



manitoba internet exchange

# Operations Report

April 25, 2019

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& Theodore Baschak

# Changes in Past Year

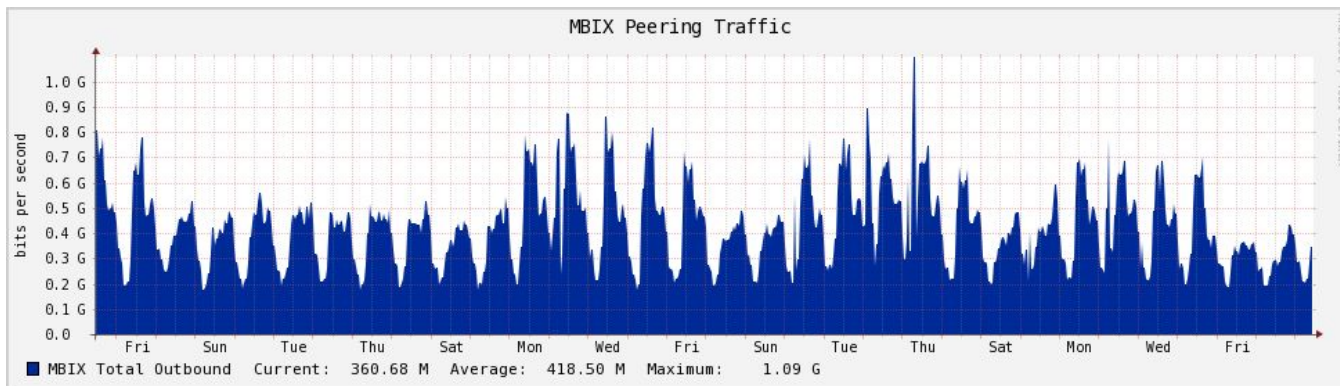
- 4 New Connected Members / Peers
  - Full Throttle
  - Nutrien
  - Hextet Systems
  - Broadband Communications North
- 2 Installing
  - High Speed Crow
  - MERLIN
- 3 New Route Servers
  - New Supermicro Servers at 3 locations
- 1 New Location
  - Expansion to 360 Portage Ave (MHT Datacenter)

# Outages/Incidents in the past year

- New switching hardware migration
  - Additional Nexus 9K @167 Lombard (GSC)
  - Migration to new Nexus 3K @294 Portage (LES.NET)
- New Route Server migration
  - Graceful, no outage
- Power failure incidents at 294 Portage
  - 294P members affected only
  - 3 incidents, 8 hours total outage in 2018

# MBIX By The Numbers

- Connected members: 28 (+5) \*\* Installing members: 2
- Lost members: 1 (Akamai)
- 1 Gb ports: 14
- 10 Gb ports: 21
- Port capacity: 224 Gbps (+32)
- Daily Peak: ~ 1 Gbps (-1)



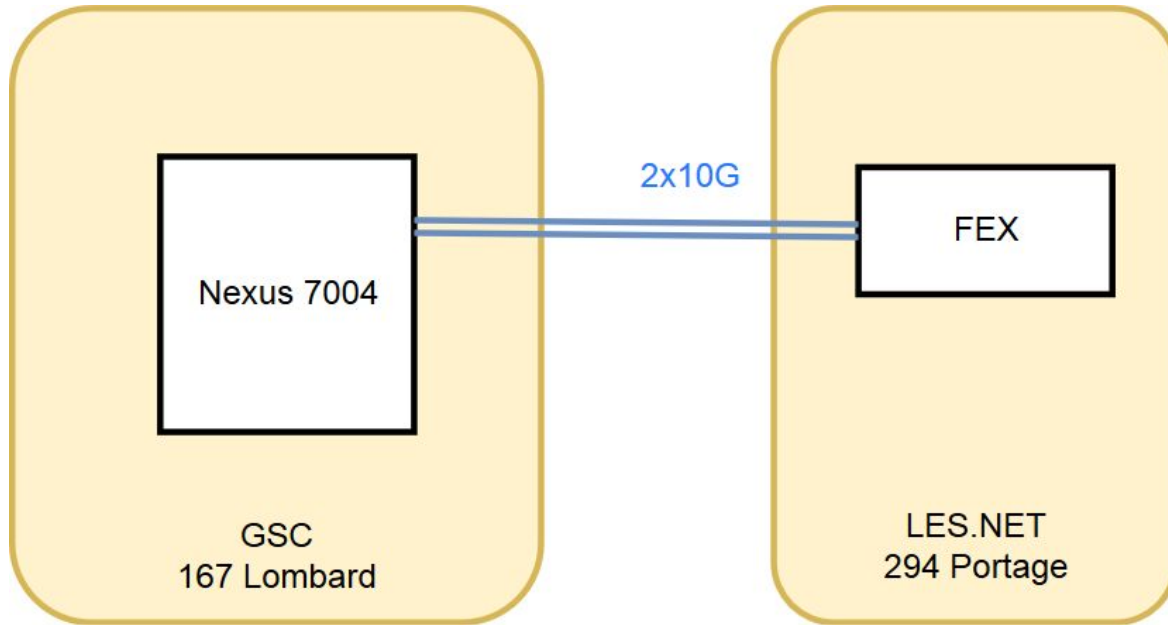
# New Switching Hardware

- New Cisco Nexus 93180YC-EX
  - Donated by CIRA
  - Installed at GSC to replace Nexus 7004 (slow migration)
- Purchased 3 used Cisco Nexus 3064-X
  - Replace Fabric extender (FEX) at 294 Portage
  - New node at 360 Portage (MHT)
  - One warm spare
- 40 G links
  - MBIX received 2 dark fibre pairs to link 3 sites
  - Using 40G LR4 optics between sites

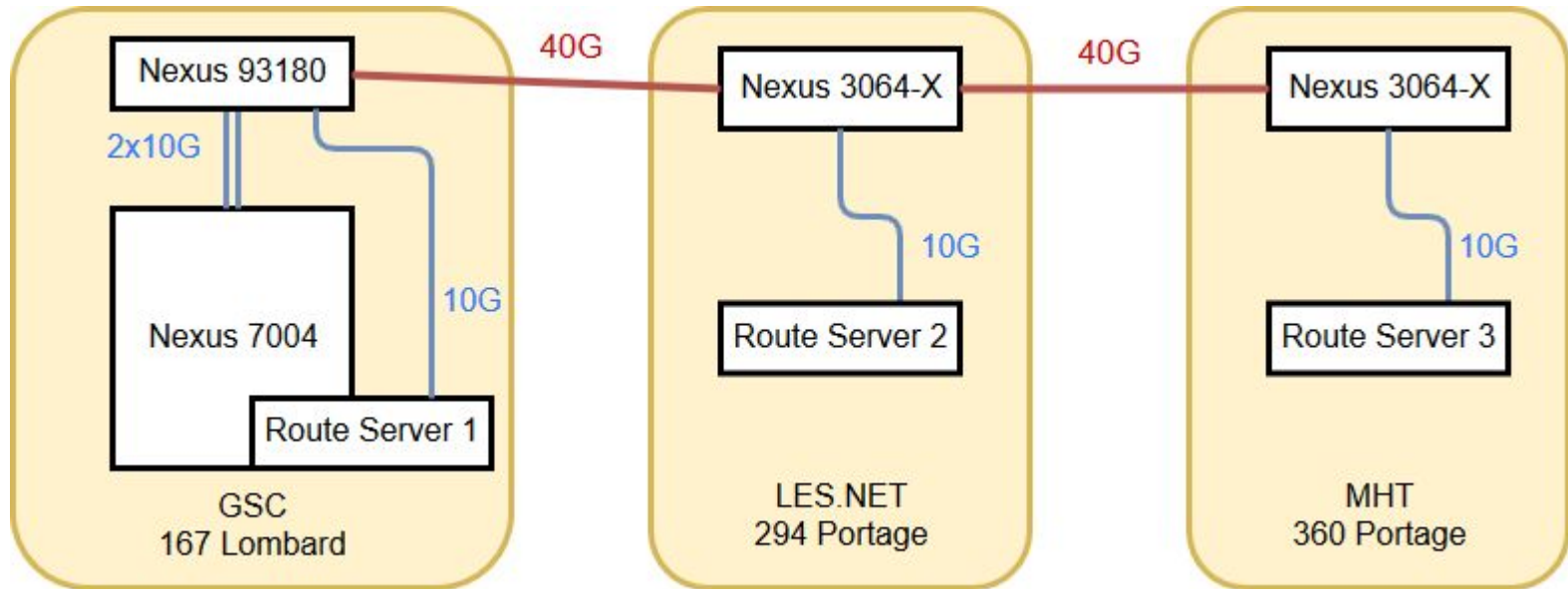
# New Route Servers

- 3 Supermicro AMD 1U servers
  - 2 active, 1 spare
  - 1 at each location
- 10G link into peering fabric
- 'arouteserver' software generates configuration
  - Updates filter lists based on IRR data
  - IRR data found on members PeeringDB entry
  - ARIN-WHOIS data also used
  - lg.mbix.ca - good way to browse the data

# MBIX 1.0 Network (pre-2018)




# MBIX 2.0 Network (2018)





# Use PeeringDB

- Free
- Meet new peers
- Contact peers
- Peering locations



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## MBIX

Organization	<a href="#">Manitoba Internet Exchange Inc.</a>
Long Name	Manitoba Internet Exchange
City	Winnipeg, Manitoba
Country	CA
Continental Region	North America
Media Type	Ethernet
Protocols Supported	<input checked="" type="radio"/> Unicast IPv4 <input type="radio"/> Multicast <input checked="" type="radio"/> IPv6
Notes	Not-for-profit internet exchange. Member-oriented and flexible.  Secure route filtering using IRR data and RPKI ROA.  For prefixes to pass validation peers must maintain IRR route objects, or RPKI ROAs, or ARIN WHOIS OriginAS entries. Peers with downstreams must also maintain IRR as-set objects, and place the as-set name in the peeringdb.com "IRR Record" field. The downstreams must also maintain objects.

### Contact Information

Company Website	<a href="http://www.mbix.ca/">http://www.mbix.ca/</a>
Traffic Stats Website	<a href="http://www.mbix.ca/statistics/">http://www.mbix.ca/statistics/</a>
Technical Email	<a href="mailto:noc@mbix.ca">noc@mbix.ca</a>
Technical Phone	+1 204-666-6349
Policy Email	<a href="mailto:info@mbix.ca">info@mbix.ca</a>
Policy Phone	+1 204-291-3391

### LAN

MTU	9000
DOT1Q	<input type="radio"/>
IPv4	206.72.208.0/24
IPv6	2001:504:26::/64

### Local Facilities

Facility ▼	Country	City
<a href="#">Global Server Center</a>	Canada	Winnipeg
<a href="#">LES.NET YWG2</a>	Canada	Winnipeg
<a href="#">Manitoba Hydro Telecom Data Centre</a>	Canada	Winnipeg

## Peers at this Exchange Point

Peer Name ▼ ASN	IPv4 IPv6	Speed Policy
<hr/>		
<a href="#">Broadband Communications North</a> Public Peering	206.72.208.35 2001:504:26:4:6280:1	10G Open
<hr/>		
<a href="#">Canadian Internet Registration Authority - DNS</a> Public Peering	206.72.208.6 2001:504:26:5:5195:1	1G Open
<hr/>		
<a href="#">Cloudflare</a> Public Peering	206.72.208.31 2001:504:26:1:3335:1	10G Open
<hr/>		
<a href="#">DNS-OARC-112</a> Public Peering	206.72.208.10 112	1G Open
<hr/>		
<a href="#">FASTNET-COMMUNICATIONS</a> Public Peering	206.72.208.30 None	10G Open
<hr/>		
<a href="#">Fiber.CA</a> Public Peering	206.72.208.21 2001:504:26:1:8534:1	1G Open
<hr/>		
<a href="#">HBN!</a> Public Peering	206.72.208.24 31914	1G Open
<hr/>		
<a href="#">Hexlet Systems</a> Public Peering	206.72.208.34 395089	10G Open
<hr/>		
<a href="#">Hurricane Electric</a> Public Peering	206.72.208.13 6939	10G Open
<hr/>		
<a href="#">LES.NET</a> Public Peering	206.72.208.2 18451	10G Open
<hr/>		
<a href="#">LES.NET</a> Public Peering	206.72.208.102 18451	10G Open
<hr/>		
<a href="#">MBIX Route Servers</a> Public Peering	206.72.208.11 2001:504:26:1:6395:11	10G Open
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# Use IRR - Internet Route Registries

MBIX now uses IRR data to verify routes being received by its members. The entire industry is concerned about bad routes being shared--IRR helps.

Despite limitations, IRR is today's best method of route authority.

If you run BGP, you should maintain your own IRR objects.

- MBIX filters peers \*automatically\* using IRR data (No LOAs)
- Use ARIN IRR -- it's free
- Many tools exist to make IRR useful to you

# Questions?

The End



**KEEP  
CALM  
AND  
PEER  
ON**