

NG MVPN BGP ROUTE TYPES AND ENCODINGS

Examples for Easy Reference

Table of Contents

Introduction	1
Scope.....	1
Design Considerations	1
Type 1 Example: Intra-AS I-PMSI AD Route	1
Type 2 Example: Inter-AS I-PMSI AD Route	1
Type 3 Example: S-PMSI AD Route.....	1
Type 4 Example: Leaf AD Route	2
Type 5 Example: Source Active AD Route	2
Type 6 Example: Shared Tree Join Route.....	2
Type 7 Example: Source Tree Join Route.....	2
Summary	2
About Juniper Networks.....	3

Introduction

NG MVPNs use seven types of BGP MVPN routes, five of which are used for autodiscovery and two for C-multicast protocol information exchange between provider edge (PE) routers. This application note identifies and gives examples of NG MVPN route types and their encodings.

Scope

This document is for use in the field when configuring and verifying NG MVPNs.

Design Considerations

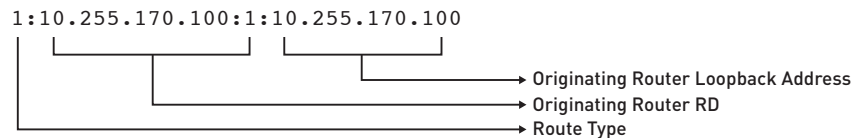
These examples apply to NG MVPN using the BGP control plane.

NG MVPN BGP Route Types and Encodings

Key			
AD	autodiscovery	MVPN	multicast VPN
AS	autonomous system	NG	next generation
ASBR	AS border router	PE	provider edge
C-G	customer multicast group address	PMSI	provider multicast service interface
C-S	customer multicast source address	RD	route distinguisher
C-multicast	customer multicast	RP	rendezvous point
I-PMSI	inclusive PMSI	S-PMSI	selective PMSI

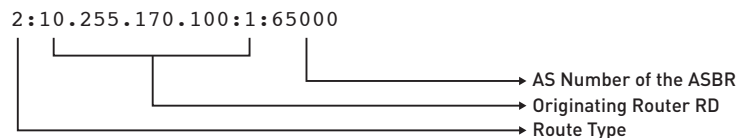
Type 1 Example: Intra-AS I-PMSI AD Route

Originated by all PE routers participating in NG MVPN.



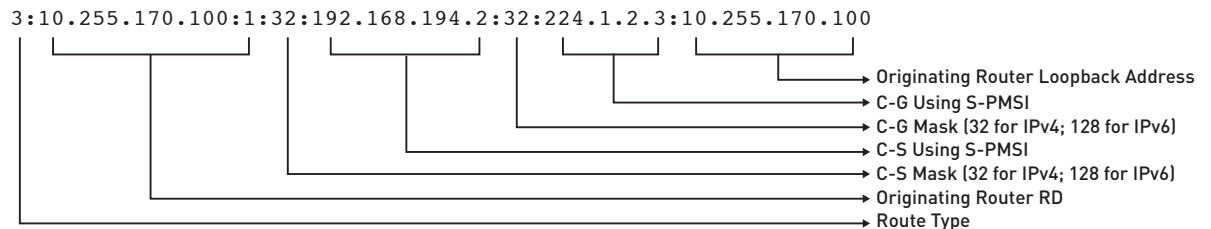
Type 2 Example: Inter-AS I-PMSI AD Route

Originated by all ASBR PE routers.



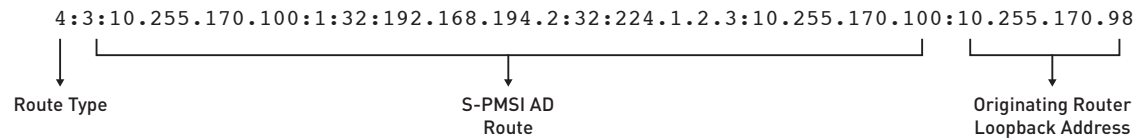
Type 3 Example: S-PMSI AD Route

Originated by the sender PE router (the sender PE that initiates the S-PMSI).



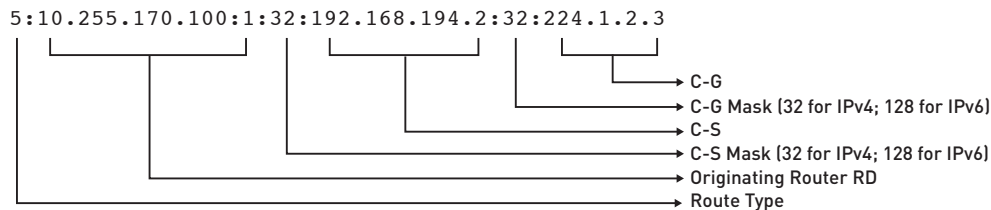
Type 4 Example: Leaf AD Route

Originated by receiver PE routers in response to receiving S-PMSI AD routes with the “leaf information required” flag set from the sender PE router.



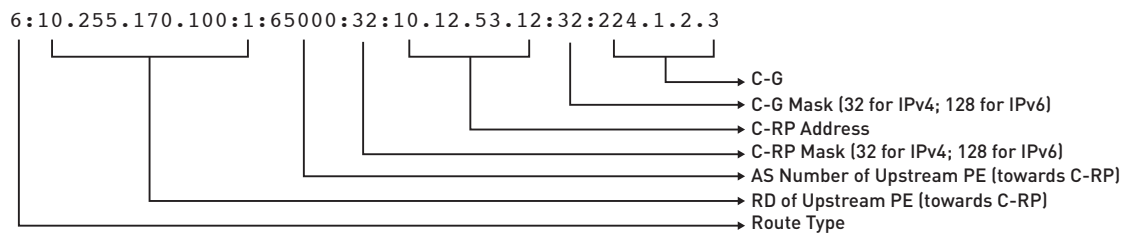
Type 5 Example: Source Active AD Route

Originated by the PE router that discovers an active VPN multicast source.



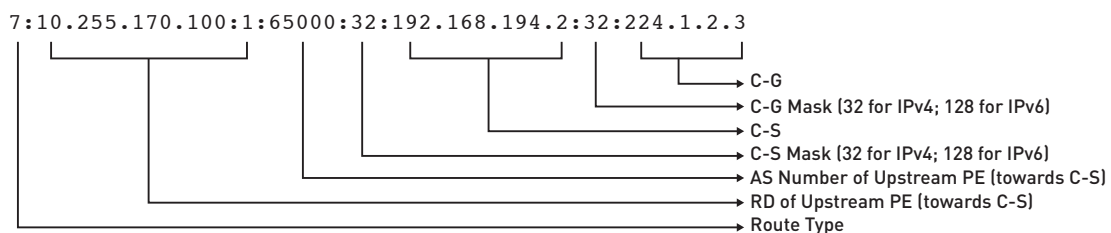
Type 6 Example: Shared Tree Join Route

Originated by the receiver PE router (the PE that receives a (C-*, C-G) join message from a VPN interface).



Type 7 Example: Source Tree Join Route

Originated by the receiver PE router (the PE that receives a local (C-S, C-G) join message or the PE that already has a Type 6 route and receives a Type 5 route).



Summary

Juniper Networks® is a leading innovator of NG MVPN solutions. Using Juniper Networks JUNOS® Software to deploy NG MVPNs, service providers now have a scalable, flexible, more economical approach to implementing solutions that support numerous emerging NG MVPN applications.

About Juniper Networks

Juniper Networks, Inc. is the leader in high-performance networking. Juniper offers a high-performance network infrastructure that creates a responsive and trusted environment for accelerating the deployment of services and applications over a single network. This fuels high-performance businesses. Additional information can be found at www.juniper.net.

Corporate And Sales Headquarters

Juniper Networks, Inc.
1194 North Mathilda Avenue
Sunnyvale, CA 94089 USA
Phone: 888.JUNIPER
(888.586.4737)
or 408.745.2000
Fax: 408.745.2100

APAC Headquarters

Juniper Networks (Hong Kong)
26/F, Cityplaza One
1111 King's Road
Taikoo Shing, Hong Kong
Phone: 852.2332.3636
Fax: 852.2574.7803

EMEA Headquarters

Juniper Networks Ireland
Airside Business Park
Swords, County Dublin,
Ireland
Phone: 35.31.8903.600
Fax: 35.31.8903.601

Copyright 2009 Juniper Networks, Inc.
All rights reserved. Juniper Networks, the Juniper Networks logo, JUNOS, NetScreen, and ScreenOS are registered trademarks of Juniper Networks, Inc. in the United States and other countries. JUNOSe is a trademark of Juniper Networks, Inc. All other trademarks, service marks, registered marks, or registered service marks are the property of their respective owners. Juniper Networks assumes no responsibility for any inaccuracies in this document. Juniper Networks reserves the right to change, modify, transfer, or otherwise revise this publication without notice.

To purchase Juniper Networks solutions, please contact your Juniper Networks representative at **1-866-298-6428** or authorized reseller.

