

Configure Advanced Options for BGP on FTD

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Introduction

This document describes the options of Border Gateway Protocol (BGP) to manipulate the Path Selection when multiple paths lead to the same destination.

Components Used

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, ensure that you understand the potential impact of any command.

Configure BGP AS Path Prepend

You can use AS Path Prepend to manipulate the path selection. Review the next documentation for further information regarding the BGP path selection:

- [BGP Path Selection](#)

Procedure

Step 1. Click **Objects**, then click **Route Map**.

Step 2. Select the Route Map you have assigned to the BGP peer where you need to apply the AS Path Prepend or add a new Route Map by clicking **Add Route Map**.

Step 3. Configure the name of the Route Map, then click **Add** under the **Entries** section.

New Route Map Object



Name

AS_Path_Prepend_RM

▼ Entries (0)

Add

| Sequence No ▲ | Redistribution | |
|-----------------------|----------------|--|
| No records to display | | |

Allow Overrides

Cancel

Save

Step 4. Configure at least the next basic settings:

- **Sequence No.** Select the number of the sequence
- **Redistribution.** Select **Allow**

Add Route Map Entry ?

Sequence No:

Redistribution:

Match Clauses **Set Clauses**

Security Zones

IPv4

IPv6

BGP

Others

Address (0) Next Hop (0) Route Source (0)

Select addresses to match as access list or prefix list addresses of route.

Access List
 Prefix List

Available Access Lists :

Available Standard Access List C

Step 5. (Optional) You can specify multiple variables like Prefix-List and Access lists in the **Match Clauses** section.

Step 6. Click **Set Clauses**, then **BGP Clauses**, then **AS Path**. Configure the Prepend option based on the next options:

- **Prepend AS Path.** Add the AS you want to add to the Path separated by commas.
- **Prepend last AS to the AS Path.** Select the number of times you want to add the last AS to the AS path (you can add the AS up to 10 times).

Add Route Map Entry



Sequence No:

Redistribution:

Allow

Match Clauses

Set Clauses

Metric Values

AS Path

Community List

Others

BGP Clauses

Select AS Path options:

Prepend AS Path :

Use comma to separate multiple values

Prepend last AS to the AS Path:

Convert Route Tag into AS Path

Cancel

Add

Step 7. Click **Add**, then **Save**.

Step 8. Click **Device**, then **Device Management**, and select the Device you want to apply the AS Path Prepend.

Step 9. Click **Routing**, then **IPv4** in the BGP section, then **Neighbor**.

Step 10. Click the edit icon for the Neighbor where you want to apply the AS Path Prepend, then on the **Filtering Routes** section, select the Route Map from the dropdown menu in the **Incoming** or **Outgoing** traffic in the **Route Map** section.

Edit Route Map Object ?

Name

▼ Entries (0) Add

| Sequence No ▲ | Redistribution | |
|-----------------------|----------------|--|
| No records to display | | |

Allow Overrides

Step 4. Configure at least the next basic settings:

- **Sequence No.** Select the number of the sequence
- **Redistribution.** Select **Allow**

Add Route Map Entry ?

Sequence No:

Redistribution:

Match Clauses **Set Clauses**

Security Zones

- IPv4**
- IPv6
- BGP
- Others

Address (0) Next Hop (0) Route Source (0)

Select addresses to match as access list or prefix list addresses of route.

Access List
 Prefix List

Available Access Lists :

Available Standard Access List

Step 5. (Optional) You can specify multiple variables like Prefix-List and Access lists in the **Match Clauses** section.

Step 6. Click **Set Clauses**, then **BGP Clauses**, then **Others**. Configure the Local Preference you want to apply in the **Local Preference** section.

Add Route Map Entry ?

Sequence No:

Redistribution:

Match Clauses **Set Clauses**

Metric Values
BGP Clauses

AS Path Community List **Others**

Set Automatic Tag

Local Preference :
Range: 1-4294967295

Set Weight :
Range: 0-65535

Origin:
 Local IGP
 Incomplete

IPv4 settings:
Next Hop:

Specific IP :

Use comma to separate multiple values

Prefix List:

IPv6 settings:

Use comma to separate multiple values

Step 7. Click **Add**, then **Save**.

Step 8. Click **Device**, then **Device Management**, and select the Device you want to apply the Local Preference.

Step 9. Click **Routing**, then **IPv4** in the BGP section, then **Neighbor**.

Step 10. Click the edit icon for the Neighbor where you want to apply the AS Local Preference, then on the **Filtering Routes** section, select the Route Map from the dropdown menu in the **Incoming** or **Outgoing** traffic in the **Route Map** section.

| | |
|---|--|
| IP Address* | <input type="checkbox"/> Enabled address |
| <input type="text" value="10.10.156.3"/> | <input type="checkbox"/> Shutdown administratively |
| Remote AS* | <input type="checkbox"/> Configure graceful restart |
| <input type="text" value="65000"/> | <input type="checkbox"/> Graceful restart(failover/spanned mode) |
| <small>(1-4294967295 or 1.0-65535.65535)</small> | |
| BFD Follower | Description |
| <input type="text" value="none"/> | <input type="text" value="Primary"/> |
| <input type="text" value="Filtering Routes"/> | <input type="text" value="Routes"/> |
| <input type="text" value="Timers"/> | <input type="text" value="Advanced"/> |
| <input type="text" value="Migration"/> | |
| Incoming | Outgoing |
| Access List | Access List |
| <input type="text" value="+"/> | <input type="text" value="+"/> |
| Route Map | Route Map |
| <input type="text" value="Local_Preference_RM"/> | <input type="text" value="+"/> |
| Prefix List | Prefix List |
| <input type="text" value="+"/> | <input type="text" value="+"/> |
| AS path filter | AS path filter |
| <input type="text" value="+"/> | <input type="text" value="+"/> |
| <input type="checkbox"/> Limit the number of prefixes allowed from the neighbor | |
| Maximum Prefixes* | |
| <input type="text" value=""/> | |
| <small>(1-2147483647)</small> | |
| Threshold Level | |
| <input type="text" value="75"/> % | |
| <input type="checkbox"/> Control prefixes received from the peer | |
| <input type="button" value="Cancel"/> <input type="button" value="OK"/> | |

Step 11. Click **OK**, then **Save**.

Configure BGP Weight

You can use Weight to manipulate locally the path selection. Review the next documentation for further information regarding the BGP path selection:

- [BGP Path Selection](#)

Procedure

Step 1. Click **Objects**, then click **Route Map**.

Step 2. Select the Route Map you have assigned to the BGP peer where you have to apply the Local Preference or add a new Route Map by clicking **Add Route Map**.

Step 3. Configure the name of the Route Map, then click **Add** under the **Entries** section.

Edit Route Map Object



Name

Weight_RM

▼ Entries (0)

Add

Sequence No ▲

Redistribution

No records to display

Allow Overrides

Cancel

Save

Step 4. Configure at least the next basic settings:

- **Sequence No.** Select the number of the sequence
- **Redistribution.** Select **Allow**

Add Route Map Entry ?

Sequence No:

Redistribution:

Match Clauses **Set Clauses**

Security Zones

- IPv4**
- IPv6
- BGP
- Others

Address (0) Next Hop (0) Route Source (0)

Select addresses to match as access list or prefix list addresses of route.

Access List
 Prefix List

Available Access Lists :

Available Standard Access List

Step 5. (Optional) You can specify multiple variables like Prefix-List and Access lists in the **Match Classes** section.

Step 6. Click **Set Clauses**, then **BGP Clauses**, then **Others**. Configure the Weight you want to apply in the **Set Weight** section.

Add Route Map Entry



Sequence No:

Redistribution:

Match Clauses

Set Clauses

Metric Values

BGP Clauses

AS Path

Community List

Others

Set Automatic Tag

Local Preference :

Range: 1-4294967295

Set Weight :

Range: 0-65535

Origin:

Local IGP

Incomplete

IPv4 settings:

Next Hop:

Specific IP :

Use comma to separate multiple values

Prefix List:

IPv6 settings:

Use comma to separate multiple values

Cancel

Add

Step 7. Click **Add**, then **Save**.

Step 8. Click **Device**, then **Device Management**, and select the Device you want to apply the Local Preference.

Step 9. Click **Routing**, then **IPv4** in the BGP section, then **Neighbor**.

Step 10. Click the edit icon for the Neighbor where you want to apply the Weight, then on the **Filtering Routes** section, select the Route Map from the dropdown menu in the **Incoming** or **Outgoing** traffic in the **Route Map** section.

New AS Path Object



Name

5

(1-500)

▼ Entries (0)

Add

Sequence No ▲

Action

Regular Expression

No records to display

Allow Overrides

Cancel

Save

New AS Path Object



Name

5

▼ Entries (0)

Add AS Path Entry



Action:

Allow

Regular Expression *:

Cancel

Add

Add

Sequence No ▲

No records to display

Allow Overrides

Cancel

Save

Step 3. (Optional) You can configure the AS Path Object directly on the peer or into a Route Map. If you want to configure directly on the peer, click the edit icon for the Neighbor where you want to apply the AS Path Filter, then on the **Filtering Routes** section, select the AS Path Object from the dropdown menu in the **Incoming** or **Outgoing** traffic in the **AS Path Filter** section.

Edit Neighbor ?

IP Address* Enabled address
 Shutdown administratively

Remote AS*
(1-4294967295 or 1.0-65535.65535)
 Configure graceful restart
 Graceful restart(fallover/spanned mode)

BFD Fallover Description

Filtering Routes | Routes | Timers | Advanced | Migration

Incoming Access List + Outgoing Access List +
Route Map + Route Map +
Prefix List + Prefix List +
AS path filter + AS path filter +

Limit the number of prefixes allowed from the neighbor

Maximum Prefixes*
(1-2147483647)

Threshold Level %
 Control prefixes received from the peer

Step 3. Click **Objects**, then click **Route Map**.

Step 4. Select the Route Map you have assigned to the BGP peer where you have to apply the Path Filter or add a new Route Map by clicking **Add Route Map**.

Step 5. Configure the name of the Route Map, then click **Add** under the **Entries** section.

Edit Route Map Object ?

Name

▼ Entries (0)

| Sequence No ▲ | Redistribution | |
|-----------------------|----------------|--|
| No records to display | | |

Allow Overrides

Step 6. Configure at least the next basic settings:

- **Sequence No.** Select the number of the sequence
- **Redistribution.** Select **Allow** (the action on the traffic is defined in **Sequence No.** In **Step 2**).

Add Route Map Entry ?

Sequence No:

Redistribution:

Match Clauses **Set Clauses**

Security Zones

- IPv4
- IPv6
- BGP
- Others

Address (0) Next Hop (0) Route Source (0)

Select addresses to match as access list or prefix list addresses of route.

Access List
 Prefix List

Available Access Lists :

Available Standard Access List C

Step 7. Click **Match Clauses** then **BGP**, select the **AS Path Object** created in Step 1, then Click **Add**.

Sequence No:

10

Redistribution:

Allow

Match Clauses

Set Clauses

| Security Zones | AS Path(2) | Community List (0) | Policy List (0) |
|----------------|---|--------------------|-----------------|
| IPv4 | Available AS Path <input type="text" value="Search"/> | | |
| IPv6 | Selected AS Path | | |
| BGP | 5 | | 5 |
| Others | | | |

Add

Cancel

Save

â€f

Step 8. Click **Save**.

Step 9. Click **Device**, then **Device Management**, and select the Device you want to apply the Regular Expression.

Step 10. Click **Routing**, then **IPv4** in the BGP section, then **Neighbor**.

Step 11. Click the edit icon for the Neighbor where you want to apply the As Path Filter, then on the **Filtering Routes** section, select the Route Map from the dropdown menu in the **Incoming** or **Outgoing** traffic in the **Route Map** section.

Edit Neighbor



IP Address* Enabled address
 Shutdown administratively

Remote AS*
(1-4294967295 or 1.0-65535.65535)
 Configure graceful restart
 Graceful restart(failover/spanned mode)

BFD Follower Description

Filtering Routes Routes Timers Advanced Migration

| | |
|---|-------------------------------------|
| Incoming | Outgoing |
| Access List <input type="text"/> | Access List <input type="text"/> |
| Route Map <input type="text" value="Path_Filter_RM"/> | Route Map <input type="text"/> |
| Prefix List <input type="text"/> | Prefix List <input type="text"/> |
| AS path filter <input type="text"/> | AS path filter <input type="text"/> |

Limit the number of prefixes allowed from the neighbor

Maximum Prefixes*
(1-2147483647)

Threshold Level %

Control prefixes received from the peer

Cancel

OK

Step 12. Click **OK**, then **Save**.