

Extension of BGP-LS and BGP- FS to distribute computing metric

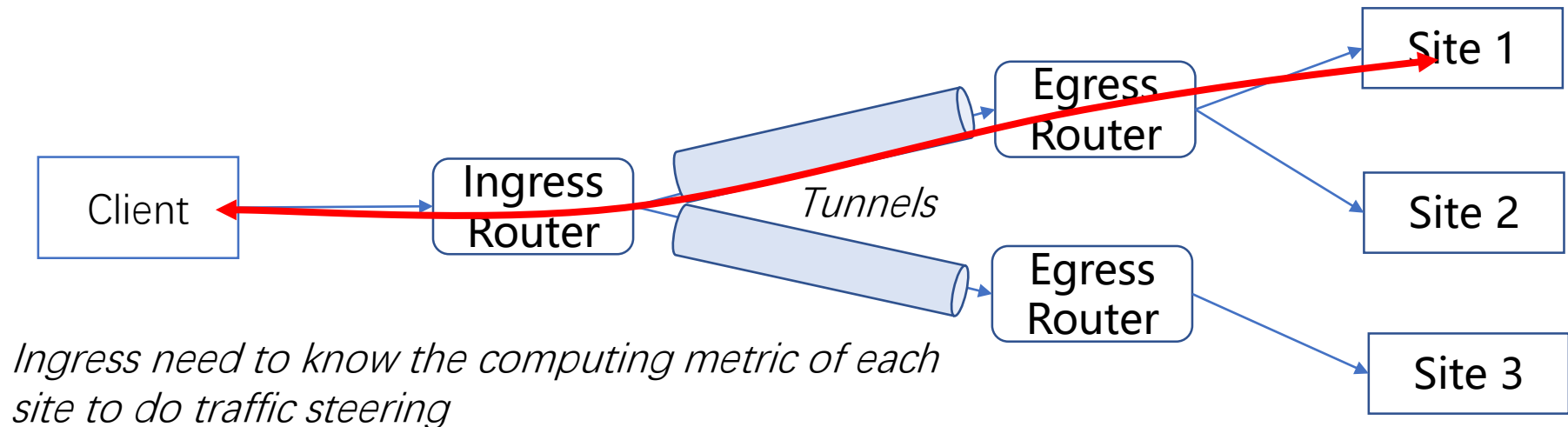
draft-ls-idr-bgp-ls-service-metadata

draft-yi-idr-bgp-fs-edge-service-metadata

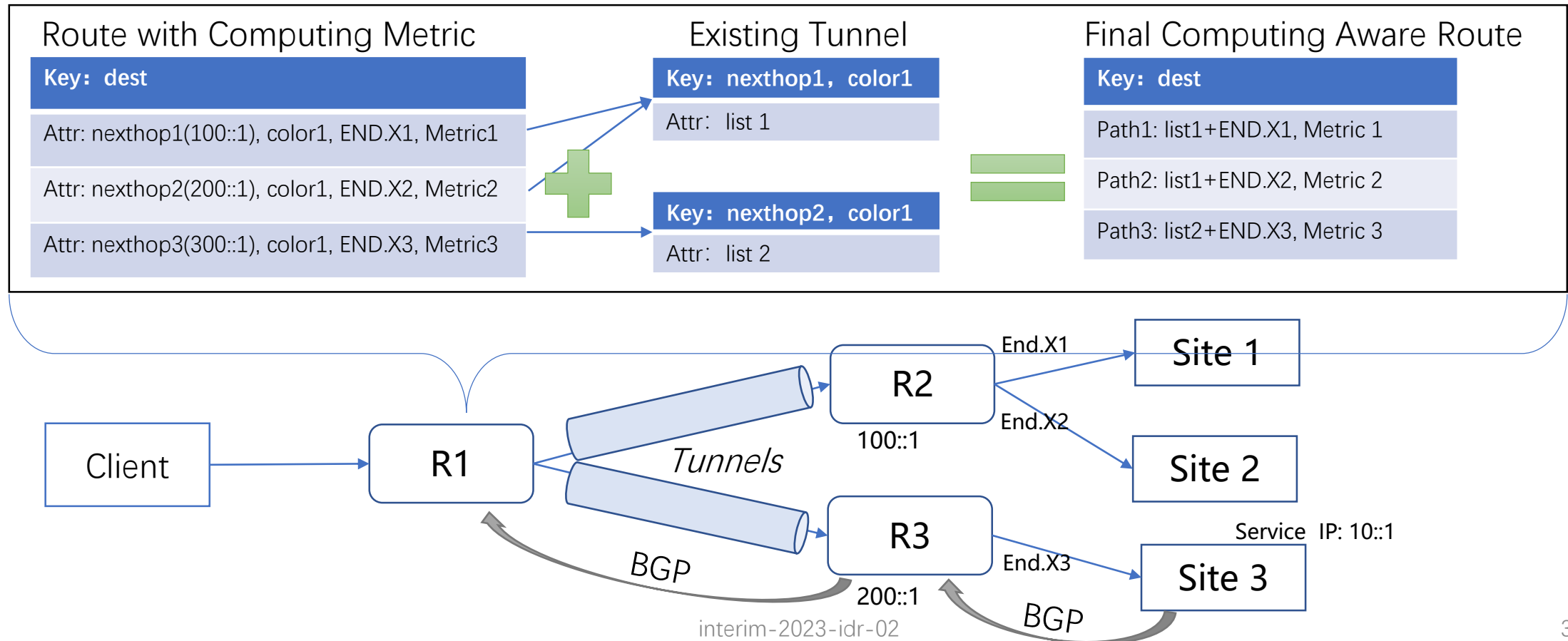
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Huawei/China Unicom

Background on CATS

- The CATS (Computing-Aware Traffic Steering) WG is chartered to consider the problem of how the **network edge can steer traffic** between clients and sites offering the service.
- The assumed model for the CATS WG is an **overlay network**, where a network edge node makes a decision based on **the metrics of interest**, and then steers the traffic to a node that serves a service instance, for example **using a tunnel**.



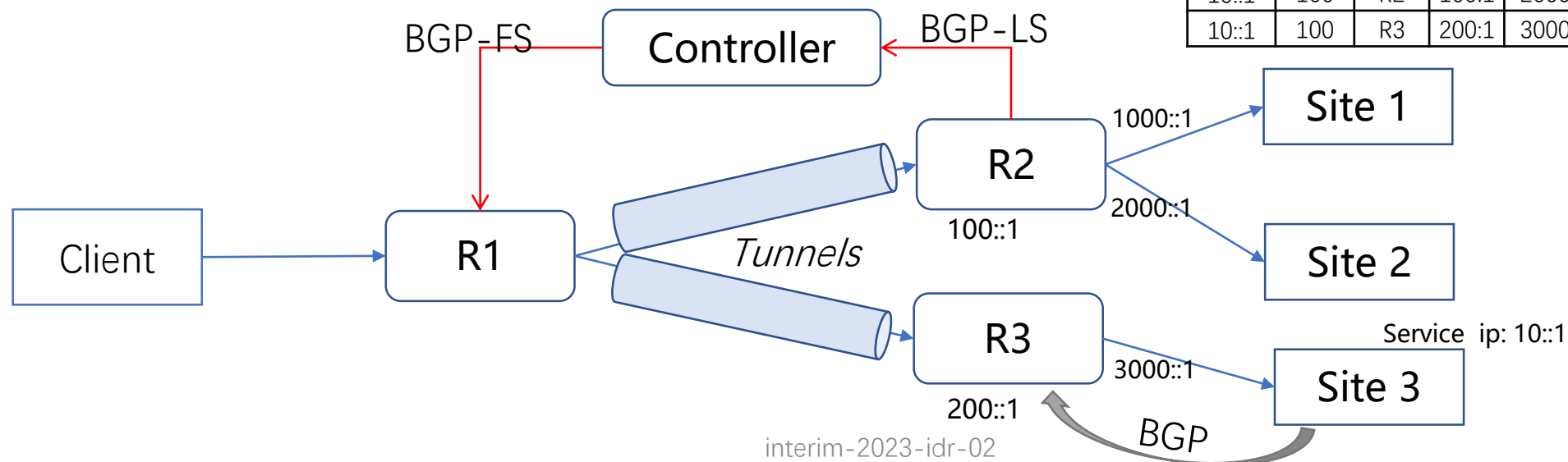
Existing method: use [draft-ietf-idr-5g-edge-service-metadata](#) to pass the metric



Our proposal: use controller to collect and distribute computing metric

- Why: Do not want to touch the BGP between Ingress and Egress
- Assume egress routers collect computing metric using [draft-ietf-idr-5g-edge-service-metadata](#)
- Egress to controller: BGP LS
- Controller to Ingress: BGP FS

Service		Path			Metric		
IP	Color	Egress	RD	Next Hop	CPU	IO	Load
10::1	100	R2	100:1	1000::1	50	30	50
10::1	100	R2	100:1	2000::1	30	60	20
10::1	100	R3	200:1	3000::1	50	30	50



Extension to BGP-LS

- Metadata Path Attribute TLV to carry the computing metric (sync with [draft-ietf-idr-5g-edge-service-metadata](#)):
 - Site preference
 - Capacity index
 - Load measurement
- Color Attribute TLV to carry the service level(Bronze, Silver, Gold) of the site (Similar to RFC9012)
- Reuse Prefix NLRI, Prefix SID Attribute

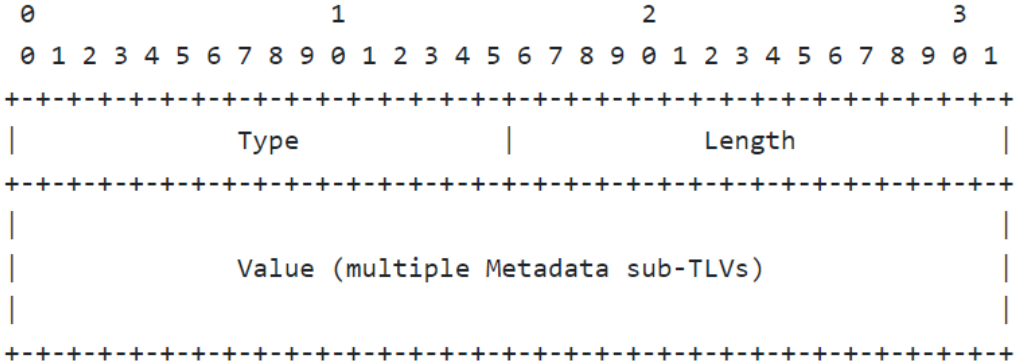


Figure 3: Metadata Path Attribute TLV format

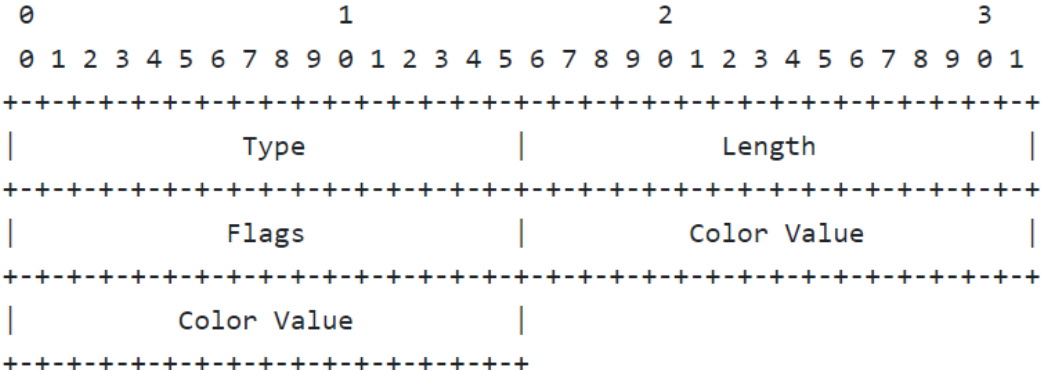


Figure 5: Color Attribute TLV format

Extension to BGP FlowSpec

- Add extension for computing metric
- Two modes of metric
 1. Original Metadata Path Attribute in [draft-ietf-idr-5g-edge-service-metadata](#)
 2. Aggregated Metric Path Attribute

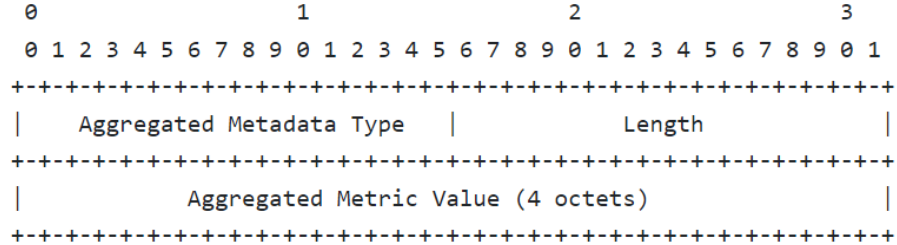
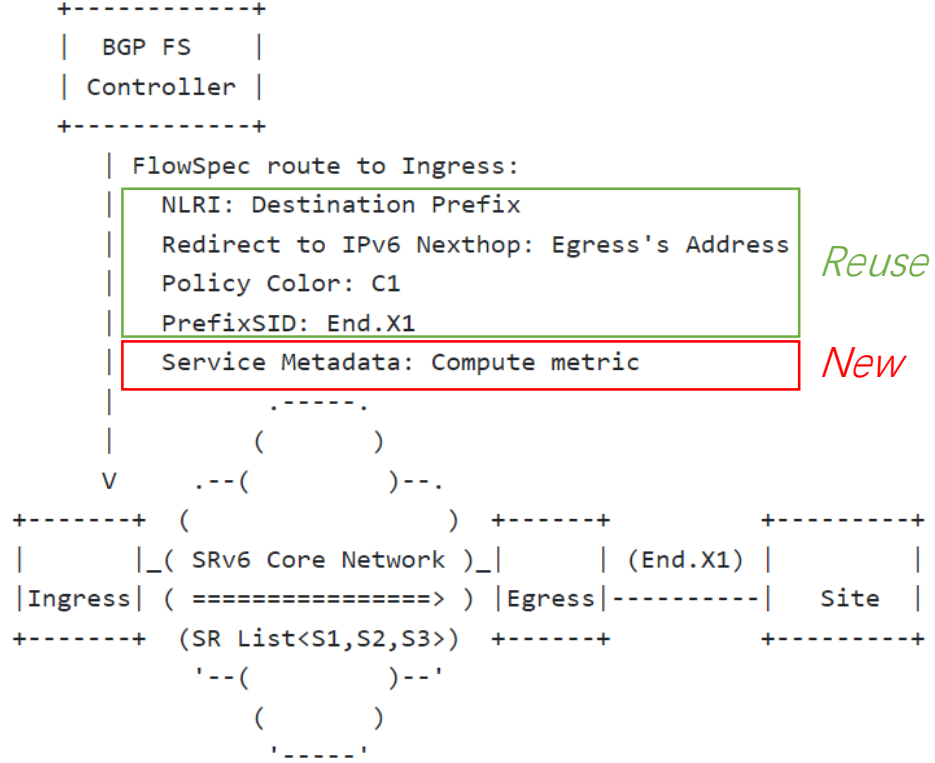


Figure 2: Aggregated Metric Path Attribute TLV format



Reuse
New

Figure 1: Example of using BGP FlowSpec to distribute the service route and metadata

Questions and Comments? Thanks

<https://github.com/VMatrix1900/draft-service-metadata-in-BGP-LS>

<https://github.com/VMatrix1900/draft-bgp-fs-edge-service-metadata>