



# AS Rank

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# Background and Motivation

- CAIDA's ranking of ASes available [1] provides:
  - AS relationships
  - AS Organization
  - AS Classification
- Data sources
  - BGP route collectors (RouteViews, RIPE)
  - traceroute (Ark data)
  - Whois
- Run at a monthly basis

[1] CAIDA, AS Rank: AS Ranking, <http://as-rank.caida.org>.



# Objectives

- Update the AS-rank system to be automatically populated with fresh data
- Add a prefix “customer cone feature”
- Design a MySQL DB and populate it with the outputs obtained from 1998 (Storage)
- Generate web visualizations (Backend + Web frontend)



# Method

BGP route collectors data  
download + Script execution at a  
monthly basis



(BGP Streaming + AS Rank  
Script) Parallelized run at  
a daily basis

Name	Last modified	Size	Description
<a href="#">Parent Directory</a>		-	
<a href="#">2013-asrank-data-extra/</a>	09-Dec-2013 10:01	-	
<a href="#">README.txt</a>	12-Jan-2016 16:26	2.0K	
<a href="#">caida-aua.pdf</a>	27-Jan-2016 16:12	12K	Acceptable Use Agreement
<a href="#">serial-1/</a>	12-Jan-2016 14:45	-	
<a href="#">serial-2/</a>	14-Jan-2016 15:19	-	

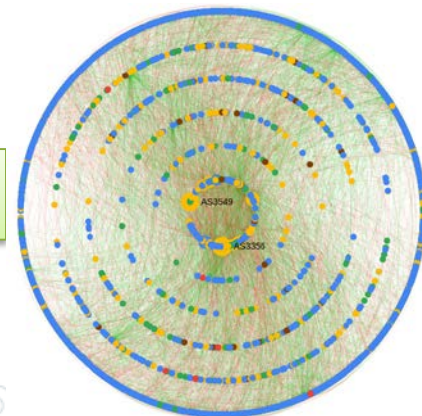


Tables_in_ASRank
ASInfo
ASRelationships
BGPView
CustomerCone
CustomerConeSize
CustomerPrefixCone
PrefixGeo
prefixcone

<a href="#">Parent Directory</a>		-
<a href="#">19980101.as-rel.txt.gz</a>	20-Aug-2013 14:38	19K
<a href="#">19980101.ppdcc-ases.txt.gz</a>	20-Aug-2013 14:38	31K
<a href="#">19980201.as-rel.txt.gz</a>	20-Aug-2013 14:38	20K
<a href="#">19980201.ppdcc-ases.txt.gz</a>	20-Aug-2013 14:38	33K
<a href="#">19980301.as-rel.txt.gz</a>	20-Aug-2013 14:38	20K
<a href="#">19980301.ppdcc-ases.txt.gz</a>	20-Aug-2013 14:38	34K



Backend +



# Our Results

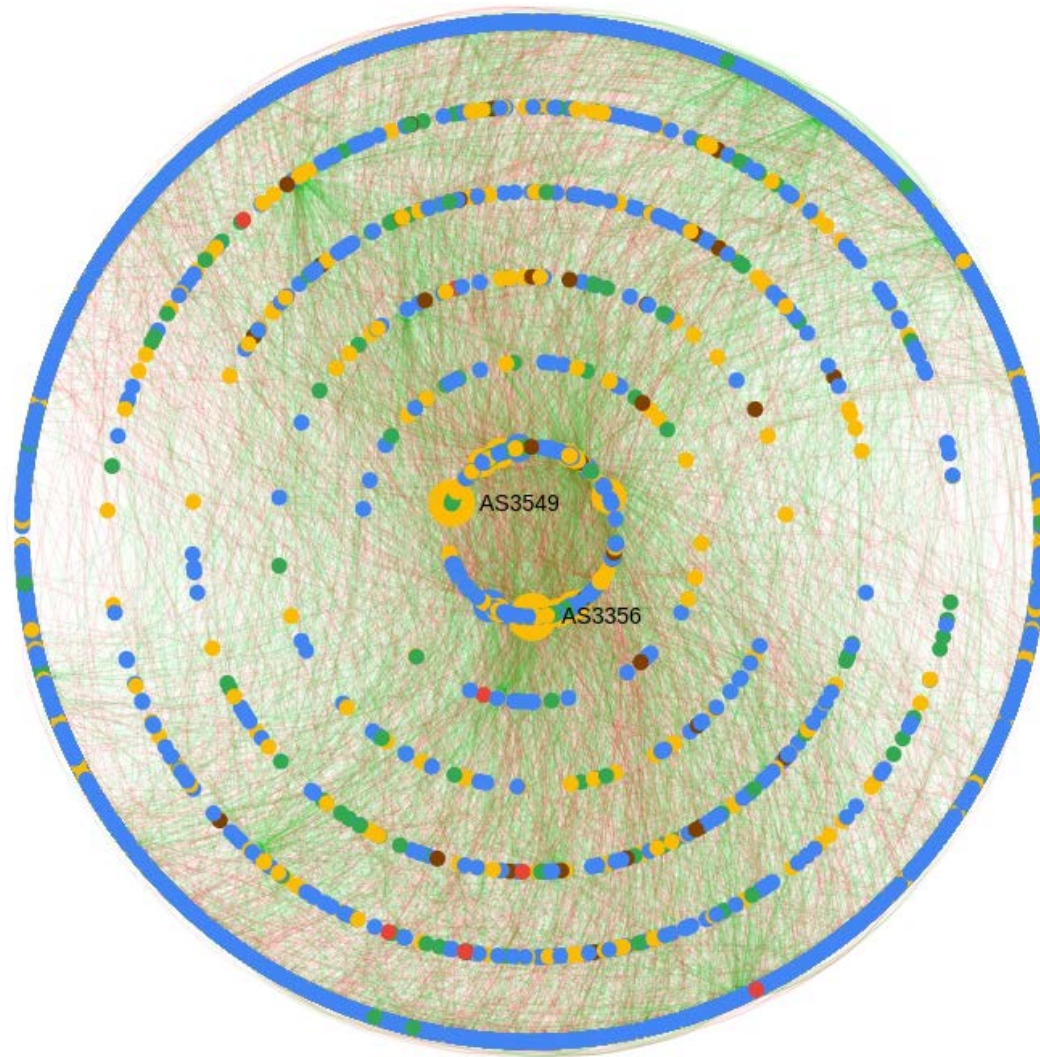
- With BGP Stream
  - Now can be run every day
- Data Storage (e.g. AS Relationships table structure)

```
mysql> describe ASRelationships;
```

Field	Type	Null	Key	Default	Extra
id	bigint(20) unsigned	NO	UNI	NULL	auto_increment
IPversion	int(11)	NO	PRI	NULL	
AS1	int(11)	NO	PRI	NULL	
AS2	int(11)	NO	PRI	NULL	
startdate	int(20)	NO	PRI	0	
enddate	int(20)	YES		NULL	
relation	int(11)	YES		NULL	

# AS topology (2009/01/01)




- Ripencc
- Afrinic
- Arin
- Apnic
- Lacnic
- Peering
- Transit





# Top 20 ASes, Customer Cone Size & prefixes (2015/01/01)

Search:

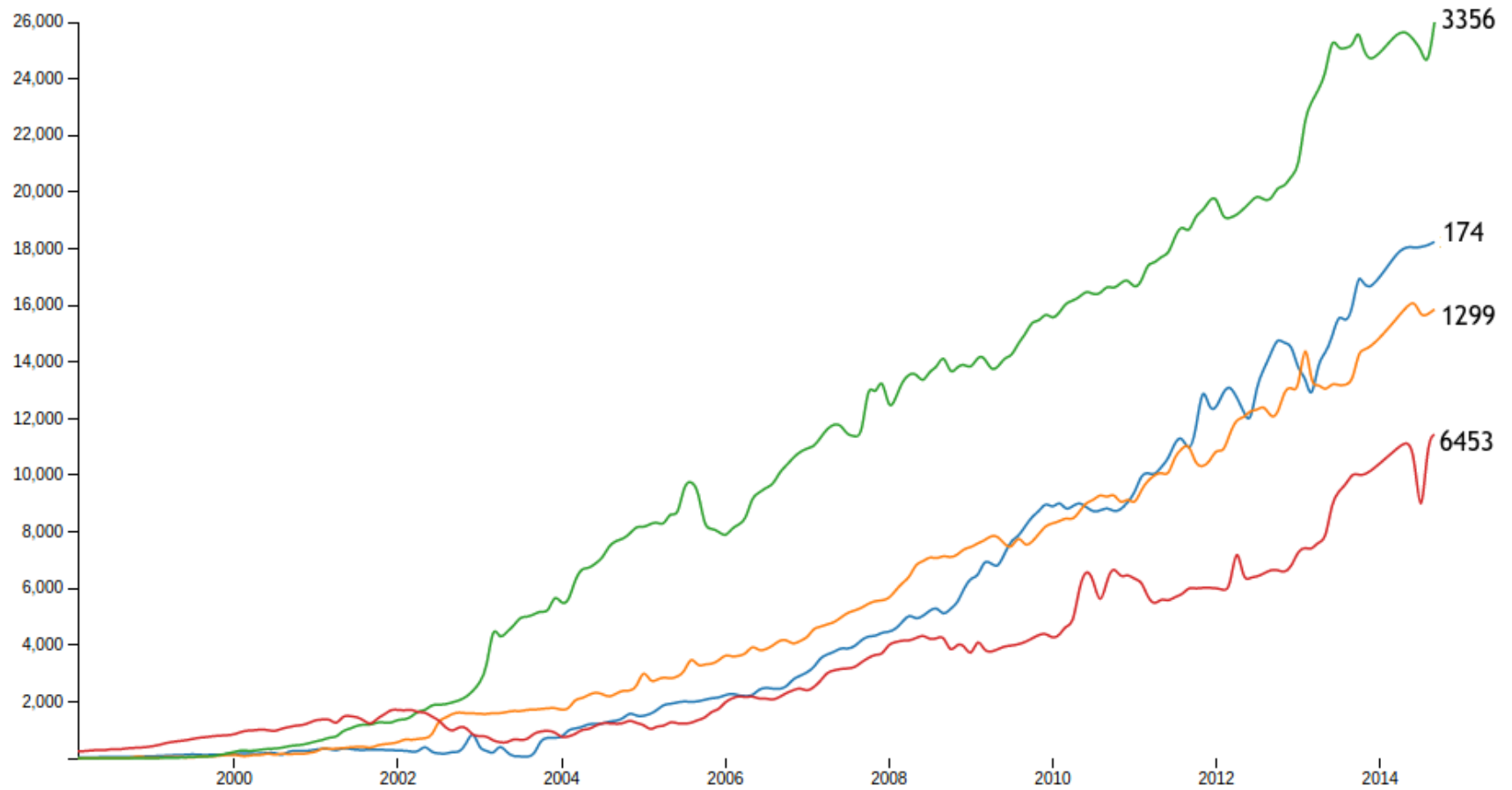
AS Number 	Org. Name 	Size of CC 
3356	LEVEL3 - Level 3 Communications, Inc.,US	26011
174	COGENT-174 - Cogent Communications,US	17794
1299	TELIANET TeliaSonera AB,SE	16147
2914	NTT-COMMUNICATIONS-2914 - NTT America, Inc.,US	15174
3257	TINET-BACKBONE Tinet SpA,DE	14892
6453	AS6453 - TATA COMMUNICATIONS (AMERICA) INC,US	9669
6762	SEABONE-NET TELECOM ITALIA SPARKLE S.p.A.,IT	9042
6939	HURRICANE - Hurricane Electric, Inc.,US	7076
3549	LVL3-3549 - Level 3 Communications, Inc.,US	6403
2828	XO-AS15 - XO Communications,US	6245

Showing 1 to 10 of 20 entries

Previous **1** 2 Next

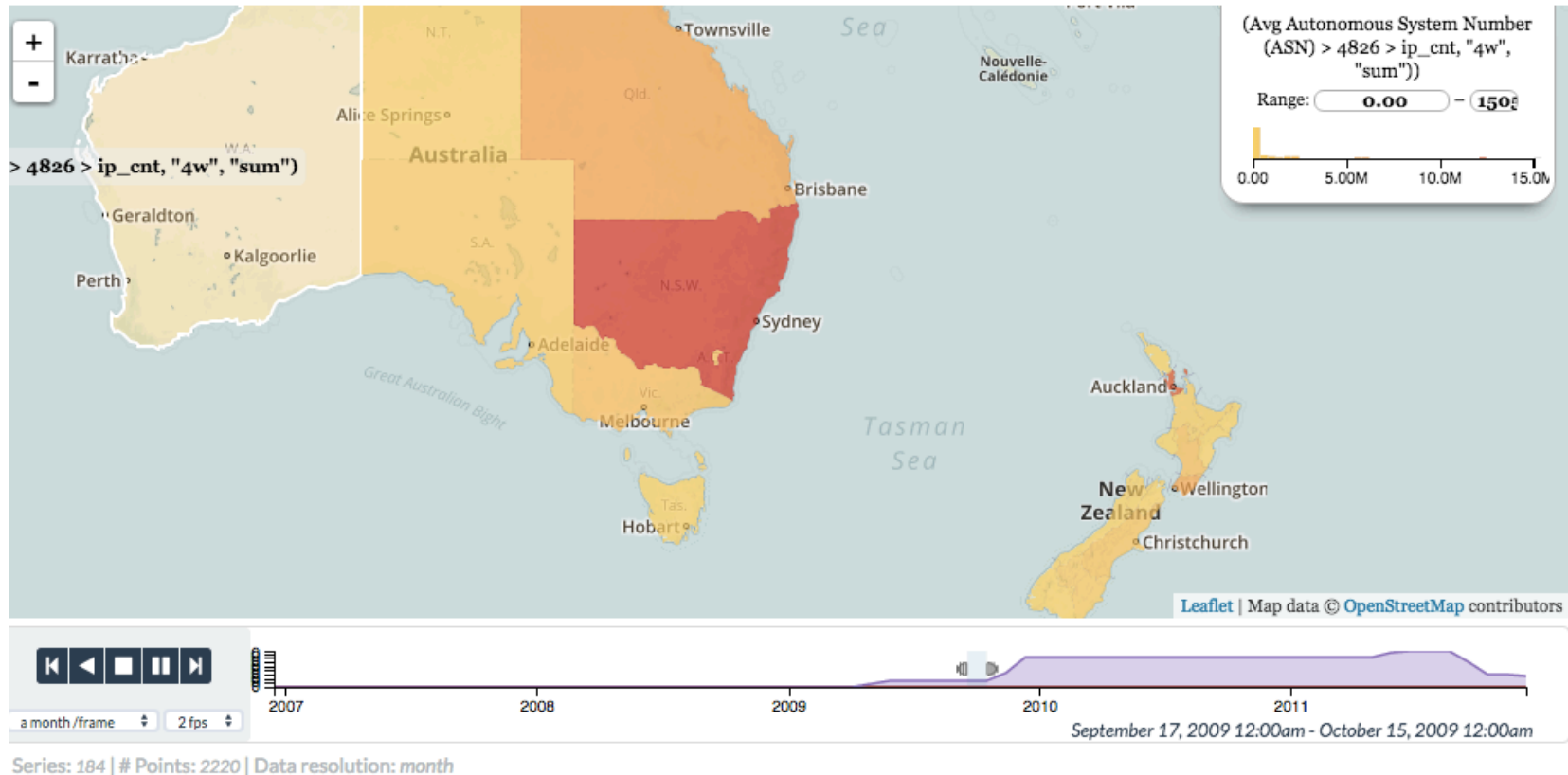
[Download txt file](#)

# AS Customer Cone Size Evolution





# VOCUS' customer cone expansion in Australia and New Zealand



**Thank you!**

**Any questions?**

