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Four-octet AS Specific BGP Extended Community

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## Abstract

This document defines a new type of a BGP extended community - four-octet 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 [RFC 2119](#) [[RFC2119](#)].

### 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
      0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1
+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
| 0x02 or 0x42 | Sub-Type | Global Administrator |
+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
| Global Administrator (cont.) | Local Administrator |
+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+

```

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.

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 four-octet 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

### [4.](#) Security Considerations

All the security considerations for BGP Extended Communities apply here.

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## 8. Acknowledgements

## 9. Normative References

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

[RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", [BCP 14](#), [RFC 2119](#), March 1997.

[RFC2434] Narten, T., Alvestrand, H., "Guidelines for Writing an IANA Considerations Section in RFCs", [RFC2434](#), October 1998.

[EXT-COMM] Srihari R. Sangli, Daniel Tappan, Yakov Rekhter, "BGP Extended Communities Attribute", [RFC 4360](#), February 2006.

## 10. Non-normative References

## 11. Author Information

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