

The following are projects that illustrates :

Design, Implementation, Deployment, Collaboration, Mentoring, and Stakeholders communications regarding setups of Test bed / QA environments for internal teams within the organization.

Performance QA Testbed

Densification and Relocation of 17 arrays/cabinets including all infrastructure backend reconfigurations

Additional QA Testbed environments

3D modeling and lab/rack layouts drafts

Tivoli Storage Manager internal projects

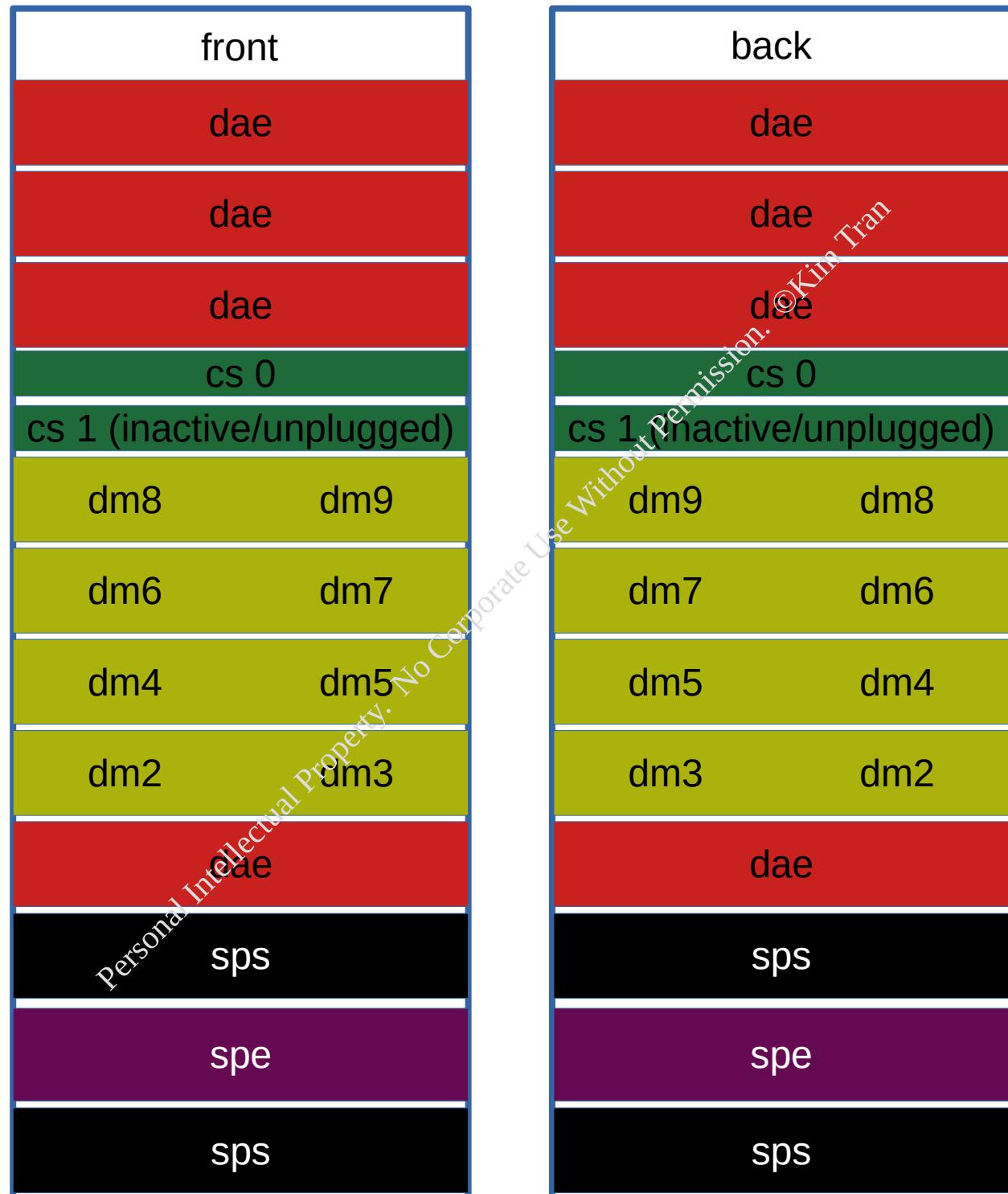
Test environment re-design and implementation/deployment

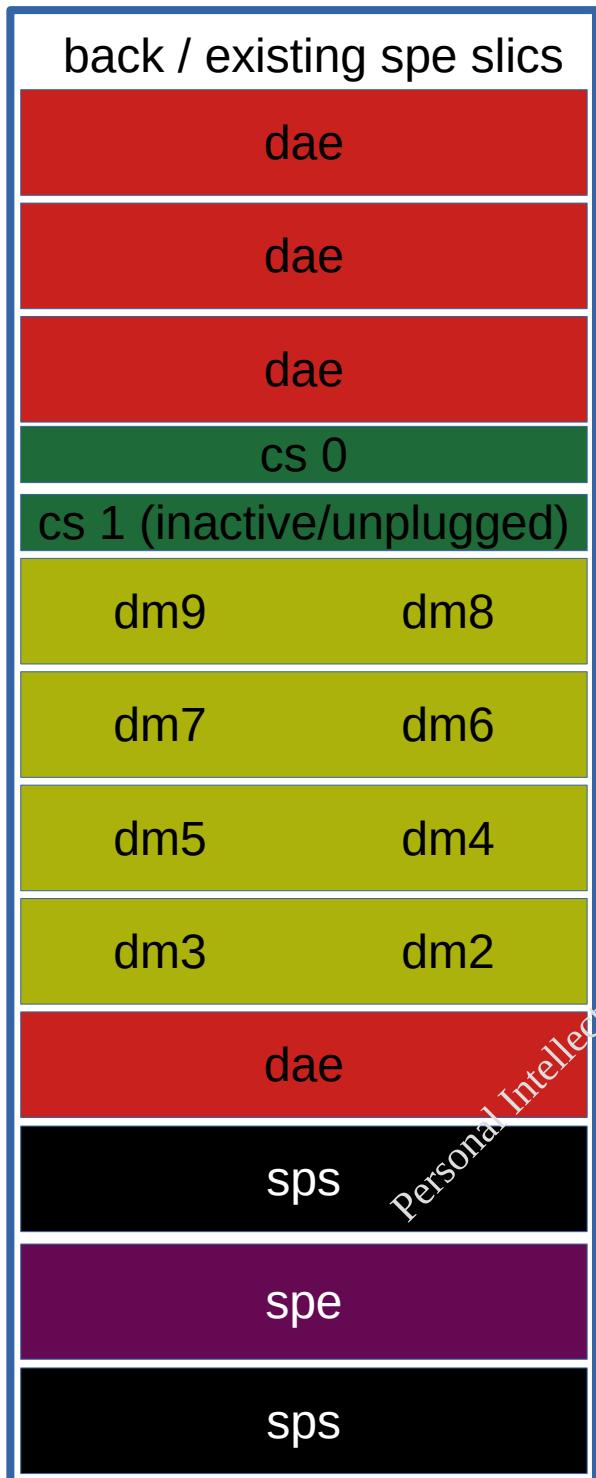
Existing test array environment was not properly scoped and designed for requested functional performance

Re-evaluated stakeholder criteria for test environment
Audited existing setup

Redesigned backend infrastructure io cablings
Corrected the infrastructure optical and copper connections to the requested performance io networks

Reconfigured all switch port configurations
Reconfigured all back end and front end configurations



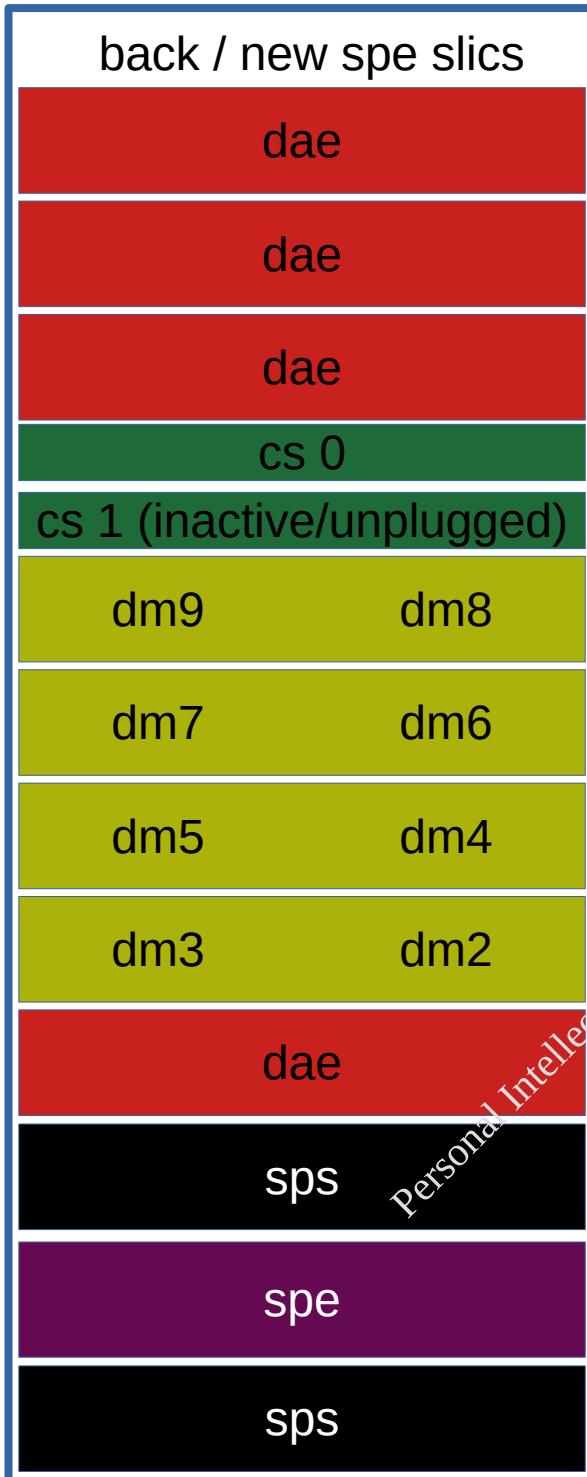


Slices on A and B

M	0	1	2	3	4	5	6	7	8	9	10
G	6	8	10	16	6	6	6	1	8	10	6
M	g	b	g	g	b	g	b	g	b	g	b
T	b	e	b	e	4	4	4	fc	4	4	p
	fc	fc	fc	4	p	p	p	fc	4	4	p
	4	4	2	4	p	s	s	4	4	2	s
	p	p	p	p	s	a	a	p	p	p	a
	o	o	o	c	s	s	s	c	o	c	s

multiple slices unused – non-inserted

swapped out slice positions for cleaner configuration



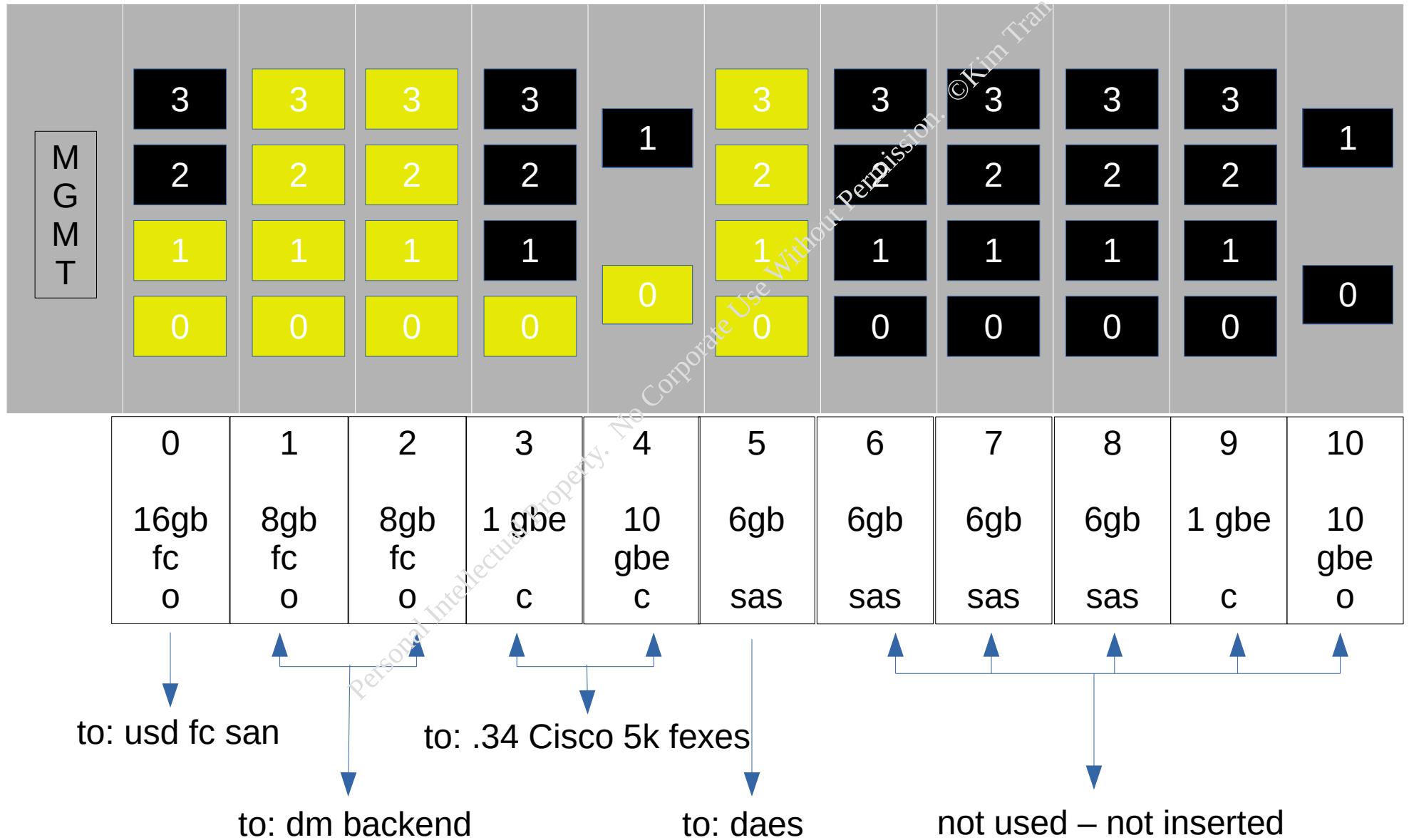
Slices on A and B

M	0	1	2	3	4	5	6	7	8	9	10
G											
M	1	8	8	1	1	6	6	6	6	1	1
T	6	g	b	g	b	g	b	g	b	g	b
	g	b	b	e	e	b	b	b	b	b	g
	b	b	e	e	4	4	4	4	4	4	g
	fc	fc	fc			p	p	p	p	p	b
	4	4	4	4	2	s	s	s	s	4	e
	p	p	p	p	p	a	a	a	a	p	b
	o	o	o	c	c	s	s	s	s	c	p
											2
											p

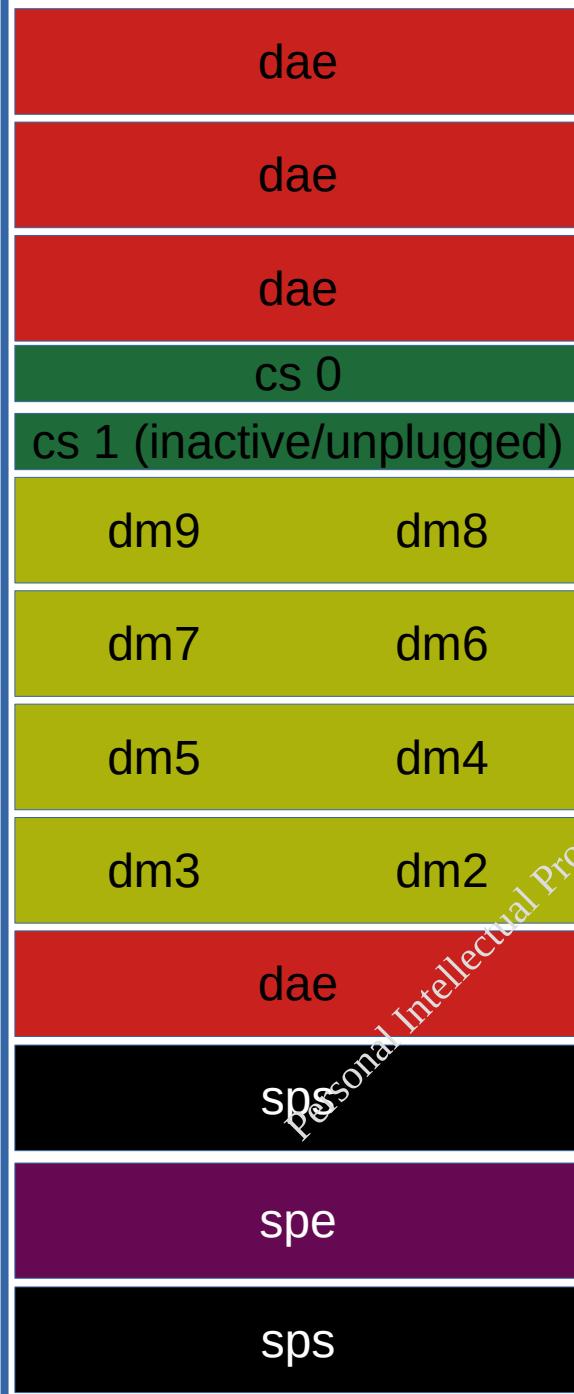
slices 6-10 unused – non-inserted

swapped out slice positions for cleaner configuration

New SPE Slic configuration placement on A and B



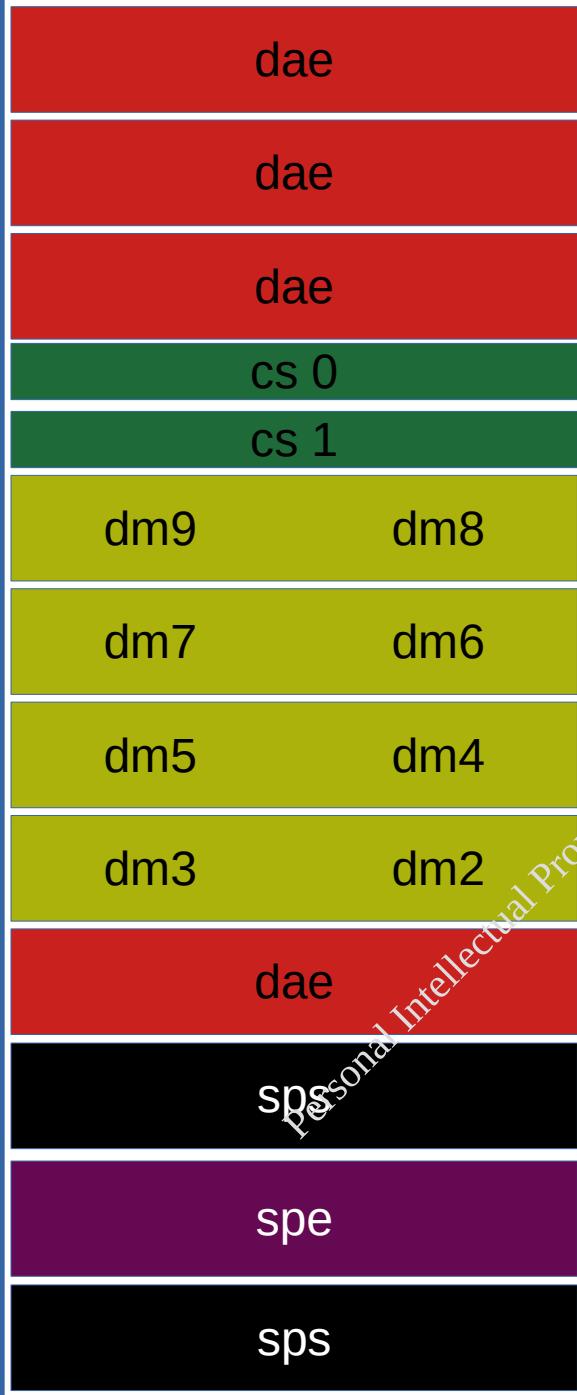
back / existing dm slices



Slices on A and B

M	0	1	2	3	4
G	8	1	1	1	1
M	0	0	0	0	0
T					
g					
b					
fc	e	e	e	e	e
4	2	2	2	2	4
p	p	p	p	p	p
o	o	o	o	c	c

back / new dm slices

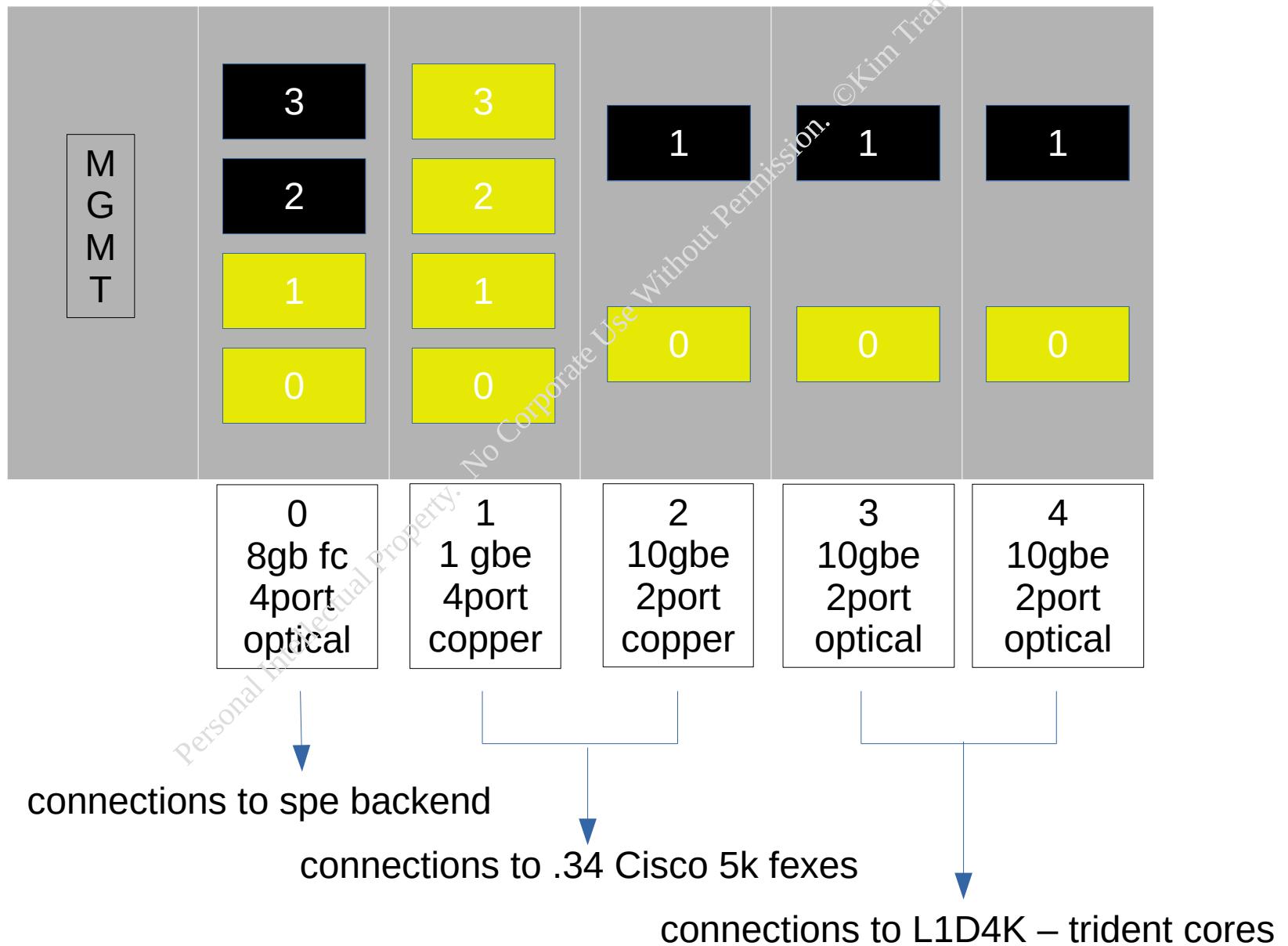


Slices on A and B

	0	1	2	3	4
M	8	1	1	1	1
G	g	g	g	g	g
M	b	b	b	b	b
T	f	e	e	e	e
	fc	e	e	e	e
	4	4	2	2	2
	p	p	p	p	p
	o	c	c	o	o

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New DM Slic configuration placement on A and B



Existing cable labels and connections are wrong due to number of ports to be connected and number of labels that are duplicates, or hanging and disconnected due to destination ports not available (fex doesn't exists, ports already utilized by another system, wrong port connection types, etc..., in addition to the new matrix that was ran for the trident cores at row 62 – wrong ports specified, wrong port type specified

Please review the following pages for audit details

MT-D1096 12Z

MT-D1096	CS0	12Z	.34 FEX 111	1	12AD	COPPER	
MT-D1096	DM9-1-0	12Z	.34 FEX 105	30	12AD	FIBER	
MT-D1096	DM9-1-1	12Z	.34 FEX 105	31	12AD	FIBER	
MT-D1096	DM9-2-0	12Z	.34 FEX 105	32	12AD	FIBER	
MT-D1096	DM9-2-1	12Z	.34 FEX 106	1	12AD	FIBER	
MT-D1096	DM9-3-0	12Z	.34 FEX 110	6	12AD	COPPER	
MT-D1096	DM9-3-1	12Z	.34 FEX 110	7	12AD	COPPER	
MT-D1096	DM9-4-0	12Z	.34 FEX 111	32	12AD	COPPER	
MT-D1096	DM9-4-1	12Z	.34 FEX 111	33	12AD	COPPER	
MT-D1096	DM9-4-2	12Z	.34 FEX 111	34	12AD	COPPER	
MT-D1096	DM9-4-3	12Z	.34 FEX 111	35	12AD	COPPER	
<	<	<	<	<	<	<	
MT-D1096	DM8-4-2	12Z	L1D4K-62AM-SW01	6	62AM	FIBER	LABEL
MT-D1096	DM8-0-2	12Z	L1D4K-62AM-SW01	6	62AM	FIBER	PORT
MT-D1096	DM8-3-0	12Z	L1D4K-62AM-SW02	41	62AM	FIBER	LABEL
MT-D1096	DM8-1-0	12Z	L1D4K-62AM-SW02	41	62AM	FIBER	PORT
MT-D1096	DM8-1-0	12Z	.34 FEX 105	26	12AD	FIBER	Cable was hanging
MT-D1096	DM8-3-1	12Z	L1D4K-62AM-SW02	42	62AM	FIBER	LABEL
MT-D1096	DM8-1-1	12Z	L1D4K-62AM-SW02	42	62AM	FIBER	PORT
MT-D1096	DM8-1-1	12Z	.34 FEX 105	27	12AD	FIBER	Cable was hanging
MT-D1096	DM8-2-0	12Z	.34 FEX 105	28	12AD	FIBER	
MT-D1096	DM8-2-1	12Z	.34 FEX 105	29	12AD	FIBER	
MT-D1096	DM8-3-0	12Z	.34 FEX 113	31	12AM	COPPER	
MT-D1096	DM8-3-1	12Z	.34 FEX 113	32	12AM	COPPER	
MT-D1096	DM8-4-0	12Z	.34 FEX 111	28	12AD	COPPER	
MT-D1096	DM8-4-1	12Z	.34 FEX 111	29	12AD	COPPER	

MT-D1096	DM8-4-1	12Z	L1D4K-62AM-SW01	5	62AM	FIBER	Cable was hanging
MT-D1096	DM8-4-2	12Z	.34 FEX 111	30	12AD	COPPER	
MT-D1096	DM8-4-3	12Z	.34 FEX 111	31	12AD	COPPER	
<	<	<	<	<	<	<	
MT-D1096	DM7-0-1	12Z	L1D4K-62AM-SW01	13	62AM	FIBER	42AN-JF-D1368:DM5-3-0 Ports used
MT-D1096	DM7-0-2	12Z	L1D4K-62AM-SW01	14	62AM	FIBER	42AN-JF-D1368:DM5-3-1 Ports used
MT-D1096	DM7-3-0	12Z	L1D4K-62AM-SW02	39	62AM	FIBER	LABEL
MT-D1096	DM7-1-0	12Z	L1D4K-62AM-SW02	39	62AM	FIBER	PORT
MT-D1096	DM7-1-1	12Z	.34 FEX 105	23	12AD	FIBER	Cable was hanging
MT-D1096	DM7-3-1	12Z	L1D4K-62AM-SW02	40	62AM	FIBER	LABEL
MT-D1096	DM7-1-1	12Z	L1D4K-62AM-SW02	40	62AM	FIBER	PORT
MT-D1096	DM7-1-0	12Z	.34 FEX 105	22	12AD	FIBER	Cable was hanging
MT-D1096	DM7-2-0	12Z	.34 FEX 105	24	12AD	FIBER	
MT-D1096	DM7-2-1	12Z	.34 FEX 105	25	12AD	FIBER	
MT-D1096	DM7-3-0	12Z	.34 FEX 113	29	12AM	COPPER	
MT-D1096	DM7-3-1	12Z	.34 FEX 113	30	12AM	COPPER	
MT-D1096	DM7-4-0	12Z	.34 FEX 111	24	12AD	COPPER	
MT-D1096	DM7-4-1	12Z	.34 FEX 111	25	12AD	COPPER	
MT-D1096	DM7-4-1	12Z	L1D4K-62AM-SW01	3	62AM	FIBER	
MT-D1096	DM7-4-2	12Z	L1D4K-62AM-SW01	4	62AM	FIBER	
MT-D1096	DM7-4-2	12Z	.34 FEX 111	26	12AD	COPPER	
MT-D1096	DM7-4-3	12Z	.34 FEX 111	27	12AD	COPPER	
<	<	<	<	<	<	<	
MT-D1096	DM6-4-2	12Z	L1D4K-62AM-SW01	2	62AM	FIBER	LABEL
MT-D1096	DM6-4-2	12Z	L1D4K-62AM-SW01	2	62AM	FIBER	PORT
MT-D1096	DM6-1-0	12Z	.34 FEX 105	17	12AD	FIBER	
MT-D1096	DM6-1-1	12Z	.34 FEX 105	18	12AD	FIBER	TWINS Was plugged in
MT-D1096	DM6-1-1	12Z	.34 FEX 105	19	12AD	FIBER	TWINS Was unplugged

MT-D1096	DM6-2-0	12Z	.34 FEX 105	20	12AD	FIBER	
MT-D1096	DM6-2-1	12Z	.34 FEX 105	21	12AD	FIBER	
MT-D1096	DM6-3-0	12Z	.34 FEX 113	27	12AM	COPPER	
MT-D1096	DM6-3-1	12Z	.34 FEX 113	28	12AM	COPPER	
MT-D1096	DM6-4-0	12Z	.34 FEX 111	20	12AD	COPPER	
MT-D1096	DM6-4-1	12Z	.34 FEX 111	21	12AD	COPPER	
MT-D1096	DM6-4-1	12Z	L1D4K-62AM-SW01	1	62AM	FIBER	Cable was hanging
MT-D1096	DM6-4-2	12Z	.34 FEX 111	22	12AD	COPPER	
MT-D1096	DM6-4-3	12Z	.34 FEX 111	23	12AD	COPPER	
<	<	<	<	<	<	<	
MT-D1096	DM5-4-2	12Z	L1D4K-62AM-SW02	50	62AM	FIBER	LABEL
MT-D1096	DM5-0-2	12Z	L1D4K-62AM-SW02	50	62AM	FIBER	PORT
MT-D1096	DM6-3-0	12Z	L1D4K-62AM-SW02	33	62AM	FIBER	LABEL
MT-D1096	DM5-1-0	12Z	L1D4K-62AM-SW02	37	62AM	FIBER	PORT
MT-D1096	DM5-1-0	12Z	.34 FEX 105	13	12AD	FIBER	Cable was hanging
MT-D1096	DM5-3-0	12Z	L1D4K-62AM-SW02	35	62AM	FIBER	LABEL
MT-D1096	DM5-1-1	12Z	L1D4K-62AM-SW02	35	62AM	FIBER	PORT
MT-D1096	DM5-1-1	12Z	.34 FEX 105	14	12AD	FIBER	Cable was hanging
MT-D1096	DM5-2-0	12Z	.34 FEX 105	15	12AD	FIBER	
MT-D1096	DM5-2-1	12Z	.34 FEX 105	16	12AD	FIBER	
MT-D1096	DM5-3-0	12Z	.34 FEX 113	25	12AM	COPPER	
MT-D1096	DM5-3-1	12Z	.34 FEX 113	26	12AM	COPPER	
MT-D1096	DM5-4-0	12Z	.34 FEX 111	16	12AD	COPPER	
MT-D1096	DM5-4-1	12Z	.34 FEX 111	17	12AD	COPPER	
MT-D1096	DM5-4-1	12Z	L1D4K-62AM-SW02	49	62AM	FIBER	Cable was hanging
MT-D1096	DM5-4-2	12Z	.34 FEX 111	18	12AD	COPPER	
MT-D1096	DM5-4-3	12Z	.34 FEX 111	19	12AD	COPPER	
<	<	<	<	<	<	<	
MT-D1096	DM4-4-2	12Z	L1D4K-62AM-SW02	48	62AM	FIBER	LABEL

MT-D1096	DM4-0-2	12Z	L1D4K-62AM-SW02	48	62AM	FIBER	PORT
MT-D1096	DM4-3-0	12Z	L1D4K-62AM-SW02	33	62AM	FIBER	LABEL
MT-D1096	DM4-1-0	12Z	L1D4K-62AM-SW02	33	62AM	FIBER	PORT
MT-D1096	DM4-1-0	12Z	.34 FEX 105	9	12AD	FIBER	Cable was hanging
MT-D1096	DM4-3-1	12Z	L1D4K-62AM-SW02	34	62AM	FIBER	LABEL
MT-D1096	DM4-1-1	12Z	L1D4K-62AM-SW02	34	62AM	FIBER	PORT
MT-D1096	DM4-1-1	12Z	.34 FEX 105	10	12AD	FIBER	Cable was hanging
MT-D1096	DM4-2-0	12Z	.34 FEX 105	11	12AD	FIBER	
MT-D1096	DM4-2-1	12Z	.34 FEX 105	12	12AD	FIBER	
MT-D1096	DM4-3-0	12Z	.34 FEX 113	23	12AM	COPPER	
MT-D1096	DM4-3-1	12Z	.34 FEX 113	24	12AM	COPPER	
MT-D1096	DM4-4-0	12Z	.34 FEX 111	12	12AD	COPPER	
MT-D1096	DM4-4-1	12Z	.34 FEX 111	13	12AD	COPPER	
MT-D1096	DM4-4-1	12Z	L1D4K-62AM-SW02	47	62AM	FIBER	Cable was hanging
MT-D1096	DM4-4-2	12Z	.34 FEX 111	14	12AD	COPPER	
MT-D1096	DM4-4-3	12Z	.34 FEX 111	15	12AD	COPPER	
<	<	<	<	<	<	<	
MT-D1096	DM3-4-2	12Z	L1D4K-62AM-SW02	46	62AM	FIBER	LABEL
MT-D1096	DM3-0-2	12Z	L1D4K-62AM-SW02	46	62AM	FIBER	PORT
MT-D1096	DM3-3-0	12Z	L1D4K-62AM-SW02	31	62AM	FIBER	LABEL
MT-D1096	DM3-1-0	12Z	L1D4K-62AM-SW02	31	62AM	FIBER	PORT
MT-D1096	DM3-1-0	12Z	.34 FEX 105	5	12AD	FIBER	Cable was hanging
MT-D1096	DM6-3-1	12Z	L1D4K-62AM-SW02	38	62AM	FIBER	LABEL
MT-D1096	DM3-1-1	12Z	L1D4K-62AM-SW02	38	62AM	FIBER	PORT
MT-D1096	DM3-1-1	12Z	.34 FEX 105	6	12AD	FIBER	Cable was hanging
MT-D1096	DM3-3-1	12Z	L1D4K-62AM-SW02	32	62AM	FIBER	LABEL
MT-D1096	DM3-2-0	12Z	L1D4K-62AM-SW02	32	62AM	FIBER	PORT
MT-D1096	DM3-2-0	12Z	.34 FEX 105	7	12AD	FIBER	Cable was hanging
MT-D1096	DM5-3-1	12Z	L1D4K-62AM-SW02	36	62AM	FIBER	LABEL

MT-D1096	DM3-2-1	12Z	L1D4K-62AM-SW02	36	62AM	FIBER	PORT
MT-D1096	DM3-2-1	12Z	.34 FEX 105	8	12AD	FIBER	Cable was hanging
MT-D1096	DM3-3-0	12Z	.34 FEX 113	21	12AM	COPPER	
MT-D1096	DM3-3-1	12Z	.34 FEX 113	22	12AM	COPPER	
MT-D1096	DM3-4-0	12Z	.34 FEX 111	8	12AD	COPPER	
MT-D1096	DM3-4-1	12Z	.34 FEX 111	9	12AD	COPPER	
MT-D1096	DM3-4-1	12Z	L1D4K-62AM-SW02	45	62AM	FIBER	Cable was hanging
							Port taken on SW side
MT-D1096	DM3-4-2	12Z	.34 FEX 111	10	12AD	COPPER	
MT-D1096	DM3-4-3	12Z	.34 FEX 111	11	12AD	COPPER	
<	<	<	<	<	<	<	
MT-D1096	DM2-2-2	12Z	L1D4K-62AM-SW02	44	62AM	FIBER	LABEL
							Port taken on SW side
MT-D1096	DM2-0-2	12Z	L1D4K-62AM-SW02	44	62AM	FIBER	PORT
							Port taken on SW side
MT-D1096	DM2-3-0	12Z	L1D4K-62AM-SW02	23	62AM	FIBER	LABEL
MT-D1096	DM2-1-0	12Z	L1D4K-62AM-SW02	23	62AM	FIBER	PORT
MT-D1096	DM2-1-0	12Z	.34 FEX 105	1	12AD	FIBER	Cable was hanging
MT-D1096	DM2-3-1	12Z	L1D4K-62AM-SW02	24	62AM	FIBER	LABEL
MT-D1096	DM2-1-1	12Z	L1D4K-62AM-SW02	24	62AM	FIBER	PORT
MT-D1096	DM2-1-1	12Z	.34 FEX 105	2	12AD	FIBER	Cable was hanging
MT-D1096	DM2-2-0	12Z	.34 FEX 105	3	12AD	FIBER	
MT-D1096	DM2-2-1	12Z	.34 FEX 105	4	12AD	FIBER	
MT-D1096	DM2-3-0	12Z	.34 FEX 113	19	12AM	COPPER	
MT-D1096	DM2-3-1	12Z	.34 FEX 113	20	12AM	COPPER	
MT-D1096	DM2-4-0	12Z	.34 FEX 111	4	12AD	COPPER	
MT-D1096	DM2-4-1	12Z	.34 FEX 111	5	12AD	COPPER	
MT-D1096	DM2-4-1	12Z	L1D4K-62AM-SW02	43	62AM	FIBER	Cable was hanging
MT-D1096	DM2-4-2	12Z	.34 FEX 111	6	12AD	COPPER	
MT-D1096	DM2-4-3	12Z	.34 FEX 111	7	12AD	COPPER	

MT-D1096	SPA-0-1	12Z	USD-105-2DEF12AD	9	12AD	FIBER
MT-D1096	SPA-0-1	12Z	USD-105-2DEF12AD	5	12AD	FIBER
MT-D1096	SPB-0-1	12Z	USD-105-2DEF12AD	7	12AD	FIBER
MT-D1096	SPB-0-0	12Z	USD-105-2DEF12AD	6	12AD	FIBER
MT-D1096	SPA-0-0	12Z	USD-105-2DEF12AD	8	12AD	FIBER
MT-D1096	SPA-0-0	12Z	USD-105-2DEF12AD	4	12AD	FIBER
MT-D1096	SPB-0-0	12Z	USD-105-2DEF12AD	10	12AD	FIBER
MT-D1096	SPB-0-1	12Z	USD-105-2DEF12AD	11	12AD	FIBER
MT-D1096	SPB-0-0	12Z	USD30-36-VF12AH	7	12AD	FIBER
MT-D1096	SPB-0-1	12Z	USD30-36-VF12AH	8	12AD	FIBER
MT-D1096	SPA-0-1	12Z	USD30-36-VF12AH	6	12AD	FIBER
MT-D1096	SPA-0-0	12Z	USD30-36-VF12AH	5	12AD	FIBER
MT-D1096	SPA-2-0	12Z	L15K-26AM-SW23434	45	26AM	FIBER
MT-D1096	SPA-2-1	12Z	L15K-26AM-SW23434	46	26AM	FIBER
MT-D1096	SPB-2-0	12Z	L15K-26AM-SW23434	47	26AM	FIBER
MT-D1096	SPB-2-1	12Z	L15K-26AM-SW23434	48	26AM	FIBER
MT-D1096	ISCIS-SPA	12Z	.34 FEX 111	2	12AD	COPPER
MT-D1096	SPA-ISCIS-P1	12Z	.34 FEX 111	36	12AD	COPPER
MT-D1096	SPB-ISCIS-P1	12Z	.34 FEX 108	1	12AD	COPPER
MT-D1096	ISCIS-SPB	12Z	.34 FEX 111	3	12AD	COPPER

Old cable matrix before rebuild

<u>Source Hostname</u>	<u>Source Port</u>	<u>Source Tile</u>		<u>Destination Hostname</u>	<u>Destination Port</u>	<u>Destination Tile</u>	<u>Cable Type</u>	<u>Notes</u>	<u>Notes</u>
MT-D1096	DM2-3 0	12Z		L1D4K-62AL-SW02	29	62AL	Fiber	10Gb	FNM00134200418
MT-D1096	DM2-3 1	12Z		L1D4K-62AL-SW02	30	62AL	Fiber	10Gb	
MT-D1096	DM3-3 0	12Z		L1D4K-62AL-SW02	31	62AL	Fiber	10Gb	
MT-D1096	DM3-3 1	12Z		L1D4K-62AL-SW02	32	62AL	Fiber	10Gb	
MT-D1096	DM4-3 0	12Z		L1D4K-62AL-SW02	33	62AL	Fiber	10Gb	
MT-D1096	DM4-3 1	12Z		L1D4K-62AL-SW02	34	62AL	Fiber	10Gb	
MT-D1096	DM5-3 0	12Z		L1D4K-62AL-SW02	35	62AL	Fiber	10Gb	
MT-D1096	DM5-3 1	12Z		L1D4K-62AL-SW02	36	62AL	Fiber	10Gb	
MT-D1096	DM6-3 0	12Z		L1D4K-62AL-SW02	37	62AL	Fiber	10Gb	
MT-D1096	DM6-3 1	12Z		L1D4K-62AL-SW02	38	62AL	Fiber	10Gb	
MT-D1096	DM7-3 0	12Z		L1D4K-62AL-SW02	39	62AL	Fiber	10Gb	
MT-D1096	DM7-3 1	12Z		L1D4K-62AL-SW02	40	62AL	Fiber	10Gb	
MT-D1096	DM8-3 0	12Z		L1D4K-62AL-SW02	41	62AL	Fiber	10Gb	
MT-D1096	DM8-3 1	12Z		L1D4K-62AL-SW02	42	62AL	Fiber	10Gb	
MT-D1096	DM2-4 1	12Z		L1D4K-62AL-SW02	43	62AL	Fiber	10Gb	
MT-D1096	DM2-4 2	12Z		L1D4K-62AL-SW02	44	62AL	Fiber	10Gb	
MT-D1096	DM3-4 1	12Z		L1D4K-62AL-SW02	45	62AL	Fiber	10Gb	
MT-D1096	DM3-4 2	12Z		L1D4K-62AL-SW02	46	62AL	Fiber	10Gb	
MT-D1096	DM4-4 1	12Z		L1D4K-62AL-SW02	47	62AL	Fiber	10Gb	
MT-D1096	DM4-4 2	12Z		L1D4K-62AL-SW02	48	62AL	Fiber	10Gb	
MT-D1096	DM5-4 1	12Z		L1D4K-62AL-SW02	49	62AL	Fiber	10Gb	
MT-D1096	DM5-4 2	12Z		L1D4K-62AL-SW02	50	62AL	Fiber	10Gb	
MT-D1096	DM6-4 1	12Z		L1D4K-62AM-SW01	1	62AL	Fiber	10Gb	
MT-D1096	DM6-4 2	12Z		L1D4K-62AM-SW01	2	62AL	Fiber	10Gb	
MT-D1096	DM7-4 1	12Z		L1D4K-62AM-SW01	3	62AL	Fiber	10Gb	
MT-D1096	DM7-4 2	12Z		L1D4K-62AM-SW01	4	62AL	Fiber	10Gb	
MT-D1096	DM8-4 1	12Z		L1D4K-62AM-SW01	5	62AL	Fiber	10Gb	
MT-D1096	DM8-4 2	12Z		L1D4K-62AM-SW01	6	62AL	Fiber	10Gb	

New cable matrix for rebuild

12AD .34/110	16	12AD	mt-d1096	spa 4:0	12Z	copper	10gbe copper
12AD .34/110	17	12AD	mt-d1096	spb 4:0	12Z	copper	10gbe copper
12AD .34/110	18	12AD	mt-d1096	dm2 2:0	12Z	copper	10gbe copper
12AD .34/110	19	12AD	mt-d1096	dm3 2:0	12Z	copper	10gbe copper
12AD .34/110	20	12AD	mt-d1096	dm4 2:0	12Z	copper	10gbe copper
12AD .34/110	21	12AD	mt-d1096	dm5 2:0	12Z	copper	10gbe copper
12AD .34/110	22	12AD	mt-d1096	dm6 2:0	12Z	copper	10gbe copper
12AD .34/110	23	12AD	mt-d1096	dm7 2:0	12Z	copper	10gbe copper
12AD .34/110	24	12AD	mt-d1096	dm8 2:0	12Z	copper	10gbe copper
12AD .34/110	25	12AD	mt-d1096	dm9 2:0	12Z	copper	10gbe copper
12AD .34/111	1	12AD	mt-d1096	cs0	12Z	copper	1gbe copper
12AD .34/111	2	12AD	mt-d1096	spa 3:0	12Z	copper	1gbe copper
12AD .34/111	3	12AD	mt-d1096	spb 3:0	12Z	copper	1gbe copper
12AD .34/111	4	12AD	mt-d1096	dm2 1:0	12Z	copper	1gbe copper
12AD .34/111	5	12AD	mt-d1096	dm2 1:1	12Z	copper	1gbe copper
12AD .34/111	6	12AD	mt-d1096	dm2 1:2	12Z	copper	1gbe copper
12AD .34/111	7	12AD	mt-d1096	dm2 1:3	12Z	copper	1gbe copper
12AD .34/111	8	12AD	mt-d1096	dm3 1:0	12Z	copper	1gbe copper
12AD .34/111	9	12AD	mt-d1096	dm3 1:1	12Z	copper	1gbe copper
12AD .34/111	10	12AD	mt-d1096	dm3 1:2	12Z	copper	1gbe copper
12AD .34/111	11	12AD	mt-d1096	dm3 1:3	12Z	copper	1gbe copper
12AD .34/111	12	12AD	mt-d1096	dm4 1:0	12Z	copper	1gbe copper
12AD .34/111	13	12AD	mt-d1096	dm4 1:1	12Z	copper	1gbe copper
12AD .34/111	14	12AD	mt-d1096	dm4 1:2	12Z	copper	1gbe copper
12AD .34/111	15	12AD	mt-d1096	dm4 1:3	12Z	copper	1gbe copper
12AD .34/111	16	12AD	mt-d1096	dm5 1:0	12Z	copper	1gbe copper
12AD .34/111	17	12AD	mt-d1096	dm5 1:1	12Z	copper	1gbe copper
12AD .34/111	18	12AD	mt-d1096	dm5 1:2	12Z	copper	1gbe copper
12AD .34/111	19	12AD	mt-d1096	dm5 1:3	12Z	copper	1gbe copper
12AD .34/111	20	12AD	mt-d1096	dm6 1:0	12Z	copper	1gbe copper
12AD .34/111	21	12AD	mt-d1096	dm6 1:1	12Z	copper	1gbe copper
12AD .34/111	22	12AD	mt-d1096	dm6 1:2	12Z	copper	1gbe copper
12AD .34/111	23	12AD	mt-d1096	dm6 1:3	12Z	copper	1gbe copper
12AD .34/111	24	12AD	mt-d1096	dm7 1:0	12Z	copper	1gbe copper

New cable matrix for rebuild

12AD .34/111	25	12AD	mt-d1096	dm7 1:1	12Z	copper	1gbe copper
12AD .34/111	26	12AD	mt-d1096	dm7 1:2	12Z	copper	1gbe copper
12AD .34/111	27	12AD	mt-d1096	dm7 1:3	12Z	copper	1gbe copper
12AD .34/111	28	12AD	mt-d1096	dm8 1:0	12Z	copper	1gbe copper
12AD .34/111	29	12AD	mt-d1096	dm8 1:1	12Z	copper	1gbe copper
12AD .34/111	30	12AD	mt-d1096	dm8 1:2	12Z	copper	1gbe copper
12AD .34/111	31	12AD	mt-d1096	dm8 1:3	12Z	copper	1gbe copper
12AD .34/111	32	12AD	mt-d1096	dm9 1:0	12Z	copper	1gbe copper
12AD .34/111	33	12AD	mt-d1096	dm9 1:1	12Z	copper	1gbe copper
12AD .34/111	34	12AD	mt-d1096	dm9 1:2	12Z	copper	1gbe copper
12AD .34/111	35	12AD	mt-d1096	dm9 1:3	12Z	copper	1gbe copper
<hr/>							
L1D4K-62AL-SW02	31	62AL	mt-d1096	dm2 3:0	12Z	optical	10gbe optical
L1D4K-62AL-SW02	32	62AL	mt-d1096	dm2 4:0	12Z	optical	10gbe optical
L1D4K-62AL-SW02	33	62AL	mt-d1096	dm3 3:0	12Z	optical	10gbe optical
L1D4K-62AL-SW02	34	62AL	mt-d1096	dm3 4:0	12Z	optical	10gbe optical
L1D4K-62AL-SW02	35	62AL	mt-d1096	dm4 3:0	12Z	optical	10gbe optical
L1D4K-62AL-SW02	36	62AL	mt-d1096	dm4 4:0	12Z	optical	10gbe optical
L1D4K-62AL-SW02	37	62AL	mt-d1096	dm5 3:0	12Z	optical	10gbe optical
L1D4K-62AL-SW02	38	62AL	mt-d1096	dm5 4:0	12Z	optical	10gbe optical
L1D4K-62AL-SW02	39	62AL	mt-d1096	dm6 3:0	12Z	optical	10gbe optical
L1D4K-62AL-SW02	40	62AL	mt-d1096	dm6 4:0	12Z	optical	10gbe optical
L1D4K-62AL-SW02	41	62AL	mt-d1096	dm7 3:0	12Z	optical	10gbe optical
L1D4K-62AL-SW02	42	62AL	mt-d1096	dm7 4:0	12Z	optical	10gbe optical
L1D4K-62AL-SW02	47	62AL	mt-d1096	dm8 3:0	12Z	optical	10gbe optical
L1D4K-62AL-SW02	48	62AL	mt-d1096	dm8 4:0	12Z	optical	10gbe optical
L1D4K-62AL-SW02	49	62AL	mt-d1096	dm9 3:0	12Z	optical	10gbe optical
L1D4K-62AL-SW02	50	62AL	mt-d1096	dm9 4:0	12Z	optical	10gbe optical
<hr/>							
USD30_40_VF12AD	4	12AD	mt-d1096	spa 0:0	12Z	optical	16gb fc
USD30_40_VF12AD	5	12AD	mt-d1096	spa 0:1	12Z	optical	16gb fc
USD30_40_VF12AD	6	12AD	mt-d1096	spb 0:0	12Z	optical	16gb fc
USD30_40_VF12AD	7	12AD	mt-d1096	spc 0:1	12Z	optical	16gb fc

Old switch port configurations found and cleanup

```
interface Ethernet1/44
description 1/44 mt-d1096 spa-2:0
switchport access vlan 820
```

```
interface Ethernet1/46
description 1/46 mt-d1096 spa-2:1
switchport access vlan 820
```

```
interface Ethernet1/47
description 1/47 mt-d1096 spb-2:0
switchport access vlan 820
```

```
interface Ethernet1/48
description 1/48 mt-d1096 spb-2:1
switchport access vlan 820
```

```
interface Ethernet108/1/1
description 108/1/1 mt-d1096-spb-3:0
switchport access vlan 820
```

```
interface Ethernet111/1/1
description 111/1/1 mt-d1096-cs0
switchport access vlan 820
```

```
interface Ethernet111/1/2
description 111/1/2 mt-d1096-iscis-spa
switchport access vlan 820
```

```
interface Ethernet111/1/3
description 111/1/3 mt-d1096-iscis-spb
switchport access vlan 820
```

```
interface Ethernet111/1/4
description 111/1/4 mt-d1096-dm2-4.0
switchport mode trunk
switchport trunk allowed vlan 712,820
```

```
interface Ethernet111/1/5
description 111/1/5 mt-d1096-dm2-4.1
switchport mode trunk
switchport trunk allowed vlan 432,712,820
```

```
interface Ethernet111/1/6
description 111/1/6 mt-d1096-dm2-4.2
switchport mode trunk
switchport trunk allowed vlan 432,712,820
```

```
interface Ethernet111/1/7
description 111/1/7 mt-d1096-dm2-4.3
switchport mode trunk
switchport trunk allowed vlan 712,820
```

```
interface Ethernet111/1/8
description 111/1/8 mt-d1096-dm3-4.0
switchport mode trunk
switchport trunk allowed vlan 712,820
```

```
interface Ethernet111/1/9
description 111/1/9 mt-d1096-dm3-4.1
switchport mode trunk
switchport trunk allowed vlan 432,712,820
```

```
interface Ethernet111/1/10
description 111/1/10 mt-d1096-dm3-4.2
switchport mode trunk
```

```
interface Ethernet111/1/11
description 111/1/11 mt-d1096-dm3-4.3
switchport access vlan 820
```

```
interface Ethernet111/1/12
description 111/1/12 mt-d1096-dm4-4.0
switchport mode trunk
switchport trunk allowed vlan 712,820
```

```
interface Ethernet111/1/13
description 111/1/13 mt-d1096-dm4-4.1
switchport mode trunk
switchport trunk allowed vlan 432,712,820
```

```
interface Ethernet111/1/14
description 111/1/14 mt-d1096-dm4-4.2
switchport mode trunk
```

```
interface Ethernet111/1/15
description 111/1/15 mt-d1096-dm4-4.3
switchport access vlan 820
```

```
interface Ethernet111/1/16
description 111/1/16 mt-d1096-dm5-4.0
switchport mode trunk
switchport trunk allowed vlan 712,820
```

Old switch port configurations found and cleanup

```
interface Ethernet111/1/17
description 111/1/17 mt-d1096-dm5-4.1
switchport mode trunk
switchport trunk allowed vlan 432,712,820
```

```
interface Ethernet111/1/18
description 111/1/18 mt-d1096-dm5-4.2
switchport mode trunk
switchport trunk allowed vlan 432,712,820
```

```
interface Ethernet111/1/19
description 111/1/19 mt-d1096-dm5-4.3
switchport access vlan 820
```

```
interface Ethernet111/1/20
description 111/1/20 mt-d1096-dm6-4.0
switchport mode trunk
switchport trunk allowed vlan 712,820
```

```
interface Ethernet111/1/21
description 111/1/21 mt-d1096-dm6-4.1
switchport mode trunk
switchport trunk allowed vlan 432,712,820
```

```
interface Ethernet111/1/22
description 111/1/22 mt-d1096-dm6-4.2
switchport mode trunk
switchport trunk allowed vlan 432,712,820
```

```
interface Ethernet111/1/23
description 111/1/23 mt-d1096-dm6-4.3
switchport access vlan 820
```

```
interface Ethernet111/1/24
description 111/1/24 mt-d1096-dm7-4.0
switchport mode trunk
switchport trunk allowed vlan 712,820
```

```
interface Ethernet111/1/25
description 111/1/25 mt-d1096-dm7-4.1
switchport mode trunk
switchport trunk allowed vlan 432,712,820
```

```
interface Ethernet111/1/26
description 111/1/26 mt-d1096-dm7-4.2
switchport mode trunk
```

```
interface Ethernet111/1/27
description 111/1/27 mt-d1096-dm7-4.3
switchport access vlan 820
```

```
interface Ethernet111/1/28
description 111/1/28 mt-d1096-dm8-4.0
switchport mode trunk
switchport trunk allowed vlan 712,820
```

```
interface Ethernet111/1/29
description 111/1/29 mt-d1096-dm8-4.1
switchport mode trunk
switchport trunk allowed vlan 432,712,820
```

```
interface Ethernet111/1/30
description 111/1/30 mt-d1096-dm8-4.2
switchport mode trunk
switchport trunk allowed vlan 432,712,820
```

```
interface Ethernet111/1/31
description 111/1/31 mt-d1096-dm8-4.3
switchport access vlan 820
```

```
interface Ethernet111/1/32
description 111/1/32 mt-d1096-dm9-4.0
switchport access vlan 820
```

```
interface Ethernet111/1/33
description 111/1/33 mt-d1096-dm9-4.1
switchport access vlan 820
```

```
interface Ethernet111/1/34
description 111/1/34 mt-d1096-dm9-4.2
switchport access vlan 820
```

```
interface Ethernet111/1/35
description 111/1/35 mt-d1096-dm9-4.3
switchport access vlan 820
```

```
interface Ethernet111/1/36
description 111/1/36 mt-d1096-spa-3:0
switchport access vlan 820
```

```
interface Ethernet113/1/19
description 113/1/19 mt-d1096-dm2-3:0
switchport mode trunk
switchport trunk allowed vlan 432,712,820
```

```
interface Ethernet113/1/20
description 113/1/20 mt-d1096-dm2-3:1
switchport mode trunk
switchport trunk allowed vlan 432,712,820
```

New switch port configurations

interface Ethernet110/1/16
description 110/1/16 mt-d1096 spa 4-0
switchport mode trunk
switchport trunk allowed vlan 432,712,820

interface Ethernet110/1/17
description 110/1/17 mt-d1096 spb 4-0
switchport mode trunk
switchport trunk allowed vlan 432,712,820

interface Ethernet110/1/18
description 110/1/18 mt-d1096 dm2 2-0
switchport mode trunk
switchport trunk allowed vlan 432,712,820

interface Ethernet110/1/19
description 110/1/19 mt-d1096 dm3 2-0
switchport mode trunk
switchport trunk allowed vlan 432,712,820

interface Ethernet110/1/20
description 110/1/20 mt-d1096 dm4 2-0
switchport mode trunk
switchport trunk allowed vlan 432,712,820

interface Ethernet110/1/21
description 110/1/21 mt-d1096 dm5 2-0
switchport mode trunk
switchport trunk allowed vlan 432,712,820

interface Ethernet110/1/22
description 110/1/22 mt-d1096 dm6 2-0
switchport mode trunk
switchport trunk allowed vlan 432,712,820

interface Ethernet110/1/23
description 110/1/23 mt-d1096 dm7 2-0
switchport mode trunk
switchport trunk allowed vlan 432,712,820

interface Ethernet110/1/24
description 110/1/24 mt-d1096 dm8 2-0
switchport mode trunk
switchport trunk allowed vlan 432,712,820

interface Ethernet110/1/25
description 110/1/25 mt-d1096 dm9 2-0
switchport mode trunk
switchport trunk allowed vlan 432,712,820

interface Ethernet111/1/1
description 111/1/1 mt-d1096 cs0
switchport access vlan 820

interface Ethernet111/1/2
description 111/1/2 mt-d1096 spa 3-0
switchport mode trunk
switchport trunk allowed vlan 432,712,820

interface Ethernet111/1/3
description 111/1/3 mt-d1096 spb 3-0
switchport mode trunk
switchport trunk allowed vlan 432,712,820

interface Ethernet111/1/4
description 111/1/4 mt-d1096 dm2 1-0
switchport mode trunk
switchport trunk allowed vlan 432,712,820

interface Ethernet111/1/5
description 111/1/5 mt-d1096 dm2 1-1
switchport mode trunk
switchport trunk allowed vlan 432,712,820

interface Ethernet111/1/6
description 111/1/6 mt-d1096 dm2 1-2
switchport mode trunk
switchport trunk allowed vlan 432,712,820

interface Ethernet111/1/7
description 111/1/7 mt-d1096 dm2 1-3
switchport mode trunk
switchport trunk allowed vlan 432,712,820

interface Ethernet111/1/8
description 111/1/8 mt-d1096 dm3 1-0
switchport mode trunk
switchport trunk allowed vlan 432,712,820

interface Ethernet111/1/9
description 111/1/9 mt-d1096 dm3 1-1
switchport mode trunk
switchport trunk allowed vlan 432,712,820

interface Ethernet111/1/10
description 111/1/10 mt-d1096 dm3 1-2
switchport mode trunk
switchport trunk allowed vlan 432,712,820

interface Ethernet111/1/11
description 111/1/11 mt-d1096 dm3 1-3
switchport mode trunk
switchport trunk allowed vlan 432,712,820

New switch port configurations

interface Ethernet111/1/12 description 111/1/12 mt-d1096 dm4 1-0 switchport mode trunk switchport trunk allowed vlan 432,712,820	interface Ethernet111/1/19 description 111/1/19 mt-d1096 dm5 1-3 switchport mode trunk switchport trunk allowed vlan 432,712,820	interface Ethernet111/1/26 description 111/1/26 mt-d1096 dm7 1-2 switchport mode trunk switchport trunk allowed vlan 432,712,820
interface Ethernet111/1/13 description 111/1/13 mt-d1096 dm4 1-1 switchport mode trunk switchport trunk allowed vlan 432,712,820	interface Ethernet111/1/20 description 111/1/20 mt-d1096 dm6 1-0 switchport mode trunk switchport trunk allowed vlan 432,712,820	interface Ethernet111/1/27 description 111/1/27 mt-d1096 dm7 1-3 switchport mode trunk switchport trunk allowed vlan 432,712,820
interface Ethernet111/1/14 description 111/1/14 mt-d1096 dm4 1-2 switchport mode trunk switchport trunk allowed vlan 432,712,820	interface Ethernet111/1/21 description 111/1/21 mt-d1096 dm6 1-1 switchport mode trunk switchport trunk allowed vlan 432,712,820	interface Ethernet111/1/28 description 111/1/28 mt-d1096 dm8 1-0 switchport mode trunk switchport trunk allowed vlan 432,712,820
interface Ethernet111/1/15 description 111/1/15 mt-d1096 dm4 1-3 switchport mode trunk switchport trunk allowed vlan 432,712,820	interface Ethernet111/1/22 description 111/1/22 mt-d1096 dm6 1-2 switchport mode trunk switchport trunk allowed vlan 432,712,820	interface Ethernet111/1/29 description 111/1/29 mt-d1096 dm8 1-1 switchport mode trunk switchport trunk allowed vlan 432,712,820
interface Ethernet111/1/16 description 111/1/16 mt-d1096 dm5 1-0 switchport mode trunk switchport trunk allowed vlan 432,712,820	interface Ethernet111/1/23 description 111/1/23 mt-d1096 dm6 1-3 switchport mode trunk switchport trunk allowed vlan 432,712,820	interface Ethernet111/1/30 description 111/1/30 mt-d1096 dm8 1-2 switchport mode trunk switchport trunk allowed vlan 432,712,820
interface Ethernet111/1/17 description 111/1/17 mt-d1096 dm5 1-1 switchport mode trunk switchport trunk allowed vlan 432,712,820	interface Ethernet111/1/24 description 111/1/24 mt-d1096 dm7 1-0 switchport mode trunk switchport trunk allowed vlan 432,712,820	interface Ethernet111/1/31 description 111/1/31 mt-d1096 dm8 1-3 switchport mode trunk switchport trunk allowed vlan 432,712,820
interface Ethernet111/1/18 description 111/1/18 mt-d1096 dm5 1-2 switchport mode trunk switchport trunk allowed vlan 432,712,820	interface Ethernet111/1/25 description 111/1/25 mt-d1096 dm7 1-1 switchport mode trunk switchport trunk allowed vlan 432,712,820	interface Ethernet111/1/32 description 111/1/32 mt-d1096 dm9 1-0 switchport mode trunk switchport trunk allowed vlan 432,712,820

New switch port configurations

```
interface Ethernet111/1/33
description 111/1/33 mt-d1096 dm9 1-1
switchport mode trunk
switchport trunk allowed vlan 432,712,820
```

```
interface Ethernet111/1/34
description 111/1/34 mt-d1096 dm9 1-2
switchport mode trunk
switchport trunk allowed vlan 432,712,820
```

```
interface Ethernet111/1/35
description 111/1/35 mt-d1096 dm9 1-3
switchport mode trunk
switchport trunk allowed vlan 432,712,820
```

```
interface ethernet1/1/31
description "1/1/31 mt-d1096 dm2 3-0"
no shutdown
switchport mode trunk
switchport trunk allowed vlan
420,428,432,436,1660,1696,1714,1718-
1720
mtu 9214
flowcontrol receive off
spanning-tree bpduguard enable
spanning-tree guard root
spanning-tree port type edge
```

```
interface ethernet1/1/32
description "1/1/32 mt-d1096 dm2 4-0"
no shutdown
switchport mode trunk
switchport trunk allowed vlan
420,428,432,436,1660,1696,1714,1718-
1720
mtu 9214
flowcontrol receive off
spanning-tree bpduguard enable
spanning-tree guard root
spanning-tree port type edge
```

```
interface ethernet1/1/33
description "1/1/33 mt-d1096 dm3 3-0"
no shutdown
switchport mode trunk
switchport trunk allowed vlan
420,428,432,436,1660,1696,1714,1718-
1720
mtu 9214
flowcontrol receive off
spanning-tree bpduguard enable
spanning-tree guard root
spanning-tree port type edge
```

```
interface ethernet1/1/34
description "1/1/34 mt-d1096 dm3 4-0"
no shutdown
switchport mode trunk
switchport trunk allowed vlan
420,428,432,436,1660,1696,1714,1718-
1720
mtu 9214
flowcontrol receive off
spanning-tree bpduguard enable
spanning-tree guard root
spanning-tree port type edge
```

```
interface ethernet1/1/35
description "1/1/35 mt-d1096 dm4 3-0"
no shutdown
switchport mode trunk
switchport trunk allowed vlan
420,428,432,436,1660,1696,1714,1718-
1720
mtu 9214
flowcontrol receive off
spanning-tree bpduguard enable
spanning-tree guard root
spanning-tree port type edge
```

New switch port configurations

```
interface ethernet1/1/36
description "1/1/36 mt-d1096 dm4 4-0"
no shutdown
switchport mode trunk
switchport trunk allowed vlan
420,428,432,436,1660,1696,1714,1718-
1720
mtu 9214
flowcontrol receive off
spanning-tree bpduguard enable
spanning-tree guard root
spanning-tree port type edge
```

```
interface ethernet1/1/37
description "1/1/37 mt-d1096 dm5 3-0"
no shutdown
switchport mode trunk
switchport trunk allowed vlan
420,428,432,436,1660,1696,1714,1718-
1720
mtu 9214
flowcontrol receive off
spanning-tree bpduguard enable
spanning-tree guard root
spanning-tree port type edge
```

```
interface ethernet1/1/38
description "1/1/38 mt-d1096 dm5 4-0"
no shutdown
switchport mode trunk
switchport trunk allowed vlan
420,428,432,436,1660,1696,1714,1718-
1720
mtu 9214
flowcontrol receive off
spanning-tree bpduguard enable
spanning-tree guard root
spanning-tree port type edge
```

```
interface ethernet1/1/39
description "1/1/39 mt-d1096 dm6 3-0"
no shutdown
switchport mode trunk
switchport trunk allowed vlan
420,428,432,436,1660,1696,1714,1718-
1720
mtu 9214
flowcontrol receive off
spanning-tree bpduguard enable
spanning-tree guard root
spanning-tree port type edge
```

```
interface ethernet1/1/40
description "1/1/40 mt-d1096 dm6 4-0"
no shutdown
switchport mode trunk
switchport trunk allowed vlan
420,428,432,436,1660,1696,1714,1718-
1720
mtu 9214
flowcontrol receive off
spanning-tree bpduguard enable
spanning-tree guard root
spanning-tree port type edge
```

```
interface ethernet1/1/41
description "1/1/41 mt-d1096 dm7 3-0"
no shutdown
switchport mode trunk
switchport trunk allowed vlan
420,428,432,436,1660,1696,1714,1718-
1720
mtu 9214
flowcontrol receive off
spanning-tree bpduguard enable
spanning-tree guard root
spanning-tree port type edge
```

New switch port configurations

```
interface ethernet1/1/42
description "1/1/42 mt-d1096 dm7 4-0"
no shutdown
switchport mode trunk
switchport trunk allowed vlan
420,428,432,436,1660,1696,1714,1718-
1720
mtu 9214
flowcontrol receive off
spanning-tree bpduguard enable
spanning-tree guard root
spanning-tree port type edge
```

```
interface ethernet1/1/47
description "1/1/47 mt-d1096 dm8 3-0"
no shutdown
switchport mode trunk
switchport trunk allowed vlan
420,428,432,436,1660,1696,1714,1718-
1720
mtu 9214
flowcontrol receive off
spanning-tree bpduguard enable
spanning-tree guard root
spanning-tree port type edge
```

```
interface ethernet1/1/48
description "1/1/48 mt-d1096 dm8 4-0"
no shutdown
switchport mode trunk
switchport trunk allowed vlan
420,428,432,436,1660,1696,1714,1718-
1720
mtu 9214
flowcontrol receive off
spanning-tree bpduguard enable
spanning-tree guard root
spanning-tree port type edge
```

```
interface ethernet1/1/49
description "1/1/49 mt-d1096 dm9 3-0"
no shutdown
switchport mode trunk
switchport trunk allowed vlan
420,428,432,436,1660,1696,1714,1718-
1720
mtu 9214
flowcontrol receive off
spanning-tree bpduguard enable
spanning-tree guard root
spanning-tree port type edge
```

```
interface ethernet1/1/50
description "1/1/50 mt-d1096 dm9 4-0"
no shutdown
switchport mode trunk
switchport trunk allowed vlan
420,428,432,436,1660,1696,1714,1718-
1720
mtu 9214
flowcontrol receive off
spanning-tree bpduguard enable
spanning-tree guard root
spanning-tree port type edge
```

```
fc san
USD30_40_VF12AD : 4
12AD mt-d1096 spa 0:0

USD30_40_VF12AD : 5
12AD mt-d1096 spa 0:1

USD30_40_VF12AD : 6
12AD mt-d1096 spb 0:0

USD30_40_VF12AD : 7
12AD mt-d1096 spb 0:1
```

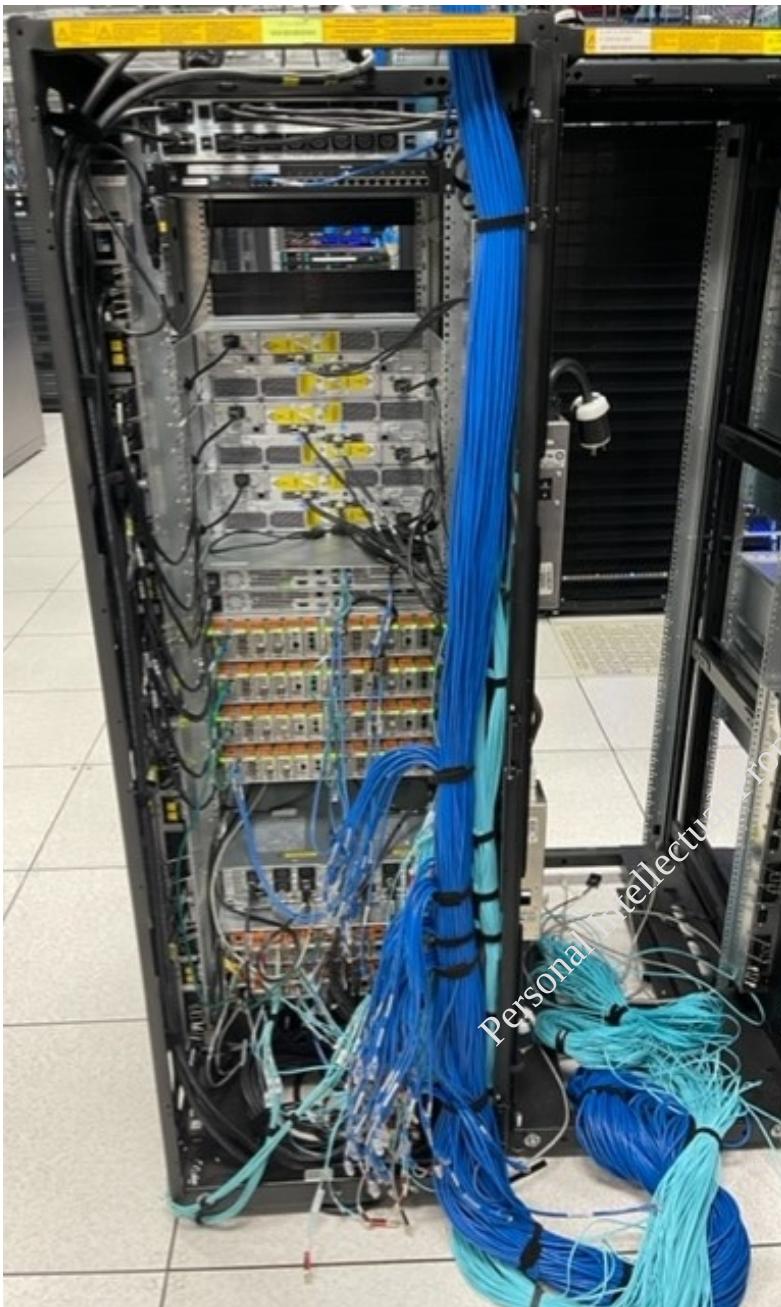
New switch port configurations

Eth110/1/16	Up	Po110	Eth111/1/7	Up	Po111	Eth111/1/17	Up	Po111
Eth110/1/17	Up	Po110	Eth111/1/8	Up	Po111	Eth111/1/18	Up	Po111
Eth110/1/18	Up	Po110	Eth111/1/9	Up	Po111	Eth111/1/19	Up	Po111
Eth110/1/19	Up	Po110	Eth111/1/10	Up	Po111	Eth111/1/20	Up	Po111
Eth110/1/20	Up	Po110	Eth111/1/11	Up	Po111	Eth111/1/21	Up	Po111
Eth110/1/21	Up	Po110	Eth111/1/12	Up	Po111	Eth111/1/22	Up	Po111
Eth110/1/22	Up	Po110	Eth111/1/13	Up	Po111	Eth111/1/23	Up	Po111
Eth110/1/23	Up	Po110	Eth111/1/14	Up	Po111	Eth111/1/24	Up	Po111
Eth110/1/24	Up	Po110	Eth111/1/15	Up	Po111	Eth111/1/25	Up	Po111
Eth110/1/25	Up	Po110	Eth111/1/16	Up	Po111	Eth111/1/26	Up	Po111

New switch port configurations

Eth 1/1/31	1/1/31 mt-d10.. up	10G	full	T	420,428,432,436,1660,1696,1714,1718-1720
Eth 1/1/32	1/1/32 mt-d10.. up	10G	full	T	420,428,432,436,1660,1696,1714,1718-1720
Eth 1/1/33	1/1/33 mt-d10.. up	10G	full	T	420,428,432,436,1660,1696,1714,1718-1720
Eth 1/1/34	1/1/34 mt-d10.. up	10G	full	T	420,428,432,436,1660,1696,1714,1718-1720
Eth 1/1/35	1/1/35 mt-d10.. up	10G	full	T	420,428,432,436,1660,1696,1714,1718-1720
Eth 1/1/36	1/1/36 mt-d10.. up	10G	full	T	420,428,432,436,1660,1696,1714,1718-1720
Eth 1/1/37	1/1/37 mt-d10.. up	10G	full	T	420,428,432,436,1660,1696,1714,1718-1720
Eth 1/1/38	1/1/38 mt-d10.. up	10G	full	T	420,428,432,436,1660,1696,1714,1718-1720
Eth 1/1/39	1/1/39 mt-d10.. up	10G	full	T	420,428,432,436,1660,1696,1714,1718-1720
Eth 1/1/40	1/1/40 mt-d10.. up	10G	full	T	420,428,432,436,1660,1696,1714,1718-1720
Eth 1/1/41	1/1/41 mt-d10.. up	10G	full	T	420,428,432,436,1660,1696,1714,1718-1720
Eth 1/1/42	1/1/42 mt-d10.. up	10G	full	T	420,428,432,436,1660,1696,1714,1718-1720
Eth 1/1/47	1/1/47 mt-d10.. up	10G	full	T	420,428,432,436,1660,1696,1714,1718-1720
Eth 1/1/48	1/1/48 mt-d10.. up	10G	full	T	420,428,432,436,1660,1696,1714,1718-1720
Eth 1/1/49	1/1/49 mt-d10.. up	10G	full	T	420,428,432,436,1660,1696,1714,1718-1720
Eth 1/1/50	1/1/50 mt-d10.. up	10G	full	T	420,428,432,436,1660,1696,1714,1718-1720

BEFORE



AFTER



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Oberon Densification and Relocation

17 arrays to be consolidated and relocated with new infrastructure cabling and reconfigurations

Design of rack and row layout

Physical rack and stack and cabling

Infrastructure cabinet switches reconfigurations

Mentoring of jr. members for implementation

Back end reconfigurations and front end reconfigurations

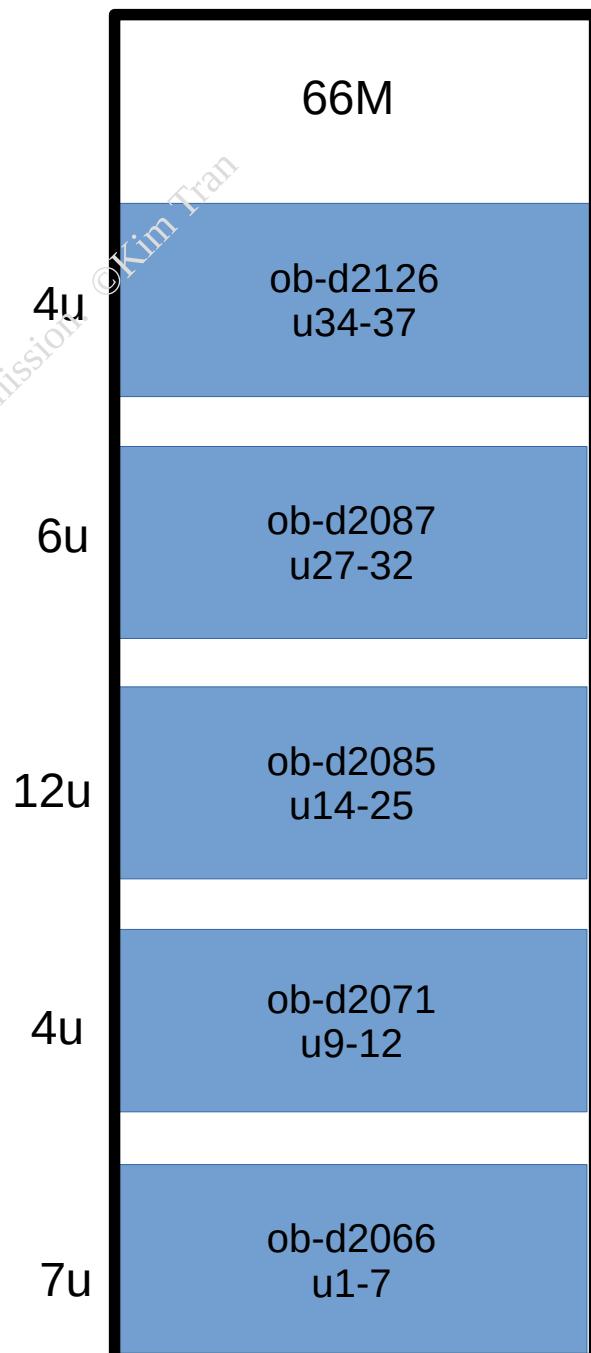
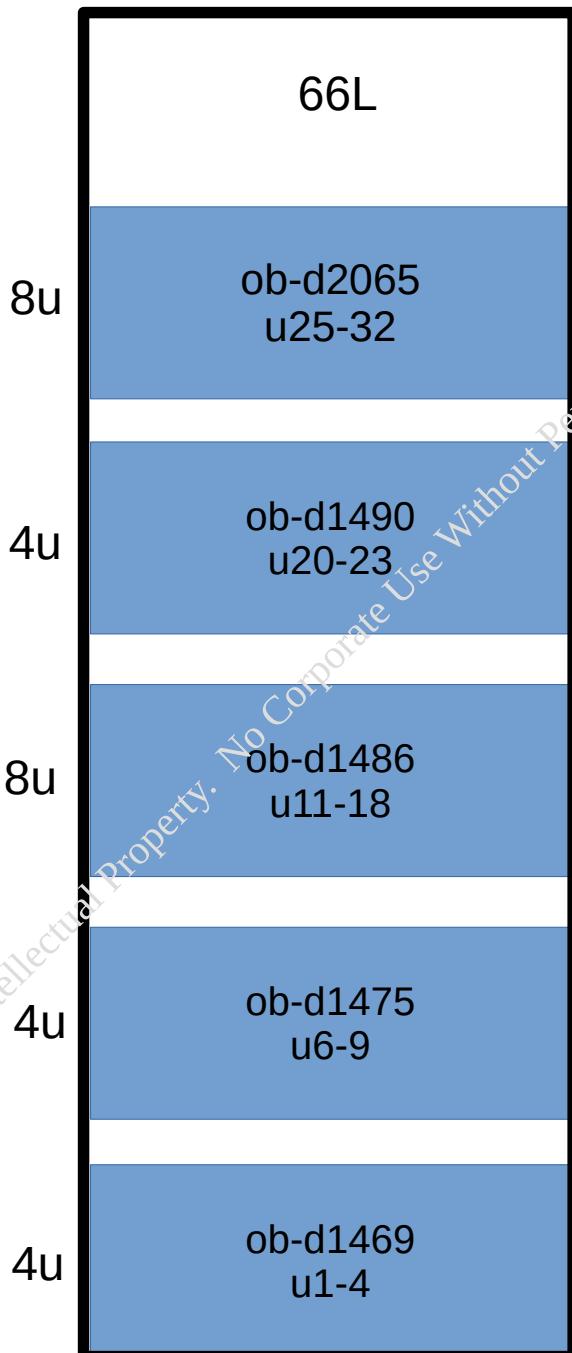
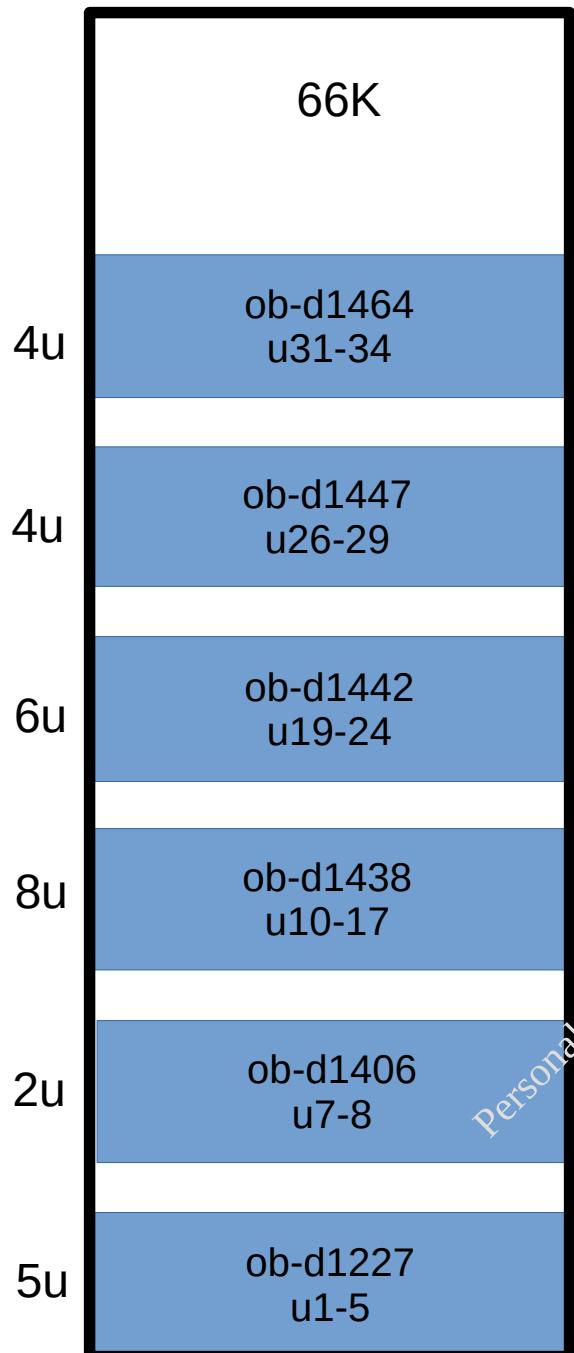
Consolidation of 17 oberons spreadout through rows 82 and 86 column one

Rack layout to maximize densification to 4 racks

Please ensure that all racks have WTI pdu's.

OB-D2105 to be re-racked to remove existing rack U gaps, and to re-cable backend connections of the cnaga daes to ensure proper dae slack and no - snag functionality when pulling out the enclosure to replace and verify drives.

*Re-racking of the cnaga daes should be done one at a time, and after racking, test to ensure that removal and closure of the dae is clean, meaning dae can be fully extended without snagging and trapping any backend cabling and can be closed without snagging and trapping any backend cabling.



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ob-d2105
u4-23

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Sheet1

<u>Source Hostname</u>	<u>Source Port</u>	<u>Source Tile</u>	<u>Destination Hostname</u>	<u>Destination Port</u>	<u>Destination Tile</u>	<u>Cable Type</u>	<u>Notes</u>		
L1D4K	3	66H	OB-D1227	SPA-MGMT	66K	COPPER	10gbe copper	10.228	-SW3
L1D4K	4	66H	OB-D1227	SPB-MGMT	66K	COPPER	10gbe copper	10.228	-SW5
L1D4K	5	66H	OB-D1406	SPA-MGMT	66K	COPPER	10gbe copper	10.228	-SW6
L1D4K	6	66H	OB-D1406	SPB-MGMT	66K	COPPER	10gbe copper	10.228	-SW7
L1D4K	7	66H	OB-D1438	SPA-MGMT	66K	COPPER	10gbe copper	10.228	VF66H
L1D4K	8	66H	OB-D1438	SPB-MGMT	66K	COPPER	10gbe copper		
L1D4K	9	66H	OB-D1442	SPA-MGMT	66K	COPPER	10gbe copper		
L1D4K	10	66H	OB-D1442	SPB-MGMT	66K	COPPER	10gbe copper		
L1D4K	11	66H	OB-D1447	SPA-MGMT	66K	COPPER	10gbe copper		
L1D4K	12	66H	OB-D1447	SPB-MGMT	66K	COPPER	10gbe copper		
L1D4K	13	66H	OB-D1464	SPA-MGMT	66K	COPPER	10gbe copper		
L1D4K	14	66H	OB-D1464	SPB-MGMT	66K	COPPER	10gbe copper		
L1D4K	15	66H	OB-D1469	SPA-MGMT	66L	COPPER	10gbe copper		
L1D4K	16	66H	OB-D1469	SPB-MGMT	66L	COPPER	10gbe copper		
L1D4K	17	66H	OB-D1475	SPA-MGMT	66L	COPPER	10gbe copper		
L1D4K	18	66H	OB-D1475	SPB-MGMT	66L	COPPER	10gbe copper		
L1D4K	19	66H	OB-D1486	SPA-MGMT	66L	COPPER	10gbe copper		
L1D4K	20	66H	OB-D1486	SPB-MGMT	66L	COPPER	10gbe copper		
L1D4K	21	66H	OB-D1490	SPA-MGMT	66L	COPPER	10gbe copper		
L1D4K	22	66H	OB-D1490	SPB-MGMT	66L	COPPER	10gbe copper		
L1D4K	23	66H	OB-D2065	SPA-MGMT	66L	COPPER	10gbe copper		
L1D4K	24	66H	OB-D2065	SPB-MGMT	66L	COPPER	10gbe copper		
L1D4K	31	66H	OB-D2066	SPA-MGMT	66M	COPPER	10gbe copper		
L1D4K	32	66H	OB-D2066	SPB-MGMT	66M	COPPER	10gbe copper		
L1D4K	33	66H	OB-D2071	SPA-MGMT	66M	COPPER	10gbe copper		
L1D4K	34	66H	OB-D2071	SPB-MGMT	66M	COPPER	10gbe copper		
L1D4K	35	66H	OB-D2085	SPA-MGMT	66M	COPPER	10gbe copper		
L1D4K	36	66H	OB-D2085	SPB-MGMT	66M	COPPER	10gbe copper		
L1D4K	37	66H	OB-D2087	SPA-MGMT	66M	COPPER	10gbe copper		
L1D4K	38	66H	OB-D2087	SPB-MGMT	66M	COPPER	10gbe copper		
L1D4K	39	66H	OB-D2105	SPA-MGMT	66R	COPPER	10gbe copper		
L1D4K	40	66H	OB-D2105	SPB-MGMT	66R	COPPER	10gbe copper		
L1D4K	41	66H	OB-D2126	SPA-MGMT	66M	COPPER	10gbe copper		
L1D4K	42	66H	OB-D2126	SPB-MGMT	66M	COPPER	10gbe copper		
L1D4K	43	66H	OB-D2087	SPB-ETH2	66M	COPPER	10gbe copper		
L1D4K	44	66H	OB-D2087	SPB-ETH3	66M	COPPER	10gbe copper		
L1D4K	45	66H	OB-D2105	SPA-ETH2	66R	COPPER	10gbe copper		
L1D4K	46	66H	OB-D2105	SPA-ETH3	66R	COPPER	10gbe copper		

L1D4K	47	66H	OB-D2105	SPB-ETH2	66R	COPPER	10gbe copper		
L1D4K	48	66H	OB-D2105	SPB-ETH3	66R	COPPER	10gbe copper		
L1D4K	49	66H	OB-D2126	SPA-ETH2	66M	COPPER	10gbe copper		
L1D4K	50	66H	OB-D2126	SPA-ETH3	66M	COPPER	10gbe copper		
L1D4K	51	66H	OB-D2126	SPB-ETH2	66M	COPPER	10gbe copper		
L1D4K	52	66H	OB-D2126	SPB-ETH3	66M	COPPER	10gbe copper		
<hr/>									
L1D4K	1	66H	OB-D1227	SPA-ETH2	66K	COPPER	10gbe copper		
L1D4K	2	66H	OB-D1227	SPB-ETH2	66K	COPPER	10gbe copper		
L1D4K	3	66H	OB-D1406	SPA-ETH2	66K	COPPER	10gbe copper		
L1D4K	4	66H	OB-D1406	SPA-ETH3	66K	COPPER	10gbe copper		
L1D4K	5	66H	OB-D1406	SPB-ETH2	66K	COPPER	10gbe copper		
L1D4K	6	66H	OB-D1406	SPB-ETH3	66K	COPPER	10gbe copper		
L1D4K	7	66H	OB-D1438	SPA-ETH2	66K	COPPER	10gbe copper		
L1D4K	8	66H	OB-D1438	SPA-ETH3	66K	COPPER	10gbe copper		
L1D4K	9	66H	OB-D1438	SPB-ETH2	66K	COPPER	10gbe copper		
L1D4K	10	66H	OB-D1438	SPB-ETH3	66K	COPPER	10gbe copper		
L1D4K	11	66H	OB-D1442	SPA-ETH2	66K	COPPER	10gbe copper		
L1D4K	12	66H	OB-D1442	SPB-ETH2	66K	COPPER	10gbe copper		
L1D4K	13	66H	OB-D1447	SPA-ETH2	66K	COPPER	10gbe copper		
L1D4K	14	66H	OB-D1447	SPB-ETH2	66K	COPPER	10gbe copper		
L1D4K	15	66H	OB-D1464	SPA-ETH2	66K	COPPER	10gbe copper		
L1D4K	16	66H	OB-D1464	SPA-ETH3	66K	COPPER	10gbe copper		
L1D4K	17	66H	OB-D1464	SPB-ETH2	66K	COPPER	10gbe copper		
L1D4K	18	66H	OB-D1464	SPB-ETH3	66K	COPPER	10gbe copper		
L1D4K	19	66H	OB-D1469	SPA-ETH2	66L	COPPER	10gbe copper		
L1D4K	20	66H	OB-D1469	SPA-ETH3	66L	COPPER	10gbe copper		
L1D4K	21	66H	OB-D1469	SPB-ETH2	66L	COPPER	10gbe copper		
L1D4K	22	66H	OB-D1469	SPB-ETH3	66L	COPPER	10gbe copper		
L1D4K	23	66H	OB-D1475	SPA-ETH2	66L	COPPER	10gbe copper		
L1D4K	24	66H	OB-D1475	SPB-ETH2	66L	COPPER	10gbe copper		
L1D4K	31	66H	OB-D1486	SPA-ETH2	66L	COPPER	10gbe copper		
L1D4K	32	66H	OB-D1486	SPA-ETH3	66L	COPPER	10gbe copper		
L1D4K	33	66H	OB-D1486	SPB-ETH2	66L	COPPER	10gbe copper		
L1D4K	34	66H	OB-D1486	SPB-ETH3	66L	COPPER	10gbe copper		
L1D4K	35	66H	OB-D1490	SPA-ETH2	66L	COPPER	10gbe copper		
L1D4K	36	66H	OB-D1490	SPA-ETH3	66L	COPPER	10gbe copper		
L1D4K	37	66H	OB-D1490	SPB-ETH2	66L	COPPER	10gbe copper		
L1D4K	38	66H	OB-D1490	SPB-ETH3	66L	COPPER	10gbe copper		
L1D4K	39	66H	OB-D2065	SPA-ETH2	66L	COPPER	10gbe copper		

L1D4K	40	66H	OB-D2065	SPA-ETH3	66L	COPPER	10gbe copper		
L1D4K	41	66H	OB-D2065	SPB-ETH2	66L	COPPER	10gbe copper		
L1D4K	42	66H	OB-D2065	SPB-ETH3	66L	COPPER	10gbe copper		
L1D4K	43	66H	OB-D2066	SPA-ETH2	66M	COPPER	10gbe copper		
L1D4K	44	66H	OB-D2066	SPA-ETH3	66M	COPPER	10gbe copper		
L1D4K	45	66H	OB-D2066	SPB-ETH2	66M	COPPER	10gbe copper		
L1D4K	46	66H	OB-D2066	SPB-ETH3	66M	COPPER	10gbe copper		
L1D4K	47	66H	OB-D2071	SPA-ETH2	66M	COPPER	10gbe copper		
L1D4K	48	66H	OB-D2071	SPB-ETH2	66M	COPPER	10gbe copper		
L1D4K	49	66H	OB-D2085	SPA-ETH2	66M	COPPER	10gbe copper		
L1D4K	50	66H	OB-D2085	SPA-ETH3	66M	COPPER	10gbe copper		
L1D4K	51	66H	OB-D2085	SPB-ETH2	66M	COPPER	10gbe copper		
L1D4K	52	66H	OB-D2085	SPB-ETH3	66M	COPPER	10gbe copper		
L1D4K	53	66H	OB-D2087	SPA-ETH2	66M	COPPER	10gbe copper		
L1D4K	54	66H	OB-D2087	SPA-ETH3	66M	COPPER	10gbe copper		
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L1D4K	1	66H	OB-D2105	SPA-1:0	66R	COPPER	10gbe copper		
L1D4K	2	66H	OB-D2105	SPA-1:1	66R	COPPER	10gbe copper		
L1D4K	3	66H	OB-D2105	SPA-1:2	66R	COPPER	10gbe copper		
L1D4K	4	66H	OB-D2105	SPA-1:3	66R	COPPER	10gbe copper		
L1D4K	5	66H	OB-D2105	SPB-1:0	66R	COPPER	10gbe copper		
L1D4K	6	66H	OB-D2105	SPB-1:1	66R	COPPER	10gbe copper		
L1D4K	7	66H	OB-D2105	SPB-1:2	66R	COPPER	10gbe copper		
L1D4K	8	66H	OB-D2105	SPB-1:3	66R	COPPER	10gbe copper		
L1D4K	9	66H	OB-D2071	SPA-1:0	66M	COPPER	10gbe copper		
L1D4K	10	66H	OB-D2071	SPA-1:1	66M	COPPER	10gbe copper		
L1D4K	11	66H	OB-D2071	SPB-1:0	66M	COPPER	10gbe copper		
L1D4K	12	66H	OB-D2071	SPB-1:1	66M	COPPER	10gbe copper		
L1D4K	13	66H	WTI-66K	MGMT	66K	COPPER	10gbe copper		
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Ports 1									
L1D4K	1	66H	OB-D1475	SPA-CNA4	66L	FIBER	10gbe optical		
L1D4K	2	66H	OB-D1475	SPB-CNA4	66L	FIBER	10gbe optical		
L1D4K	3	66H	OB-D2087	SPA-CNA4	66M	FIBER	10gbe optical		
L1D4K	4	66H	OB-D2087	SPA-CNA5	66M	FIBER	10gbe optical		
L1D4K	5	66H	OB-D2087	SPB-CNA4	66M	FIBER	10gbe optical		
L1D4K	6	66H	OB-D2087	SPB-CNA5	66M	FIBER	10gbe optical		
L1D4K	7	66H	OB-D1442	SPA-1:0	66K	FIBER	10gbe optical		
L1D4K	8	66H	OB-D1442	SPA-1:1	66K	FIBER	10gbe optical		

L1D4K	9	66H	OB-D1442	SPB-1:0	66K	FIBER	10gbe optical		
L1D4K	10	66H	OB-D1442	SPB-1:1	66K	FIBER	10gbe optical		
L1D4K	11	66H	OB-D1447	SPA-0:0	66K	FIBER	10gbe optical		
L1D4K	12	66H	OB-D1447	SPB-0:0	66K	FIBER	10gbe optical		
L1D4K	13	66H	OB-D1469	SPA-0:0	66L	FIBER	10gbe optical		
L1D4K	14	66H	OB-D1469	SPA-0:1	66L	FIBER	10gbe optical		
L1D4K	15	66H	OB-D1469	SPB-0:0	66L	FIBER	10gbe optical		
L1D4K	16	66H	OB-D1469	SPB-0:1	66L	FIBER	10gbe optical		
L1D4K	21	66H	OB-D2085	SPA-1:0	66M	FIBER	10gbe optical		
L1D4K	22	66H	OB-D2085	SPA-1:1	66M	FIBER	10gbe optical		
L1D4K	23	66H	OB-D2085	SPB-1:0	66M	FIBER	10gbe optical		
L1D4K	24	66H	OB-D2085	SPB-1:1	66M	FIBER	10gbe optical		
L1D4K	31	66H	OB-D2105	SPA-0:0	66R	FIBER	10gbe optical		
L1D4K	32	66H	OB-D2105	SPA-0:1	66R	FIBER	10gbe optical		
L1D4K	33	66H	OB-D2105	SPA-0:2	66R	FIBER	10gbe optical		
L1D4K	34	66H	OB-D2105	SPA-0:3	66R	FIBER	10gbe optical		
L1D4K	35	66H	OB-D2105	SPB-0:0	66R	FIBER	10gbe optical		
L1D4K	36	66H	OB-D2105	SPB-0:1	66R	FIBER	10gbe optical		
L1D4K	37	66H	OB-D2105	SPB-0:2	66R	FIBER	10gbe optical		
L1D4K	38	66H	OB-D2105	SPB-0:3	66R	FIBER	10gbe optical		
USD-									
USD-	2	66H	OB-D1227	SPA-CNA4	66K	FIBER	16gbe optical – fc san		
USD-	3	66H	OB-D1227	SPB-CNA4	66K	FIBER	16gbe optical – fc san		
USD-	4	66H	OB-D1442	SPA-CNA4	66K	FIBER	16gbe optical – fc san		
USD-	5	66H	OB-D1442	SPA-CNA5	66K	FIBER	16gbe optical – fc san		
USD-	6	66H	OB-D1442	SPB-CNA4	66K	FIBER	16gbe optical – fc san		
USD-	7	66H	OB-D1442	SPB-CNA5	66K	FIBER	16gbe optical – fc san		
USD-	8	66H	OB-D1447	SPA-CNA4	66K	FIBER	16gbe optical – fc san		
USD-	9	66H	OB-D1447	SPA-CNA5	66K	FIBER	16gbe optical – fc san		
USD-	10	66H	OB-D1447	SPB-CNA4	66K	FIBER	16gbe optical – fc san		
USD-	11	66H	OB-D1447	SPB-CNA5	66K	FIBER	16gbe optical – fc san		
USD-	12	66H	OB-D1464	SPA-CNA4	66K	FIBER	16gbe optical – fc san		
USD-	13	66H	OB-D1464	SPA-CNA5	66K	FIBER	16gbe optical – fc san		
USD-	14	66H	OB-D1464	SPB-CNA4	66K	FIBER	16gbe optical – fc san		
USD-	15	66H	OB-D1464	SPB-CNA5	66K	FIBER	16gbe optical – fc san		
USD-	16	66H	OB-D1469	SPA-CNA4	66L	FIBER	16gbe optical – fc san		
USD-	17	66H	OB-D1469	SPA-CNA5	66L	FIBER	16gbe optical – fc san		
USD-	18	66H	OB-D1469	SPB-CNA4	66L	FIBER	16gbe optical – fc san		
USD-	19	66H	OB-D1469	SPB-CNA5	66L	FIBER	16gbe optical – fc san		
USD-	20	66H	OB-D1486	SPA-CNA4	66L	FIBER	16gbe optical – fc san		

USD	21	66H	OB-D1486	SPB-CNA4	66L	FIBER	16gbe optical – fc san		
USD	22	66H	OB-D1490	SPA-CNA4	66L	FIBER	16gbe optical – fc san		
USD	23	66H	OB-D1490	SPA-CNA5	66L	FIBER	16gbe optical – fc san		
USD	26	66H	OB-D1490	SPB-CNA4	66L	FIBER	16gbe optical – fc san		
USD	27	66H	OB-D1490	SPB-CNA5	66L	FIBER	16gbe optical – fc san		
USD	28	66H	OB-D2065	SPA-CNA4	66L	FIBER	16gbe optical – fc san		
USD	29	66H	OB-D2065	SPA-CNA5	66L	FIBER	16gbe optical – fc san		
USD	30	66H	OB-D2065	SPB-CNA4	66L	FIBER	16gbe optical – fc san		
USD	31	66H	OB-D2065	SPB-CNA5	66L	FIBER	16gbe optical – fc san		
USD	32	66H	OB-D2066	SPA-CNA4	66M	FIBER	16gbe optical – fc san		
USD	33	66H	OB-D2066	SPA-CNA5	66M	FIBER	16gbe optical – fc san		
USD	34	66H	OB-D2066	SPB-CNA4	66M	FIBER	16gbe optical – fc san		
USD	35	66H	OB-D2066	SPB-CNA5	66M	FIBER	16gbe optical – fc san		
USD	36	66H	OB-D2071	SPA-CNA4	66M	FIBER	16gbe optical – fc san		
USD	37	66H	OB-D2071	SPB-CNA4	66M	FIBER	16gbe optical – fc san		
USD	38	66H	OB-D2085	SPA-CNA4	66M	FIBER	16gbe optical – fc san		
USD	39	66H	OB-D2085	SPA-CNA5	66M	FIBER	16gbe optical – fc san		
USD	40	66H	OB-D2085	SPB-CNA4	66M	FIBER	16gbe optical – fc san		
USD	41	66H	OB-D2085	SPB-CNA5	66M	FIBER	16gbe optical – fc san		
USD	42	66H	OB-D2105	SPA-CNA4	66R	FIBER	16gbe optical – fc san		
USD	43	66H	OB-D2105	SPA-CNA5	66R	FIBER	16gbe optical – fc san		
USD	44	66H	OB-D2105	SPB-CNA4	66R	FIBER	16gbe optical – fc san		
USD	45	66H	OB-D2105	SPB-CNA5	66R	FIBER	16gbe optical – fc san		
USD	46	66H	OB-D2126	SPA-CNA4	66M	FIBER	16gbe optical – fc san		
USD	47	66H	OB-D2126	SPB-CNA4	66M	FIBER	16gbe optical – fc san		
USD	50	66H	OB-D1406	SPA-1:1	66K	FIBER	16gbe optical – fc san		
USD	51	66H	OB-D1406	SPA-1:2	66K	FIBER	16gbe optical – fc san		
USD	52	66H	OB-D1406	SPB-1:1	66K	FIBER	16gbe optical – fc san		
USD	53	66H	OB-D1406	SPB-1:2	66K	FIBER	16gbe optical – fc san		
USD	54	66H	OB-D1475	SPA-0:0	66L	FIBER	16gbe optical – fc san		
USD	55	66H	OB-D1475	SPA-0:1	66L	FIBER	16gbe optical – fc san		
USD	56	66H	OB-D1475	SPB-0:0	66L	FIBER	16gbe optical – fc san		
USD	57	66H	OB-D1475	SPB-0:1	66L	FIBER	16gbe optical – fc san		
USD	58	66H	OB-D2071	SPA-0:0	66M	FIBER	16gbe optical – fc san		
USD	59	66H	OB-D2071	SPB-0:0	66M	FIBER	16gbe optical – fc san		
USD	60	66H	OB-D2085	SPA-0:0	66M	FIBER	16gbe optical – fc san		
USD	61	66H	OB-D2085	SPA-0:1	66M	FIBER	16gbe optical – fc san		
USD	62	66H	OB-D2085	SPA-0:2	66M	FIBER	16gbe optical – fc san		
USD	63	66H	OB-D2085	SPB-0:0	66M	FIBER	16gbe optical – fc san		
USD	64	66H	OB-D2085	SPB-0:1	66M	FIBER	16gbe optical – fc san		
USD	65	66H	OB-D2085	SPB-0:2	66M	FIBER	16gbe optical – fc san		

Sheet1

USD		66	66H	OB-D2087	SPA-0:0	66M	FIBER	16gbe optical – fc san		
USD		67	66H	OB-D2087	SPA-0:1	66M	FIBER	16gbe optical – fc san		
USD		68	66H	OB-D2087	SPB-0:0	66M	FIBER	16gbe optical – fc san		
USD		69	66H	OB-D2087	SPB-0:1	66M	FIBER	16gbe optical – fc san		

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Lead Engineer on project to consolidate and relocate 17 storage arrays for QA team in China

Assisted by junior team members for rack/stack and network configurations.

Inventory, Plan, Design new infrastructure rack cabling of Dell 4k switches and configurations, array rack layouts, pre-relocation healthcheck and post-relocation health verification.

Joseph [REDACTED] awarded You

Winning Together
July 6, 2021

Durham Lab 1 Oberon Consolidation

I would like to thank Kim and Drew for the extra effort that went into relocating 17 Capitalized arrays that were scattered in different rows in Durham Lab 1. They planned the move in advance including the consolidation plan, executed the pre-cabling required for move and switch setups. Additionally, they executed the relocations ahead of scheduled timeline. This project helped to free up two rows in Durham Lab 1 that included 36 tile spaces for New Product additions to the lab. Excellent work guys. Through your extra efforts Durham IEO LabOps was able to exceed customer expectations with no impact to their schedules.

Bravo Award

1500 Points

From: Tran, Kim <Ngoc.Tran@dell.com>
Sent: Thursday, June 24, 2021 2:16 PM
To: [REDACTED]
Subject: Re: Oberon Consolidation Starting 6.17.21 - Please review

Folks,

ob-d1438 and ob-d1442 verification complete and ready for hand off.

That should do it for the oberons in this consolidation/relocation effort.

Special thanks to Drew [REDACTED] for the heavy lifting and sanity checking the layouts while in motion.
Also, to Jim [REDACTED] for the on demand network configurations.

please submit a ticket for any further issues.

Kim Tran
Lab Systems Engineer
Infrastructure Solutions Group
Dell EMC | IEO Cloud Operations

From: Tran, Kim <Ngoc.Tran@dell.com>
Sent: Wednesday, June 23, 2021 3:42 PM
To: <undisclosed>
Subject: Re: Oberon Consolidation Starting 6.17.21 - Please review

Folks,

ob-d2105 verification complete and ready for hand off

customer needs to submit ticket for drive failures and to verify their replication/fs status

ob-d2071 verification complete and ready for hand off

ob-d1438, ob-d1442, has issues being addressed for final verification and hand off

From: [REDACTED]
Sent: Tuesday, June 22, 2021 4:50 PM
To: <undisclosed>
Subject: RE: Oberon Consolidation Starting 6.17.21 - Please review

Thanks for the updates Kim.

Best practice would be to include a reservation name associated with the arrays. J

From: Tran, Kim <Ngoc.Tran@dell.com>
Sent: Tuesday, June 22, 2021 3:39 PM
To: <undisclosed>
Subject: Re: Oberon Consolidation Starting 6.17.21 - Please review

Cab 66R has been racked and stacked, cabled, and powered on

Verification is in progress

ob-d2105 in progress

Kim Tran
Lab Systems Engineer

From: Tran, Kim <Ngoc.Tran@dell.com>
Sent: Tuesday, June 22, 2021 2:52 PM
To: <undisclosed>
Subject: Re: Oberon Consolidation Starting 6.17.21 - Please review

ob-d2126 verification complete

ready for hand off

From: Tran, Kim <Ngoc.Tran@dell.com>
Sent: Tuesday, June 22, 2021 2:38 PM
To: <undisclosed>
Subject: Re: Oberon Consolidation Starting 6.17.21 - Please review

Folks,

ob-d2066	verification complete
ob-d1490	verification complete
ob-d1406	verification complete
ob-d2065	verification complete
ob-d1438	in progress
ob-d2105	rack in progress
ob-d2126	in progress
ob-d1469	verification complete
ob-d1486	verification complete
ob-d1464	verification complete
ob-d1475	verification complete
ob-d2071	in progress
ob-d1447	verification complete
ob-d2085	verification complete
ob-d2087	verification complete
ob-d1227	verification complete
ob-d1442	in progress

ob-d1486 will be handed off, though ticket needed for drive failure replacement
ob-d1464 and ob-d1475 will be handed off, users will need to verify their replication/fs configurations

ob-d1438, ob-d1442, ob-d2071, ob-d2126 has issues being addressed for final verification and hand off

Kim Tran
Lab Systems Engineer
Infrastructure Solutions Group
Dell EMC | IEO Cloud Operations
office: +1 919 767-0885
ngoc.tran@dell.com

From: Tran, Kim <Ngoc.Tran@dell.com>
Sent: Tuesday, June 22, 2021 9:14 AM
To: <undisclosed>
Subject: Re: Oberon Consolidation Starting 6.17.21 - Please review

Morning Sandy,

ob-d2066 in progress
ob-d1490 in progress
ob-d1406 in progress
ob-d2065 in progress
ob-
d1438 in progress
ob- rack in
d2105 progress
ob-
d2126 in progress
ob-
d1469 in progress

ob-d1486 in progress
ob-d1464 in progress
ob-d1475 in progress
ob-d2071 in progress
ob-d1447 in progress
ob-d2085 in progress
ob-d2087 in progress
ob-d1227 in progress
ob-d1442 in progress

There should be another update by end of day, and some arrays should be ready for handoff.

thanks,

Kim Tran
Lab Systems Engineer

From: [REDACTED]
Sent: Monday, June 21, 2021 9:43 AM
To: Tran, Kim <Ngoc.Tran@dell.com><undisclosed>
Subject: RE: Oberon Consolidation Starting 6.17.21 - Please review

Hi Kim,

Can you provide one overall list of the status of verifications?

Thanks.

Sandy

From: Tran, Kim <Ngoc.Tran@dell.com>

Sent: Friday, June 18, 2021 3:33 PM

To: <undisclosed>

Subject: Re: Oberon Consolidation Starting 6.17.21 - Please review

Folks,

Cab 66L has been racked and stacked, cabled, and powered on.
Verifications are still in progress to address any issues found.

Notifications will be sent out after verification of arrays done and ready for handover.

Cab 66M is on scheduled to be worked 6/21.

Arrays in cab 66L:

ob-d1469
ob-d1475
ob-d1486
ob-d1490
ob-d2065

thanks,

Kim Tran
Lab Systems Engineer
Infrastructure Solutions Group
Dell EMC | IEO Cloud Operations

office: +1 919 767-0885
ngoc.tran@dell.com

From: Tran, Kim <Ngoc.Tran@dell.com>
Sent: Thursday, June 17, 2021 3:24 PM
To: <undisclosed>
Subject: Re: Oberon Consolidation Starting 6.17.21 - Please review

Folks,

Cab 66K has been racked and stacked, cabled, and powered on.
Verification will be done tomorrow to address any issues found.

Cab 66L is on scheduled to be worked tomorrow 6/18.

Arrays in cab 66K:

ob-d1227
ob-d1406
ob-d1438
ob-d1442
ob-d1447
ob-d1464

thanks,

Kim Tran
Lab Systems Engineer
I
From: [REDACTED]

Subject: RE: Oberon Consolidation Starting 6.17.21 - Please review

Thanks Sandy.

And thanks to all for your help in this effort.

Cheers,

Joey

From: [REDACTED]

Subject: Oberon Consolidation Starting 6.17.21 - Please review -

All,

Note that the arrays below are scheduled to start relocation on 6.17.21. To expedite readiness the new locations have been pre-cabled and network setups preconfigured. Daily emails will be sent to track progress, arrays that are ready for use and any issues. It is important to note that all IPs and equipment names will remain the same.

Cheers,

Joey

[REDACTED]
[REDACTED]
[REDACTED]
Tran, Kim;

Subject: RE: Oberon Consolidation - Please Review and Reply

Yes mam.

Are we OK to start the 17th?

Joey

[REDACTED] Tran, Kim

Subject: RE: Oberon Consolidation - Please Review and Reply

Okay, so do I assume that as of 6/17 all will be offline until you notify all are back online?

[REDACTED] Tran, Kim

Subject: RE: Oberon Consolidation - Please Review and Reply

Sandy,

The 17th is still our target if all testing is done. We will be moving all arrays over a week long period and will notify all once they are back online.

Cheers,

Joey

[REDACTED] Tran, Kim

Subject: RE: Oberon Consolidation - Please Review and Reply

Hi Joey,

Just wanted to follow up on this.

Is the plan to still start relocations this Thursday, 6/17?

Any way you can tell me when my array (OB-D1227) will be moved?

I just want to notify John [REDACTED]. He's the primary user of the array.

Thanks.

Sandy

[REDACTED] Tran, Kim

Subject: RE: Oberon Consolidation - Please Review and Reply

Please see below.

Name	SPE Chassis SN	PSNT	Model	Tile	Owner	Reserved By	Reservation Made By	Reservation Purpose
OB-D1227	FNM0015350043 8	FNM0015350044 6	Unity 500	82J	[REDACTED]	[REDACTED]	[REDACTED]	Code Deployment
OB-D1438	APM0018270158 4	APM0018281513 1	Unity 450F	82K P	[REDACTED]	[REDACTED]	[REDACTED]	CTA testing
OB-D1442	APM0018232419 7	APM0018280790 7	Unity 550F	82T P	[REDACTED]	[REDACTED]	[REDACTED]	test
OB-D1469	APM0018260820 8	APM0018282007 9	Unity 450F	82U P	[REDACTED]	[REDACTED]	[REDACTED]	I&C
OB-D1486	APM0018254293 2	APM0018301899 0	Unity 550	82U	[REDACTED]	[REDACTED]	[REDACTED]	CTA testing
OB-D1490	APM0018254113 0	APM0018281545 5	Unity 450F	82I	[REDACTED]	[REDACTED]	[REDACTED]	test
OB-D2065	APM0019012011	APM0019062000	Unity	82J	[REDACTED]	[REDACTED]	[REDACTED]	Reserve CFT Unity

	7	8	600							
OB-D2066	6	APM0018511882	APM0019062000	Unity 600	82F					SP Testing
OB-D2105	2	APM0018493009	APM0019112403	Unity 500	82N					TEST
OB-D2126	3	APM0019201819	APM0019210176	Unity 300	82S					SP Testing
OB-D1406	8	APM0017070685	APM0017070685	Unity 300	86G					Share to VSA team
OB-D1447	2	APM0018232419	APM0018280286	Unity 550F	86N					CTA testing
OB-D1464	1	APM0018242384	APM0018280813	Unity 450F	86F					It is reserved in Go project.
OB-D1475	2	APM0018254905	APM0018280285	Unity 450F	86F					CTA testing
OB-D2071	0	APM0019100382	APM0019100856	Unity 650F	86K					Reserve CFT Unity
OB-D2085	2	APM0019061733	APM0019090771	Unity 500	86N					I&C
OB-D2087	9	APM0018471588	APM0019090771	Unity 400	86U					vc_hyperv_warnad

Joey

[REDACTED] Tran, Kim

Subject: RE: Oberon Consolidation - Please Review and Reply

OK. All in Swarm. Will pull

Joe

[REDACTED] Tran, Kim

Subject: RE: Oberon Consolidation - Please Review and Reply

Hi Joey,

Can you provide names of who has the equipment reserved and also the Responsible Manager?

Thanks.

[REDACTED] Tran, Kim

Subject: RE: Oberon Consolidation - Please Review and Reply

All,

Just wanted to check back that we are OK to start array relocation starting on 6.17.21 for all of Oberon's below. Please note that we are in the process of pre-cabling all arrays for the new locations along with the addition of new Dell Infrastructure. It is important to note that all array names, IPs and Vlans will stay the same post relocation. The moves will be executed from 6.17 - 6.25 and we will notify all as the arrays come back online in the new location. Please ensure all users are aware.

ob-d2066
ob-d1490
ob-d1406
ob-d2065
ob-d1438
ob-d2105
ob-d2126
ob-d1469

ob-d1486

ob-d1464

ob-d1475

ob-d2071

ob-d1447

ob-d2085

ob-d2087

ob-d1227

ob-d1442

Cheers,

Joey

Tran, Kim

Subject: RE: Oberon Consolidation - Please Review and Reply

Hi Joey,

So far, no one object to do move on June 17th.

One question is OB-D1406 is listed both in Row 86 and Row 82. From Swarm information, it is located in 86G.
Could you please double check?

Thanks!

Thanks,
Jennifer

[REDACTED]; Tran, Kim

Subject: RE: Oberon Consolidation - Please Review and Reply

Many thanks!

Joey

[REDACTED] Tran, Kim

Subject: RE: Oberon Consolidation - Please Review and Reply

Hi Joey,

Sorry for not replying in time.

If Goshawk will be RTS on June 9th as planned. June 17th to start relocation should be fine.
I am checking with related managers to get their feedback. I will reply to you for their feedback.
And I will inform you around June 10th to see if there is any change for Goshawk Golden Run test.

Thanks,
Jennifer

[REDACTED] Tran, Kim

Subject: RE: Oberon Consolidation - Please Review and Reply

All,
Reminder. Please advise.

Joe

[REDACTED] Tran, Kim

Subject: Oberon Consolidation - Please Review and Reply

Jennifer,

Wanted to circle back once more on the plans to consolidate all Oberon's into one area. We currently have a consolidation plan and cable Matrix for the arrays below to relocate from row 82 & 86 to row 66. **As agreed we are targeting work to start 6.17.21** Please let us know if this date is OK. As I recall you all are still executing Goshhawk test. It is important to note that we have or will:

- Pre-cable new row
- Add additional Network and Fiber Switches for array moves
- No IPs or Equip. Names will change and access will remain the same

We will manage the Hosts moves for this area as a separate effort.

ob-d2066

ob-d1490

ob-d1406

ob-d2065

ob-d1438

ob-d2105

ob-d2126

ob-d1469

ob-d1486

ob-d1464

ob-d1475

ob-d2071

ob-d1447

ob-d2085

ob-d2087

ob-d1227

ob-d1442

Joe

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France Unity / Oberon Project

Setup of 4 Unity arrays for France Customer's Metrosync Dev Environment

Setup of arrays that were procured for the project

Solo design to implementation to delivery

Design of rack and row layout

Physical rack and stack and cabling

Design of Infrastructure cabinet cabling and ip scheme

Back end reconfigurations and front end reconfigurations

From: excellence@emc.com <excellence@emc.com>
Sent: Tuesday, April 4, 2017 7:42 AM
To: Tran, Ngoc
Subject: Congratulations, you've received an Excellence@Dell Award!

Hi Ngoc K Tran,

Congratulations !

I am pleased to notify you that you have been approved for an Excellence@Dell Bronze level award! Thank you for your continued contributions, which drive our culture of innovation, passion, and success.

Simply click the link below to view your award certificate.

<http://excellenceatemc.emc.com/mr/nominations/96461251/present>

For more information about Excellence@Dell, [click here](#).

From: [REDACTED]
Sent: Thursday, March 30, 2017 8:13 AM
To: Tran, Ngoc
Subject: RE: Hardware in Durham (4 Oberon's) - Status update 3.29.17

Nice work and communication Kim.
jc

From: Tran, Ngoc
Sent: Wednesday, March 29, 2017 11:30 PM
To: [REDACTED]

Cc:

Subject: RE: Hardware in Durham (4 Oberon's) - Status update 3.29.17

Folks,

Ready to handover

The 4 arrays are cabled, have been pxe/reinit with the merlin code (4.2.xxx)

Basic configuration have been performed and verified

Please reference RITM0227272 for more details on work/tasks done.

Array sp's management/unisphere and ssh connectivity have been verified

To my knowledge and understanding of original request:

==

deployed as FC connected pairs for synchronous replication (mirror view).

This means we must have pairs of arrays directly connected through the
SRM FC port (SPA of array1 to SPA of array2 and SPB or array1 connected to SPB of array2)

We need IP's and cabling to access subnets 10.109.165 and 10.109.173

We need to have FTP/http/cifs ports open for each ip

We need to have ssh port open for the system management

==

So connections were for sp's management (cooper).

Two 16gb fc connections per sp per array.

FC connection for array pairs (spa/spb) for 2 pairs of ob-d1404/ob-d1405 and ob-d1406/ob-d1407.

Connectivity to the 10.109.165 and 10.109.173 has been tested with ob-d1404:

PING 10.109.165.1 (10.109.165.1) from 10.109.17.35 : 56(84) bytes of data.

64 bytes from 10.109.165.1: icmp_seq=1 ttl=255 time=1.44 ms

64 bytes from 10.109.165.1: icmp_seq=2 ttl=255 time=1.25 ms

64 bytes from 10.109.165.1: icmp_seq=3 ttl=255 time=1.44 ms

-- 10.109.165.1 ping statistics --

3 packets transmitted, 3 received, 0% packet loss, time 2002ms
rtt min/avg/max/mdev = 1.254/1.381/1.447/0.099 ms

```
02:55:56 root@OB-D1404-spb spb:~> ping 10.109.173.1
PING 10.109.173.1 (10.109.173.1) from 10.109.17.35 : 56(84) bytes of data.
64 bytes from 10.109.173.1: icmp_seq=1 ttl=255 time=0.842 ms
64 bytes from 10.109.173.1: icmp_seq=2 ttl=255 time=1.07 ms
```

-- 10.109.173.1 ping statistics --

2 packets transmitted, 2 received, 0% packet loss, time 999ms

rtt min/avg/max/mdev = 0.842/0.957/1.073/0.119 ms

```
02:56:04 root@OB-D1404-spb spb:~>
```

Pings to the requested networks' gateway confirmed.

Presumptions would be similar results for the other arrays as they were configured the same, excluding any specific cases with network/vlan/configuration issues, for other protocols, please verify and open ticket as necessary to correct or as required with any additional cables or ip's requested.

Thanks,

Kim Tran

Lab Systems Engineer

Infrastructure Solutions Group

Dell EMC | EOS² Cloud Operations

(919) 767-0885

ngoc.tran@dell.com

From [REDACTED]

Sent: Wednesday, March 29, 2017 8:24 PM

To: [REDACTED] Tran, Ngoc <Ngoc.Tran@emc.com> [REDACTED]

Subject: RE: Hardware in Durham (4 Oberon's) - Status update 3.28.17

Hello,

Please note the 4 arrays are still being set up, target EOD 3.30.17 to complete. Once Tran has all arrays in-service you can open request for additional IPs and or I can work with networking to obtain the required IPs. From what I recall these will be used to test Harrier?

Cheers,
Joey

From: [REDACTED]
Sent: Wednesday, March 29, 2017 3:39 AM
To: Tran, Ngoc <Ngoc.Tran@emc.com>
[REDACTED]
Subject: RE: Hardware in Durham (4 Oberon's) - Status update 3.28.17

Thank You for the update! Please let us know when it's all set!

I still have a question. When I swarm ob-d1404 I do not see any IO IPs assigned to the array, is it something that we've forgot to ask or is it still on-going?

If I remember correctly I think we've asked for connection to the 10.109.72.x subnet but did we ask for IO IP addresses? Anyway, we will need 8 IO IPs for each array (that means 4*8 IPs in total)

Thanks!

--
Michel.

From: Tran, Ngoc
Sent: mercredi 29 mars 2017 03:05
[REDACTED]
Subject: RE: Hardware in Durham (4 Oberon's) - Status update 3.28.17

Folks,

The first pair of arrays, ob-d1404 and ob-d1405 are currently being pxe reinit now, along with verification.
The second pair of arrays ob-d1406 and ob-d1407 are scheduled for bmc/network connectivity and pxe reinit/verification for tomorrow.
Estimate turnover for all arrays is for Thursday, without further delays or complications expected.

Thanks,

Kim Tran
Lab Systems Engineer
Infrastructure Solutions Group
Dell EMC | EOS² Cloud Operations
(919) 767-0885
ngoc.tran@dell.com

From: Tran, Ngoc
Sent: Monday, March 27, 2017 5:00 PM
To: [REDACTED]
<sy> [REDACTED]
Cc: [REDACTED]
<Ch> [REDACTED]
Subject: RE: Hardware in Durham (4 Oberon's) - Status update 3.27.17

Folks,

-Cable matrix done
-Cable run done {2 fc connections / sp, in addition to fc connection for replication: ob-d1404/ob-d1405 and ob-d1406 /ob-d1407 pairs)
-zoning, may be required – PLEASE CONFIRM IF THIS IS THE CASE
-ip's for interfaces have been configured

Please see attached matrix for details

-Currently working through issues with networking team, on resolving the bmc/mgmt interfaces and attaining the dhcp reserved ip's
-this is holding up the rest of the process of initializing arrays with latest array code and verification

Kim Tran
Lab Systems Engineer
Infrastructure Solutions Group
Dell EMC | EOS² Cloud Operations
(919) 767-0885
ngoc.tran@dell.com

From: [REDACTED]
Sent: [REDACTED]
To: [REDACTED]
Go: [REDACTED]
Cc: [REDACTED]
<Ngoc.Tran@emc.com>
Subject: RE: Hardware in Durham (4 Oberon's) - Status update 3.24.17

Tran, Ngoc

Thank you to keep us updated.

Regards
Fred

From: [REDACTED]
Sent: [REDACTED]
To: [REDACTED]
Cc: [REDACTED] Tran, Ngoc
Subject: RE: Hardware in Durham (4 Oberon's) - Status update 3.24.17

All,
Please see below for an update on your hardware setup.

IP's have been requested, Swarm names assigned and the cable matrix is complete. Cabling will commence today and conclude Monday, followed by final configurations. Target Readiness will be EOD 3.28.17 EST.
Arrays Names will be.

OB-D1404
OB-D1405
OB-D1406
OB-D1407

RITM0227272

Cheers,
Joey [REDACTED]

From:

Sent:

To: R

Cc: C

Frederic <[f](#)>; Tran, Ngoc <Ngoc.Tran@emc.com>

Subject: RE: Hardware in Durham (4 Oberon's)

All,

Please see below for a status update on the 4 Oberon's listed.

As of 3.21.17 the arrays have been racked and powered and we have fulfilled the infrastructure needs. Work has started on the cable Matrix and general setup. As requested we

Will provide 2 16GB FC connections per SP (4 per array) and will load all arrays with latest Merlin code and assign all arrays to the 10.109.xx.xx subnet.

One RITM will be created for all associated task and the target for readiness is Friday 3.24.17 PM EST.

REQ0192398

Install - physical setup of EMC Unity 300 - APM00170709445
Install - physical setup of EMC Unity 300 - APM00170706848
Install - physical setup of EMC Unity 300 - APM00170706850
Install - physical setup of EMC Unity 300 - APM00170709441

Cheers,

Joey

From: [REDACTED]
Sent: [REDACTED]
To: [REDACTED]
Cc: [REDACTED]
Fred [REDACTED]
Subject: RE: Hardware in Durham

+FredC

Joe plans to provide an update soon.

-Sylvia

From: [REDACTED]
Sent: [REDACTED]
To: [REDACTED]
Cc: [REDACTED]
<[fran](#)>
Subject: RE: Hardware in Durham

Hi Joseph

Having discussed with Alain, here are our needs (added to Michel mail)

We need IP's and cabling to access subnets 10.109.165 and 10.109.173

We need to have FTP/http/cifs ports open for each ip
We need to have ssh port open for the system management

Thanks for your help

Regards

Fred

From: [REDACTED]
Sent: [REDACTED]
To: C [REDACTED]
Cc: C [REDACTED]
Subject: RE: Hardware in Durham

Hi Joseph,

As far as I know, there's no requirement for specific zoning on these arrays.

On my side the only requirement I have is to that they must be deployed as FC connected pairs for synchronous replication (mirror view). This means we must have pairs of arrays directly connected through the SRM FC port (SPA of array1 to SPA of array2 and SPB or array1 connected to SPB of array2)

Ideally we would have the following pairs set for synchronous replication: bc-h1404 with bc-h1405 and bc-h1564 with bc-h1254.

For Ethernet connectivity, Alain may confirm but I believe it would be good to have the arrays file Ethernet ports connected to the 10.109.165.x network (please alain correct me if I'm wrong)

Thanks for your support!

--
Michel.

From: [REDACTED]
Sent: [REDACTED]
To: L [REDACTED]
Cc: C [REDACTED]
Subject: RE: Hardware in Durham

All
Any input on the query below?

Cheers,
Joey

From: [REDACTED]
Sent: [REDACTED]
To: [REDACTED]
Cc: [REDACTED]
<[sy](#)>
Subject: RE: Hardware in Durham

Hi Joseph

+Alain Ledouaron that drives the Dur LAB1 test setups for protocol area,
+ Michel Gosse that works closely on sync replication
+ Sylvia, because this is Sylvia ☺

Alain, Michel, , we have these two pairs of hdw to conduct metrosync test and dev, we need to be able to execute regression test ops 'as usual'
Alain, please indicate the connectivity requirements to address functional testing , Michel, please follow the replication aspects.

Thanks All

Regards

Fred

From: [REDACTED]
Sent: [REDACTED]
To: [REDACTED]
Cc: [REDACTED]
Subject: FW: Hardware in Durham

Fred,

Need your help sir. As noted below the 4 Oberon's listed are for your use as part of "US protocol lab (Durham lab 1)" and should beaded to SWARM in the CPO Office Restricted and CI-Client Interoperability Pools? As of today I have found a location in the Oberon area (Durham Lab 1) to locate the 4 arrays, however we need to gather what your setup requirements are for these units. i.e. code, connectivity, any zoning etc... Any help much appreciated.

REQ0192398

Install - physical setup of EMC Unity 300 - APM00170709445
Install - physical setup of EMC Unity 300 - APM00170706848
Install - physical setup of EMC Unity 300 - APM00170706850
Install - physical setup of EMC Unity 300 - APM00170709441

Cheers,
Joey Chippewa

From: [REDACTED]
Sent: [REDACTED]
To: [REDACTED]
Cc: [REDACTED]
<[fr](#)>
Subject: RE: Hardware in Durham

Hi Joey,

These systems should be installed in Fred [REDACTED] lab. This should be US protocol lab (Durham lab 1).

They do need to be deployed as FC connected pairs for Sync (Mirrorview) replication testing).

Currently Lab 2 in Hopkinton should have SC-H1404 and BC-H1405 in this configuration. LAB 1 in Hopkinton has BC-H1564 and BC-H1254. I can follow up with DM team if more info is needed. Also John [REDACTED] team in Hopkinton is setting up sync replication pairs as well so they should have info to shared.

The systems in SWARM should be in CPO Office Restricted and CI-Client Interoperability Pools.

Thanks,
--Julie

From: [REDACTED]
Sent: [REDACTED]
To: Name [REDACTED]
Cc: Work [REDACTED]
Subject: Hardware in Durham

Hello,

We have received the following hardware in Durham and I was informed that you might be able to provide the requirements. Any help much appreciated.

REQ0192398

Work in Progress	Joseph [REDACTED]	Install - physical setup of EMC Unity 300 - APM00170709445
Work in Progress	Joseph [REDACTED]	Install - physical setup of EMC Unity 300 - APM00170706848
Work in Progress	Joseph [REDACTED]	Install - physical setup of EMC Unity 300 - APM00170706850
Work in Progress	Joseph [REDACTED]	Install - physical setup of EMC Unity 300 - APM00170709441

Cheers,
Joey

Joey
Sr. Project Manager
Dell EMC
(919)742-XXXX
[Joseph](#)



South Plainfield Project

Setup of 4 VNX2 arrays for Customer Test Environment

Setup of arrays that arrived out of state

Design of rack and row layout

Physical rack and stack and cabling

Design of Infrastructure cabinet cabling and ip scheme

Mentoring of jr. members for implementation

Back end reconfigurations and front end reconfigurations

From: excellence@emc.com <excellence@emc.com>
Sent: Friday, February 24, 2017 2:54 PM
To: Tran, Ngoc
Subject: Congratulations, you've received an Excellence@Dell Award!

Hi Ngoc K Tran,

Congratulations !

I am pleased to notify you that you have been approved for an Excellence@Dell Bronze level award! Thank you for your continued contributions, which drive our culture of innovation, passion, and success.

Simply click the link below to view your award certificate.

<http://excellenceatemc.emc.com/mnr/nominations/90082500/present>

For more information about Excellence@Dell, [click here](#).

[REDACTED]
Sent: Tuesday, February 7, 2017 7:25 AM

[REDACTED]
Subject: RE: South PlainField - hand off

Good work Kim, Bryan and Ed.

From: Tran, Ngoc
[REDACTED]

[REDACTED]

Subject: RE: South PlainField - hand off

Chris,

Here's an update on the progress:

The arrays and hosts have been racked/stacked.

Cabling and switch ports, network/connectivity ran and configured.

Arrays and hosts have been powered on and configured with requested (or latest stable available) os/image

Connectivity/access as applicable validated (bmc/solmux[terminal-console]/ssh, etc...)

Attached is the cable matrix / ip information

Environment is ready for hand off/returned.

Please reach out to Joey [REDACTED] for further issues.

I would like to take a moment to **THANK EVERYONE** involved. Meeting the delivery timeline would not have been possible without your efforts. A very special **THANK YOU** goes out to **DAN** [REDACTED] for on the spot assistance with hiccups and roadblocks that were encountered throughout the progress at multiple levels of the effort.

Kim Tran
Lab Systems Engineer
Dell EMC | EOS² Cloud Operations
(919) 767-0885
ngoc.tran@dell.com

[REDACTED]
Sent: Thursday, February 02, 2017 10:06 AM
[REDACTED]

Subject: Re: South PlainField Syncup Part Deux Update 1.31.17 |

Hi Guys-

I'm looking over the cable matrix and IP plan, currently the Lenovo boxes are IPd as such:

nc8020090	MJ00P726	10.228.20.90
nc8020091	MJ00P72A	10.228.20.91
nc8020092	MJ00P729	10.228.20.92
nc8020093	MJ00P723	10.228.20.93
nc8020094	MJ00P725	10.228.20.94
nc8020095	MJ00V2VA	10.228.20.95

Can this be modified as follows:

MJ00V2VA	10.228.20.90
MJ00P72A	10.228.20.91
MJ00P729	10.228.20.92
MJ00P725	10.228.20.93
MJ00P726	10.228.20.94
MJ00P723	10.228.20.95

It's somewhat important that these remain in the same order that they were in before they left, meaning ...2VA is the 1st one of the group as it is the master for the rest of them.

Thanks!

Chris

[REDACTED]
Date: Tuesday, January 31, 2017 at 3:42 PM

[REDACTED] "Tran, Ngoc" <Ngoc.Tran@emc.com>, [REDACTED]

[REDACTED]>
Subject: RE: South PlainField Syncup Part Deux Update 1.31.17

Chris,

Work is proceeding to plan ! The team is making excellent progress on all fronts. See action update below.

Actions:

*** The following actions were taken in support of the next steps in this effort. Please provide any updates by replying to all on this email thread.

#	Action	Owner	Opened	Forecast	Actual	Status/Comment
1	Provide additional server requirements for review	[REDACTED]	1.26.17	1.31.17	1.30.17	
2	Scrap old Servers (Dells)	[REDACTED]	1.26.17	1.31.17	1.31.17	
3	Set up SharePoint site for project	[REDACTED]	1.26.17	1.26.17	1.26.17	
4	Develop Rack Layout for (4) Jetfires /(2) BC's. Utilizing existing space on Row 12	Kim Tran	1.26.17	1.27.16	1.27.17	
5	Reinstall all Array hardware in new locations	Kim Tran / [REDACTED]	1.26.17	1.30.17	1.30.17	
6	Develop new IP scheme for new hardware South Plainfield hardware	[REDACTED]	1.30.17	1.31.17	1.31.17	
7	IP Plan for all of existing South Plainfield hardware in Durham	[REDACTED]				TBD
8	Relocate (6) Lenovo servers & 2 supermicro to 12AE server rack	[REDACTED]	1.26.17	1.27.16	1.30.17	
9	Develop Cable Matrix for Arrays and Hosts additions	Kim Tran	1.26.17	1.30.17	1.31.17	
10	Run all cables for new hardware additions (array/hosts)	Kim Tran / [REDACTED]	1.26.17	2.2.17		
11	Array configurations and setup	Kim Tran / [REDACTED]	1.26.17	2.7.17		
12	Host configurations	[REDACTED]	1.26.17	2.3.17		

[SharePoint Site](#) └ ----- CTRL Right click

Sent: Thursday, January 26, 2017 2:50 PM
To: [REDACTED] Tran, Ngoc; S [REDACTED]
Subject: South PlainField Syncup Part Deux 1.26.17

All,

Many thanks for your time to review & plan the re-installation of the recently relocated hardware from South Plainfield to Durham Lab 1.

Please see below for a summary of our meeting , actions planned and key data points and timeline. Also note I have created a SharePoint site(ref. below) to house all associated project data (Rack layout, Hosts data, IPS, cable matrix).

Summary

Meeting to discuss and plan the reinstallation of 4 racks of hardware from South Plainfield to Durham. Team reviewed hardware listing and setup requirements, IP changes and expectations for availability in Durham. Team agreed that all older servers (Dell 1950s and SuperMicro) can be removed from service and Chris will provide a data on additional server needs.

Timeline

Target Date to complete all work has been reset to [2.7.16](#).

Key Project Notes

- Project team defined and team kickoff held. Team and responsibilities:

• Kim Tran - Overall Prime (Planning and Arrays)

• [REDACTED] - Array Installation and Setup

• [REDACTED] - Lenovo Server Setup

• [REDACTED] - Archi - Networking Prime

**** Please note that all ESM tickets to transfer and install hardware for this effort has been closed. The project lead will open a Generic project RITM and the team will open tasks as required to execute the re-installation and configuration.

- Chris [REDACTED] - Single Point of Contact for all requirements gathering and liaison into Engineering team
- **Hardware shipment** – All hardware arrived in Durham on 1.23.17 and has been located in Row 12 column 2 Lab 1.

- Hardware listed on the attached excel. Includes: 4-Jetfires, 2- beachcombers and 5 – Lenovo's. All array hardware will be relocated to available space within the existing racks in row 12 (plan TBD) and all hosts will be placed in the infrastructure rack located at 12AE.
- **IP Addressing** – All new installations will be assigned IP addressing using the new Durham IP Scheme (i.e. 10.228.xx.xx) All non-Firewall
- Additional Work will be required to transition the remainder of the environment to the new IP Scheme (Phase 2) The primary short term goal is to get the new hardware operational on new IP's.
- **Virtual Resource Requirements** – N/A at this time
- **Fibre Requirements** - N/A at this time
- **No plans for future growth**

Hardware Setup

- **Lenovo's** – (5) Lenovo's require only ISCSI connectivity and no OS change. Only need to connect and change IP address and hostname if required.
- **Array Setup** - 4 Jetfires (NAS) require two 1 interface per DM and ISCSI interfaces; Load latest image available
- **BC's** – Setup BC (each BC has one associated DAE). Requires 1 interface per SP (ISCSI); Load latest image available
- **Infrastructure** – Existing hardware has room to accommodate the new
- **2248** – Repurpose to Network team
-

Actions:

*** The following actions were taken in support of the next steps in this effort. Please provide any updates by replying to all on this email thread.

#	Action	Owner	Opened	Forecast	Actual	Status/Comment
1	Provide additional server requirements for review	[REDACTED]	1.26.17	1.31.17		
2	Scrap old Servers (Dell & SuperMicro)	[REDACTED]	1.26.17	1.31.17		
3	Set up SharePoint site for project	Kim Tran	1.26.17	1.26.17	1.26.17	
4	Develop Rack Layout for (4) Jetfires /(2) BC's. Utilizing existing space on Row 12	Kim Tran / [REDACTED]	1.26.17	1.27.16		
5	Reinstall all Array hardware in new locations	[REDACTED]	1.26.17	1.30.17		
6	Develop new IP scheme for new hardware South Plainfield hardware			TBD		
7	IP Plan for all of existing South Plainfield hardware in Durham	[REDACTED]			TBD	

8 Relocate (5) Lenovo servers to 12AE server rack	[REDACTED]	1.26.17	1.27.16
9 Develop Cable Matrix for Arrays and Hosts additions	Kim Tran	1.26.17	1.30.17
10 Run all cables for new hardware additions (array/hosts)	Kim Tran / [REDACTED]	1.26.17	2.2.17
11 Array configurations and setup	Kim Tran / [REDACTED]	1.26.17	2.7.17
12 Host configurations	[REDACTED]	1.26.17	2.3.17

[SharePoint Site](#) └ ----- CTRL Right click

<< File: SouthPlainfieldHW_List.xls >>

Cheers,
Joey

Kim Tran
Lab Systems Engineer
Infrastructure Solutions Group
Dell EMC | IEO Cloud Operations
office: +1 919 767-0885
ngoc.tran@dell.com

From: [REDACTED]
Sent: Saturday, January 28, 2017 10:49 AM
To: Tran, Ngoc; [REDACTED]
Subject: RE: south plainfield - arrays

Tran,
Good work. I will take care of the empty racks and server Scrap. Overall goal is as agreed. Thanks all!!!

Please note handover date to customer. If we could better that by a couple days it would be great😊

#	Action	Owner	Opened	Forecast	Actual	Status/Comment
1	Provide additional server requirements for review	[REDACTED]	1.26.17	1.31.17		
2	Scrap old Servers (Dell & SuperMicro)	[REDACTED]	1.26.17	1.31.17		
3	Set up SharePoint site for project	[REDACTED]	1.26.17	1.26.17	1.26.17	
4	Develop Rack Layout for (4) Jetfires /(2) BC's. Utilizing existing space on Row 12	Kim Tran	1.26.17	1.27.16	1.27.16	
5	Reinstall all Array hardware in new locations	Kim Tram / [REDACTED]	1.26.17	1.31.17		
6	Develop new IP scheme for new hardware South Plainfield hardware	[REDACTED]	1.27.17	1.31.17		
7	IP Plan for all of existing South Plainfield hardware in Durham	[REDACTED]				TBD
8	Relocate (5) Lenovo servers to 12AE server rack	[REDACTED]	1.26.17	1.27.16		
9	Develop Cable Matrix for Arrays and Hosts additions	Kim Tran	1.26.17	1.30.17		
10	Run all cables for new hardware additions (array/hosts)	Kim Tran / [REDACTED]	1.26.17	2.2.17		
11	Array configurations and setup	Kim Tran / [REDACTED]	1.26.17	2.7.17		
12	Host configurations	Bryan [REDACTED]	1.26.17	2.3.17		
13	Handover relocated setups to Customer	All	1.26.17	2.7.17		

From: Tran, Ngoc

Sent: Friday, January 27, 2017 11:56 PM

To: [REDACTED]

Subject: RE: south plainfield - arrays

Ed,

Please find the rack layouts for the 4x jetfires/vnx's and 2 beachcombers/vnxe's at row12 in lab 1

==Joey, please confirm==

Racks to be cleared:

12AP (2 x beachcombers/vnx's with 2x daes); to be relocated to 12AJ; **there are 2 servers, I think these are to be scrapped/decomm?**

12AK (2 x jetfires/vnx's); should have 'deimos' and 'phobos' to be relocated to 12AH

12AI (2 x jetfires/vnx's); should have 'oberon' and 'titania' to be relocated to 12AJ and 12AF respectively

=====

These should be the corresponding sn's from a manual audit:

12AI

OBERON

VNX7600 - APM00134401843

Data Mover 2/3 - APM00134501225

Data Mover 4/5 - APM00134501226

CS - FC6NS133100054

12AI

TITANIA

VNX7600 - APM00134501934

Data Mover 2/3 - APM00134501227

Data Mover 4/5 - APM00134501957

CS - FC6NS134000456

12AK

DEIMOS

VNX7600 - APM00123700953

Data Mover 2/3 - APM00134702493

Data Mover 4/5 - APM00134702494

CS - FC6NS134500531

12AK

PHOBOS

VNX7600 - APM00134700954

Data Mover 2/3 - APM00134503282

Data Mover 4/5 - APM00134603281
CS - FC6NS134000287

12AP
VNXE - FNM00131900112
VNXE - FNM00131900114
DAE - JWXEC140701339
DAE - US1D1100601190

As mentioned, you can go ahead and relocate the beachcomber/vnxe's.

Attach the sas cables from port bus 0 of the dpe to port 1 of the dae, for spa and spb, or just leave one end of sas cable plugged in and I'll connect 😊

I will get with you on Monday to follow up and confirm the go ahead with the jetfires/vnx's - as soon as I map the existing backend connections, I should be done by the time you're in around 2pm.

Thanks,

Kim Tran
Lab Systems Engineer
Dell EMC | EOS² Cloud Operations
(919) 767-0885
ngoc.tran@dell.com

----- Original message -----

From: "Tran, Ngoc" <Ngoc.Tran@emc.com>

Date: 1/27/17 5:14 PM (GMT-05:00)

Subject: south plainfield - arrays

Hey Ed,

I should be done with the rack move layout this evening,
I can send that over when done, but just an fyi – **PLEASE DO NOT MOVE THEM YET.**
I want to finish mapping the existing backend cabling to cross-reference with the documentation.
I'll let you know when ready to do the physical move, it shouldn't be no later than Monday.

Thanks,

Kim Tran
Lab Systems Engineer
Dell EMC | EOS² Cloud Operations
(919) 767-0885
ngoc.tran@dell.com

[REDACTED]
Sent: Thursday, January 12, 2017 11:50 AM

[REDACTED]; Tran, Ngoc

Subject: RE: South Plainfield Relocation to Durham Review Part two Update 1.12.17

All,

Many thanks for your time to review the planning to relocate the attached hardware from South Plainfield to Durham Lab 1.

Please see below for a summary of our meeting and the actions planned and key activities.

Summary

Meeting to discuss and planning the reinstallation of 4 racks of hardware from South Plainfield to Durham. Team reviewed shipping status, hardware listing, IP changes and expectations for availability in Durham. As discussed we will need to look for alternatives to reinstallation of some of the older server hardware and prioritize the VNX array bring-up.

Timeline

Target Date to complete all Work 1.27.17 (Initial focus will be on all prioritized hardware - as provided by Chris [REDACTED])

Key Project Notes

- Durham project team assembled to support reinstallation and re-ip addressing effort.
 - Kim Tran - VNX; [REDACTED] - Servers/VMs; [REDACTED] - EGS
- [REDACTED] - Single Point of Contact for all requirements gathering and liaison into Engineering team.
- Hardware availability - Equipment is scheduled to be picked up from South Plainfield on 1.13.17. Expected delivery to Durham will be the week of 1.16-1.20.
- Request made to add primes to shipping tracking emails and updates.
- Additional Networking equipment will be included in the shipment for Rob Greene.
- New IP Scheme for incoming and existing South Plainfield hardware will be developed to transition area to new required IP addressing as part of this project.



SouthPlainfieldH.S.

Cheers,

Joey

---Original Appointment---

From: [REDACTED]

Sent: Friday, January 06, 2017 3:14 PM

To: [REDACTED] Ngoc [REDACTED], Ngoc [REDACTED]

Subject: South Plainfield Relocation to Durham Review Part two

When: Thursday, January 12, 2017 10:30 AM-11:00 AM (UTC-05:00) Eastern Time (US & Canada).

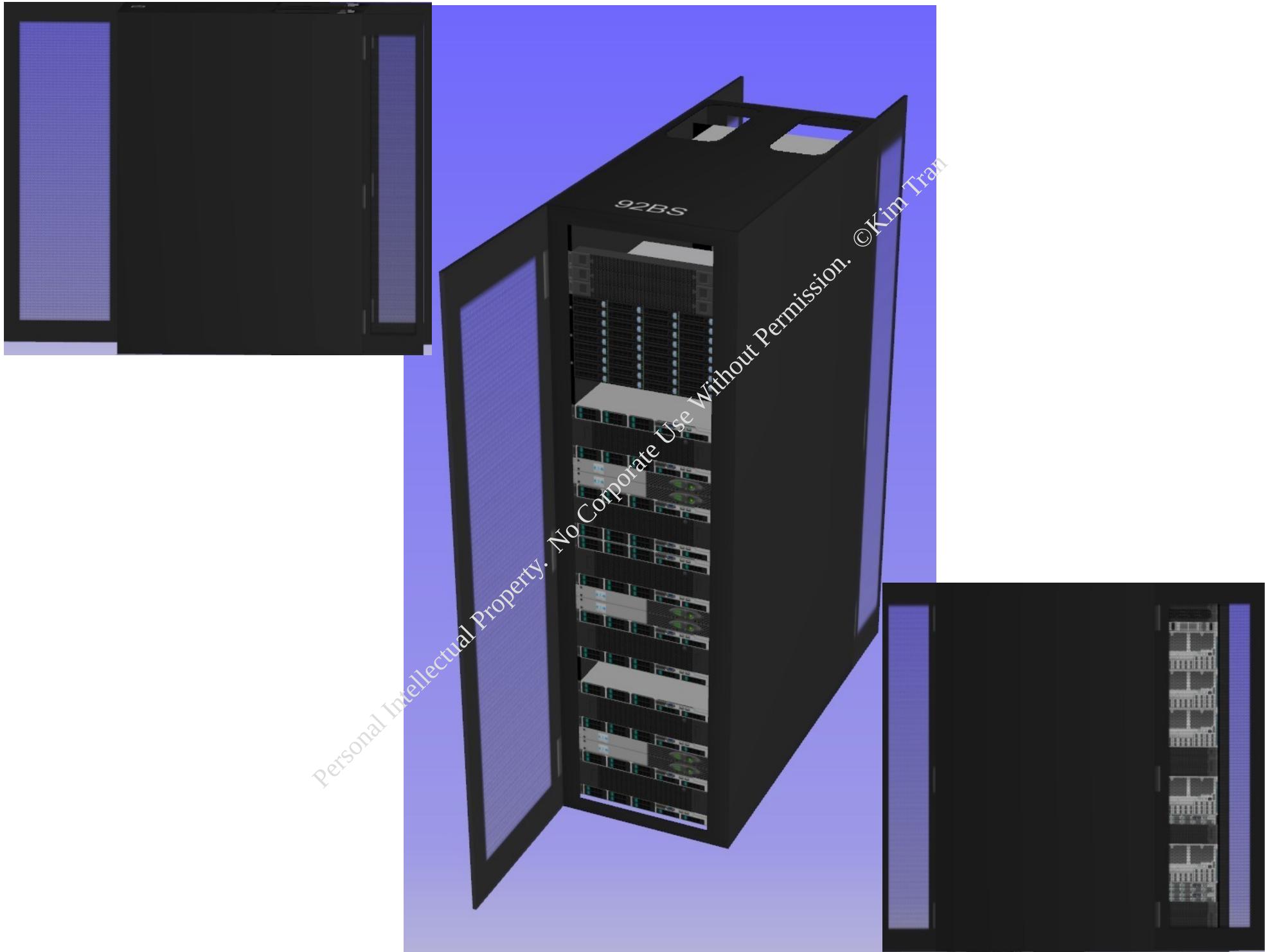
Where: Conference Bridge 888.643-3084 (Toll-Free) Access Code 64852067

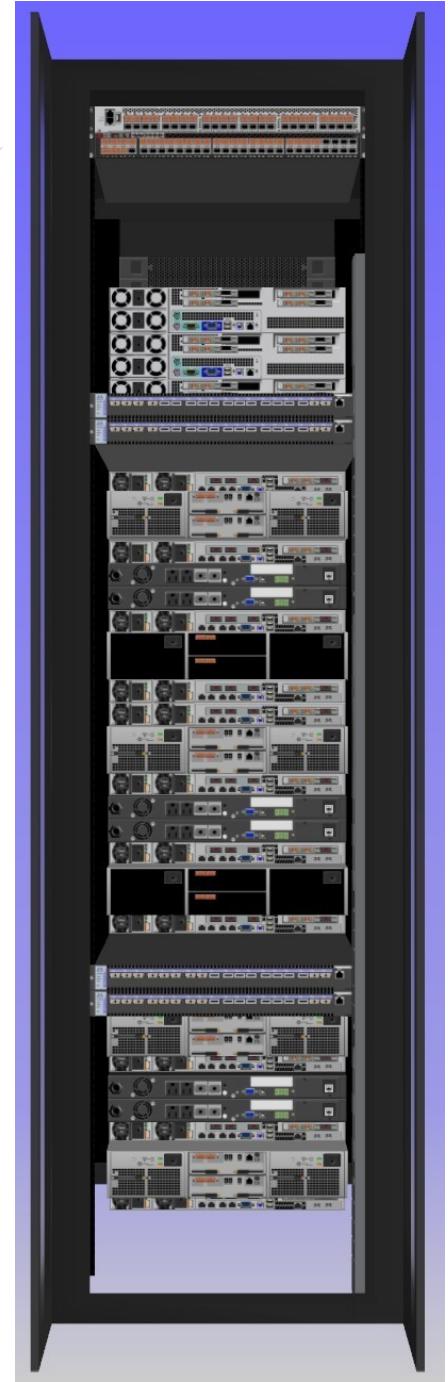
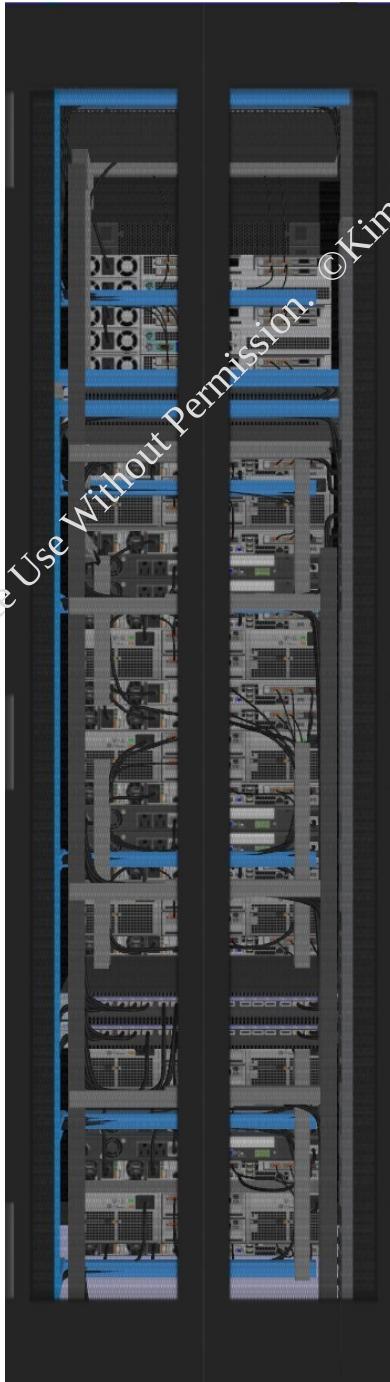
DCIM 3D INFRASTRUCTURE MODELING

Sample cabinet rack buildouts

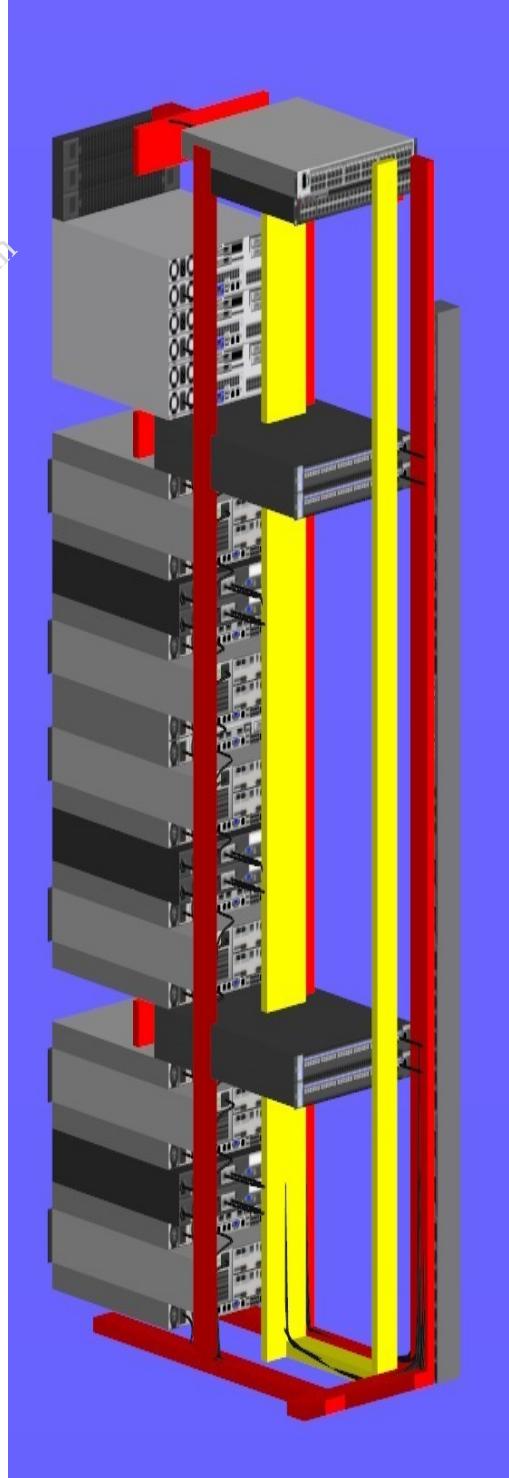
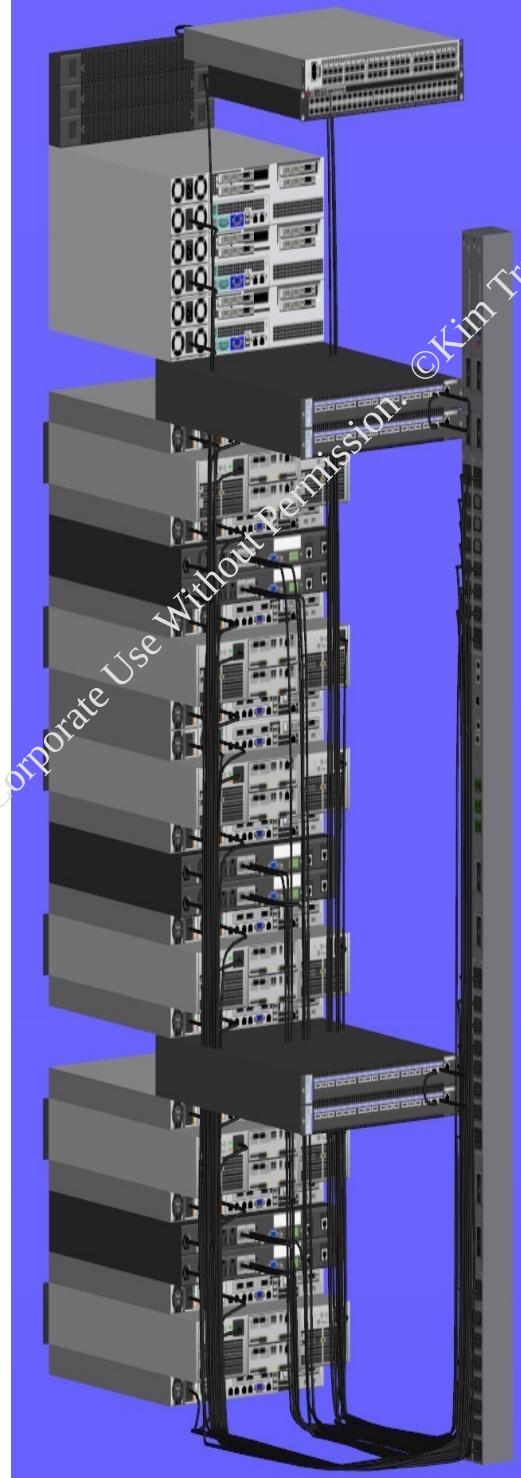
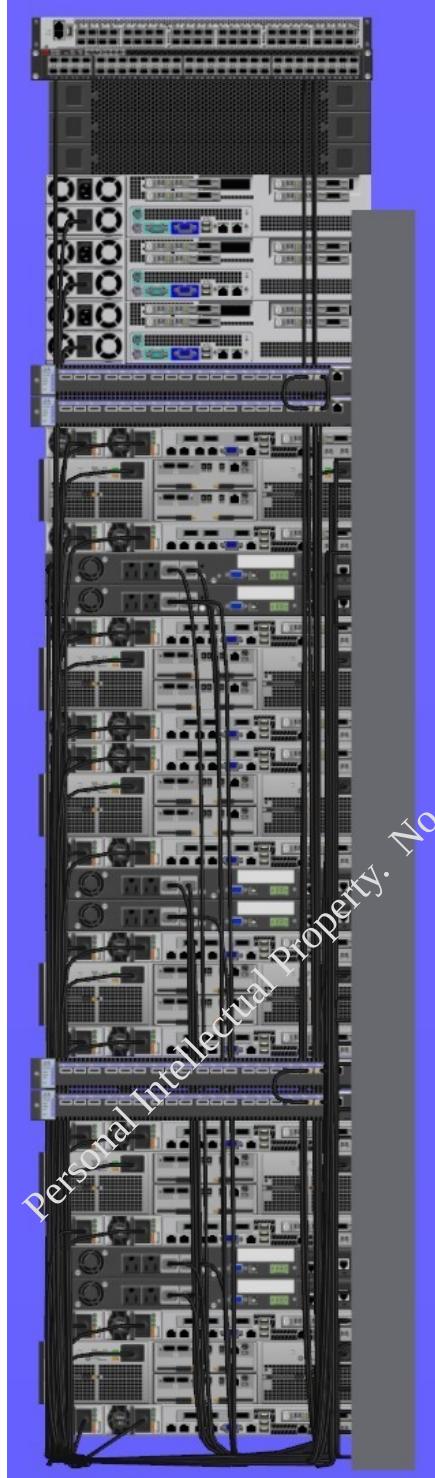
Preliminary labs 1-4 drafts

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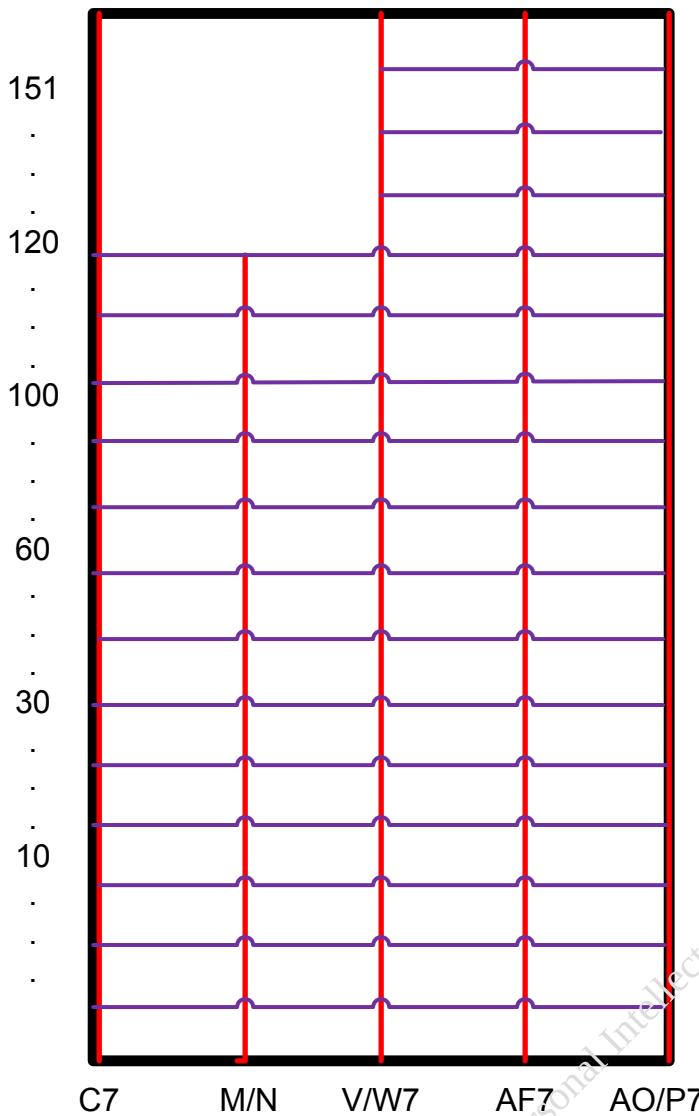


utilizing csv template to build out 3D racks instead of manual drawing

Preliminary data gathering and modeling

LAB 1

6	CK6	CI6	CI6	CH6	CG6	CF6	CE6	CD6	CC6	CB6	CA6	BZ6	BY6	BX6	BW6	BV6	BU6	BT6	BS6	BR6	3AT
		15%	48%	Open	88%	93%	100%	75%	73%	60%	Open	79%	26%	20%	53%	100%	48%	Open	83%		
12	EMSD	1AT																			
		XL	53%	Open	53%	98%	98%	98%	93%	73%	95%	88%	73%	19%	63%	88%	53%	93%	88%	100%	
16	EMSD	6AT																			
		CL12	CI12	CH12	CG12	CF12	CE12	CD12	CC12	CB12	CA12	BZ12	BY12	BX12	BW12	BV12	BU12	BT12	BS12	BR12	
22	EMSD	4AT																			
		CL22	CI22	CH22	CG22	CF22	CE22	CD22	CC22	CB22	CA22	BZ22	BY22	BX22	BW22	BV22	BU22	BT22	BS22	BR22	



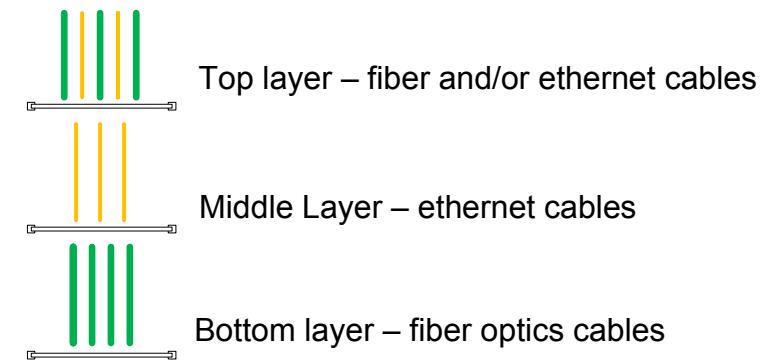
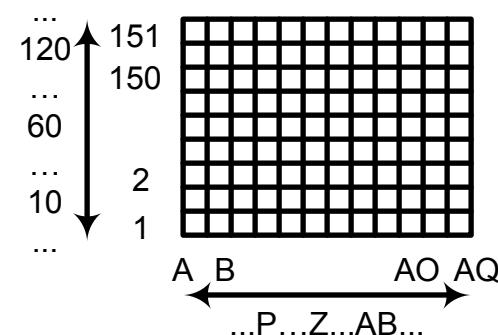
X/Y means cable tray is roughly between two columns instead of flushed with a single column

V/W7 = between column V and W row 7
M/N = between column M and N

C7 in this case is actually a vertical standing column

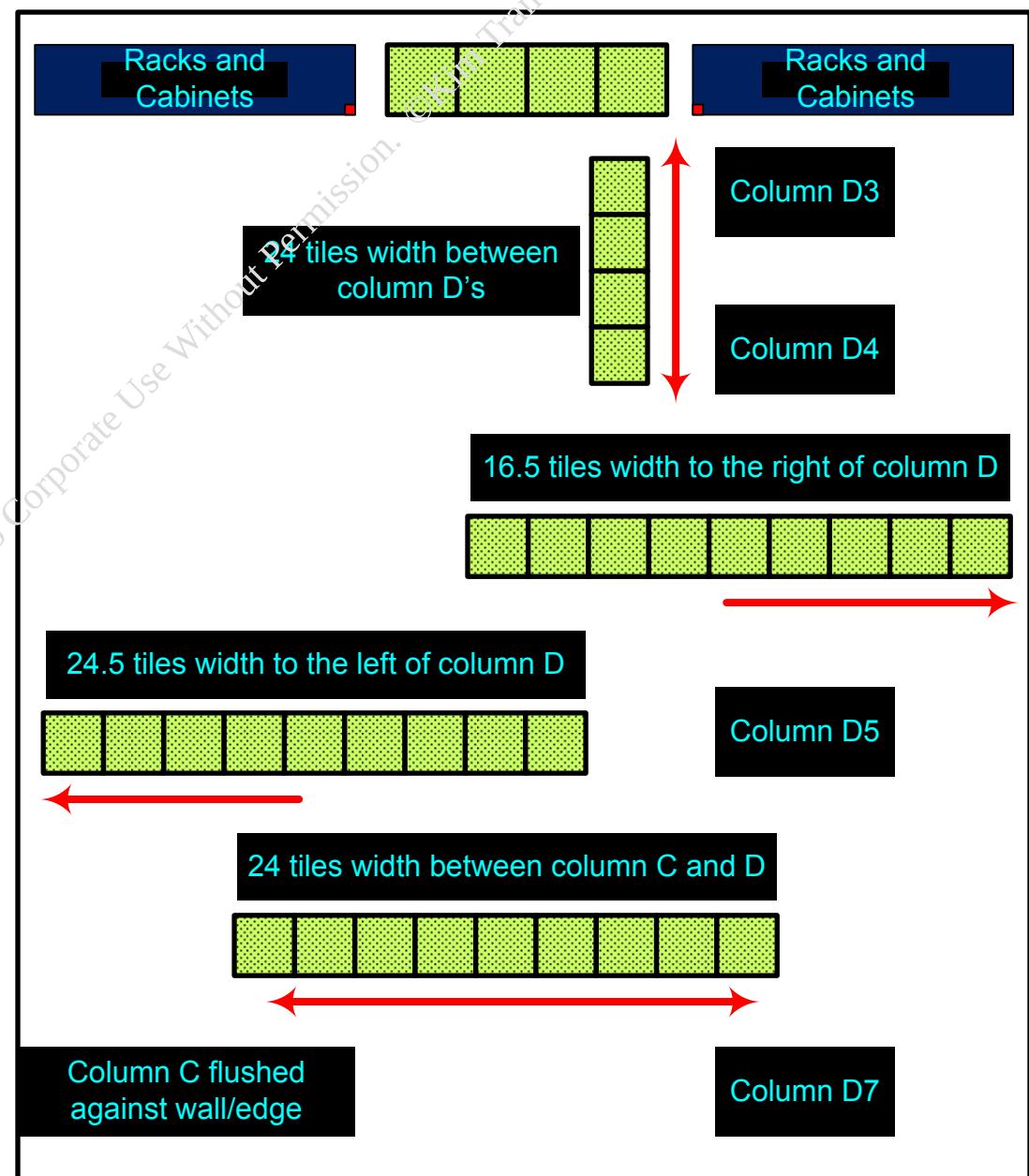
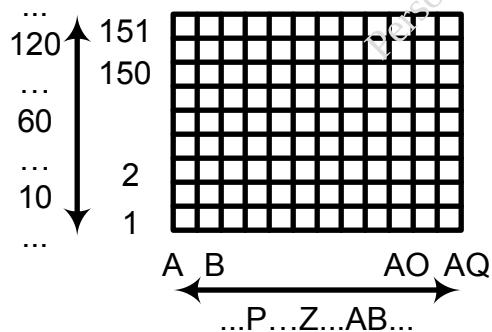
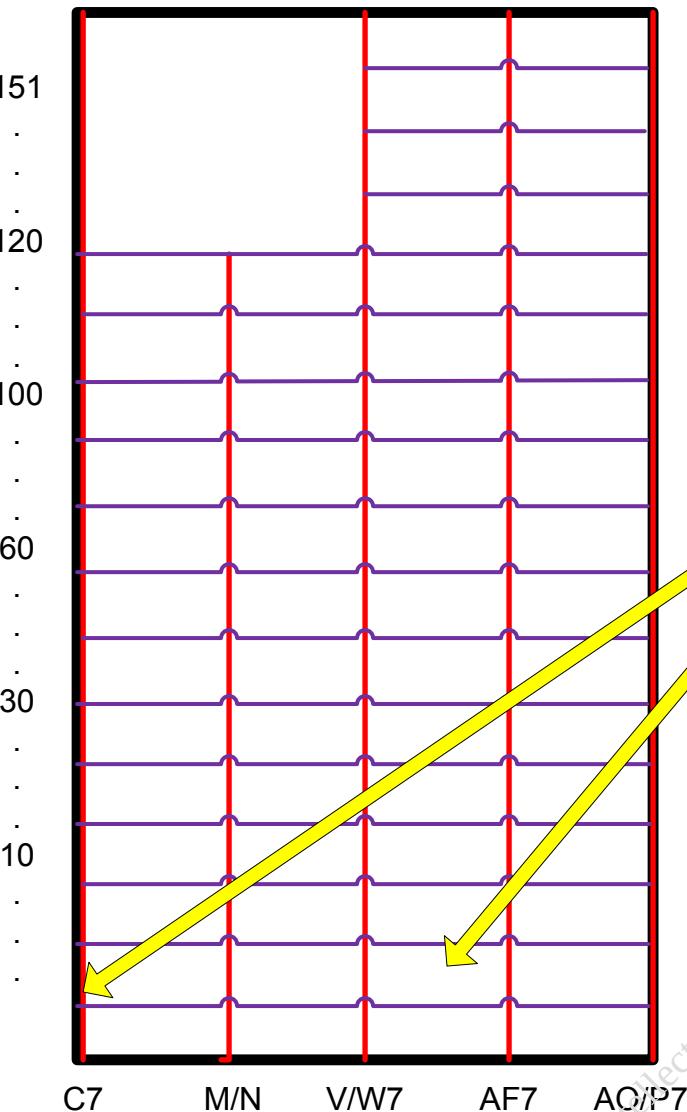
- column cable tray
- row cable tray

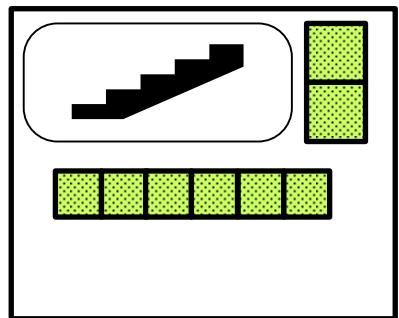
- Generalizations (lab 4):
- cable tray in the middle column have 3 layers of cables
 - border/edge rows and columns might have 3 layers of cables
 - parallel columns on either side of middle column have 2 layers of cables
 - on either side of middle column will be rows populated with racks/cabinets that varies from 13-18 tiles (horizontal)
 - each column of cable trays are roughly distanced by 9 tile widths (~216" / 18')
 - each row of racks/cabinets are distanced by 3 tile widths (~72" / 6')
 - rows on both side of the middle column are separated by 4 tile widths (~96" / 8')
 - cable trays distance raised from the floor:
 - bottom tray ~103" / 8'7" (fiber)
 - middle tray ~113" / 9'5" (ethernet)
 - top tray ~118" / 9'10" (fiber/network/inter-lab connections)
 - width of room dimensions 42 tiles (24" LxW) [41 tiles + ~½ tile on each end]
 - length of room dimensions 151 tiles (24" LxW)
 - height from floor to ceiling is ~146" / 12'2"



Lab 4

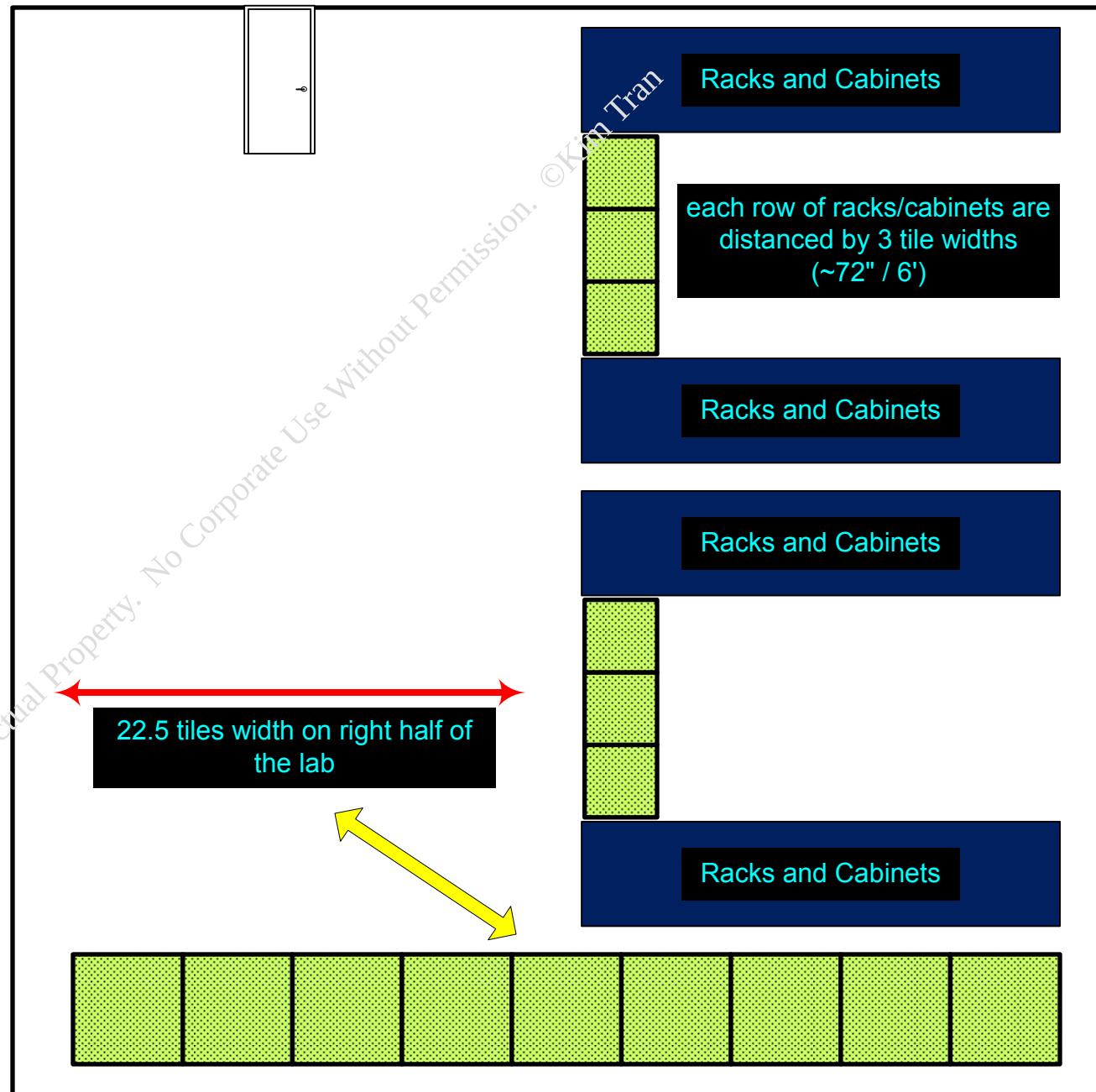
For visual representation only
=not drawn to scale=





Stairs
2 tiles width x 6.5 tiles width

19.5 tiles width on left half of the lab



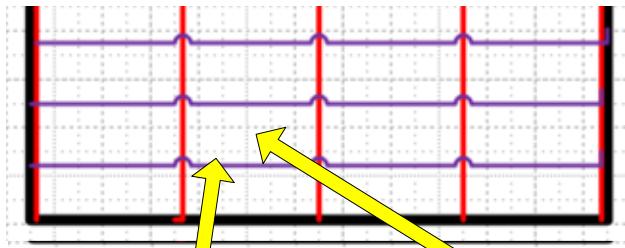
Racks and Cabinets

each row of racks/cabinets are
distanced by 3 tile widths
(~72" / 6')

Racks and Cabinets

Racks and Cabinets

Racks and Cabinets



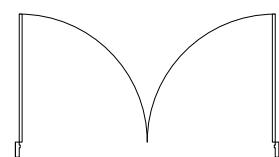
Racks and Cabinets

28 rows of racks and cabinets
(last 4 rows only half are populated)

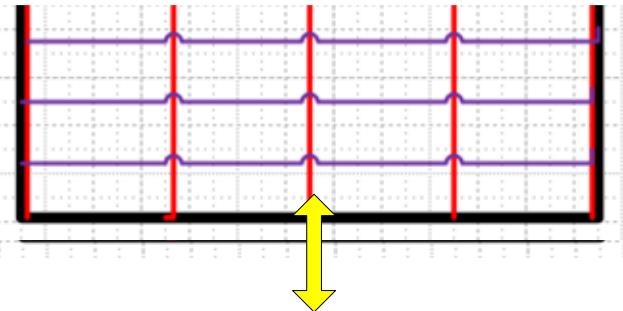
— column cable tray

Racks and Cabinets

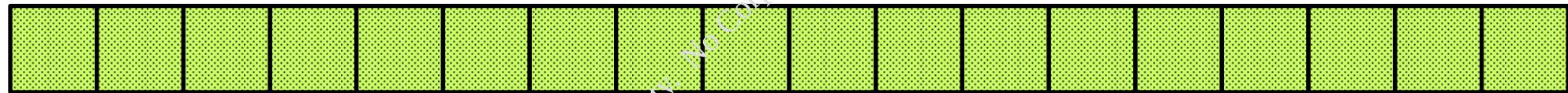
each column of cable trays are roughly distanced by 9 tiles width (~216" / 18')



First row of racks
and cabinets and
door entry are
distanced by 6
tiles width



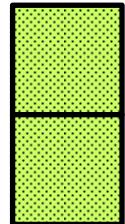
Racks and Cabinets



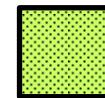
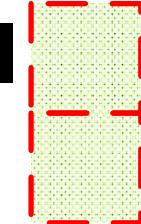
Up to 18 tile widths may be populated with racks and cabinets on both sides of lab

Racks and Cabinets may occupy 2 tile lengths and 1 tile width

Yes

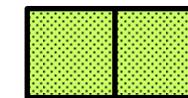


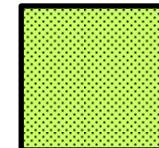
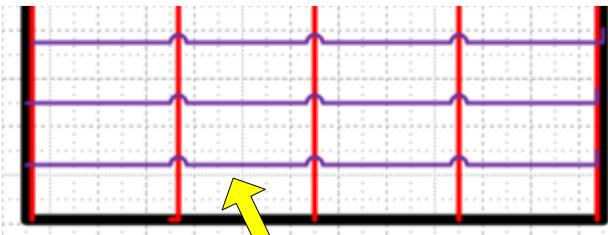
or



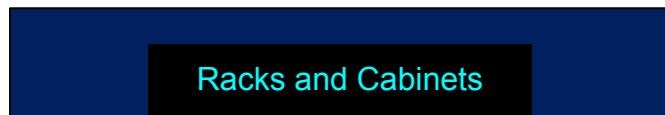
~ meant to represent 1 tile,
unless specified otherwise

No





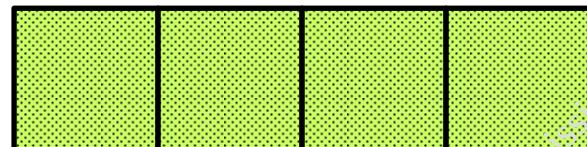
Tile ~24" LxW



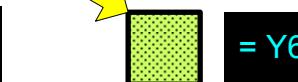
= D6



Rows on left side
start/flushed at tile
D6 ↔ T6



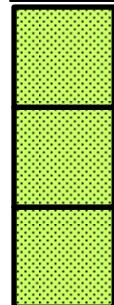
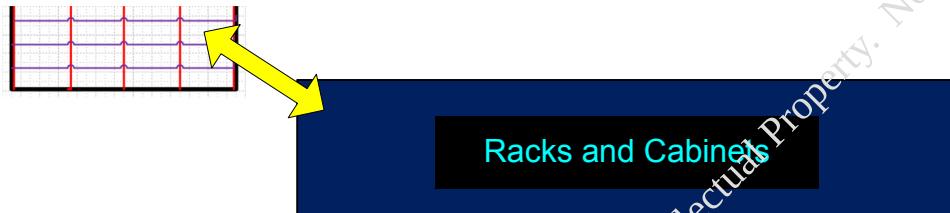
rows on both side of the middle column
are separated by 4 tile widths (~96" / 8')



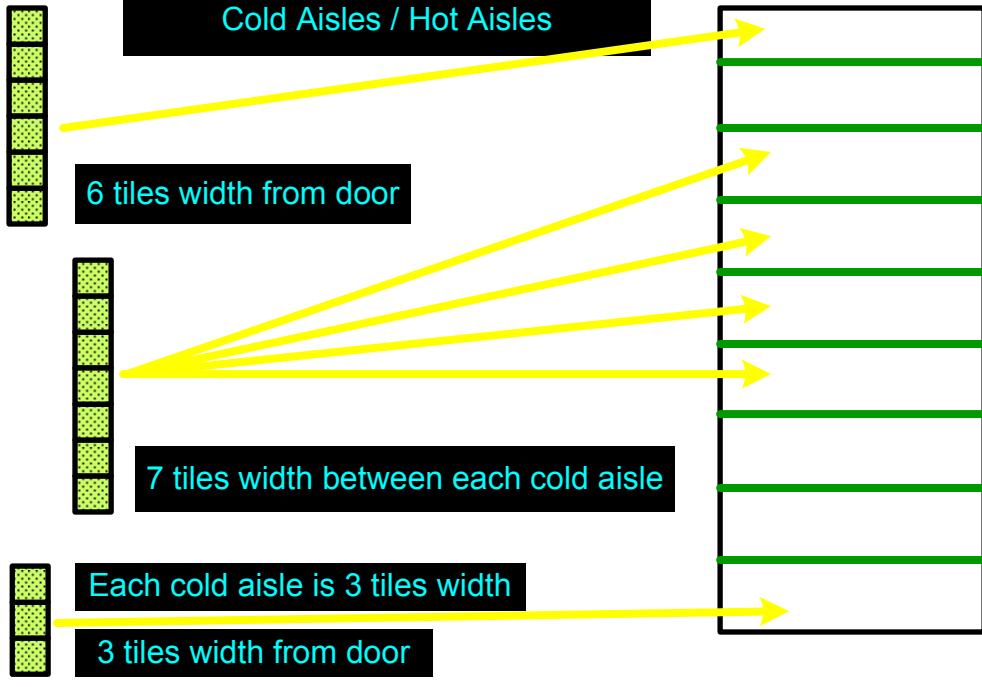
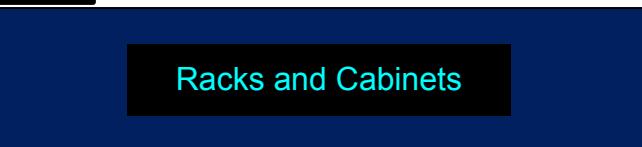
= Y6

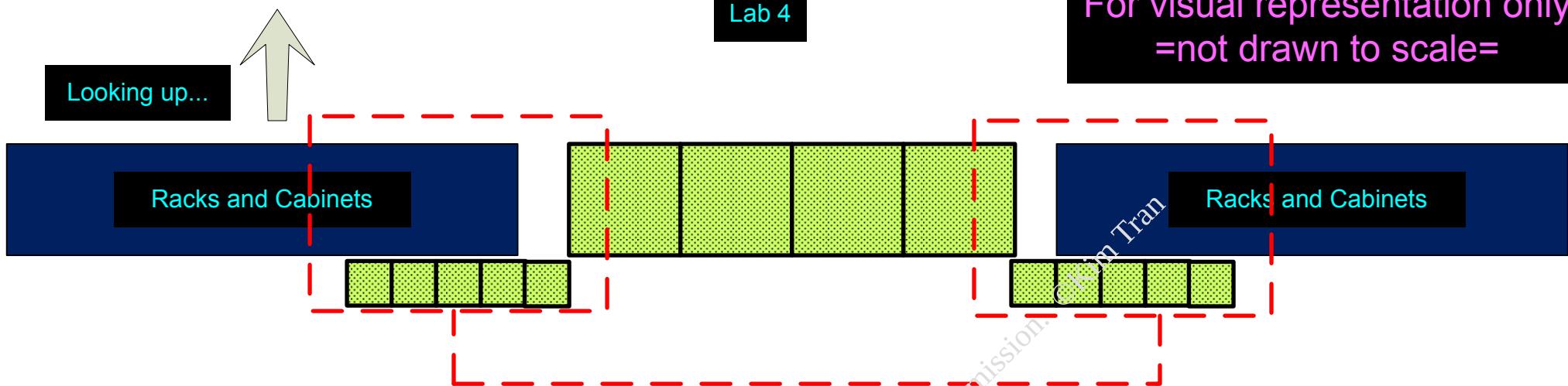


Rows on right side
start/flushed at tile
Y6 ↔ AM6



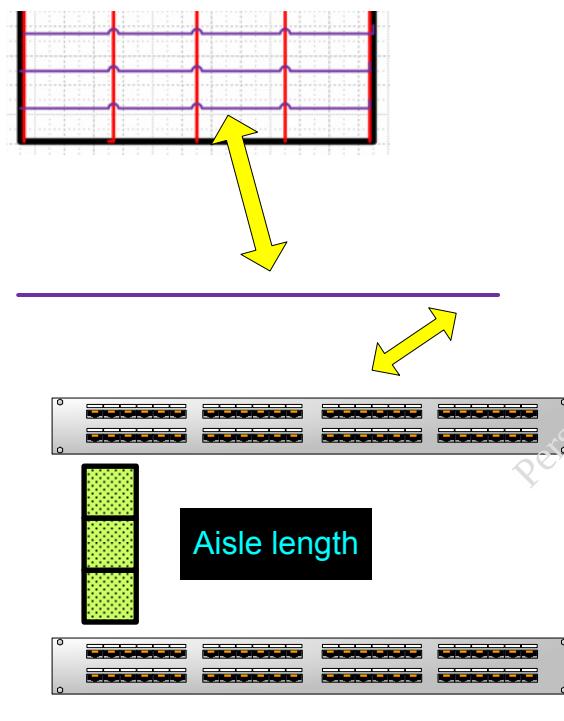
each row of racks/cabinets are
distanced by 3 tile widths (~72" / 6')



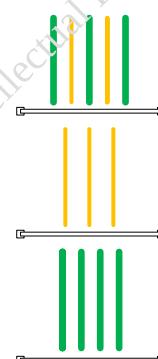


Roughly 5 tiles width in from the middle/main cable tray column, there is usually a 3rd / top layer cable tray running horizontally (parallel to rack/cabinet rows) connecting to a ceiling mounted switch

The switches on each row tends to face each other



row cable tray

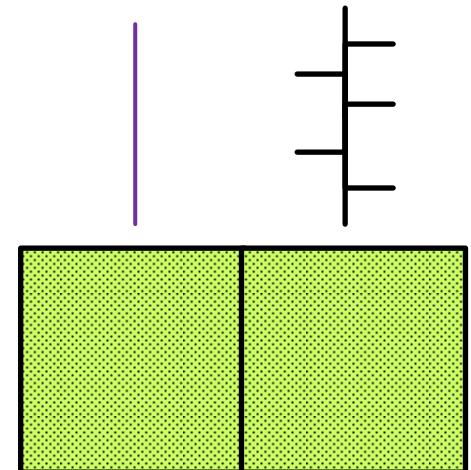


Top layer – fiber and/or ethernet cables

Middle Layer – ethernet cables

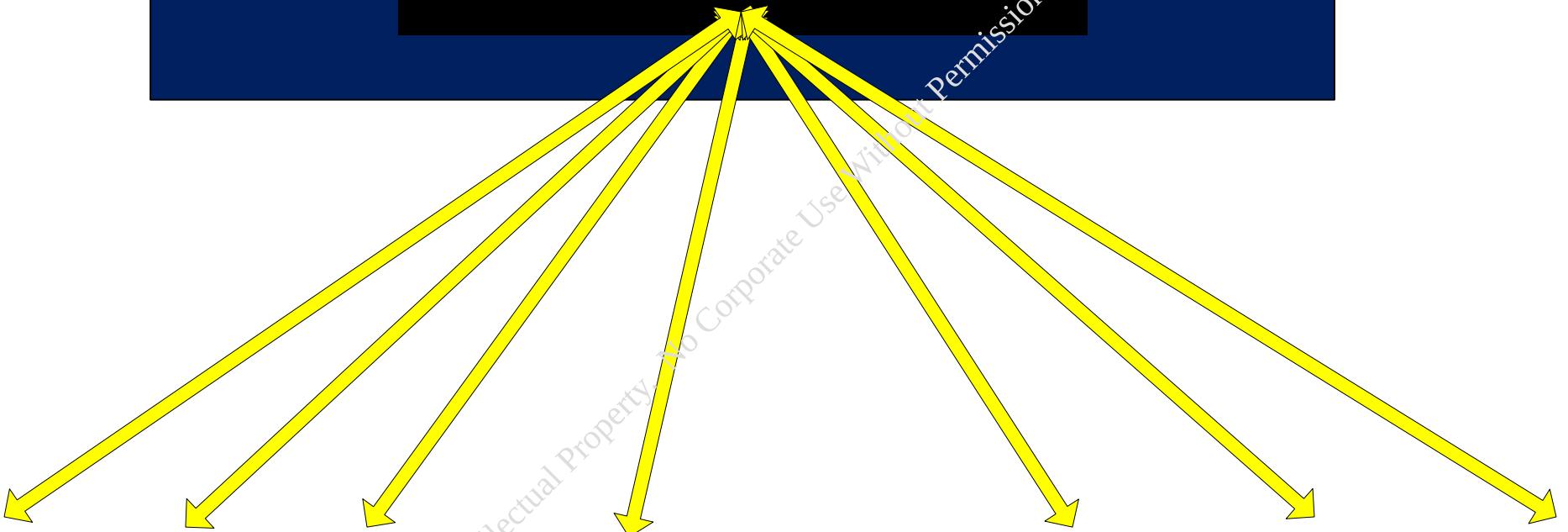
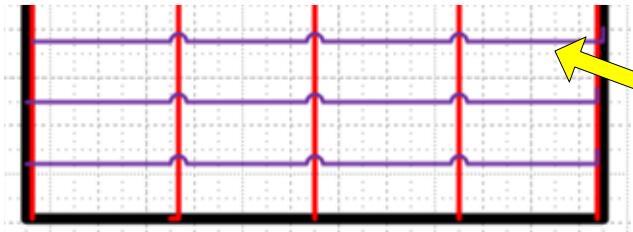
Bottom layer – fiber optic cables

Generally speaking, the row will have the cable tray bus and the power drop bus aligned to a tile



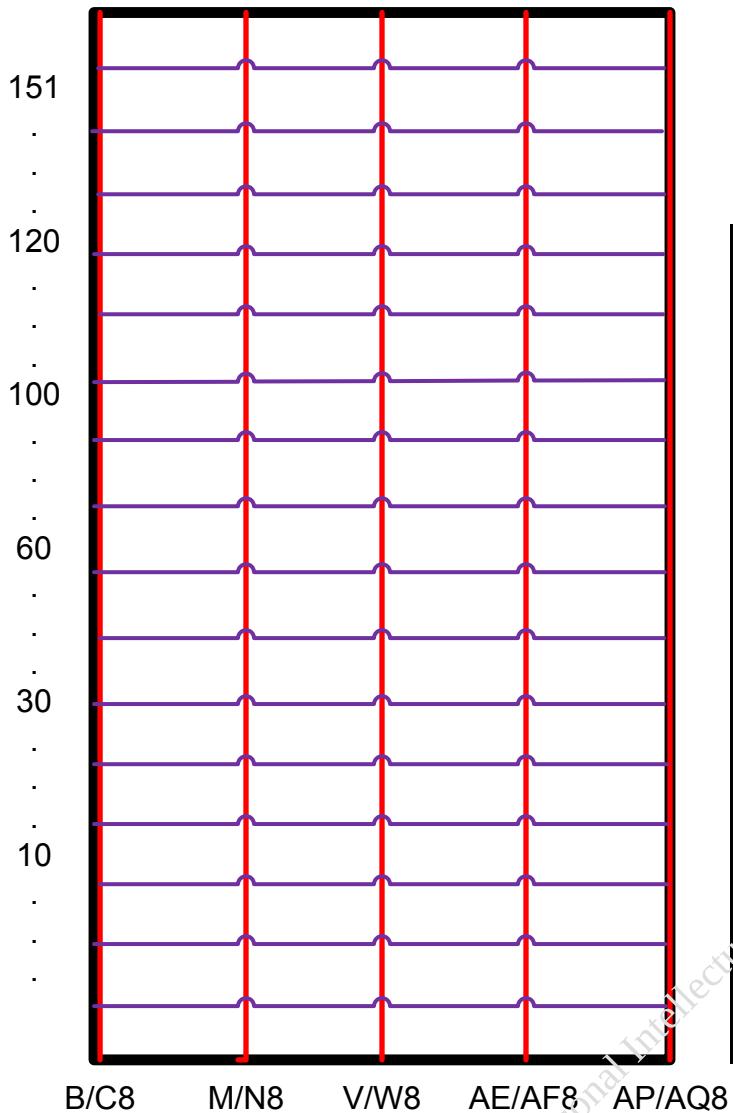
Lab 4

For visual representation only
=not drawn to scale=



Lab 3

For visual representation only
=not drawn to scale=



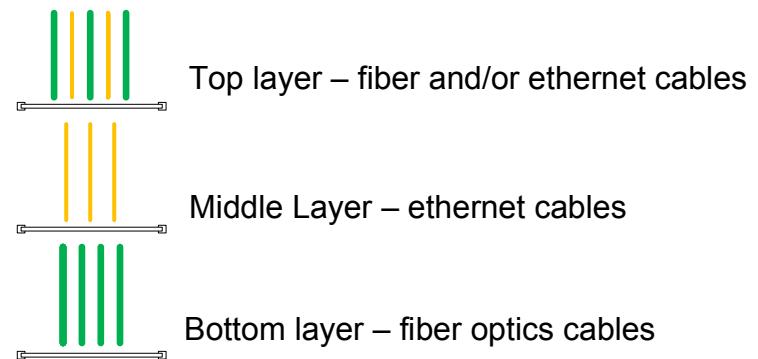
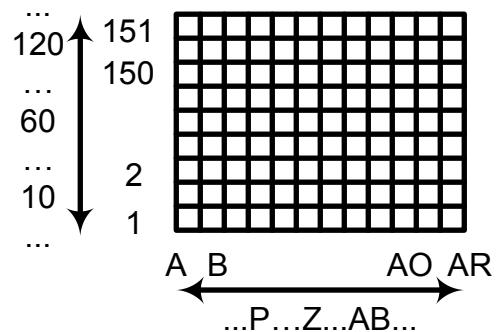
X/Y means cable tray is roughly between two columns instead of flushed with a single column

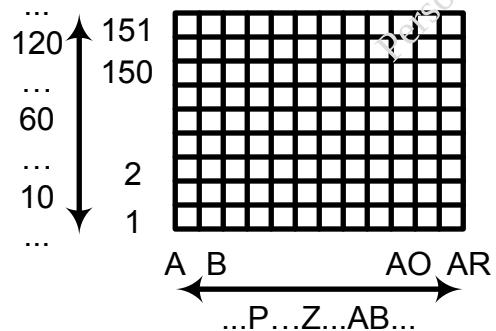
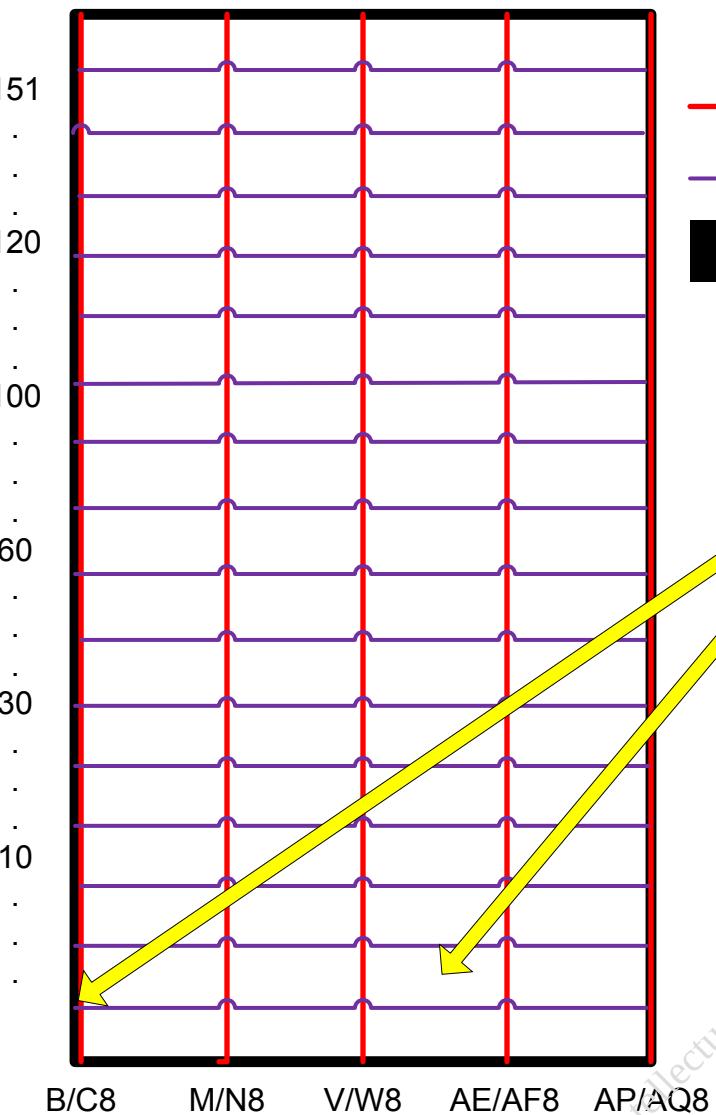
V/W8 = between column V and W row 8

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Generalizations (lab 3):

- cable tray in the middle column have 3 layers of cables
- border/edge rows and columns might have 3 layers of cables
- parallel columns on either side of middle column have 2 layers of cables
- on either side of middle column will be rows populated with racks/cabinets that varies from 12-19 tiles (horizontal)
- each column of cable trays are roughly distanced by 9 tiles width (~216" / 18')
- each row of racks/cabinets are distanced by 3 tiles width (~72" / 6')
- rows on both sides of the middle column are separated by 3 tiles width (~96" / 8')
- cable trays distance raised from the floor (if similar to lab 4):
 - bottom tray ~103" / 8'7" (fiber)
 - middle tray ~113" / 9'5" (ethernet)
 - top tray ~118" / 9'10" (fiber/network/inter-lab connections)
- width of room dimensions 43 tiles (24" LxW) [42 tiles + ~½ tile on each end]
- length of room dimensions 151 tiles (24" LxW)
- height from floor to ceiling is ~146" / 12'2" (if similar to lab 4)



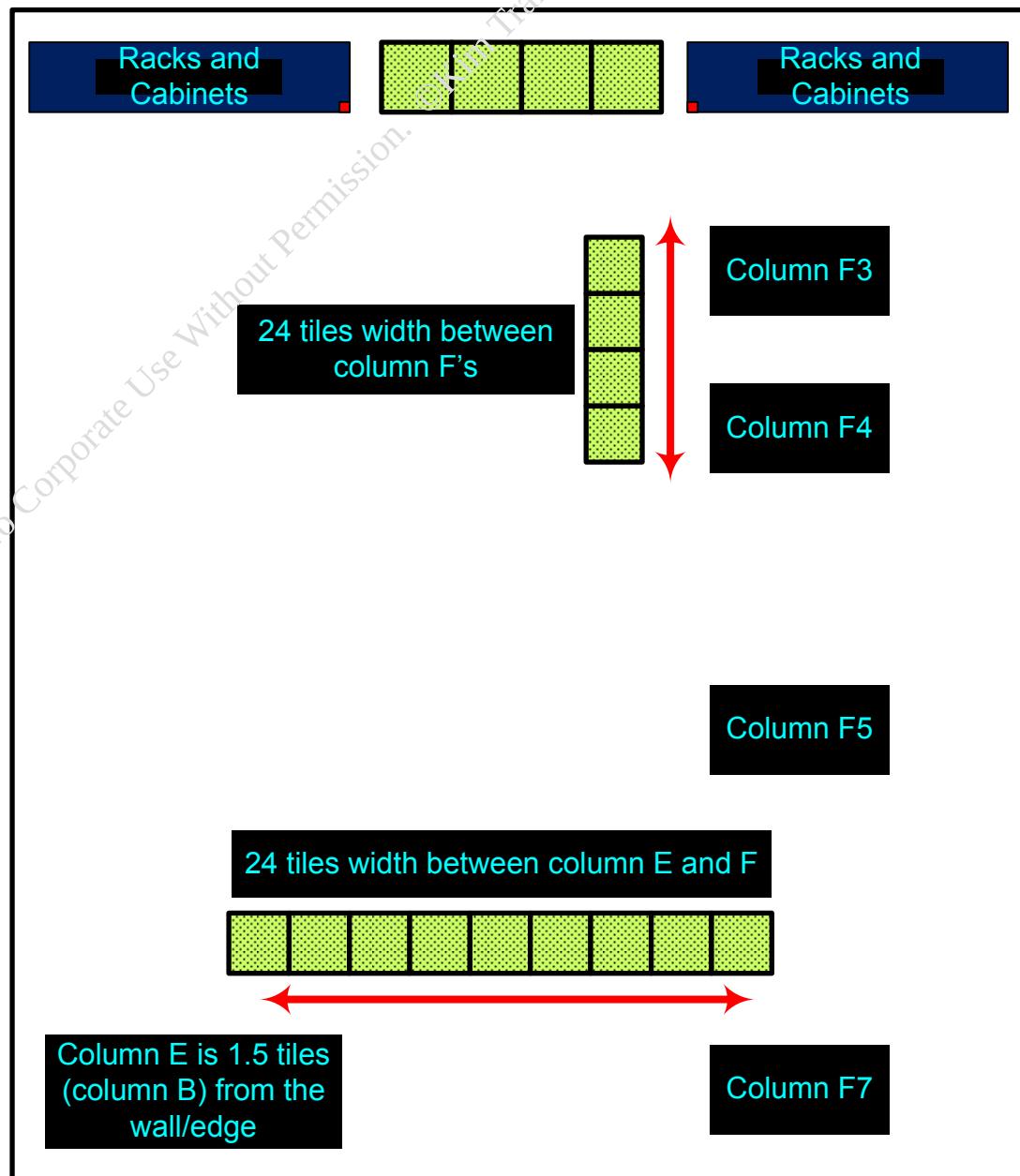


Lab 3

— column cable tray
— row cable tray

29 rows of racks and cabinets

For visual representation only
=not drawn to scale=



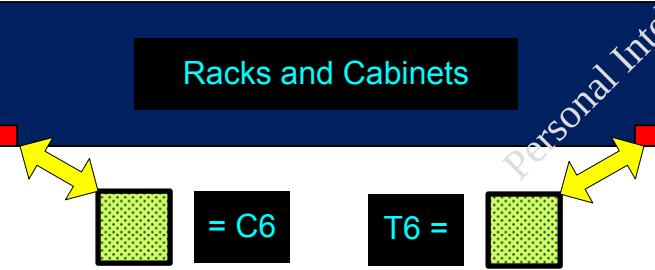
Racks and Cabinets



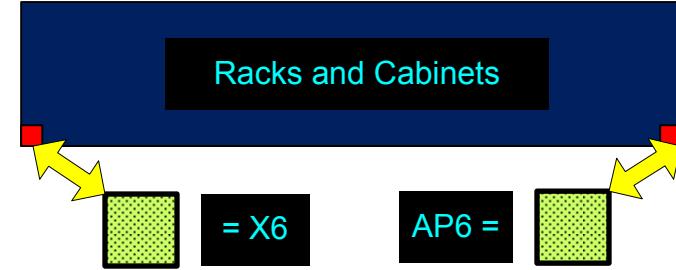
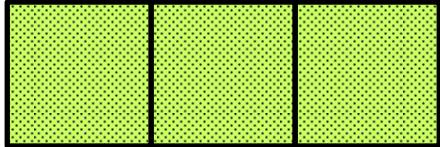
Lab 3 has 18(L)-19(R) tiles width may be populated with racks and cabinets on both sides of lab

Racks and Cabinets may occupy 2 tile lengths and 1 tile width

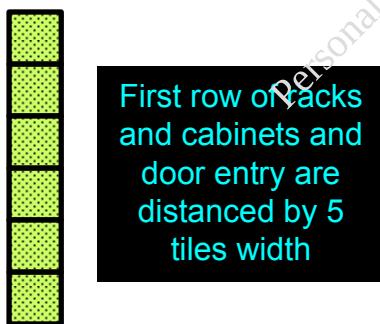
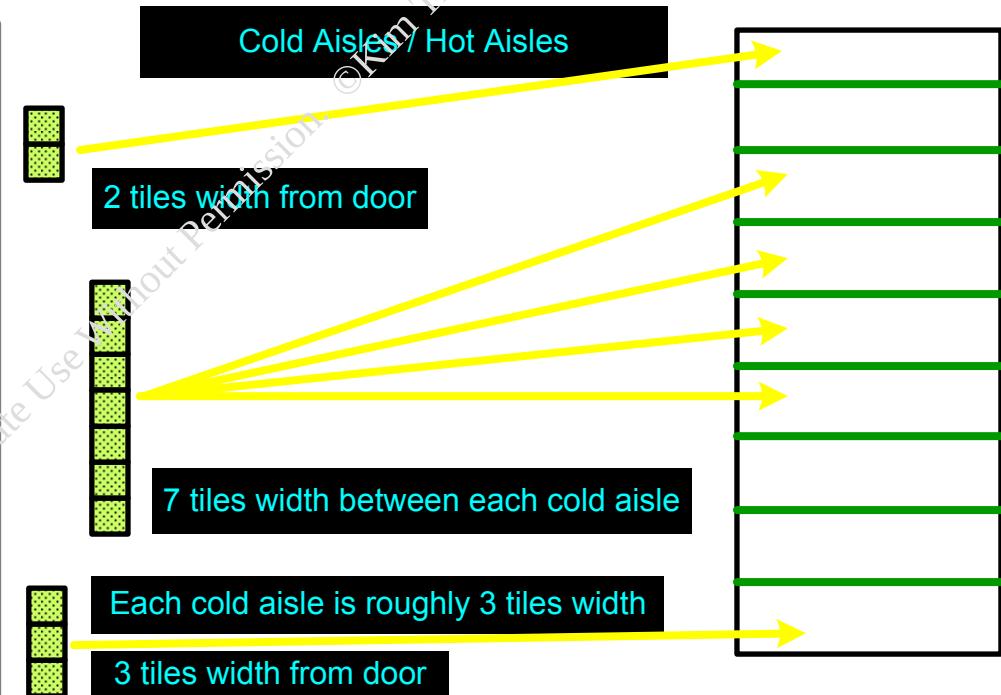
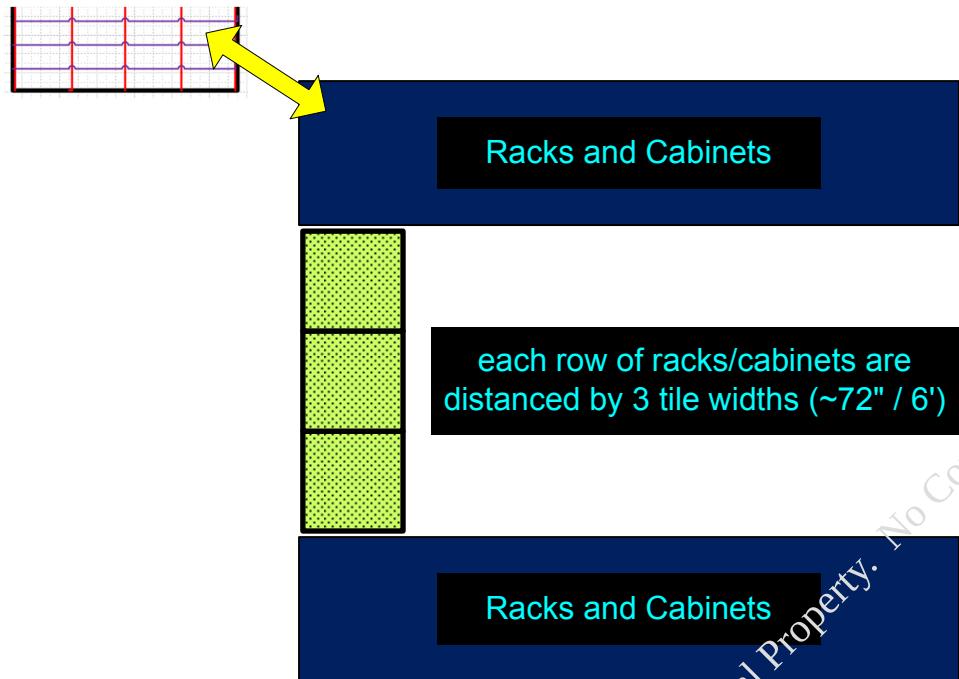
Racks and Cabinets



Rows on left side
start/flushed at tile
C6 ↔ T6

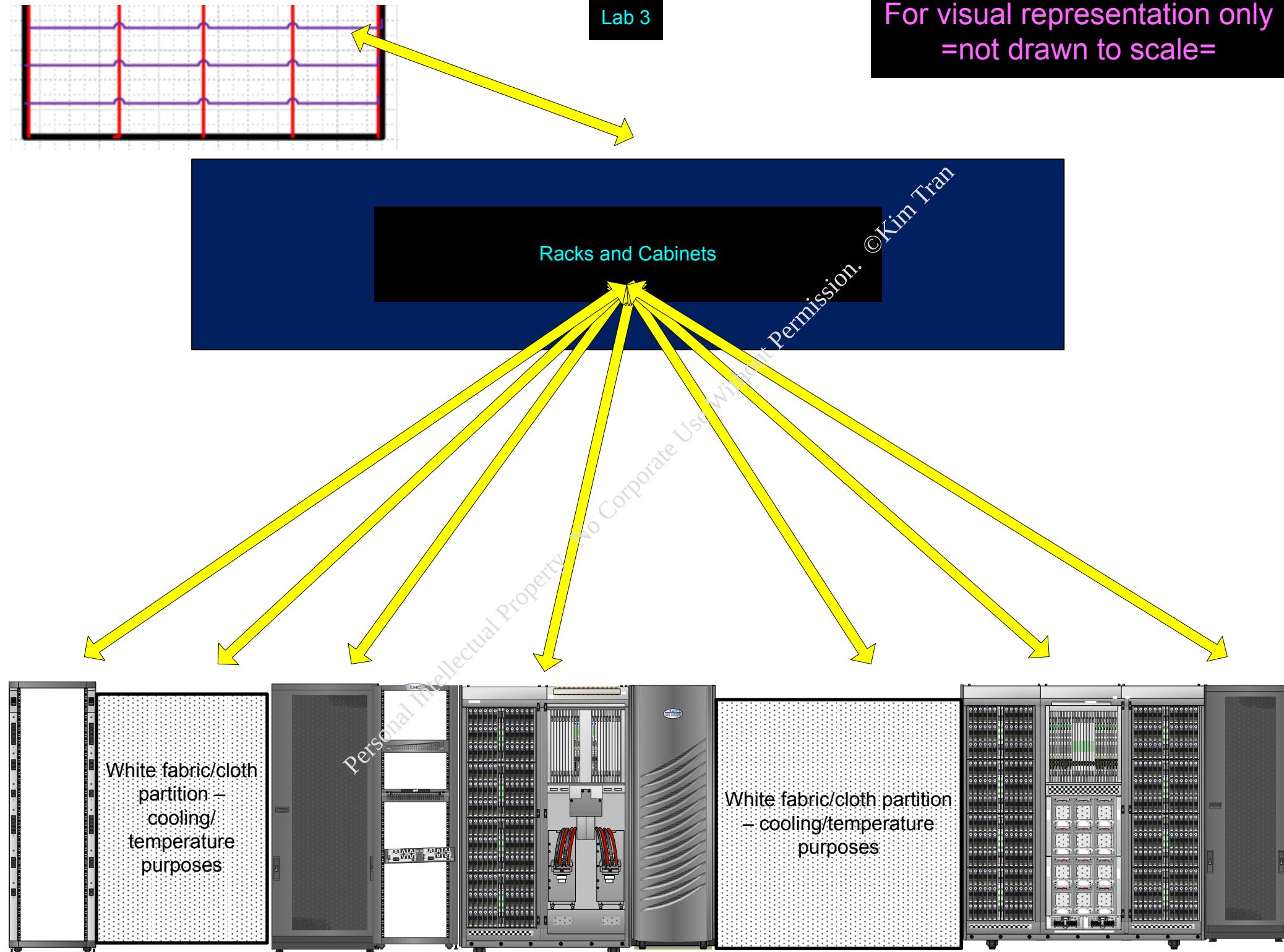


Rows on right side
start/flushed at tile
X6 ↔ AP6



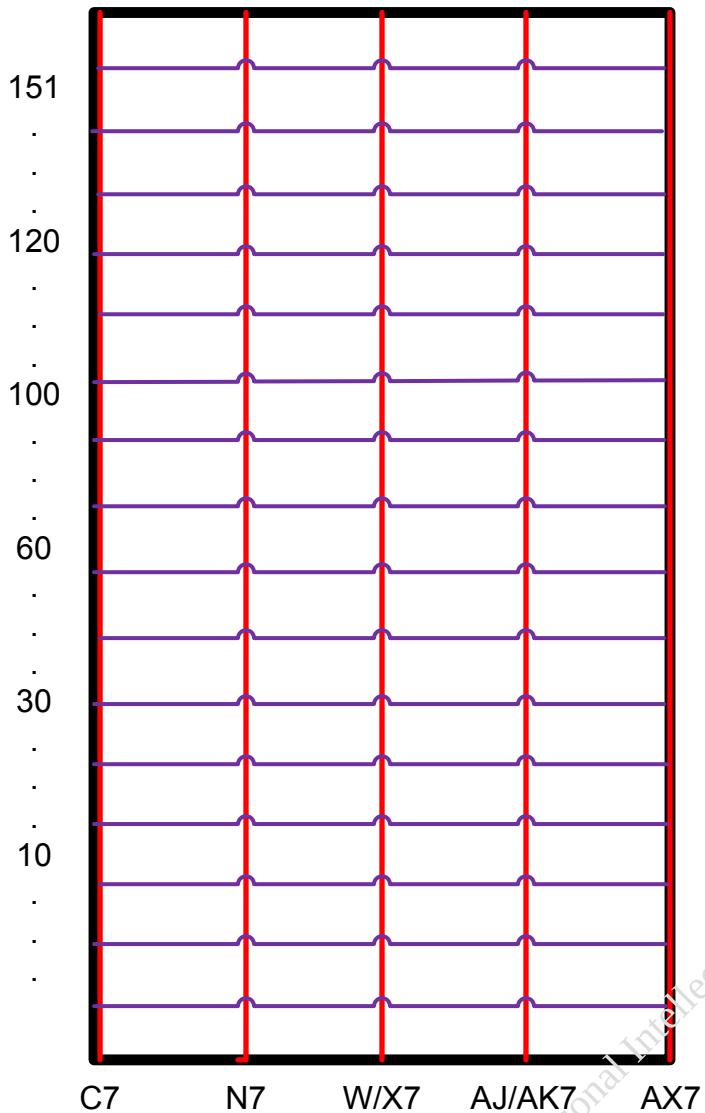
There are variations in the cold aisles/hot aisles for lab 3

Starting cold aisles from doorway may be 2-3 rows in, first several instances fluctuates between 6 -7 tiles width



Lab 2

For visual representation only
=not drawn to scale=



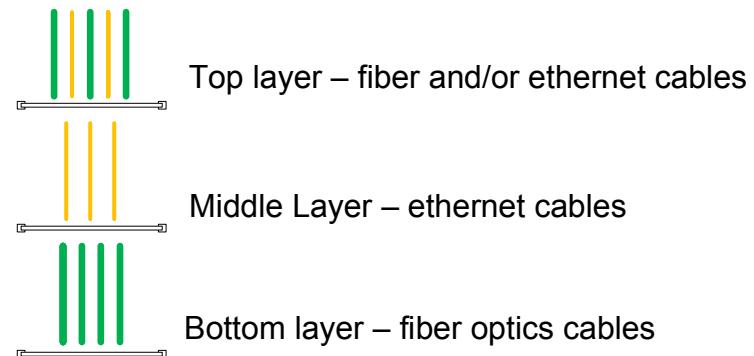
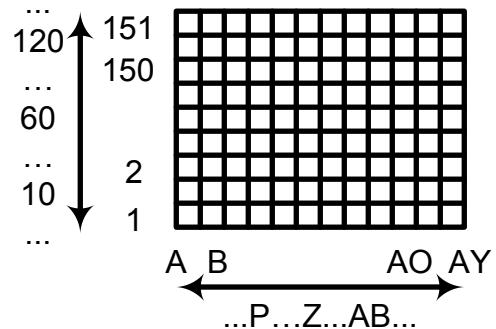
X/Y means cable tray is roughly between two columns instead of flushed with a single column

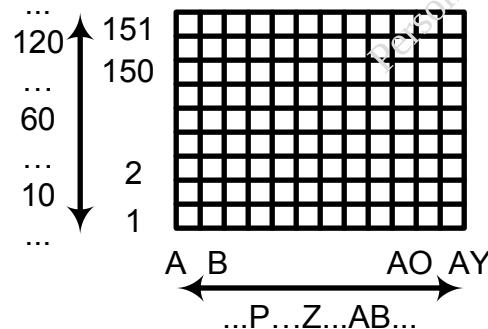
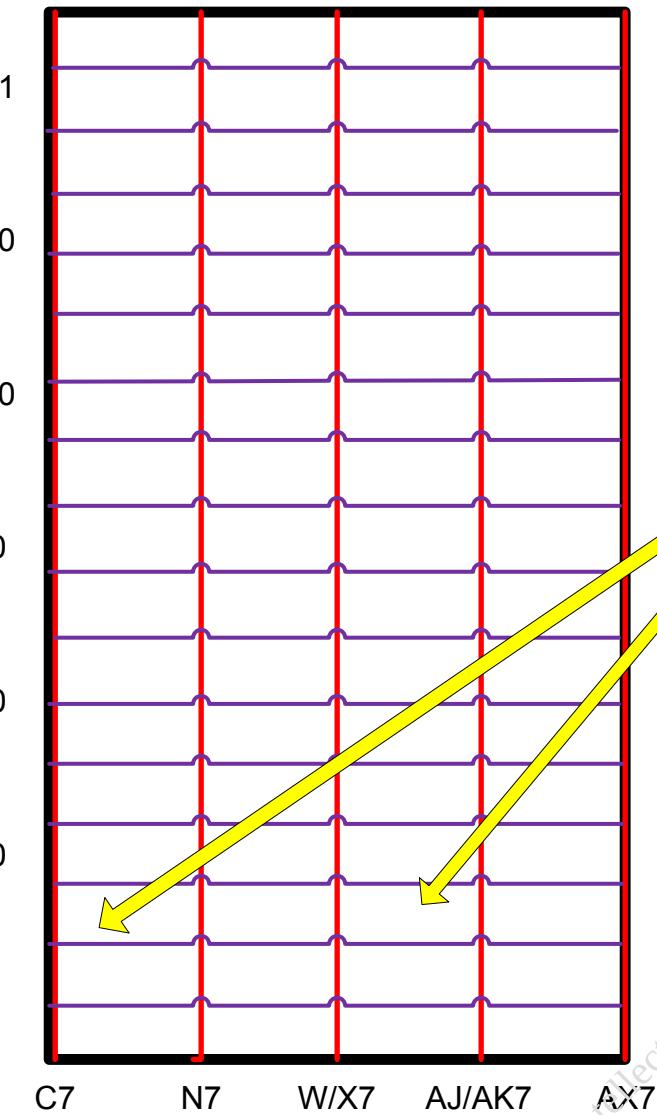
W/X7 = between column W and X row 7

- red line: column cable tray
- purple line: row cable tray

Generalizations (lab 2):

- cable tray in the middle column have 3 layers of cables
- border/edge rows and columns might have 3 layers of cables
- parallel columns on either side of middle column have 2 layers of cables
- on either side of middle column will be rows populated with racks/cabinets that varies from 12-22 tiles (horizontal)
- each column of cable trays are roughly distanced by 9-12 tiles width
- each row of racks/cabinets are distanced by 3 tiles width (~72" / 6')
- rows on both sides of the middle column are separated by 3 tiles width (~96" / 8')
- cable trays distance raised from the floor (if similar to lab 4):
 - bottom tray ~103" / 8'7" (fiber)
 - middle tray ~113" / 9'5" (ethernet)
 - top tray ~118" / 9'10" (fiber/network/inter-lab connections)
- width of room dimensions 50 tiles (24" LxW) [49 tiles + ~½ tile on each end]
- length of room dimensions 151 tiles (24" LxW)
- height from floor to ceiling is ~146" / 12'2" (if similar to lab 4)





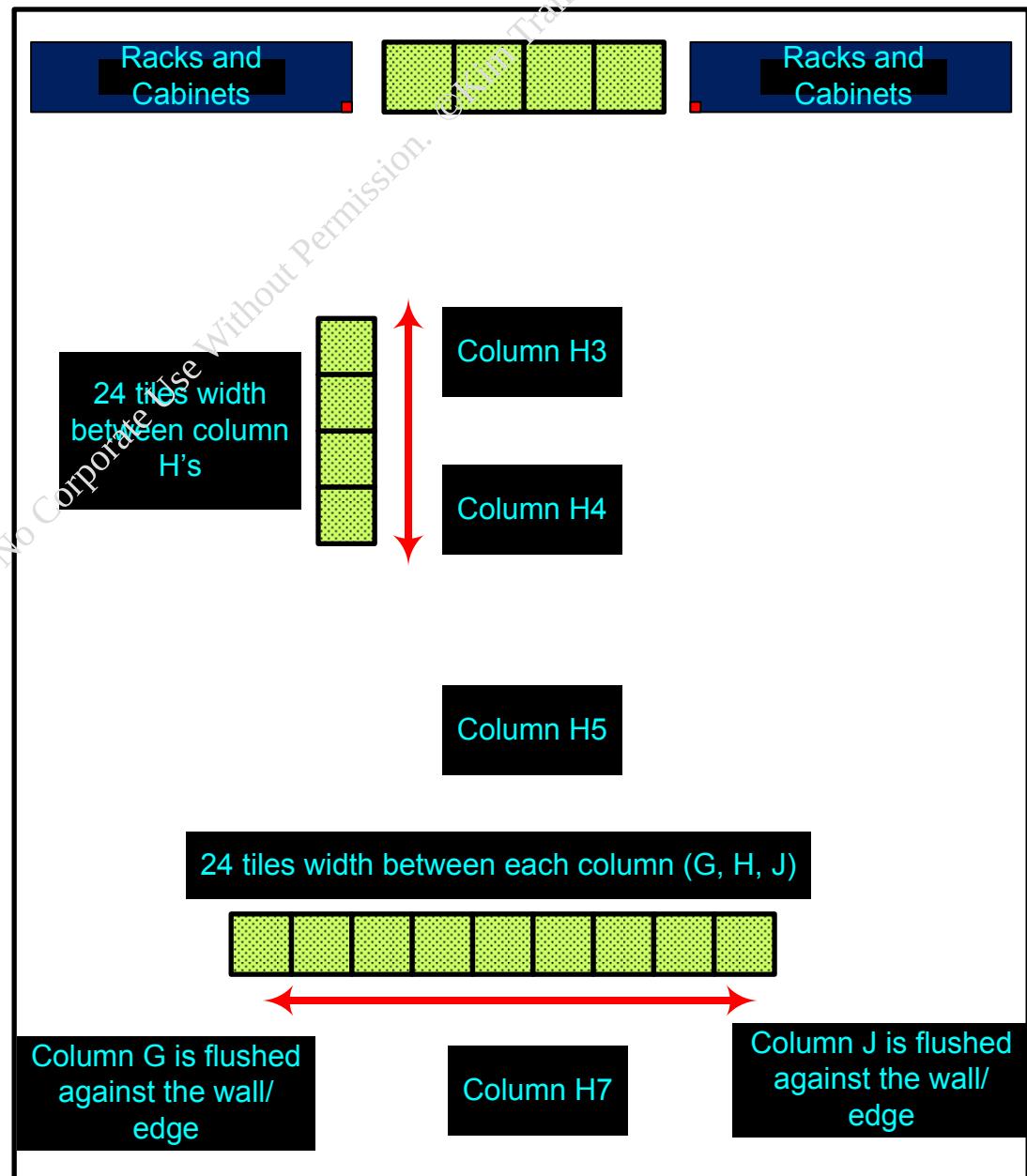
Lab 2

column cable tray

row cable tray

29 rows of racks and cabinets

For visual representation only
=not drawn to scale=



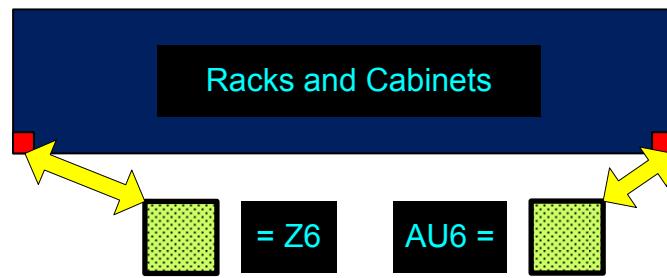
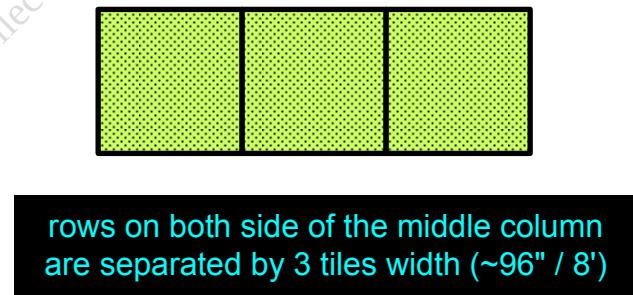
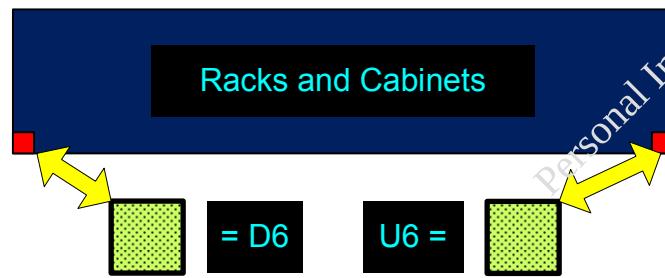
Racks and Cabinets

©Kim Tran



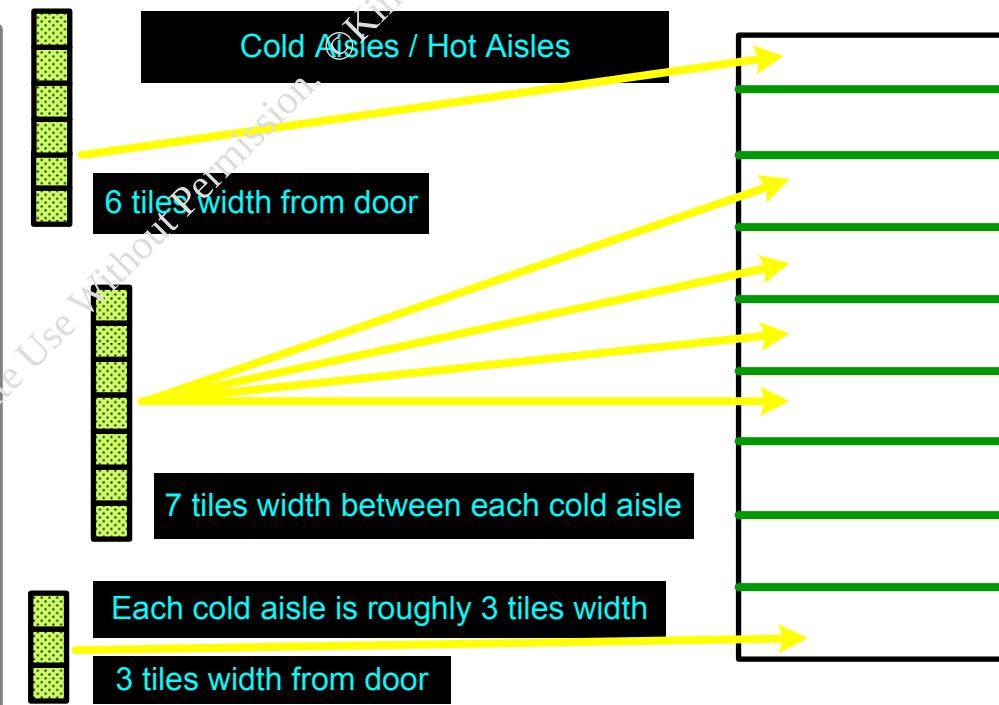
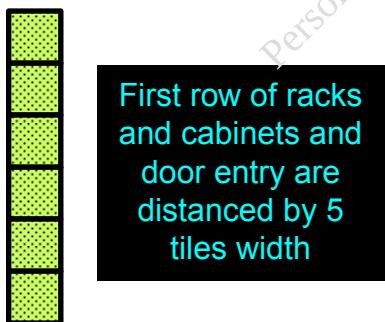
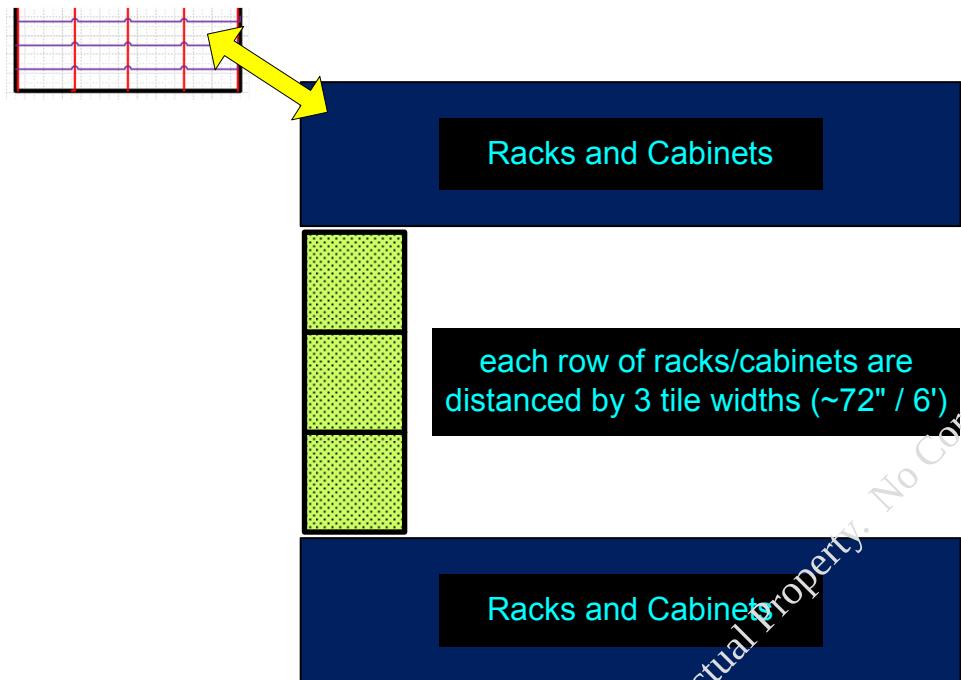
Lab 2 has 18(L)-22(R) tiles width may be populated with racks and cabinets on both sides of lab

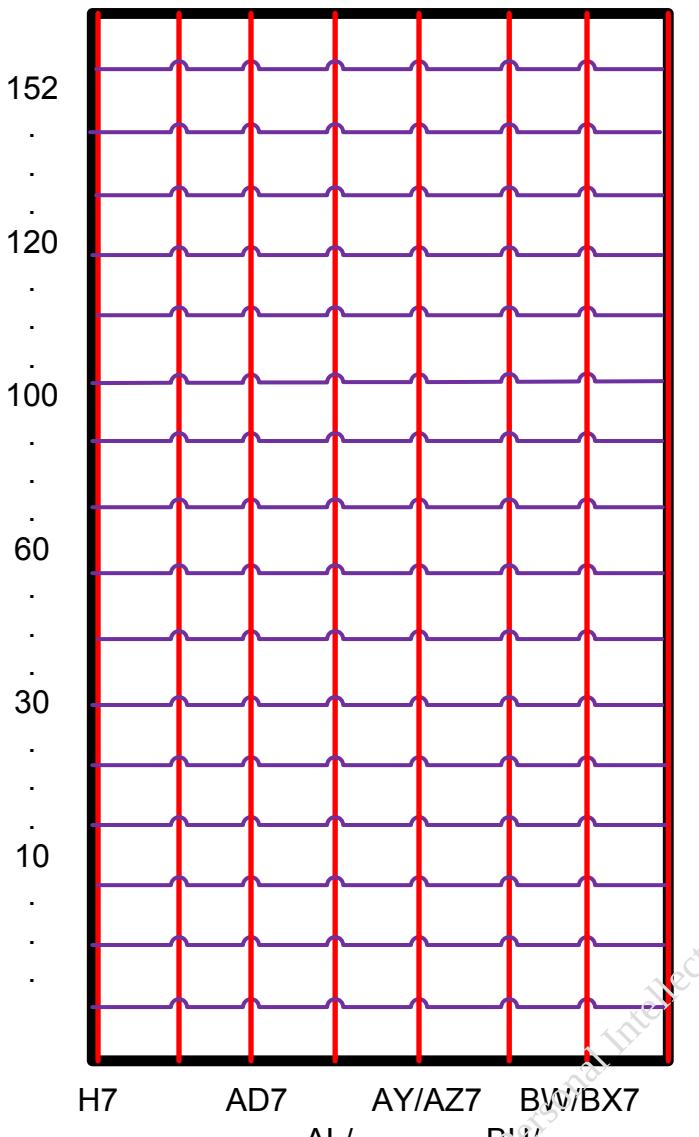
Racks and Cabinets may occupy 2 tile lengths and 1 tile width



Rows on left side
start/flushed at tile
D6 ↔ U6

Rows on right side
start/flushed at tile
Z6 ↔ AU6





X/Y means cable tray is roughly between two columns instead of flushed with a single column

W/X7 = between column W and X row 7

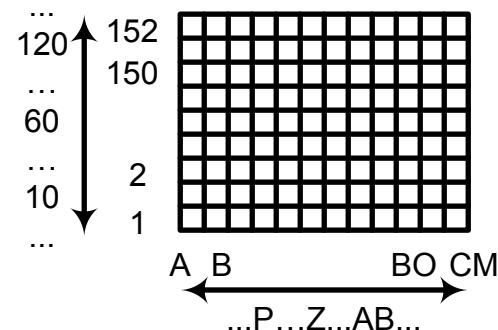
Lab 1

- red line column cable tray
- purple line row cable tray

For visual representation only
=not drawn to scale=

Generalizations (lab 1):

- cable tray in the middle column have 3 layers of cables
- border/edge rows and columns might have 3 layers of cables
- parallel columns on either side of middle column have 2 layers of cables
- on either side of middle column will be rows populated with racks/cabinets that varies from 12-22 tiles (horizontal)
- each column of cable trays are roughly distanced by 9-12 tiles width
- each row of racks/cabinets are distanced by 3 tiles width (~72" / 6')
- cable trays distance raised from the floor (if similar to lab 4):
 - bottom tray ~103" / 8'7" (fiber)
 - middle tray ~113" / 9'5" (ethernet)
 - top tray ~118" / 9'10" (fiber/network/inter-lab connections)
- width of room dimensions 91 tiles (24" LxW)
- length of room dimensions 152 tiles (24" LxW)
- height from floor to ceiling is ~146" / 12'2" (if similar to lab 4)



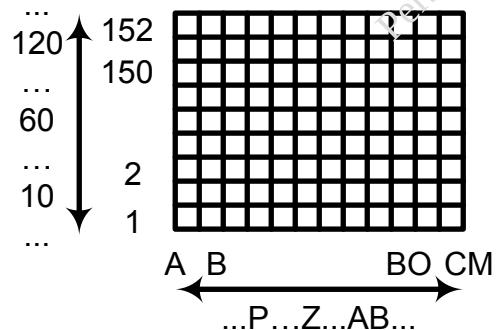
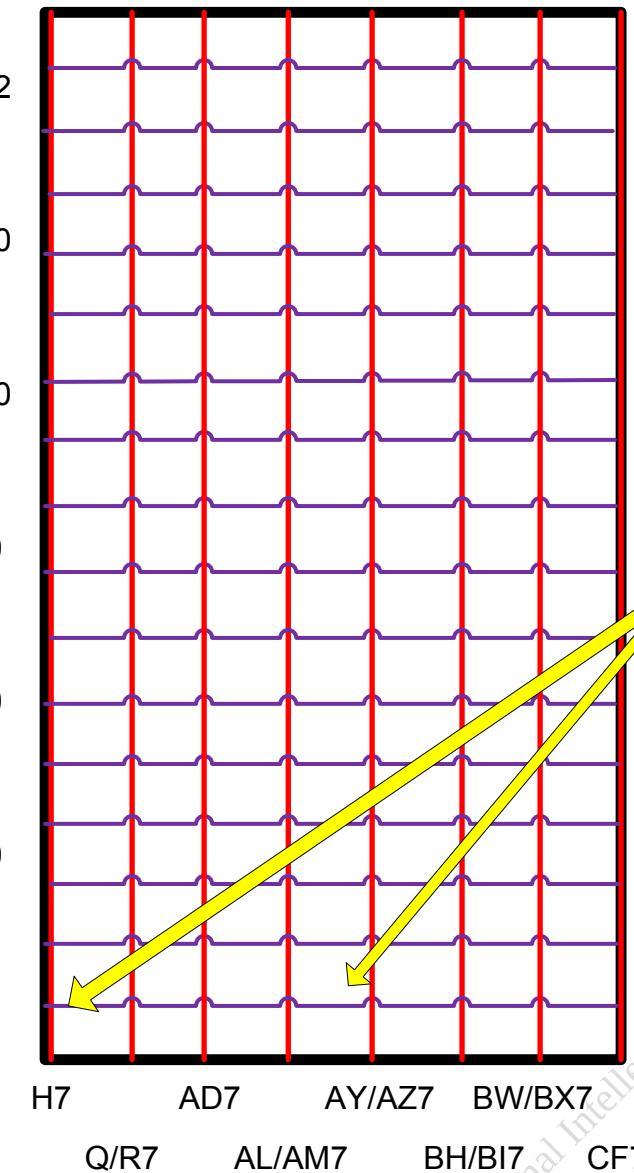
Top layer – fiber and/or ethernet cables



Middle Layer – ethernet cables



Bottom layer – fiber optics cables



Lab 1

— column cable tray

— row cable tray

29 rows of racks and cabinets

For visual representation only
=not drawn to scale=

Racks and Cabinets

Racks and Cabinets

4 column sets of racks and cabinets (18 tiles width) separated by 4-5 tiles width

24 tiles width between column E's

Column E3

Column E4

Column E5

24 tiles width between each column (C, E, F)



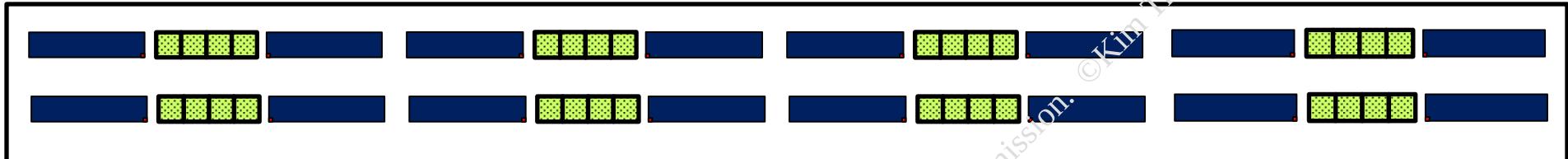
Column C

Column E7

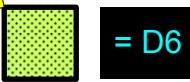
Column F is flushed against the wall/edge

Lab 1 has 18 tiles width that may be populated with racks and cabinets on both sides of lab

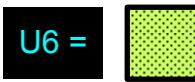
Racks and Cabinets may occupy 2 tile lengths and 1 tile width



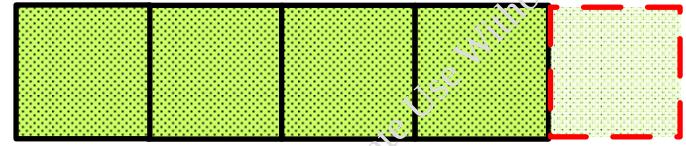
Racks and Cabinets



= D6

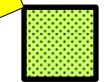


= U6 =

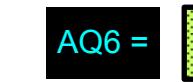


rows on both side of the middle column are separated by 4-5 tiles width

Racks and Cabinets



= Z6

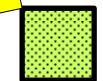


= AQ6 =

Rows on left side start/flushed at tile
D6 ↔ U6

Rows on right side start/flushed at tile
Z6 ↔ AQ6

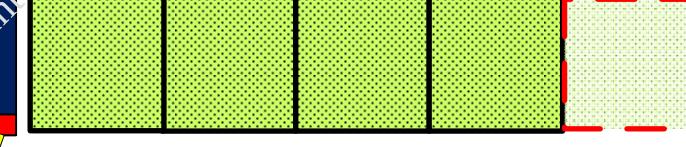
Racks and Cabinets



= AV6



= BM6 =



rows on both side of the middle column are separated by 4-5 tiles width

Racks and Cabinets



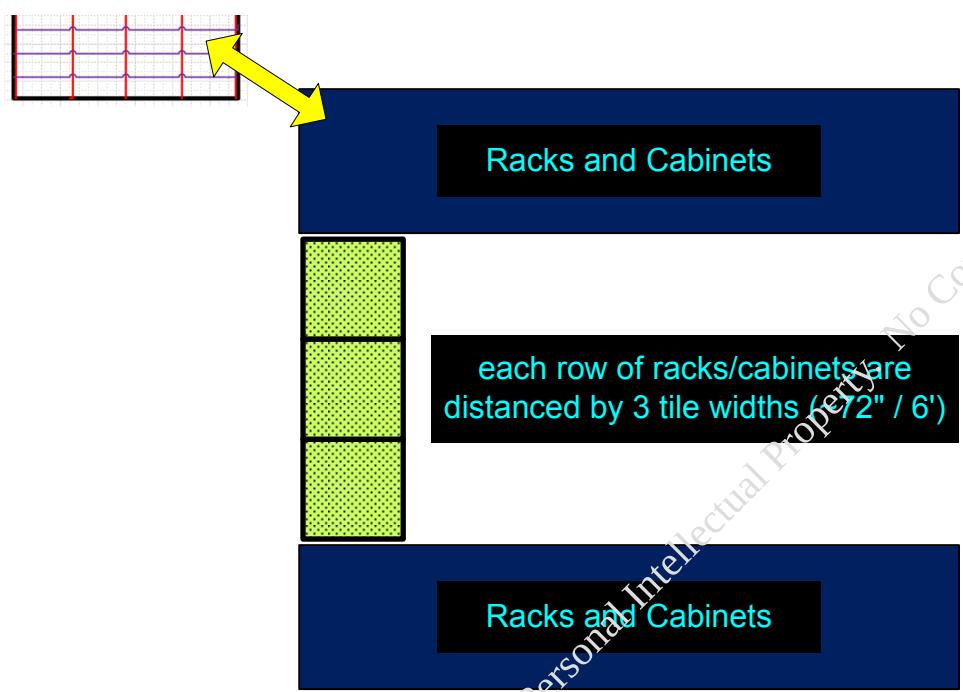
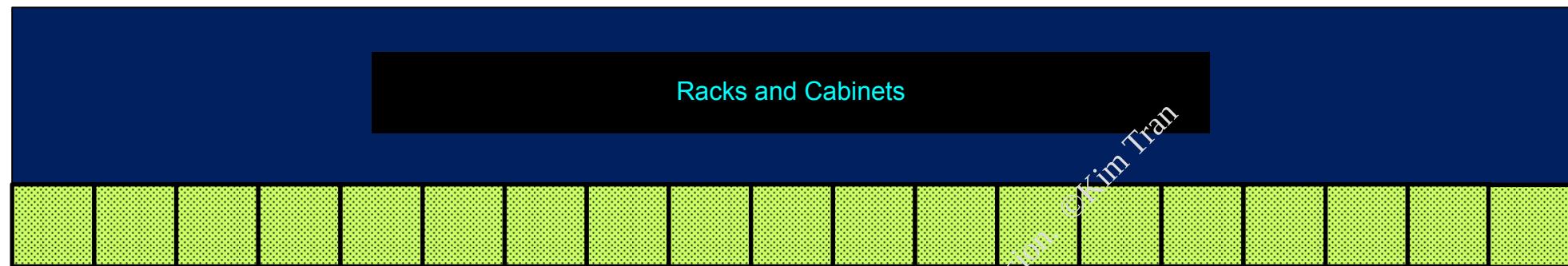
= BS6



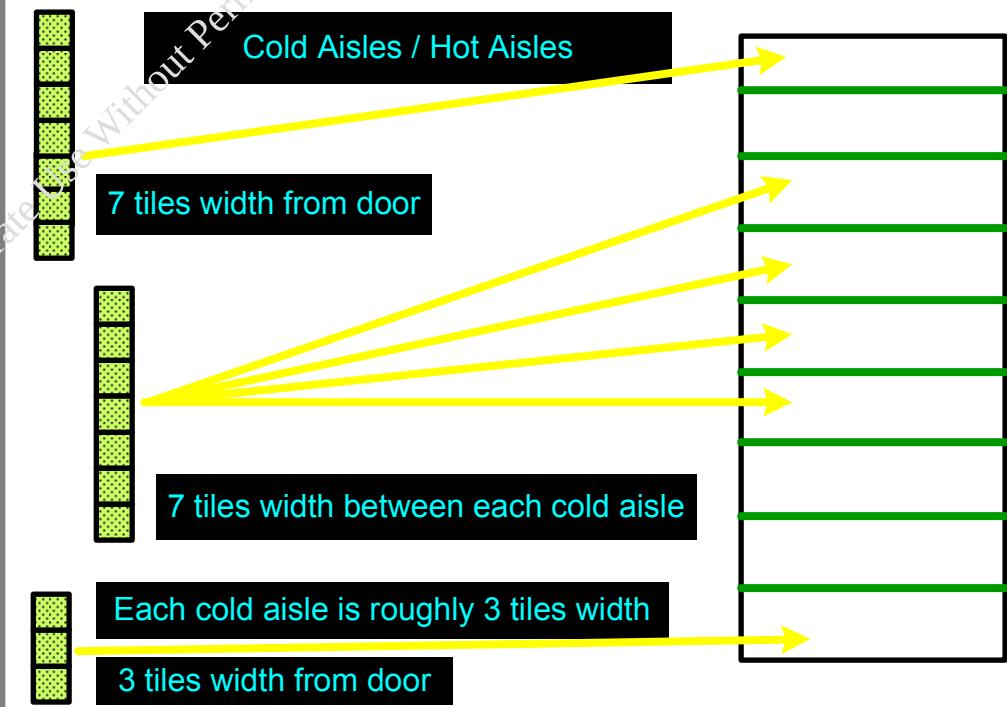
= CJ6 =

Rows on left side start/flushed at tile
AV6 ↔ BM6

Rows on right side start/flushed at tile
BS6 ↔ CJ6



First row of racks and cabinets and door entry are distanced by 6 tiles width



Tivoli Storage Manager – Internal Projects

Internal Projects to maintain and retain
technical skillsets edge

TSM Library Sharing with
Sharepoint VM integration with peer
collaboration

TSM Server Migration



TSM Project

Library Sharing-VM SharePoint

Prepared for

Bill Horejs

Version 1.1

August 5, 2008

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Abstract

Bill Horejs assigned me (Kim Tran) with the task of building a Tivoli Storage Manager (TSM) server for various testing purposes in the BPIC. Also a SharePoint vm was to be created as part of the testing purposes.

Plan and Preparations

For this project, I approached it from the test first then implement. I spent the majority of the time on the testing, in addition to researching the complications that i encountered.

I worked on the installation/settings/configurations in a test vna to be more comfortable before ‘tampering’ with physical/live equipment/data.

I spoke with Chris Gibes, Carlo Bonura, Dan Gramza, Lisa Atarian, Dave Bach to find out the information needed to build the TSM server along with the SharePoint vm.

Chris suggested to just load Windows 2003, rather than 2008, since at the time it was still unsupported, granted the original intention was to load Windows 2008. The library sharing was not originally part of the configuration, but was an added value of learning to set it up and having access to the physical library from a secondary TSM server.

Carlo assisted with the building of the vm for the SharePoint testing. Lisa greatly assisted with the setup/configurations (with growth testing) of the Microsoft Office SharePoint Server / MS SQL Server . Dave provided specifications/sizing for the vm partitions for installation/utilization of SharePoint.

Dan provided the supplementary information on IP and other issues that I ran into. Matt Koerten graciously assisted during the testing phase when complications arose in the BPIC (down switch, cabling, assistance with troubleshooting).

Out of Scope

In depth configuration for SQL/SharePoint for “specific” testing was not specified. An environment where SQL/SharePoint was installed and “ready” for configuration specific needs at time of actual testing.

TSM

Step-by-step configuration of TSM server, storage pools, other components (devices, paths, class)

Restoration of SQL/SharePoint

Client is installed, ready for backup.

Restore process is an issue that requires more time for testing/troubleshooting

Library sharing – setup:

Defining the library, drives, paths –for the [main/manager] server. This scenario assumes the library, drives, and path to the drives and library are already defined, with the “shared” option set to “yes”

(Please see the TSM 5.x Admin / Reference Guide for syntax and examples)

TSM Server Setup/Install

The actual installation of each software itself varies from around one minute to possibly over an hour—depending on system specifications. The operating system averages around forty minutes, in addition to another one-two hours for patching the system with necessary security updates.

The TSM server/client software can be installed in two-three minutes. The Integrated Solutions Console (ISC) and the Administration Center can vary between fifteen minutes to an hour or more.

Estimated time: three-five hours (actual may vary)

TSM Server Setup/Configurations

The things that needed to be done for this part of the setup:

- Configure the TSM server instance
- Define the storage pools
- Setup the server-to-server communications with demors (bpic tsm server)
- Setup the library manager/client to share the library
- Configure the TSM backup client
- Test the configurations

Setup of the environment can be done via the command line interface (CLI) or through the administration center (GUI).

Granted no complications are encountered, estimated time: one-three hours (actual may vary)

System Setup Info

Server IP: 172.30.26.x(static)

Login: Administrator/xxx

TSM server is running Windows Server 2003 R2 Enterprise

TSM Server 5.5.1, Client 5.5.1

Local drive : 25GB

Diskpool partition: 40GB

Virtual Tape Library partition: 36GB

SharePoint IP: 172.30.92.xxx (static)

Login: Admin/xxx

SharePoint server is running Windows server 2003 Standard

TSM Client 5.5.1.1

Tivoli Data Protection for SQL 5.5.1

Microsoft Office SharePoint Server 2007

Microsoft SQL Server 2005

Local drive: 12GB

SharePoint drive (data): 20GB

Complications

The main complication that I ran into was the defining/sharing of the library on demors.

Following the syntax and instructions to setting up the library, I was able to ‘define’ the servers for server-to-server communication then define them to be the library manager and client on each server. The problem came from defining the shared library on the client. Since the library client server needed to connect with the library manager server to request the sharing privileges.

The error was an ‘authentication failure’. The majority of the research pointed to either starting over by removing then redefining the servers, passwords or to update the servers making sure the password was correct on both servers for the communication. This did not resolve the issue, a document on the IBM website pointed to a possible issue that was resolved in a fix release.

The current version of TSM on demors was 5.5.0. With assistance from Ingrid K. and Chris G. to verify that the settings were all ‘correct’, it was agreed that demors could be upgraded to 5.5.1. Following the upgrade, I redefined the server-to-server communications and when defining the shared library this time, it was successful. I strongly believe the upgrade fixed the issue/complication that was hindering me from setting up the shared library.

End of Document

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Appendix A: Server-to-Server Communication

Library Sharing Setup

Server-to-Server Communication

On the main server:

- set servername [name]
- set serverpassword [password]

define the client server on the main server

- define server [name] serverpassword [password] hladdress [ip address] lladdress [tcp port]

On the client server(s)

- set servername [name]
- set serverpassword [password]

define the main server on the client server

- define server [name] serverpassword [password] hladdress [ip address] lladdress [tcp port]

On each server, turn the crossdefine option on

- set crossdefine on

Library Sharing Setup

On the client server(s)

- define library [name] libtype=shared primarylibmanager=[main server name]

Define the all the device class associated (or to be used) with the shared library

- define devclass [class name] library [library name] devtype [type]

(parameters for device class should be same on client /manager server, using the same device class is good practice but not required)

Define a storage pool to be used with the shared library

- define stgpool [name] [device class defined] maxscratch=[number]

On the main server:

Define a path to the drive(s) from the client server that it will be allowed access to.

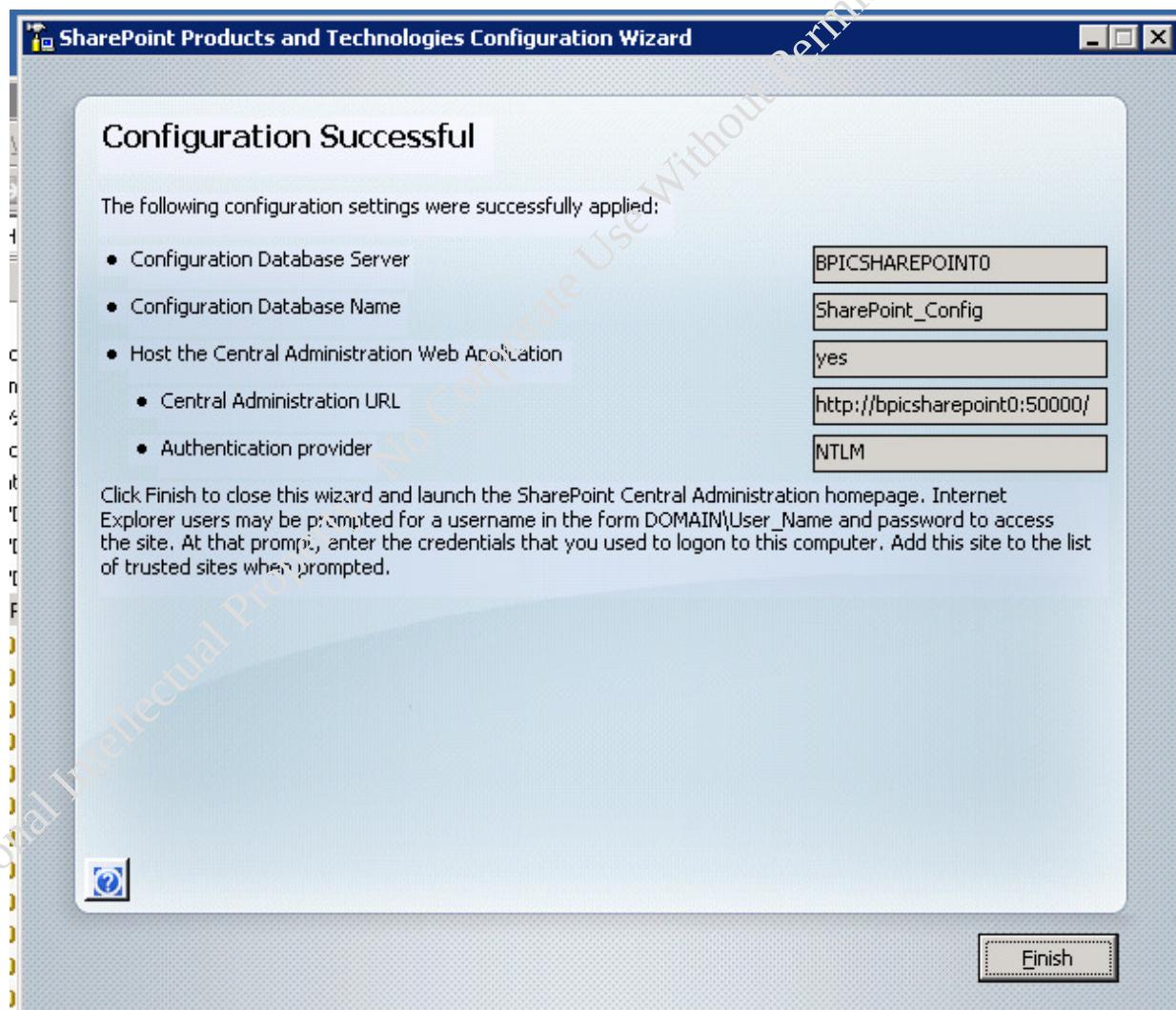
- define path [client server] [name of drive] srctype=[type “server”] desttype=[type “drive”] library=[library name] device=[device]

Appendix B: Sharepoint VM Specifications/Install Notes

By Lisa Atarian

1. Created two localhost accounts (sp_install and sp_SQL) to use for SharePoint install
2. Installed MOSS using the below specs

SharePoint Enterprise Edition, Complete Installation



Central Administration URL is - <http://bpicssharepoint0:50000>

Log on to the Central Administration Site using sp_install/sp_install username and psswd

SharePoint SQL access account is: username sp_SQL, password sp_SQL

SharePoint SQL installation account is (**this is also used as the SharePoint service account**):
username sp_install, password sp_install

Both of these SQL accounts are using BPICSHAREPOINT0 SQL instance, and are given SQL
Security Administrator and SQL Database Creator rights on the SQL box

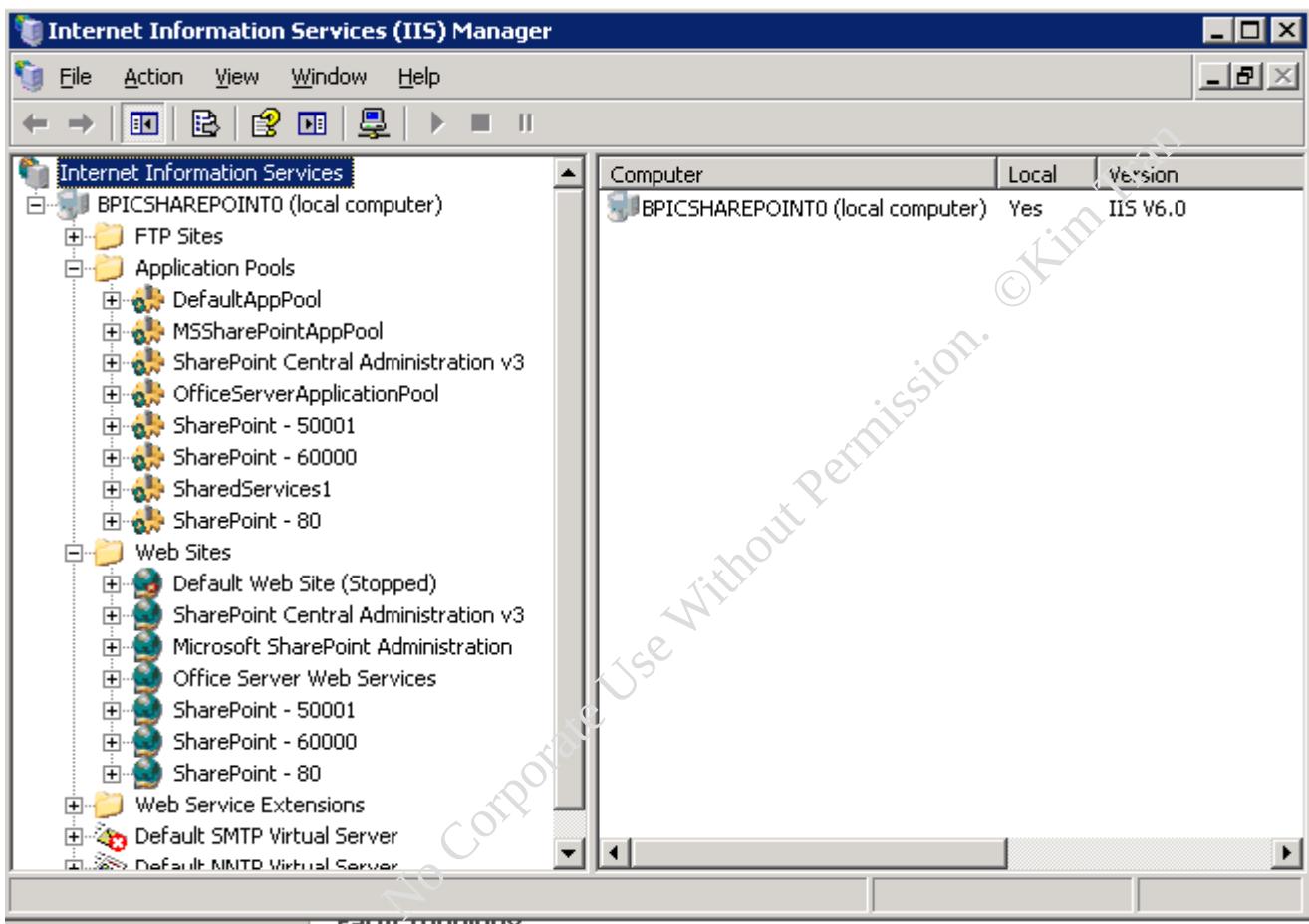
The screenshot shows the Microsoft SQL Server Management Studio interface. In the Object Explorer, the 'Security' node under 'BPICSHAREPOINT0' is expanded, with 'Logins' selected. The 'Logins' table is displayed in the 'Summary' pane, listing the following logins:

Name	Created
BPICSHAREPOINT0\SQLServer2005MSFTEUser\$BPICSHAREP...	7/11/2008
BPICSHAREPOINT0\SQLServer2005MSSQLUser\$BPICSHAREP...	7/11/2008
BPICSHAREPOINT0\SQLServer2005SQLAgentUser\$BPICSHAR...	7/11/2008
BUILTIN\Administrators	7/11/2008
NT AUTHORITY\SYSTEM	7/11/2008
sa	4/8/2003
BPICSHAREPOINT0\sp_install	8/5/2008
BPICSHAREPOINT0\sp_SQL	8/5/2008

A modal window titled 'Login Properties - BPICSHAREPOINT0\sp_install' is open, showing the 'Server Roles' tab selected. The 'Server roles:' section contains the following checkboxes:

- bulkadmin
- dbcreator
- diskadmin
- processadmin
- securityadmin
- serveradmin
- setupadmin
- sysadmin

Site Collection URL is - <http://BPICSHAREPOINT0> (log on as any bpicsharepoint0 user account - for example: username bpicsharepoint0\admin, password berbee)



SharePoint - 50001 is Central Administration

SharePoint - 60000 is MySite

SharedServices1 is for Shared Services Provider

SharePoint - 80 is the Backup_Test site collection



TSM Project

Appleton TSM Server Migration

Prepared for

Gerry Thome

Version 1.0

September 29th, 2008

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Abstract

This is an internal TSM project in which I will be working with Gerry Thome to migrate the Appleton TSM server from the current physical server to a new, more reliable physical server.

Plan and Preparation

The approach was to update and prepare the newer physical server with firmware, drivers, and OS patches. Install and configure a base instance of the TSM server and client applications, followed by the migration/restoration of the current TSM server database.

TSM Server Setup/Install

The actual installation of each software itself varies from around one minute to possibly over an hour—depending on system specifications. The operating system averages around forty minutes, in addition to another one-two hours for patching the system with necessary security updates.

The TSM server/client software can be installed in two-three minutes. The Integrated Solutions Console (ISC) and the Administration Center can vary between fifteen minutes to an hour or more.

Estimated time: three-five hours (actual may vary)

TSM Server Setup/Configurations

The tasks that needed to be completed for this part of the setup:

- Configure the basic TSM server instance
- Define the basic storage pools
- Configure the TSM backup client (basic/default settings)
- Test the configurations

Setup of the environment can be done via the command line interface (CLI) or through the administration center (GUI).

Granted no complications are encountered, estimated time: one-three hours (actual may vary)

System Setup Info

Server IP: 172.30.x.x (static)

Login: Administrator/xxxxx

TSM server is running Windows Server 2003 Standard

TSM Server 5.5.1, Client 5.5.1

Local drive: 205GB (raid 5)

Diskpool dir: 50GB

Small File pool dir: 30GB

Complications

The main complication that I ran into was the current TSM server dying (no longer starting up) before the “volhist.out” and “devcnfg.out” files along with a database backup for that current point in time was done. Therefore the restoration of the TSM database took longer than anticipated, by manually searching the tapes for the type of data that equaled the database backups.

After I researched the ways to query the tapes for database backups, the database was restored.

Summary

The tasks completed to rebuild and migrate the former TSM server consisted of:

- Updating and patching of the newer TSM server machine
- Installation of TSM server and client
- Configuration of TSM server and client
- Restoration of the TSM database
- Configuration, setup, and audit of hardware (library and tape volumes)
 - The audit of the library and volumes is to correct the information that the TSM database has on record of what volumes and data is actually present.
- Creation, restoration, and audit of storage pool volumes
- Setup of ISC and Admin Center for GUI administration
- Inspection and verification of log activity, ensuring scripts and schedules are functional after the database restore

End of Document

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Appendix A: Library Setup

Library Setup

On the TSM server

- define library [name] libtype=[“scsi”]

Define a path to the library from the server that it will have access

- define path [name of server] [name of library] srctype=[type “server”] desttype=[type “library”] device=[device]

Define the drive(s)

- define drive [library name] [drive name]

Define a path to the drive(s) from the server that it will have access

- define path [server] [name of drive] srctype=[type “server”] desttype=[type “drive”] library=[library name] device=[device]

Define the all the device class associated (or to be used) with the library

- define devclass [class name] library [library name] devtype [type “lto”]

Finding the database backup volumes

On the TSM server (command prompt in the TSM “server” directory)

- dsmserv display dbbackupvolume devc=<devclass name> volumenames=<volume names, 1,2,3>

***When I entered in that command, if I was searching through multiple volumes...and for my experiences...if it didn't find the contents it was looking for on the first volume in the series, it would have an error then return you to the command prompt. I manually input the volume name one at a time:

“volumenames=vol1” then “volumenames=vol2”, and “volumenames=vol3” instead of
“volumenames=vol1,vol2,vol3”***

The other option instead of manually inputting the volumes one at a time is to create a script and a file with a list of the volumes to be searched as noted here:

http://www-01.ibm.com/support/docview.wss?rs=1019&context=SSSQWC&context=SSGSG7&q1=restore+db+volhist&uid=swg21143559&loc=en_US&cs=utf-8&lang=en

search for “swg21143559” on the IBM site if the link no longer works

The results, if a valid database backup is found should have some content similar to:

Date/Time: 09/16/2008 04:22:01

Volume Type: BACKUPFULL

Backup Series: 3,052

Backup Operation: 0

Volume Seq: 1

Device Class: LTOCLASS

Volume Name: 001373

Restoring the database from a volume with a valid database backup

Ensure that the library/drives/paths/devclass are defined, the database and recovery log from the base instance of the TSM server is at least large enough to process the restored database and recovery log data.

- Define dbvolume [volume name]
- Define logvolume [volume name]
- Extend db [size in mb]
- Extend log [size in mb]

One the valid database backup volume is found:

- dsmserv restore db volumenames=[name of volume] devc=[device class name] commit=[yes]



Appleton TSM Server Migration Project End Report

Prepared for Gerry Thome

Version 1.0

September 29, 2008

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Introduction

This is the Project End Report for the Appleton TSM Server Migration project, the recently completed effort to migrate the TSM server from an older physical machine to a newer, more powerful machine. Although the project has formally closed, Berbee believes that further benefit can accrue to Gerry Thome by analyzing the conduct of the project and its outcome.

In this document, Berbee details the overall outcome of the project:

- What went well?
- What are the lessons learned?
- What issues remain open, and how does Berbee plan for them to be resolved?
- What activities are recommended as follow-ons to Appleton TSM Server Migration project?

Additionally, the appendix of Open Issues provides detail about any pending open issues.

By providing this information, Berbee intends to help Gerry Thome gain maximum benefit from its experience with the project.

Recap

In summary, this was an internal project, in which Gerry Thome would be working with Kim Tran in order to strengthen his skills/knowledge on TSM while awaiting shadowing opportunities. The agenda was to migrate the current TSM server to a new, more reliable physical server. Due to the current server suddenly becoming out of service before some important files were readily backed up, the migration process became more complicated.

The extra steps and time to resolve the issue consisted of researching the methods to restore the TSM database without the “volhist.out” and the “devcfg.out” file in addition to searching the tape volumes for the most recent database backups. After researching the methods to restore and finding the recent backup copy, the TSM database was restored. The library volumes and storage pools were audited and recreated. The log files were checked and verified to make sure scripts and schedules were functional.

Services Completed

- Updating and patching of the newer TSM server machine
- Installation of TSM server and client
- Configuration of TSM server and client
- Restoration of the TSM database
- Configuration, setup, and audit of hardware (library and tape volumes)
- Creation, restoration, and audit of storage pool volumes
- Setup of ISC and Admin Center for GUI administration

Deliverables Completed

- Project documentation
- Post project debrief
- Project closure documentation

What Went Well

Key successes of Appleton TSM Server Migration project appear in Table 1, with notes on the lessons learned that can be applied to future projects.

TABLE 1. SUCCESS STORIES

SUCCESS AREA	NOTES
Updating and patching the physical server	I used the IBM update xpress cd 4.06 (latest) to update the latest firmware drivers for the hardwares on the eserver x346. The Windows 2003 server was also updated and patched via windows update.
Installation of TSM server and client	There were no issues with the installation of the server and client software.
Configuration of TSM server and client	There were no issues with the configuration of the server and client.
Communication	Communications to update Gerry on the status as things progress was smooth and on track.

Lessons Learned

Lessons learned throughout the Appleton TSM Server Migration appear in Table 2, with notes illustrating specifically how they can be applied to future projects.

TABLE 2. LESSONS LEARNED

ITEM/AREA	NOTES
Migration / Restore of TSM database	<p>The major problem during this step was the fact that the former TSM died (no longer starting up) before the “volhist.out” and “devcfg.out” files were backed up to a readily accessible media. Therefore extra research and steps were taken to restore the TSM database.</p> <p>In the future, the lesson learned is to immediately create readily accessible copies of the “volhist.out” and “devcfg.out” in preparation for unexpected situations, such as hardware failure. These files are needed for the restoration of the TSM database...the volhist file contains the location of the database backups to be restored, while the devcfg file has information on the library/hardware setup. Without these files, restoration becomes more complicated, by searching manually through the tapes, or to script the searching of the volumes if there are a lot of tapes.</p> <p>The process to restore the database without the files breaks down into creating a new, base install of the TSM server and client. Creating and mapping the paths for the hardware (library and drives), then searching for the database backups on the volumes available. Followed by the syntax for the commands to restore the database.</p>

Wrapping Up

Table 3 provides information on outstanding issues related to Appleton TSM Server Migration project, with notes on how Berbee plans for them to be resolved.

For a detailed Issues Log report, see the appendix of Open Issues on page 8.

TABLE 3. OUTSTANDING ISSUES

ISSUE	PLAN FOR RESOLUTION
Pending Issues	<p>After the creation of the base TSM server/client instance; creation of the library/drive paths for the hardware; search of the database backups; restoration of the database, restoration and audits of the library and volumes; successful test restores; and verifications of the log files that scripts and schedules are running...</p> <p>I am unsure of what more that needs to be done. I will continue to monitor the server, and touch base with Gerry Thome on any pending/opening issues.</p>

What's Next?

Based on the outcome of Appleton TSM Server Migration project, Berbee recommends that Gerry Thome capitalize on the benefits of the project by pursuing the initiatives outlined in Table 4.

TABLE 4. RECOMMENDED FOLLOW-ON ACTIVITIES

ACTIVITY	NOTES
Updates to the Server	Should the current server need updates or other tasks to be performed, please keep me informed and I will be willing to assist.
Migration and additions	If the TSM needs to be migrated again, or if another instance (physical) is planned. I will be willing to offer my assistance per your request.
Troubleshooting and Support	I will be ready and willing to assist with current and future support issues

Project Closure Acknowledgement

Berbee Information Networks Corporation

By: _____

Name: _____

Title: Account Manager

Name: _____

Title: Project Manager

Date: _____

[Client Representative Signature]

By: _____

Name: _____

Title: _____

Appendix. Open Issues

This appendix provides a detailed report of open issues as of 9/29/08.

The report begins on the next page.

For information on how Berbee plans for these issues to be resolved, refer to the What's Next Section on page 6.

Not Applicable

Post Project Review and Lessons Learned

This is a post project review and input on the lessons learned from the project.

General Information

Project Name	Appleton TSM Server Migration
Today's Date	March 15, 2009
Project Wrap-up Completed (Yes, No)	YES
Describe any problems being adequately prepared prior to arriving at the customer site? (Statement of Work, BEST, any other needed information)	I was adequately prepared. Although, the project would have been smoother if the TSM server didn't just die (without starting up again) leading to a loss of two files that are beneficial to the restoration of the TSM database.
Describe any customer satisfaction issues related to the deliverables or quality of deliverables.	No Issues
Describe customer satisfaction issues/concerns	No Issues
Describe any problems staying on schedule.	On Schedule
If there were change requests, was the change management process used? Describe any issues related to change management or scope containment.	Change management process not used
What 2 things could have been done to improve customer satisfaction?	<ol style="list-style-type: none"> 1. More personal client interaction time to discuss in real time issues and resolutions. 2. More prompt with the immediate backups of crucial restoration files—a lesson for future references.