

# .CA ccTLD News ccNSO @ ICANN55

Canadian Internet Registration Authority (CIRA)  
L'Autorité Canadienne pour les Enregistrements Internet (ACEI)

Jacques Latour  
2016-03-09

# Agenda

- New Internet Exchange Points (IXPs) across Canada
- Mapping Canada's Internet performance using our new Internet Performance Tool
- Update on D-Zone DNS Anycast service offering.
- Q&A

# Canadian IXP Infrastructure overview



# Canadian IXP Infrastructure

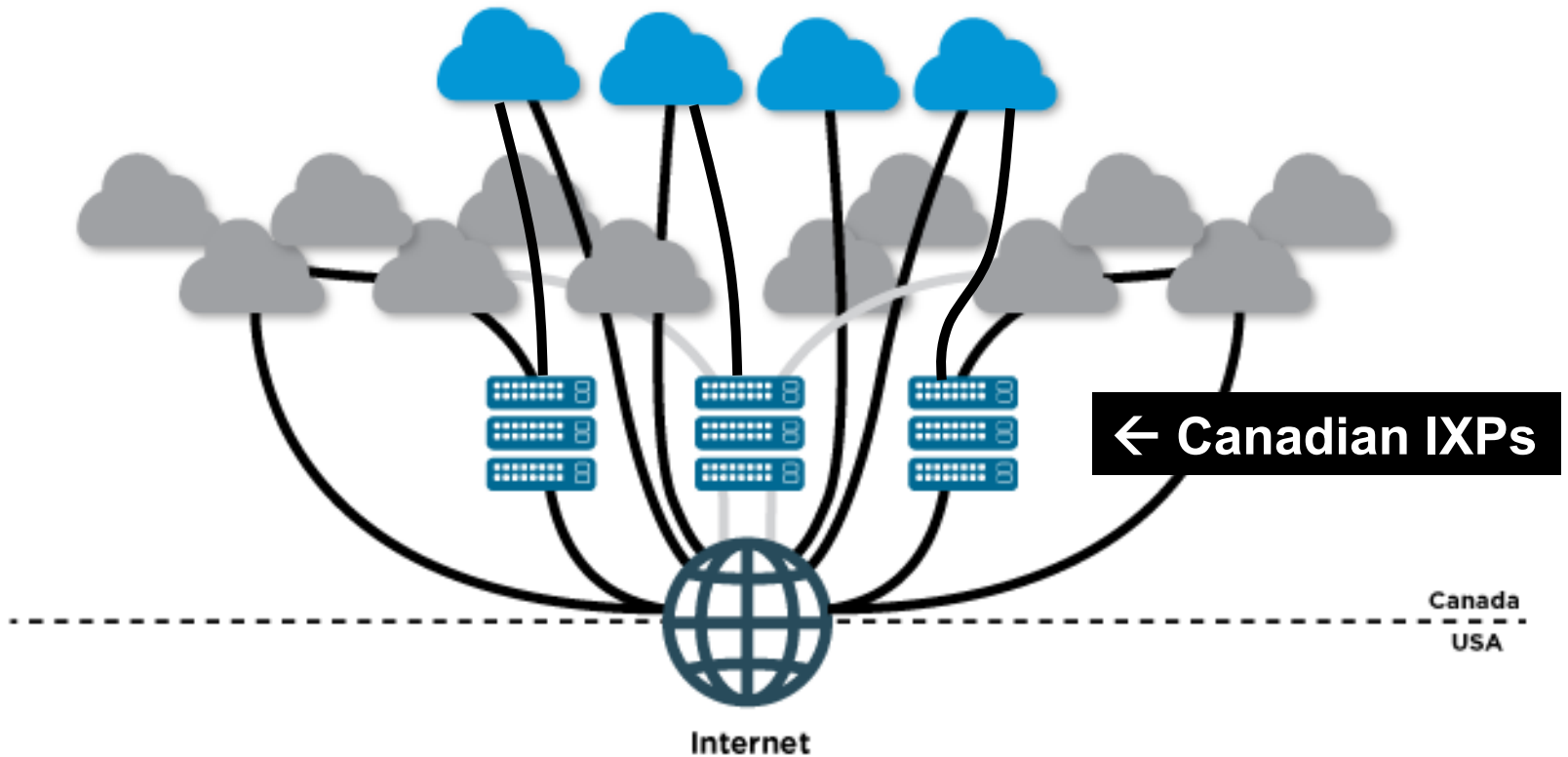
- 7 established and operational IXPs from 2 five years ago






# IXP Benefits to Canada

- Key service positioning for .CA infrastructure
  - DNS, Registry, NTP, CIRA D-Zone, etc...
- Better global Internet (IPv4 and IPv6) access to small and medium ISP and for .CA
- Moving the heart of the Internet into Canada
- Benefits:
  - Lower latency, access to IPv6
  - Direct access to global content providers
  - Internet routing resiliency
  - Toward an autonomous Canadian Internet

# Canadian Internet Vision



 - Incumbents     - Small & Medium ISP's     - IXP's

# Internet Performance Test Overview

<http://cira.ca/performance>



# CIRA's IPT Portal

- Canadian portal
- Postal code
- Measure & Report:
  - IPV6
  - DNSSEC
  - Upload speed
  - Download speed
  - 96 quality metrics

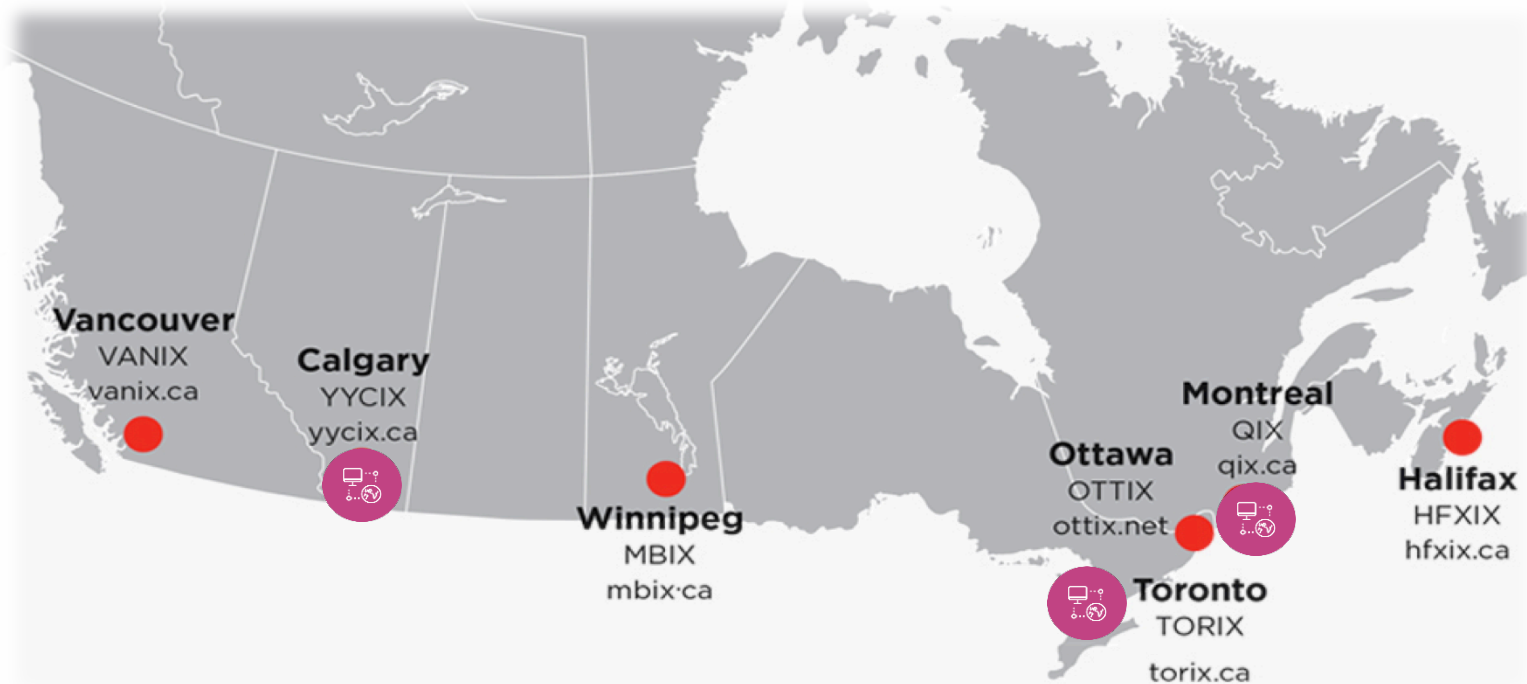
The screenshot displays the CIRA Internet Performance Test (IPT) portal. At the top, the CIRA logo and 'Internet Performance Test' are visible, along with the MLAB logo and 'Français' link. The main heading is 'My Internet Performance Test'. Below this, a message states: 'For the most accurate results, we recommend using the Google Chrome browser to run the Internet Performance Test.' The user's IP is identified as 192.228.22.11, and the location is inferred as Ottawa, ON. The form includes fields for 'My Postal Code' (K1S5S5), 'My ISP' (CIRA Canadian Internet Registration Authority Auto), and 'Test Server' (Toronto). A 'Start' button is present. Below the form, a navigation bar shows 'Upload Speed', 'My Device', 'ISP Network', 'The Internet', and 'Download Speed'. The 'Internet Performance Statistics' section is set to 'Download Statistics' and includes a search bar for 'Postal Code'. A map of North America shows numerous test locations marked with red and white hexagons. A legend at the bottom indicates connection speeds: 0 Mbps (red), 25 Mbps (light red), and 50 Mbps (light blue). The page footer shows '117,683 Connection Tests' and a 'Terms & Conditions' link.



# CIRA's Internet Performance Test

- Evolving experiment to measure the performance and state of the Canadian Internet
- Based on world renowned **M-Lab** platform and Web100 Network Diagnostic Test (**NDT**)
- On-going development of a customized portal to make the information relevant to Canadians
  - Visually by aggregating the data based on postal code
  - Open source, by making M-Lab results freely available

# Canadian M-Lab Infrastructure



IPT uses 3 M-Lab  nodes in Canada

- Calgary, Toronto, Montreal

Nodes are owned and operated by M-Lab

<http://www.measurementlab.net/infrastructure>





# D-Zone

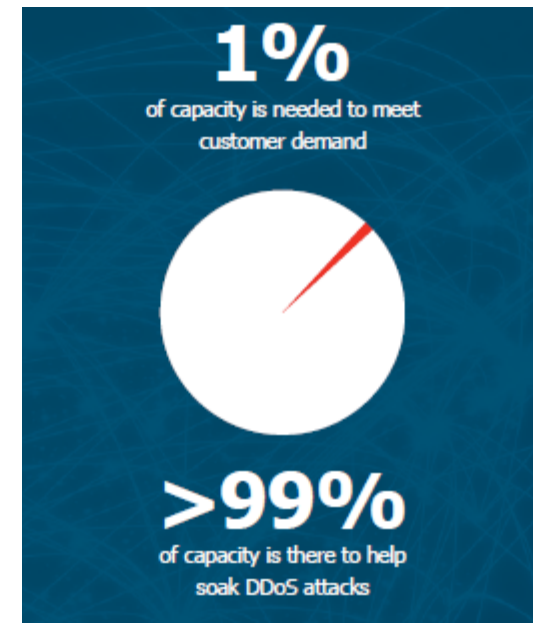
## Anycast DNS Service



# D-Zone Anycast DNS

A secondary DNS designed for Top Level Domain Registries

- Global architecture with nodes key Internet hubs
- Simple management interface for tracking domain activity (query volume, NXDOMAINS, etc)
- It is currently in use by two TLDs (.CA and .KIWI)

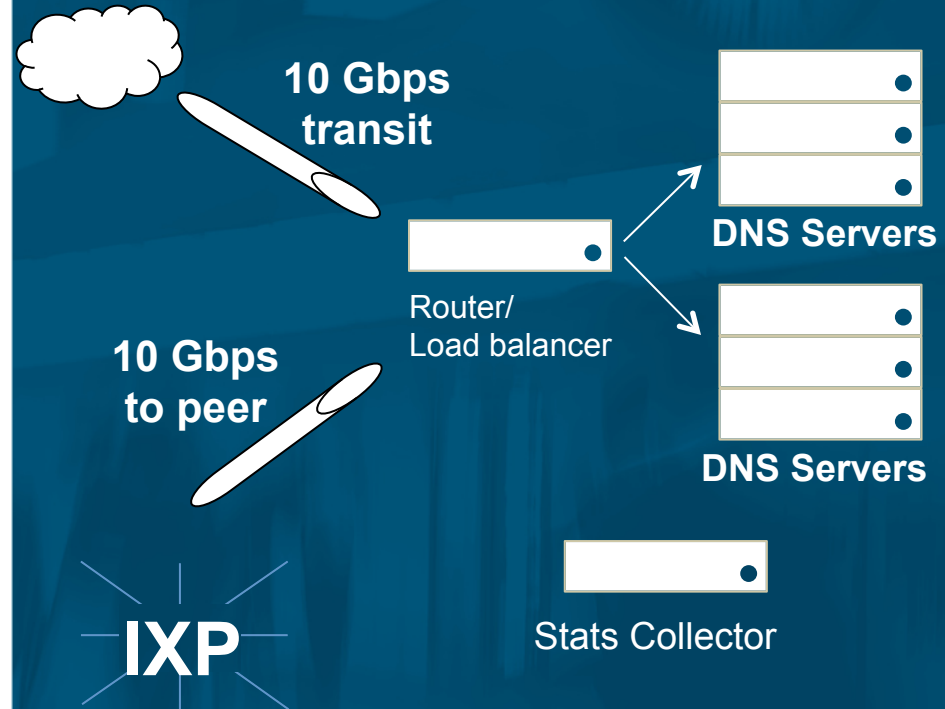


DDoS attacks can be over 100 Gbps - it is a best practice to back-up your DNS in a minimum of two clouds and with a minimum of two suppliers.

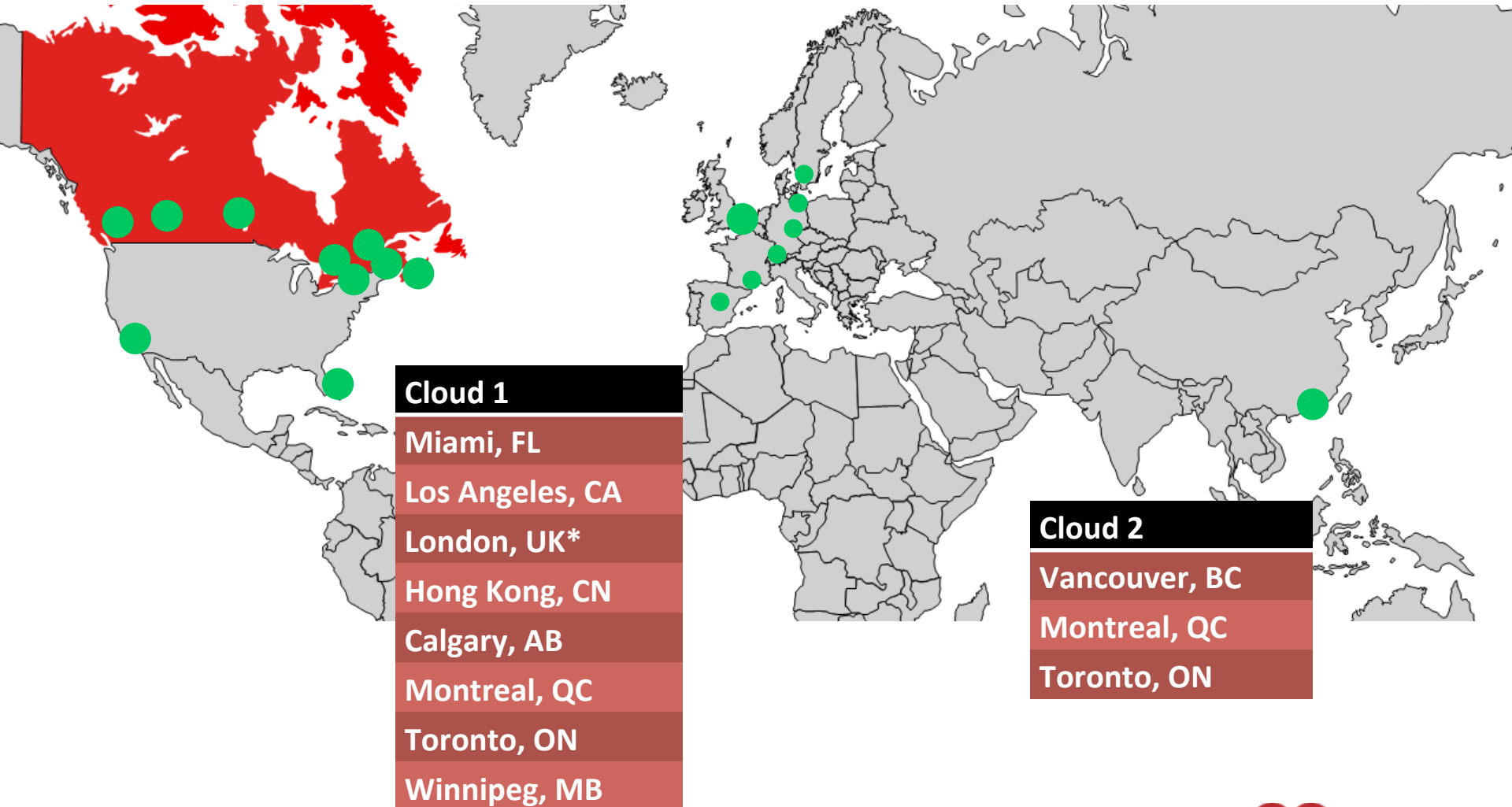
D-Zone is designed for the most rigorous demands of an always-on service

- ✓ Typical global node is built for redundancy and scalability
- ✓ DDoS resistant by providing two 10 GB paths via transit and local IXP
- ✓ State of the art equipment deployed this past year

## Typical D-Zone Global Node



# A GLOBAL ANYCAST DNS SERVICE ACROSS TWO CLOUDS AND BUILT TO SCALE



\*directly peered node to six sites in the EU scales instantly

**Q&A**

**Thank  
You!**

