

BCOP

Network Operational Simplicity

Idea concept triggered by observations from Jan Zorz

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The Bottom Line

Network operation should work towards the goal of operations and technology being simple enough that the features required to get the job done are delivered upon request



You can load your network with plenty of features

BUT

Roads may be unpredictable
Sometimes your cargo is “different”

SO

Make sure that the transport vehicle doesn't trip over

The Key Objective

Network Operational Simplicity

- “*Simplicity is prerequisite for reliability*” (Dijkstra)
- Framework for Network Operational Simplicity
- Allow integration of new business services (new revenue potentials)
- Drive network behavior predictability
- Keep it simple
 - Not that simple without making it complex 😊
- Optimized network operation gives cost effectiveness and reliability
- Avoid becoming entangled in piece-meal simplification, but look at the bigger picture
- Keep it clean, move away from legacy structures ASAP

The “long” road to Complexity

- Burdens of legacy
- Fixes, patches, exceptions ... instead of focusing on the whole picture.
- Business acquisitions, mergers, split-ups ...
- Intentional complexity as job protection
- Introducing new features as a fix instead of re-thinking the network architecture as a whole



Why Network Operational Simplicity?

- With increased complexity
 - business goals are lost
 - quality goes down
 - Network operation becomes less trivial
- Simplifying enables establishment of roles and responsibilities of the professionals who keep the infrastructure up and running
 - Easy to operate, troubleshoot, enhance, real-time-statistics, etc...
 - Proactive Identify bottlenecks and accelerate performance
- Layers of complexity which don't integrate well don't live up to their promises
- Prepare your network for Next Generation Business Service Integration

What it is NOT?

- It is NOT a design guide
 - It documents best practices and bias towards particular technologies and operation
- It is NOT a guide into proprietary technology
 - The BCOP guide has focus upon standards and Open Source technology
- It does NOT document ALL technologies existing
 - It is not the intention to boil the ocean of features
- It is NOT a guide to build basic CORE networks
 - The most Enhanced SP network makes usage of Operational Network Simplification
- “Simple Network Operation” should NOT mean “Basic Network Services”

A Strategy of Simplicity

- For example (a rough idea):
 - Interface descriptions should always follow strict syntax to allow automated parsing by various tools.
 - Don't turn unnecessary protocols / options / AFI/SAFIs on, if not really used in the network and really required.
 - Redistribution: loopbacks only in IGP, everything else in BGP, no exceptions.
 - Single IGP of choice for the whole AS, single-area wherever possible (IS-IS L2 only / OSPF area 0 only).
 - Usage of templates wherever possible
 - In greenfield networks with newer equipment - start with MPLS SR, avoid LDP+IGP combinations, IGP w/ SR-related TLVs suffices

Next steps?

- Open questions
 - Do you see network operation complexity as a bottle neck for innovation?
 - What do “you” see as Network Operational Complexity?
 - Do you have examples of Operational complexity gone wild?
 - What would you like to see in this BCOP document?
 - Any contributors for usage cases and content contribution
- BCOP Roadmap
 - Phase 1:
 - “Network Operational Simplicity” BCOP focus upon traditional SP CORE network (Edge-to-Edge)
 - Draft Phase 1 Framework presentation @RIPE71
 - Phase 2:
 - Business and Service Chaining Integration
 - Phase 3:
 - Other area’s

Questions?



Harry's bread. Nice and soft.

