

Network Working Group  
Internet-Draft  
Intended status: Informational  
Expires: November 07, 2013

J. Tantsura, Ed.  
Ericsson  
S. Yilmaz  
K. Patel  
Cisco Systems  
S. Mynam  
Dell Force10 Networks  
R. Raszuk  
NTT MCL  
May 06, 2013

Diverse Path Implementation Report  
draft-mynam-grow-diverse-path-impl-01

## Abstract

This document provides an implementation report for Diverse Path as defined in [RFC6774](#). The editor did not verify the accuracy of the information provided by respondents or by any alternative means. The respondents are experts with the implementations they reported on, and their responses are considered authoritative for the implementations for which their responses represent.

## Requirements Language

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in [RFC 2119](#) [[RFC2119](#)].

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## [1.](#) Introduction

The BGP4 protocol specifies the selection and propagation of a single best path for each prefix. Apart from BGP Add-Paths Proposal , today BGP has no other mechanisms to distribute paths other than best path between its speakers. BGP Divrsepath proposal does not specify any changes to the BGP protocol definition as specified by BGP Add-Paths proposal. It does not require upgrades to provider edge or core routers nor does it need network wide upgrades. Diverse Path attempts do solve the addpath problem and provision an interim

solution to the customers who cannot deploy addpath solution on certain networks. Due to the simple nature of Diverse Path with simple upgrades and configuration to the Route Reflectors without any configurations on the edge routers, Diverse Path becomes very easy to deploy

This document provides an implementation report for Diverse Path as defined in [RFC6774](#) - Distribution of Diverse BGP Paths

The editor did not verify the accuracy of the information provided by respondents or by any alternative means. The respondents are experts with the implementations they reported on, and their responses are considered authoritative for the implementations for which their responses represent.

## [2.](#) Implementation Forms

Contact and implementation information for person filling out this form:

Name: Satish Mynam, Email: mynam@cisco.com, Vendor: Cisco Systems, Inc. Release: IOS

Name: Jeff Tantsura, Email: jeff.tantsura@ericsson.com, Vendor: Ericsson, Release: IPOS, SEOS

### [2.1.](#) Support for multiple RRs

Does the implementation support Sec.4.[\[RFC6774\]](#) Provision for Multi plane route reflection?

Cisco: YES

Ericsson: YES

Does the implementation provide support for Sec4.1[\[RFC6774\]](#) Co-located best and backup path RRs?

Cisco: YES

Ericsson: YES

Does the implementation provide provision for Sec 4.3.[\[RFC6774\]](#) Multi plane route servers for Internet Exchanges?

Cisco: YES

Ericsson: NO

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## [2.2.](#) Path Selection

Does BGP diverse Path implementation follow the procedures for selection of the bestpath outlined in [Section 9.1](#).Decision Process in [RFC 4271](#)?

Cisco: YES

Ericsson: YES

## [2.3.](#) Deployment Consideration

Does BGP diverse Path implementation be easily enabled by introduction of a new route reflector, route server plane dedicated to the selection and distribution of Nth best-path?

Cisco: YES

Ericsson: YES (2nd Best-path)

Does BGP diverse Path implementation require any upgrades to the edge /core routers?

Cisco: NO

Ericsson: NO

Can BGP diverse Path implementation be deployed on multiple RR clusters?

Cisco: YES

Ericsson: YES

Does your BGP diverse Path implementation involve major modification to BGP implementations in the entire network?

Cisco: NO

Ericsson: NO

#### [2.4.](#) Usage of Diverse Path

Does BGP diverse Path implementation require any modifications to BGP4 protocol?

Cisco: NO

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Ericsson: NO

Does it help in the Multi-path load balancing applications for both IBGP and EBGP?

Cisco: YES

Ericsson: NO

Does the implementation support second session from RR to the same RR-client preferably terminated at a different loopback address of the route reflector and provide second bestpath to the RR-client?

Cisco: NO

Ericsson: YES

#### [2.5.](#) Bestpath algorithm

Does it add any modifications to the 9.1.Decision Process in [RFC 4271](#)? Does it skip any steps in the decision process?

Cisco: NO. No modifications to the algorithm are done except when RRs are not co-located and have different metric to reach the edge routers a configurable CLI command is provided for the user to control the disabling of the IGP metric check in the Decision Process to select bestpath and backuppath

Ericsson: NO. No modifications to the algorithm are done except when RRs are not co-located and have different metric to reach the edge routers a configurable CLI command is provided for the user to control the disabling of the IGP metric check in the Decision Process to select bestpath and backuppath

Does the implementation provide support for disabling IGP metric for bestpath selection on Sec 4.2 [[RFC6774](#)] randomly located best and backup path RRs?

Cisco: YES

Ericsson: YES

## [2.6.](#) Interoperable Implementations

List other implementations that you have tested interoperability of Diverse Path

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Cisco: The implementation should be interoperable with other vendor BGP implementations as no BGP Protocol changes are needed

Ericsson: The implementation should be interoperable with other vendor BGP implementations as no BGP Protocol changes are needed

## [3.](#) IANA Considerations

This document makes no request of IANA.

Note to RFC Editor: this section may be removed on publication as an RFC.

## [4.](#) Security considerations

No new security issues are introduced to the BGP protocol by this specification.

## [5.](#) Acknowledgements

## [6.](#) References

### [6.1.](#) Normative References

- [RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", [BCP 14](#), [RFC 2119](#), March 1997.
- [RFC4223] Savola, P., "Reclassification of [RFC 1863](#) to Historic", [RFC 4223](#), October 2005.
- [RFC4271] Rekhter, Y., Li, T., and S. Hares, "A Border Gateway Protocol 4 (BGP-4)", [RFC 4271](#), January 2006.

### [6.2.](#) Informative References

- [RFC6774] Raszuk, R., Fernando, R., Patel, K., McPherson, D., and K. Kumaki, "Distribution of Diverse BGP Paths", [RFC 6774](#), November 2012.

## Authors' Addresses

Jeff Tantsura, (editor)  
Ericsson  
300 Holger Way  
San Jose, CA 95134  
US

Email: [jeff.tantsura@ericsson.com](mailto:jeff.tantsura@ericsson.com)

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Selma Yilmaz  
Cisco Systems  
170 West Tasman Drive  
San Jose, CA 95134  
US

Email: [seyilmaz@cisco.com](mailto:seyilmaz@cisco.com)

Keyur Patel  
Cisco Systems  
170 West Tasman Drive  
San Jose, CA 95134  
US

Email: [keyupate@cisco.com](mailto:keyupate@cisco.com)

Satish Mynam  
Dell Force10 Networks  
350 Holger Way  
San Jose, CA 95134  
US

Email: [Satish\\_Mynam@Dell.com](mailto:Satish_Mynam@Dell.com)

Robert Raszuk  
NTT MCL

Email: [robert@raszuk.net](mailto:robert@raszuk.net)