



# MyIX MyNOG Conference

26 October 2017

Kuala Lumpur





# Who is MyIX

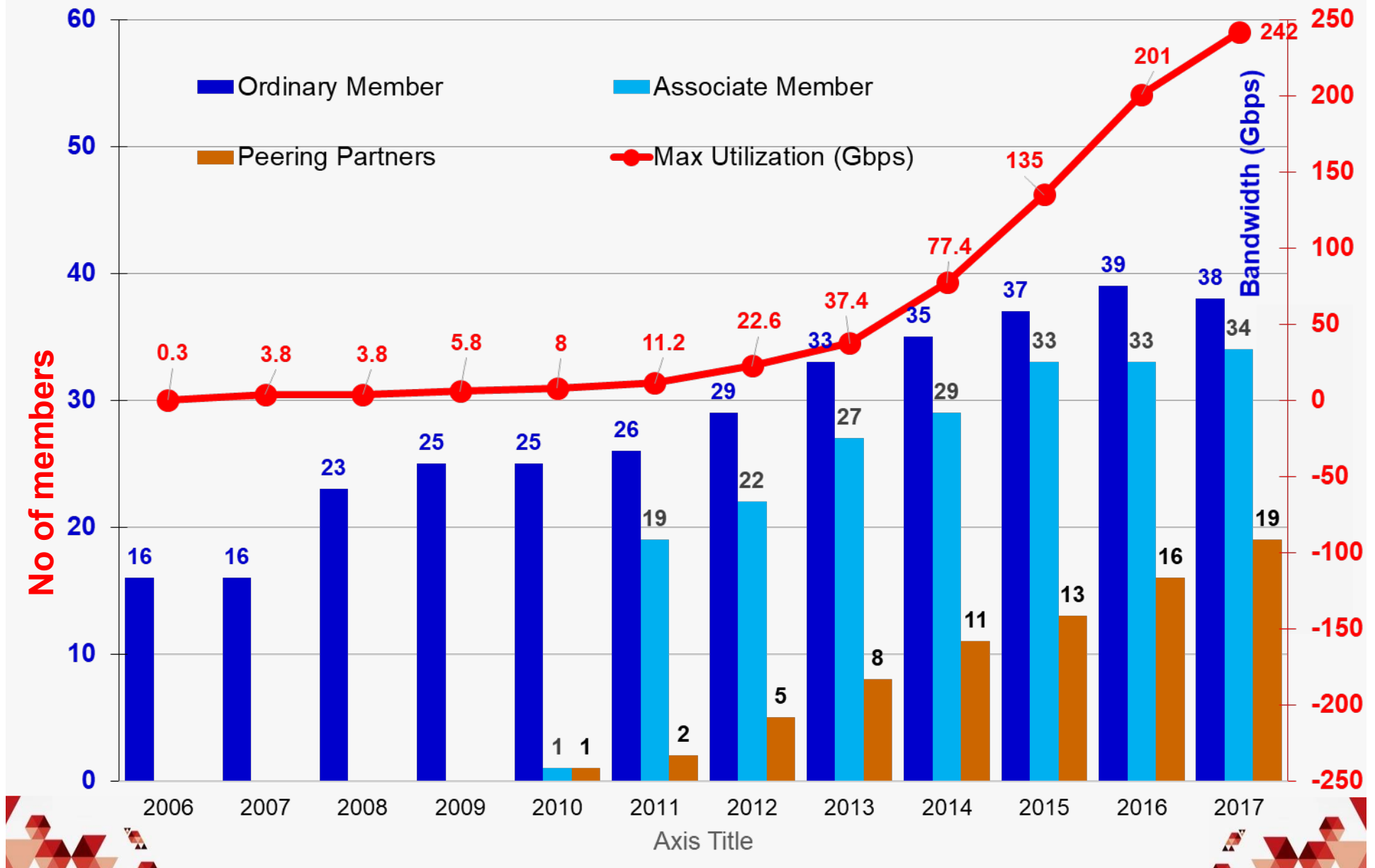


- Malaysia Internet Exchange (MyIX) established in September 2006
- Layer 2, IXP (Internet Exchange Point) where various networks interconnect and exchange traffic with one another
- The only IXP in Malaysia
- Non-profit, operated by the Association of Internet Service Providers in Malaysia
- Funded by Government (2006-2010)
- Support from regulator, MCMC





# Growth in Members & Traffic (Sep 2017)





# MyIX Today



- 77 different networks connected
- 135 physical connections in total
- ~240 Gbps (Max) traffic (Sep 17)
- Support Bilateral Peering Arrangement (BLPA) & Multi-Lateral Peering Arrangement (MLPA) over Layer 2
- Supports both IPv4/IPv6 dual stack
- ~ 4000 IPV4
- ~ 100 IPV6



# MyIX Today



- Entire Malaysian Market is connected (Reported by Cloudflare in TPIX Peering Forum 2017)
- More and more non-MY participants
- We have almost all the top content networks



# Membership

- Ordinary member
  - ◆ Local NSP
  - ◆ ASN
  - ◆ Voting Right
- Associate member
  - ◆ Local company
  - ◆ ASN
  - ◆ Non Voting Member
- Peering partner
  - ◆ ASN





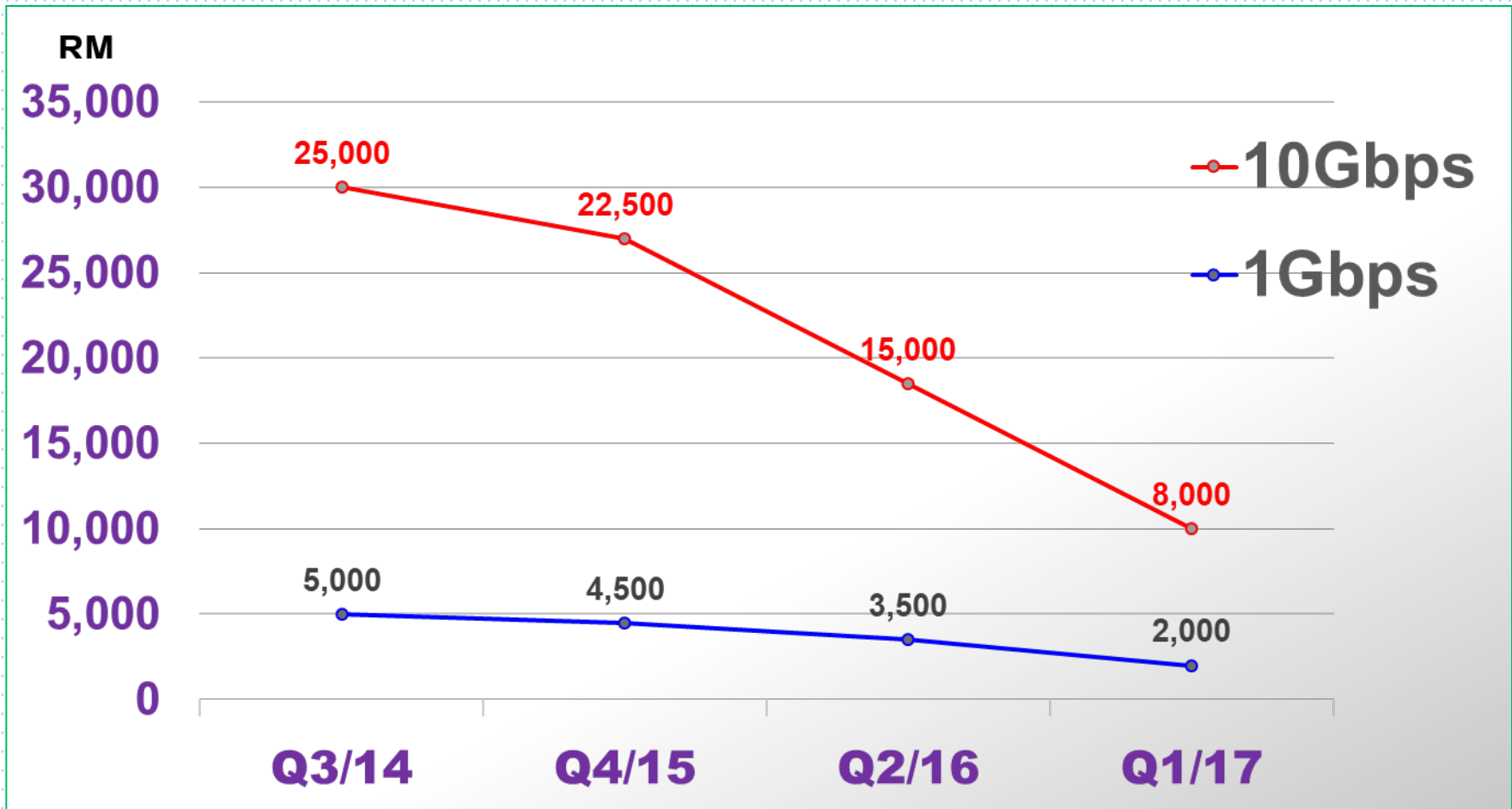
# International Peers

- Google
- Facebook
- Akamai
- MSN
- Amazon
- Biznet
- Cloudflare
- TATA
- Hutchison
- Tencent
- Twitter
- SG GS
- Swiftserve
- ViewQwest
- Telstra
- Pacnet
- Telenor
- Alibaba





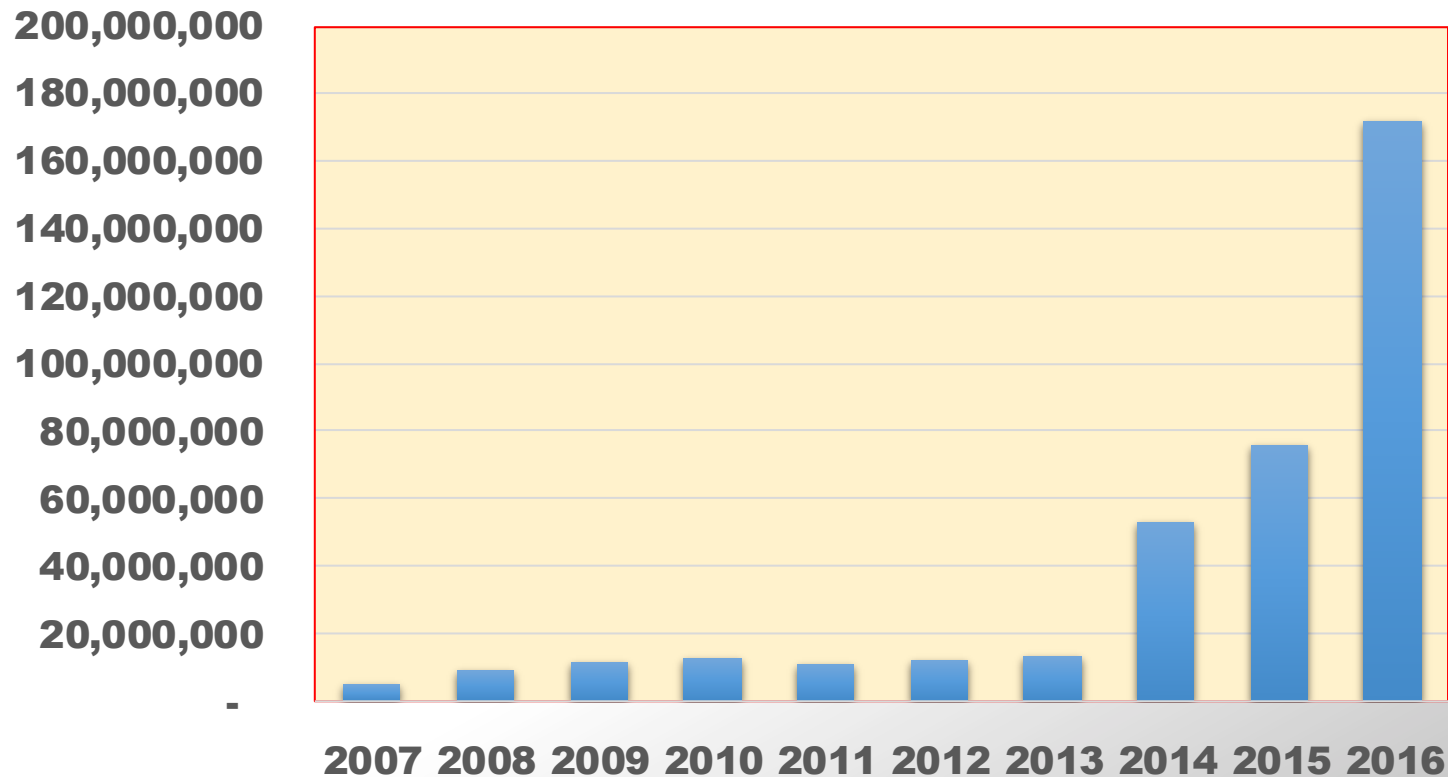
# Port Charges Trend







# Industry's Savings (RM) from IP Transit Services for Domestic Peering



- Median IP transit price (USD), source from Telegeography
- Based on port capacity subscribed by MyIX member
- Estimated savings of > 300 M

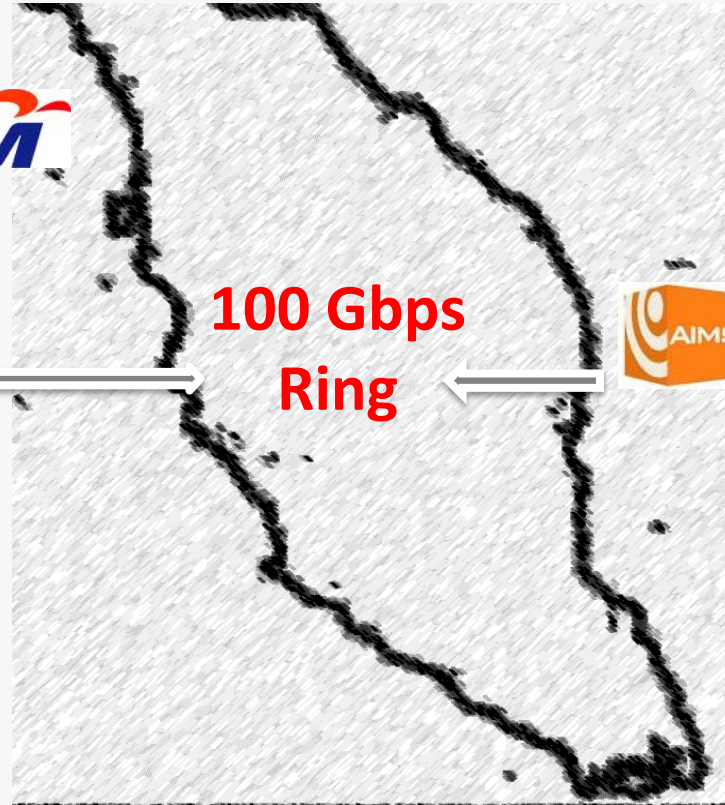




# Peering Nodes (Central)



**CX1**  
Jalan Teknokrat 6  
Cyberjaya , Selangor



**1st Floor, Menara Aik Hua,**  
Cangkat Raja Chulan,  
Kuala Lumpur





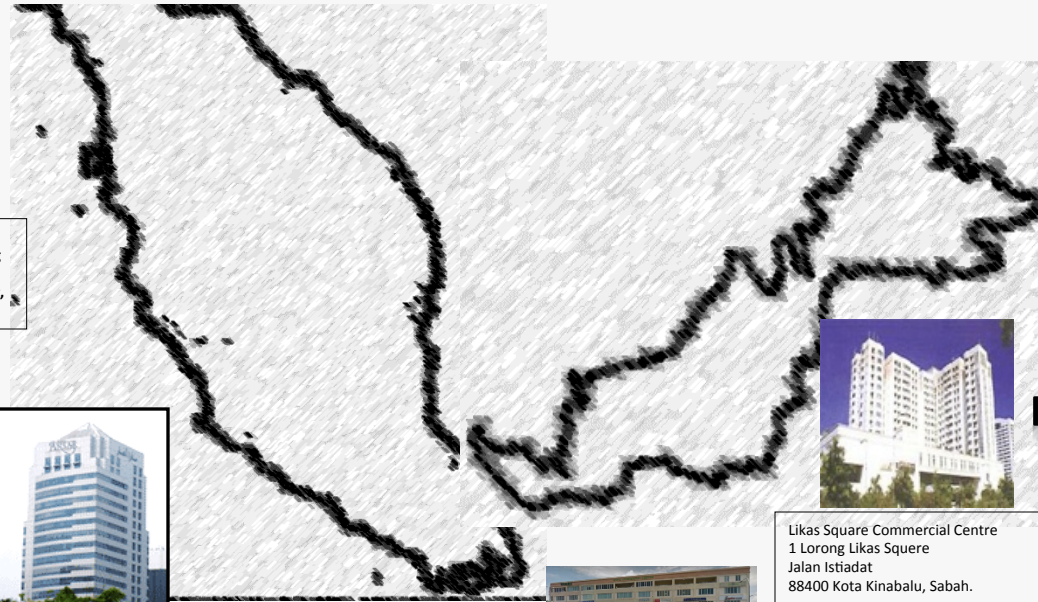
# Peering Nodes (Regional)



## PENANG



Level 2,  
Menara Suntech @ Penang  
Cybercity,  
Jalan Lintang Mayang Pasir,  
11950 Penang



Level 7, Menara Ansar,  
65 Jalan Trus,  
80000 Johor Bahru,  
Johor

## JOHOR



Sublot 5, Ground Floor,  
Setia Commercial Centre  
Jalan Setia Raja  
93350 Kuching, Sarawak



Likas Square Commercial Centre  
1 Lorong Likas Square  
Jalan Istiadat  
88400 Kota Kinabalu, Sabah.

## KOTA KINABALU

## KUCHING



# Value Added Services



- Looking Glass, F-Root, I-Root DNS, PCH
- Route Server (Bird, Version 1.6.3)
  - ✓ Support BGP Community
  - ✓ Blackholing
- Training in collaboration with APNIC
- New Portal for members/peers
  - ✓ List of peering member info (IP, ASN, NOC contact)
  - ✓ View port utilization
  - ✓ View peering traffic (Top inbound/outbound)
  - ✓ View historical utilization
  - ✓ Prefixes Management



# Peer Listing



LOGGED IN AS: BIZNET

## Member Listing

[Download as CSV](#)

[Dashboard](#) > [Member Listing](#)

[Top Inbound By Members](#)

[Top Outbound By Members](#)

[Traffic History](#)

**Member Listing**

[Route Server](#)

[Edit Account Details](#)

[Change Password](#)

[Logout](#)

Show  entries

Search:

Member Name	ASN	IPv4	IPv6	NOC Contact	NOC Email	Technical Name	Technical Email
Digi Telecommunications Sdn Bhd	• 4818	• 218.100.44.70	• 2001:DE8:10::6	+60357213000	tociscip@digicom.my	Peering	peering-support@d
Extreme Broadband Sdn Bhd	• 38182	• 218.100.44.72	• 2001:DE8:10::8	0193885753	noc@extremebb.net	Dominic Guan	dominic@extremeb
	• 38182	• 218.100.44.140	• 2001:DE8:10::3F				
REDtone Engineering and Network Services Sdn Bhd	• 24028	• 218.100.44.76	• 2001:DE8:10::B	1800 87 7790	noc.broadband@redtone.com	Core Network	peering@redtone.c
MyKRIS Asia Sdn Bhd	• 23678	• 218.100.44.79	• 2001:DE8:10::E	03-5891 9740	noc@mykris.net	Network Operation Centre	noc@mykris.net
	• 45121	• 218.100.44.114	• 2001:DE8:10::2D				
	• 23678	• 218.100.44.156	• 2001:DE8:10::56				
	• 24321	• 218.100.44.208	• 2001:DE8:10::A1				
	• 45121	• 218.100.44.212	• 2001:DE8:10::A6				
	• 23678	• 218.100.44.175	• 2001:DE8:10::76				



# Port Utilization



LOGGED IN AS: BIZNET

[Top Inbound By Members](#)

[Top Outbound By Members](#)

[Traffic History](#)

[Member Listing](#)

[Route Server](#)

[Edit Account Details](#)

[Change Password](#)

[Logout](#)

## Members

Dashboard > Traffic History

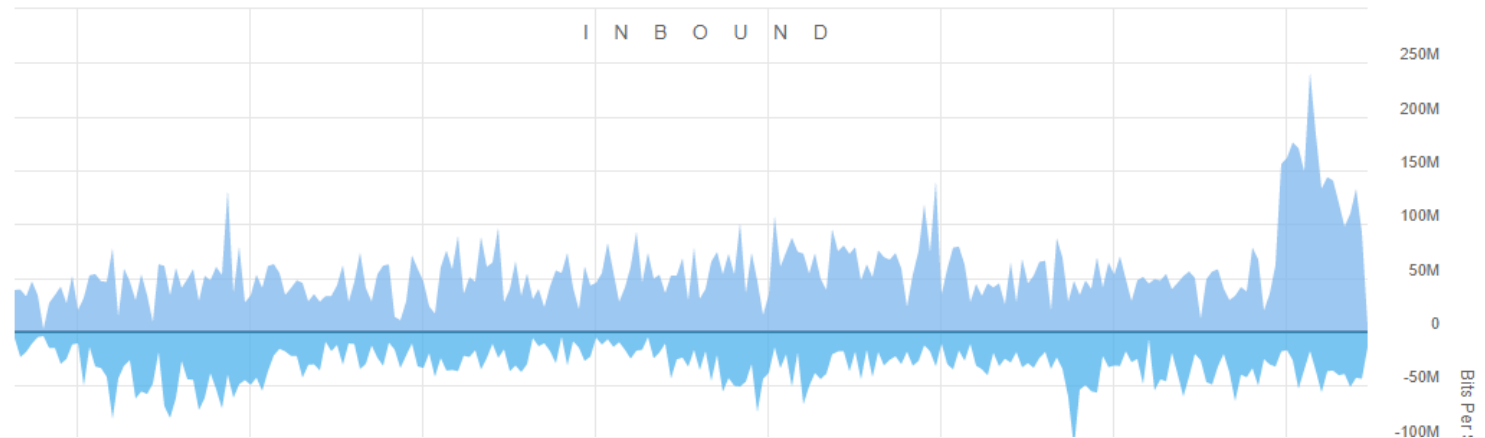
Port

### Traffic History - 2017-10-21 07:19 ~ 2017-10-21 11:14

Peering Port: 218.100.44.119

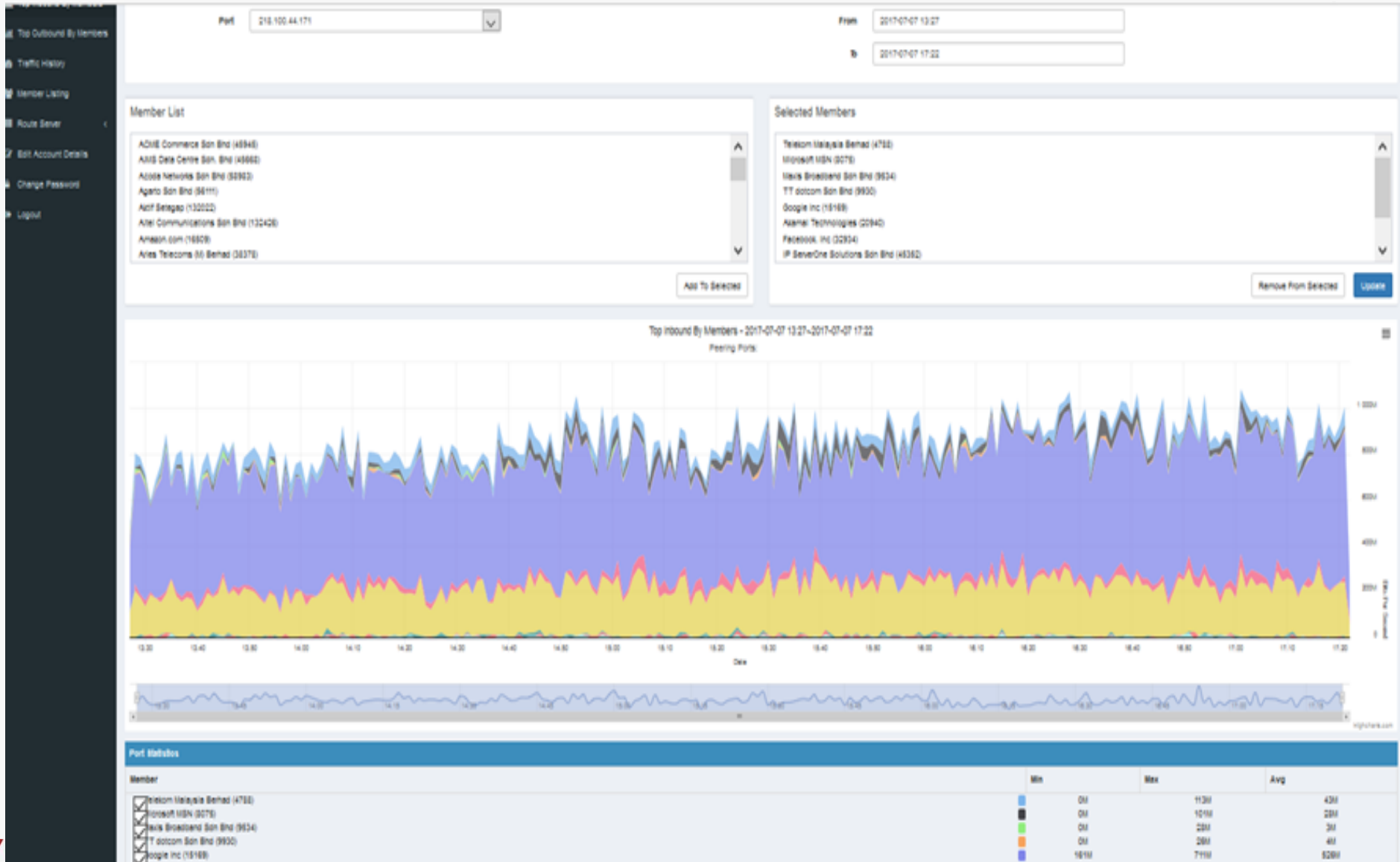
Zoom

From  To





# Top Inbound/Outbound Traffic





# View Prefixes



## Manual Entry or AS Set (from route registry)

Browser address bar: <https://202.76.234.4/members/prefixes>

MyIX

LOGGED IN AS: OHANA

- Top Inbound By Members
- Top Outbound By Members
- Traffic History
- Member Listing
- Route Server
- Active Prefixes**
- Prefix Update
- Edit Account Details
- Change Password
- Logout

### Active Prefixes

Dashboard > Active Prefixes

Show 10 entries

Search:

Prefix	Port	RS 1	RS 2	Date Added
43.252.216.0/22	218.100.44.171	YES	YES	2017-07-02 07:30:48
43.228.200.0/22	218.100.44.171	YES	YES	2017-07-02 07:30:48
2400:6e80::/32	218.100.44.171	YES	YES	2017-07-02 07:30:48
103.26.248.0/22	218.100.44.171	YES	YES	2017-07-02 07:30:48
103.22.160.0/22	218.100.44.171	YES	YES	2017-07-02 07:30:48
103.12.140.0/22	218.100.44.171	YES	YES	2017-07-02 07:30:48

Showing 1 to 6 of 6 entries

Previous 1 Next

[Add Prefixes](#) [Delete Prefixes](#)





# Prefix Addition, Deletion Request



- Select port, key in prefixes. New prefix will be active upon validation and approval

The screenshot shows the MyIX web interface for a Prefix Addition Request. The page title is "Prefix Addition Request" and the user is logged in as "OHANA". The left sidebar contains navigation options: Top Inbound By Members, Top Outbound By Members, Traffic History, Member Listing, Route Server, Active Prefixes, Prefix Update (with sub-options: Addition, Deletion, History), Edit Account Details, and Change Password. The main content area is titled "Prefixes to be added" and includes a "Port" dropdown menu, a "Type" section with radio buttons for IPv4 (selected) and IPv6, and a large text area for "Line-separated prefixes". A "Submit Request" button is located at the bottom right of the form.



# BGP Community



Function list:

xxxxY:YYYYY

55822:55822 => announce to everyone [ default ]

65000:55822 => announce to none

65500:12345 => don't announce to AS12345

65502:12345 => don't announce to AS134190

6511y:yyyyy => prepend one time

6512y:yyyyy => prepend two time

6513y:yyyyy => prepend three time

55822:666 => blackhole this IP. only /32





# BGP Community



- Example:

```
#####
Default Open (Announce to All)  55822:55822
#####
```

```
#####
Default Open Except AS12345  55822:55822  65500:12345
#####
```

```
#####
Default Open Except AS134190  55822:55822  65502:3118
#####
```

```
#####
Default Closed (Announce to None)  65000:55822
#####
```

```
#####
```





# BGP Community



- ```
#####
Include AS55822 in BGP ath to all participants
#####
Prepend 1x to AS12345 65110:55822
Prepend 2x to AS12345 65120:55822
Prepend 3x to AS12345 65130:55822

#####
AS-PATH prepend for AS12345
#####
=====
2 Bytes ASN
=====
Prepend 1x to AS12345 65110:12345
Prepend 2x to AS12345 65120:12345
Prepend 3x to AS12345 65130:12345

#####
AS-PATH prepend for AS134190
#####
Prepend 1x to AS134190 65112:3118
Prepend 2x to AS134190 65122:3118
Prepend 3x to AS134190 65132:3118
```





# BGP Community



- As BGP community will only work for 2 bytes ASN
- Some MyIX members is using 4 bytes ASN
- Here is how we do the workaround.

We use 1 byte at the high-bit, and make the entire ASN supported range from 16 bit to 24 bit.

If the members ASN is: 134190, here is what will be used in the BGP community string

Calculation formula:

$$134190 = 2 \times 65536 + 3118 : \text{xxxx2:3118}$$

$$131311 = 2 \times 65536 + 239 : \text{xxxx2:239}$$

=====

for now, we can only support up to ASN: < 654335 only ( 24 bit ) ]

if we happened to have members that more than this number,  
then we will need to use extended community

=====



# Stopping DDoS at IXP

- A network suffering from DDoS attack can trigger a blackhole route to the attacked IP and save their network
- Configure BGP community to block the IP
- Route Server will drop the data by redirect IP to a null server



# On Going & Moving Forward



- Collaborate with APNIC for more training & other services
- Review peering policy & port charges to attract International & Regional players
- Peering Forum/Conference to bring experts to share knowledge related to industry
- Invite more content providers
- Value added services ie tools & reporting



**Thank You !**

**For enquiries, please contact us at  
[peering@myix.my](mailto:peering@myix.my)**

