IPv6

Workshop!

Micheal Jones

cybera

Overview

- General Considerations re: using IPv6

- Systems

- Adding IPv6 to an IPv4 application

- Workshop (DNS, Web, Firewall, and Mail)

Cybera

- IPv6 /32

- OpenStack IPv6 testbed

- Rapid Access Cloud

- Services (eg. DNS, Web, etc.) - all our in house services are set up dual stack.*

Transition Styles

- Parallel networks

- NAT

- Tunneling

- Dual Stacking

Dual Stack = Twice the work?

- Firewall rules

- DNS entries

- etc.

Gotchas

- Poor support by packages/products (compared to IPv4)

- IPv6 assignment isn't the same as IPv4 - much more flexible.

- Publicly routable IPs (or not)

Systems

RFC 6555 - Happy Eyeballs

OS X / iOS

Windows

Linux

Applications?

Browsers

Google Chrome

Mozilla Firefox

Safari (OS X or iOS)

www.v6address.com

ip6.me

- ip4.me - external IPv4 address

- ip6.me - external IPv6 address

- IPvFox - Firefox Extension

- IPfoo - Chrome Extension

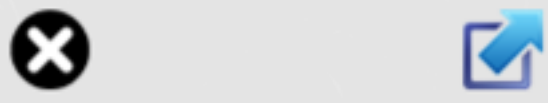# Adding IPv6 to an IPv4 Application

A story in x parts

Network Mapping Tool

http://netmap.cybera.ca

simple

Map | Satellite

ORGANIZATION TYPES

K-12

PSI

Not for Profit

Enterprise

REN

NETWORKS

CyberaNet

Westgrid

CANARIE

Search Location

Canada

Alberta

Saskatchewan

Manitoba

British Columbia

Washington

Montana

North Dakota

Minnesota

Oregon

Idaho

Wyoming

South Dakota

Nevada

Utah

Wyoming

Nebraska

Iowa

United States

Google

Map data ©2014 Google, INEGI | Terms of Use | Report a map error
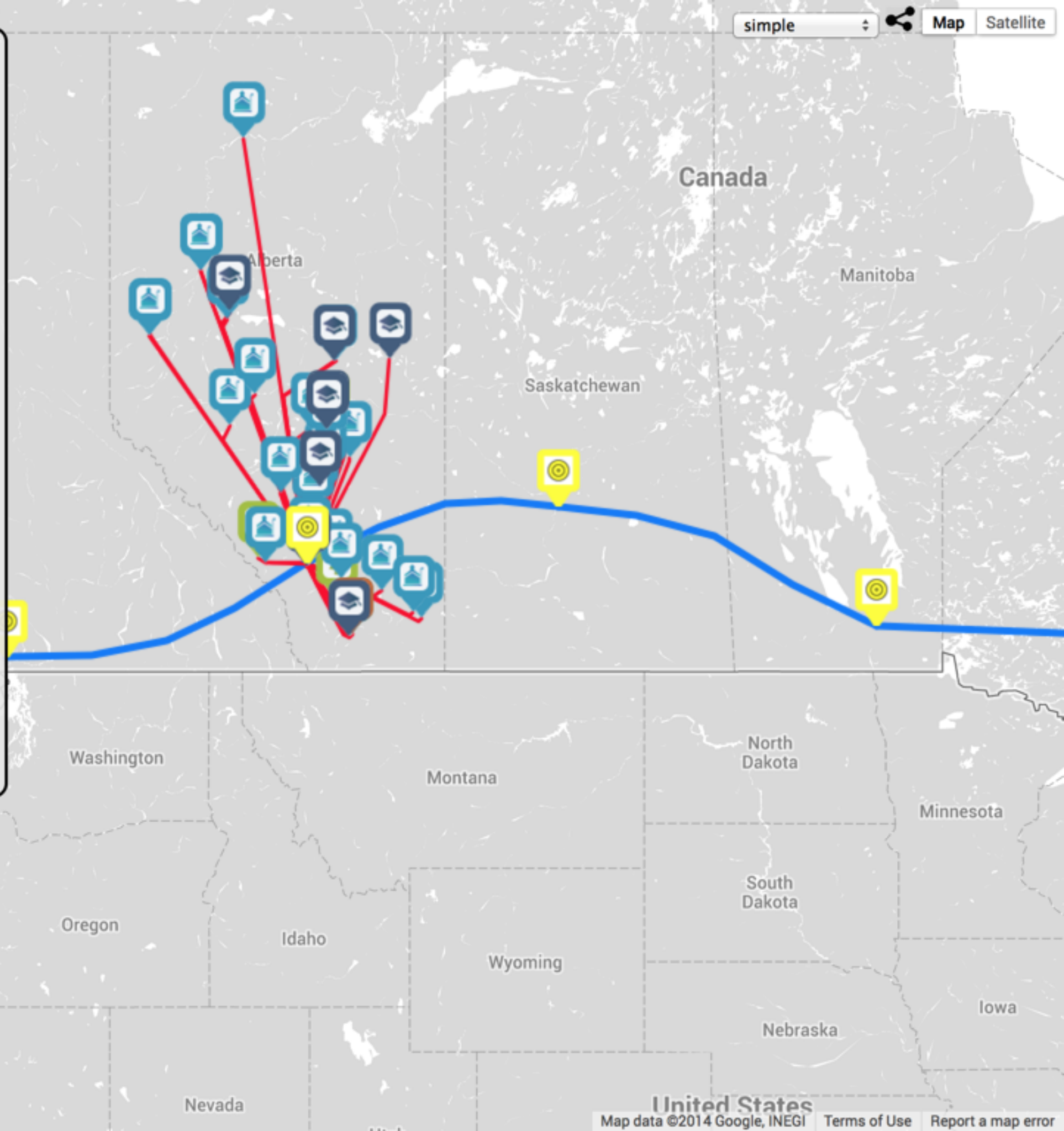
Cybera ⟷ The Banff Centre

Speed: 1 GbE
Network: CyberaNet

Calgary to Banff

RRD Graph

	Total	Average	Max	95th %
In	58.75T	3.74M	31.42M	12.25M
Out	137.76T	8.76M	21.27M	12.62M
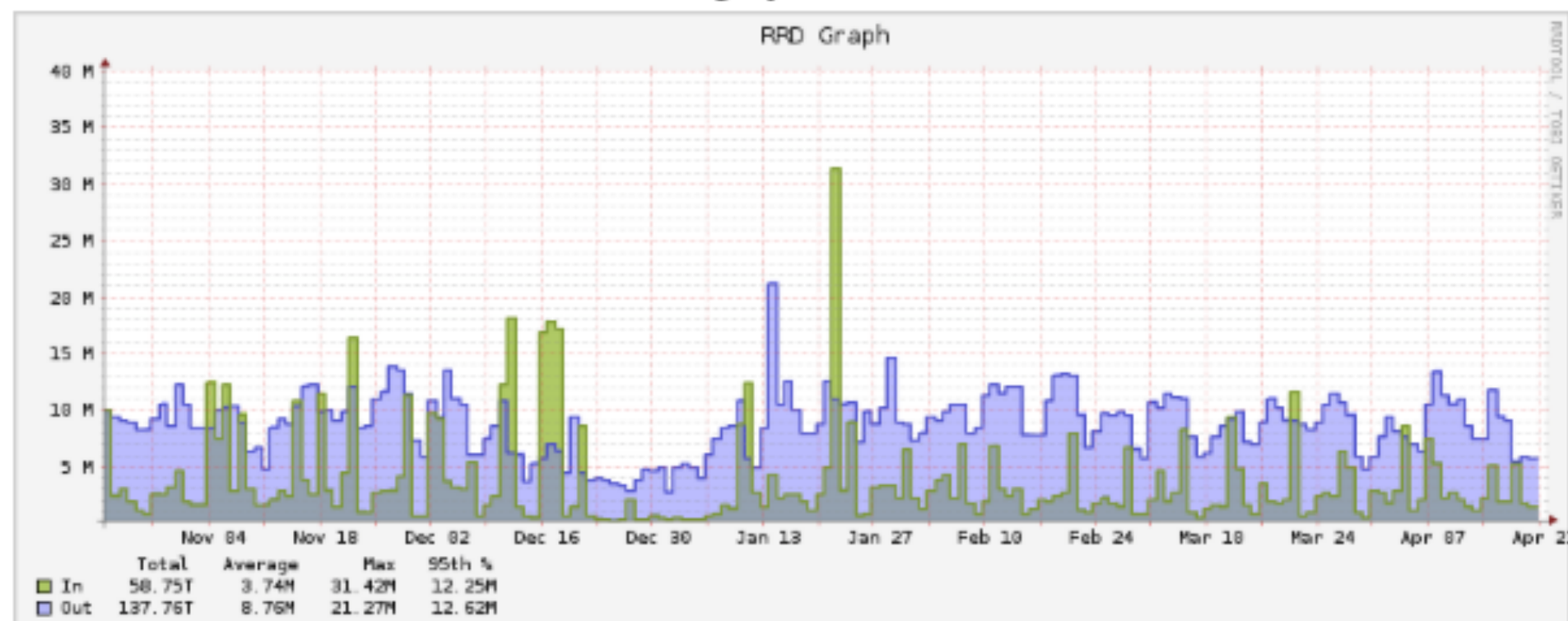
Network Mapping Tool

- Web Application (Tomcat/PostgresSQL)

- Graphing Web Application (cmdb_api)

IPv4 Checklist

- DNS for Hosts (netmap.cybera.ca => 199.116.232.114)

- Services (Web, DB, etc.) actually running

- Proxy in front of Tomcat (security, and caching)

- Open Ports in Firewall

- Test

IPv6 Checklist

- DNS for Hosts (netmap.cybera.ca => 2605:fd00::114)

- Services (Web, DB, etc.) actually running

- Proxy in front of Tomcat (security, and caching)

- Open Ports in Firewall

- Test

So we tested…

- The main web app worked - it was awesome.

- The graphs would sometimes not show up. Not so awesome.

Not so Happy Eyeballs

Only 4 or only 6?

What was the point?

- Adding IPv6 is "easy"

- Need to test if/when one method is poor

- If I can do it - I'm sure you can as well.

Workshop Time

http://github.com/cybera/ipv6-system