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Fully Qualified Domain Name Capability for BGP  
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## Abstract

In this document we propose a BGP capability that allows the advertisement of a BGP speaker's FQDN (Fully Qualified Domain Name).

## Status of This Memo

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## 1. Introduction

BGP can be made much easier to troubleshoot by displaying the hostname of the speaker in addition to the speaker's IP address. This is especially true for IPv6 addresses due to their length. If all BGP sessions were via global addresses then DNS could be used to resolve the hostname for each address. BGP sessions can be via IPv6 link-local addresses which will not have a DNS entry per Section 2.1 of [RFC4472]. This document defines a new BGP capability that allows the exchange of a speaker's FQDN.

## 2. 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 [RFC2119].

## 3. FQDN Capability

The FQDN Capability is a new BGP capability [RFC5492]. The Capability Code for this capability is specified in the IANA Considerations section of this document. The Capability Length field of this capability is variable. The Capability Value field consists of the following:

```
+-----+
|  Hostname Length (1 octet)  |
+-----+
|  Hostname (variable)       |
+-----+
|  Domain Name Length (1 octet) |
+-----+
|  Domain Name (variable)     |
+-----+
```

Hostname Length:

The number of characters in the Hostname

Hostname:

The hostname encoded via UTF-8

Domain Name Length:

The number of characters in the Domain Name

Domain Name:

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The domain name encoded via UTF-8

#### [4.](#) Operation

The FQDN Capability SHOULD only be used for displaying the hostname and/or domain name of a speaker in order to make troubleshooting easier.

#### [5.](#) IANA Considerations

IANA has assigned capability number TBD for the FQDN Capability described in this document. This registration is in the BGP Capability Codes registry.

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

This document introduces no new security concerns to BGP or other specifications referenced in this document.

#### [7.](#) References

##### [7.1.](#) Normative References

- [RFC4472] Durand, A., Ihren, J., and P. Savola, "Operational Considerations and Issues with IPv6 DNS", [RFC 4472](#), April 2006.
- [RFC5492] Scudder, J. and R. Chandra, "Capabilities Advertisement with BGP-4", [RFC 5492](#), February 2009.
- [RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", [BCP 14](#), [RFC 2119](#), March 1997.

##### [7.2.](#) Implementation References

- [quagga] Dutt, D., "Quagga - BGP FQDN Capability", May 2015,

<https://github.com/CumulusNetworks/quagga/commit/45d4b165b9d01c0e98082e7d1e90a3b1a60b1085>>.

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