BIRD Route Server Daemon Deployment

Tim Preston

UKNOF 15
LINX provides Route Servers for member
Multilateral Peering
Each peering LAN has two Route Servers
Two sites each with two Route Servers
Telecity Sovereign House
Telecity 8&9 Harbour Exchange
One Route Server per LAN per site
All running Quagga
Hardware resilient, but one software
The Problem

Quagga becoming less stable as it scales
Resource hungry
Particularly when converging sessions
When busy BGP keepalives are not processed
Drops more sessions
Spiralling Death Syndrome
Stop and phased restart to recover
Options We Considered

Quagga - Single RIB
Improved scaling but undesirable behaviour for a Route Server

OpenBGPd
Required a change of platform for full feature support (MD5 authentication)

BIRD
1.1.3 stalled at 200 peers, 26K prefixes
Why BIRD?

Good multiple RIB support
Part of the design goals
Responsive developers
Scaling issue resolved within 24 hours
Control
CLI remains responsive under load
Deployed BIRD v 1.1.7 for IPv4 peering on rs1.linx.net
This is the busiest of the four Route Servers
Brought live shortly after Midnight
Friday 15th January 2010
Went extremely smoothly
Did that Help?

YES!
BIRD using less resources
Converges rapidly
If a restart is required converges without manual intervention
Performing even better in live environment than lab testing predicted
Active prefixes up from 29K to 37K...
Resource Usage

Quaqqa

BIRD

CPU Utilisation of RS1

CPU & Memory Utilisation of RS1 with 163 peers with 46.5k prefixes

Engineering
What Next

Understand the increase in active prefixes
Possible Quagga issue?
Deploy for IPv6
Currently still using Quagga
Get used to new process for peer changes
Bear with us for a while...
Longer Term

Collect statistics from within BIRD itself
Enhance Looking Glass to talk to BIRD
Quagga improvements
Euro-IX initiative
Use current dual platform to evaluate both Route Server daemons
Decide whether to continue with dual platform or migrate to the best performer