

# OpenBMP

## Project Overview

**GROW WG / IETF/Chicago**  
**2017.03.27**

**Randy Bush <randy@psg.com>**

**Serpil Bayraktar <serpil@cisco.com>**

**Tim Evens <tievens@cisco.com>**

# In a Nutshell

- Think Route Views / RIS for BMP
- Add a web-based sexy GUI
- With very cool analysis tools

# Just Some Examples

# A Tasting Menu

OBMP

Dashboards

Global View

Peer View

Tops

AS View

Link State View

Whois

Looking Glass

Analysis

AS Analysis

Prefix Analysis

Aggregation Analysis

Security Analysis

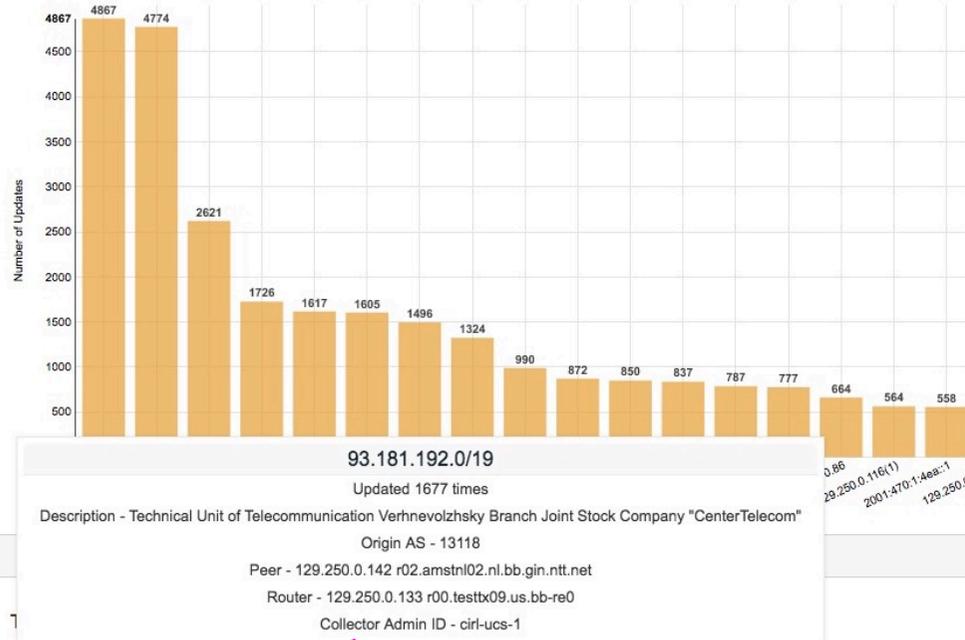
BGP Peer r0.sea.rg.net

## ROUTER - PEER DIAGRAM

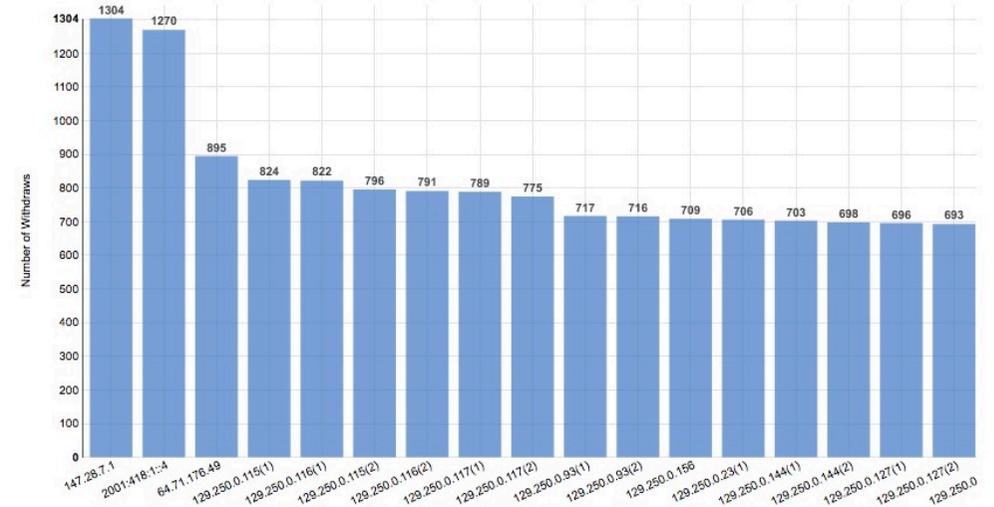


# Noisiest Prefixes

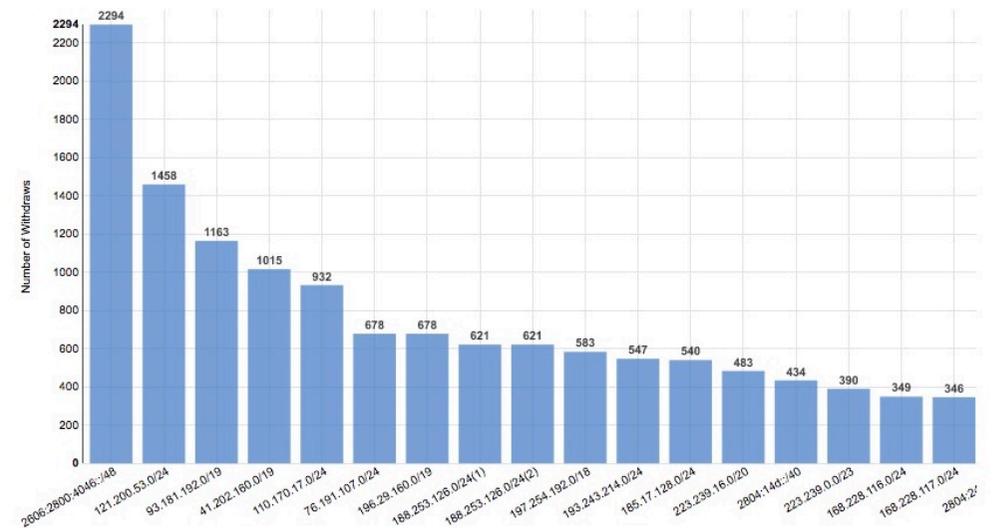
Top 20 Peers By Number of Updates



Top 20 Peers By Number of Withdraws



Top 20 Prefixes By Number of Withdraws



# History of That Prefix

RouterName	NH	AS_Path	Peer_ASN	MED	Communities	Last_Modified
r16.testtx09.us.bb	129.250.8.174	6453 4755 45820 45820 45284	65000	42949...	2914:1201 2914:2202 2914:3200 65504:6453	2017-02-10 18:41:57.1680...
r16.testtx09.us.bb	129.250.66.130	6453 4755 45820 45820 45284	65000	42949...	2914:1204 2914:2205 2914:3200 65504:6453	2017-02-10 18:41:57.1670...
r16.testtx09.us.bb	129.250.8.2	6453 4755 45820 45820 45284	65000	42949...	2914:1205 2914:2204 2914:3200 65504:6453	2017-02-10 18:41:57.1620...
r16.testtx09.us.bb	80.231.60.122	6453 4755 45820 45820 45284	65000	42949...	2914:1203 2914:2201 2914:3200 65504:6453	2017-02-10 18:41:57.1580...
xrv-peering	4.68.1.197	3356 6453 4755 45820 45820 45284	3356	0	3356:22 3356:86 3356:575 3356:666 3356:2006 6453:6000	2017-02-10 18:41:57.1490...
route-views.rout...	4.69.184.193	3356 6453 4755 45820 45820 45284	3356	0	3356:22 3356:86 3356:575 3356:666 3356:2012 6453:1000	2017-02-10 18:41:57.1330...
r16.testtx09.us.bb	129.250.9.114	6453 4755 45820 45820 45284	65000	42949...	2914:1009 2914:2000 2914:3000 65504:6453	2017-02-10 18:41:57.1200...
r16.testtx09.us.bb	64.86.252.133	6453 4755 45820 45820 45284	65000	42949...	2914:1005 2914:2000 2914:3000 65504:6453	2017-02-10 18:41:57.1000...
r16.testtx09.us.bb	216.6.87.157	6453 4755 45820 45820 45284	65000	42949...	2914:1001 2914:2000 2914:3000 65504:6453	2017-02-10 18:41:57.0810...
r16.testtx09.us.bb	209.58.116.21	6453 4755 45820 45820 45284	65000	42949...	2914:1008 2914:2000 2914:3000 65504:6453	2017-02-10 18:41:57.0640...
r16.testtx09.us.bb	64.86.8.20	6453 4755 45820 45820 45284	65000	42949...	2914:1002 2914:2000 2914:3000 65504:6453	2017-02-10 18:41:57.0570...

TOTAL ITEMS: 100

<p>+3356 +3356:22 +3356:86 +3356:576 +3356:666 +3356:2052 +6453:6000 +6453:6200 +6453:6202 <del>-2914:1212</del> <del>-2914:2212</del> <del>-2914:3200</del> <del>-65504:6453</del></p>	<p>AS Path: 3356 6453 4755 45820 45284 Communities: 3356:22 3356:86 3356:576 3356:666 3356:2052 6453:6000 6453:6200 6453:6202 02/10/2017 18:41:58.049</p>
<p>+2914:1212 +2914:2212 +2914:3200 <del>-2914:1007</del> <del>-2914:2000</del> <del>-2914:3000</del></p>	<p>AS Path: 6453 4755 45820 45820 45284 Communities: 2914:1212 2914:2212 2914:3200 65504:6453 02/10/2017 18:41:57.406</p>
<p><del>-3356</del></p>	<p>AS Path: 6453 4755 45820 45820 45284 <b>dupe!</b> Communities: 2914:1007 2914:2000 2914:3000 65504:6453 02/10/2017 18:41:57.291</p>
<p>+2914:1007 +2914:2000 +2914:3000 +65504:6453 <del>-3356:22</del> <del>-3356:86</del> <del>-3356:575</del> <del>-3356:666</del> <del>-3356:2042</del> <del>-6453:6000</del> <del>-6453:6100</del> <del>-6453:6101</del></p>	<p>AS Path: 6453 4755 45820 45820 45284 Communities: 2914:1007 2914:2000 2914:3000 65504:6453 02/10/2017 18:41:57.288</p>
<p>+3356:2042 <del>-3356:2043</del></p>	<p>AS Path: 3356 6453 4755 45820 45820 45284 Communities: 3356:22 3356:86 3356:575 3356:666 3356:2042 6453:6000 6453:6100 6453:6101 02/10/2017 18:41:57.209</p>
<p>+3356:2043 <del>-3356:2006</del></p>	<p>AS Path: 3356 6453 4755 45820 45820 45284 Communities: 3356:22 3356:86 3356:575 3356:666 3356:2043 6453:6000 6453:6100 6453:6101</p>

- Every Change
- And What Changed

# A Peering Link

⌵  BGP Peer r0.sea.rg.net 2001:418:1::4 3130 Up Time 14 Days, 14h9m  X

## ROUTER - PEER DIAGRAM



## NUMBER OF PREFIXES

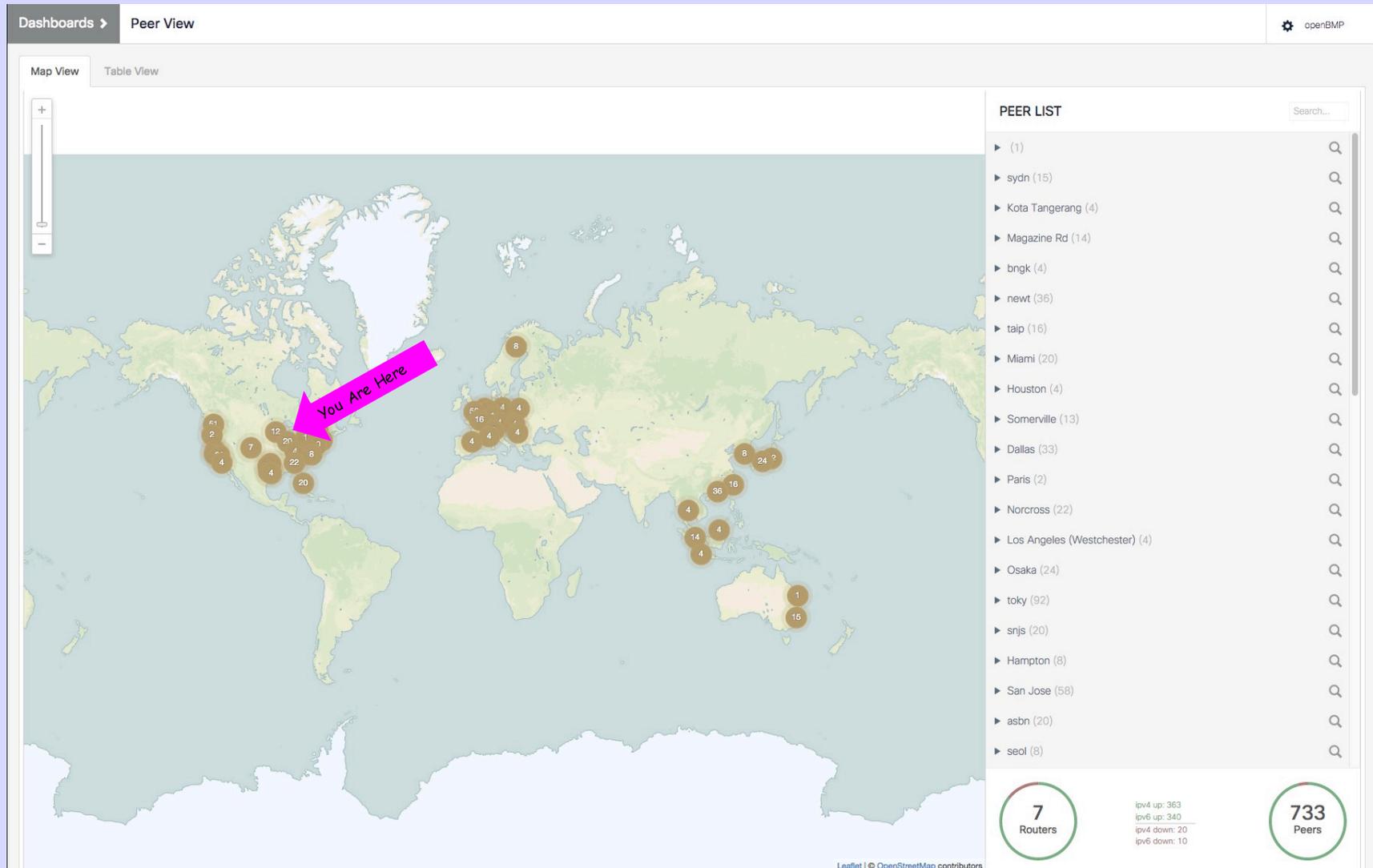
 17932  4011 Filter Rate

Pre Rib Post Rib 77.63%

## LOCATION INFORMATION

Type	Peer
Location	Seattle
State	Washington
Country	United States

# And, Of Course, the Mandatory World Map 😊



# IOS XE 3.12.0/15.4.2 (or greater)

```
router bgp <nnnn>
  bmp server 1
    address 10.20.254.245 port-number 5000
    description "BMP Server - primary"
    initial-delay 10
    failure-retry-delay 120
    flapping-delay 120
    stats-reporting-period 300
    update-source GigabitEthernet1
    activate
  exit-bmp-server-mode
  !
  bmp buffer-size 100
  !
  neighbor <ip/group> bmp-activate all
  neighbor ...
```

# IOS XR 5.2.2 (or greater)

```
router bgp <nnnn>
!
neighbor <d.d.d.d>
  bmp-activate server 1
  ...
!
!
!
bmp server 1
  host 10.20.254.245 port 5000
  description BMP Server - primary
  update-source GigabitEthernet0/0/0/0
  initial-delay 60
  initial-refresh delay 60 spread {number of peers * 2}
  stats-reporting-period 300
```

# JunOS 13.3 (or greater)

```
routing-options {
  bmp {
    station BMPServer1 {
      initiation-message "Development/LAB";
      local-address 172.20.160.24;
      connection-mode active;
      monitor enable;
      route-monitoring {
        pre-policy;
        post-policy;
      }
      station-address 10.20.254.245;
      station-port 5000;
      statistics-timeout 300;
    }
  }
}
```

# mrt2bmp

- Converts mrt data, such as Route Views and RIS to OpenBMP
- Yes, it only gives the best path view
- But it makes backward compatibility possible.
- You can inject traditional dumps into openBMP
- For longitudinal analysis it may be good to have the old data parsable using the same tools

So why are we here?

# The Glass is Dirty



# Feedback Please

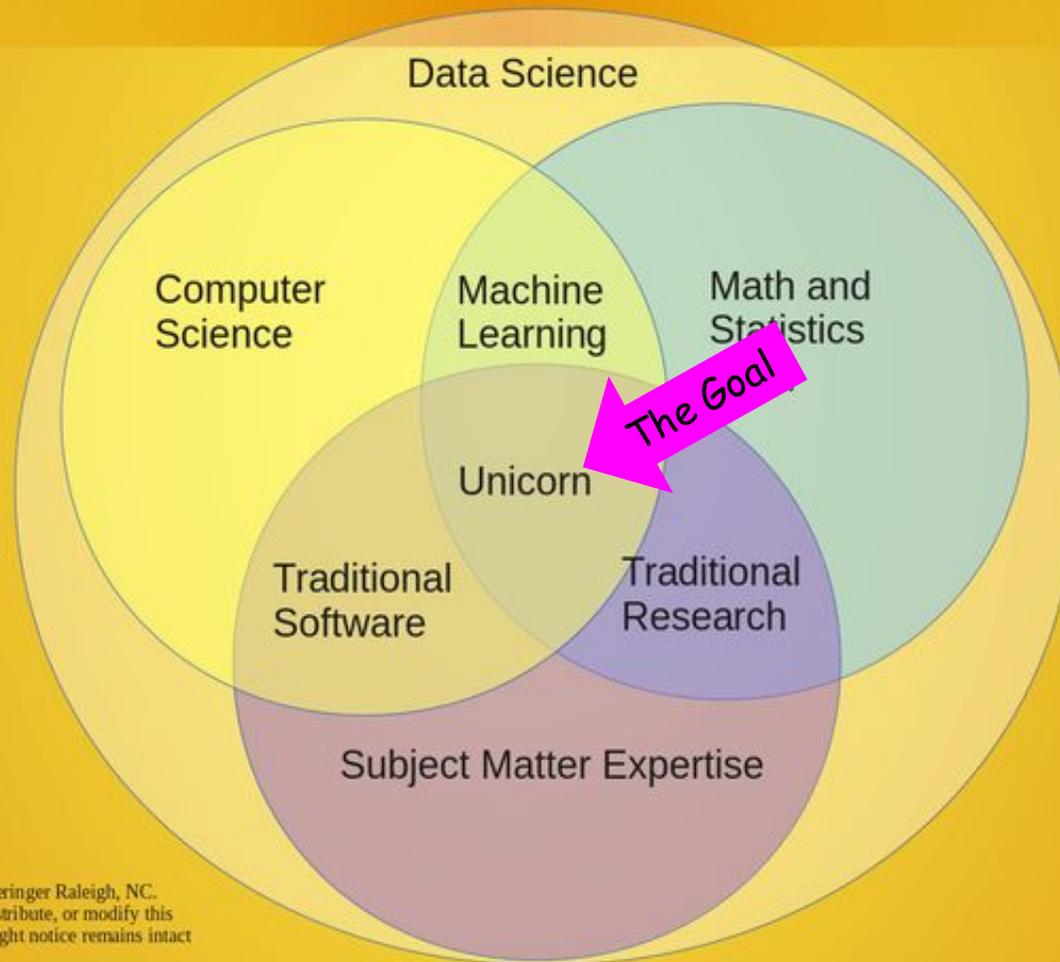
## Play with Demo in Bar BoF

Can we save a lot of future  
pain by doing the equivalent  
of draft-ymbk-grow-bgp-  
collector-communities BEFORE  
collection starts to scale

Are current BMP specs  
and implementations  
what we want?

# We Want Moar Dataz!

## Data Science Venn Diagram v2.0



Copyright © 2014 by Steven Geringer Raleigh, NC.  
Permission is granted to use, distribute, or modify this  
image, provided that this copyright notice remains intact

# Some Referneces

Project Overview

<https://openbmp.org/>

Running your own service from RouteViews data:

[https://github.com/OpenBMP/openbmp/blob/master/docs/GETTING\\_STARTED.md](https://github.com/OpenBMP/openbmp/blob/master/docs/GETTING_STARTED.md)



“We’d now like to open the floor to shorter speeches disguised as questions.”