BGP OPERATIONAL MESSAGE

draft-frs-bgp-operational-message-00

David Freedman (Claranet).
Robert Raszuk (Cisco Systems).
Rob Shakir (Cable&Wireless).

AGENDA

BGP OPERATIONAL Message:
- End result of merging the DIAGNOSTIC and ADVISORY proposals discussed in IDR.

Overview of the OPERATIONAL Message.

- Brief run-through of the implementation and motivations.
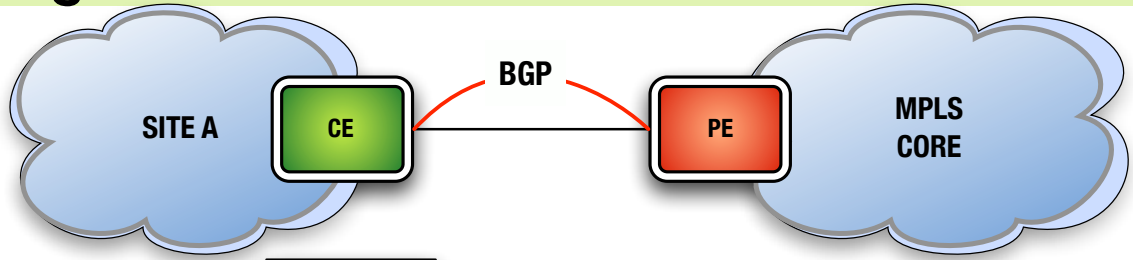
Address Key FAQs.

- Particularly, the justification for being in-band, and considerations for this.

Working Group Feedback/Discussions.

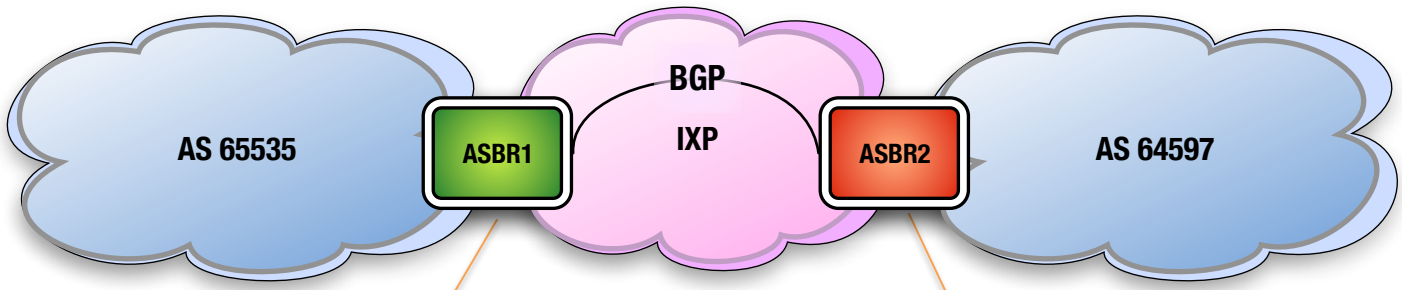- Very keen to hear comments regarding the draft!

Error Handling

CE transmits UPDATE with invalid path attribute.

PE withdraws NLRI – currently invisible to the CE.

More Efficient Operations

AS65535 are performing maintenance and wish to inform their peers.

OPERATIONAL
Planned maintenance!

AS64597 see only a down BGP session – NOC must initiate investigation.

- Capability-signalled, TLV-based additional BGP-4 message.

ADVISE TLVs

- Operator enhancement – core ADVISORY functionality.

STATE TLVs

- RIB query and verification mechanism – from DIAGNOSTIC.

DUMP TLVs

- Means for the transmission of data regarding error conditions – including NLRI contained in invalid UPDATE, and the UPDATE itself.

CONTROL TLVs

- To provide rate-limiting and associated signalling.

Why?

- BGP is an authenticated, existing control-plane channel.
- All OPERATIONAL messages specific to their carrier session.
- Key operator requirements:
    - Which session does this refer to?
    - Avoid introducing further scale bottlenecks.

Convergence / Security.

- Key concerns – avoid reducing protocol robustness.
- A few approaches:
    - Only information that is <u>required</u> to be in-band.
    - Use of CONTROL TLVs.
    - An OPERATIONAL message can be <u>completely ignored</u>.

OVERLAP WITH BMP?

BMP?

- BGP Monitoring Protocol – specified in GROW.
- Provides a means to mirror post-Adj-RIB-In UPDATEs.
- Out-of-Band – separate socket.

Does OPERATIONAL overlap with BMP?

- We do not think so.
- Key differences:
    - In-band vs. Out-of-band clearly.
    - BMP is focused on intra-domain.
    - Router-Router messaging is very different to Router-Monitoring Station.

- Essentially, these are complimentary technologies which together provide a much improved set of operational tools for managing BGP.

CONCLUSIONS

Soliciting Feedback.

- Very interested to hear any comments from the WG.
    - Does this effectively combine DIAGNOSTIC and ADVISORY?
    - Implementation complexities?

Further FAQs at:

http://www.convergence.cx/drafts/draft-frs-bgp-operational-message-00-faq.txt

Next Steps.

- Revise to -01 based on any issues raised.
- Requesting IDR adoption.