My First Colo

Background on bringing up a wholesale infrastructure.

https://github.com/cpc2018/my-first-colo

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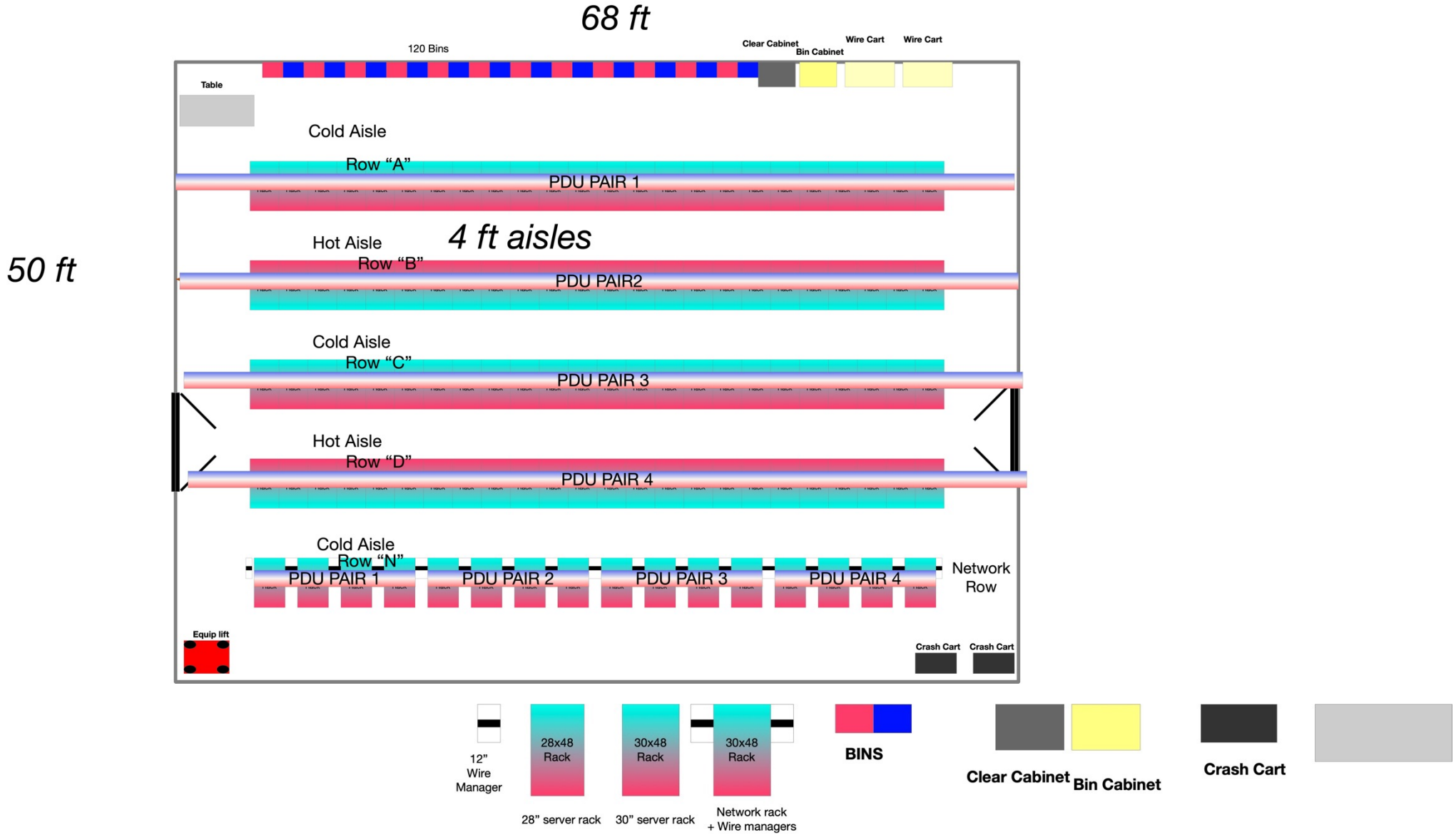
What is a rack / What is a colo?

Retail, vs. Wholesale, vs. Owned

Sizing	standard retail	premier (high retail)	wholesale	high wholesale	Owned/Build to suit
Brief description	(small, cheap)	(small, not cheap)	medium (cheap)	medium (not cheap)	large
space size	0-250Kw	0-250Kw	250kw-6Mw	250kw-6Mw	2Mw-30Mw
# racks	0-25	0-25	25-200	25-200	200-3000
power billing	Metered or allocated	Allocated	Metered	Metered	Metered
sq footage	up to 750 Sq ft.	up to 750 Sq ft.	up to 12k Sq ft	up to 12k Sq ft	up to 250K Sq ft
contract length	2-3 yrs	2-3 yrs	5-7 yrs + renewals	5-7 yrs + renewals	10 yrs +
crossconnect billing	possible NRC / monthly	NRC + high monthly	possible NRC / monthly	NRC + high monthly	N/A
Peering fabrics available?	possible	definitely	possible	highly likely	unlikely
Backhaul needed?	likely	n/a - most on-site	likely	possible	likely
dedicated office	unlikely	unlikely	likely	likely	yes
dedicated storage?	unlikely	unlikely	likely	likely	yes
# Carriers	1 to 5	20+	1 to 5	5 to 20	1 to 5
security 24x7	likely	expected	likely	expected	expected
engineering 24x7	possible	expected	possible	likely	expected
broker needed	no	no	recommended	recommended	recommended
lease style	monthly contract	monthly contract	triple net or modified gross	triple net or modified gross	N/A or 3 N
estimate time to go live	60-150 days	60-150 days	120-210 days	120-210 days	~1yr +

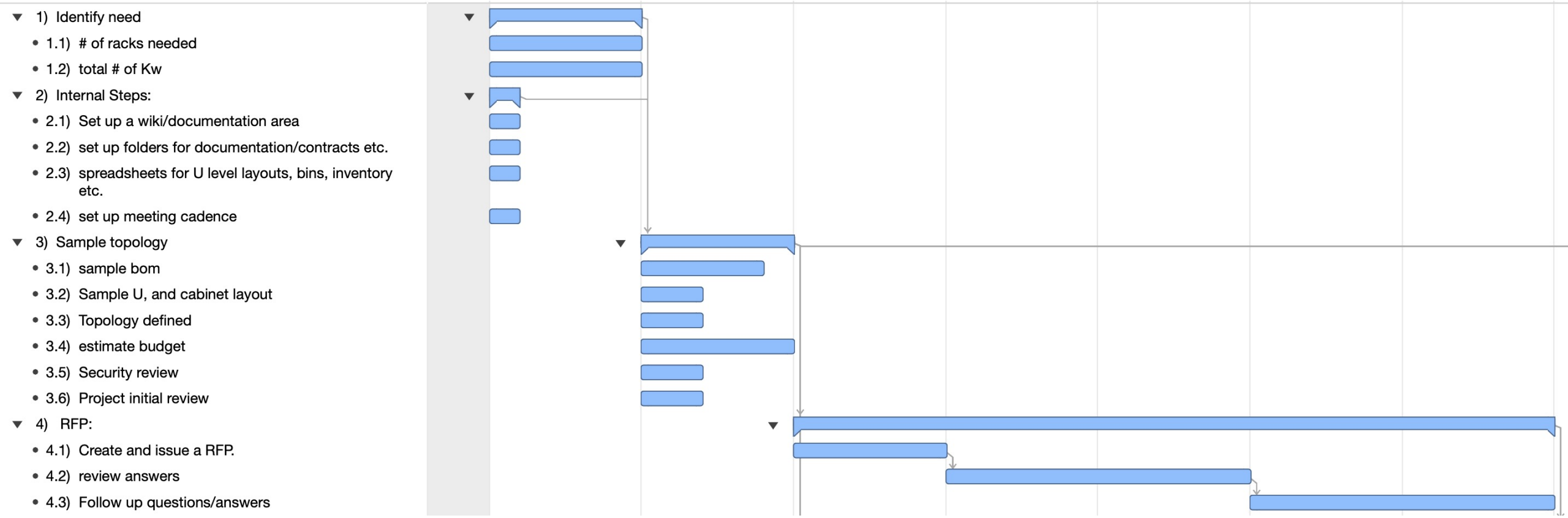
Sample Space Layout – 1 Mw



The teams

- Datacenter Lawyer
- Executive Sponsor
- Datacenter Broker
- Rack Integrator
- Networking Reseller
- Datacenter / Network Architect
- Finance/Procurement Team
- Project Management
- Systems/SRE Team
- Network Team
- Security Team
- Datacenter Team
- Monitoring / Tools Team
- Capacity Planning
- Electrical Company
- Low Voltage Cabling company

The Project Plan (fast) (early phases)



Site selection

- RFP
- Site Visits
- Process review
- “Tier 3”

Table of Contents

Space needs:	
# Racks	
#Kw	
Max Kw/Rack	

Space is available?	
Power is available?	
Quote received?	

Datacenter Detail:	
Outlet Voltage?	
Racks can roll to space?	
8 ft clearance?	
Raised floor height?	
Ceiling height	
How many carriers?	
Power up/down	
overhead grid?	
# Generators?	
A/B power in cage?	
UPS Arch: 2N, N+1?	

Datacenter Y/N questions:	
Racks up to 2500 lbs?	
Fit a 55 foot Truck?	
Is there a break room?	
Wifi in the datacenter?	
Wifi in the break area?	
Enough parking spots?	
Was L5 commissioned?	
Fiber is Diverse to MMR?	

Vendor Address:

Access questions:	
# non bio to space	
# Biometric to space	
Biometric, CardKey, Key	

Shipping Questions:	
Maximum truck len.	
Room to uncrate?	
Dock leveller?	
temporary storage?	

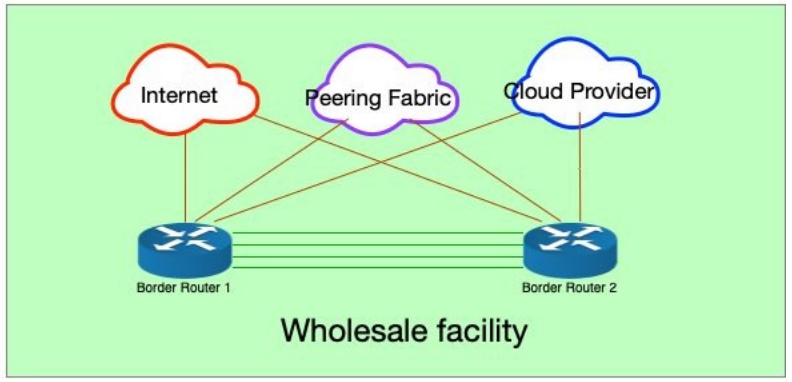
Fiber Panels	
LC Supported?	
Bulk to MMR?	
Fusion, Premade, 1?	
Supports the panel?	

Outages	
# outages last year	
# minutes down last year	

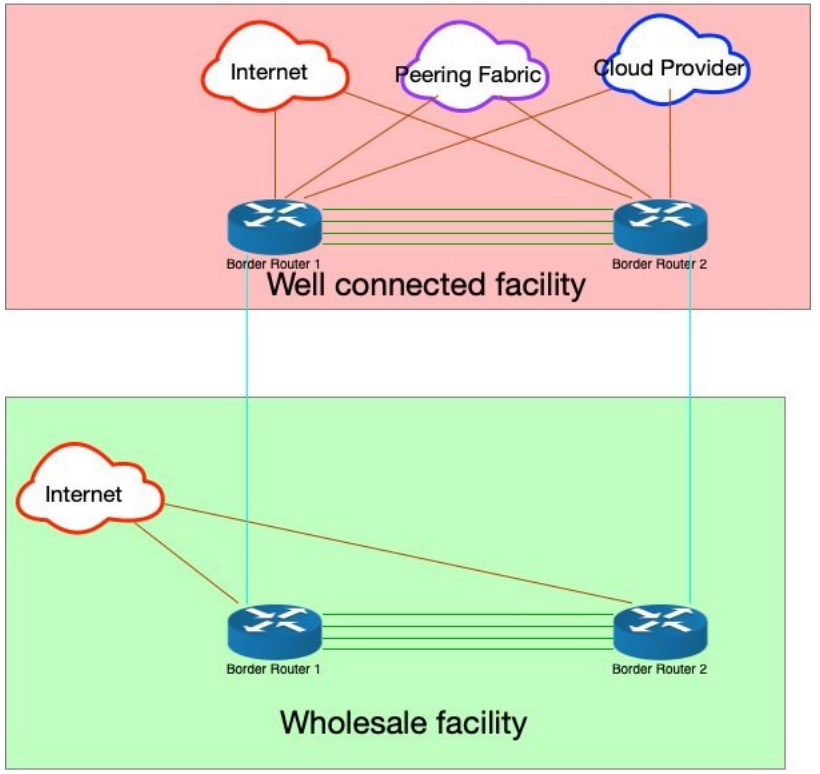
Inspection:			
Security Desk		MMR1	
Shipping		MMR2	
Elect room		Cage	
Generators		Storage (if needed)	
Break Area		Cooling	
Humidity		1 Line	

Datacenter Local Connectivity examples

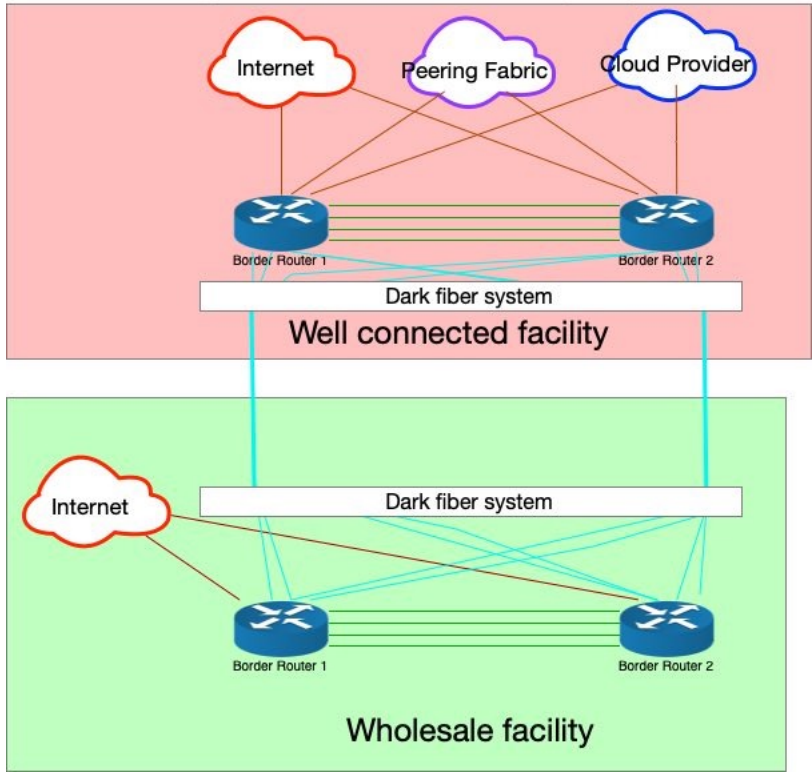
Generic Edge Topology - 1 building



Generic Edge Topology
Colo to Well connected building
(Lit fiber example)



Generic Edge Topology
Colo to Well connected building
(Dark fiber example)



Worldwide Connectivity

- Where do you expand?
  - Interconnection points, space availability, regulation considerations
  - Partner networks
  - Undersea cable

Tier 1 markets US
Ashburn, VA
Bay Area, CA
LA, CA
NY, NY
Chicago, IL,
DFW, TX

Tier 2 markets US
Seattle, WA
Miami, FL
Atlanta, GA
Toronto, CA
Portland, OR
Houston, TX
Phoenix, AZ
Las Vegas, NV

Tier 1 markets EMEA
Frankfurt, DE
London, UK
Amsterdam, NL
Paris, FR

Tier 2 markets EMEA
Stockholm, SE
Prague, CZ
Helsinki, FI
Marseille, FR

Tier 1 markets AP
Tokyo, JP
Singapore, SG
Hong Kong, HK *

Tier 2 markets AP
Seoul, KR
Taipei, TW
Osaka, JP
Guam **

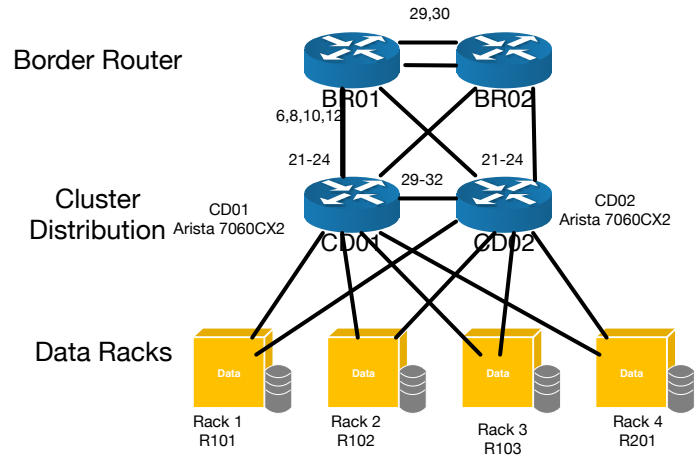
Tier 2 markets AU
Melbourne
Sydney
Perth

Tier 2 markets S.A.
Sao Paolo, BR
Rio De Janeiro, BR
Bogota,

Tier 2 markets Africa
Johannesburg, SA
Capetown, SA

The Cookie Cutter approach.

Location “A”



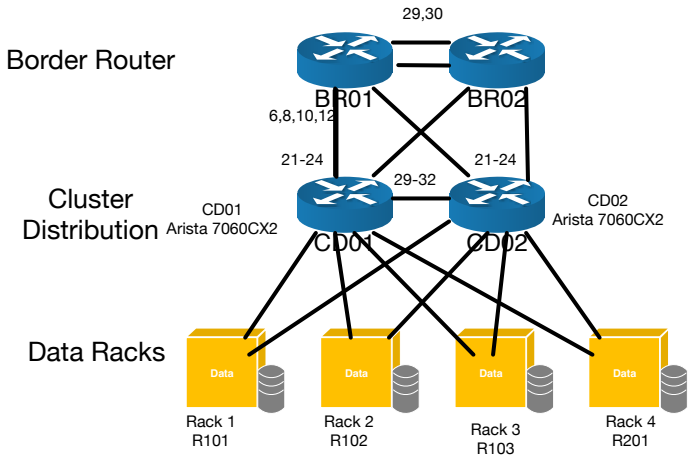
Key info:
Prod info: 10.X.X.X/24
MGMT Info: 10.X.X.X/24
Server Prod: 10.X.X.X/XX
Server IPMI: 10.X.X.X/XX
NTP, DNS, Logging: 10.X.X.X/XX, 10.X.X.X/XX

PDUs
Pdu1a X.X.X.X
Pdu1b X.X.X.X
Pdu2a X.X.X.X
Pdu2b X.X.X.X
Pdu3a X.X.X.X
Pdu3b X.X.X.X
Pdu4a X.X.X.X
Pdu4b X.X.X.X
Pdu5a X.X.X.X
Pdu5b X.X.X.X
TS01: X.X.X.X

Network Gear:
CD01: X.X.X.X
CD02: X.X.X.X
BR01: X.X.X.X
BR02: X.X.X.X
MD01: X.X.X.X
MD02: X.X.X.X
R1-MA01: X.X.X.X
R2-MA01: X.X.X.X
R3-MA01: X.X.X.X
R4-MA01: X.X.X.X

Network Version: “1.0”
Server Version “1.0”

Location “B”



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Pdu1a X.X.X.X
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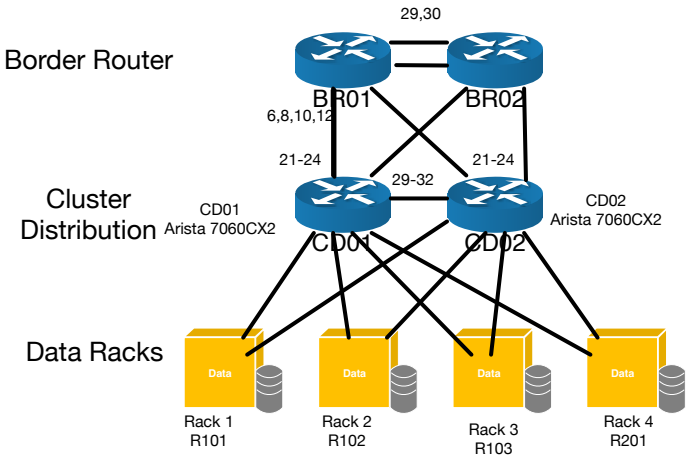
Pdu2a X.X.X.X
Pdu2b X.X.X.X
Pdu3a X.X.X.X
Pdu3b X.X.X.X
Pdu4a X.X.X.X
Pdu4b X.X.X.X
Pdu5a X.X.X.X
Pdu5b X.X.X.X
TS01: X.X.X.X

Network Gear:
CD01: X.X.X.X
CD02: X.X.X.X
BR01: X.X.X.X
BR02: X.X.X.X
MD01: X.X.X.X
MD02: X.X.X.X
R1-MA01: X.X.X.X
R2-MA01: X.X.X.X
R3-MA01: X.X.X.X
R4-MA01: X.X.X.X

Network Version: “1.0”
Server Version “1.0”

Location “C”



Key info:
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MGMT Info: 10.X.X.X/24
Server Prod: 10.X.X.X/XX
Server IPMI: 10.X.X.X/XX
NTP, DNS, Logging: 10.X.X.X/XX, 10.X.X.X/XX

PDUs
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Pdu1b X.X.X.X
Pdu2a X.X.X.X
Pdu2b X.X.X.X
Pdu3a X.X.X.X
Pdu3b X.X.X.X
Pdu4a X.X.X.X
Pdu4b X.X.X.X
Pdu5a X.X.X.X
Pdu5b X.X.X.X
TS01: X.X.X.X

Network Gear:
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R1-MA01: X.X.X.X
R2-MA01: X.X.X.X
R3-MA01: X.X.X.X
R4-MA01: X.X.X.X

Network Version: “1.0”
Server Version “1.0”

Questions?

Backup slides

Spares Needed

Previous problems/Anecdotes.

20 providers (but 0)

24x7 engineering (but ~0)

No loading dock

What’s next

Power / Cooling