Abstract

This document defines several subcodes for BGP Finite State Machine (FSM) Error that could provide more information to help network operators in diagnosing BGP FSM issues and correlating network events.

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 RFC 2119 [RFC2119].

Status of this Memo

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This Internet-Draft will expire on February 12, 2012.

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1. Introduction

This document defines several subcodes for BGP [RFC4271] Finite State Machine Error that could provide more information to help network operators in diagnosing BGP FSM issues and correlating network events. This information is also helpful to developers in lab situations.

2. Definition of Finite State Machine Error Subcodes

This document defines following subcodes for BGP Finite State Machine Error:

0 - Unspecific Error
1 - Receive Unexpected Message in OpenSent State
2 - Receive Unexpected Message in OpenConfirm State
3 - Receive Unexpected Message in Established State

3. Usage of FSM Error Subcodes

If a BGP speaker receives an unexpected message (e.g. KEEPALIVE/UPDATE/ROUTE-REFRESH message) on a session in OpenSent state, it MUST send to the neighbor a NOTIFICATION message with the Error Code Finite State Machine Error and the Error Subcode "Receive Unexpected Message in OpenSent State". The Data field is a 1-octet unsigned integer which indicates type of the unexpected message.

If a BGP speaker receives an unexpected message (e.g. OPEN/UPDATE/ROUTE-REFRESH message) on a session in OpenConfirm state, it MUST send to the neighbor a NOTIFICATION message with the Error Code Finite State Machine Error and the Error Subcode "Receive Unexpected Message in OpenConfirm State". The Data field is a 1-octet unsigned integer which indicates type of the unexpected message.

If a BGP speaker receives an unexpected message (e.g. OPEN message) on a session in Established state, it MUST send to the neighbor a NOTIFICATION message with the Error Code Finite State Machine Error and the Error Subcode "Receive Unexpected Message in Established State". The Data field is a 1-octet unsigned integer which indicates type of the unexpected message.
4. Security Considerations

This document does not change the security properties of BGP.

5. IANA Considerations

IANA is requested to create the registry "BGP Finite State Machine Error Subcodes", within the "BGP Error Subcodes" registry, with Registration Procedures "Standards Action process or the Early IANA Allocation process".

The registry should be populated with the following values:

<table>
<thead>
<tr>
<th>Value</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Unspecified Error</td>
</tr>
<tr>
<td>1</td>
<td>Receive Unexpected Message in OpenSent State</td>
</tr>
<tr>
<td>2</td>
<td>Receive Unexpected Message in OpenConfirm State</td>
</tr>
<tr>
<td>3</td>
<td>Receive Unexpected Message in Established State</td>
</tr>
</tbody>
</table>

6. Contributors

The following individuals contributed to this document:

Xiaoming Gu      EMail: guxiaoming@huawei.com
Chong Wang       EMail: chongwang@huawei.com

7. Acknowledgements

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8. Normative References


Authors’ Addresses

Jie Dong
Huawei Technologies
Huawei Building, No.3 Xinxi Rd
Beijing 100085
China

Email: jie.dong@huawei.com

Mach Chen
Huawei Technologies
Huawei Building, No.3 Xinxi Rd
Beijing 100085
China

Email: mach.chen@huawei.com

Anantharamu Suryanarayana
Cisco Systems
USA

Email: asuryana@cisco.com