

Making Network Resilience Resilient

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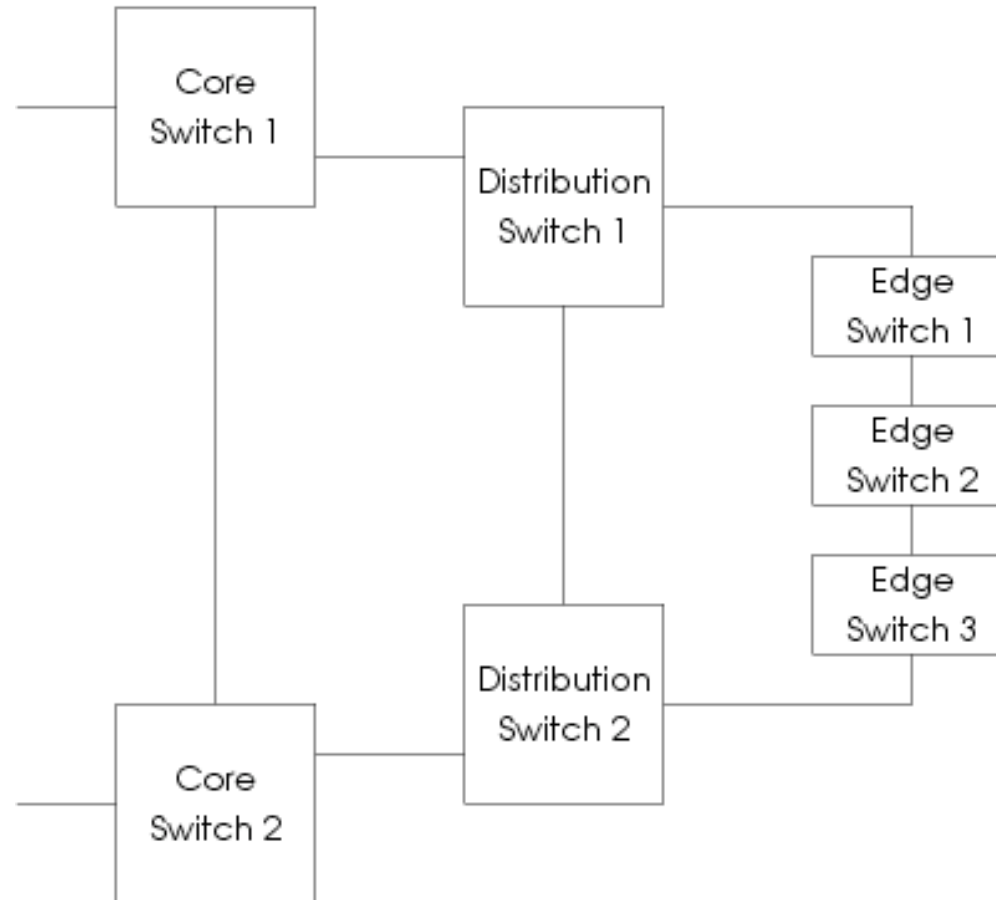
&

Mark Charlton

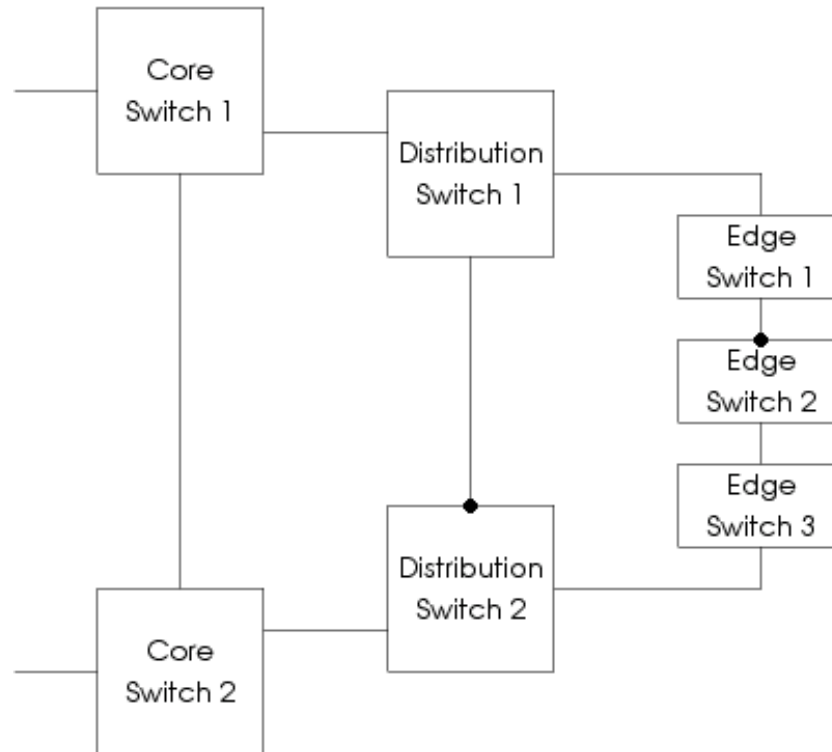
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Imagine a piece of network...

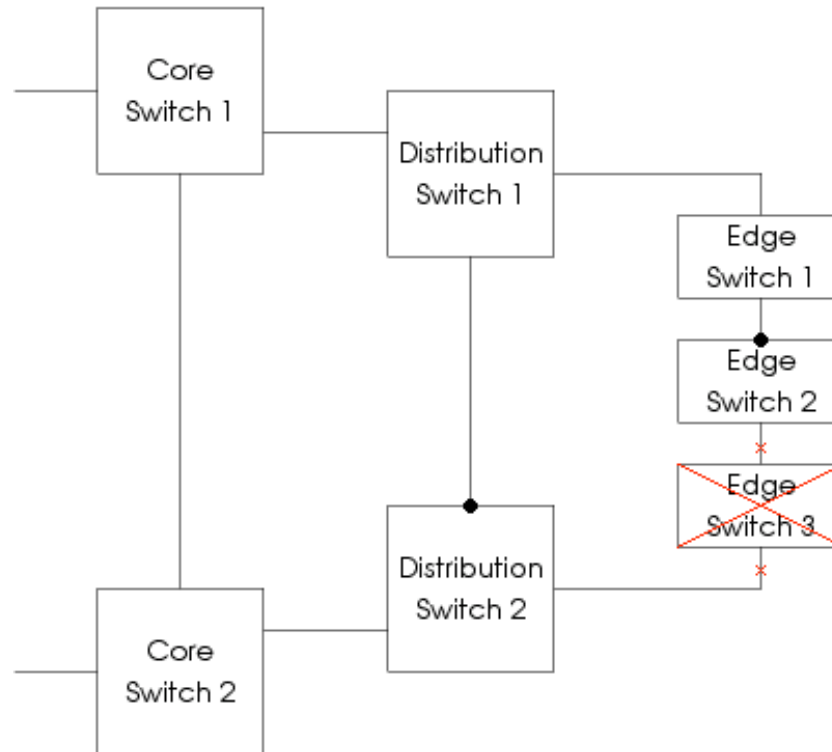
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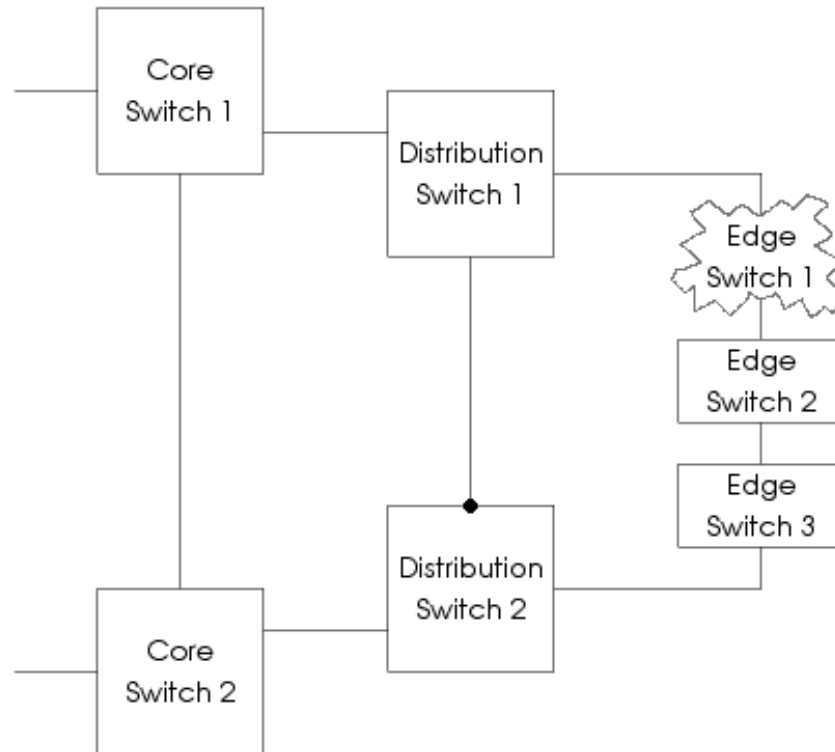
...and add spanning tree...



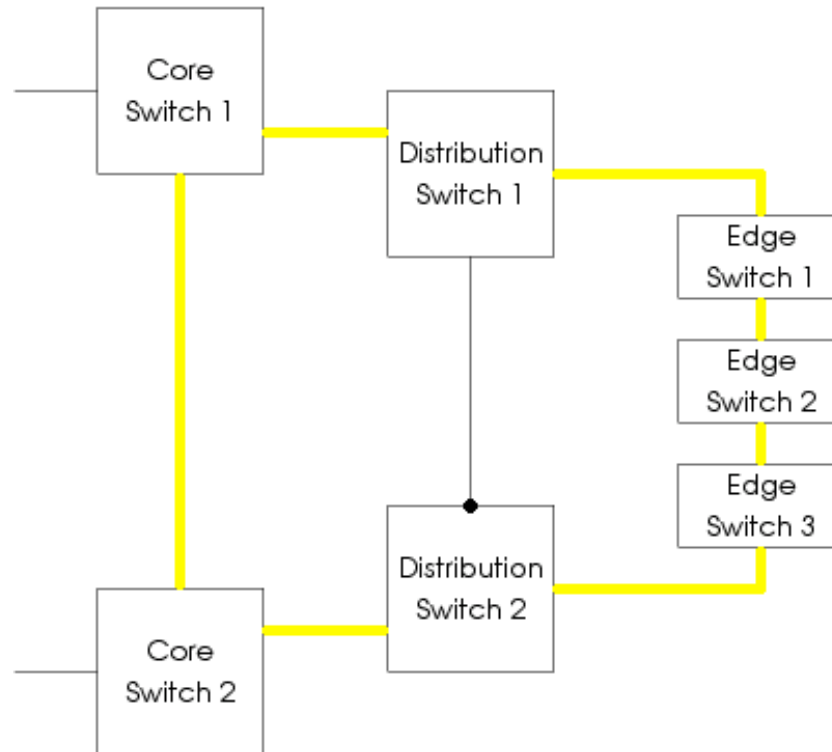
...add a hard(ware) failure...



...or, add a soft(ware) failure...



Result – one big loop



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 - where blocks are and monitor them
- Monitor
 - for BPDUs (or lack) – not feasible – too many links – too much data to consolidate
 - for “excessive” traffic on links
 - blocking ports – is there traffic flowing?

What can we do at Layer 2?

- Don't have resilient links!
 - ResNet

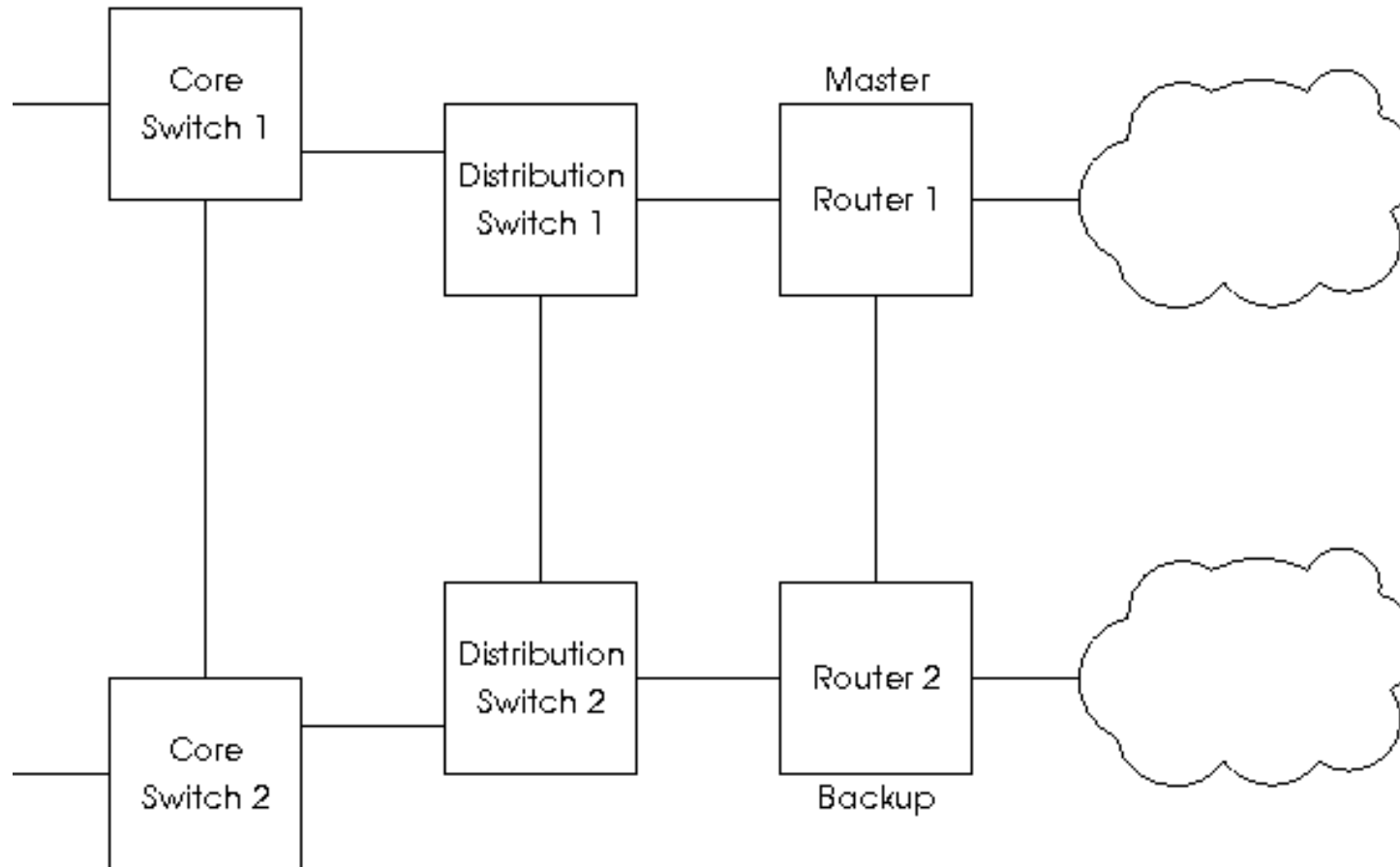
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- Have a modular switch OS, monitor STP task and stop/restart as appropriate
- But something has to do this:
 - best and logical place is the switch
 - another CPU?
 - more software – more complexity

Layer 3 - VRRP



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- Separate CPU / task monitor
 - high end switches
- Challenge manufacturers
 - ways to make switches fail safely

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- Network design (layer 2 and layer 3)
 - consider all failure scenarios
 - can we configure round problems?
- No resilience
 - possible if we can provide fast (enough) response?

Resilient Resilience

Any questions?
Any thoughts?
Anything at all?

