



# **Internet Routing Table Analysis Update**

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**RIPE38, Amsterdam, January 2001**



# Internet Routing Table Analysis

- **New:**
  - Unassigned but announced ASNs flagged**
  - /24 announcements from each /8 block**
- **Full Stats on APNIC web page**  
<http://www.apnic.net/stats/bgp>



# 19th January summary

## Global summary

### Routing Report 19 January, 2001

BGP routing table entries examined:	100161
Origin ASes present in the Internet Routing Table:	9709
Origin ASes announcing only one prefix:	3439
Transit ASes present in the Internet Routing Table:	1290
Average AS path length visible in the Internet Routing Table:	5.3
Max AS path length visible:	17
Illegal AS announcements present in the Routing Table:	17
Non-routable prefixes present in the Routing Table:	0
Prefixes being announced from the IANA Reserved Address blocks:	1
Number of addresses announced to Internet:	1196700186
Equivalent to 71 /8s, 84 /16s and 50 /24s	
Percentage of available address space announced:	32.3
Percentage of allocated address space announced:	63.3
Percentage of available address space allocated:	51.0

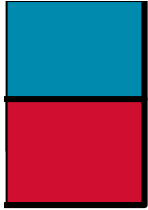


# 19th January summary

## APNIC region summary

### APNIC region Report 19 January, 2001

```
Prefixes being announced by APNIC Region ASes:           15415
Prefixes being announced from the APNIC address blocks:   13873
APNIC Region origin ASes present in the Internet Routing Table: 1132
APNIC Region origin ASes announcing only one prefix:      404
APNIC Region transit ASes present in the Internet Routing Table: 178
Average APNIC Region AS path length visible:             5.0
  Max APNIC Region AS path length visible:               10
Number of APNIC addresses announced to Internet:          64646364
  Equivalent to 3 /8s, 218 /16s and 108 /24s
  Percentage of available APNIC address space announced:  76.1
APNIC AS Blocks      4608 - 4864, 7467 - 7722, 9216 - 10239,
                    17408 - 18431
APNIC Address Blocks 61/8, 202/7 and 210/7
```

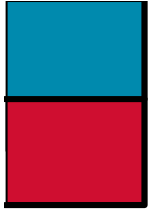


# 19th January summary

## ARIN region summary

### ARIN region Report 19 January, 2001

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Prefixes being announced by ARIN Region ASes:                69416
Prefixes being announced from the ARIN address blocks:        46988
ARIN Region origin ASes present in the Internet Routing Table: 5907
ARIN Region origin ASes announcing only one prefix:          1712
ARIN Region transit ASes present in the Internet Routing Table: 621
Average ARIN Region AS path length visible:                   5.2
  Max ARIN Region AS path length visible:                     17
Number of ARIN addresses announced to Internet:                173035215
  Equivalent to 10 /8s, 80 /16s and 78 /24s
  Percentage of available ARIN address space announced:        79.3
ARIN AS Blocks          1 - 1876, 1902 - 2042, 2044 - 2046, 2048 - 2106
                        2138 - 2584, 2615 - 2772, 2823 - 2829, 2880 - 3153
                        3354 - 4607, 4865 - 5119, 5632 - 6655, 6912 - 7466
                        7723 - 8191, 10240 - 12287, 13312 - 15359
                        16384 - 17407, 18432 - 20479
ARIN Address Blocks    63/8, 64/7, 66/8, 199/8, 200/8, 204/6, 208/7
                        and 216/8
```



# 19th January summary

## RIPE NCC region summary

### RIPE NCC region Report 19 January, 2001

```
Prefixes being announced by RIPE Region ASes:                15313
Prefixes being announced from the RIPE address blocks:        12075
RIPE Region origin ASes present in the Internet Routing Table: 2671
RIPE Region origin ASes announcing only one prefix:          1323
RIPE Region transit ASes present in the Internet Routing Table: 490
Average RIPE Region AS path length visible:                  5.9
  Max RIPE Region AS path length visible:                     16
Number of RIPE addresses announced to Internet:               88695932
  Equivalent to 5 /8s, 73 /16s and 100 /24s
  Percentage of available RIPE address space announced:       75.5
RIPE AS Blocks          1877 - 1901, 2042, 2047, 2107 - 2136, 2585 - 2614
                        2773 - 2822, 2830 - 2879, 3154 - 3353, 5377 - 5631
                        6656 - 6911, 8192 - 9215, 12288 - 13311,
                        15360 - 16383
RIPE Address Blocks     62/8, 193/8, 194/7, 212/7 and 217/8
```



## APNIC Region per AS prefix count summary

ASN	No of nets	/19 equiv	Description
1221	2367	1189	Telstra
2764	435	123	connect.com.au pty ltd
2907	366	892	SINET Japan
703	358	249	UUNET Technologies, Inc.
4755	343	113	VSNL India
4740	257	17	Ozemail
7657	230	12	The Internet Group Limited
4618	208	56	Internet Thailand
9269	206	23	Hong Kong CTI
7545	205	7	TPG Internet Pty Ltd
4763	189	43	Telstra New Zealand
7474	188	84	Optus Communications
4766	176	619	KORnet Powered BY Korea Telec
4134	161	514	Data Communications Bureau
7586	140	6	Paradox Digital Pty. Ltd
7496	129	10	Power Up
3462	128	180	Data Communications Institute
4786	124	7	NetConnect Communications Pty
7539	122	77	Delegated to TWNIC for subseq
7617	120	45	One.Net Pty Ltd



## ARIN Region per AS prefix count summary

ASN	No of nets	/19 equiv	Description
701	2608	3548	UUNET Technologies, Inc.
1	1022	4628	BBN Planet
7018	902	3023	AT&T
1239	694	1636	Sprint ICM-Inria
7046	694	521	UUNET Technologies, Inc.
2914	637	1289	Verio, Inc.
174	618	2823	PSINet Inc.
2548	611	551	Digital Express Group, Inc.
705	561	36	UUNET Technologies, Inc.
3561	560	1283	Cable & Wireless USA
2551	552	345	NETCOM On-Line Communication
3549	512	436	Frontier GlobalCenter
8013	506	64	PSINet Ltd. Canada
3908	447	281	Supernet, Inc.
209	431	569	Qwest
3602	430	79	Sprint Canada
4293	427	55	Cable & Wireless USA
271	424	271	BCnet Backbone
6082	392	64	Management Analysis, Incorpor
8151	351	184	UniNet S.A. de C.V.






## RIPE NCC Region per AS prefix count summary

ASN	No of nets	/19 equiv	Description
3301	390	306	TeliaNet Sweden
702	348	469	UUNET Technologies, Inc.
1270	338	433	UUNET Germany
1257	316	256	Swipnet AB
3215	200	181	RAIN
719	192	154	LANLINK
5515	190	343	Sonera Finland
786	183	959	JANET IP Service
1849	172	290	UUNET UK (formerly PIPEX)
3320	167	462	Deutsche Telekom AG
680	164	846	Deutschef Forschungsnetz
517	140	140	Xlink
1942	140	53	INRIA-Rocquencourt
2856	136	394	BTnet UK Regional network
3303	126	277	Swisscom
5400	109	32	Concert Internet Plus Europea
1901	103	77	EUnet Austria
1267	96	986	IUnet S.p.A
3269	89	242	TELECOM ITALIA
3259	85	87	UUNET FRANCE



## Global per AS prefix count summary

ASN	No of nets	/19 equiv	Description
701	2608	3548	UUNET Technologies, Inc.
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1	1022	4628	BBN Planet
7018	902	3023	AT&T
1239	694	1636	Sprint ICM-Inria
7046	694	521	UUNET Technologies, Inc.
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2764	435	123	connect.com.au pty ltd
209	431	569	Qwest
3602	430	79	Sprint Canada
4293	427	55	Cable & Wireless USA
271	424	271	BCnet Backbone



## List of Illegal AS's

Bad AS	Designation	Network	Transit AS	Description
2027	UNALLOCATED	150.185.0.0/16	10530	Interpacket Group,
2027	UNALLOCATED	150.185.128.0/18	8143	Publicom Corp.
2027	UNALLOCATED	150.186.0.0/16	10530	Interpacket Group,
2027	UNALLOCATED	150.187.0.0/16	10530	Interpacket Group
2027	UNALLOCATED	150.188.0.0/16	10530	Interpacket Group
2027	UNALLOCATED	150.189.0.0/16	10530	Interpacket Group
1877	UNALLOCATED	192.108.196.0/24	1800	SPRINT
1877	UNALLOCATED	192.108.209.0/24	1880	Stupi, house man's
1877	UNALLOCATED	192.108.210.0/24	1880	Stupi, house man's
1877	UNALLOCATED	192.108.214.0/24	1800	SPRINT
5757	UNALLOCATED	192.239.13.0/24	701	UUNET Technologies,
5757	UNALLOCATED	207.19.224.0/24	701	UUNET Technologies,
65010	PRIVATE	195.98.237.0/24	2200	INRIA-Rocquencourt
65103	PRIVATE	204.29.186.0/23	6992	Netscape Communicati
65160	PRIVATE	193.150.192.0/18	6830	chello broadband
65160	PRIVATE	213.200.128.0/18	6830	chello broadband
65500	PRIVATE	203.166.86.0/24	10084	Western Australian I

**UUNET are aware of AS5757 and will resolve ASAP**  
**RIPE NCC and Peter are aware of 1877 and will fix ASAP**  
**ARIN are aware of AS2027 - no more news**



## Advertised IANA Reserved Addresses

Network	Origin AS	Description
91.16.23.0/24	11770	Net56

## Number of prefixes announced by prefix length

/1:0	/2:0	/3:0	/4:0	/5:0	/6:0
/7:0	/8:21	/9:4	/10:5	/11:10	/12:31
/13:59	/14:194	/15:305	/16:6777	/17:1010	/18:2027
/19:6263	/20:4434	/21:4318	/22:6450	/23:8419	/24:58056
/25:291	/26:411	/27:244	/28:182	/29:154	/30:275
/31:1	/32:220				

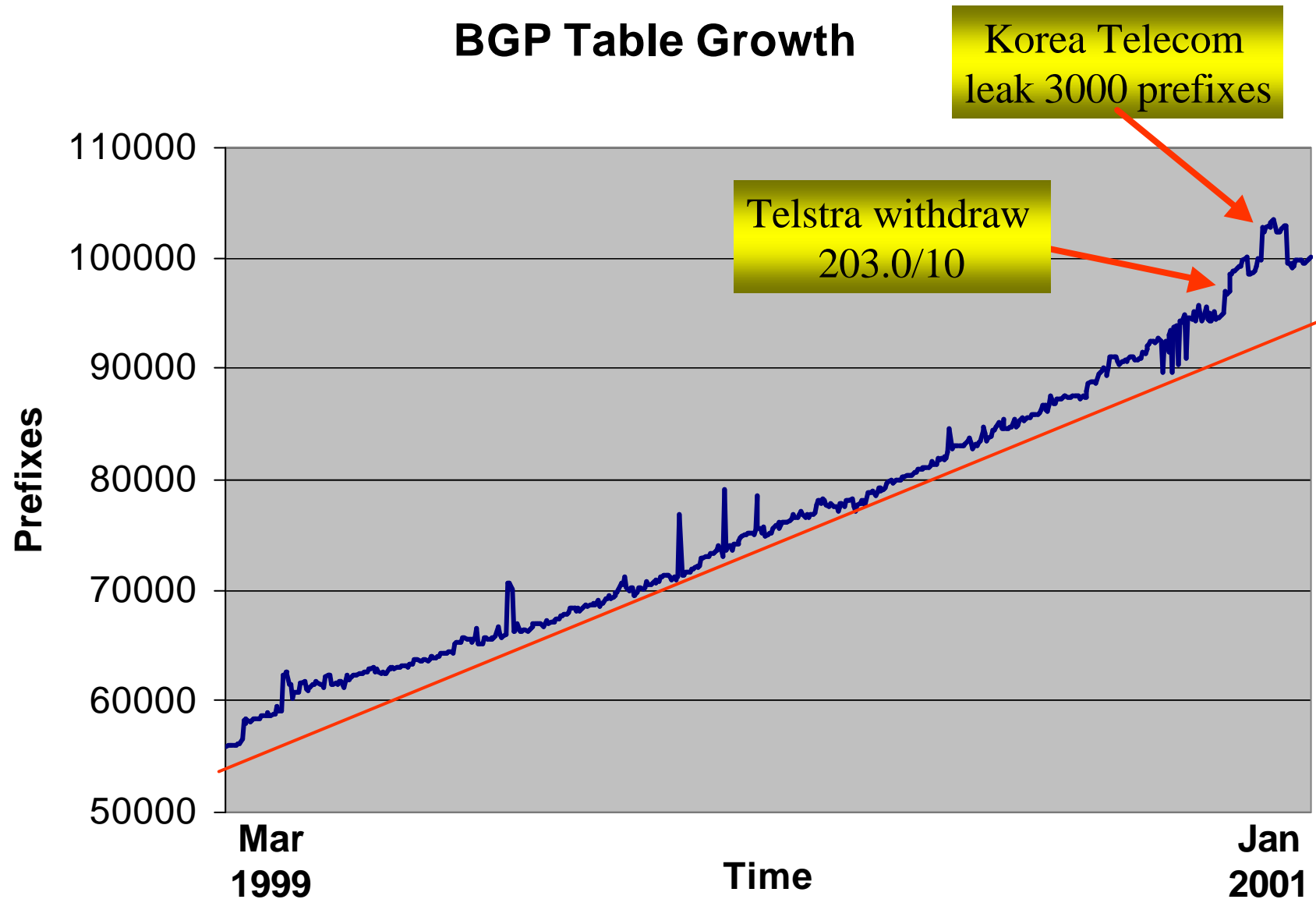


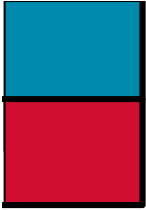
## Number of /24s announced by per /8

9:2	12:306	15:1	24:640	26:1	32:29
38:8	44:2	53:2	55:1	57:9	61:61
62:102	63:1559	64:1177	65:24	66:78	91:1
128:28	129:190	130:20	131:31	132:9	133:4
134:94	135:7	136:121	137:78	138:190	139:68
140:289	141:19	142:61	143:36	144:123	145:11
146:135	147:89	148:119	149:109	150:22	151:330
152:963	153:118	154:58	155:71	156:14	157:102
158:57	159:52	160:18	161:57	162:63	163:122
164:112	165:98	166:175	167:77	168:71	169:31
170:193	171:2	192:5403	193:1808	194:1982	195:818
196:394	198:3757	199:3396	200:1737	202:2469	203:5216
204:3538	205:2488	206:2825	207:3003	208:2846	209:3438
210:378	211:131	212:760	213:293	214:8	215:11
216:2629	217:88				

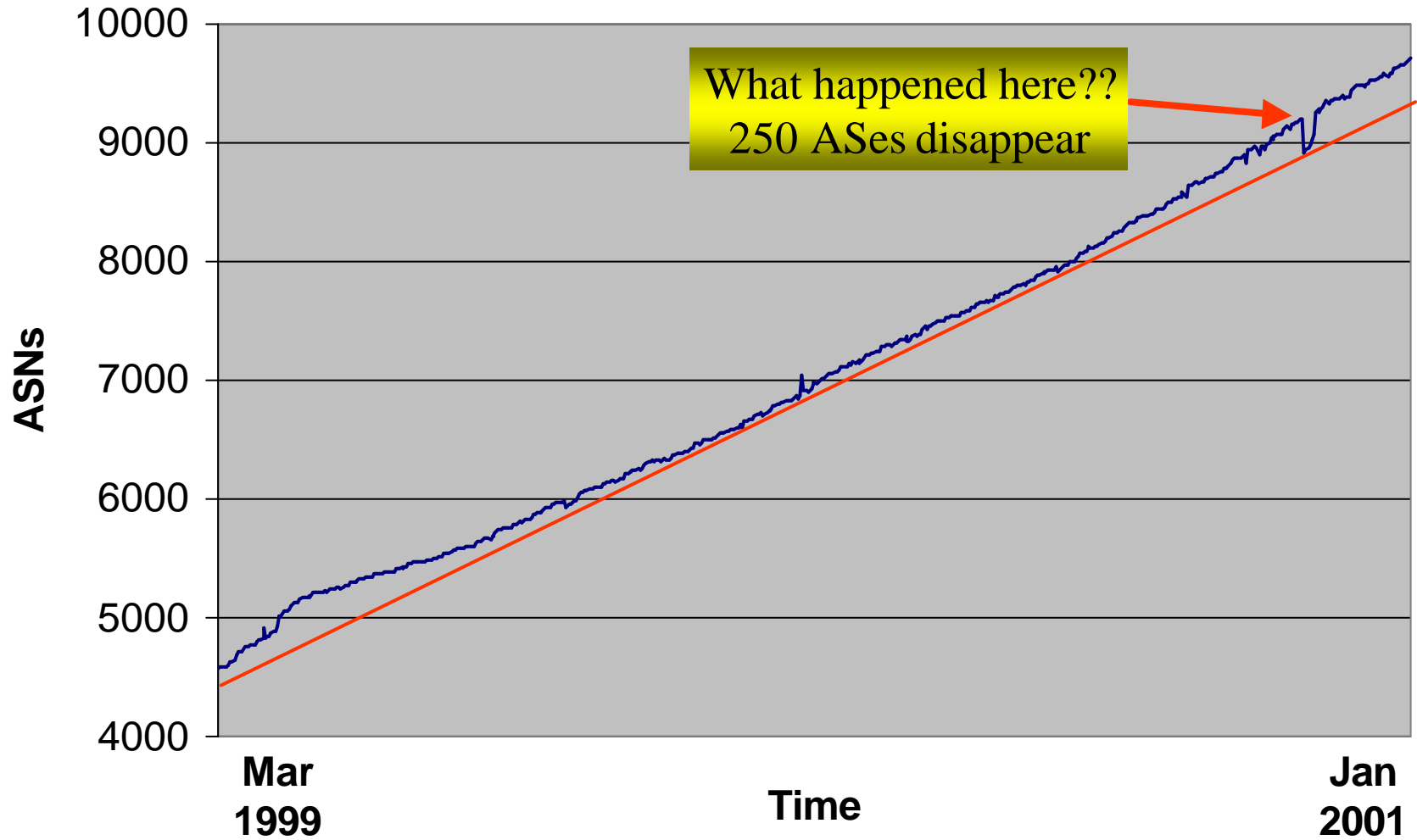


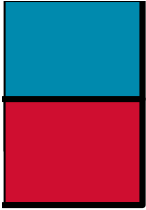
## BGP Table Growth



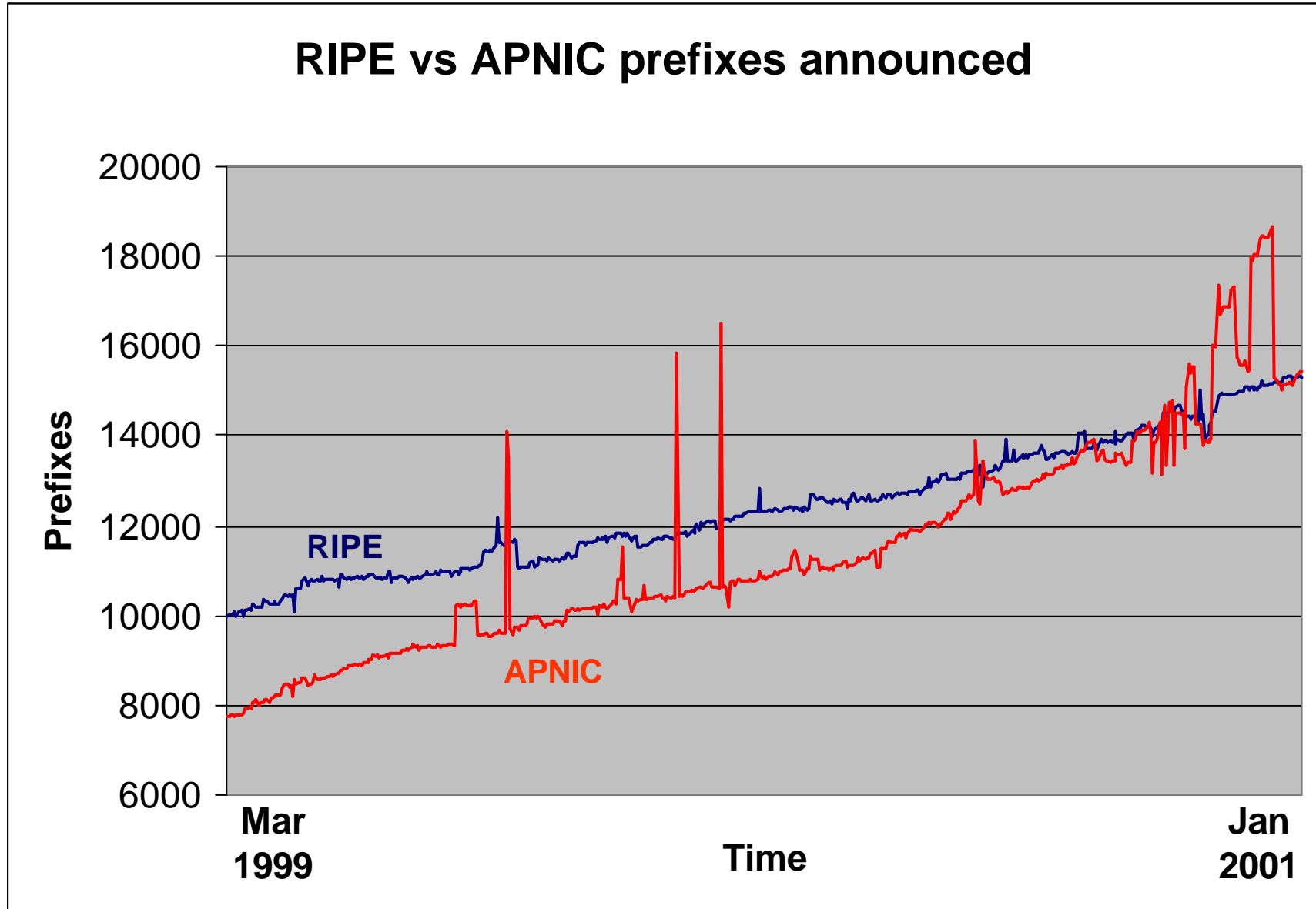


## AS Announcement Growth





## RIPE vs APNIC prefixes announced







# Final Slide...

- **What other stats would be interesting?**
- **Any comments/discussion?**