Moonv6 Update

NANOG 34

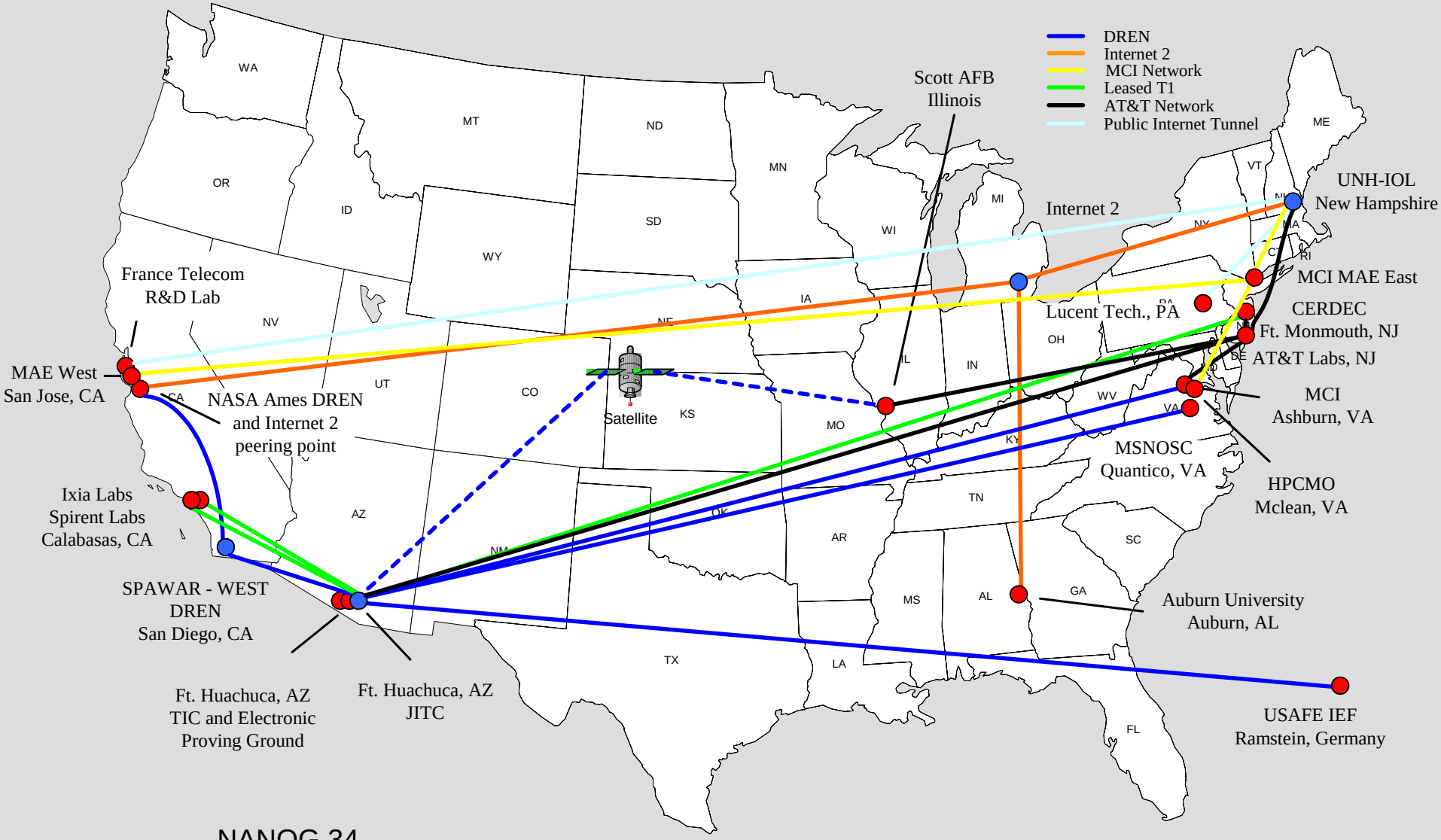
Outline

- What is Moonv6?
- Previous Moonv6 testing
- April Application Demonstration
- Future Moonv6 Test Items

What is Moonv6?

- An international project led by the North American IPv6 Task Force (NAv6TF) to execute deployment testing of IPv6 technology
- Implemented by multiple Government, Academic and Commercial organizations
- Test items are determined by network operation requirements of commercial service providers and government agencies.
- Test plans are composed by all interested participants

Moonv6 Network Map



Moonv6 Phase I

- Tested simple routing protocol tests for OSPFv3 and BGP-4+ in both native and dual-stack mode
- Tested Common network application such as FTP, TFTP, HTTP, HTTPS, Telnet, SSH, DNS
- Base specifications, Neighbor Discovery
- Transition mechanisms
  - RFC 2893, RFC 3056 and ISATAP worked in most cases
- Limited testing of security, mobility and advanced routing protocol features.

Moonv6 Phase II

- Established a fully operational 24 x 7 IPv6 network for IPv6 deployment testing
- UNH-IOL obtained a unique AS number, BGP peering with AT&T, and Internet 2 established
- Refined and added to test scenarios from Phase I, longer testing period with local and wide area testing.
- Significant convergence testing of OSPF, BGP and IS-IS.
- QoS and multicast proof of concept testing
- Simple Firewall Functionality tests

Moonv6 November Test Set

- Routing Convergence
- Firewall Functionality and Access Policy
- DHCP and DNS Testing
- VoIP Demonstration
- iSCSI Demonstration

April Application Demonstration

- MCI backbone provided essential transport
- MAE West hosted IPv6 applications servers
- Applications provided by
  - France Telecom: ePresentation
  - Panasonic: Web-enabled cameras

Network

- MCI provided an OC-3 connection to UNH-IOL via MCI MAE East
- UNH-IOL provided client devices
- Peering between UNH-IOL (AS 33226) and MCI - AS 816 (MCI IPv6) and AS 6066 (MCI Research)
- Lucent provided DNS infrastructure

Pages to Surf

http://[2001:570:0:239:f400::195]

http://[2001:468:603:c001:280:f0ff:fe54:86eb]

http://[2001:468:603:ce11::80]/moonv6

http://[2001:570:0:239:f410::19]

Or

http://survey.nav6tf.org/moonv6

Applications Detail

- ePresentation
  - Unicast testing complete
  - Multicast testing being performed
- Panasonic Web-enabled cameras
- Simple applications
  - Web Browsing
  - SSH/SFTP
  - nmap

Lab Testing

- MCI engineers performed additional testing across multi-vendor platforms
  - IPv6 Transition with GRE tunnels and IPv6 islands over an MPLS core
  - Additional testing of dual stack and native scenarios with BGP, IS-IS and OSPF
  - Stability, scalability and convergence
  - L2 transport over 802.11b wireless LANs

Future Applications Vision

- Add applications to this network
  - Use Moonv6 network for applications deployment testing
- Add additional service providers to this model as applications become more widely available

Future/Cont. Test Items

- Routing
  - Detailed QoS measurements
- Firewall
  - Attack Scenarios
  - Routing Policies
  - IDS/IPS
- Various encrypted tunnels for IPv6 including IPSec
- PPPoE & IPv6 Radius Servers
- VoIP
- Mobile IPv6
- Further DHCP and DNS interaction
- Proxy servers
- Mail servers
- Transition Mechanisms
- eConferencing (peer-to-peer) and eLearning (multicast)

Conclusion

- More applications are needed for future testing
  - All ideas welcome
- IPv6 implementations are developing
  - Progress towards commercialization
  - A result of improved focus and organization
- Testing will continue between sites
  - Current structure to stay in place

Conclusion (cont.)

- More participation from enterprises and government agencies for future phases
- Additional volunteer resources are needed
  - Call for participation
    - May 31st deadline for August test event participation -focus on Mobile VoIP, eConferencing, and eLearning

For More Information

- Go to www.moonv6.org

- Under “Project” there are freely available theoretical test plans that were created for the events