



Internet Initiative Japan

Applying DNS Anycast Behavior

WIDE / CAIDA
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<<http://psg.com/~randy/060317.wide-rtg.pdf>>

Anycast DNS Switches

- Remember last year's presentation?
- Watched anycast root server changes from within an ISP
- Showed significant routing behavior changes
- But what were the causes of these symptoms?

Causes of Change

- Measurement error? Nah 😊
- External: my neighbor, or neighbor's neighbor, has stability issues
- My AS has internal 'issues'

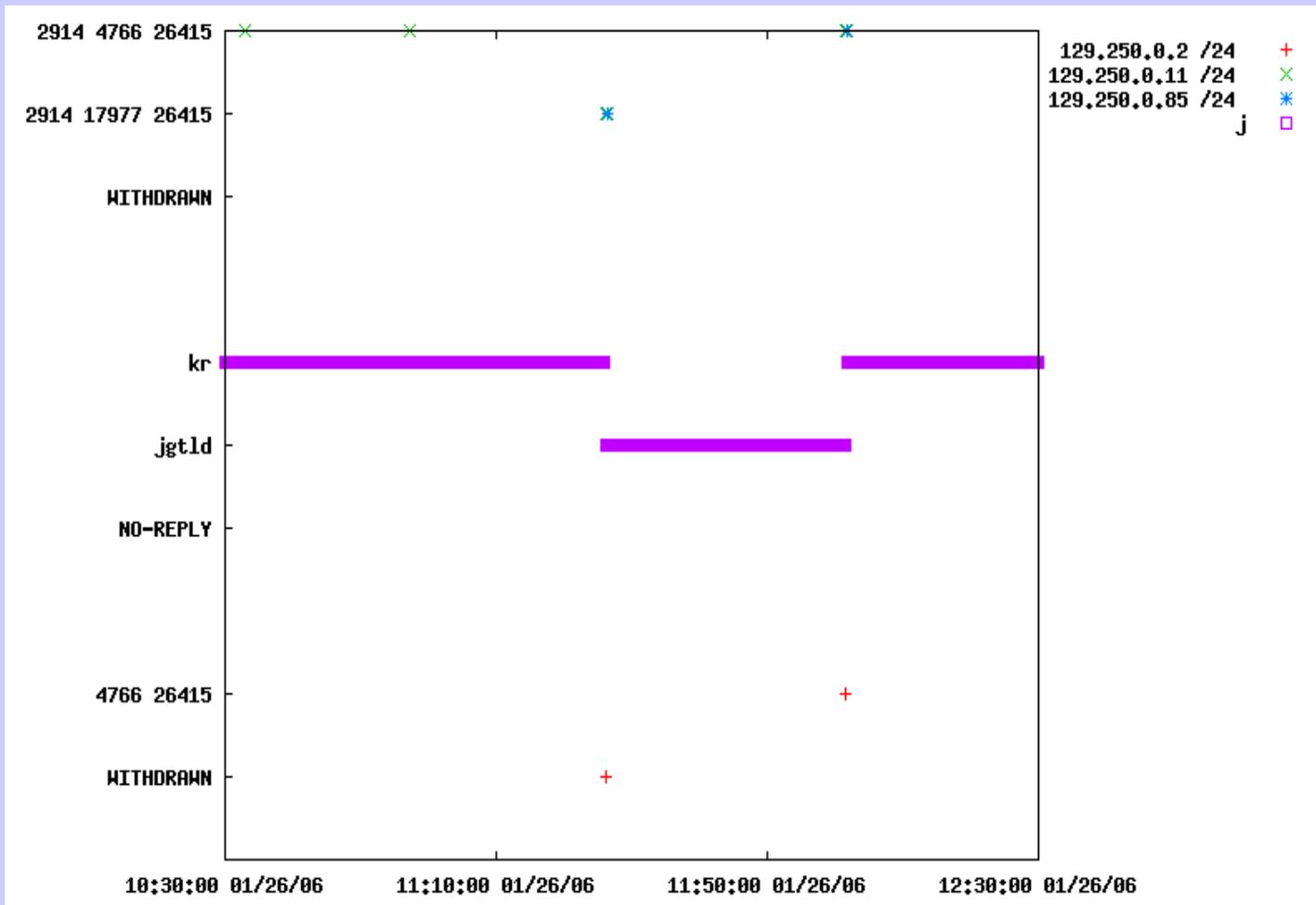
Experiment

- eBGP feeds from all AS's peering routers (but one gets restricted view, thanks BGP)
- iBGP feeds from all AS's peering routers
- Could not measure IGP because it is IS-IS and there is no IS-IS -> MRT
- Anycast probe within AS

Probe Imporoved

- Old only probed six Anycasted roots
- Added a Unicast root
- Added a Stable Prefix
- Added a Routing Beacon
- Additions used to know when the probe is working properly

External Cause

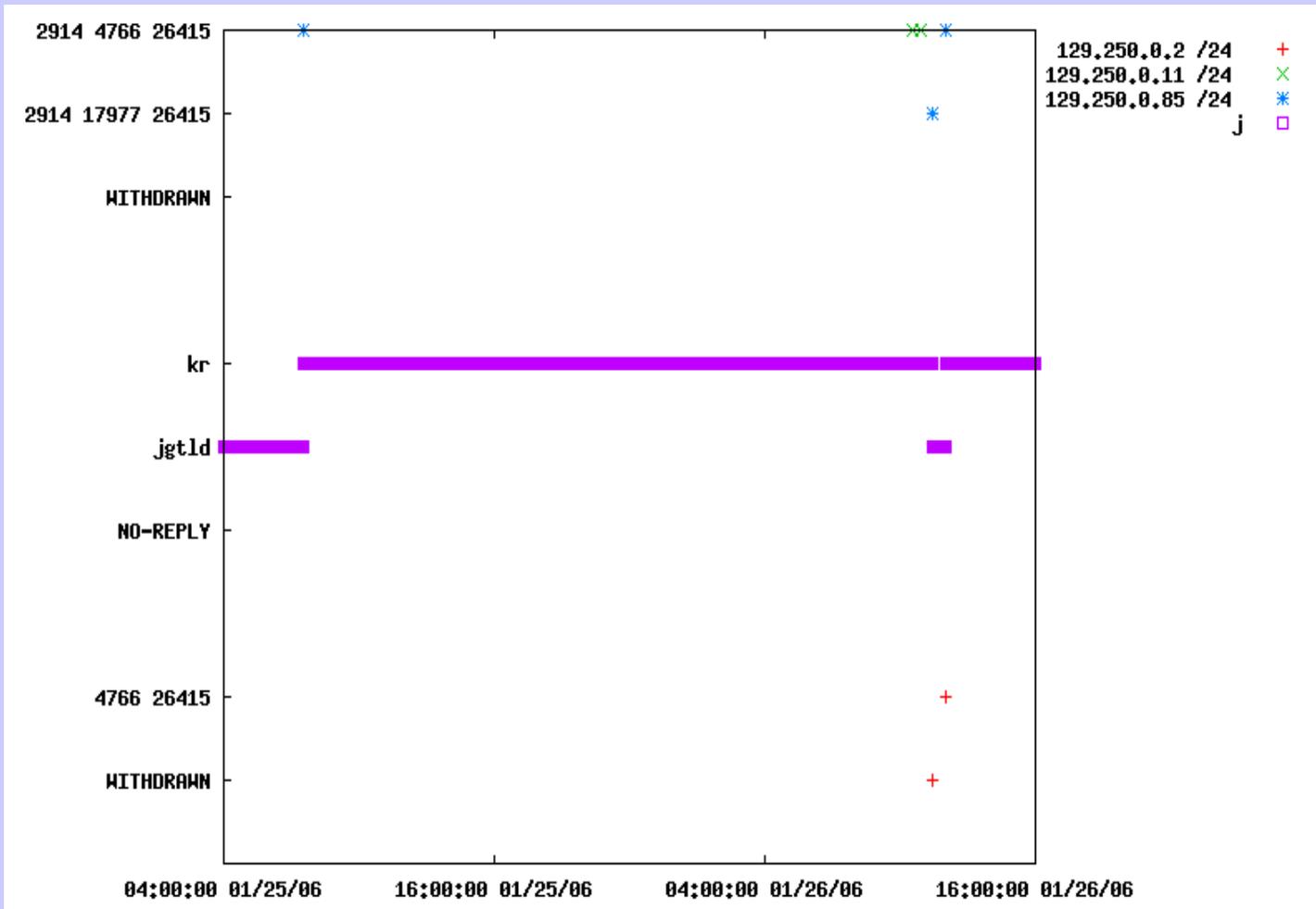


eBGP

Probe

iBGP

Internal & External

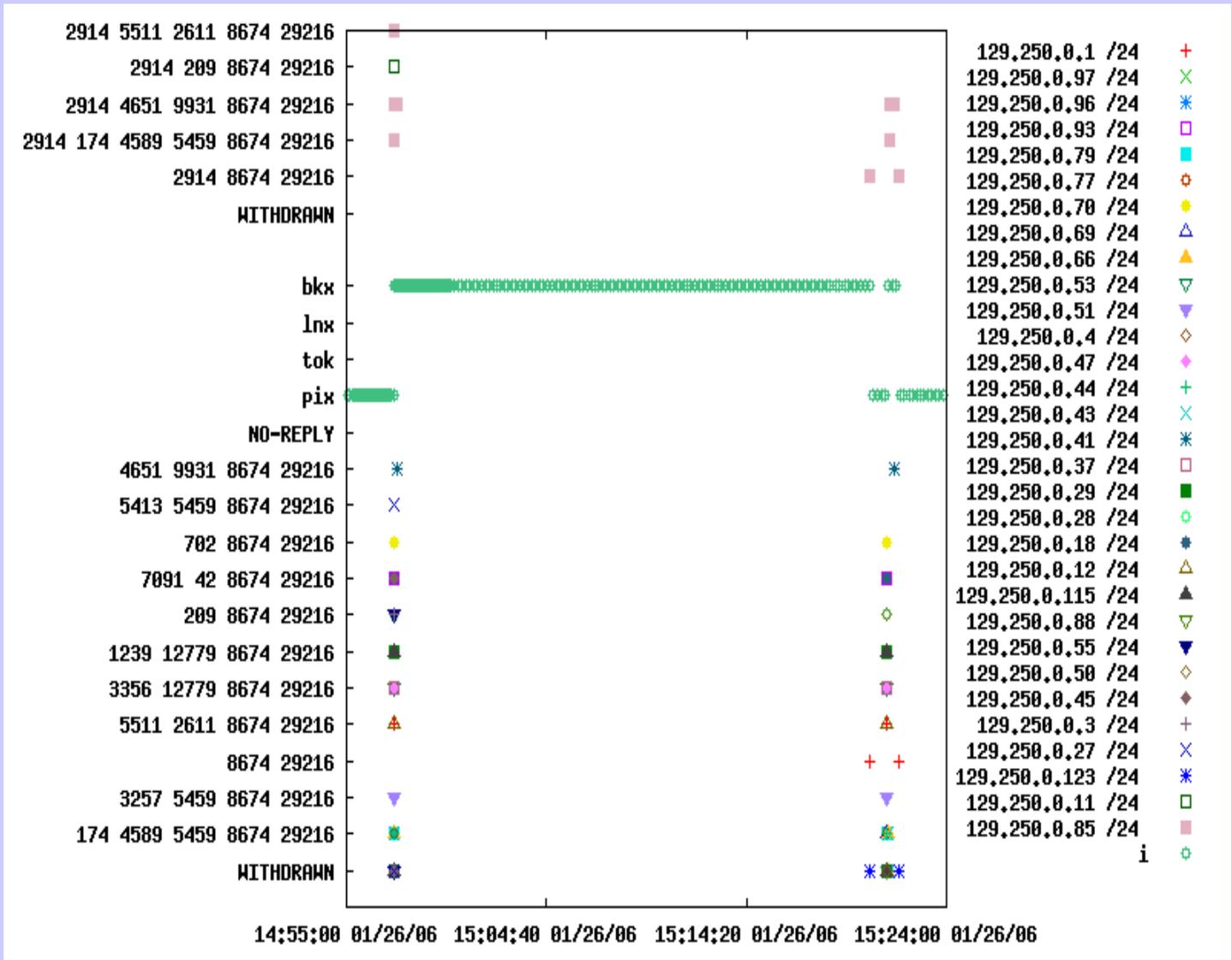


eBGP

Probe

iBGP

External Detail



eBGP

Probe

iBGP

As a Tool

- Run a probe in your AS, it's cheap
- Anycast event uncorrelated with *BGP, then look inside
- Anycast event correlated with BGP event, look to neighbor(s)

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