

Overlay Networks

Outline

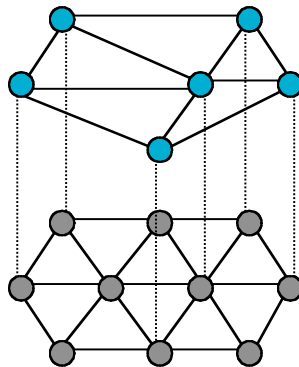
- Tunneling
- Virtual Private Networks
- Routing Overlays
- PlanetLab

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Overlay Network

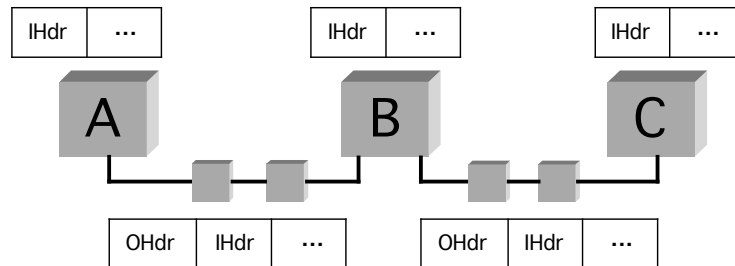


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Tunneling

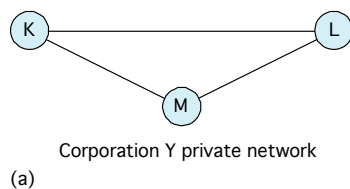
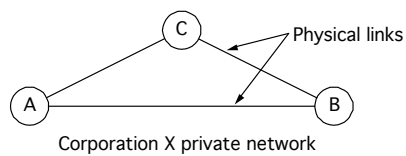


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Virtual Private Network

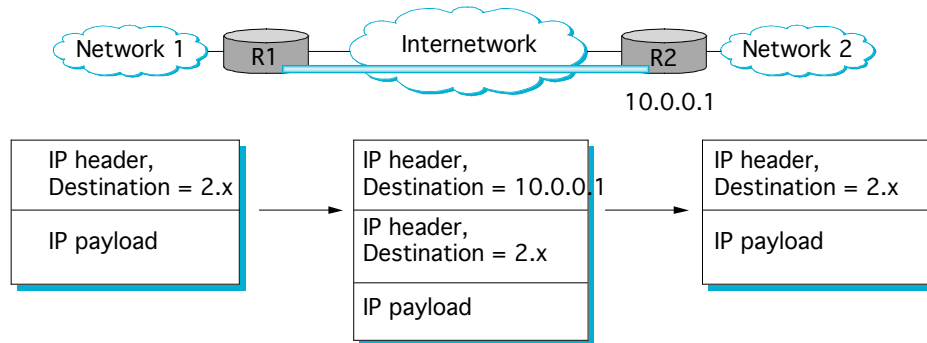


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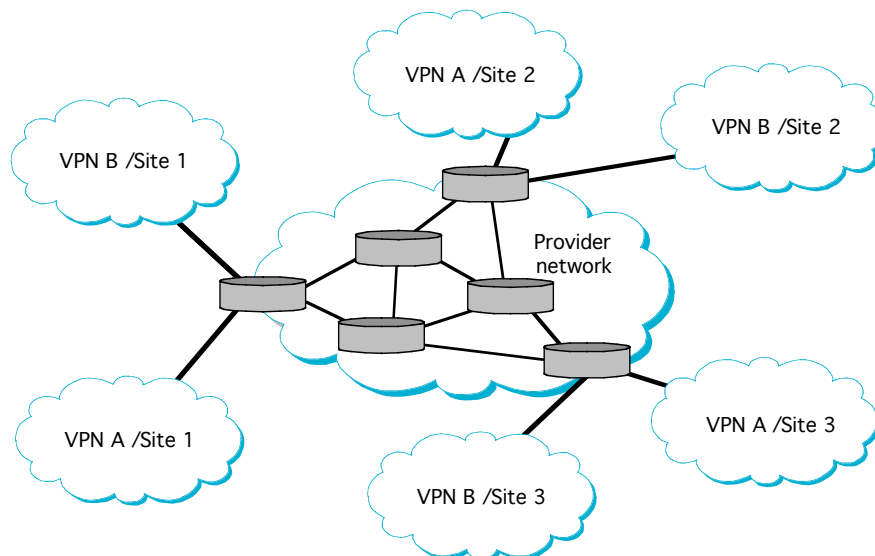
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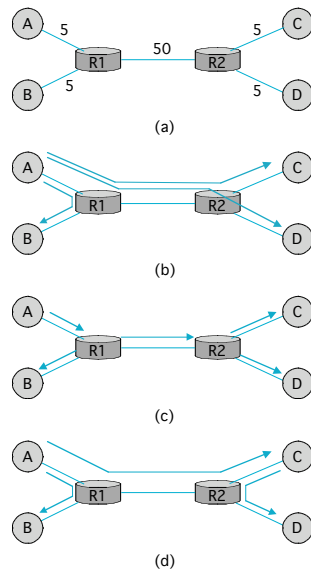
VPN (cont)



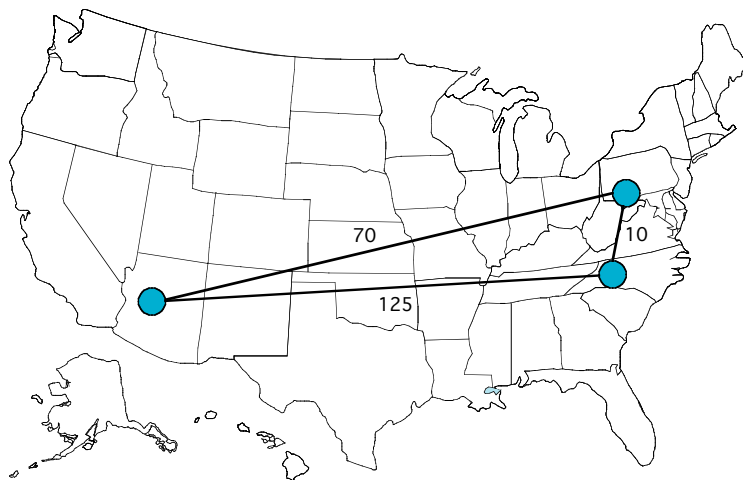
VPN (cont)



Multicast



Triangle Inequality

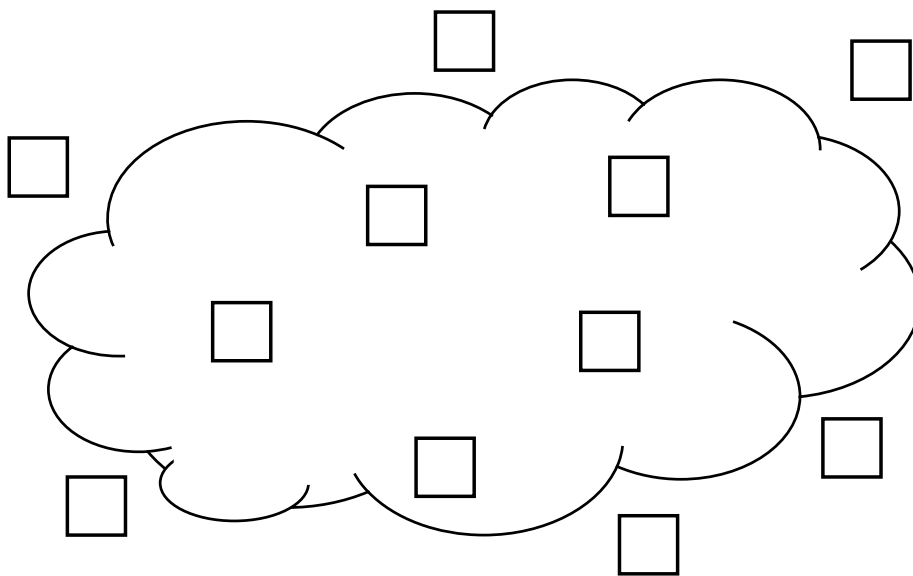


PlanetLab

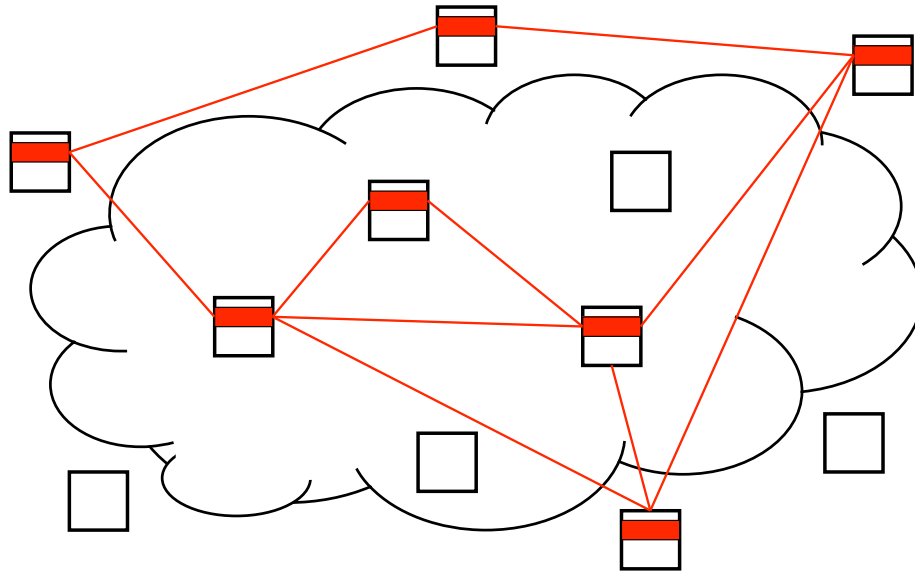


- 550 machines spanning 250 sites and 28 countries
 - nodes within a LAN-hop of > 1M users
- Supports *distributed virtualization*
 - each of 450 network services running in their own *slice*

Slices



Slices

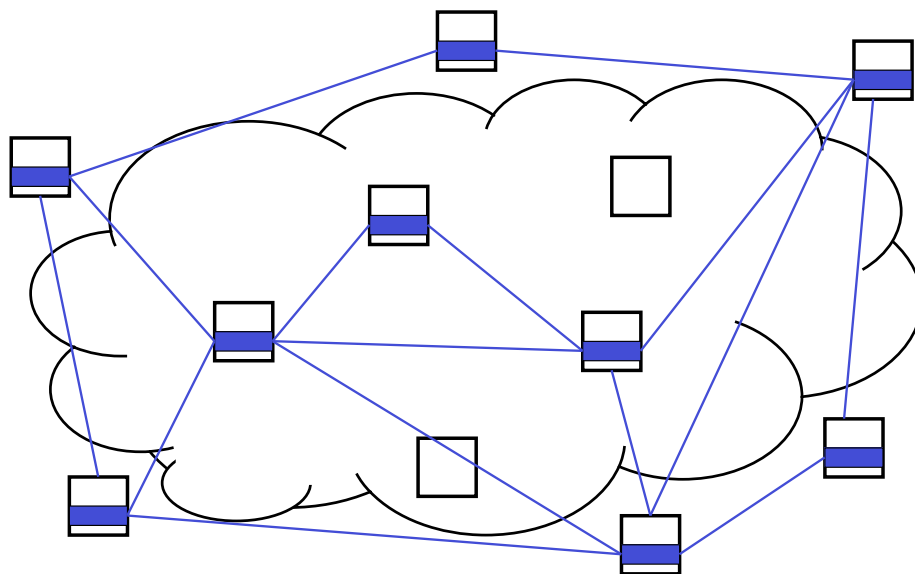


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Slices

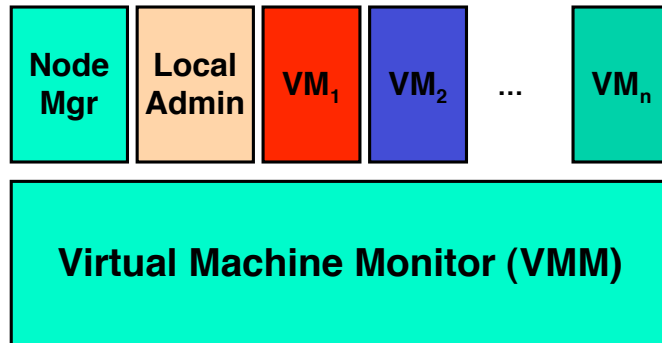


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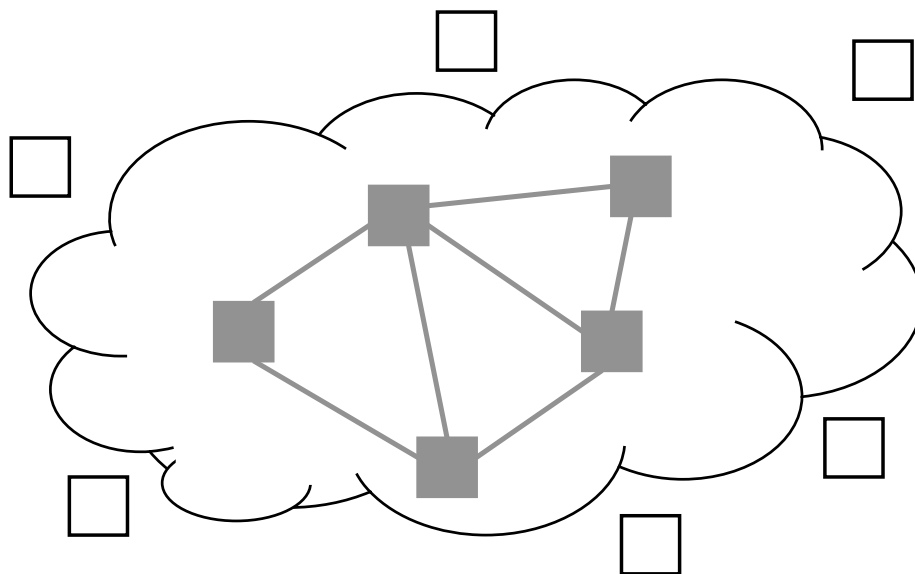
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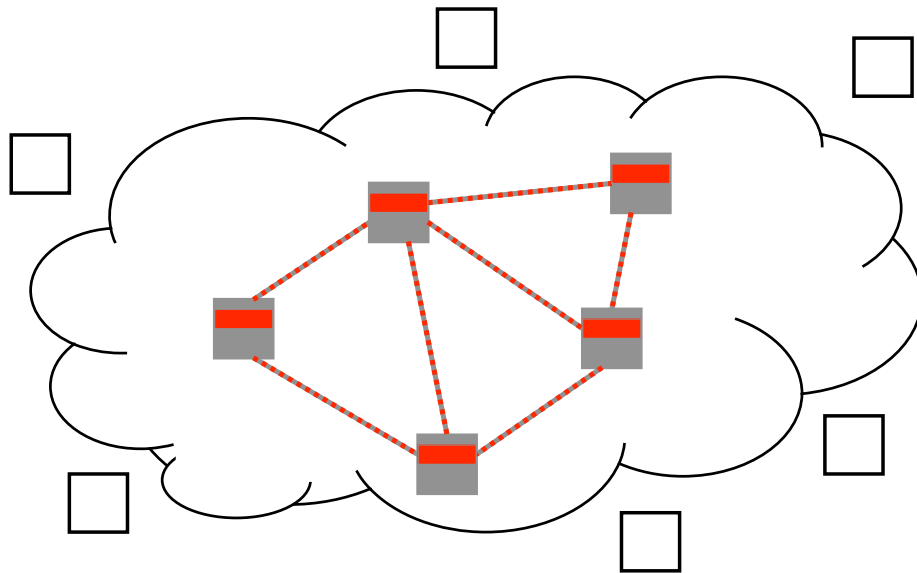
Per-Node View



Extending Slices to NLR



Extending Slices to NLR

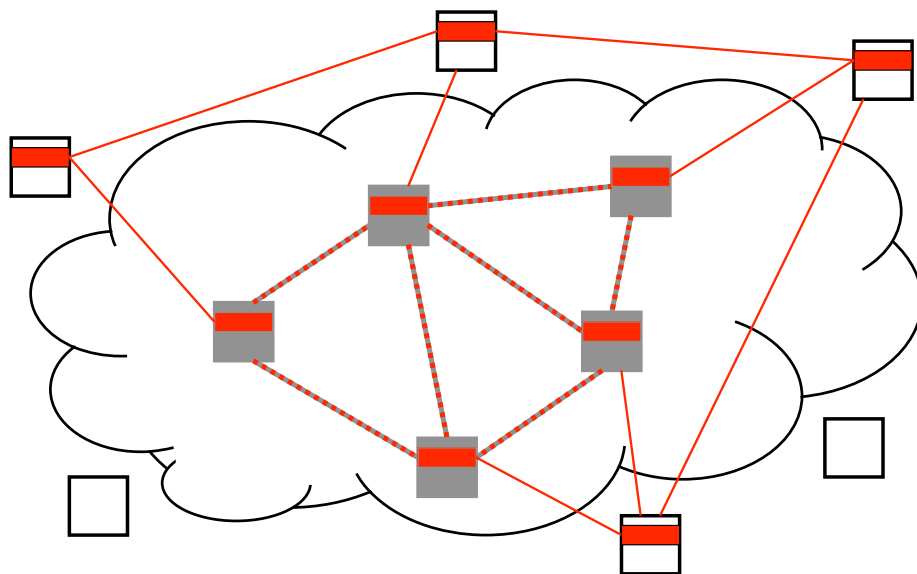


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NLR + PlanetLab



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User Opt-in

