



**Aussie  
Broadband**

THE ACTUAL AUSSIE WAY

# Migrating a Large Telco Networks IGP from OSPF/OSPFv3 to ISIS

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## Sam Faunt – Who am I?

- From Adelaide
- Senior Network Engineer at Aussie Broadband
- Part of the Internet Edge and Backbone Team

# Agenda

01 Brief Overview of ISIS and OSPF

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02 Why Change IGP?

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03 Migration Process

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04 Issues We Encountered Along The way

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05 Conclusion

# Brief Overview of ISIS and OSPF/OSPFv3

# OSPF/OSPFv3

- Layer 3 Protocol
- Link state protocol
- Requires multiple processes for each address family (IPv4 /IPv6)
- OSPF uses areas to partition network Segments
- Uses Link State Advertisement (LSA) to Advertise to the rest of the network
- Flooded LSAs used to build Link State Database on each local Router

# ISIS

- Layer 2 Protocol
- Link state protocol
- Uses “Levels” to segment parts of the network like OSPF Areas
- Advertisements are done using Link State PDU (Protocol Data Unit)
- Uses TLVs (Type Length Value) to add features

# Why Change IGP?

# Why Change IGP?

- One protocol to handle IPv6 and IPv4
- Joining IGP between 9268 (Over The Wire) and 4764
- Segment Routing
- Vendor Support
- Most widely used IGP in Major Telco Providers

# Our Migration Process to ISIS

# IS-IS Migration Process – Step 1

Build our config in the lab and deploy and test there

- Testing reconvergence times
- Discovering What features we want enable EG, FRR SRLG disjoint, FRR node protection or micro loop avoidance
- What prefixes do we want in the IGP, Loopback only Or loopback +links
- Can OSPv3 and OSPF run at the same time ISIS is running on the box
- How does ISIS work across different Hardware platforms

# IS-IS Migration Process – Step 2

## Network Deployment

- Deployed configuration in place with ospf/ospfv3 active

# IS-IS Migration Process – Step 3

## Network Cutover

- Change admin distance of OSPF and OSPv3 to be below ISIS
- AS4764 Change over completed first
- Then Started AS9268 and then we ran into problems
- Finally got there and the whole network was migrated to using ISIS as default IGP

# Issues along the way

## AS9268 Deployment issue

- We changed the admin distance of OSPF to below IS-IS so it'd take over
- Traffic started blackholing and the routing table was preferring OSPF for some loopbacks still
- At first, we thought stale routes on this core router, so we rebooted it
- That router did not come back

# Conclusion

# Questions?