



Baseⁿ

BaseN - Insight to the ⁿth degree

How I learned to love IPv6

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Feel free to raise your hand and ask questions at any time

Brief company overview

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- Founded in 2001
- Original idea was to scale beyond what was available at that time and from then on
- Focus on large service providers and enterprises
- Smart grid market

Brief company overview

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- Network Performance
- Fault Management
- Analytics
- One Platform to bind them..
- Completely distributed and fault tolerant multi-site architecture

Disclaimer

- Had a 6BONE prefix in 1999
- Had a few /32s since then
- No routers were harmed while creating this presentation



Basics

- We're using switches as routers
- Cheap, fast or features
 - We chose cheap & fast
- 64-bit Xeon servers
- EL4, EL6

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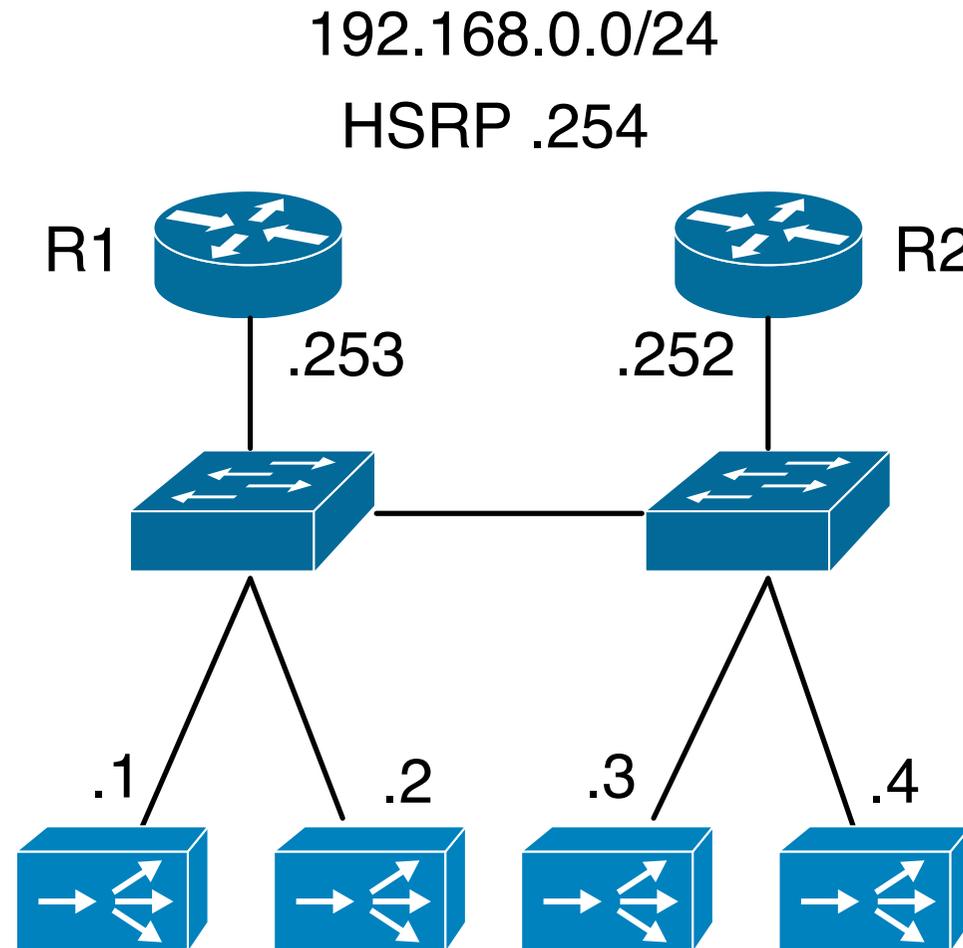


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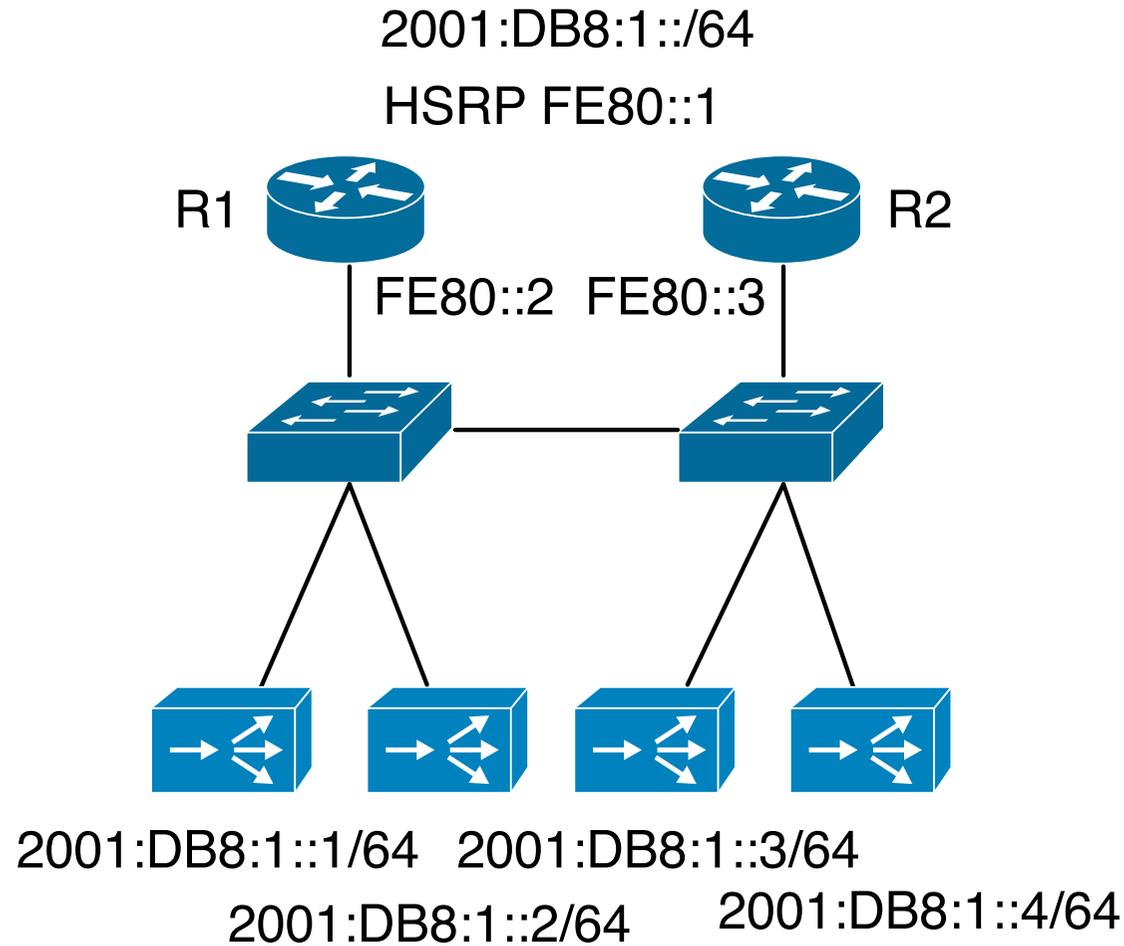
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Server LANs – IPv4



Server LANs – IPv6



Unpleasant surprise #1

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- %FHRP group not consistent with already configured groups on the switch stack – virtual MAC reservation failed
- Huh?

Unpleasant surprise #1

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Unpleasant surprise #1

- 3560(G), 3750(G) cannot have both IPv4 and IPv6 HSRP enabled at the same time
 - You can read it between the lines on CCO



Unpleasant surprise #2

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- IPv6 ND and RA mysteriously vanished
 - Seen on EX



Unpleasant surprise #2

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- Unconfigure IGMP snooping
- Adds some extra flooding to backend servers that utilize multicast

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Feature parity

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- For everything we support on IPv4 we have to support for IPv6, too
- Any kind of reception of events
- Any kind of active measurements

Feature parity

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- We have to be first turning IPv6 on in a network



Legacy services

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- ... and last turning IPv4 off



Hardening

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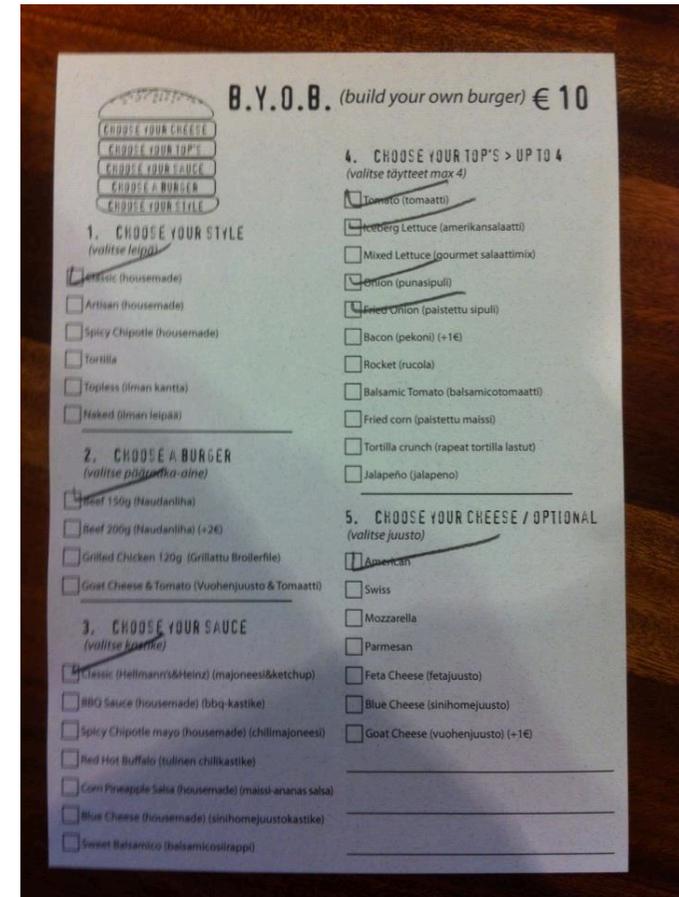
- Router, switch control plane protection
- A LAN with both IPv4 and IPv6 must have ACLs for both too
- A dual stacked server must have both iptables and ip6tables

Observations

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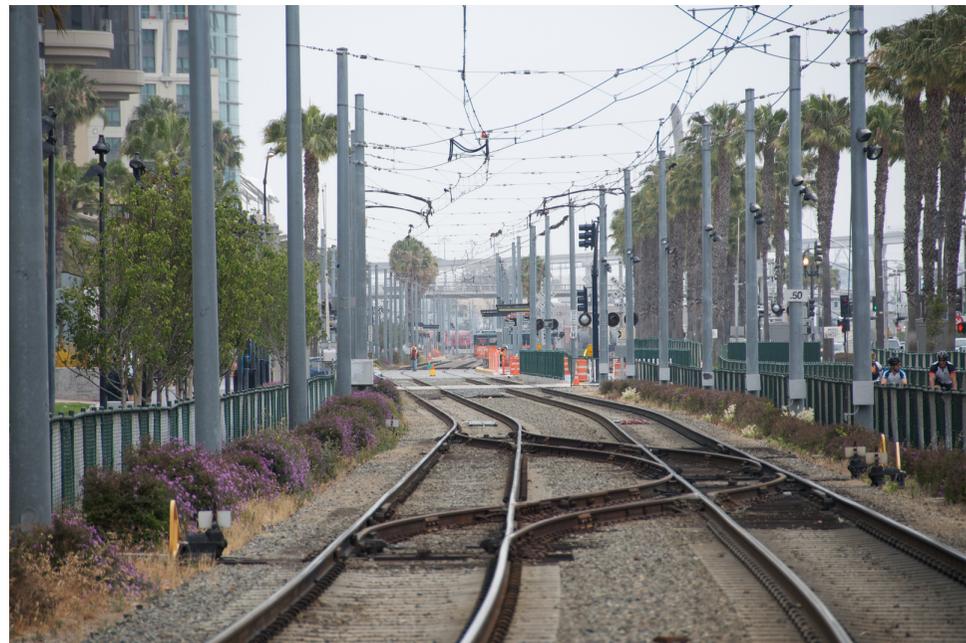
- In most RFPs and RFQs IPv6 is still a checkbox item



- Very few customers measure or collect anything using IPv6



- Practically none have IPv6 only devices



The end

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