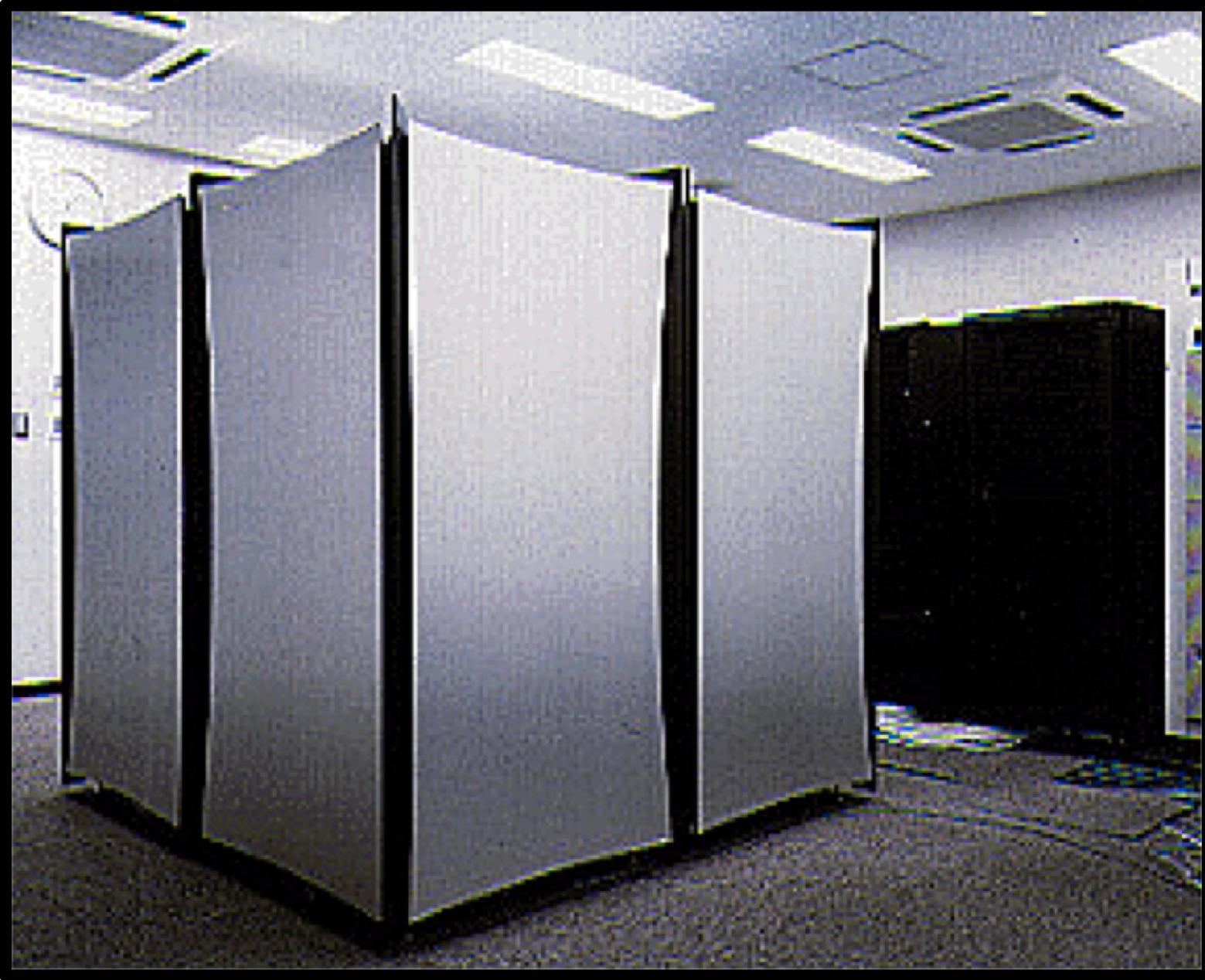




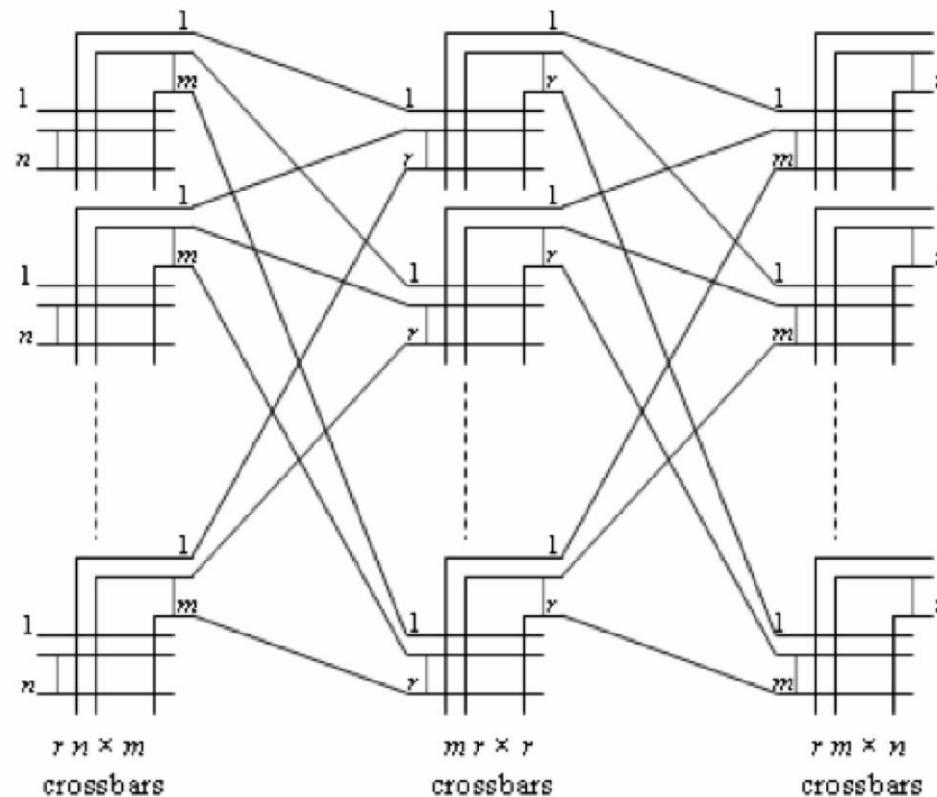
facebook
INFRASTRUCTURE

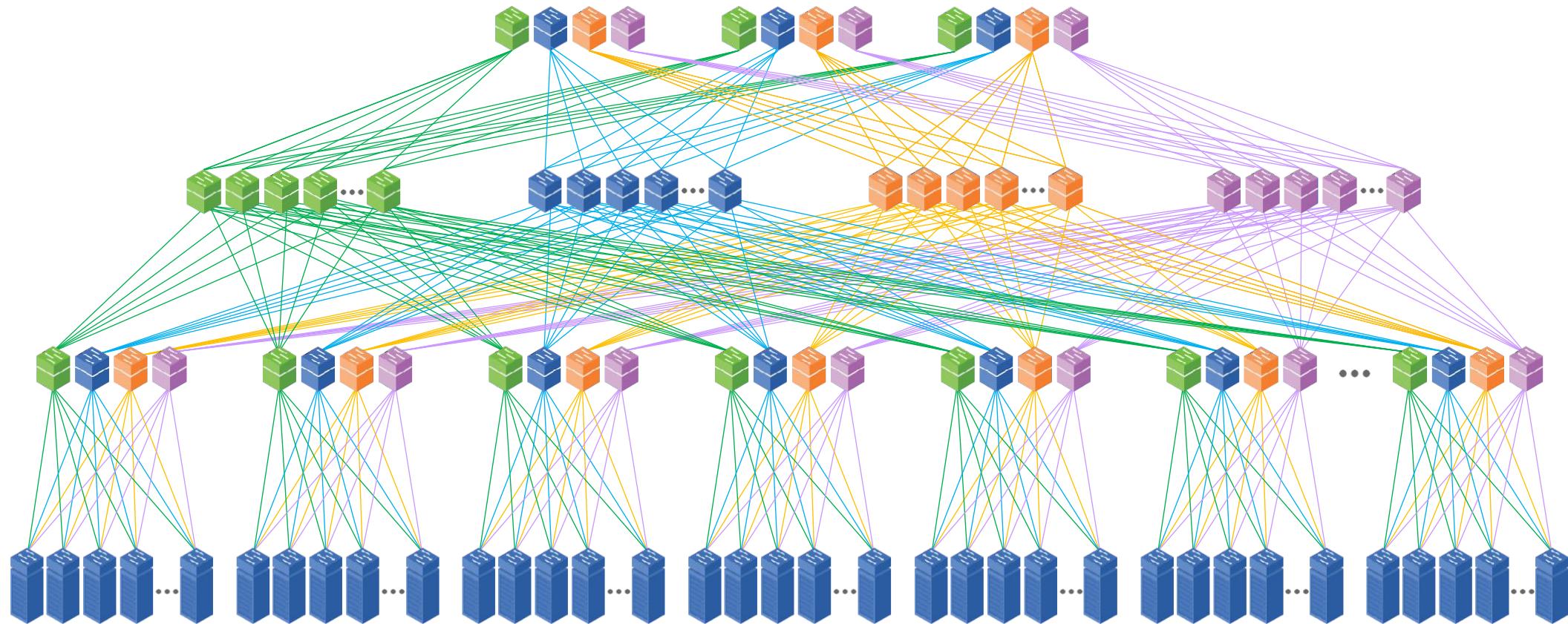


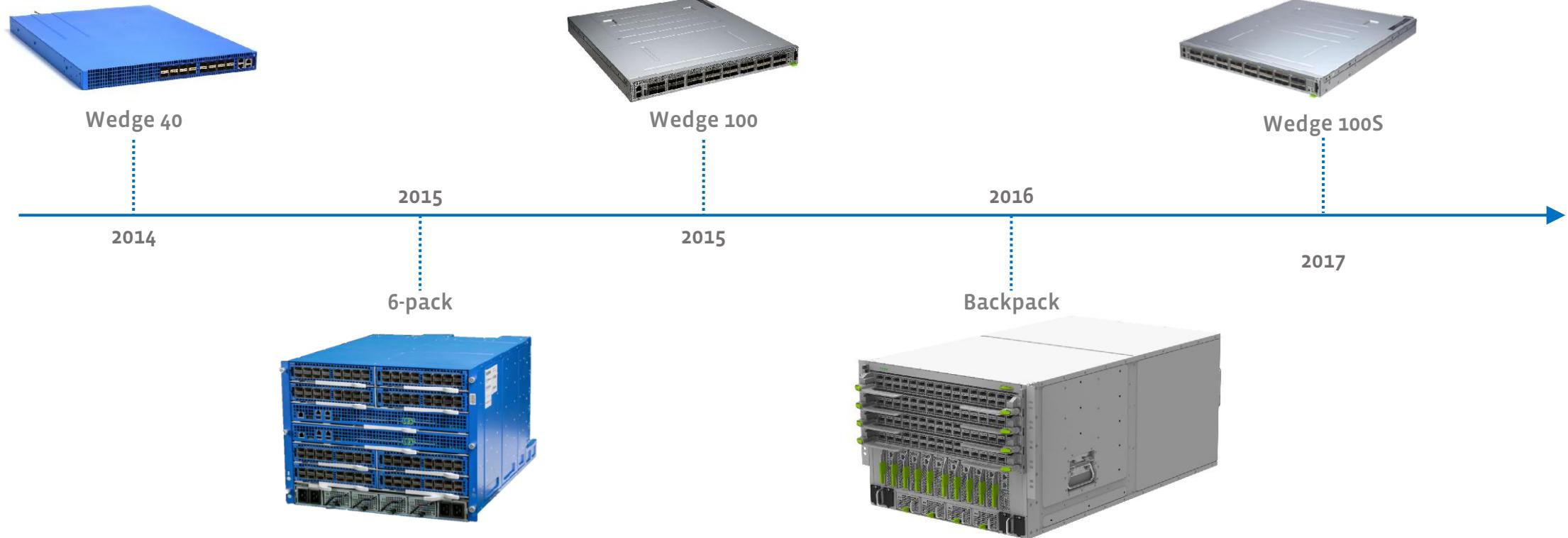


CLOS Topologies

Harnessing the Bleeding Edge of 1950s Telephone Switch Technology







ЭБАС

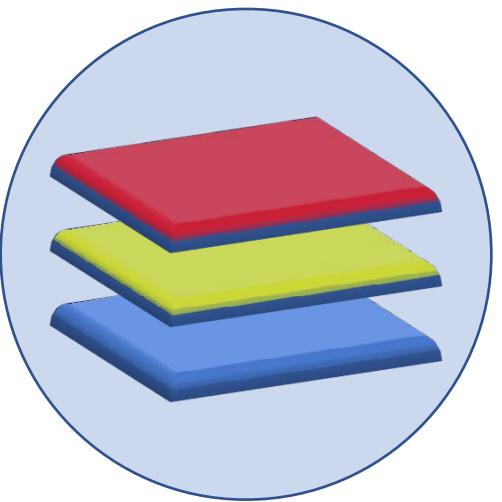
FBOSS Software Team



What can you do?



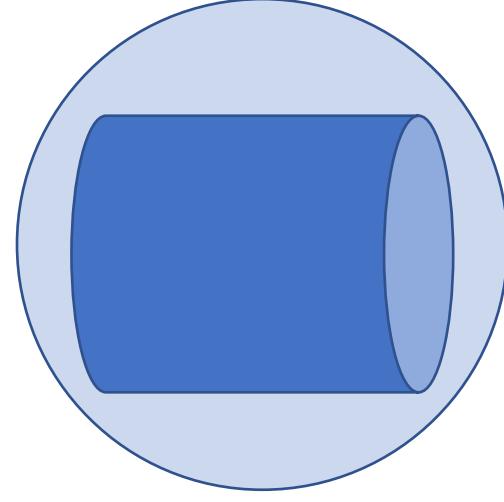
Rules of the Game



LAYER 3



INDUSTRY
STANDARD



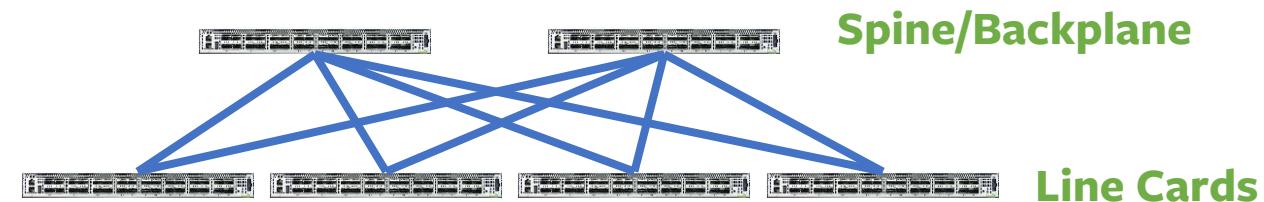
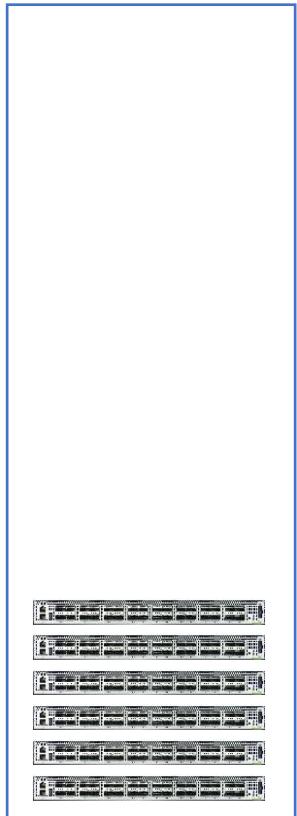
CAPACITY



Start with a low cost 32 Port 40G switch

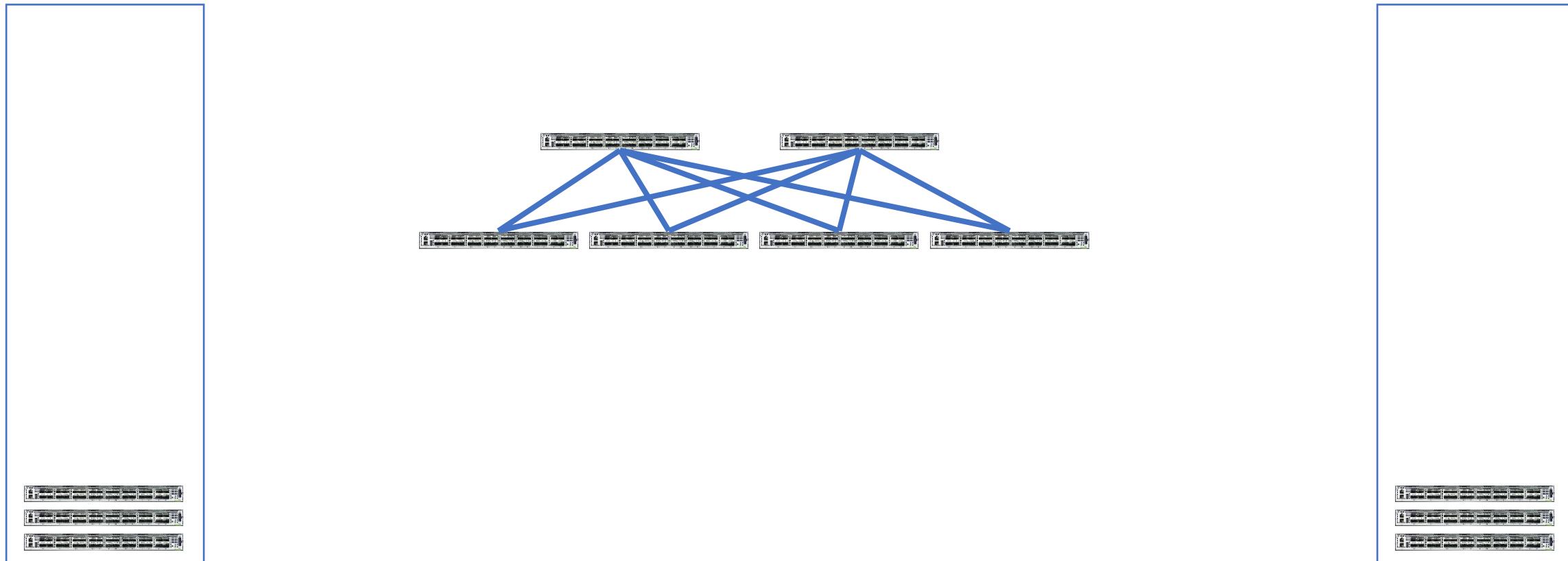


Build a Virtual Chassis

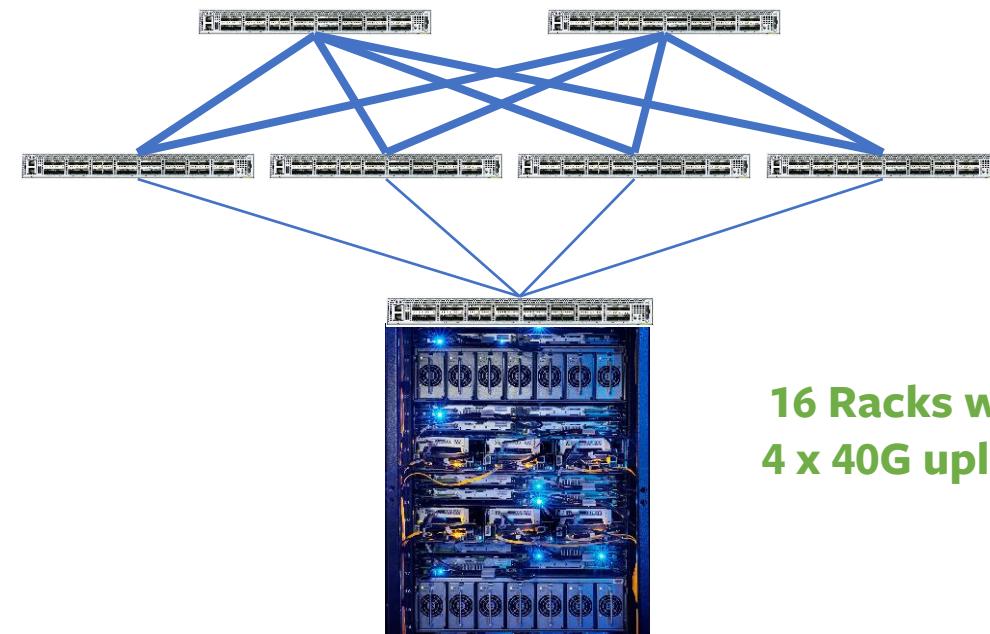


Build a Virtual Chassis

Physical and Logical Redundancy



Attach some Racks

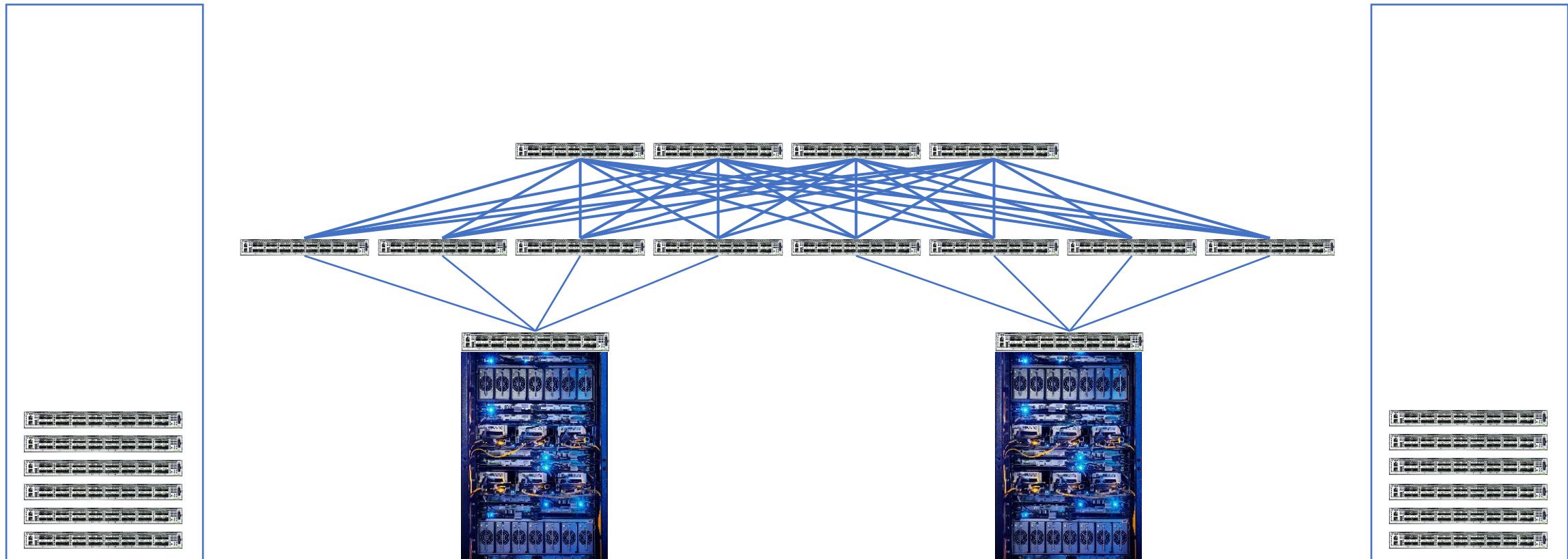


**16 Racks with
4 x 40G uplinks**



Virtual Chassis Scaling

- No Single Points of failure
- Any individual device failure is just 25% of capacity



How many 32 port switches fit in a Rack?

- 40 Devices x 32 ports = 1280!
- 640 non-oversubscribed rack facing ports



Small versus Big



© Cuyahoga jco August 2014

Fixed Switch



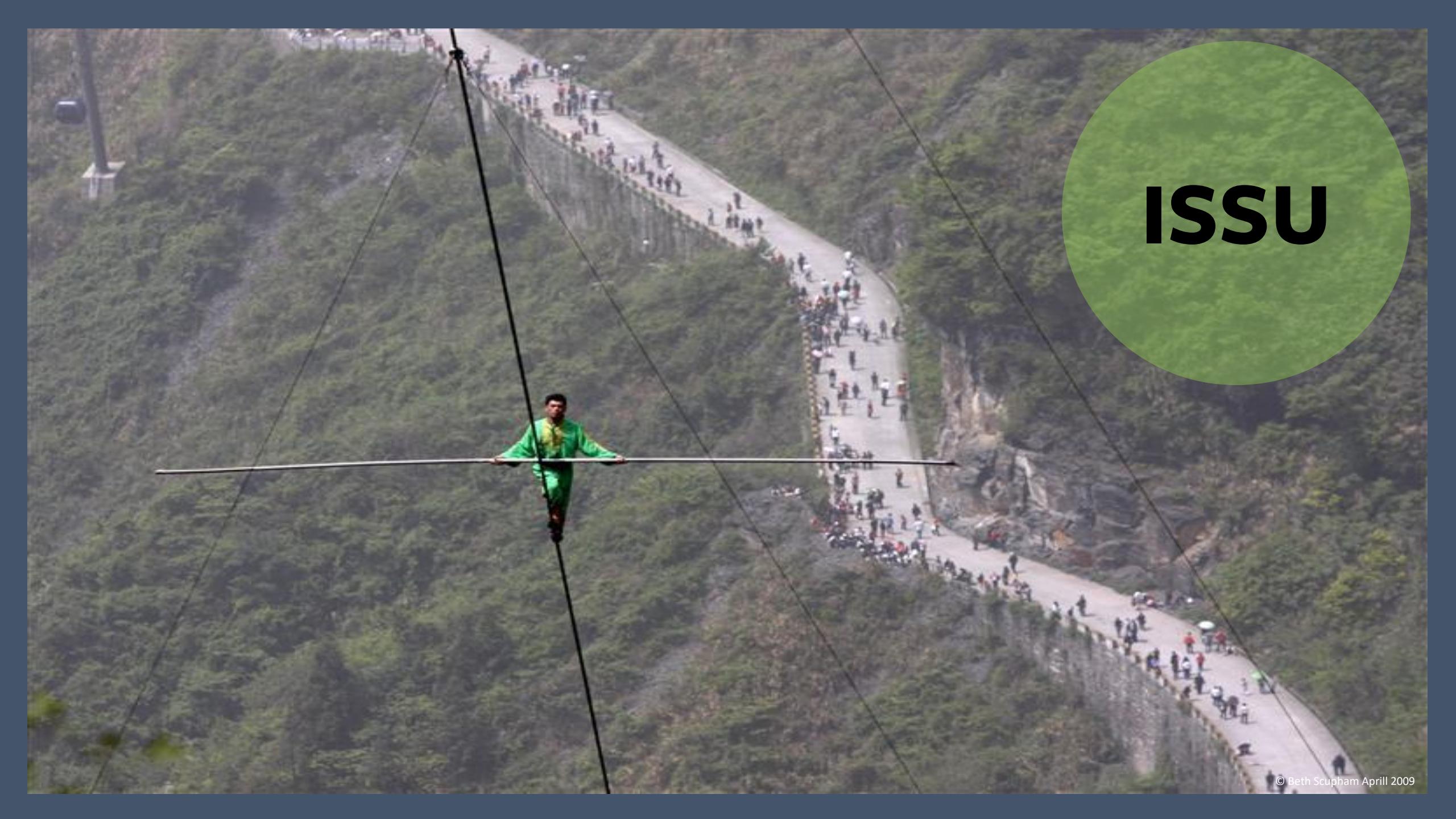
© Jim Sher May 2008

Chassis



- Smaller Table Sizes
- Smaller TCAM
- Smaller buffers
- No fancy chassis features

- Route aggregation
- Restrict use of ACLs within dc network
- Add bandwidth so buffers empty faster



ISSU

Provisioning

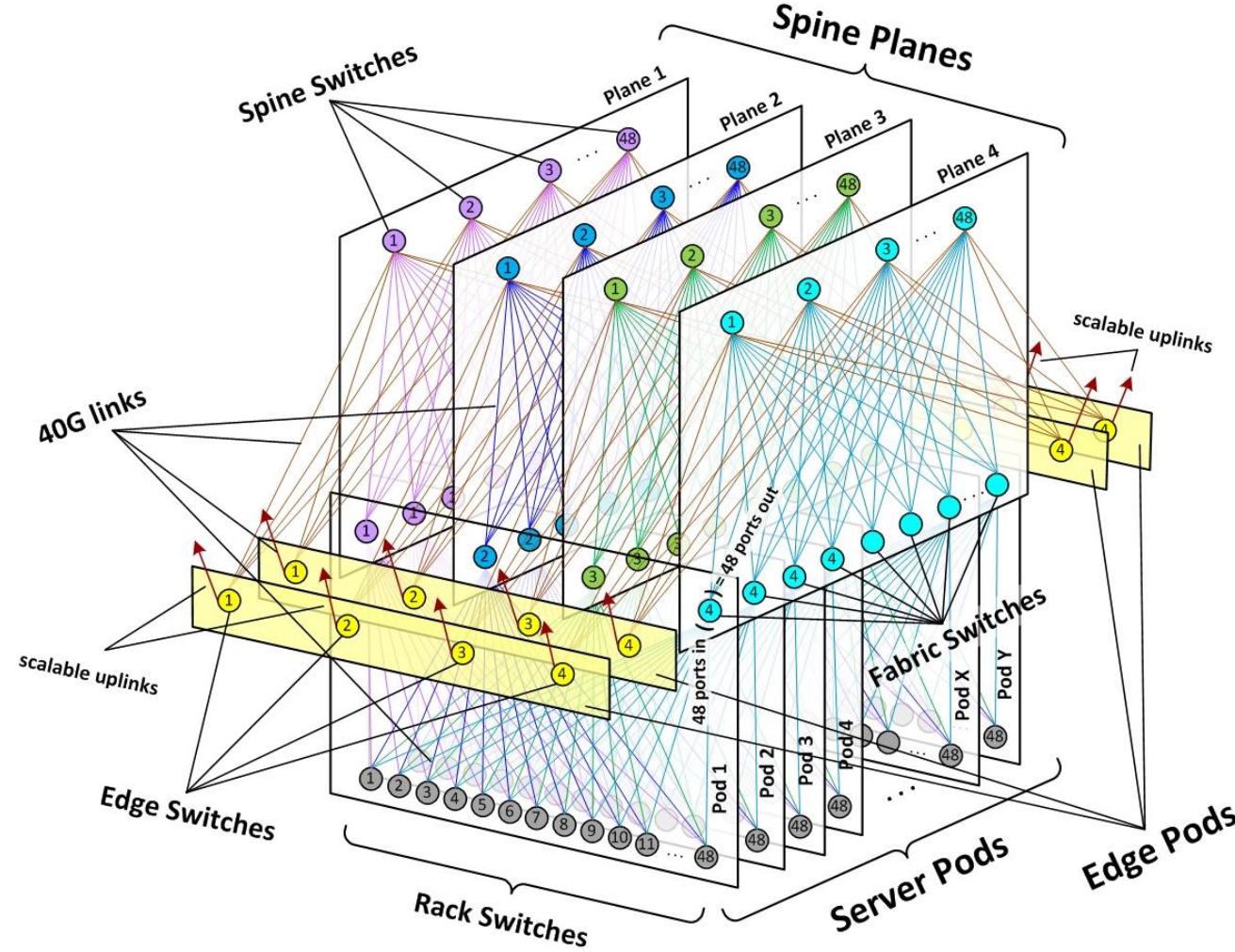
- Standardize switch configuration
- Source control
- Build simple tools to take switches in/out

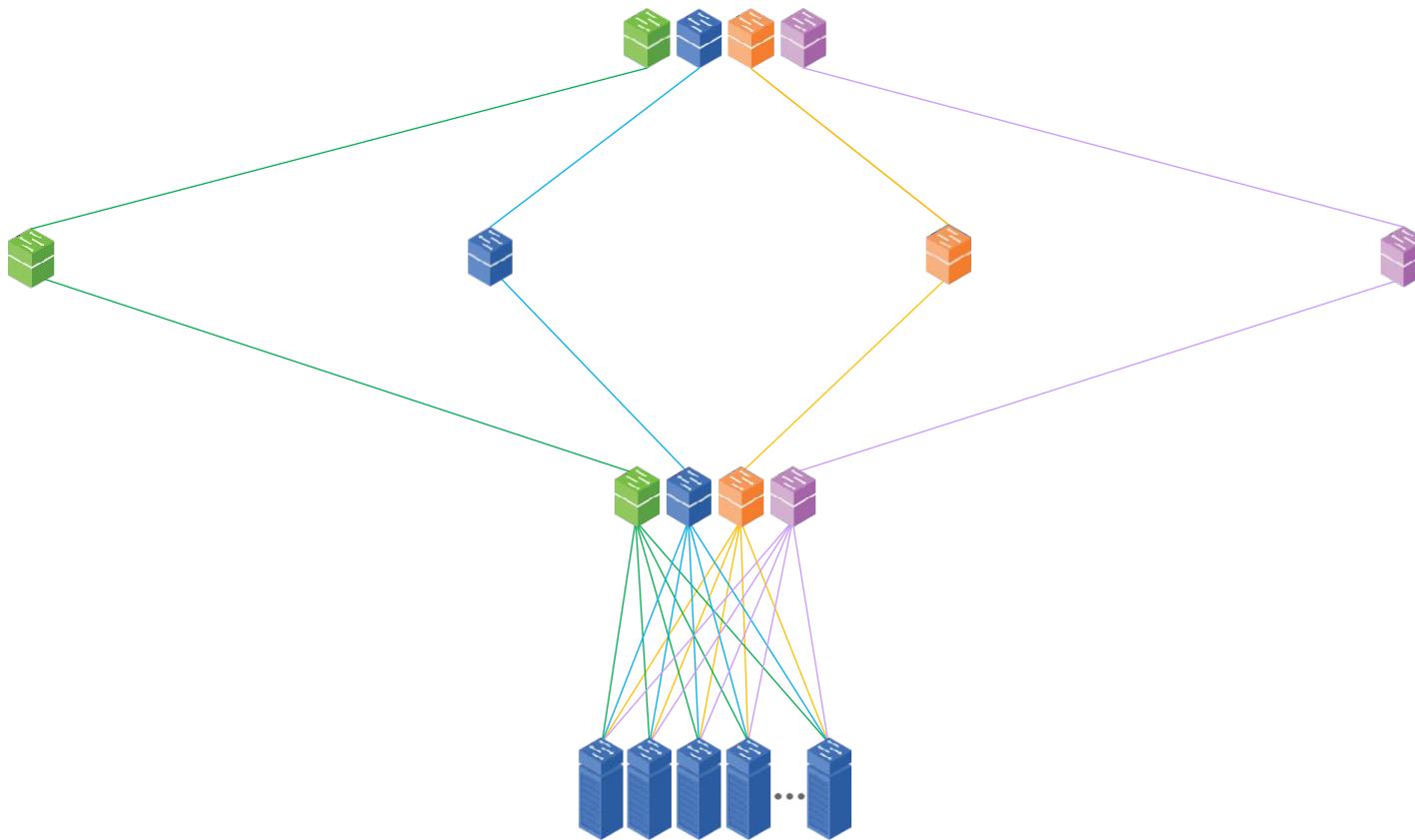
Monitoring

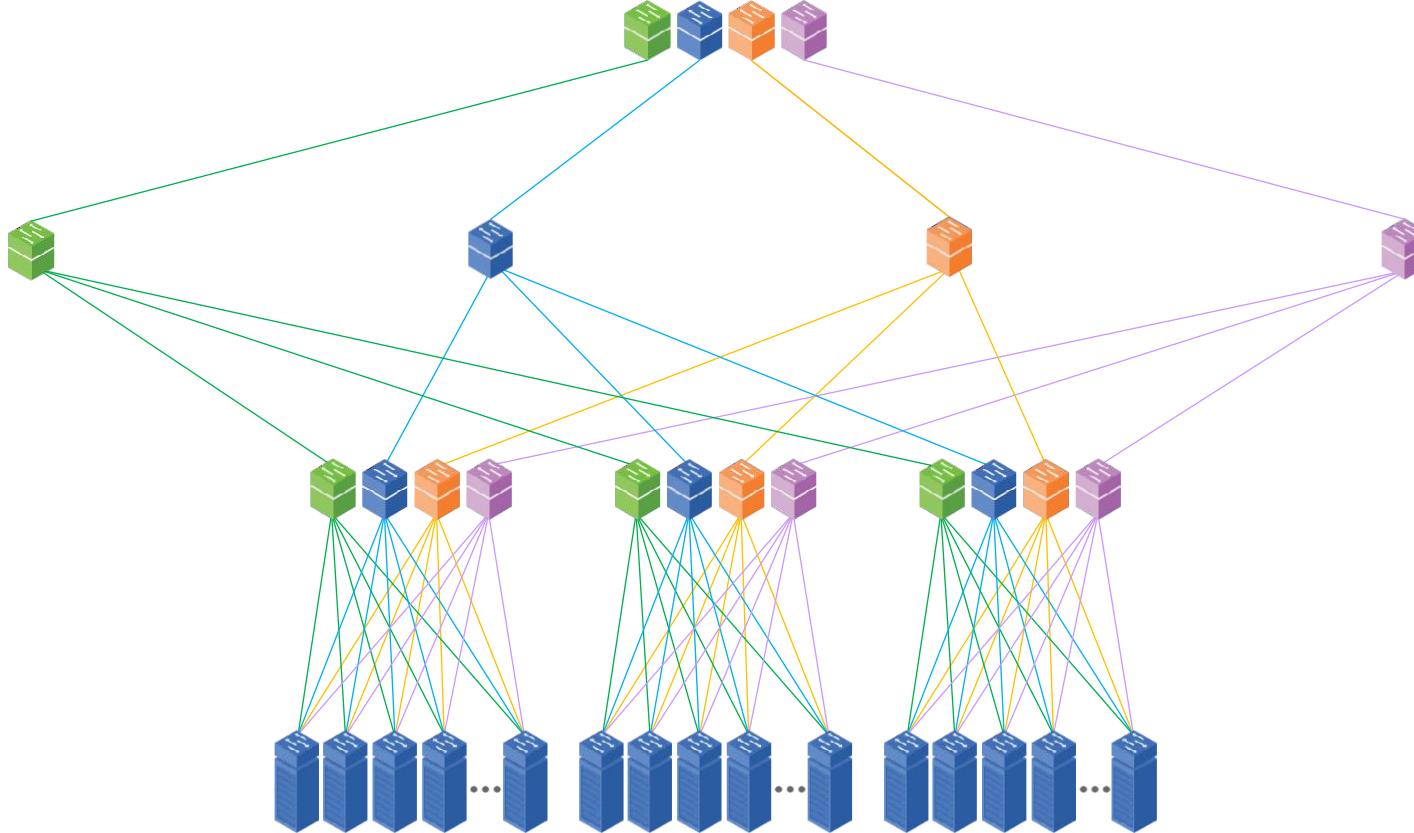
- Central logging of syslog, SNMP
- Ping all the things
- When a switch starts reporting errors take it out

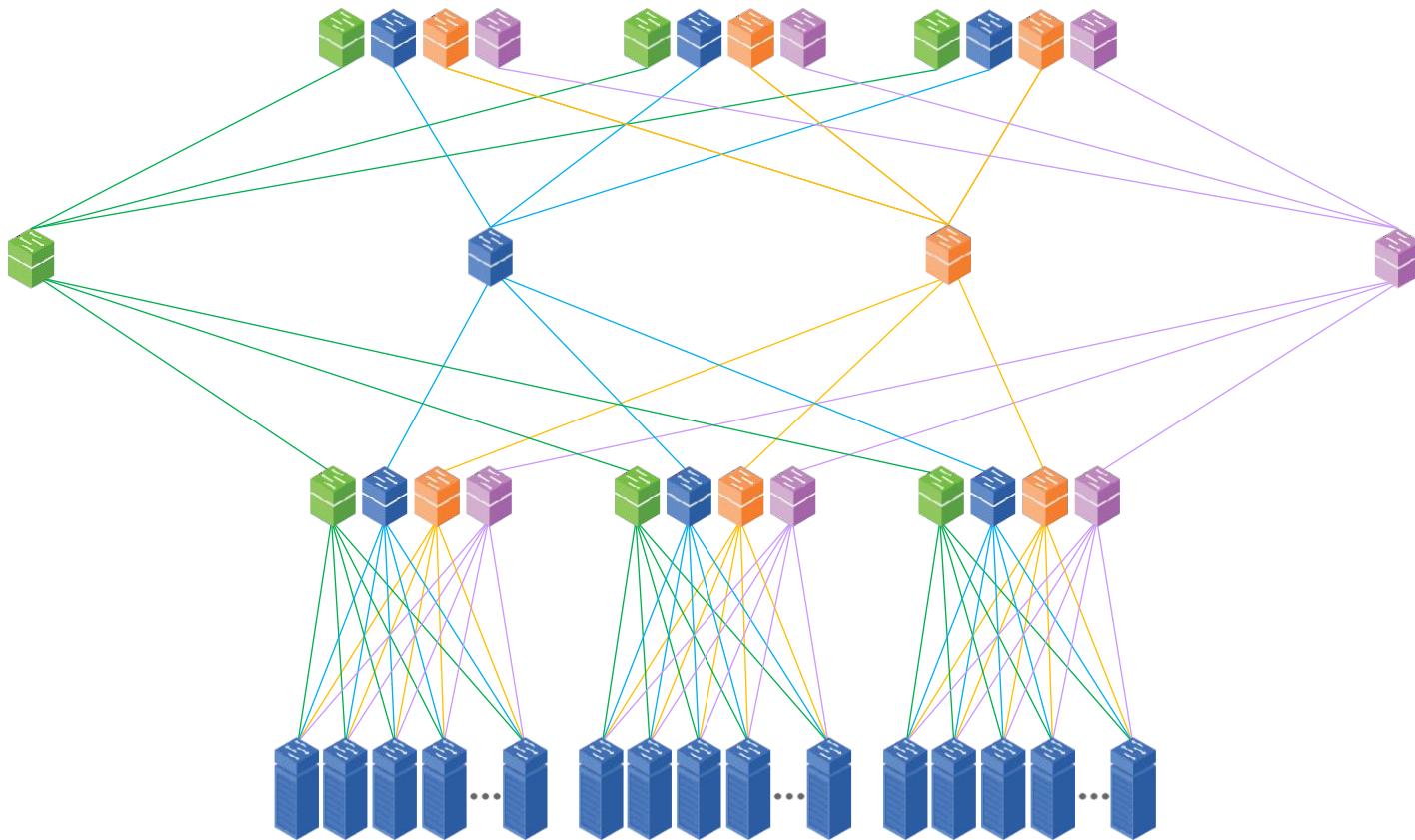
Open your mind

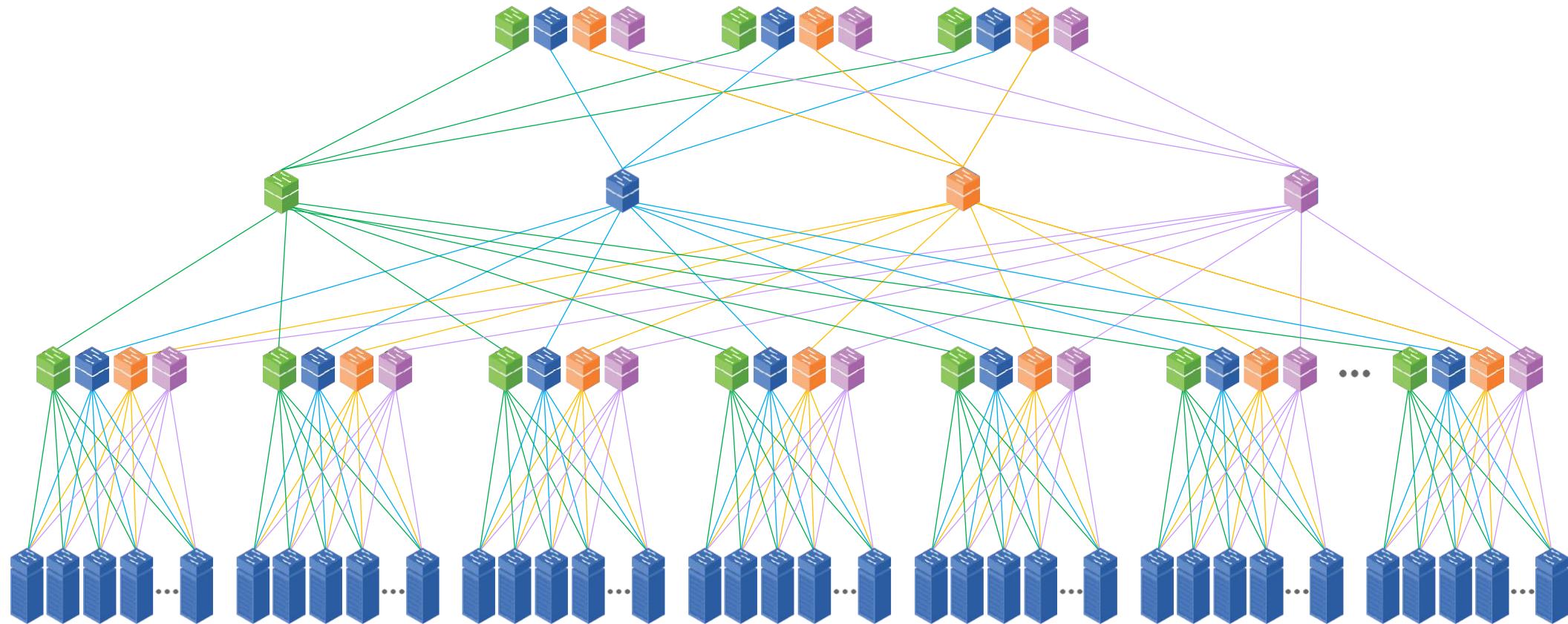
Datacenter Network is a giant Virtual Chassis!

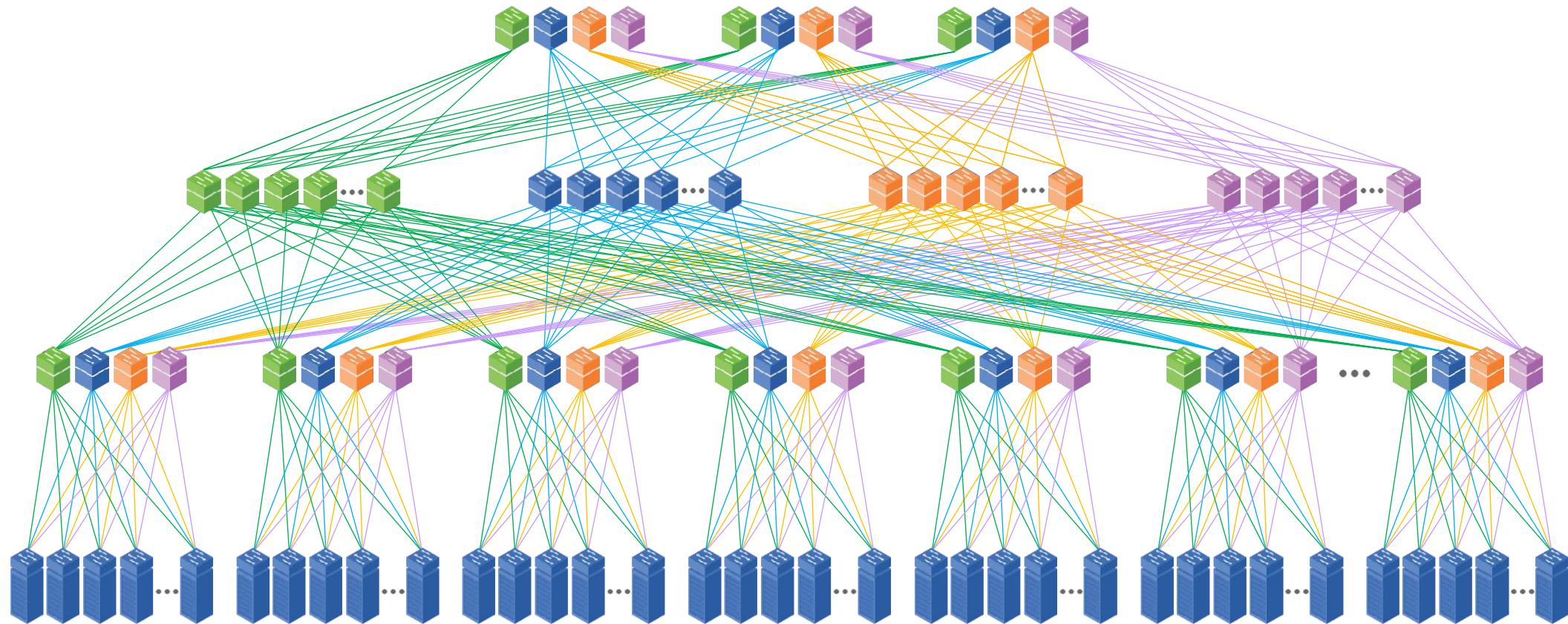


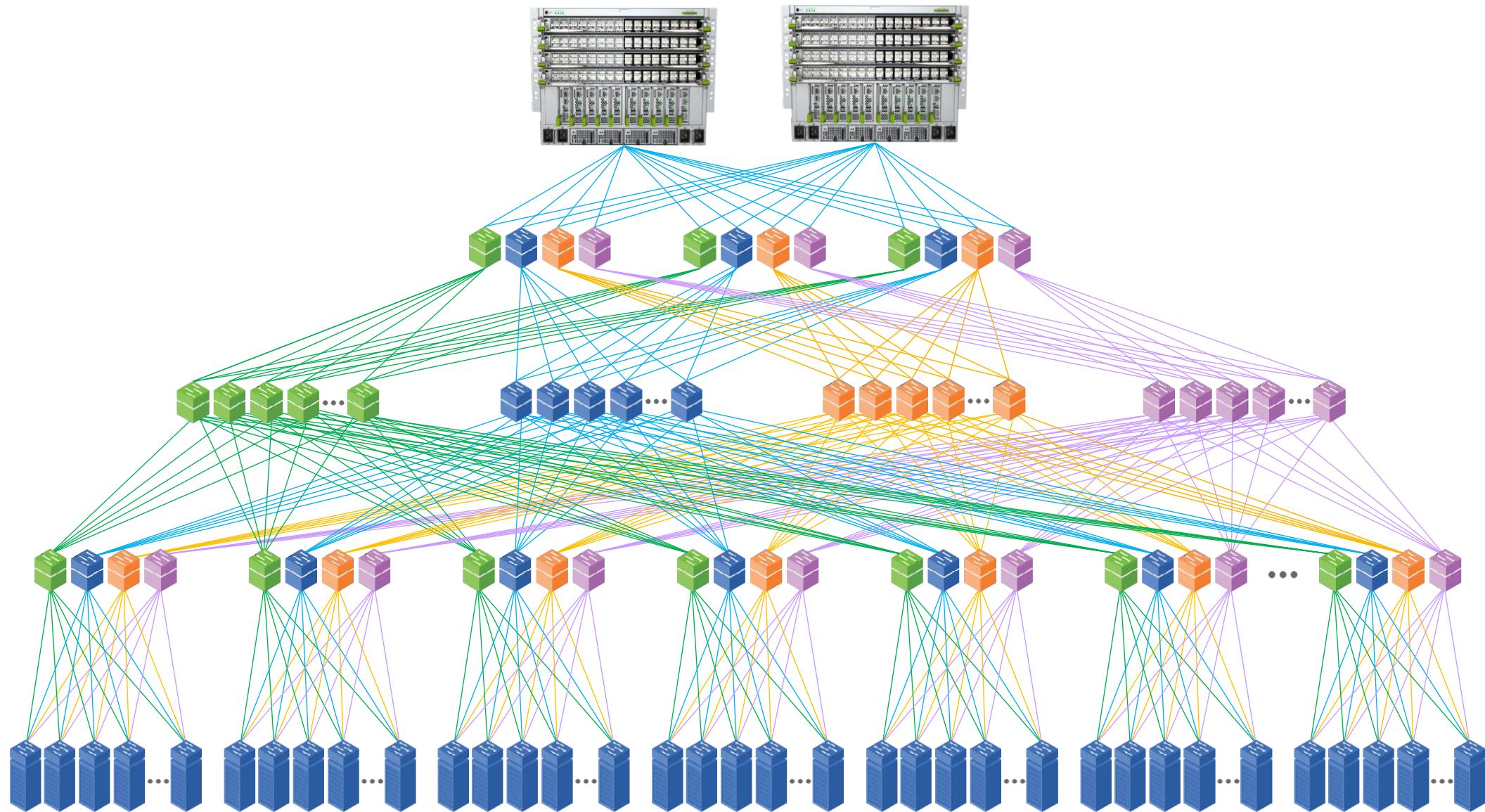




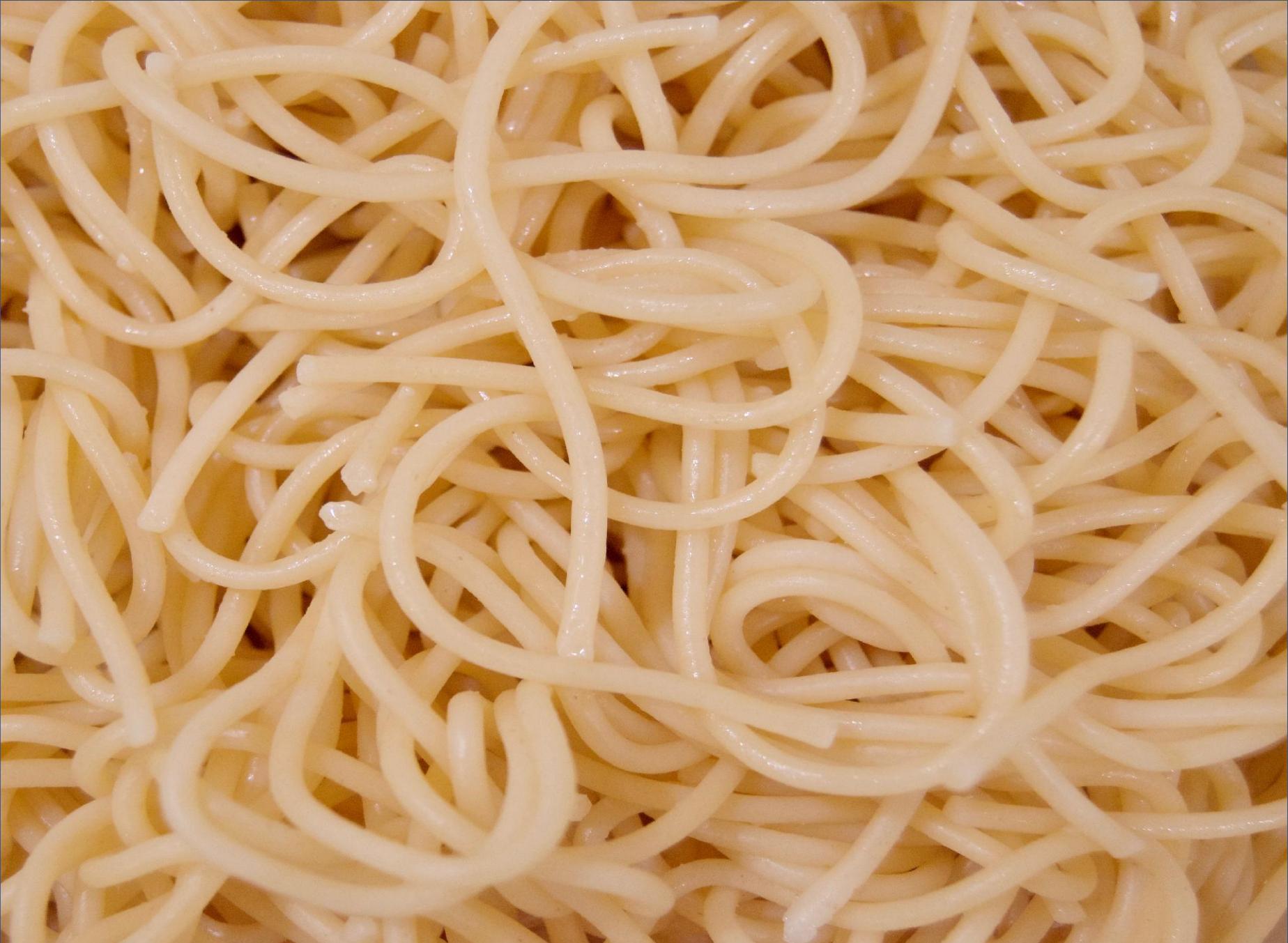








Cabling





$$\begin{array}{rcl} & 32 & \text{data cables} \\ & 1 & \text{oob} \\ & 1 & \text{mgmt} \\ + & 2 & \text{power} \\ \hline & 36 & \text{cables} \end{array} \quad \times \quad 40 = 1,440 \text{ cables!}$$

- Color coding
- Take time to cable right
- Cable selection - AOCs, DACs



What's in it for you?

facebook

Thank You

facebook