

## Section 1: Chairs Summary of Q1 Discussion in Week 1-3

People responding (by 7/25) 20 total (14 non-authors, 6 authors)

[New Summary information from weeks 2-3 is in yellow]

### Overall Agreements on Intent

- Current Intent is more than past QoS
- Customer Intent includes SLA + SLE + more
  - SLA - service level agreements
  - SLE – service level expectations
- Intent does not have a clear, well-defined language
- Intent is more than BGP color or BGP transport class (even if these BGP features are proposed to signal intent)

### Color in BGP

- Is an BGP opaque value and predates RFC5512 or SR.
- SR uses color as an “abstract” value in calculating pathways (IGP and BGP) or coloring service routes

### Q1: What is the customer need driving the use of Color to express Customer Intent?

Desires for better mechanisms to:

- a) set-up pathways across AS for single Intent/QoS
- b) Ability to program network
- c) Customers/providers want to treat traffic according to a specific SLOs
- d) **Connect multiple IGP domains into one coherent AS. [new]**

Use cases: 5G, 5G network-slicing, multiple network control plans, and others

**Luay:** It is more than just QoS, and questions target QoS. Should be called SLO pathway.

**Question 1-a:** Are applications requesting to be able to tag their routes with SLAs (color) at the service level? Yes – with caveats on details

**Question 1-b:** If so, is it due to QoS/SLA measurements on traffic between Data Center applications and user applications (such as applications on phone)? Yes – with caveats

**Question 2: In the distant past QoS was hard to set-up seamlessly as a QoS pathway across multiple Autonomous systems (AS).**

**[Bruno]:** We probably need to distinguish Multiple AS versus multiple Administrative Domains. A single Administrative Domain may cross multiple ASes,

**[Luay]** agrees with Bruno on multiple AS. He suggests pathway should be called an SLO path that has QoS treatments at different points. SLO is more than QoS. Providers want to build an SLO path across same AS, Same ASes under one Administrative control, and lastly ASes under different Administrative control.

**[New] [Shraddha Hedge]:** Yes, the intent must be sent in BGP routing update between ASes. The different ASes here are closely co-operating domains such as same ownership but different teams administering different part of the network such as Global network/domestic or backbone/metro network as described in sec 4.1 of <https://datatracker.ietf.org/doc/draft-hr-spring-intentaware-routing-using-color/>. The purpose of color carried in service prefix is for steering the traffic into the transport. The color carried in transport is to identify the intent the particular transport satisfies.

**Question 2a:** Should Customer intent that expresses pathway “QoS” be passed in BGP routing updates sent between Autonomous Systems? Answer: Yes – for customer routes and transport routes fulfilling requirement.

**Question 2b:** Is it the purpose of color or transport class to allow automatic steering of traffic on into an “QoS” path (across different technologies)? Answer: Yes (with Caveats on Option-C usage, and abstract nature of color)

**Question 2c: How should this automatic steering interact with flow specification (FS)?** Answer: FS is orthogonal to CAR/CT (that is allowed but not a required part of solution)

**Question 3:** For those who believe that BGP should set-up a seamless path across multiple Autonomous Systems for a single Intent/QoS, do the exact mechanisms matter or do you simply want an interoperable solution? If they matter, please describe what matters.

Exact mechanisms: do not matter: (3), matter (16)

If matter: One mechanism: 16

Two mechanisms: 3 (Jim Uttaro, Luay Jalil, and Gyan Mishra)

What matters: Interoperable (most), scale (all), stability (all), other specific factors (all)

**Question 4:** RFC7606 focused on error handling in which the MP-NLRI focuses on destination keys (RD and Prefix) plus non-key material (Labels, SIDS). Attributes (generally) apply to all NLRI. For example, MED applies to all NLRIs in the packet.

Question 4a: Would error handling be better for color-aware routing if attributes relevant to a specific color/class be grouped in a MP-Color-Attribute?

- Yes/Probably” simple NLRI helps, but we already carry non-key fields (Bruno)
- Yes: Kaliraj, Nats, Gyan
- No: Ketan, Swadesh, Mahesh

**Question 4b:** Should IDR consider future work on a MP-Color Attribute?

Answer: It depends (5 people). Bruno, Jeff, Sue redefined a specific mechanism that might be useful.