Abstract

When BGP route collectors such as RIPE RIS and Route Views are used by operators and researchers, currently one can not tell if a path announced to a collector is from the ISP’s customer cone, an internal route, or one learned from peering or transit. This greatly reduces the utility of the collected data. This document specifies the use of BGP communities to differentiate the kinds of views being presented to the collectors.

Requirements Language

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" are to be interpreted as described in [RFC2119] only when they appear in all upper case. They may also appear in lower or mixed case as English words, without normative meaning.

Status of This Memo

This Internet-Draft is submitted in full conformance with the provisions of BCP 78 and BCP 79.

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This Internet-Draft will expire on March 10, 2016.
1. Introduction

BGP route collectors such as RIPE RIS [ris] and Route Views [rviews] are used by both operators and researchers. Unfortunately, one cannot tell if a path announced to a collector is from the ISP’s customer cone (one’s own prefixes and the closure of those to whom transit is provided; i.e. what one would announce to a peer), an internal route, or an external route learned via peering or transit. This greatly reduces the utility of the collected data, and has been a cause of much pain over the years. This document specifies the use of BGP communities to differentiate between these categories.

In 2006, [RFC4384] attempted a similar goal but failed to gain traction in the operational community. We believe this was due to its unnecessary complexity. This document proposes a much simpler marking scheme and, if published, will obsolete [RFC4384].
2. Rationale

When an operator uses a collector to look at an ISP’s announcement of a prefix, it is very useful to know if the ISP also announced it to their customers and/or peers/transits. Researchers want to differentiate similarly in order to understand expected route propagation.

One usually wishes to ignore any internal-only routes an ISP may announce to the collector, as they would not be announcing them to peers, transits, or customers.

An ISP is expected to announce customer routes to their customers, and announce customer routes to their external peers and transits.

In general, one does not need to differentiate whether the ISP will announce to peers or transits; and the ISP may not wish to expose the business relationships with external providers. So we do not propose to differentiate peers from transit providers.

3. Categories

We define only three categories of announcements:

- **Customer Cone**: One’s own prefixes and the closure of those to whom transit is provided including routes announced by BGP customers, static prefixes used for non-BGP customers, datacenter routes, etc.
- **External Routes**: Routes learned from peers and transit providers which the ISP would normally announce to customers but not to peers. Often, ISPs do not announce such routes to collectors. But, as there is no general practice, this category is important to mark.
- **Internal Routes**: ISPs occasionally announce to the collector internal point to point and other routes they would not normally announce to customers, peers, or transit providers.

4. Signaling

BGP announcements to route collectors SHOULD be marked with communities indicating into which category the announcement falls. As most collector peers already use community markings similar to these, but ad hoc, the additional effort should be trivial.

The ASN in the marking SHOULD be that of the collector peer. The communities were selected from community values which were unused at the time of this document and SHOULD be as follows:
<table>
<thead>
<tr>
<th>Category</th>
<th>Community</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer Cone</td>
<td>ASN:64994</td>
</tr>
<tr>
<td>External Route</td>
<td>ASN:64995</td>
</tr>
<tr>
<td>Internal Route</td>
<td>ASN:64996</td>
</tr>
</tbody>
</table>

Community Markings

Table 1

5. IANA Considerations

As the number of categories is intentionally minimal, an IANA registry should not be needed.

6. References

6.1. Normative References


6.2. Informative References


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