

IDR  
Internet-Draft  
Intended status: Standards Track  
Expires: March 6, 2017

J. Heitz  
Cisco  
K. Patel  
Arrcus  
J. Snijders  
NTT  
I. Bagdonas  
Equinix  
A. Simpson  
Nokia  
September 2, 2016

Large BGP Community  
draft-heitz-idr-large-community-03

Abstract

A new type of BGP community attribute that contains communities that each hold a 4-octet AS number and a 8-octet opaque field is defined.

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 [[RFC2119](#)].

Status of This Memo

This Internet-Draft is submitted in full conformance with the provisions of [BCP 78](#) and [BCP 79](#).

Internet-Drafts are working documents of the Internet Engineering Task Force (IETF). Note that other groups may also distribute working documents as Internet-Drafts. The list of current Internet-Drafts is at <http://datatracker.ietf.org/drafts/current/>.

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."

This Internet-Draft will expire on March 6, 2017.

Internet-Draft

Large BGP Community

September 2016

## Copyright Notice

Copyright (c) 2016 IETF Trust and the persons identified as the document authors. All rights reserved.

This document is subject to [BCP 78](#) and the IETF Trust's Legal Provisions Relating to IETF Documents (<http://trustee.ietf.org/license-info>) in effect on the date of publication of this document. Please review these documents carefully, as they describe your rights and restrictions with respect to this document. Code Components extracted from this document must include Simplified BSD License text as described in Section 4.e of the Trust Legal Provisions and are provided without warranty as described in the Simplified BSD License.

## Table of Contents

<a href="#">1.</a>	Introduction . . . . .	<a href="#">2</a>
<a href="#">2.</a>	Large BGP Community Attribute . . . . .	<a href="#">2</a>
<a href="#">3.</a>	Textual Representation . . . . .	<a href="#">3</a>
<a href="#">4.</a>	Security Considerations . . . . .	<a href="#">3</a>
<a href="#">5.</a>	IANA Considerations . . . . .	<a href="#">3</a>
<a href="#">6.</a>	Acknowledgements . . . . .	<a href="#">3</a>
<a href="#">7.</a>	Normative References . . . . .	<a href="#">3</a>
	Authors' Addresses . . . . .	<a href="#">4</a>

[1.](#) Introduction

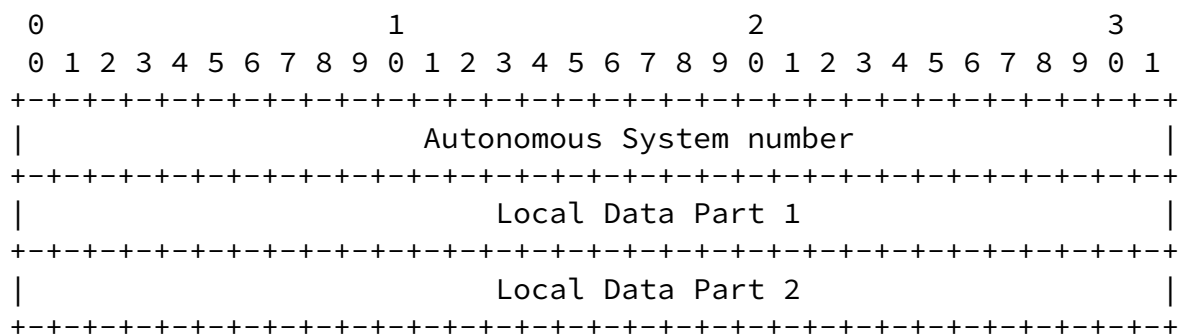
A BGP Community attribute is defined that encodes 12 byte communities, suitable for 4-Octet Autonomous System Numbers that require 8 octets of locally significant opaque data.

To ensure rapid and smooth adoption of the new community attribute, it must be as similar to the [[RFC1997](#)] community as possible, only bigger.

[2.](#) Large BGP Community Attribute

The Large Community Attribute is a transitive optional BGP attribute, with the Type Code (suggested 41) to be assigned by IANA. The attribute consists of a set of "Large Communities". All routes with the Large Community attribute belong to the communities listed in the attribute.

Each Large Community is encoded as a 12-octet quantity, as follows:



### 3. Textual Representation

The textual representation of the Large BGP Community is A:B:C, where A is the Autonomous System number, B is the Local Data part 1 and C is the Local Data part 2. A ranges from 0 to 4294967295. B ranges from 0 to 4294967295. C ranges from 0 to 4294967295. A, B and C are plain decimal non-negative integers without leading zeroes. Each number must appear, even if it is 0. For example, "0:1:2" cannot be written as ":1:2". The string is expected to match the following regular expression: `^[0-9]+:[0-9]+:[0-9]+$`

### 4. Security Considerations

TBD

### 5. IANA Considerations

IANA is requested to assign a BGP path attribute value for the Large community attribute.

### 6. Acknowledgements

Thanks to Russ White, Acee Lindem, Shyam Sethuram and Jared Mauch for insightful review and comments.

### 7. Normative References

[RFC1997] Chandra, R., Traina, P., and T. Li, "BGP Communities Attribute", [RFC 1997](#), DOI 10.17487/RFC1997, August 1996, <<http://www.rfc-editor.org/info/rfc1997>>.

[RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", [BCP 14](#), [RFC 2119](#), DOI 10.17487/RFC2119, March 1997, <<http://www.rfc-editor.org/info/rfc2119>>.

Heitz, et al.

Expires March 6, 2017

[Page 3]

---

Internet-Draft

Large BGP Community

September 2016

#### Authors' Addresses

Jakob Heitz  
Cisco  
170 West Tasman Drive  
San Jose, CA 95054  
USA

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

Keyur Patel  
Arrcus, Inc

Email: [keyur@arrcus.com](mailto:keyur@arrcus.com)

Job Snijders  
NTT Communications, Inc.  
Theodorus Majofskistraat 100  
Amsterdam 1065 SZ  
NL

Email: [job@ntt.net](mailto:job@ntt.net)

Ignas Bagdonas  
Equinix  
London

UK

Email: [ibagdona.ietf@gmail.com](mailto:ibagdona.ietf@gmail.com)

Adam Simpson

Nokia

600 March Road

Ottawa Ontario K2K 2E6

Canada

Email: [adam.1.simpson@nokia.com](mailto:adam.1.simpson@nokia.com)