A Brief

# History of IPv6
# @ ARIN

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# Timeline

2003

2004

2006

2008

**Sprint IPv6**
WWW, DNS, FTP
Linux Router
PMTU Issues
Routing Issues

**Worldcom IPv6**
WWW, DNS, FTP
Cisco Router
PMTU Issues
Routing Issues

**Equi6IX IPv6**
Transit via OCCAID
WWW, DNS, FTP
Cisco Router
13 Peers

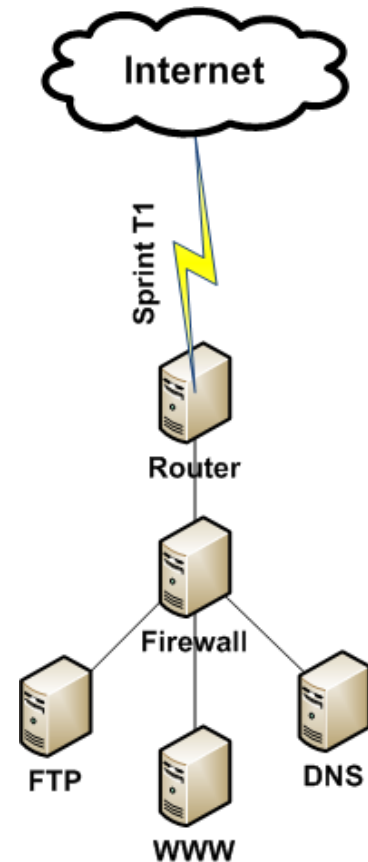**NTT | Tinet IPv6**
WHOIS, DNS, IRR
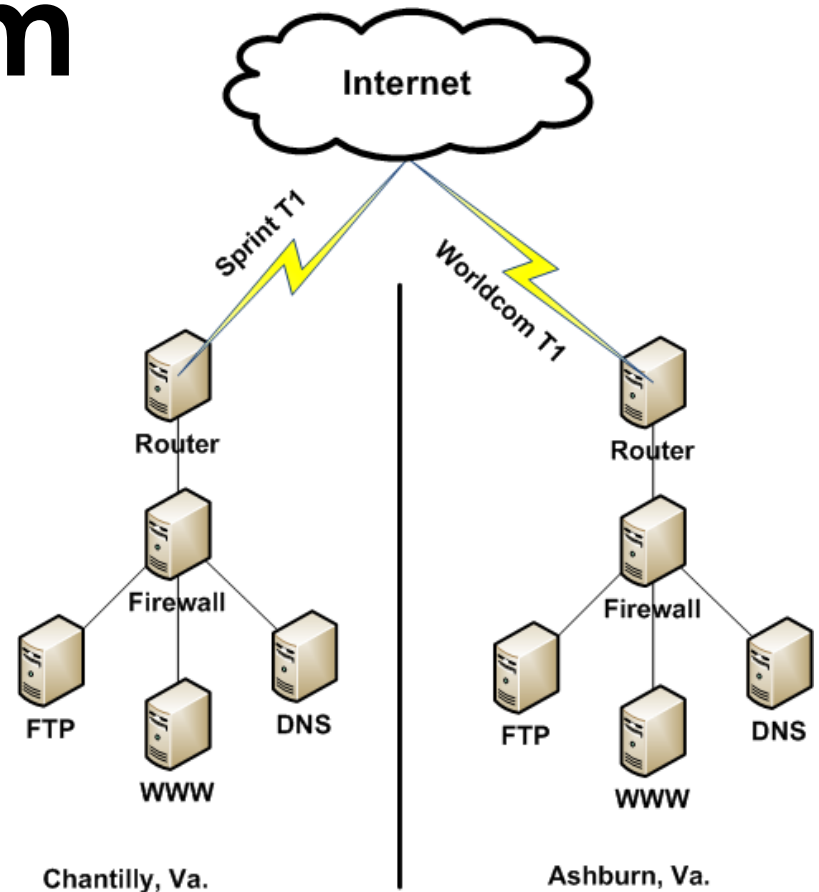Cisco Router
4 Byte ASN
8 Peers
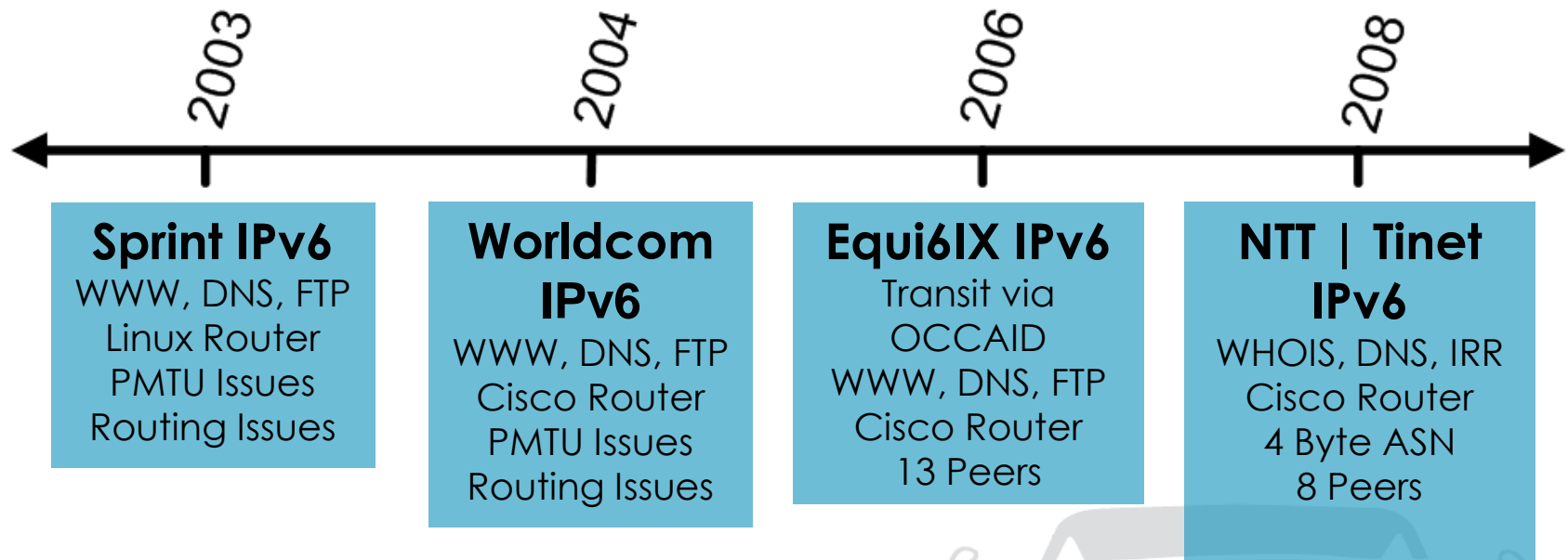
# 2003: Sprint

- T1 via Sprint

- Linux Router with Sangoma T1 Card

- OpenBSD Firewall

- Linux Based WWW, DNS, FTP Servers

- Segregated Network No Dual Stack (Security Concerns)

- A lot of PMTU Issues

- A lot of Routing Issues

- Service has gotten better over the years

# 2004: Worldcom

- T1 via Worldcom to Equinix

- Cisco 2800 Router

- OpenBSD Firewall

- Linux Based WWW, DNS, FTP Servers

- Segregated Network No Dual Stack (Security Concerns)

- A lot of PMTU Issues
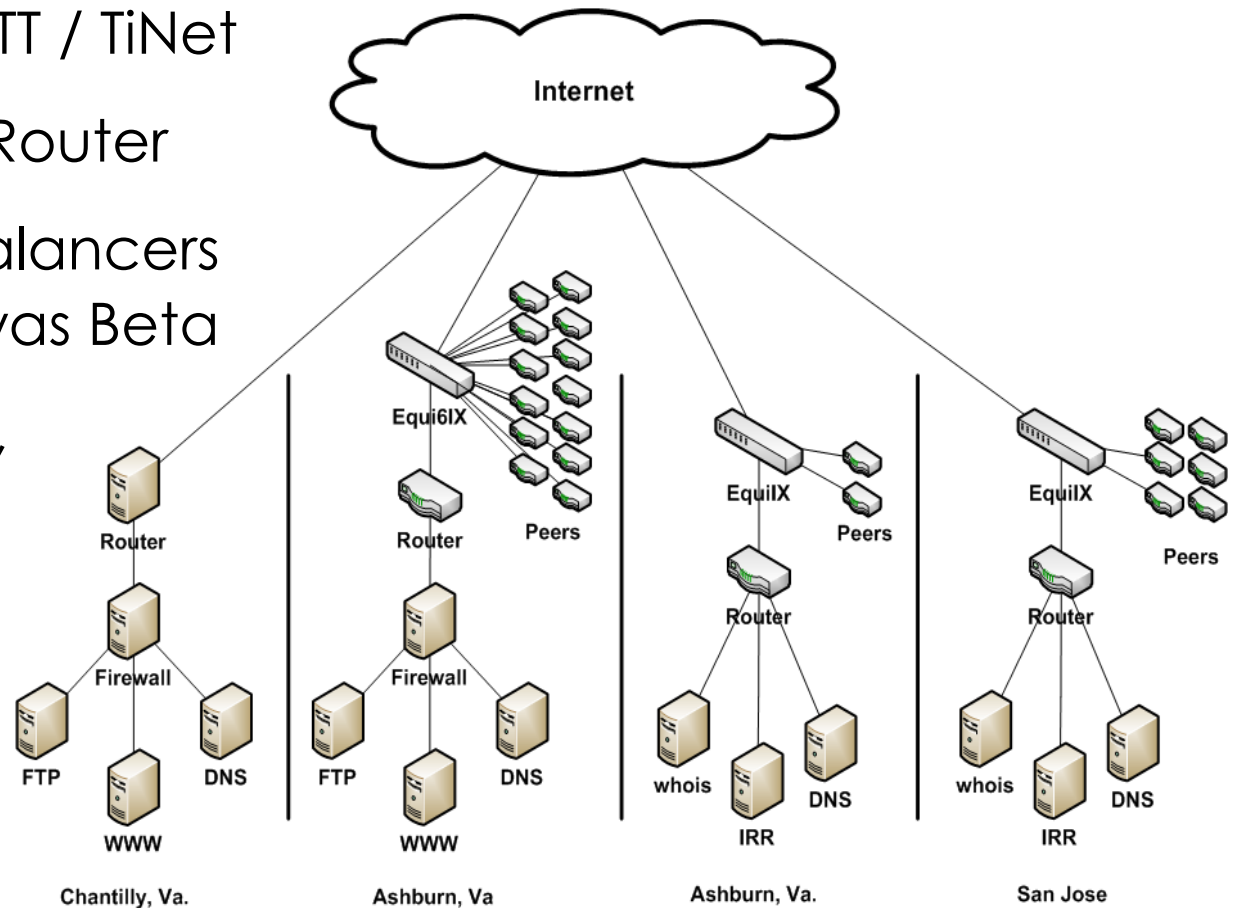
- A lot of Routing Issues

# 2006: Equi6IX

- 100 Mbit/s Ethernet to Equi6IX

- Transit via OCCAID

- Cisco 2800 Router

- OpenBSD Firewall

- WWW, DNS, FTP Servers

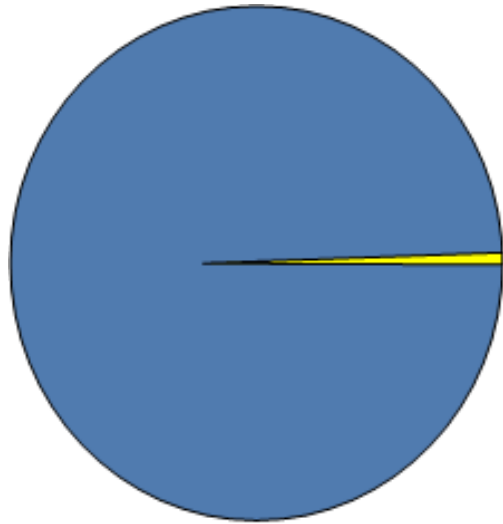- Segregated Network

- Some Dual Stack
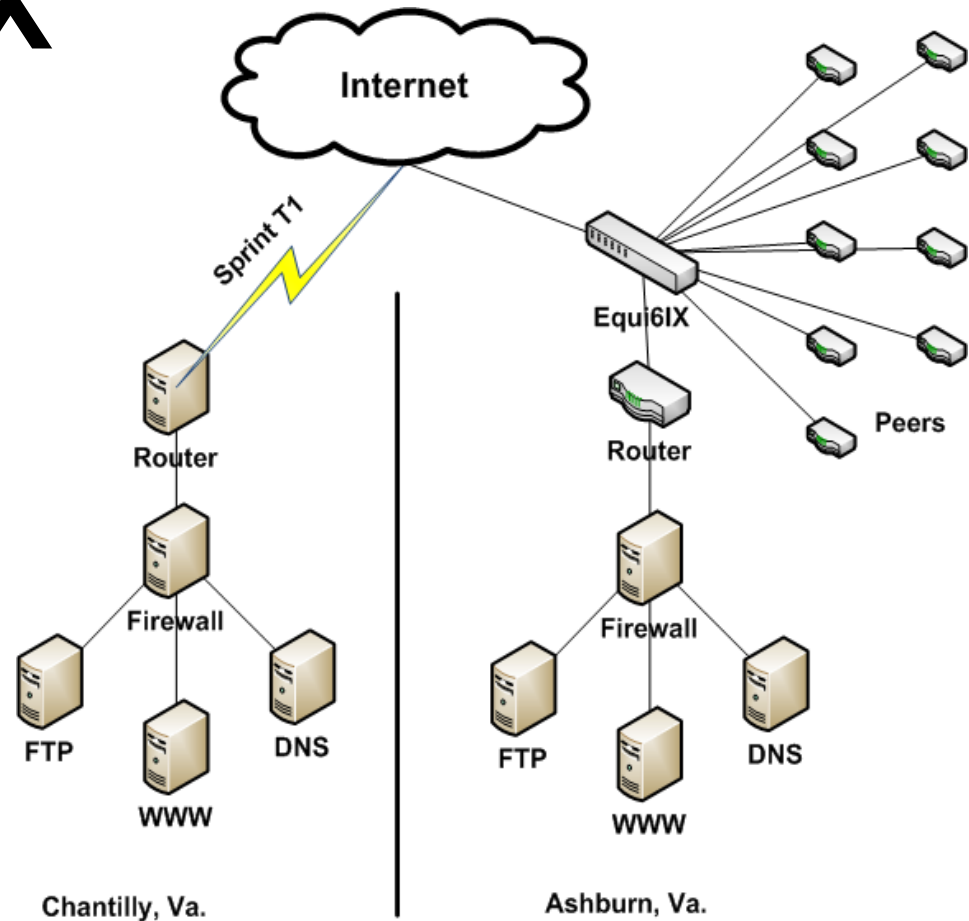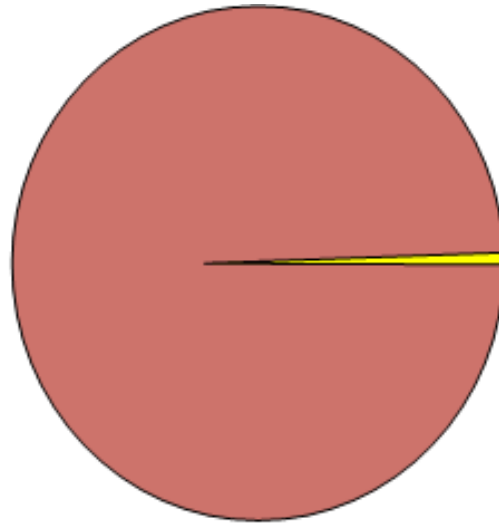
# 2008: NTT / TiNet IPv6

- 1000 Mbit/s to NTT / TiNet

- Cisco ASR 1000 Router

- Foundry Load Balancers
  - IPv6 Support was Beta

- DNS, WHOIS, IRR, More Later

- Dual Stack
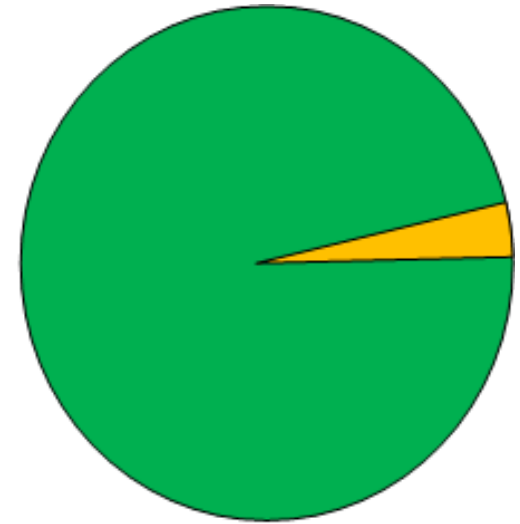
- Stand Alone Network
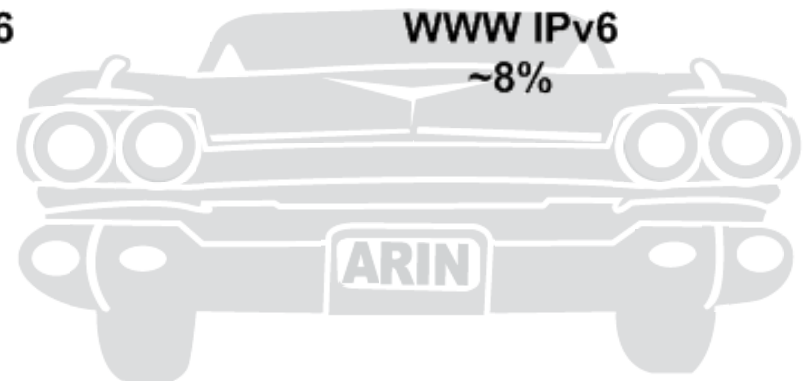
# How much IPv6 Traffic?



WHOIS IPv6
~ .12%

DNS IPv6
~.55%

WWW IPv6
~8%

# Lessons Learned

- Tunnels are not desirable

- Not all transit is equal

- Routing is not as reliable (pmtu? filters?)

- Dual Stack is not so bad

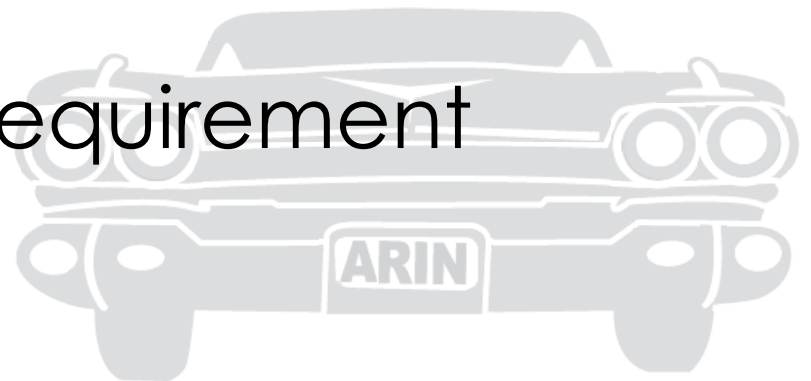- Proxies are good

- People fear 4 byte ASN

# More Lessons Learned

- Native support is better

- DHCPv6 is not well supported

- Reverse DNS is a pain

- Windows XP is broken but usable

- Bugging vendors does work!

# Today and the Future:

- Standardized on dual stack

- IPv6 is enabled by default

- V6 support a requirement from vendors

- All RFPs list IPv6 as a requirement

# Questions?

# Thank You!