Network Working Group Internet Draft Expiration Date: March 2009 Intended Status: Proposed Standard Yakov Rekhter (Juniper Networks) Srihari R. Sangli (Cisco Systems) Daniel Tappan (Cisco Systems)

Four-octet AS Specific BGP Extended Community

draft-ietf-l3vpn-as4octet-ext-community-00.txt

Status of this Memo

Internet-Drafts are working documents of the Internet Engineering Task Force (IETF), its areas, and its working groups. Note that other groups may also distribute working documents as Internet-Drafts.

Internet-Drafts are draft documents valid for a maximum of six months and may be updated, replaced, or obsoleted by other documents at any time. It is inappropriate to use Internet-Drafts as reference material or to cite them other than as "work in progress".

The list of current Internet-Drafts can be accessed at <a href="http://www.ietf.org/ietf/lid-abstracts.txt">http://www.ietf.org/ietf/lid-abstracts.txt</a>

The list of Internet-Draft Shadow Directories can be accessed at <a href="http://www.ietf.org/shadow.html">http://www.ietf.org/shadow.html</a>.

IPR Disclosure Acknowledgement

By submitting this Internet-Draft, each author represents that any applicable patent or other IPR claims of which he or she is aware have been or will be disclosed, and any of which he or she becomes aware will be disclosed, in accordance with <u>Section 6 of BCP 79</u>.

Sangli, Tappan, Rekhter

# Abstract

This document defines a new type of a BGP extended community - fouroctet AS specific extended community. This community allows to carry 4 octet autonomous system numbers.

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 <u>RFC 2119</u> [<u>RFC2119</u>].

## **1**. Introduction

This document defines a new type of a BGP ([BGP-4]) extended community ([EXT-COMM]) - four-octet AS specific extended community. This type of extended community is similar to the two-octet AS specific extended community, except that it can carry a four octets autonomous system number.

### 2. Four-octet AS specific extended community

This is an extended type with Type Field comprising of 2 octets and Value Field comprising of 6 octets.

0	1	2	3
0123456	78901234	5 6 7 8 9 0 1 2 3 4	5678901
+-+-+-+-+-+-	+ - + - + - + - + - + - + - + - + - + -	+-	+ - + - + - + - + - + - + - +
0x02 or 0x42	Sub-Type	Global Adminis	strator
+-+-+-+-+-+-	+ - + - + - + - + - + - + - + - + - + -	+ - + - + - + - + - + - + - + - + - + -	+-+-+-+-+-+-+
Global Admin	istrator (cont.)	Local Adminis	trator
+-			

The value of the high-order octet of this extended type is either 0x02 or 0x42. The low-order octet of this extended type is used to indicate sub-types.

The Value Field consists of two sub-fields:

Global Administrator sub-field: 4 octets

This sub-field contains a 4-octets Autonomous System number assigned by IANA.

[Page 2]

Local Administrator sub-field: 2 octets

The organization identified by Autonomous System number in the Global Administrator sub-field, can encode any information in this sub-field. The format and meaning of the value encoded in this sub-field should be defined by the sub-type of the community.

# 3. IANA Considerations

This document defines a class of extended communities called fouroctet AS specific extended community for which the IANA is to create and maintain a registry entitled Four-octet AS Specific Extended Community. All the communities in this class are of extended Types. Future assignment are to be made using the "First Come First Served" policy defined in [RFC2434]. The Type values for the transitive communities of the four-octet AS specific extended community class are 0x0200-0x02ff, and for the non-transitive communities of that class are 0x4200-0x42ff. Assignments consist of a name and the value.

This document makes the following assignments for the four-octet AS specific extended community:

Name	Type Value
four-octet AS specific Route Target	0x0202
four-octet AS specific Route Origin	0x0203

### **<u>4</u>**. Security Considerations

All the security considerations for BGP Extended Communities apply here.

### 5. Intellectual Property Statement

The IETF takes no position regarding the validity or scope of any Intellectual Property Rights or other rights that might be claimed to pertain to the implementation or use of the technology described in this document or the extent to which any license under such rights might or might not be available; nor does it represent that it has made any independent effort to identify any such rights. Information on the procedures with respect to rights in RFC documents can be found in BCP 78 and BCP 79.

Copies of IPR disclosures made to the IETF Secretariat and any

[Page 3]

Internet Draftdraft-ietf-l3vpn-as4octet-ext-community-00.txtSeptember 2008

assurances of licenses to be made available, or the result of an attempt made to obtain a general license or permission for the use of such proprietary rights by implementers or users of this specification can be obtained from the IETF on-line IPR repository at http://www.ietf.org/ipr.

The IETF invites any interested party to bring to its attention any copyrights, patents or patent applications, or other proprietary rights that may cover technology that may be required to implement this standard. Please address the information to the IETF at ietf-ipr@ietf.org.

### 6. Copyright Notice

Copyright (C) The IETF Trust (2008).

This document is subject to the rights, licenses and restrictions contained in  $\frac{BCP}{78}$ , and except as set forth therein, the authors retain all their rights.

This document and the information contained herein are provided on an "AS IS" basis and THE CONTRIBUTOR, THE ORGANIZATION HE/SHE REPRESENTS OR IS SPONSORED BY (IF ANY), THE INTERNET SOCIETY, THE IETF TRUST AND THE INTERNET ENGINEERING TASK FORCE DISCLAIM ALL WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY WARRANTY THAT THE USE OF THE INFORMATION HEREIN WILL NOT INFRINGE ANY RIGHTS OR ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

### 7. Disclaimer of validity:

The IETF takes no position regarding the validity or scope of any Intellectual Property Rights or other rights that might be claimed to pertain to the implementation or use of the technology described in this document or the extent to which any license under such rights might or might not be available; nor does it represent that it has made any independent effort to identify any such rights. Information on the procedures with respect to rights in RFC documents can be found in <u>BCP 78</u> and <u>BCP 79</u>. Copies of IPR disclosures made to the IETF Secretariat and any assurances of licenses to be made available, or the result of an attempt made to obtain a general license or permission for the use of such proprietary rights by implementers or users of this specification can be obtained from the IETF on-line IPR repository at <u>http://www.ietf.org/ipr</u>.

The IETF invites any interested party to bring to its attention any copyrights, patents or patent applications, or other proprietary

[Page 4]

Internet Draftdraft-ietf-l3vpn-as4octet-ext-community-00.txtSeptember 2008

rights that may cover technology that may be required to implement this standard. Please address the information to the IETF at ietfipr@ietf.org.

### 8. Acknowledgements

#### 9. Normative References

[BGP-4] Rekhter, Y., and T. Li, "A Border Gateway Protocol 4 (BGP-4)", <u>RFC 4271</u>, January 2006

[RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", <u>BCP 14</u>, <u>RFC 2119</u>, March 1997.

[RFC2434] Narten, T., Alvestrand, H., "Guidelines for Writing an IANA Considerations Section in RFCs", <u>RFC2434</u>, October 1998.

[EXT-COMM] Srihari R. Sangli, Daniel Tappan, Yakov Rekhter, "BGP Extended Communities Attribute", <u>RFC 4360</u>, February 2006.

### **<u>10</u>**. Non-normative References

### **<u>11</u>**. Author Information

Yakov Rekhter Juniper Networks, Inc. e-mail: yakov@juniper.net

Srihari R. Sangli Cisco Systems, Inc. e-mail: rsrihari@cisco.com

Dan Tappan Cisco Systems, Inc. 250 Apollo Drive Chelmsford, MA 01824 e-mail: tappan@cisco.com

[Page 5]