Choosing a Campus Core Router

Network Startup Resource Center

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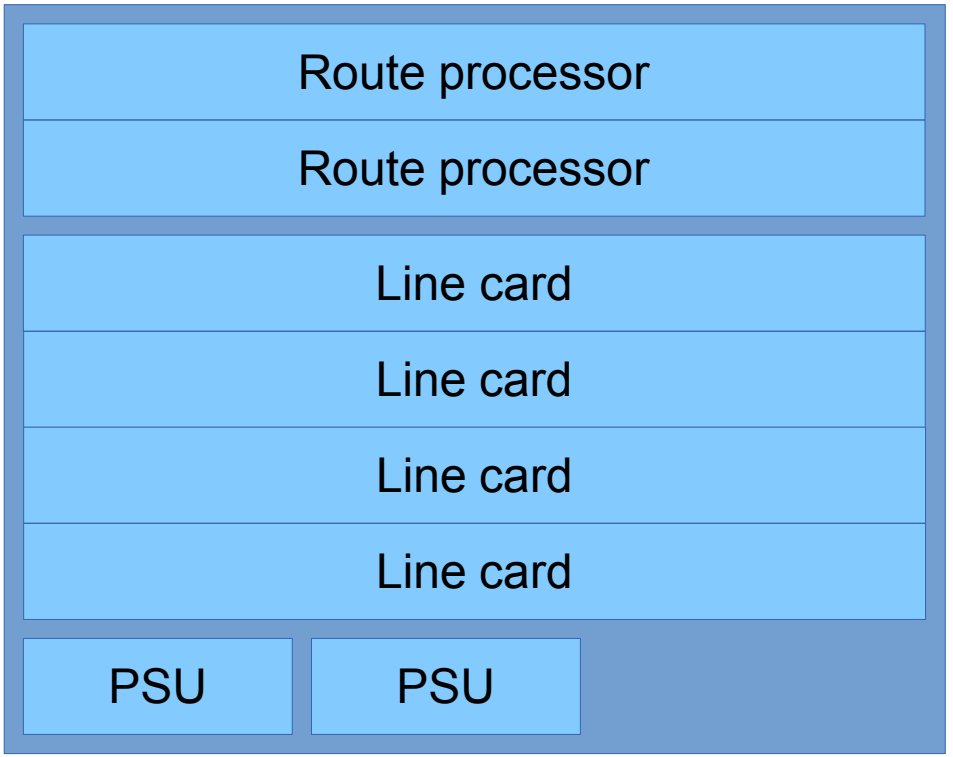
Core router: essential features

- Lots of fiber ports
  - SFP (1G) or SFP+ (10G)
- Robust, line-rate routing (layer 3 forwarding)
  - IPv4 and IPv6, static routes
- Sufficient ARP (IPv4) and NDP (IPv6) entries
- DHCP relay (DHCP helper)
- Management: SNMP, netflow/jflow/sflow etc

Core router: optional features

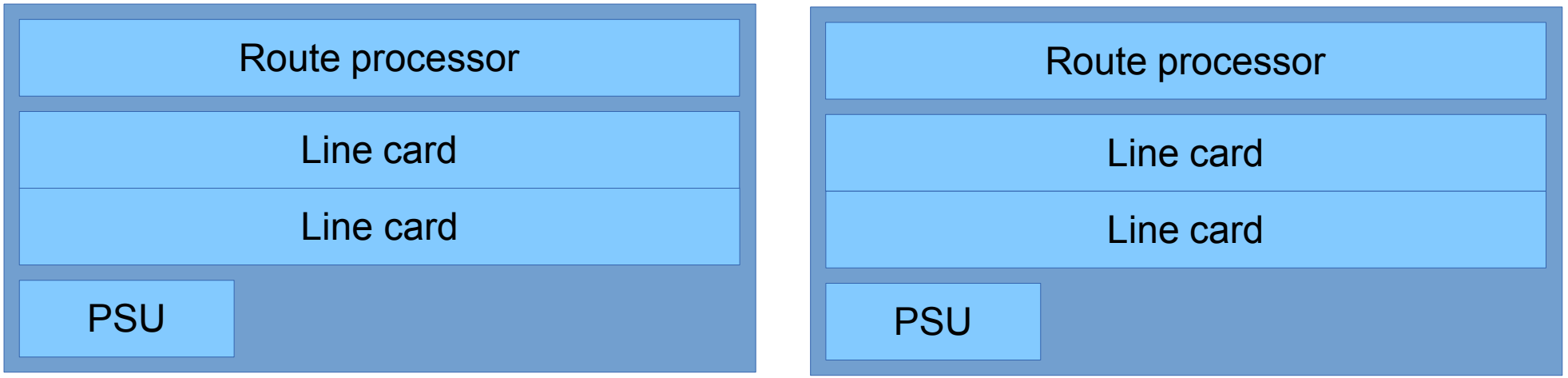
- OSPF (v2 and v3) or IS-IS
- HSRP/VRRP
- Hardware redundancy (e.g. dual PSU)
  - but would you be better buying a whole second device?

One super-redundant device



- Chassis failures are not unknown :-(
- What would you do if that happened?

Two less-redundant devices



- Running "live-live" so everything is tested
- In emergency, can move key users to other si
- Key buildings can be dual-homed
  - This is where OSPF and HSRP/VRRP come in

Don't spend too much!

- Many "edge" L3 switches make fine campus core routers
- You won't be carrying a full routing table
  - so a limit of say 16K routes isn't a problem
  - check how many IP interfaces/VLANs it supports
- Whatever you buy today will be obsolete in 3-5 years anyway
- If it's cheap you can afford two

Cisco C3750X-{12,24}S-E

- 12 or 24 SFP ports
  - Plus 2-4 optional uplinks ("service module")
- Stackable (up to 9 units)
- Needs Advanced IP Services licence for IPv6

Juniper EX4200-24F

- 24 SFP ports
- Optional 2 x 10G modules
- Stackable (up to 10)

"Advanced Feature" licence not required - only for IS-IS, BGP and MPLS

Juniper EX4500

- 40 SFP+ ports (1G/10G)
- Optional uplink modules

Beware limit of only 1,000 IPv6 NDP entries in hardware; use with L3 distribution switches?

Not big enough?!

- Above this you are looking at chassis switches
- Examples:
  - Cisco 4500E
  - Juniper EX8208, EX8216

Maybe you already have one!

- Check the features of your existing devices
  - And check on forums for experiences of people using the same device for routing
- May need to enable it: "ip routing" or similar
- May need to update to latest stable firmware
- Test with a spare device if you have one