Splitter (#ESR0) Common Chapter Build Instructions

Table A-1: Document Version

Version	Version Date	Author	UCD Identifier
0.8	4/06/23	Jesús Villarreal	UCD_Splitter

Figure A-1 ***Splitter***

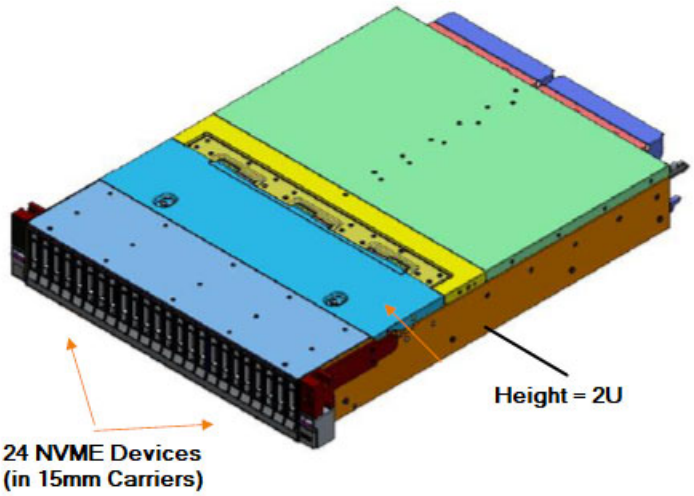


Table A-2: MTM Details

MTM	Internal Name	Published Name	Announce Date	GA Date
N/A	Splitter	Splitter	~~November 8, 2022~~ ~~October 11, 2022~~ ~~April 25, 2023~~ April 11, 2023	~~November 18, 2022~~ ~~December 09, 2022~~ ~~May 5, 2023~~ May 19, 2023

Table A-3: Journal of Changes

Date	Version	Description of Changes	Author
4/06/23	0.8	4/11/23 1. per GPEPR-5605, Moved GA date of Splitter (#ESR0) from 5/5/23 to 5/19/23. This includes associated FCs: #ECLR, #ECLS, #ECLX, #ECLY, #ECLZ, #ECMS, #EHR3 and #ESM1 5/9/23 1. per GPEPR-5626, added rule to Default =#ECLS (copper cable) for all P10 systems.	Jesús Villarreal

11/10/22	0.7	per GPEPR-5135, Moved announce date of Splitter (#ESR0) from 4/25/23 to 4/11/23. The GA remains as 5/5/23. This includes associated FCs: #ECLR, #ECLS, #ECLX, #ECLY, #ECLZ, #ECMS, #EHR3 and #ESM1	Jesús Villarreal
9/15/22	0.6	per GPEPR-4897, Moved announce date of Splitter (#ESR0) to 4/25/23 and GA 5/5/23. This includes associated FCs: #ECLR, #ECLS, #ECLX, #ECLY, #ECLZ, #ECMS, #EHR3 and #ESM1	Jesús Villarreal
7/14/22	0.5	per GPEPR-4654, Moved announce date of Splitter to 10/11/22 and GA 12/9/22. per GPEPR-4503, Added #ES3H (800GB Seahawk3, AIX/Linux) for 10/11/22 Announce	Jesús Villarreal
5/12/22	0.4	per GPEPR-4406, Changed Kingfisher support in Splitter from 11/08/22 to TBD	Jesús Villarreal
4/21/22	0.3	per GPEPR-4157, updated length of #ECLS (copper cable pair) from 4.0M to 3.0M.	Jesús Villarreal
12/5/21	0.2	per GPEPR-3645 , changed definition of #ESM1 to include ESM plus 1xplate, Added #ESM2 (ESM with 2 plates) and #ECMD planned for GA2. Updated Figures A-2, A-4, A-5, A-6, A-7 and A-8 to indicate change in #ESM1. Updated Figure a-8 to indicate #ESM2.	Jesús Villarreal
11/19/21	0.1	Initial Version	Jesús Villarreal

A.1 Product Description

The Splitter NVMe SAS storage enclosure is a follow-on product to the Slider drawer for Power Series applications. Unlike Slider that supported HDD (#ESLL) and HDD/SSD (#ESLS) devices , Splitter will support only U.2 NVMe SSD devices in Gen3 carriers.

Table A-4: Announcement plan

Details
Splitter will be a feature code (#ESR0) of the supported servers and orderable with servers just like Slider and Homerun. Unlike the two versions of Slider (Slider-12, Slider-24) there will only be one NVMe version of Splitter that will consist of the following: • One rackable 2U I/O drawer that includes two ESMs and twenty-four NVMe bays for support of up to twenty-four U.2 NVME drives in 15mm Gen3 carriers. The 15mm carriers can accommodate either 7mm or 15mm NVME devices. GA1 of Splitter will support only 15mm devices. GA1 is currently planned for ~~November~~ ~~December 2022~~ May 2023. • Unlike Slider that supported GEN2-S carriers, Splitter will only support Gen3-Carrier. These will be the same Gen3-carriers supported on the CECs. The current plan is to alternate placement of the ordered NVMes between the CECs and the Splitters. • ~~Each ESM in the Splitter base can support up to two plates (#ESM1). Each #ESM1 plate connects to a cable card installed in the CEC using a pair of optical cables or copper cables. The cable cards are called Bear-river (Denali or 2U Rainier) or Bearlake (for Everest and 4U Rainier). In GA1 only one plate (#ESM1) per ESM will be supported~~. • Every Splitter will require 2x ESMs. The ESM type (#ESM1) planned for announce in GA1 will contain a single plate with two external ports. The two ports will connect to single cable card installed in the CECs using a pair of optical cables or copper cables. The cable cards are called Bear-river (for 2U CECs like Denali or 2U Rainier) or Bearlake (for 4U CECs like Everest and 4U rainier). The plan is to also announce an ESM type (#ESM2) with two plates but those announce dates are still tbd and will not be in GA1.
In ~~November~~ ~~October 2022~~ April 2023, Splitter will only announce on the following Power 10 MTMs: : • 9080-HEX (Denali) • 9043-MRX (Everest) • 9105-22A/22B (Rainier-2U) • 9105-41B/42A (Rainier-4U) • 9786-22H/42H (Rainier-Sap Hana)

Table A-5: Splitter Key Details

Number	Details
1	2U Rack Mounted Storage Enclosure ~~with 2x Electronic Service Modules (ESM)~~ with 2x base power supplies and 24x U.2 NVMe drive bays.

Number	Details
2	2x Electronic Services Modules (#ESM1 or #ESM2) always required.
3	GA1 will announce an ESM (#ESM1) ~~for installation in ESM slots~~ that will contain a single plate with two ports.
4	GA2 will announce an ESM (#ESM2) that will contain two plates with two ports each. GA2 announce is TBD
5	Each #ESM1 requires an identical pair of Gen4 CXP optical or copper cables.
6	Each #ESM2 requires an 2x identical pair of Gen4 CXP optical or copper cables
7	Bearriver or Bearlake (cable cards) installed in the host server connect to the ESMs ~~plates~~ (#ESM1 or #ESM2) in Splitter.
8	All power supplies, NVMe drives, and ESMs plug directly into the Splitter midplane. The power cables plug into the C14 connectors in the back of the Splitter. The signal cables from the cable cards plug into ports in the ESM plates also in the back of the Splitter enclosure.
9	Each Splitter contains two redundant AC power supplies. The AC power supplies are part of the base and not feature coded.
10	DC power is not supported.

Table A-6: Splitter Components

Feature/Component	Splitter Description
System Chassis	2 EIA 19” rack mount
Chassis Feature Code	#ESR0
Total NVMe bays / Front panel accessible	24x15mm NVMe Bays with Gen3 Carriers. The same Gen3 carriers will be supported in the P10 CECs.
AC Power Supply Qty / type	Two (2) / AC Power 90-264VAC. The Power supplies are not feature coded.
Modes of Operation	
Mode 1 Single Path (#ECMS) (This is the only mode supported by GA1)	Both Bear Rivers/Bearlakes are installed in the same CEC. Each ESM drives on set of 12 NVMe devices through the Splitter midplane. This mode is supported #ESM1 installed.
Mode 1 Dual Path (#ECMD) (Planned support in GA2)	Both Bear Rivers/Bearlakes are installed in the same CEC. Each ESM drives all 24 drives through the Splitter midplane. This mode is supported with #ESM1 installed. **This mode will not be supported in the ~~November~~ ~~October 2022~~ April 2023 announce.**
Mode 2 Dual Path (FC = TBD) ((planned support in GA2	This is similar to Mode 1 Dual Path but this requires ESMs with two plates (#ESM2 ~~4x#ESM1 per #ESR0~~). **This mode will not be supported in the ~~November~~ ~~October 2022~~ April 2023 announce.**

Table A-7: General Rules for Splitter Components

Details
The Splitter NVMe enclosure will use the same Gen3 carrier as P10 servers. Splitter does not support Gen2-S carriers.
Splitter is available in the following three feature coded factory set configurations (Modes): • Mode 1 Single Path (GA1) • Mode 1 Dual Path (GA2) • Mode 2 Dual Path (GA is tbd)

A.2 OS Support

Table A-8: OS Support

OS	Comments
Splitter will be supported with AIX/LINUX, IBM i and VIOS.	1
Notes **Details**	

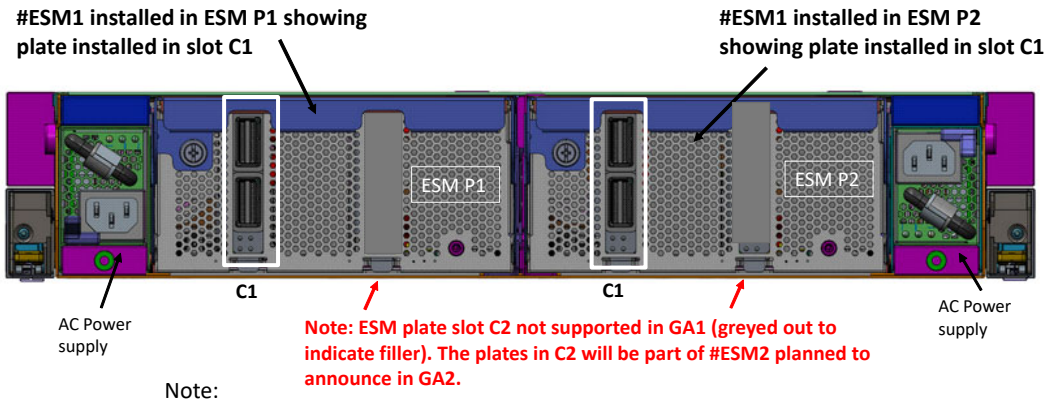
	OS	Comments
1	The Feature matrix will list the latest OS levels supported. This is TBD for now.	

Table A-9: General OS Rules

Rules	Details
1	TBD

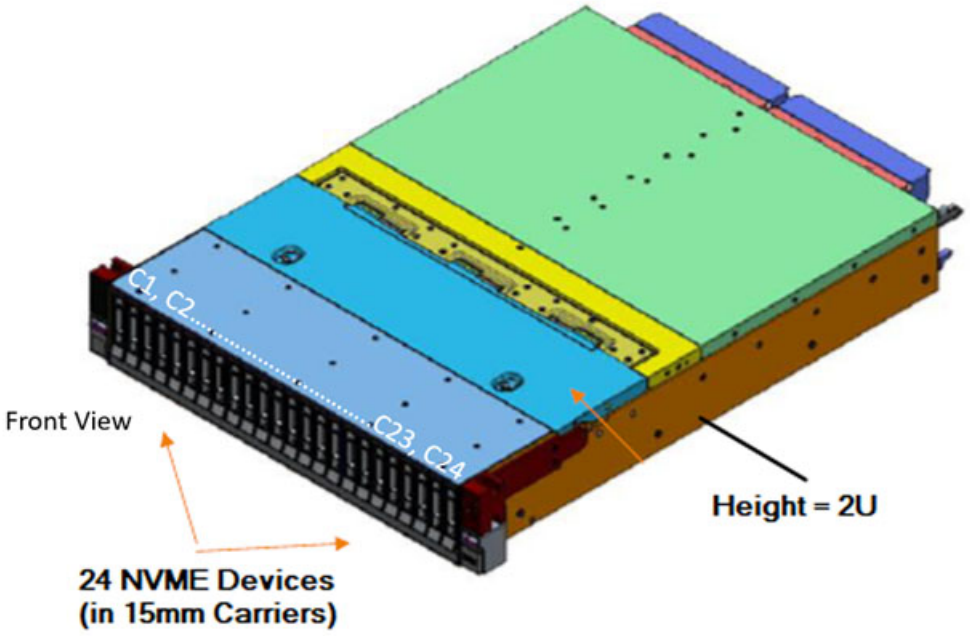
A.3 Diagrams

Figure A-2 ***Splitter -- Rear View***



Note:
#ESM1 = ESM with single plate (2xports) planned for GA1 is shown.
#ESM2 = ESM with two plates (4x ports) is planned for GA2 (tbd date)

Figure A-3 ***Splitter - Front View***



A.4 Order Content

This section will include all the feature codes associated with Splitter.

Table A-10: Order Content Summary

Details
The Splitter base BOM includes 1. Splitter Chassis 2. Two (2) Power Supplies 3. Twenty-four (24) NVMe 15mm SSD filler panels
Each Splitter (#ESR0) ordered must include: 1. 0 to 24 U.2 NVMe devices from Section A.4.2 2. Two (2) line cords. See section A.5 for selectable linecords and defaults. 3. One (1) Configuration Mode Specify is required with every Splitter. GA1 requires #ECMS. See Table A-22.

A.4.1 Splitter Chassis Features, Config Indicator Codes, and Misc Specifies

Table A-11: Splitter Chassis Features, Config Indicator Codes, and Misc Specifies

TYPE	FC	Description	Note
Splitter Chassis	#ESR0	GEN4 JBOF 2U DASD DRWR W/ 24 U.2 NVMe SSD BAYS AND SUPPORT FOR TWO ESM MODULES (SPLITTER)	
ESM with 1 plate	#ESM1	ESM MODULE W/ ONE PCIe4 x16 2-PORT HOST I/F FOR #ESR0 CONNECTION TO BEARRIVER/BEARLAKE	
ESM with 2 plate	#ESM2	ESM MODULE W/ TWO PCIe4 x16 2-PORT HOST I/F FOR #ESR0 CONNECTION TO BEARRIVER/BEARLAKE	2

Misc Specify Codes			
Customer Specify	#0456	CUSTOMER SPECIFIED PLACEMENT	
Configuration Mode	#ECMS	Mode1 Single Path Configuration Mode	
Configuration Mode	#ECMD	Mode1 Single Path Configuration Mode	2
Load Source	#EHR3	REMOTE LOAD SOURCE IN #ESR0 (SPLITTER)	1
Load Source (IBM i)	#ELYA	#ES3A LOAD SOURCE SPECIFY, 800GB 4K NVME U.2 15MM SSD PCIe4 ENTERPRISE CLASS (SEAHAWK3 IBMi)	
Load Source (IBM i)	#ELYC	#ES3C LOAD SOURCE SPECIFY, 1.6TB 4K NVME U.2 15MM SSD PCIe4 ENTERPRISE CLASS (SEAHAWK3 IBMi)	
Load Source (IBM i)	#ELYE	#ES3E LOAD SOURCE SPECIFY, 3.2TB 4K NVME U.2 15MM SSD PCIe4 ENTERPRISE CLASS (SEAHAWK3 IBMi)	
Load Source (IBM i)	#ELYG	#ES3G LOAD SOURCE SPECIFY, 6.4TB 4K NVME U.2 15MM SSD PCIe4 ENTERPRISE CLASS (SEAHAWK3 IBMi)	
Load Source (IBM i)	#EKLW	#EKF2 LOAD SOURCE SPECIFY, 800GB 4K NVME U.2 15MM SSD PCIe4 ENTERPRISE CLASS (KINGFISHER IBMi)	3
Load Source (IBM i)	#EKLX	#EKF4 LOAD SOURCE SPECIFY, 1.6TB 4K NVME U.2 15MM SSD PCIe4 ENTERPRISE CLASS (KINGFISHER IBMi)	3
Load Source (IBM i)	#EKLY	#EKF6 LOAD SOURCE SPECIFY, 3.2TB 4K NVME U.2 15MM SSD PCIe4 ENTERPRISE CLASS (KINGFISHER IBMi)	3
Load Source (IBM i)	#EKLZ	#EKF8 LOAD SOURCE SPECIFY, 6.4TB 4K NVME U.2 15MM SSD PCIe4 ENTERPRISE CLASS (KINGFISHER IBMi)	3

Notes	Details
1	#EHR3 indicates that load source will be located in a Splitter drawer.
2	#ESM2 and #ECMD announce is planned for GA2 (announce = TBD)

Table A-12: General Rules

Rules	Details
1	Configuration Mode feature code (#ECMS) is required with every Splitter.
2	Multiple Splitter drawers with mixed Modes are supported?
3	Kingfisher remains as not supported in Splitter on ~~11/08/22 10/11/22 4/25/23~~ 4/11/23 for now. The support date is TBD and will be documented in it's own pcr..

A.4.2 NVMe Drives supported in Splitter

The NVME bays accept only U.2 NVMe 15mm SSDs contained in Gen3 carriers.

Table A-13: SAS SFF DASD Drives for Splitter

FC	Description	Notes
#ES3H	800GB 4K NVME U.2 15MM 18W SSD PCIe4 ENTERPRISE CLASS (SEAHAWK3 AIX/LINUX)	2
#ES3A	800GB 4K NVME U.2 15MM 18W SSD PCIe4 ENTERPRISE CLASS (SEAHAWK3 IBMi)	1
#ES3B	1.6TB 4K NVME U.2 15MM 18W SSD PCIe4 ENTERPRISE CLASS (SEAHAWK3 AIX/LINUX)	2
#ES3C	1.6TB 4K NVME U.2 15MM 18W SSD PCIe4 ENTERPRISE CLASS (SEAHAWK3 IBMi)	1

#ES3D	3.2TB 4K NVME U.2 15MM 18W SSD PCIe4 ENTERPRISE CLASS (SEAHAWK3 AIX/LINUX)	2
#ES3E	3.2TB 4K NVME U.2 15MM 18W SSD PCIe4 ENTERPRISE CLASS (SEAHAWK3 IBMi)	1
#ES3F	6.4TB 4K NVME U.2 15MM 18W SSD PCIe4 ENTERPRISE CLASS (SEAHAWK3 AIX/LINUX)	2
#ES3G	6.4TB 4K NVME U.2 15MM 18W SSD PCIe4 ENTERPRISE CLASS (SEAHAWK3 IBMi)	1
#EKF2	800GB 4K NVME U.2 15MM 18W SSD PCIe4 ENTERPRISE CLASS (KINGFISHER IBMi)	1,4
#EKF3	1.6TB 4K NVME U.2 15MM 18W SSD PCIe4 ENTERPRISE CLASS (KINGFISHER AIX/LINUX)	2,4
#EKF4	1.6TB 4K NVME U.2 15MM 18W SSD PCIe4 ENTERPRISE CLASS (KINGFISHER IBMi)	1,4
#EKF5	3.2TB 4K NVME U.2 15MM 18W SSD PCIe4 ENTERPRISE CLASS (KINGFISHER AIX/LINUX)	2,4
#EKF6	3.2TB 4K NVME U.2 15MM 18W SSD PCIe4 ENTERPRISE CLASS (KINGFISHER IBMi)	1,4
#EKF7	6.4TB 4K NVME U.2 15MM 18W SSD PCIe4 ENTERPRISE CLASS (KINGFISHER AIX/LINUX)	2,4
#EKF8	6.4TB 4K NVME U.2 15MM 18W SSD PCIe4 ENTERPRISE CLASS (KINGFISHER IBMi)	1,4

Notes	Details
1	For use with IBM i partitions. Not supported on MTMs that do not support IBM i
2	For use with AIX/Linux/VIOS partitions

Table A-14: General Rules

Rules	Details
1	#ESR0 with 0 NVMe drives are allowed.
2	Place larger capacity NVMe drives first.
3	If no CSP on the P10 system order, alternate placement between CEC NVMe bays and splitter drawers. The placement on the splitter drawers (#ESR0) will be in the following sequence: C1, C13, C2, C14, C3, C15, C4, C16, C5, C17, C6, C18, C7, C19, C8, C20, C9, C21, C10, C22, C11, C23, C12, C24. If multiple Splitters are on the order fill all C1 slots first on all the splitters then C13 etc.
4	Kingfisher is not supported in Splitter on ~~11/08/22~~ 10/11/22. The new support date is TBD.

A.4.3 CXP Cables

Table A-15: SAS Cables

Cable Type	Function
Copper Cable	This cable (#ECLS) is used to connect a cable card (#EJ24 or #EJ2A) installed in the host server to a Splitter expansion drawer. Each #ECLS contains a pair of identical ~~4M~~ 3M long copper cables.
Optical Cable	This cable (#ECLR, #ECLX, #ECLY, #ECLZ) is used to connect a cable card (#EJ24 or #EJ2A) installed in the host server to a Splitter expansion drawer. Each optical cable feature code (#ECLR, #ECLX, #ECLY, #ECLZ) contains an identical pair of optical cables of the same length.Their respective lengths are (2M, 3M, 10M and 20M).

A.4.4 CXP Data Cable Features

Table A-16: SAS Data Cable Features

Feature Code	Description	Length	Cable Type	Notes
CXP Copper Cable Pair				

Feature Code	Description	Length	Cable Type	Notes
#ECLS	~~4.0M~~ 3.0M CXP GEN4 16X COPPER CABLE PAIR (BEARRIVER, BEARLAKE TO SPLITTER/F4 MEX FOM)	~~4.0M~~ 3.0M (~~13ft~~ 9.8ft)	16X Copper Cable	
CXP Optical Cable Pairs				
#ECLR	2.0M CXP GEN4 16X ACTIVE OPTICAL CABLE PAIR (BEARRIVER, BEARLAKE TO SPLITTER/F4 MEX FOM)	2 m (6.5 ft)	16X Active Optical Cable	
#ECLX	3.0M CXP GEN4 16X ACTIVE OPTICAL CABLE PAIR (BEARRIVER, BEARLAKE TO SPLITTER/F4 MEX FOM)	3 m (9.8 ft)	16X Active Optical Cable	
#ECLY	10.0M CXP GEN4 16X ACTIVE OPTICAL CABLE PAIR (BEARRIVER, BEARLAKE TO SPLITTER/F4 MEX FOM)	10 m (33 ft)	16X Active Optical Cable	1
#ECLZ	20.0M CXP GEN4 16X ACTIVE OPTICAL CABLE PAIR (BEARRIVER, BEARLAKE TO SPLITTER/F4 MEX FOM)	20 m (66 ft)	16X Active Optical Cable	1

Notes	Details
1	CXP cables longer than 3M will not be installed in Manufacturing, but will be placed in the ship group, as they are expected to be used to connect NVMe to cable cards (Bearriver/Bearlakes) in other racks.

Table A-17: General Rules

Rules	Details
1	Every #ESR0 requires an identical pair of #ECLR, #ECLX, #ECLY or # ECLZ feature codes when ordered with #ESM1.

A.5 Line Cords

Table A-18: Line Cords

FC	Description	Notes
#6458	Linecord, Drawer to IBM PDU, 14 ft, 200-240V/10a, IEC320/C13, IEC320/C14	
#6469	Linecord, Drawer to OEM PDU, 14 ft, 200-240V/15a, IEC320/C13, PT#5	
#6472	Linecord, to Wall/OEM PDU, 9 ft, 200-240v/10a, IEC320/C13, PT#18	
#6473	Linecord, to Wall/OEM PDU, 9 ft, 200-240v/10a, IEC320/C13, PT#19	
#6474	Linecord, to Wall/OEM PDU, 9 ft, 200-240v/10a, IEC320/C13, PT#23	
#6475	Linecord, to Wall/OEM PDU, 9 ft, 200-240v/10a, IEC320/C13, PT#32	
#6476	Linecord, to Wall/OEM PDU, 9 ft, 200-240v/10a, IEC320/C13, PT#24	
#6477	Linecord, to Wall/OEM PDU, 9 ft, 200-240v/10a, IEC320/C13, PT#22	
#6478	Linecord, to Wall/OEM PDU, 9 ft, 200-240v/10a, IEC320/C13, PT#25	
#6488	Linecord, to Wall/OEM PDU, 9 ft, 100-127v/15a or 200-240v/10a, IEC320/C13, PT#2	
#6493	Linecord, to Wall/OEM PDU, 9 ft, 200-240v/10a, IEC320/C13, PT#62	
#6494	Linecord, to Wall/OEM PDU, 9 ft, 200-240v/10a, IEC320/C13, PT#69	
#6496	Linecord, to Wall/OEM PDU, 9 ft, 200-240v/10a, IEC320/C13, PT#66	

#6659	Linecord, to Wall/OEM PDU, 9 ft, 200-240V/10a, IEC320/C13, PT#76 (TAIWAN PT#5)	
#6671	Linecord, Drawer to IBM PDU, 9 ft, 200-240V/10a, IEC320/C13, IEC320/C14	
#6672	Linecord, Drawer to IBM PDU, 6.5ft, 200-240V/10a, IEC320/C13, IEC320/C14	
#6680	Linecord, to Wall/OEM PDU, 9 ft, 200-240V/10a, IEC320/C13, PT#6 insulated	
#6577	PWR CBL, DRWR TO IBM PDU, MFG SEL LENGTH, 200-240V/10A, IEC320/C13, IEC320/C14	
#END3	PWR CBL, DRWR TO IBM PDU, MFG SEL LENGTH, 200-240V/10A, IEC320/C13, IEC320/C14	1
#ELC5	PWR CBL, DRWR TO IBM PDU, MFG SEL LENGTH, 250V/10A, IEC320/C13, IEC320/C20	
#END7	PWR CBL, DRWR TO IBM PDU, MFG SEL LENGTH, 250V/10A, IEC320/C13, IEC320/C20	1
#6665	PWR CBL DRWR TO IBM PDU, 10', 200-240V/10A, IEC320/C13, IEC320/C20, (39Y7938)	
#END5	PWR CBL DRWR TO IBM PDU, 10', 200-240V/10A, IEC320/C13, IEC320/C20, (39Y7938)	1
#6669	PWR CBL, DRWR TO OEM PDU, 14', 200-240V/15A, IEC320/C13, PT#57	
#6497	LINECORD, TO WALL, 6', 200-240V/10A, IEC320/C13, PT#10	
Notes	**Details**	
1	#END3, #END7, #END5 are only supported in India	
2	Defaults #6577 if 4651-4666 is ordered else default = #6458.	

Table A-19: General Rules

Rules	Details
1	Every #ESR0 requires 2x identical linecords or power cables from table A-18.
2	Default #6577 if 4651-4666 is ordered else default = #6458.

A.6 Splitter Configurations

Table A-20: Splitter Configuration Details

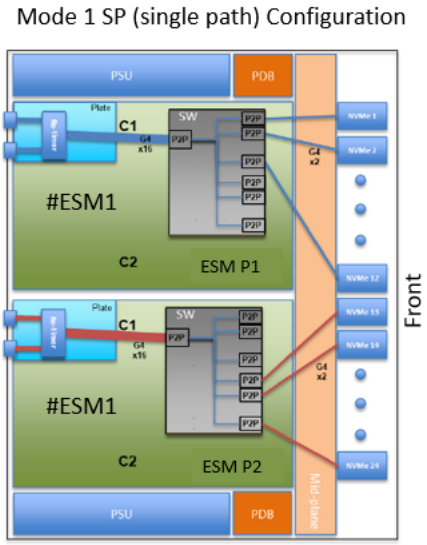
Details
The Splitter NVMe enclosure is connected to Power Series CECs through cable cards called Bearriver (#EJ24)or Bearlake (#EJ2A).
In GA1, Both cable cards (Bearriver/Bearlake) must be installed in the same CEC.
BEARRIVER and BEARLAKE cards are connected to the ESM plates of #ESM1 installed in the Splitter. ~~ESMs.~~
ESMs can support up to 2 plates each. In GA1, only 1 plate per ESM (#ESM1) is allowed. 2 plates per ESM (#ESM2) will be supported in GA2.
CXP2 copper or optical cable pairs connect the Bearriver/Bearlake cable cards ~~to the ESM plates~~ to #ESM1 or #ESM2
There are three mode setting supported in Splitter: Mode1 Single Path (#ECMS), Mode 1 Dual Path (#ECMD) and Mode 2 Dual Path (TBD). GA1 will only support Mode1 Single Path (#ECMS).
Unlike Slider, Spitter does not requires Y cables, X cables, etc. The mode setting are set logically through Phype.

Table A-21: Splitter Configuration Rules

Rule	Description
1	Every #ESR0 requires 2x#ESM1or 2x#ESM2
2	Every #ESR0 requires 2x #EJ24 or 2x #EJ2A
3	Every #EJ24 and every #EJ2A requires one of the following: #ECLR, #ECLS, #ECLX, #ECLY, #ECLZ. Default: #ECLS
4	Every #ESR0 must have a mode indicator: #ECMS or #ECMD. #ECMD is not supported in GA1. #ECMS = Default.

A.6.1 Splitter Mode 1 Single Path

Figure A-4 ***Splitter - Mode 1 Single Path (#ECMS)Configuration***



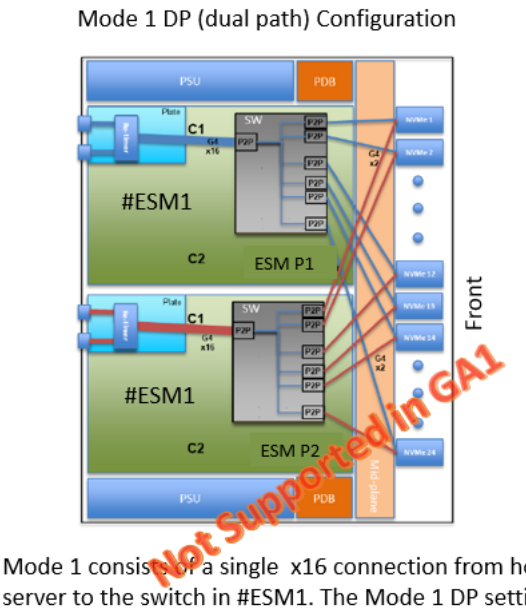
Mode 1 consists of a single x16 connection from host server to the switch in #ESM1. The Mode 1 SP setting enables a single path to all 24 NVME device from the host server as shown above.

Table A-22: Mode 1 Details

Details
A Mode 1 single path Splitter (#ECMS) consists of a single x16 connection from the host server through each of the two ESMs (2x#ESM1) to all 24 NVMe devices. The switch in each of the ESMs is configured to logically drive only 12 of the 24 NVMe drives. This enables a single path to each of the 24 NVMe devices from the host as shown in Figure A-5
'Normal mode' refers to Mode 1 which is the default mode in Splitter.

A.6.2 Splitter Mode 1 Dual Path (NOT SUPPORTED IN GA1)

Figure A-5 ***Splitter - Mode 1 Dual Path (#ECMD)***



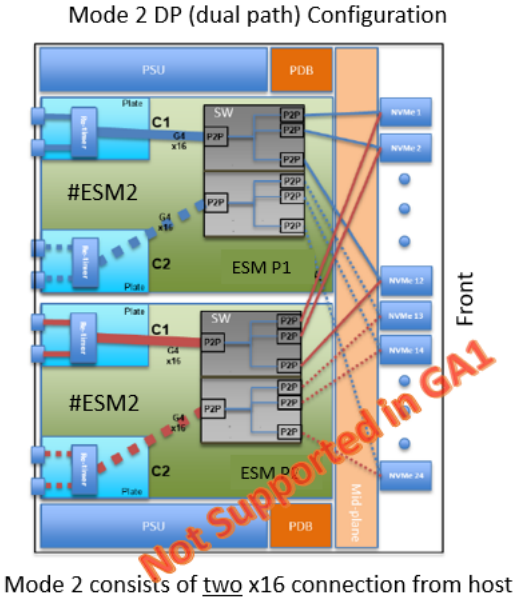
Mode 1 consists of a single x16 connection from host server to the switch in #ESM1. The Mode 1 DP setting enables a dual path to all 24 NVME device from the host server as shown above.

Table A-23: Splitter Mode 1 - Dual Port General Description

Details
A Mode 1 dual path Splitter (#ECMD) consists of a single x16 connection from the host server through each of the two ESMs (2x #ESM1) to all 24 NVMe devices. Unlike Mode 1 single path, the switch in each of ESMs is configured to logically drive all 24 NVMe drives. This enables a dual path to each of the 24 NVMe devices from the host as shown in Figure A-5. **Note: This mode will not be supported in GA1.**

A.6.3 Splitter Mode 2 Dual Path (NOT SUPPORTED IN GA1)

Figure A-6 ***Splitter - Mode 2 Dual Path (fc =TBD)***



Mode 2 consists of two x16 connection from host server to each ESM. The Mode 2 DP setting enables a dual path to all 24 NVME device from the host server as shown above.

Table A-24: Mode 2 General Description

Details
A Mode 2 dual path Splitter (FC = tbd) consists of two x16 connections from the host server through each of the two ESMs (2x #ESM2) to all 24 NVMe devices. Unlike Mode 1 dual path, the switch in each of ESMs is configured to logically drive all 24 NVMe drives through two x16 connections as opposed to a single x16 connection in mode 1 dual path. This enables a dual path to each of the 24 NVMe devices throught two x16 connections from the host as shown in Figure A-6. **Note: this mode will not be supported in GA1.**

A.6.4 System Attach configurations

Figure A-7 ***Splitter - GA1 System Cabling)***

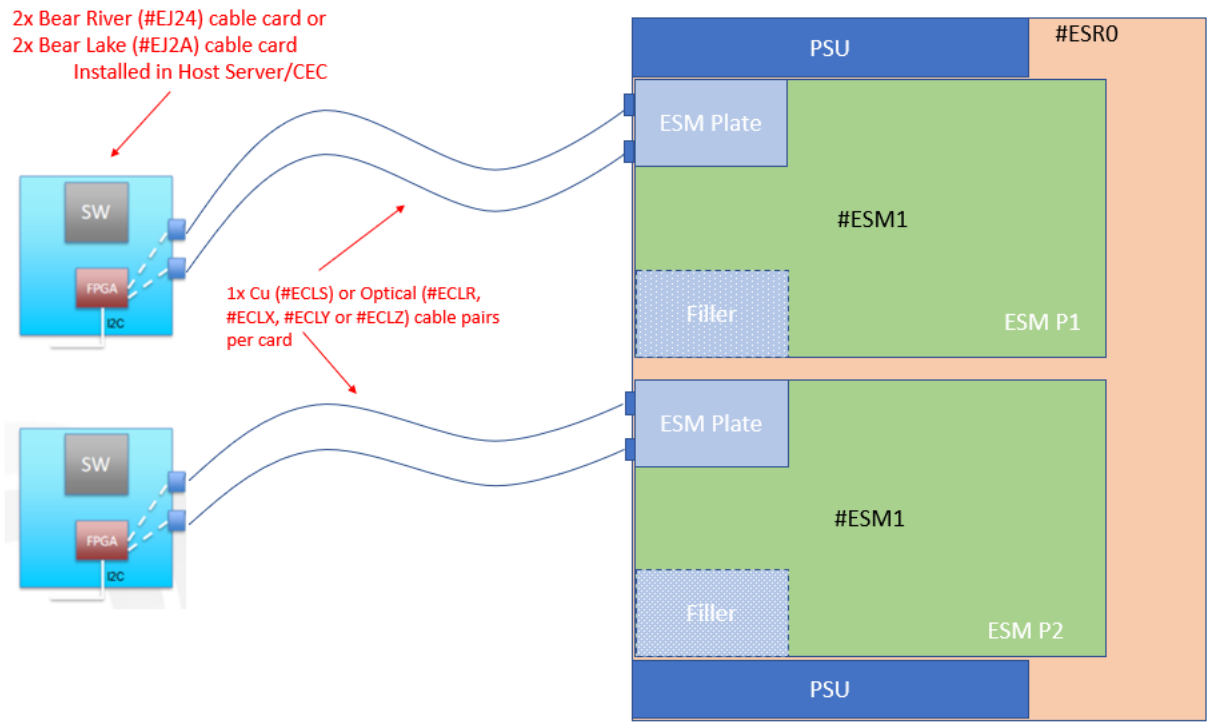


Figure A-8 ***Splitter - GA2 System Cabling)***

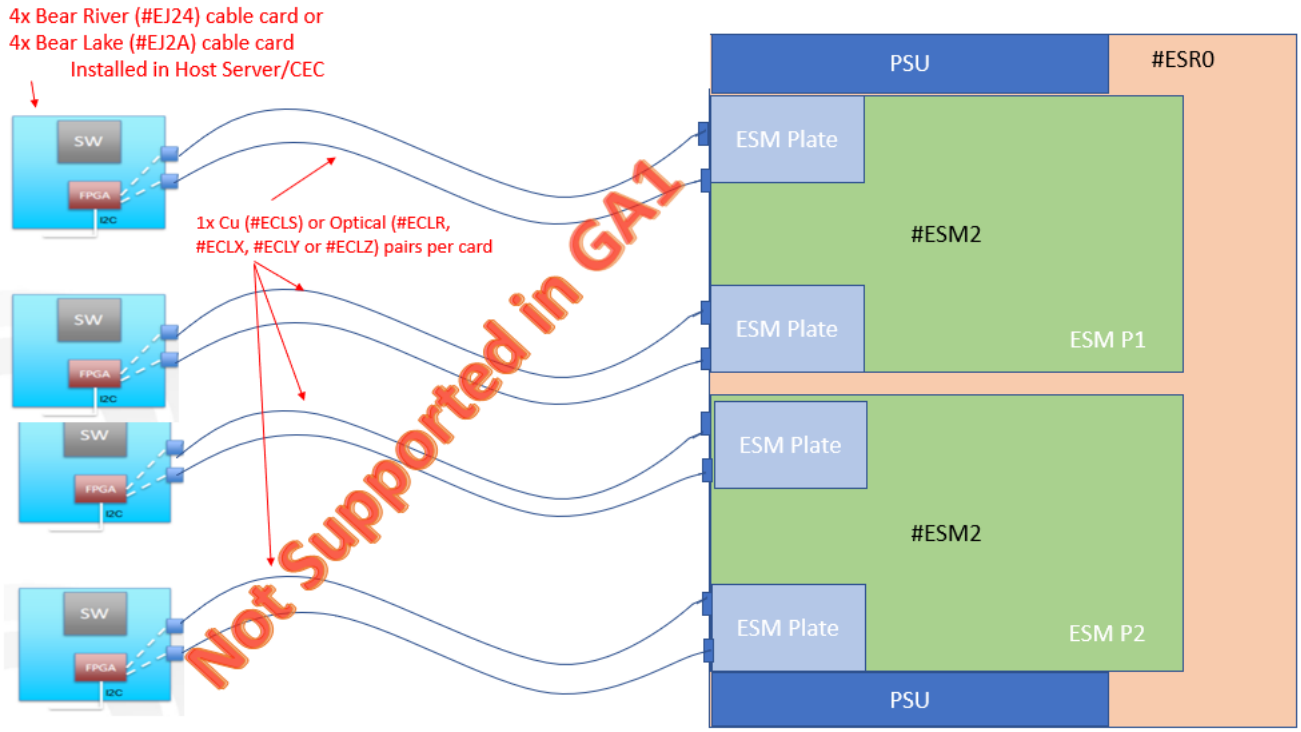


Table A-25: Splitter attached to external SAS ports Bearriver or Bearlake General Rules

Rules	Details
1	Every #ESR0 requires 2x #EJ24 or 2x#EJ2A
2	Every #EJ24 and #EJ2A requires 1x #ECLS/#ECLR/#ECLX/#ECLY/#ECLZ
3	All CXP cables (#ECLS/#ECLR/#ECLX/#ECLY/#ECLZ) connected to same splitter must be identical. No mixing allowed.
4	The #EJ24s ro #EJ2A must be installed in the same CEC.

A.7 Splitter Location Codes

Table A-26: Splitter Location Codes

Component	Location Code
Mid-plane	P3
NVMe Device	P3-C1..C24
Fan Assembly	P3-A1..A6
Power Distribution Board	P3-C25..C26
Enclosure LED Panel (FIO card) Connector	P3-T1

Temperature Sensor Connector	P3-T2
Enclosure LED Panel (FIO card)	D1
Temperature Sensor	D2
Power Supply	E1, E2
ESM	P1, P2
Plate	P1-C1/C2 (Note: P1-C2 will have a Filler in GA1) P2-C1/C2 (Note: P1-C2 will have a Filler in in GA1)
CXP Connector	P1-C1-T0/T1 P1-C2-T0/T1 (Not used in GA1) P2-C1-T0/T1 P2-C2-T0/T1 (Not used in GA1)

Figure A-9 ***Physical Location Codes (Front and Rear View)***

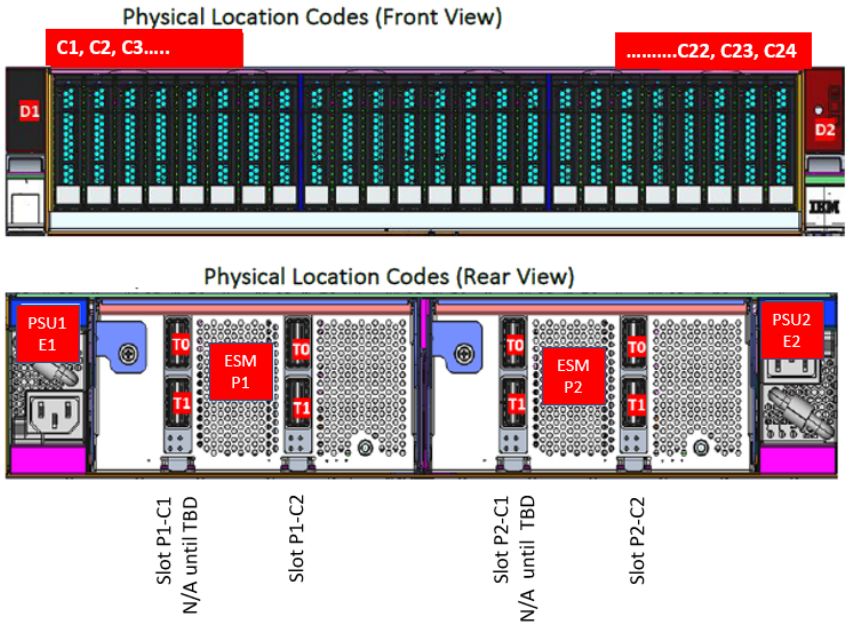


Figure A-10 ***Location Codes (Internal View)***