

Revisiting Power Provisioning

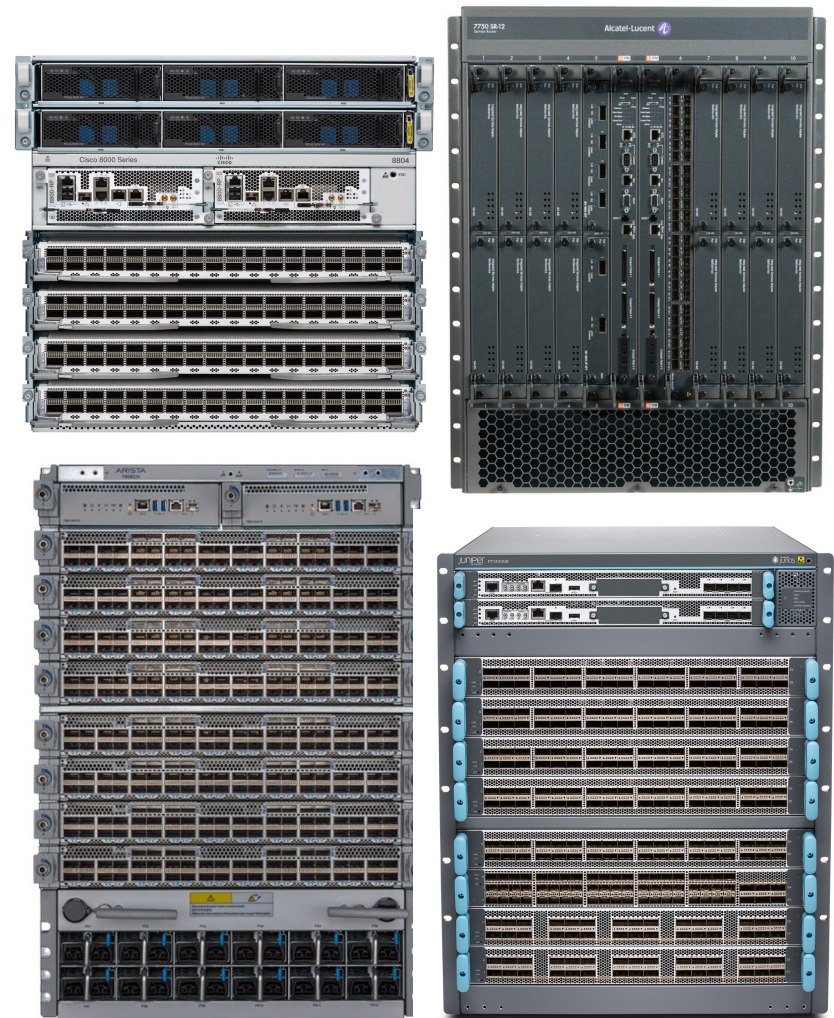
(in big routers)

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Lane Wigley

Big Routers

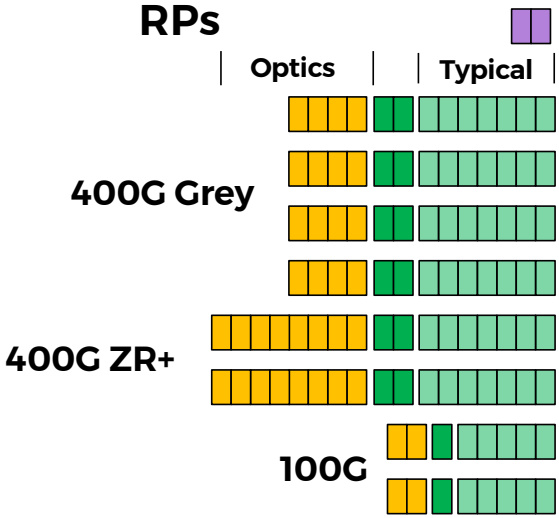
- Modular fabrics and line cards
- Many optics options
- Modular power supplies



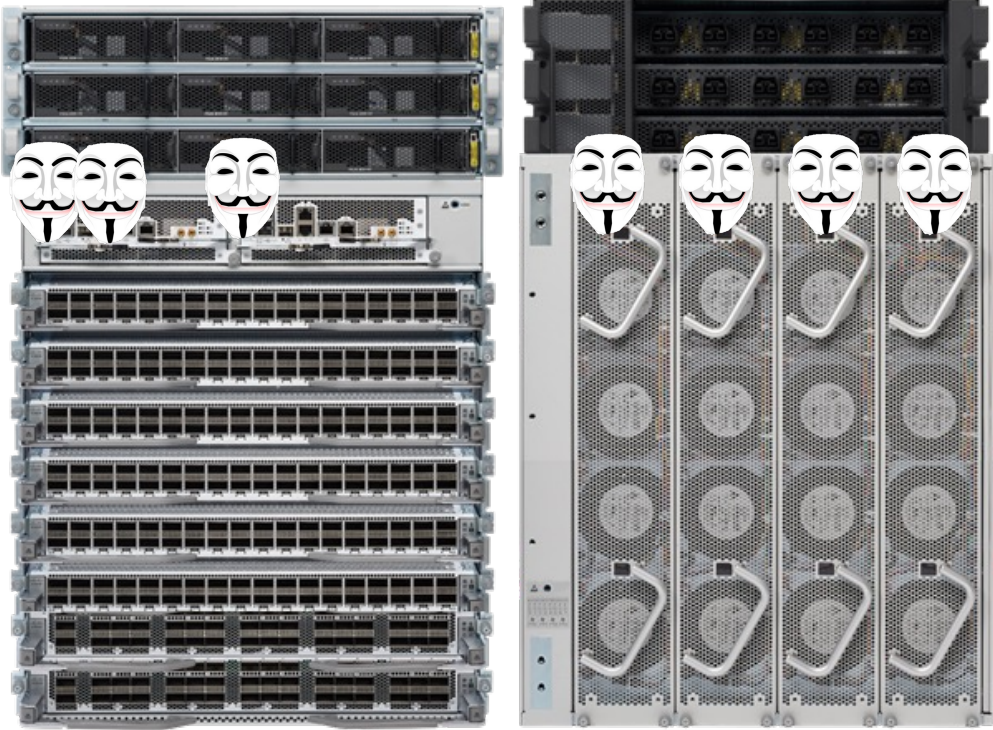
Provisioning Goals

- Prevent brown outs
- Accurately represent cooling requirements
- Minimize costs
- Don't hog the power, fit in budget
- Enable efficient PSU operation
- Don't get stranded

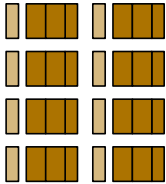
Typical vs. Max Power



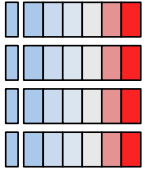
Optics & Line Cards



Fabric



Fans



Example: Allocating for Optics

- ZR+ requires 800W / RU



 NANOLOG™

how it started



how it's going

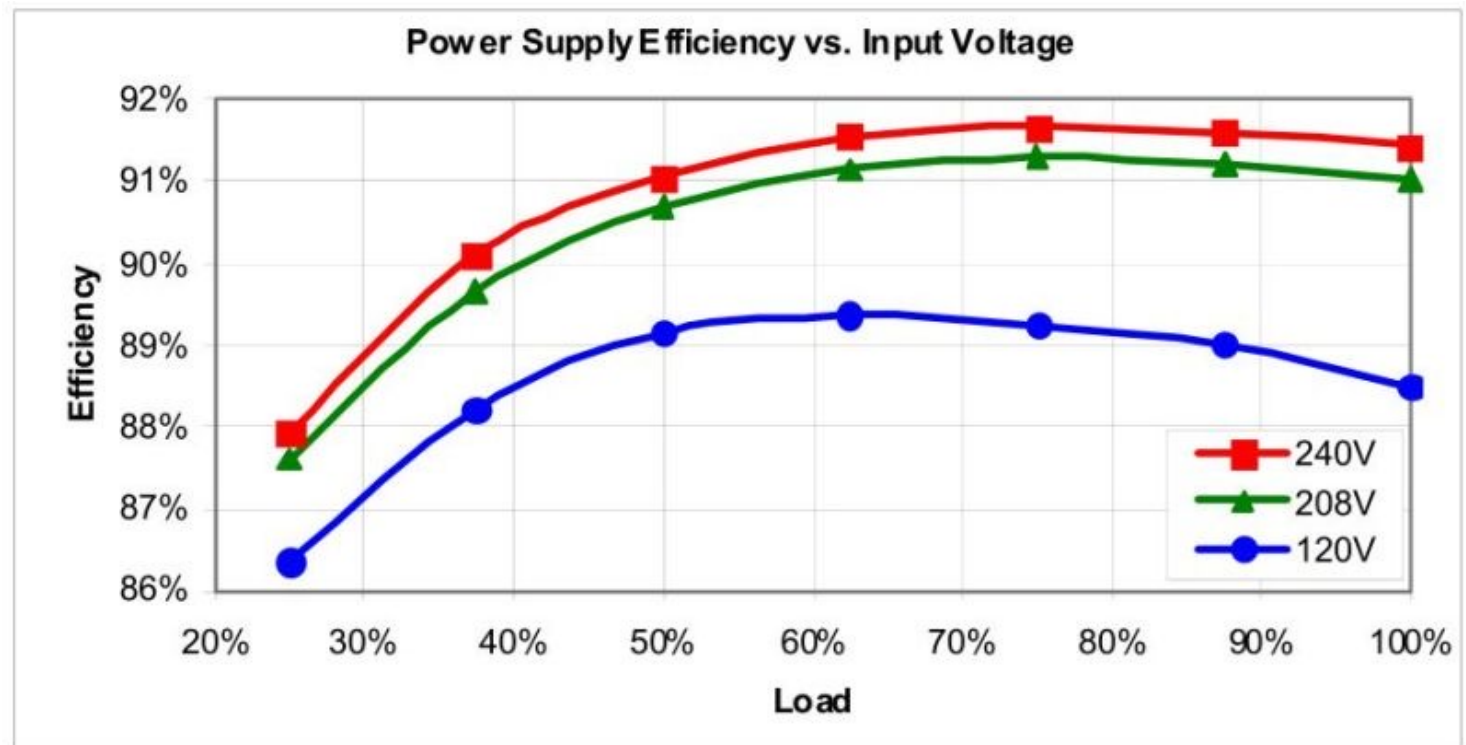


Max vs. Typical is Highlighted



PSU Efficiency

Avoid Low Utilization (example - not a specific product)



Discussion

- How to treat empty ports?
- How much margin is facilities adding? (oversub?)
- Optimal max temp?
 - Balance system fan, chip/CPU power & cooling power
- Oversubscribe power? Do we need
 - Losing a power feed, and
 - Cooling failure, and
 - Max traffic with small packets?
- Processes to option future facility power for next-gen



Thank you

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<https://xrdocs.io/8000/blogs/> for more on power & provisioning