

EMC VMAX³ - Front-End FC WWPNN's & Zoning Considerations

Version 1.1
www.davidring.ie

VMAX 100K = Eng 1-2 (Max 64 FC Ports)
VMAX 200K = Eng 1-4 (Max 128 FC Ports)
VMAX 400K = Eng 1-8 (Max 256 FC Ports)

X:XX:XX:X = System-wide Unique ID
? = Unique ID For Engines 1&2 | 3&4 | 4&6 | 7&8

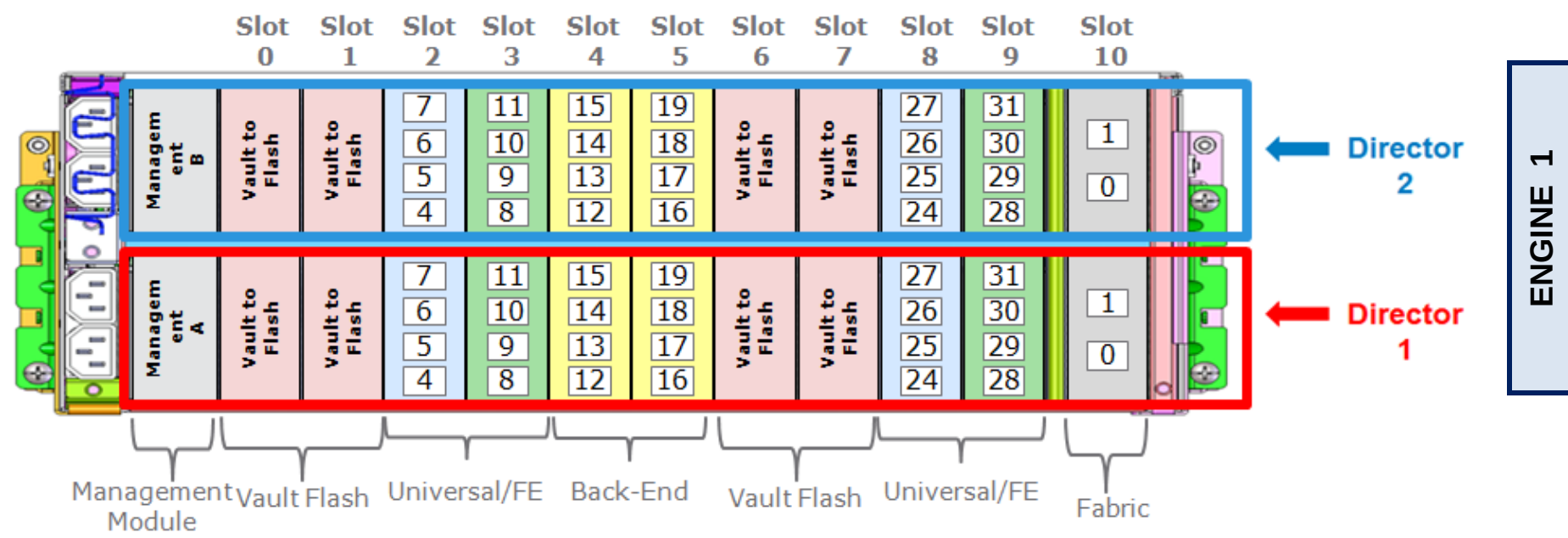
Front-End I/O Modules are always added in pairs across directors in Slots 2,3 & 8,9

		SLOT 2 :		SLOT 3 :		SLOT 8 :		SLOT 9 :	
ENGINE 8	Director 16	16D:7	50:00:09:7X:XX:XX:X?:C7	16D:11	50:00:09:7X:XX:XX:X?:CB	16D:27	50:00:09:7X:XX:XX:X?:DB	16D:31	50:00:09:7X:XX:XX:X?:DF
		16D:6	50:00:09:7X:XX:XX:X?:C6	16D:10	50:00:09:7X:XX:XX:X?:CA	16D:26	50:00:09:7X:XX:XX:X?:DA	16D:30	50:00:09:7X:XX:XX:X?:DE
		16D:5	50:00:09:7X:XX:XX:X?:C5	16D:9	50:00:09:7X:XX:XX:X?:C9	16D:25	50:00:09:7X:XX:XX:X?:D9	16D:29	50:00:09:7X:XX:XX:X?:DD
		16D:4	50:00:09:7X:XX:XX:X?:C4	16D:8	50:00:09:7X:XX:XX:X?:C8	16D:24	50:00:09:7X:XX:XX:X?:D8	16D:28	50:00:09:7X:XX:XX:X?:DC
	Director 15	15D:7	50:00:09:7X:XX:XX:X?:87	15D:11	50:00:09:7X:XX:XX:X?:8B	15D:27	50:00:09:7X:XX:XX:X?:9B	15D:31	50:00:09:7X:XX:XX:X?:9F
		15D:6	50:00:09:7X:XX:XX:X?:86	15D:10	50:00:09:7X:XX:XX:X?:8A	15D:26	50:00:09:7X:XX:XX:X?:9A	15D:30	50:00:09:7X:XX:XX:X?:9E
		15D:5	50:00:09:7X:XX:XX:X?:85	15D:9	50:00:09:7X:XX:XX:X?:89	15D:25	50:00:09:7X:XX:XX:X?:99	15D:29	50:00:09:7X:XX:XX:X?:9D
		15D:4	50:00:09:7X:XX:XX:X?:84	15D:8	50:00:09:7X:XX:XX:X?:88	15D:24	50:00:09:7X:XX:XX:X?:98	15D:28	50:00:09:7X:XX:XX:X?:9C
ENGINE 7	Director 14	14D:7	50:00:09:7X:XX:XX:X?:47	14D:11	50:00:09:7X:XX:XX:X?:4B	14D:27	50:00:09:7X:XX:XX:X?:5B	14D:31	50:00:09:7X:XX:XX:X?:5F
		14D:6	50:00:09:7X:XX:XX:X?:46	14D:10	50:00:09:7X:XX:XX:X?:4A	14D:26	50:00:09:7X:XX:XX:X?:5A	14D:30	50:00:09:7X:XX:XX:X?:5E
		14D:5	50:00:09:7X:XX:XX:X?:45	14D:9	50:00:09:7X:XX:XX:X?:49	14D:25	50:00:09:7X:XX:XX:X?:59	14D:29	50:00:09:7X:XX:XX:X?:5D
		14D:4	50:00:09:7X:XX:XX:X?:44	14D:8	50:00:09:7X:XX:XX:X?:48	14D:24	50:00:09:7X:XX:XX:X?:58	14D:28	50:00:09:7X:XX:XX:X?:5C
	Director 13	13D:7	50:00:09:7X:XX:XX:X?:07	13D:11	50:00:09:7X:XX:XX:X?:0B	13D:27	50:00:09:7X:XX:XX:X?:1B	13D:31	50:00:09:7X:XX:XX:X?:1F
		13D:6	50:00:09:7X:XX:XX:X?:06	13D:10	50:00:09:7X:XX:XX:X?:0A	13D:26	50:00:09:7X:XX:XX:X?:1A	13D:30	50:00:09:7X:XX:XX:X?:1E
		13D:5	50:00:09:7X:XX:XX:X?:05	13D:9	50:00:09:7X:XX:XX:X?:09	13D:25	50:00:09:7X:XX:XX:X?:19	13D:29	50:00:09:7X:XX:XX:X?:1D
		13D:4	50:00:09:7X:XX:XX:X?:04	13D:8	50:00:09:7X:XX:XX:X?:08	13D:24	50:00:09:7X:XX:XX:X?:18	13D:28	50:00:09:7X:XX:XX:X?:1C
ENGINE 6	Director 12	12D:7	50:00:09:7X:XX:XX:X?:C7	12D:11	50:00:09:7X:XX:XX:X?:CB	12D:27	50:00:09:7X:XX:XX:X?:DB	12D:31	50:00:09:7X:XX:XX:X?:DF
		12D:6	50:00:09:7X:XX:XX:X?:C6	12D:10	50:00:09:7X:XX:XX:X?:CA	12D:26	50:00:09:7X:XX:XX:X?:DA	12D:30	50:00:09:7X:XX:XX:X?:DE
		12D:5	50:00:09:7X:XX:XX:X?:C5	12D:9	50:00:09:7X:XX:XX:X?:C9	12D:25	50:00:09:7X:XX:XX:X?:D9	12D:29	50:00:09:7X:XX:XX:X?:DD
		12D:4	50:00:09:7X:XX:XX:X?:C4	12D:8	50:00:09:7X:XX:XX:X?:C8	12D:24	50:00:09:7X:XX:XX:X?:D8	12D:28	50:00:09:7X:XX:XX:X?:DC
	Director 11	11D:7	50:00:09:7X:XX:XX:X?:87	11D:11	50:00:09:7X:XX:XX:X?:8B	11D:27	50:00:09:7X:XX:XX:X?:9B	11D:31	50:00:09:7X:XX:XX:X?:9F
		11D:6	50:00:09:7X:XX:XX:X?:86	11D:10	50:00:09:7X:XX:XX:X?:8A	11D:26	50:00:09:7X:XX:XX:X?:9A	11D:30	50:00:09:7X:XX:XX:X?:9E
		11D:5	50:00:09:7X:XX:XX:X?:85	11D:9	50:00:09:7X:XX:XX:X?:89	11D:25	50:00:09:7X:XX:XX:X?:99	11D:29	50:00:09:7X:XX:XX:X?:9D
		11D:4	50:00:09:7X:XX:XX:X?:84	11D:8	50:00:09:7X:XX:XX:X?:88	11D:24	50:00:09:7X:XX:XX:X?:98	11D:28	50:00:09:7X:XX:XX:X?:9C
ENGINE 5	Director 10	10D:7	50:00:09:7X:XX:XX:X?:47	10D:11	50:00:09:7X:XX:XX:X?:4B	10D:27	50:00:09:7X:XX:XX:X?:5B	10D:31	50:00:09:7X:XX:XX:X?:5F
		10D:6	50:00:09:7X:XX:XX:X?:46	10D:10	50:00:09:7X:XX:XX:X?:4A	10D:26	50:00:09:7X:XX:XX:X?:5A	10D:30	50:00:09:7X:XX:XX:X?:5E
		10D:5	50:00:09:7X:XX:XX:X?:45	10D:9	50:00:09:7X:XX:XX:X?:49	10D:25	50:00:09:7X:XX:XX:X?:59	10D:29	50:00:09:7X:XX:XX:X?:5D
		10D:4	50:00:09:7X:XX:XX:X?:44	10D:8	50:00:09:7X:XX:XX:X?:48	10D:24	50:00:09:7X:XX:XX:X?:58	10D:28	50:00:09:7X:XX:XX:X?:5C
	Director 9	9D:7	50:00:09:7X:XX:XX:X?:07	9D:11	50:00:09:7X:XX:XX:X?:0B	9D:27	50:00:09:7X:XX:XX:X?:1B	9D:31	50:00:09:7X:XX:XX:X?:1F
		9D:6	50:00:09:7X:XX:XX:X?:06	9D:10	50:00:09:7X:XX:XX:X?:0A	9D:26	50:00:09:7X:XX:XX:X?:1A	9D:30	50:00:09:7X:XX:XX:X?:1E
		9D:5	50:00:09:7X:XX:XX:X?:05	9D:9	50:00:09:7X:XX:XX:X?:09	9D:25	50:00:09:7X:XX:XX:X?:19	9D:29	50:00:09:7X:XX:XX:X?:1D
		9D:4	50:00:09:7X:XX:XX:X?:04	9D:8	50:00:09:7X:XX:XX:X?:08	9D:24	50:00:09:7X:XX:XX:X?:18	9D:28	50:00:09:7X:XX:XX:X?:1C

Example
X:XX:XX:X?
for Directors
13-16 :
5:78:01:EF

Example
X:XX:XX:X?
for Directors 9-12 :
5:78:01:EE

ENGINE 4	Director 8	8D:7	50:00:09:7X:XX:XX:X?:C7	8D:11	50:00:09:7X:XX:XX:X?:CB	8D:27	50:00:09:7X:XX:XX:X?:DB	8D:31	50:00:09:7X:XX:XX:X?:DF	Example X:XX:XX:X ? for Directors 5-8 : 5:78:01:ED
		8D:6	50:00:09:7X:XX:XX:X?:C6	8D:10	50:00:09:7X:XX:XX:X?:CA	8D:26	50:00:09:7X:XX:XX:X?:DA	8D:30	50:00:09:7X:XX:XX:X?:DE	
		8D:5	50:00:09:7X:XX:XX:X?:C5	8D:9	50:00:09:7X:XX:XX:X?:C9	8D:25	50:00:09:7X:XX:XX:X?:D9	8D:29	50:00:09:7X:XX:XX:X?:DD	
		8D:4	50:00:09:7X:XX:XX:X?:C4	8D:8	50:00:09:7X:XX:XX:X?:C8	8D:24	50:00:09:7X:XX:XX:X?:D8	8D:28	50:00:09:7X:XX:XX:X?:DC	
	Director 7	7D:7	50:00:09:7X:XX:XX:X?:87	7D:11	50:00:09:7X:XX:XX:X?:8B	7D:27	50:00:09:7X:XX:XX:X?:9B	7D:31	50:00:09:7X:XX:XX:X?:9F	
		7D:6	50:00:09:7X:XX:XX:X?:86	7D:10	50:00:09:7X:XX:XX:X?:8A	7D:26	50:00:09:7X:XX:XX:X?:9A	7D:30	50:00:09:7X:XX:XX:X?:9E	
		7D:5	50:00:09:7X:XX:XX:X?:85	7D:9	50:00:09:7X:XX:XX:X?:89	7D:25	50:00:09:7X:XX:XX:X?:99	7D:29	50:00:09:7X:XX:XX:X?:9D	
		7D:4	50:00:09:7X:XX:XX:X?:84	7D:8	50:00:09:7X:XX:XX:X?:88	7D:24	50:00:09:7X:XX:XX:X?:98	7D:28	50:00:09:7X:XX:XX:X?:9C	
ENGINE 3	Director 6	6D:7	50:00:09:7X:XX:XX:X?:47	6D:11	50:00:09:7X:XX:XX:X?:4B	6D:27	50:00:09:7X:XX:XX:X?:5B	6D:31	50:00:09:7X:XX:XX:X?:5F	Example X:XX:XX:X ? for Directors 1-4 : 5:78:01:EC
		6D:6	50:00:09:7X:XX:XX:X?:46	6D:10	50:00:09:7X:XX:XX:X?:4A	6D:26	50:00:09:7X:XX:XX:X?:5A	6D:30	50:00:09:7X:XX:XX:X?:5E	
		6D:5	50:00:09:7X:XX:XX:X?:45	6D:9	50:00:09:7X:XX:XX:X?:49	6D:25	50:00:09:7X:XX:XX:X?:59	6D:29	50:00:09:7X:XX:XX:X?:5D	
		6D:4	50:00:09:7X:XX:XX:X?:44	6D:8	50:00:09:7X:XX:XX:X?:48	6D:24	50:00:09:7X:XX:XX:X?:58	6D:28	50:00:09:7X:XX:XX:X?:5C	
	Director 5	5D:7	50:00:09:7X:XX:XX:X?:07	5D:11	50:00:09:7X:XX:XX:X?:0B	5D:27	50:00:09:7X:XX:XX:X?:1B	5D:31	50:00:09:7X:XX:XX:X?:1F	
		5D:6	50:00:09:7X:XX:XX:X?:06	5D:10	50:00:09:7X:XX:XX:X?:0A	5D:26	50:00:09:7X:XX:XX:X?:1A	5D:30	50:00:09:7X:XX:XX:X?:1E	
		5D:5	50:00:09:7X:XX:XX:X?:05	5D:9	50:00:09:7X:XX:XX:X?:09	5D:25	50:00:09:7X:XX:XX:X?:19	5D:29	50:00:09:7X:XX:XX:X?:1D	
		5D:4	50:00:09:7X:XX:XX:X?:04	5D:8	50:00:09:7X:XX:XX:X?:08	5D:24	50:00:09:7X:XX:XX:X?:18	5D:28	50:00:09:7X:XX:XX:X?:1C	
ENGINE 2	Director 4	4D:7	50:00:09:7X:XX:XX:X?:C7	4D:11	50:00:09:7X:XX:XX:X?:CB	4D:27	50:00:09:7X:XX:XX:X?:DB	4D:31	50:00:09:7X:XX:XX:X?:DF	Example X:XX:XX:X ? for Directors 1-4 : 5:78:01:EC
		4D:6	50:00:09:7X:XX:XX:X?:C6	4D:10	50:00:09:7X:XX:XX:X?:CA	4D:26	50:00:09:7X:XX:XX:X?:DA	4D:30	50:00:09:7X:XX:XX:X?:DE	
		4D:5	50:00:09:7X:XX:XX:X?:C5	4D:9	50:00:09:7X:XX:XX:X?:C9	4D:25	50:00:09:7X:XX:XX:X?:D9	4D:29	50:00:09:7X:XX:XX:X?:DD	
		4D:4	50:00:09:7X:XX:XX:X?:C4	4D:C	50:00:09:7X:XX:XX:X?:C8	4D:24	50:00:09:7X:XX:XX:X?:D8	4D:28	50:00:09:7X:XX:XX:X?:DC	
	Director 3	3D:7	50:00:09:7X:XX:XX:X?:87	3D:11	50:00:09:7X:XX:XX:X?:8B	3D:27	50:00:09:7X:XX:XX:X?:9B	3D:31	50:00:09:7X:XX:XX:X?:9F	
		3D:6	50:00:09:7X:XX:XX:X?:86	3D:10	50:00:09:7X:XX:XX:X?:8A	3D:26	50:00:09:7X:XX:XX:X?:9A	3D:30	50:00:09:7X:XX:XX:X?:9E	
		3D:5	50:00:09:7X:XX:XX:X?:85	3D:9	50:00:09:7X:XX:XX:X?:89	3D:25	50:00:09:7X:XX:XX:X?:99	3D:29	50:00:09:7X:XX:XX:X?:9D	
		3D:4	50:00:09:7X:XX:XX:X?:84	3D:8	50:00:09:7X:XX:XX:X?:88	3D:24	50:00:09:7X:XX:XX:X?:98	3D:28	50:00:09:7X:XX:XX:X?:9C	
ENGINE 1	Director 2	2D:7	50:00:09:7X:XX:XX:X?:47	2D:11	50:00:09:7X:XX:XX:X?:4B	2D:27	50:00:09:7X:XX:XX:X?:5B	2D:31	50:00:09:7X:XX:XX:X?:5F	Example X:XX:XX:X ? for Directors 1-4 : 5:78:01:EC
		2D:6	50:00:09:7X:XX:XX:X?:46	2D:10	50:00:09:7X:XX:XX:X?:4A	2D:26	50:00:09:7X:XX:XX:X?:5A	2D:30	50:00:09:7X:XX:XX:X?:5E	
		2D:5	50:00:09:7X:XX:XX:X?:45	2D:9	50:00:09:7X:XX:XX:X?:49	2D:25	50:00:09:7X:XX:XX:X?:59	2D:29	50:00:09:7X:XX:XX:X?:5D	
		2D:4	50:00:09:7X:XX:XX:X?:44	2D:8	50:00:09:7X:XX:XX:X?:48	2D:24	50:00:09:7X:XX:XX:X?:58	2D:28	50:00:09:7X:XX:XX:X?:5C	
	Director 1	1D:7	50:00:09:7X:XX:XX:X?:07	1D:11	50:00:09:7X:XX:XX:X?:0B	1D:27	50:00:09:7X:XX:XX:X?:1B	1D:31	50:00:09:7X:XX:XX:X?:1F	
		1D:6	50:00:09:7X:XX:XX:X?:06	1D:10	50:00:09:7X:XX:XX:X?:0A	1D:26	50:00:09:7X:XX:XX:X?:1A	1D:30	50:00:09:7X:XX:XX:X?:1E	
		1D:5	50:00:09:7X:XX:XX:X?:05	1D:9	50:00:09:7X:XX:XX:X?:09	1D:25	50:00:09:7X:XX:XX:X?:19	1D:29	50:00:09:7X:XX:XX:X?:1D	
		1D:4	50:00:09:7X:XX:XX:X?:04	1D:8	50:00:09:7X:XX:XX:X?:08	1D:24	50:00:09:7X:XX:XX:X?:18	1D:28	50:00:09:7X:XX:XX:X?:1C	



Dual Fabric: Even director ports connect to Fabric-A & Odd director ports connect to Fabric-B:

ENGINE 1	Director 2	2D:7	2D:11	2D:27	2D:31	Fabric-B
		2D:6	2D:10	2D:26	2D:30	Fabric-A
		2D:5	2D:9	2D:25	2D:29	Fabric-B
		2D:4	2D:8	2D:24	2D:28	Fabric-A
	Director 1	1D:7	1D:11	1D:27	1D:31	Fabric-B
		1D:6	1D:10	1D:26	1D:30	Fabric-A
		1D:5	1D:9	1D:25	1D:29	Fabric-B
		1D:4	1D:8	1D:24	1D:28	Fabric-A

HOST FA Port Balancing: Connect a Host to 2 Directors in a Single Engine system or 4 Directors in a VMAX with greater than 1 Engine.

Single Engine example: Zoning a Host evenly across 2 directors and across both fabrics using ports 1D:4, 2D:31, 1D:28 & 2D:7:						
ENGINE 1	Director 2	2D:7	2D:11	2D:27	2D:31	<u>Fabric-B</u>
		2D:6	2D:10	2D:26	2D:30	<u>Fabric-A</u>
		2D:5	2D:9	2D:25	2D:29	<u>Fabric-B</u>
		2D:4	2D:8	2D:24	2D:28	<u>Fabric-A</u>
	Director 1	1D:7	1D:11	1D:27	1D:31	<u>Fabric-B</u>
		1D:6	1D:10	1D:26	1D:30	<u>Fabric-A</u>
		1D:5	1D:9	1D:25	1D:29	<u>Fabric-B</u>
		1D:4	1D:8	1D:24	1D:28	<u>Fabric-A</u>

Two Engine example: Zoning a Host evenly across 4 directors and across both fabrics using ports 1D:4, 2D:31, 3D:28 & 4D:7:						
ENGINE 2	Director 4	4D:7	4D:11	4D:27	4D:31	<u>Fabric-B</u>
		4D:6	4D:10	4D:26	4D:30	<u>Fabric-A</u>
		4D:5	4D:9	4D:25	4D:29	<u>Fabric-B</u>
		4D:4	4D:8	4D:24	4D:28	<u>Fabric-A</u>
	Director 3	3D:7	3D:11	3D:27	3D:31	<u>Fabric-B</u>
		3D:6	3D:10	3D:26	3D:30	<u>Fabric-A</u>
		3D:5	3D:9	3D:25	3D:29	<u>Fabric-B</u>
		3D:4	3D:8	3D:24	3D:28	<u>Fabric-A</u>
ENGINE 1	Director 2	2D:7	2D:11	2D:27	2D:31	<u>Fabric-B</u>
		2D:6	2D:10	2D:26	2D:30	<u>Fabric-A</u>
		2D:5	2D:9	2D:25	2D:29	<u>Fabric-B</u>
		2D:4	2D:8	2D:24	2D:28	<u>Fabric-A</u>
	Director 1	1D:7	1D:11	1D:27	1D:31	<u>Fabric-B</u>
		1D:6	1D:10	1D:26	1D:30	<u>Fabric-A</u>
		1D:5	1D:9	1D:25	1D:29	<u>Fabric-B</u>
		1D:4	1D:8	1D:24	1D:28	<u>Fabric-A</u>