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**Inter-domain SLA Exchange Implementation Report
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Abstract

This document is a report of implementations based on [[IDR-SLA](#)]. [[IDR-SLA](#)] introduces a new BGP attribute to exchange QoS SLA parameters between BGP peers. Current status of the implementation report covers Cisco implementation and an inter-operability results between implementations from 2 different Cisco OS.

Status of this Memo

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Table of Contents

- [1. Implementations and interoperability](#) [3](#)
- [1.1. Survey of Operations](#) [3](#)
- [2. Suggestions for the future](#) [5](#)
- [3. Acknowledgements](#) [5](#)
- [4. Security Considerations](#) [5](#)
- [5. Normative References](#) [5](#)
- [Authors' Addresses](#) [6](#)

1. Implementations and interoperability

	Cisco IOS	Cisco NX-OS
Cisco IOS	Y	Y
Cisco NX-OS	Y	Y

1.1. Survey of Operations

Optional transitive attribute:

Is QoS attribute implemented as an optional transitive attribute
- Yes

Local QoS SLA policy enablement:

When QoS SLA policy enablement triggers an explicit BGP update message with QoS attribute and SLA sub-type content, has an attribute's highest order bit, in the QoS attribute flag, set to 1? This is to indicate receiver to drop the message on reception.
- Yes

Is implementation capable of QoS SLA advertisement in the context of advertised NLRI? with source AS = 0 in the QoS SLA attribute
- did not implement

Is implementation capable of advertising QoS SLA with explicit source and destination AS encoded?
- Yes

First trigger for QoS SLA advertisement:

At the first trigger for SLA advertisement, a sender advertises SLA parameters with a unique SLA id?
- Yes

Acting as a receiver, is implementation capable to learn an advertised QoS attribute and SLA parameters
- Yes

Updating previously advertised QoS SLA:

On an event detecting update to earlier advertised SLA, sender

picks the same SLA id, advertised before, and signals new SLA parameters in its entirety. No delta updates.

- Yes

Acting as a receiver, is implementation capable to replace SLA parameters learned previously?

- Yes

Invalidation of previously advertised SLA:

On an event to invalidate previously advertised SLA parameters, a BGP update message is sent to the same destination AS with the same SLA id, advertised before, with SLA message containing 0 Traffic Class count.

- Yes

Acting as a receiver, is implementation capable to remove previously learned QoS SLA parameters?

- Yes

QoS SLA advertisement for point to point connection:

Is implementation capable to advertise SLA for the destination that is next hop

- Yes

QoS SLA advertisement for destination multiple hops away:

Is implementation capable to advertise SLA for the destination that is multiple hops away?

- Yes

None of the forwarding nodes modify the content of the QoS SLA parameters?

- Yes

Inter-operability with nodes not supporting this attribute:

Is interoperability tested to make sure this optional transitive attribute is forwarded without any impact through the nodes that do not implement support of this attribute

- Yes

Attributes implemented:


```
Cisco:
  Direction
    incoming
    outgoing
  Traffic Class Count
  Traffic Class Description
  Traffic Class Elements Count
  Classifier Element values
    ipDiffServCodePoint
  Traffic Class Service Count
  Service Attributes:
    Traffic_CLASS_TSPEC
    MINRATE_IN_PROFILE_MARKING
    MINRTE_OUT_PROFILE_MARKING
    RELATIVE_PRIORITY
```

2. Suggestions for the future

The proposed draft is to define message to exchange SLA parameters between two nodes. The proposal does not mandate sender to have SLA parameters provisioned in a specific manner the QoS attribute and SLA sub-type contents are encoded in the message. It is not required though it would be nice if SLA negotiation and SLA format, that gets provisioned on vendor devices, is well defined and aligned with the SLA sub-type format proposed in the [[IDR-SLA](#)] and thus providing a consistent way of mapping.

3. Acknowledgements

Thanks to Ruta Vaidya for providing data on Cisco implementation.

4. Security Considerations

No Security considerations are required for the report presented in this document.

5. Normative References

[IDR-SLA] Shah, S., Patel, K., Bajaj, S., Tomotaki, L., and M. Boucadair, "Inter-domain SLA Exchange, I-D.[draft-ietf-idr-sla-exchange](#)", June 2013.

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