HDDs : Integrate SATA controller + Optional SAS /RAID Controller
	Storage Adapter	Integrated Sata controller	1	1	1	
	Adapter		0	0	1	Optional - Exteral SAS adapter for Expansion SAS drawer
	Disks	ELD2 1TB 7200 RPM SATA HDD BARE DRIVE	1	1	1	OS Boot Disk (back side) +12 HDD/SSDs front side
			0	0		Optional HDDs/SSDs

S821C Server (Base config) -- Required Inter-connect

		Description	Mfg Config #1	Min	Max	Comments
	Network	ENOT QUAD E'NET (2X1 + 2X10 10Gb) PCIe Gen 2 X8/SHORT LP-Fiber	1	1	1	(Required) For High Speed Network
	Adapter		0	0		Some adapter Max config 1/3/4... See econfig rule
	Power	EKLJ (PS #6666) PWR CBL DRWR TO IBM PDU 2.8m (9.2ft) 250V/10A,	2	2	2	Select Proper Line cord if not connected to IBM PDU
	Cables	CAT5E SWITCH CABLE, BLUE (2M)	1	1	1	(Required) For OS 1G Network (Recommended 2M length min)
		CAT5E SWITCH CABLE, GREEN (2M)	1	1	1	(Required) For IPMI 1G Network (Recommended 2M length min)
		ENO2 3M- Active Twinax cable	2	2	2	(Required) For High Speed Network (Recommended 2M length min)
		No rack integration	1	1	1	
		Country specific FCs (keyboards, language groups) are selectable	1	1	1	User select
		Shipping and Handling	1	1	1	User select

Customized Personality : S822LC Server Config 1 ..etc

MT	Model	Description	T-Shirt Sizes (example) #1 Default	Native MTM Min	Max	Solution Rule Comments
xxxx	xxx	Solution MTM	1	1	1	
8335	GTB	S822LC (8335)	**4**	**4**	**16**	This section Defined the <u>Common config of the Server node</u> (in group servers) -- **Next** Section : Defined any unique config that you may need (Optional)
	Solution ID	Custom Server Code (for use with Solution ID)	1	1	1	Optional FC -- used to specify Solution specific config... Need econfig support
	Pod Type	Compute Server Type 2 Specify Code	1	1	1	Optional FC -- used to specify node type/ config ... Need econfig support
	Processor	EP05 10W P8 2.860/3.492GHZ PROC 192/247W (DELLOVO)	2	2	2	
	Memory	EM58 128GB (4X32GB) IS RDIMMS (1.2V) 1600MHZ 4GBIT DDR4 DRAM	8	8	8	
	Disks	ES6A 2TB 7200 RPM 512E SATA HDD IN MODIFIED GEN3 CARRIER (SFF)	2	2	2	OS Boot Disk
	NVmE PCI		0	0	0	
	GPU	EC4F COMPUTE INTENSIVE ACCELERATOR, GPU, Slot C1/4/7/9	1	1	1	

S822C Server (Base config) -- Required Inter-connect

		Description	Default	Min	Max	Comments
	Network	ENOV QUAD E'NET (2X1 + 2X10 10Gb) PCIe Gen 2 X8/SHORT LP-Twinax	1	1	1	(Required) For High Speed Network
	Adapter		0	0	1	optional second type of Network adapter
	Power	6665 PWR CBL DRWR TO IBM PDU, 2.8m (9.2ft), 250V/10A, IEC320/C13,	2	2	2	Select Proper Line cord if not connected to IBM PDU
	Cables	CAT5E SWITCH CABLE, BLUE (2M)	1	1	1	(Required) For OS 1G Network (Recommended 2M length min)
		CAT5E SWITCH CABLE, GREEN (2M)	1	1	1	(Required) For IPMI 1G Network (Recommended 2M length min)
		EKC1 3M- Active Twinax cable	2	2	2	(Required) For High Speed Network (Recommended 2M length min)
		No rack integration	1	1	1	
		Country specific FCs (Keyboards, language groups) are selectable	1	1	1	User select
		Shipping and Handling	1	1	1	User select

	General Rules			Comments				
	Note (1)			e-config to present to the customer the {list of MTMs and FCs below} defining the default, minimum and maximum configuration. The rules listed below for the HPC Cluster solution supersede the current announce material rules for the stand-alone server.				
	Note (2)			* Top and Bottom 1U of rack must always be open (FCs ER1T & ER1B). * For optional switches, priority order starting as follows: 1) 7120-64C 8828-E36 2) 8831-S48 8831-NF2 3) 8831-NF2 8831-F36 4) 8831-F36 7120-64C 5) 8828-E36 8831-S48 6) 7120-48E * If no switches are ordered, leave these locations 41, 40, 39, & 38 reserved in first rack (4651) * If 8831-NF2 or 8828-E36 are ordered, 1U above and 1U below cannot be occupied by anyone of the other four switches (F36, 64C, S48, 48E), and will need to be left open. 8831-NF2 or 8828-E36 can be placed next to another non-switch MTM. Examples: 2xE36, or 2xNF2, or 1xE36 + 1xNF2, or E36 + 5146-GSx, or NF2 + 8247-22L side by side is OK, but E36 + 48E is not allowed, need a gap between switches.				
	Note (3)			Config #1: Lenovo 1G SW + Lenovo 10G switch, Config #2: Lenovo 1G SW + Mellanox 10G SW, Config #3: Lenovo 1G + Mellanox IB Switch, Config #4: Mellanox 1G + Mellanox 10G				
	Note (4)							
	Note (5)							

				Config #1	Per Rack		
	MT	Model	FC	Description		Min	Max	Comments

	MT	Model	FC	Description	Config #1	Min	Max	Comments
1G Mgmt (Based)	7120	48E		Lenovo G8052 1GbE Switch (48x 10GbE ports + 4x 10GbE ports)	1	1	1	* Qty 1 required per rack. An additional switch is needed, beyond the qty 1 per rack.
			1118	CAT5E SWITCH CABLE, 3M, YELLOW	1	1	1	
			6577	PWR CBL, DRWR TO IBM PDU, MFG SEL LENGTH, 200-240V/10A, IEC320/C13, IEC320/C14	2	2	2	
				Include all existing FCs; except FCs 0010, 0011, 0712, 0714, EGSx, EHKx, EHLA, 4649 (Rack Integration Services), and 0456 (Customer Specified Placement); do not include these FCs.				Note: FCs ESC0 & ESC1 are not announced and not applicable for switches
1G Mgmt (Base)	8831	S52		Mellanox 1G Switch	0	0	0	* Qty 1 required per rack. An additional switch is needed, beyond the qty 1 per rack.
			1118	CAT5E SWITCH CABLE, 3M, YELLOW	1	1		
			465x	Rack Indicator - Rack #x	1	1		FC 4651 min qty = 1. Use 4652 to 4666 min qty =1 for additional racks
			6577	PWR CBL, DRWR TO IBM PDU, MFG SEL LENGTH, 200-240V/10A, IEC320/C13, IEC320/C14	2	2	2	
				Include all existing FCs; except FCs 0010, 0011, 0712, 0714, EGSx, EHKx, EHLA, 4649 (Rack Integration Services), and 0456 (Customer Specified Placement); do not include these FCs.				Note: FCs ESC0 & ESC1 are not announced and not applicable for switches
10G Data Network	7120	64C		Lenovo G8264 ..10GB Switch (48x10G + 4x40G)	1	1*	1	
			Solution ID	Solution Specify Code (for grouping only)	1	1	1	
			Pod Type					
			1118	CAT5E SWITCH CABLE, 3M, YELLOW	1	1	1	
			EB28	IBM SFP+ SR TRANSCEIVER	1	1	1	
				Include all existing FCs; except FC 4649, FC 0456 (Customer Specified Placement) and ESC1 (Shipping & Handling), do not include these FCs	2	2	2	
10G Data Network	8831	S48		Mellanox 1410 ..10GB Switch (48x10G + 12x40G)	0	0	0	
			EDT6	1U AIR DUCT FOR S48	1	1	1	
				Include all existing FCs; except FC 4649, FC 0456 (Customer Specified Placement) and ESC1 (Shipping & Handling), do not include these FCs	1	1	1	
IB Data Network	8828	E36		EDR InfiniBand Switch	0	0	0	* Qty 1 required per rack. An additional switch is needed, beyond the qty 1 per rack.
			Solution ID	Solution Specify Code (for grouping only)	1	1	1	Need to announce FC on all MTMs in HPC Cluster
			Pod Type					
			465x	Rack Indicator - Rack #x	1	1	1	FC 4651 min qty = 1. Use 4652 to 4666 min qty =1 for additional racks
			EDT4	1U AIR DUCT	1	1	1	
				Include all existing FCs; except FCs 0010, 0011, 0712, 0714, EGSx, EHKx, EHLA, 4649 (Rack Integration Services), and 0456 (Customer Specified Placement); do not include these FCs.				Note: FCs ESC0 & ESC1 are not announced & not applicable for switches. Power cable MFI BOMs and rail kit MFI BOMs are included with the 8828 & 8831 switches

Depth Supplier IBM MTM Comments:
1) 24.75"(D) --Mellanox 1710 8831-NF2 - protrudes 50mm from the rear EIA surface; High Speed Eth
2) 27" (D) --Mellanox SB7700 8828-E36 - greatest depth ; Infiniband
3) 24.7" (D) --Mellanox SX6036 8831-F36 - 2nd greatest remaining depth; Infiniband
4) 19.0" (D) --Lenovo G8264 7120-64C - 3rd greatest remaining depth; High Speed Eth
5) 17.5" (D) --Lenovo G8052 7210-48E - 4th greatest remaining depth; Mgmt Network
6) 16.8" (D) --Mellanox 1410 8831-S48 - 5th greatest remaining depth; High Speed Eth <new assembly>

Suggested Racking Rules

Leave **U42** open for accessibility (FC ER1T).

Reserve **U37-U41** for *rack-to-rack* network switches to enable multi-rack expansion. This will reduce the maximum number of data servers containable by the first rack.

Ensure that any component inserted above **32U** are approved by your compliance team to prevent rack tipping.

Reserve **U24-U26** for *In-rack* (leaf) network switches. Multiple switches enable …
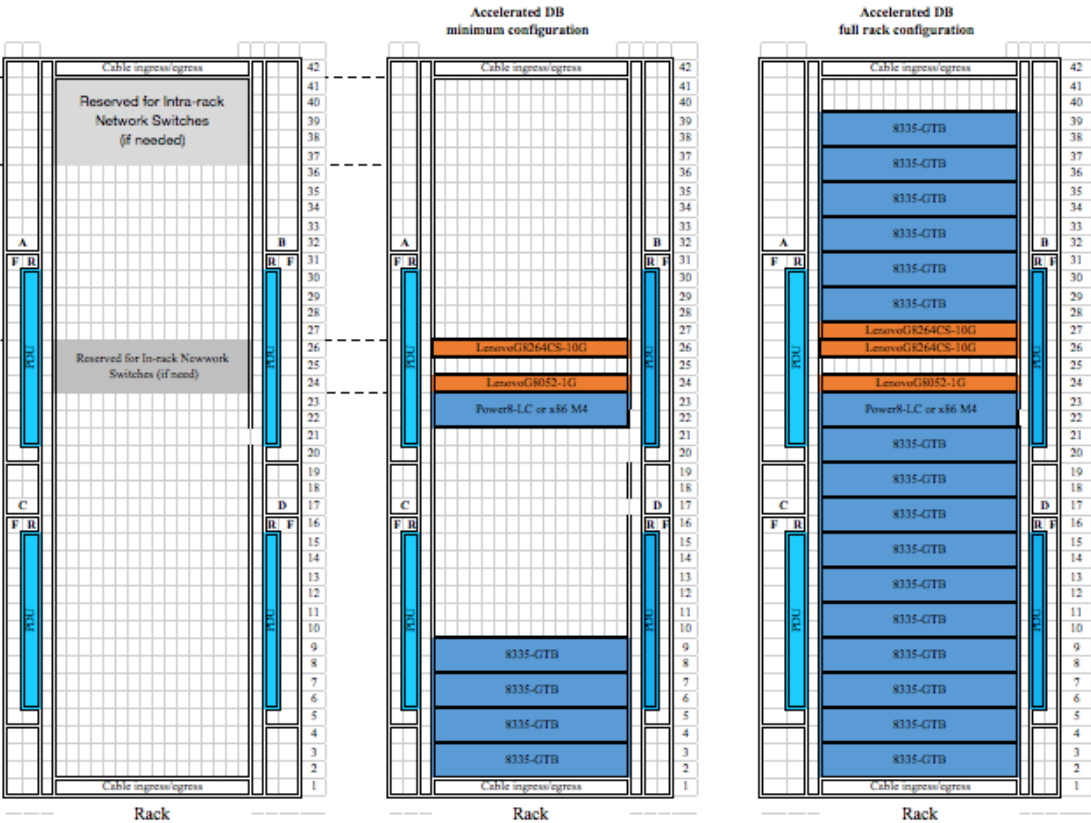
Reserved for TF4 Display if selected

General rules:
- Place the 1st and heaviest components at **U2** and work up.
- Keep common units (same MTMs, building blocks) together
- Follow ntive MTM unique racking requirement.

Solution-specific rules:
- Place seeding node / license node at **U2**
- Place and cable between 4-18 2U servers per rack

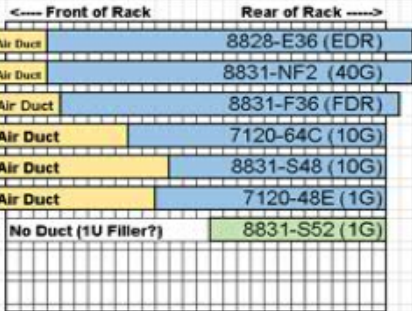Leave **U1** open for accessibility (FC ER1B)

Rack (blank configuration)

Cable ingress/egress

Reserved for Intra-rack Network Switches (if needed)

Reserved for In-rack Network Switches (if need)

Cable ingress/egress

Rack

Accelerated DB minimum configuration

Cable ingress/egress

U	Component
26	LenovoG8264CS-10G
24	LenovoG8052-1G
23-22	Power8-LC or x86 M4
9-8	8335-GTB
7-6	8335-GTB
5-4	8335-GTB
3-2	8335-GTB

Cable ingress/egress

Rack

Accelerated DB full rack configuration

Cable ingress/egress

U	Component
39-38	8335-GTB
37-36	8335-GTB
35-34	8335-GTB
33-32	8335-GTB
31-30	8335-GTB
29-28	8335-GTB
27	LenovoG8264CS-10G
26	LenovoG8264CS-10G
24	LenovoG8052-1G
23-22	Power8-LC or x86 M4
21-20	8335-GTB
19-18	8335-GTB
17-16	8335-GTB
15-14	8335-GTB
13-12	8335-GTB
11-10	8335-GTB
9-8	8335-GTB
7-6	8335-GTB
5-4	8335-GTB
3-2	8335-GTB

Cable ingress/egress

Rack

SolutionRacking Specifics:

a)

b)

c)

Reference

Switch Racking Profile Diagram (2016 09 20 - JTS)

Rack Side View

Side view

Front of Rack — Back of Rack

- 8828-E36 - EDR
- 8831-NF2 – 40G
- 8831-F36 - FDR
- 7120-64C – 10G
- 8831-S48 – 10G
- 7120-48E – 1G

Rack Side View

<---- Front of Rack   Rear of Rack ----->

	Component
Air Duct	8828-E36 (EDR)
Air Duct	8831-NF2 (40G)
Air Duct	8831-F36 (FDR)
Air Duct	7120-64C (10G)
Air Duct	8831-S48 (10G)
Air Duct	7120-48E (1G)
No Duct (1U Filler?)	8831-S52 (1G)

Switch Description	Depth
Mellanox SB7700	27"
Mellanox 1710	27"
Mellanox SX6036	24.7"
Lenovo G8264	19"
Mellanox 1410	16.8"
Lenovo G8052	17.5"
Mellanox AS4610-54T	13.8"