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Route Distinguisher Zero Value Usage

[draft-martini-l3vpn-rd-zero-00.txt](#)

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Abstract

The behaviour that must be followed when an route distinguisher (RD) of value zero is received is not clearly defined in [rfc4364](#). This document clarifies the use of an RD with a value of zero in the context defined in [rfc 4364](#).

Table of Contents

1	Specification of Requirements	2
2	Introduction	2
3	RFC4364 definitions	2
3.1	Usage of RD value of zero	3
4	Full Copyright Statement	3
5	Intellectual Property Statement	3
6	IANA Considerations	4
7	Normative References	4
8	Author Information	4

[1](#). Specification of Requirements

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](#).

[2](#). Introduction

This document refines the Route Distinguisher semantics detailed in [\[RFC4364\]](#). The Route Distinguisher consist of an 8-byte value whose encoding is detailed in [\[RFC4364\]](#). The Route Distinguisher is used in conjunction with VPN prefixes and VPN nexthops in VPN networks to solely allow one to create distinct routes to a common IPv4 address prefix.

[3](#). [RFC4364](#) definitions

Currently in [\[RFC4364\] section 4.3.2](#), the RD is used with a value of 0 in the next hop field of the BGP NLRI. This is a special case that is allowed by the design. In [section 4.2 of \[RFC4364\]](#), the encoding of the RD for type 0 is defines as a type field , and a value field. If the type field is 0, then the value field in interpreted as containing an autonomous system number (ASN), and a assigned Number

subfield. The ASN cannot contain 0 as it is a reserved ASN number.

[3.1.](#) Usage of RD value of zero

Whenever the RD is used within the VPN nexthop field of the BGP NLRI, the RD is used with the value of 0. However whenever the RD is used with VPN prefix field of the BGP NLRI, the Route Distinguisher MUST never be used with the value of 0. Hence, VPN routes received with the Route Distinguisher value of 0 MUST be discarded with an appropriate error.

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[6](#). IANA Considerations

This document has no IANA Actions.

[7](#). Normative References

[[RFC4364](#)]] "BGP/MPLS IP Virtual Private Networks (VPNs)"
E. Rosen, Y. Rekhter, [RFC 4364](#) February 2006

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