



Internet Initiative Japan

BGP is Chattier than we Think

In Fact, it can be Ugly

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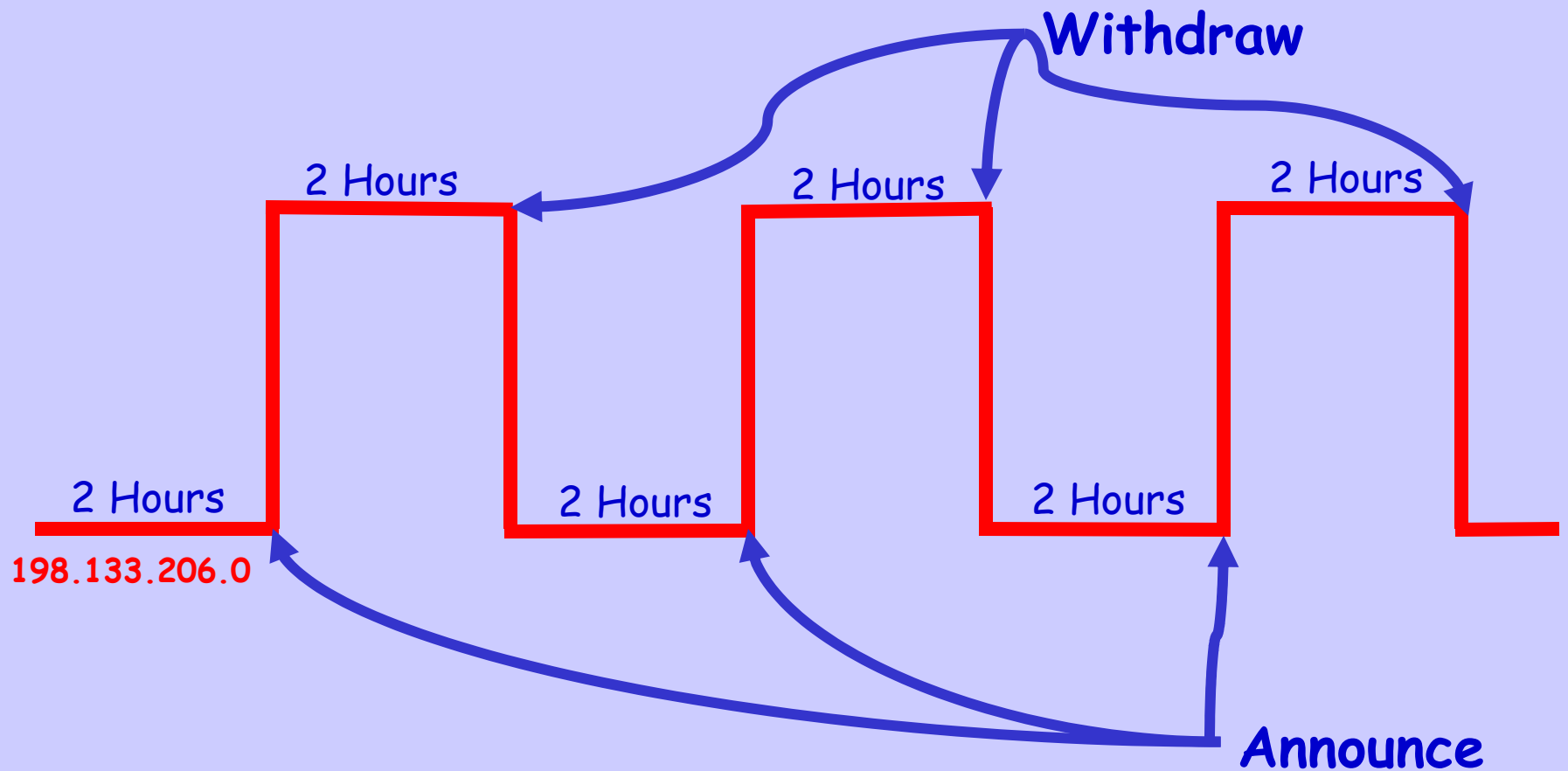
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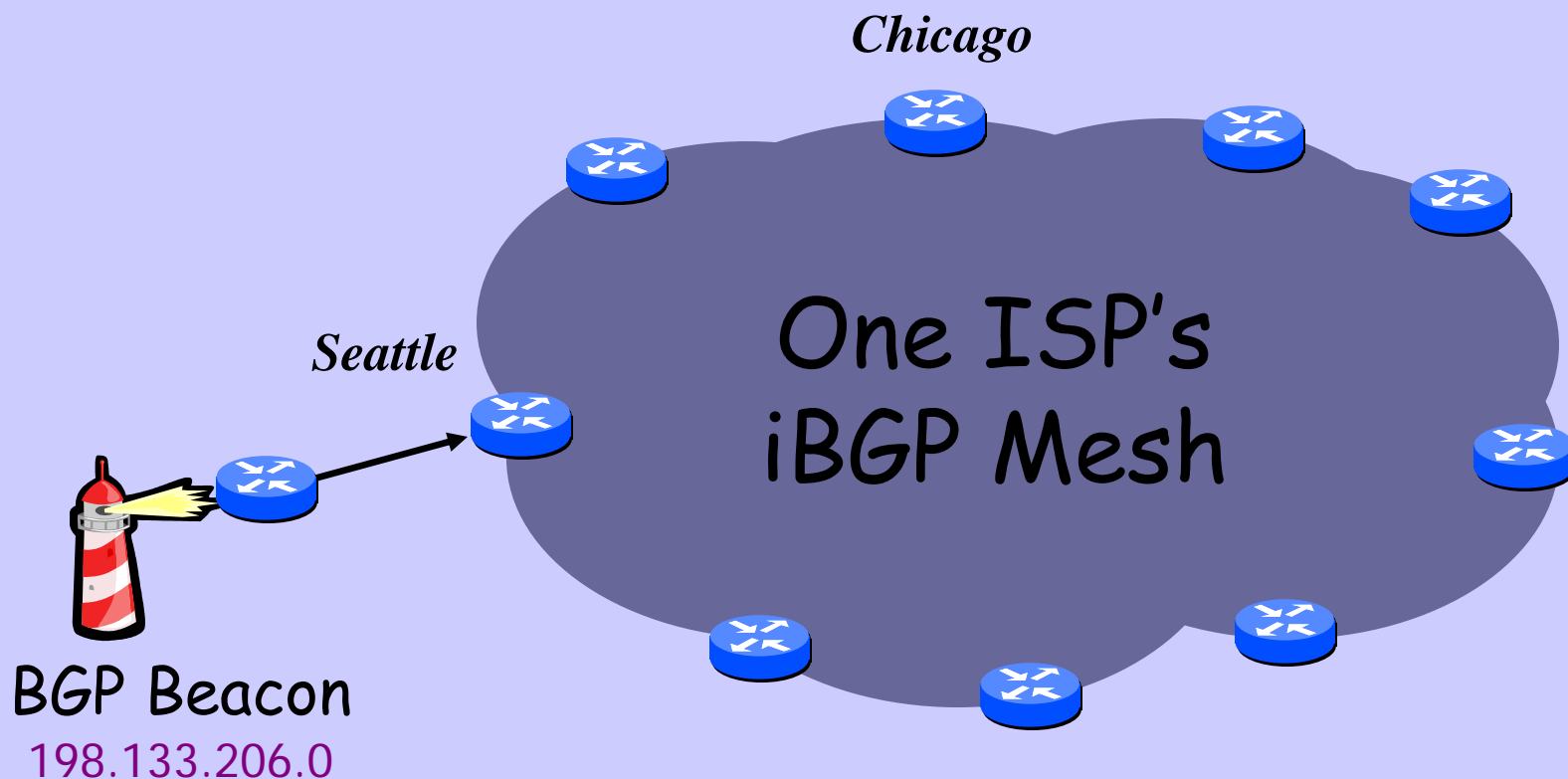
<<http://psg.com/~randy/030821.apnic-bbgp.pdf>>

BGP Beacons Announce & Withdraw



Measurement within One ISP

- Measure at peering edges of a global ISP
- Archived (and anonymized)
- Multi-month study



The Sound of Discovery is
not "Eureka!".

It is "Oh \$#@%\$!!!"

Life Looks Simple in Seattle

```
2003-07-01:ANN-event, updateCnt=1, []->[ispA]  
20:00:13 A asA 3130
```

Even if Beacon is Multi-Homed

```
2003-07-02:ANN-event, updateCnt=2, [asA,]->[asB]  
00:00:31 W  
00:00:31 A asB 3130
```

Chicago Sees More Complexity

2003-07-08:ANN-event, updateCnt=4, []->[ispA]

20:00:24 A asA 3130 34

20:00:24 A asA 3130 33

20:00:28 A asA 3130 34

20:00:34 A asA 3130 33

↑
Route
Oscillation

Much More!

```
2003-06-11:ANN-event, updateCnt=41, []->[ispA,ispB].
```

```
13:00:08 A asA asB 3130 33
13:00:10 A asA asB 3130 30
13:00:17 A asA asB 3130 1
13:00:18 A asA 3130 34
13:00:18 A asA 3130 33
13:00:18 W
13:00:19 A asA asB 3130 30
13:00:19 A asA 3130 33
13:00:19 A asA 3130 34
13:00:19 A asA 3130 33
13:00:19 A asA asB 3130 37
13:00:19 A asA asB 3130 30
13:00:19 A asA 3130 33
13:00:19 A asA 3130 34
13:00:19 A asA 3130 33
13:00:19 A asA 3130 34
13:00:19 A asA 3130 33
13:00:19 A asA asB 3130 37
13:00:19 W
13:00:19 A asA 3130 34
13:00:19 A asA 3130 33
13:00:20 A asA 3130 34
13:00:20 A asA 3130 33
13:00:20 A asA asB 3130 1
13:00:20 A asA 3130 33
13:00:20 A asA 3130 34
13:00:22 A asA 3130 33
13:00:23 A asA 3130 34
13:00:24 A asA asB 3130 1
13:00:24 A asA 3130 34
13:00:24 A asA asB 3130 27
13:00:24 A asA asB 3130 42
13:00:24 A asA 3130 33
13:00:24 A asA 3130 34
13:00:24 A asA asB 3130 27
13:00:24 A asA asB 3130 30
13:00:24 A asA 3130 34
13:00:24 A asA asB 3130 27
13:00:25 A asA asB 3130 30
13:00:25 A asA 3130 34
13:00:26 A asA 3130 33
```

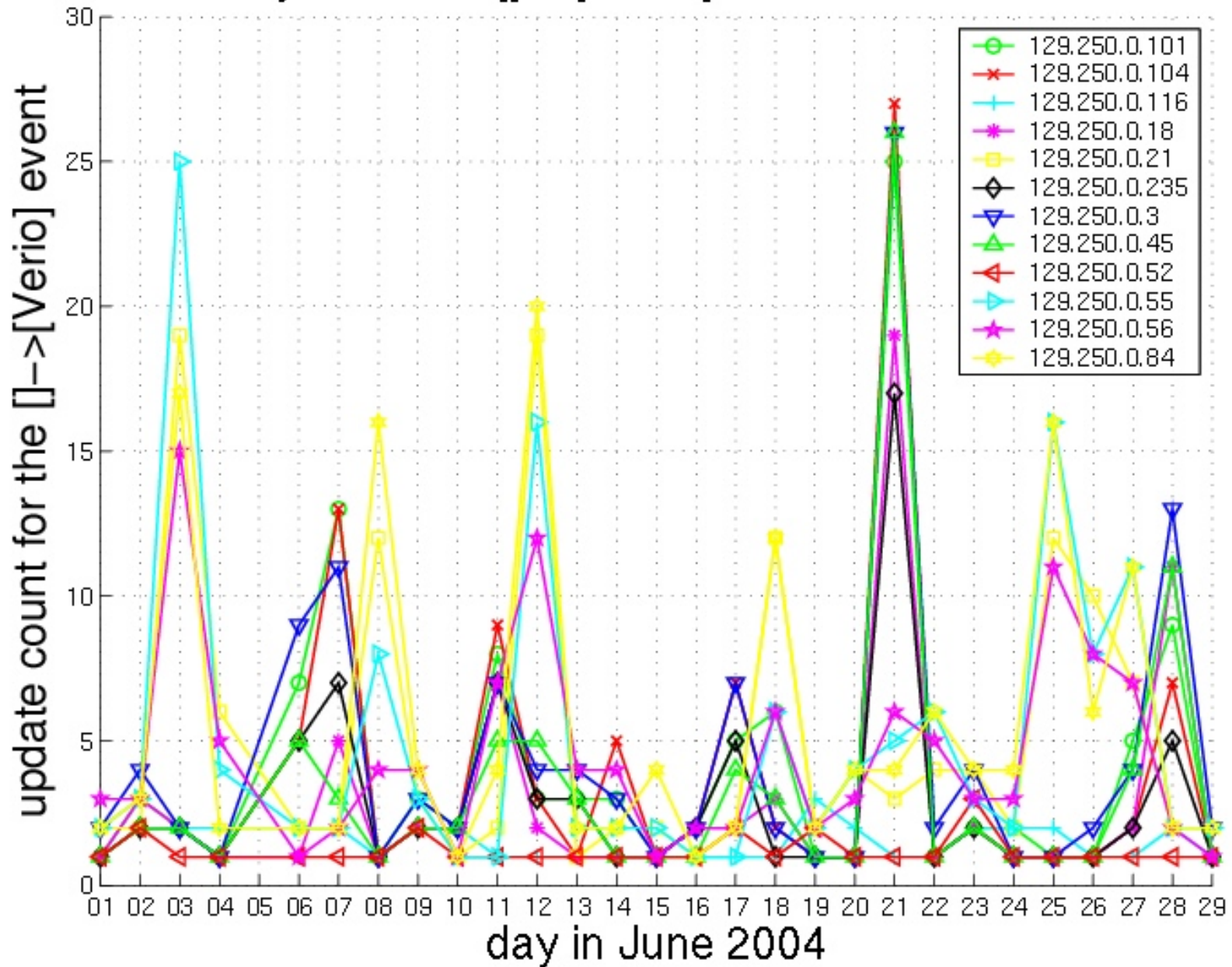
41 Events
39 Announcements
2 Withdraws!

In 26 seconds (and that's fast!)

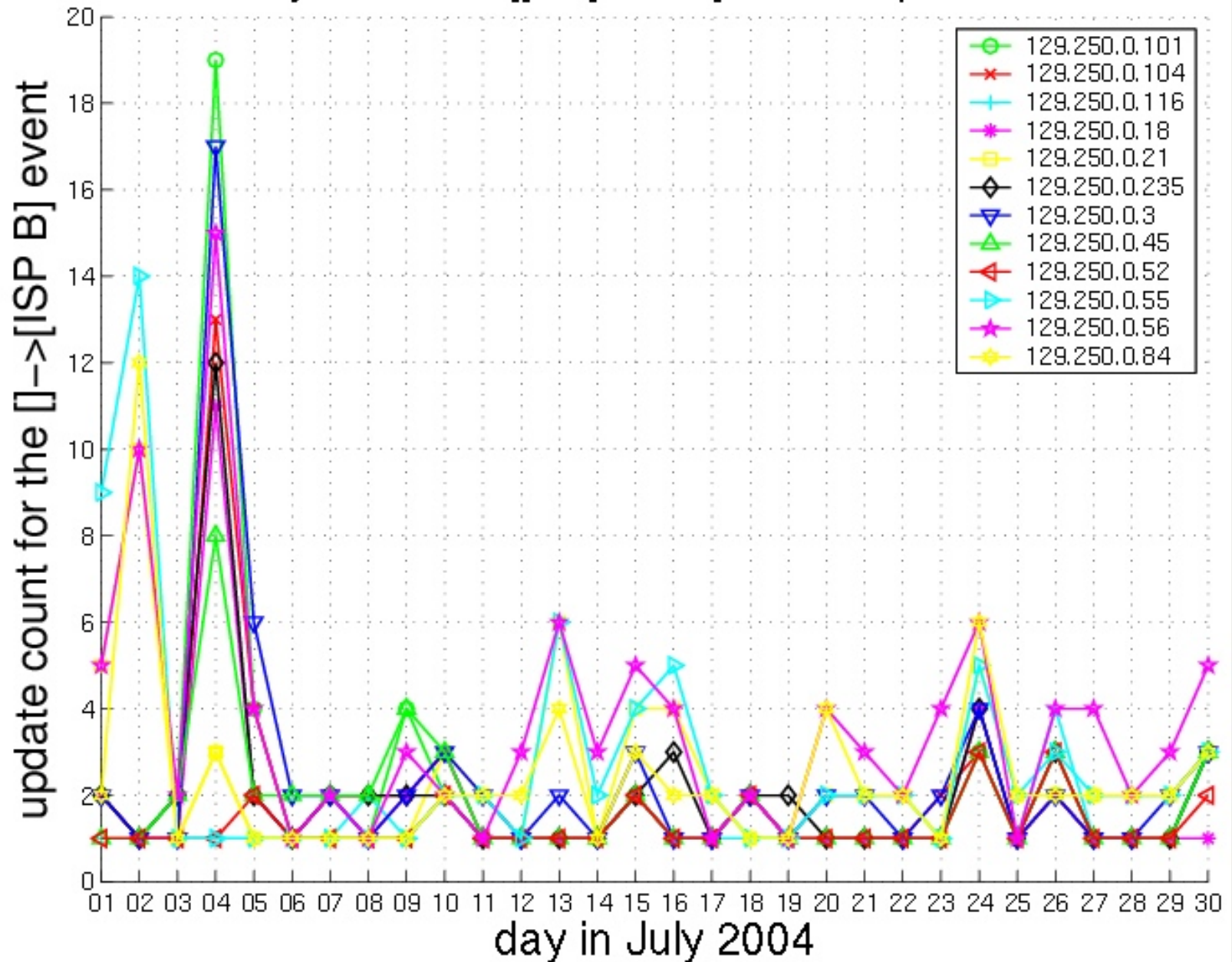
And we don't even charge extra

And the feature-rich vendors tell us that BGP is "Rock solid stable"

Randys Beacon [->[ISP B] event: event duration



Randys Beacon []- >[ISP B] event: update count



Yes,
BGP is Chattier
than we Think

But Researchers
Can Help You!