



# Extreme Fabric Automation Command Reference

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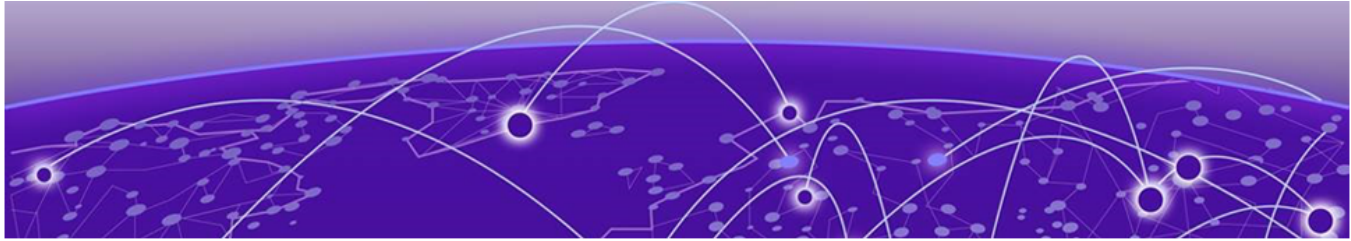
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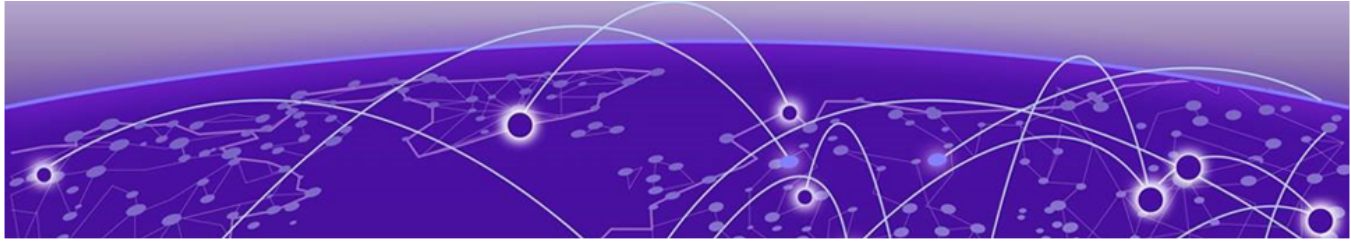
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# Preface

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Read the following topics to learn about:

- The meanings of text formats used in this document.
- Where you can find additional information and help.
- How to reach us with questions and comments.






## Text Conventions

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Unless otherwise noted, information in this document applies to all supported environments for the products in question. Exceptions, like command keywords associated with a specific software version, are identified in the text.

When a feature, function, or operation pertains to a specific hardware product, the product name is used. When features, functions, and operations are the same across an entire product family, such as ExtremeSwitching switches or SLX routers, the product is referred to as *the switch* or *the router*.

**Table 1: Notes and warnings**

Icon	Notice type	Alerts you to...
	Tip	Helpful tips and notices for using the product
	Note	Useful information or instructions
	Important	Important features or instructions
	Caution	Risk of personal injury, system damage, or loss of data
	Warning	Risk of severe personal injury



**Table 2: Text**

Convention	Description
screen displays	This typeface indicates command syntax, or represents information as it is displayed on the screen.
The words <i>enter</i> and <i>type</i>	When you see the word <i>enter</i> in this guide, you must type something, and then press the Return or Enter key. Do not press the Return or Enter key when an instruction simply says <i>type</i> .
<b>Key</b> names	Key names are written in boldface, for example <b>Ctrl</b> or <b>Esc</b> . If you must press two or more keys simultaneously, the key names are linked with a plus sign (+). Example: Press <b>Ctrl+Alt+Del</b>
Words in italicized type	Italics emphasize a point or denote new terms at the place where they are defined in the text. Italics are also used when referring to publication titles.
<b>NEW!</b>	New information. In a PDF, this is searchable text.

**Table 3: Command syntax**

Convention	Description
<b>bold</b> text	Bold text indicates command names, keywords, and command options.
<i>italic</i> text	Italic text indicates variable content.
[ ]	Syntax components displayed within square brackets are optional. Default responses to system prompts are enclosed in square brackets.
{ <b>x</b>   <b>y</b>   <b>z</b> }	A choice of required parameters is enclosed in curly brackets separated by vertical bars. You must select one of the options.
<b>x</b>   <b>y</b>	A vertical bar separates mutually exclusive elements.
< >	Nonprinting characters, such as passwords, are enclosed in angle brackets.
...	Repeat the previous element, for example, <i>member</i> [ <i>member</i> ...].
\	In command examples, the backslash indicates a “soft” line break. When a backslash separates two lines of a command input, enter the entire command at the prompt without the backslash.

## Documentation and Training

Find Extreme Networks product information at the following locations:

[Current Product Documentation](#)

[Release Notes](#)

[Hardware and software compatibility](#) for Extreme Networks products

[Extreme Optics Compatibility](#)

[Other resources](#) such as white papers, data sheets, and case studies

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## Help and Support

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If you require assistance, contact Extreme Networks using one of the following methods:

### Extreme Portal

Search the GTAC (Global Technical Assistance Center) knowledge base; manage support cases and service contracts; download software; and obtain product licensing, training, and certifications.

### The Hub

A forum for Extreme Networks customers to connect with one another, answer questions, and share ideas and feedback. This community is monitored by Extreme Networks employees, but is not intended to replace specific guidance from GTAC.

### Call GTAC

For immediate support: (800) 998 2408 (toll-free in U.S. and Canada) or 1 (408) 579 2826. For the support phone number in your country, visit: [www.extremenetworks.com/support/contact](http://www.extremenetworks.com/support/contact)

Before contacting Extreme Networks for technical support, have the following information ready:

- Your Extreme Networks service contract number, or serial numbers for all involved Extreme Networks products
- A description of the failure
- A description of any actions already taken to resolve the problem
- A description of your network environment (such as layout, cable type, other relevant environmental information)
- Network load at the time of trouble (if known)
- The device history (for example, if you have returned the device before, or if this is a recurring problem)
- Any related RMA (Return Material Authorization) numbers

## Subscribe to Product Announcements

You can subscribe to email notifications for product and software release announcements, Field Notices, and Vulnerability Notices.

1. Go to [The Hub](#).
2. In the list of categories, expand the **Product Announcements** list.
3. Select a product for which you would like to receive notifications.
4. Select **Subscribe**.
5. To select additional products, return to the **Product Announcements** list and repeat steps 3 and 4.

You can modify your product selections or unsubscribe at any time.

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## Send Feedback

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The Information Development team at Extreme Networks has made every effort to ensure that this document is accurate, complete, and easy to use. We strive to improve our documentation to help you in your work, so we want to hear from you. We welcome all feedback, but we especially want to know about:

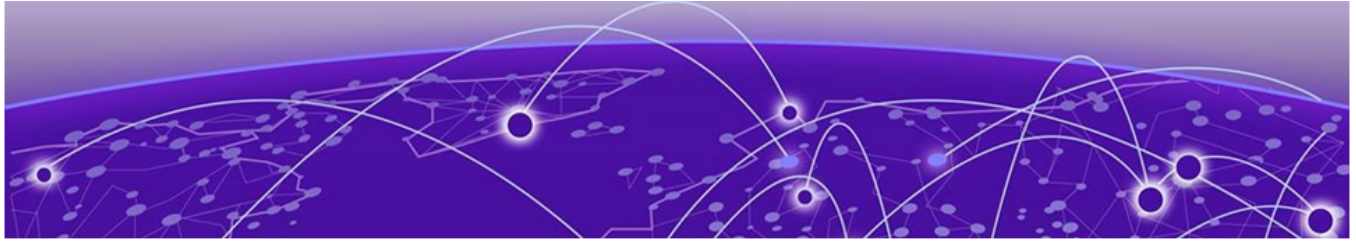
- Content errors, or confusing or conflicting information.

- Improvements that would help you find relevant information.
- Broken links or usability issues.

To send feedback, do either of the following:

- Access the feedback form at <https://www.extremenetworks.com/documentation-feedback/>.
- Email us at [documentation@extremenetworks.com](mailto:documentation@extremenetworks.com).

Provide the publication title, part number, and as much detail as possible, including the topic heading and page number if applicable, as well as your suggestions for improvement.



# About this Document

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## What's New in this Document

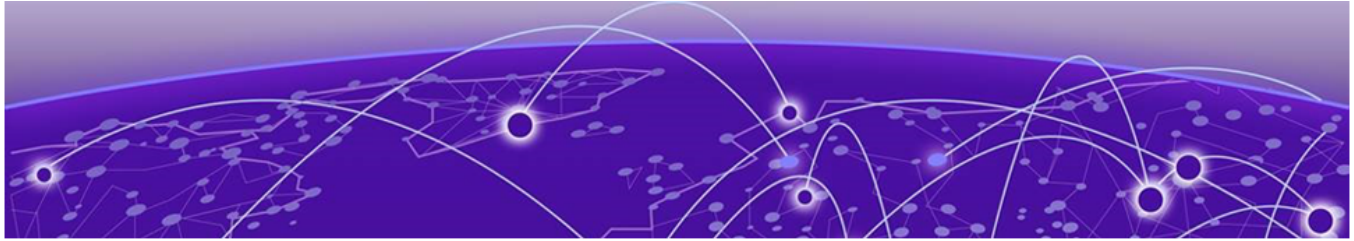
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### New commands

`efa-journal list deps`

### Modified commands

- `efa inventory device tpvm-upgrade execute`
- `efa-journal reset`



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This document describes commands available in the Extreme Fabric Automation CLI.

## efa auth apikey

---

Creates or displays the API Key for the OpenStack instance.

### Syntax

```
efa auth apikey generate --client-id --force --help
```

```
efa auth apikey show --client-id --help
```

### Parameters

**--client-id**

Generates the API Key for the indicated client ID.

**--force**

Forces key regenerate.

**--help**

Displays help for the command.

### Usage Guidelines

Use this command to generate the API Key after you used the **efa auth client register** command to register the client.

Save the generated key to use for configuring the ML2 plug in.

### Examples

This example generates an API Key for the indicated client ID.

```
# efa auth apikey generate --client-id d6d7430e-7cd0-11ea-b7a6-aaa8d3cb654e
API Key is created successfully.
eyJhbGciOiJSUzI1NiIsImtZCI6IjEuMCIsInR5cCI6IkpX...
--- Time Elapsed: 506.458623ms ---
```

## efa auth client

---

Deletes or registers OpenStack tenant clients and displays client details.

### Syntax

```
efa auth client delete [ --name tenant-name --help ]  
efa auth client register [ --name tenant-name --type client-type --help ]  
efa auth client show [ --name tenant-name --help ]
```

### Parameters

**--name** *tenant-name*  
Specifies the name of the tenant to register.

**--type** *client-type*  
Specifies the type of client you are registering (`cli` or `OpenStack`).

**--help**  
Provides help for the commands.

### Usage Guidelines

Use the generated key when you configure the ML2 plugin.

### Examples

This example registers a tenant called RegionOne.

```
# efa auth client register --name RegionOne -- type OpenStack  
Successfully registered client.  
Attribute      Value  
name           RegionOne  
type           OPENSTACK  
ID             d6d7340e-7cd0-11ea-b7a6-aaa8d3cb654e
```

## efa auth execution

---

Deletes or displays the authorization execution logs.

### Syntax

```
efa auth execution delete --days int32
```

```
efa auth execution show --id string --limit int32 --status string
```

### Parameters

**show**

Displays a list of executions.

**--id string**

Filters the executions based on execution id. The "limit" and "status" flags are ignored when "id" flag is given.

**--limit int32**

Limits the number of executions to be listed. Value "0" lists all the executions (default 10).

**--status string**

Filters the executions based on the status (failed/succeeded/all) (default "all").

**delete --days int32**

Deletes execution entries that are older than the specified number of days (default 30).

### Examples

This example deletes entries older than 15 days.

```
efa auth execution delete 15
```

## efa auth ldapconfig

Adds, updates, or deletes an external LDAP server, or shows the current LDAP configuration.

### Syntax

```
efa auth ldapconfig add { --name ldap-name | --primary value | --host
hostname | --port port-num | [--tls | --insecure-tls ] --cacert cert-loc |
--timeout value | --bind-user-name dn | --bind-user-password pwd |
--user-search-base dn | --user-object-class obj-class | --user-login-attribute
att-value | --user-role-attribute att-value | --user-role-attribute-key
att-value | --user-member-attribute att-value | --group-search-base dn |
--group-object-class obj-class | --group-attribute att-value | --group-member-user-attribute
att-value | --group-member-mapping-attribute att-value}
```

```
efa auth ldapconfig update { --name ldap-name | --primary value | --host
hostname | --port port-num | [--tls | --insecure-tls ] --cacert cert-loc |
--timeout value | --bind-user-name dn | --bind-user-password pwd |
--user-search-base dn | --user-object-class obj-class | --user-login-attribute
att-value | --user-role-attribute att-value | --user-role-attribute-key
att-value | --user-member-attribute att-value | --group-search-base dn |
--group-object-class obj-class | --group-attribute att-value | --group-member-user-attribute
att-value | --group-member-mapping-attribute att-value}
```

```
efa auth ldapconfig delete { --name ldap-name | --primary value | --host
hostname | --port port-num | [--tls | --insecure-tls ] --cacert cert-loc |
--timeout value | --bind-user-name dn | --bind-user-password pwd |
--user-search-base dn | --user-object-class obj-class | --user-login-attribute
att-value | --user-role-attribute att-value | --user-role-attribute-key
att-value | --user-member-attribute att-value | --group-search-base dn |
--group-object-class obj-class | --group-attribute att-value | --group-member-user-attribute
att-value | --group-member-mapping-attribute att-value}
```

```
efa auth ldapconfig show { --name ldap-name | --primary value | --host
hostname }
```

### Parameters

#### **add**

Adds an external LDAP server.

#### **delete**

Deletes an external LDAP server.

#### **update**

Updates an external LDAP server.

#### **show**

Shows LDAP server configuration.

- name** *ldap-name*  
Specifies the name of the LDAP connection.
- primary** *value*  
Specifies 1 when multiple LDAP connections are available.
- host** *hostname*  
Specifies the host name or IP address of the host server.
- port** *port-num*  
Specifies the port at which the LDAP server listens for connections.
- tls** | **--insecure-tls**  
Specify **--tls** to use LDAP over SSL and TLS. Specify **--insecure-tls** to use LDAP without certification verification.
- cacert** *cert-loc*  
Specifies the location of the Certificate Authority certificate.
- timeout** *value*  
Specifies the number of seconds that must elapse before the LDAP server is considered unreachable. The default is 5 seconds.
- bind-user-name** *dn*  
Specifies the Distinguished Name (DN) of the user that you want to use to bind, search, and retrieve LDAP entries.
- bind-user-password** *pwd*  
Specifies the password of the bind user.
- user-search-base** *dn*  
Specifies the DN of the node in the directory tree from which searches for user objects will start.
- user-object-class** *obj-class*  
Specifies the name of the object class to use for user objects. The default is `inetOrgPerson`.
- user-login-attribute** *att-value*  
Specifies the attribute that matches the user name part of credentials that users enter while logging in. The default is `uid`.
- user-role-attribute** *att-value*  
Specifies the attribute from which the user role is read.
- user-role-attribute-key** *att-value*  
Specifies the attribute that reads the role value from the role attribute.
- user-member-attribute** *att-value*  
Specifies the attribute that reads the member of the group that the user is part of.
- group-search-base** *dn*  
Specifies the DN of the node in the directory tree from which searches for group objects begins.
- group-object-class** *obj-class*  
Specifies the name of the object class to use for group searches. The default is `groupOfNames`.
- group-attribute** *att-value*

Specifies the attribute that defines the search filter on a group. The default is `cn`.

**--group-member-user-attribute** *att-value*

Specifies the name of the user attribute whose format matches the group members. The default is `entrydn`.

**--group-member-mapping-attribute** *att-value*

Specifies the name of the group attribute that contains the members of a group. The default is `member`.

## Usage Guidelines

You configure an LDAP server for user validation and to fetch user groups.

When a user is assigned EFA roles in LDAP, ensure that you define the **--user-role-attribute** parameter.

You can use key-value pairs to define one attribute value that assigns multiple roles to a user. Use the **--user-role-attribute-key** parameter for such a scenario.

When you use LDAP groups to assign roles to users, ensure that you define the **--user-member-attribute** parameter.

When LDAP groups are not in the same search base as the users in the groups, ensure that you define the following parameters.

- **--group-search-base**
- **--group-object-class**
- **--group-attribute**
- **--group-member-user-attribute**
- **--group-member-mapping-attribute**

To configure LDAP for a deployment of EFA on a TPVM, see the "TPVM Management" section of the *Extreme SLX-OS Management Configuration Guide*.

## Examples

This example configures the bind user name, the bind password, and the DN of the node from which searches start.

```
# efa auth ldapconfig add --name ldapconfig -- host 10.x.x.x
--bind-user-name cn=admin,dc=extrnet,dc=com --bind-user-password password
--user-search-base ou=people,dc=extrnet,dc=com
```

This example configures the **--user-role-attribute** parameter for a user that is assigned EFA roles in LDAP.

```
# efa auth ldapconfig add --name ldap1 --host 10.x.x.x
--bind-user-name cn=x,dc=y,dc=com --bind-user-password xxx
--user-search-base ou=people,dc=y,dc=com --user-role-attribute role
```

This example assigns multiple roles to a user with one key-value pair. The role attribute for the user entry in LDAP has the value of

`datacenterowner:SystemAdmin,datacenterowner:FabricAdmin`.

```
# efa auth ldapconfig add --name ldap1 --host 10.x.x.x
--bind-user-name cn=x,dc=y,dc=com --bind-user-password xxx
--user-search-base ou=people,dc=y,dc=com --user-role-attribute role
--user-role-attribute-key datacenterowner
```

This example configures the **--user-member-attribute** for a user entry in LDAP that has an attribute of `memberOf`.

```
# efa auth ldapconfig add --name ldap1 --host 10.x.x.x
--bind-user-name cn=x,dc=y,dc=com --bind-user-password xxx
--user-search-base ou=people,dc=y,dc=com --user-member-attribute memberOf
```

This example configures the attributes required when LDAP groups are not in the same search base as the users in the groups.

```
# ldapconfig add --name ldap1 --host 10.x.x.x --bind-user-name cn=x,dc=y,dc=com
--bind-user-password xxx --user-search-base ou=people,dc=x,dc=com
--group-search-base ou=groups,dc=x,dc=in --group-member-user-attribute dn
--group-member-mapping-attribute memberUid --group-object-class posixGroup
```

This example maps an LDAP group to an EFA role.

```
# efa auth rolemapping add --name group1 --type GROUP --role SystemAdmin
```

This example configures LDAP Active Directory.

```
# efa auth ldapconfig add --name ldap1 --host 10.x.x.x --bind-user-name cn=x,dc=y,dc=com
--bind-user-password xxx --user-search-base ou=people,dc=y,dc=com --user-object-class
user
--user-login-attribute sAMAccountName --user-member-attribute memberOf
```



## efa auth rolemapping

Assigns EFA roles to a user or an LDAP group.

### Syntax

```
efa auth rolemapping add {--name user-name --role efa-role --type user-type}  
efa auth rolemapping show  
efa auth rolemapping remove--id id
```

### Parameters

**--name** *user-name*

Specifies the user name or the LDAP group name.

**--role** *efa-role*

Specifies the role that you want to assign. One of the following: FabricAdmin, SecurityAdmin, NetworkOperator, SystemDebugger, SystemAdmin, <Tenant>Admin. The Tenant Administrator is assigned dynamically when the tenant is created. The role name has the format of <Tenant-name>Admin.

**--type** *user-type*

Specifies the type of user. Enter either *user* or *group*.

**add**

Specifies that you want to add a mapping.

**show**

Indicates that you want to show all role mappings.

**remove --id** *id*

Specifies that you want to remove the mapping for the indicated ID number.

### Examples

This example assigns the role of Fabric Admin to a user named fabricuser.

```
# efa auth rolemapping add --name fabricuser --role FabricAdmin --type user  
Successfully added the role mapping
```

This example assigns the role of NetworkOperator to a group named viewer.

```
# efa auth rolemapping add --name viewer --role NetworkOperator --type group  
Successfully added the role mapping.
```

This example displays all assigned mappings.

```
# efa auth rolemapping show  
ID  Name      Role           Type  
1   efauser   SystemAdmin    USER  
2   fabricuser FabricAdmin    USER  
3   viewer    NetworkOperator GROUP
```

This example deletes the role for the user with ID 3.

```
# efa auth rolemapping remove --id 3  
Deleted role mapping successfully
```

## efa auth settings token

Configures and displays the expiration settings for authentication tokens.

### Syntax

```
efa auth settings token update{ --type cli | access | refresh }{ --hours
  num | --minutes num }
```

```
efa auth settings token show
```

### Parameters

#### update

Specifies that you want to change one or more of the supported parameters.

**--type cli | access | refresh**

Specifies the type of token you want to update.

**--hours num**

Specifies the number of hours that should elapse before a token expires.

**--minutes num**

Specifies the number of minutes that should elapse before a token expires.

#### show

Displays the current expiration settings.

### Examples

This example sets the CLI token to expire after 2 hours.

```
$ efa auth settings token update --type CLI --hours 2

Successfully updated the token expiry time.
+-----+-----+-----+
| Type  | Hours | Minutes |
+-----+-----+-----+
| CLI   | 2     | 0       |
+-----+-----+-----+
--- Time Elapsed: 193.455466ms ---
```

This example displays the current expiration settings.

```
$ efa auth settings token show

+-----+-----+-----+
| Type   | Hours | Minutes |
+-----+-----+-----+
| ACCESS | 1     | 0       |
+-----+-----+-----+
| REFRESH | 8     | 0       |
+-----+-----+-----+
| CLI    | 2     | 0       |
+-----+-----+-----+
```

## efa certificates device install

---

Installs HTTPS and OAuth2 certificates on SLX devices.

### Syntax

```
efa certificates device install { --ips ip-addr --certType [ https |  
token ] }
```

### Command Default

By default, certificates are not installed.

### Parameters

**--ips** *ip-addr*

Specifies a comma-separated list of the IP addresses of the SLX devices on which you want to install the certificate.

**--certType** [ https | token ]

Specifies the type of certificate you are installing.

### Usage Guidelines

During the registration of an SLX device in EFA, the following configuration changes are made on the device.

- The public certificate for verifying an EFA token is copied to the device as an OAuth2 certificate.
- EFA generates the HTTPS certificate for the SLX device. The certificate is copied to the device, HTTP mode is turned off on the device, and HTTPS is enabled on the device.
- OAuth2 is enabled as the primary mode of authentication. Fallback is set to "local login."

You can use the **efa inventory device list** command to verify the status of the certificates on the device. If the **Cert/Key Saved** column contains "N," then certificates are not installed. You can then use the **efa certificates device install** command to install the certificates.

### Examples

This example installs the HTTPS certificate on two devices.

```
efa certificates device install --ips 1.1.1.1,2.2.2.2 --certType https
```

## efa certificates server

---

Installs a third-party certificate that was acquired through a trusted Certificate Authority.

### Syntax

```
efa certificates server [ --certificate cert-filename --key key-filename  
  --configfile config-filename ]
```

### Parameters

**--certificate** *cert-filename*

Specifies the file name of the certificate.

**--key** *key-filename*

Specifies the file name of the certificate key.

**--configfile** *config-filename*

(Optional) Specifies a different configuration file from the `efa.conf` file used by EFA for its settings.

### Examples

This example installs a certificate titled `mycert` using the `myconfigfile.conf` file.

```
$ efa certificate server --certificate mycert --key mycertkey --configfile  
myconfigfile.conf
```

---

## efa fabric clone

---

Clones source fabric.

### Syntax

```
efa fabric clone [ --source source-fabric-name --destination destination-fabric-name ]
```

### Parameters

**--source**

Name of the fabric to be cloned.

**--destination**

New name of the cloned fabric.

### Usage Guidelines

Cloning can expedite the deployment of fabrics across different sites or data centers. For fabrics in two different data centers to look exactly the same for disaster recovery purposes, create a clone for the source fabric.

This command clones all the fabric properties - type, stage, description, fabric settings - but not the devices on the fabric.

### Examples

The following example clones BLR\_FABRIC into PUN\_FABRIC.

```
efa fabric clone --source BLR_FABRIC --destination PUN_FABRIC
```

## efa fabric configure

Configures the underlay and overlay on all fabric devices.

### Syntax

```
efa fabric configure [ --name fabric-name | --force | --help ]
```

### Parameters

- name** *fabric-name*  
Specifies the name of the fabric.
- force**  
Forces the configuration on the devices.
- help**  
Display help for configure.

### Usage Guidelines

If the **--force** option is used, all the devices are removed and added back to the fabric. This action can result in **config remove** and **add on** all the devices.

If the addition of devices to a fabric is successful, the underlay and overlay is configured on all the devices of the fabric using the `efa fabric configure` command.

### Examples

```
(efa:extreme)extreme@tpvm:~$ efa fabric configure --name fabric-2 --force
Configure fabric force
WARNING: Fabric configure with 'force' option 'removes' all the devices from
fabric and 'adds' back all the devices to fabric. Do you want to proceed [y/n]?
y
Fetching devices from fabric fabric-2
Removing device from fabric fabric-2
Remove Device(s) [Success]
Removal of device with ip-address = 10.24.80.159 [Succeeded]
Removal of device with ip-address = 10.24.80.158 [Succeeded]
Updating the devices in inventory for fabric fabric-2
Update of device with ip-address = 10.24.80.158 [Succeeded]
Update of device with ip-address = 10.24.80.159 [Succeeded]
Clearing the devices in the fabric fabric-2
Updating the devices in inventory for fabric fabric-2
Update of device with ip-address = 10.24.80.158 [Succeeded]
Update of device with ip-address = 10.24.80.159 [Succeeded]
Add the devices to fabric fabric-2
Add Device(s) [Success]
Addition of Leaf device with ip-address = 10.24.80.158 [Succeeded]
Addition of Leaf device with ip-address = 10.24.80.159 [Succeeded]
Validate Fabric [Success]
Configure Fabric [Success]
Please verify the fabric physical/underlay topology using 'efa fabric topology show
{physical | underlay}
```

```
' before attempting tenant configuration on the fabric.  
- Time Elapsed: 1m52.840570796s -
```



## efa fabric create

---

Creates a fabric.

### Syntax

```
efa fabric create [ --name fabric-name | --type clos | non-clos | --stage  
3 | 5 | --description description | --help ]
```

### Parameters

**--name** *fabric-name*

Specifies the name of the fabric.

**--description** *description*

Describes the product.

**--type** **clos** | **non-clos**

Specifies the type of the fabric. The default is clos.

**--stage** **3** | **5**

Specifies the type of fabric to create. The default is a 3-stage fabric. Stage 0 is considered the default stage for Clos and is ignored for non-Clos.

**--help**

Displays help for the command.

### Examples

This example creates a 3-stage fabric.

```
efa fabric create --name clos-fabric --type clos --stage 3
```

## efa fabric debug clear-config

---

Clears the underlay or overlay configuration from the device and recovers the device from erroneous conditions.

### Syntax

```
efa fabric debug clear-config [ --device device ip | --reference-fabric fabric name ]
```

### Parameters

**--device**

Device IP address.

**--reference-fabric**

Name of the fabric and the device it will eventually belong to.

### Examples

```
$ efa fabric debug clear-config --device 10.24.4810.24.48.131,10.24.51.135,10.24.51.131,10.25.225.58,10.24.80.139.131,10.24.51.135,10.24.51.131,10.25.225.58,10.24.80.139
```

## efa fabric debug config-gen-reason

---

Obtains the configuration generation reason for a particular fabric device.

### Syntax

```
efa fabric debug config-gen-reason [ --device device ip | --name fabric name ]
```

### Parameters

**--device**

The device IP address.

**--name**

Name of the fabric to which the device belongs.

### Examples

```
efa fabric debug config-gen-reason --device 10.24.80.139 --name BLR_FABRIC
```

---

## efa fabric debug device drift

---

Reconciles or displays the device configuration drift between the device and intended fabric configuration.

### Syntax

```
efa fabric debug device drift [ --name string ip | --ip string | --reconcile ]
```

### Parameters

**--name** *string*

Specifies the name of the fabric.

**--ip** *string*

Specifies the device IP.

**--reconcile**

Reconciles the device configuration.

## efa fabric delete

---

Deletes the fabric from inventory.

### Syntax

```
efa fabric delete [ --name fabric-name ] [ --force ]
```

### Parameters

**--name** *fabric-name*

Name of the fabric to be deleted.

**--force**

Forces the deletion of fabric even if the fabric has devices.

### Usage Guidelines

Deletion of a fabric is not allowed if the fabric has one or more devices. You must delete all the devices from the fabric prior to deleting the fabric.

Forced deletion of a fabric removes the devices from the fabric but not from the inventory.

### Examples

The following example deletes the fabric BLR\_FABRIC.

```
efa fabric delete --name BLR_FABRIC
```

---

## efa fabric device add

---

Adds a device to an existing fabric.

### Syntax

```
efa fabric device add [ --name fabric-name | --ip device-ip --role leaf |  
  spine | super-spine | border-leaf | --leaf-type single-homed | multi-  
  homed | --hostname hostname | --asn local-asn | --vtep-loopback id | --  
  loopback port-num | --pod name | --username username | --password password  
  | --rack name ]
```

### Parameters

**--name** *fabric-name*

Specifies the name of the fabric.

**--ip** *device-ip*

Specifies the pair of device IP addresses for rack, or a single IP address for non-rack.

**--role** **leaf** | **spine** | **super-spine** | **border-leaf**

Specifies the device role (leaf | spine | super-spine | border-leaf).

**--leaf-type** **single-homed** | **multi-homed**

Specifies whether the leaf is single-homed or multi-homed.

**--hostname** *hostname*

Specifies the host name.

**--asn** *local-asn*

Specifies the local ASN.

**--vtep-loopback** *id*

Specifies the VTEP loopback ID.

**--loopback** *port-num*

Specifies the loopback port number.

**--pod** *name*

Specifies the name of the pod.

**--rack** *name*

Specifies the name of the rack.

**--username** *username*

Specifies the user name for the device.

**--password** *password*

Specifies the password for the device.

## Usage Guidelines

A device must be registered with Inventory Service before being added to a fabric. The Fabric Service supports IP numbered configuration. Each interface on a link between leaf and spine is assigned an IP address. EBGP peering uses these IP addresses.

Device credentials must be provided as part of this command if the devices are not already registered with the inventory.

If you provide the user name and password, then the device is automatically registered with the inventory service.

If you do not provide the user name and password, then you must explicitly register the device with the inventory service.

## Examples

This example adds a pair of devices to the specified fabric and the specified rack.

```
efa fabric device add --name extr-fabric --ip 10.24.80.134,10.24.80.135
--rack room1-rack1 --username admin --password password
```

---

## efa fabric device add-bulk

---

Adds multiple devices to a fabric.

### Syntax

```
efa fabric device add-bulk [ --name fabric-name | --ip device-ip | --leaf list | --border-leaf list | --three-stage-pod name | --five-stage-pod name | --spine list | --super-spine list | --username username | --password password | --rack name | --border-leaf-rack list | --border-leaf-ip device-ip ]
```

### Parameters

**--name** *fabric-name*

Specifies the name of the fabric.

**--ip** *device-ip*

Specifies the pair of device IP addresses for rack.

**--leaf** *list*

Specifies the comma-separated list of leaf IP addresses or host names.

**--border-leaf** *list*

Specifies the comma-separated list of border leaf IP addresses or host names.

**--three-stage-pod** *name*

Specifies the name of the leaf or spine pod.

**--five-stage-pod** *name*

Specifies the name of the super-spine pod.

**--spine** *list*

Specifies the comma-separated list of spine IP addresses or host names.

**--super-spine** *list*

Specifies the comma-separated list of super spine IP addresses or host names.

**--username** *username*

Specifies the user name for the list of devices.

**--password** *password*

Specifies the password for the list of devices.

**--rack** *name*

Specifies the rack name.

**--border-leaf-rack** *list*

Specifies the border leaf rack name.

**--border-leaf-ip** *device-ip*

Specifies the pair of border leaf device IPs for the rack.



## Usage Guidelines

Ensure you perform the following operations before running this command:

- Run the **efa inventory device register --ip <list-of-device-ips>** command.
- Run the **efa inventory device interface list --ip <device-ip>** command. In the output of the command, verify that the states of the port links are as you expected (in the Admin Status and Oper Status fields). If not, manually check the physical cabling and fix any issues. Then continue with the **efa fabric device add-bulk** operation.

If you provide a user name and password, devices are automatically registered with the inventory service.

If you do not provide a user name and password, you must explicitly register the devices with the inventory service.

A single “three-stage-pod” and “five-stage-pod” can be provided each time you run the command.

## Examples

This example adds two leaf IP addresses and two border leaf IP addresses to the specified fabric.

```
efa fabric device add-bulk --name BLR_FABRIC --leaf 10.24.48.131,10.24.51.135
--border-leaf 10.24.51.131,10.25.225.58 --spine 10.24.80.139 --username admin --password
password
```

## efa fabric device remove

---

Removes an existing device from a fabric.

### Syntax

```
efa fabric device remove { --name fabric-name | --ip list-of-device-ips } | [--no-device-cleanup]
```

### Parameters

**--name** *fabric-name*

Specifies the name of the fabric.

**--ip** *list-of-device-ips*

Specifies a comma-separated list of device IP addresses to remove.

**--no-device-cleanup**

Specifies that you do not want to clean up the configuration on the devices.

### Usage Guidelines

If the `no-device-cleanup` option is used, the configuration pushed by the automation engine is not cleaned up from the fabric devices. Removal of a device from fabric does not delete the device from inventory. You must explicitly delete the device from inventory.

### Examples

This example removes five devices and does not clean up the configuration.

```
efa fabric device remove --ip 10.24.48.131,10.24.51.135,10.25.225.58,  
10.24.51.131,10.24.80.139 --name BLR_FABRIC --no-device-cleanup
```

## efa fabric error show

---

Displays the name of the fabric, error types, and reasons for the errors.

### Syntax

```
efa fabric error show [ --name | --export ]
```

### Parameters

**--name**

Specifies the name of the fabric.

**--export**

Export error details to a CSV file.

### Usage Guidelines

Topology validation occurs during the addition of a device and during fabric configuration. Use this command to display any errors that occur during validation and, optionally, to export them to a CSV file.

Errors that occur during the add, validate, and configure phases are persisted in the DB.

### Examples

```
efa fabric device error show --name BLR_FABRIC
```

## efa fabric execution

---

Displays the execution history for the service.

### Syntax

```
efa fabric execution delete [ --days int32 ]  
efa fabric execution show [ | --id execution id | --limit int32 number of  
  executions | --status string | failed | succeeded | all ]  
efa fabric execution show-event [ --device ip address | --execution-id  
  execution id ]
```

### Parameters

**--days** *int32*

Deletes execution entries older than the specified number of days (default 30).

**--device** *ip address*

Filters on IP address.

**--execution-id** *execution id*

Filters on Execution UUID.

**--id** *execution id*

Filters the executions based on the execution id. The `limit` and `status` flags are ignored when the `id` flag is used.

**--limit**

Limits the number of executions to be listed. A value of "0" lists all the executions. The default is 10.

**--status**

Filters the executions based on the status (failed, succeeded, all). The default is "all".

### Examples

```
efa fabric execution show
```

## efa fabric setting

Displays or updates the IP fabric settings.

### Syntax

```
efa fabric setting show [ --name fabric-name | --advanced options ]

efa fabric setting update [--name fabric-name | --p2p-link-range fabric-
name | --loopback-ip-range ip-pool | --rack-l3-backup-ip-range ip-
pool | --loopback-port-number id | --vtep-loopback-port-number id |
--spine-asn-block asn-pool | --super-spine-asn-block asn | --leaf-
asn-block asn-pool | --border-leaf-asn-block asn-pool | --rack-asn-
block asn-pool | --rack-border-leaf-asn-block asn-pool | --anycast-
mac-address mac | --ipv6-anycast-mac-address mac | --mac-aging-
timeout timeout | --mac-aging-conversation-timeout timeout | --mac-
move-limit limit | --duplicate-mac-timer time | --duplicate-mac-
timer-max-count max| --configure-overlay-gateway yes | no | --bfd-
enable yes | no | --bfd-tx interval | --bfd-rx interval | --bfd-
multiplier multiplier| --bgp-multihop ttl | --max-paths paths| --
allow-as-in path | --mtu size | --ip-mtu size | --leaf-peer-group
group-name | --optimized-replication-enable yes | no | --spine-peer-
group group-name | --super-spine-peer-group group-name | --rack-
underlay-ebgp-peer-group group-name | --rack-overlay-ebgp-peer-group
group-name | --mctlink-ip-range pool | --lacp-timeout long | short |
--mct-port-channel id | --rack-l3-backup-port port | --rack-mct-ports
port | --rack-ld-l3-backup-port port | --rack-ld-mct-ports port | --
single-rack-deployment yes | no | --control-vlan id | --control-ve id
| --vni-auto-map yes | no | --backup-routing-enable yes | no | --
backup-routing-ipv4-range range | --backup-routing-ipv6-range range |
--optimized-replication-enable yes | no | --mdtgroup-range range | --
default-mdtgroup ipv4-address | --md5-password password | --md5-
password-enable yes | no | --bgp-dynamic-peer-listen-limit peers]
```

### Parameters

**--name** *fabric-name*

Specifies the name of the fabric.

**--p2p-link-range** *ip-pool*

Specifies the IP address pool used for P2P link configuration.

**--loopback-ip-range** *ip-pool*

Specifies the IP address pool for the loopback interface to be used for unnumbered and VTEP IP.

**--rack-l3-backup-ip-range** *ip-pool*

Specifies the IP address pool for Layer 3 backup.

**--loopback-port-number** *id*

Specifies the loopback ID on the device to be used as the donor IP interface for the link between leaf and spine. Valid values range from 1 through 255.

- vtep-loopback-port-number** *id*  
Specifies the loopback ID on the device to be used as VTEP IP interface. Valid values range from 1 through 255.
- spine-asn-block** *asn-pool*  
Specifies the ASN pool for spine nodes or a single ASN.
- super-spine-asn-block** *asn*  
Specifies the single ASN.
- leaf-asn-block** *asn-pool*  
Specifies the ASN pool for leaf nodes.
- border-leaf-asn-block** *asn-pool*  
Specifies the ASN pool for border leaf nodes.
- rack-asn-block** *asn pool*  
Specifies the ASN pool for rack nodes. Valid values are numbers from 4200000000-4200065534.
- rack-border-leaf-asn** *asn pool*  
Specifies the ASN pool for rack border leaf nodes. Valid values are numbers from 4200065535-4200065635.
- anycast-mac-address** *asn pool*  
Specifies the IPv anycast MAC address in the following format: HHHH.HHHH.HHHH
- ipv6-anycast-mac-address** *mac*  
Specifies the IPv6 anycast MAC address in the following format: HHHH.HHHH.HHHH
- mac-aging-timeout** *timeout*  
Specifies the MAC aging timeout. Valid values are 0 (for no timeout) or 60 through 86400.
- mac-aging-conversation-timeout** *timeout*  
Specifies the MAC conversational aging timeout in seconds. Valid values are 0 (for no timeout) or 60 through 100000.
- mac-move-limit** *limit*  
Specifies the MAC move detect limit. Valid values range from 5 through 500.
- duplicate-mac-timer** *time*  
Specifies the number of seconds for detecting a duplicate MAC address.
- duplicate-mac-timer-max-count** *max*  
Specifies the maximum number of duplicate MAC addresses that can be detected.
- configure-overlay-gateway** **yes | no**  
Configures overlay gateway.
- bfd-enable** **yes | no**  
Turns on or turns off BFD.
- bfd-tx** *interval*  
Specifies the BFD minimum transmit interval in milliseconds. Valid values range from 50 through 3000.

**--bfd-rx** *interval*

Specifies the BFD minimum receive interval in milliseconds. Valid values range from 50 through 30000.

**--bfd-multiplier** *multiplier*

Specifies the number of times that a packet is missed before BFD declares the neighbor is down. Valid values range from 3 through 50.

**--bgp-multihop** *t11*

Determines the TTL value for EBGP neighbors that are not on directly connected networks. Valid values range from 1 through 255.

**--max-paths** *paths*

Specifies the maximum number of paths over which packets can be forwarded. Valid values range from 1 through 64.

**--allow-as-in** *path*

Turns off the AS\_PATH check of the routes learned from the AS. Valid values range from 1 through 10.

**--mtu** *size*

- For SLX-OS 21.1 and later versions: The MTU size in bytes. Valid values range from 1500 through 9216.
- For other SLX-OS versions: The MTU size in bytes. Valid values range from 1548 through 9216.

**--ip-mtu** *size*

The IPv4 or IPv6 MTU size. Valid values range from 1300 through 9194.

**--leaf-peer-group** *group-name*

Specifies the name of the leaf peer group name. Valid name length is from 1 through 63 characters.

**--spine-peer-group** *group-name*

Specifies the name of the spine peer group. Valid name length is from 1 through 63 characters.

**--super-spine-peer-group** *group-name*

Specifies the name of the super spine peer group. Valid name length is from 1 through 63 characters.

**--rack-underlay-ebgp-peer-group** *group-name*

Specifies the EBGP peer group name of the rack underlay. Valid name length is from 1 through 63 characters.

**--rack-overlay-ebgp-peer-group** *group-name*

Specifies the EBGP peer group name of the rack overlay. Valid name length is from 1 through 63 characters.

**--mctlink-ip-range** *pool*

Specifies the IP address pool to be used for MCT peering.

**--lACP-timeout** **long** | **short**

Specifies LACP timeout for MCT member ports. Accepted values are long and short.

**--mct-port-channel** *id*

Specifies the port-channel interface ID to be used as an MCT peer-interface. Valid values range from 1 through 64.

**--rack-l3-backup-port** *port*

Specifies the rack Layer 3 backup port number. The default is 0/48.

**--rack-mct-ports** *port*

Specifies the rack MCT port numbers. The default is 0/46,0/47.

**--rack-ld-l3-backup-port** *port*

Specifies the Rack Low Density L3 Backup port (not applicable to SLX-9250) <STRING: default '0/32'>.

**--rack-ld-mct-ports** *port*

Specifies the rack low-density MCT port numbers. The default is 0/30,0/31.

**--single-rack-deployment** **yes | no**

Specifies if single-rack deployment is used. The default is no.

**--control-vlan** *id*

Specifies the VLAN ID to be used as the MCT cluster control VLAN. Valid values range from 1 through 4090.

**--control-ve** *id*

Specifies the VE ID to be used as the MCT cluster control VE. Valid values range from 1 through 4090.

**--vni-auto-map** **yes | no**

Specifies whether to automatically map the VTEP VLAN (or bridge domain) to VNI mode.

**--backup-routing-enable** **yes | no**

Turns on or turns off backup routing.

**--backup-routing-ipv4-range** *range*

Specifies the IPv4 backup routing range.

**--backup-routing-ipv6-range** *range*

Specifies the IPv6 backup routing range.

**--optimized-replication-enable** **yes | no**

Enables optimized replication. The default is no.

**--mdtgroup-range** *range*

Specifies the IPv4 multicast address range in IP prefix format. For example: 239.0.0.0/8

**--default-mdtgroup** *ipv4-address*

Specifies the default IPv4 multicast address. The address must be from the MDT group range.

**---md5-password** *password*

BGP MD5 password to be used on fabric links. If a word: 1-80 for plain text and 1-164 for encrypted string. Default is "<prompt>".

**---md5-password-enable** **yes | no**

Turns on or turns off BGP MD5 password on fabric links.

**---bgp-dynamic-peer-listen-limit** *peers*



Specifies the maximum number of dynamic BGP peers that can be operational across the VRFs in the SLX. Valid values range from 1-255. Default is 100.

These examples update optimized replication, the MDT group, and the default MDT group.

```
# efa fabric setting --update --optimized-replication-enable yes --name fabric1
# efa fabric setting --update --mdtgroup-range 239.0.0.0/8 --name clos_fabric
# efa fabric setting --update --default-mdtgroup 239.1.1.1 --name clos_fabric
```

In this example, MD5 authentication is created or updated:

```
efa fabric setting update --name fabric1 --md5-password-enable yes
Please supply a password for BGP MD5 authentication on fabric links:
efa fabric configure --name fabric1
```

---

## efa fabric show

---

Displays the details of the fabric.

### Syntax

```
efa fabric show [--name fabric-name]
```

### Parameters

**--name** *fabric-name*

Specifies the name of the fabric.

### Usage Guidelines

Displays the details of all fabrics when the `name` option is not provided.

Displays the details of the specified fabric when the `name` option is provided.

### Examples

This example displays details for the BLR\_FABRIC.

```
efa fabric show --name BLR_FABRIC
```

## efa fabric show-config

---

Displays the configuration of a given fabric.

### Syntax

```
efa fabric show-config [ --name fabric name | --device-role leaf | spine  
| super-spine | border-leaf | --ip ip address ]
```

### Parameters

**--name**

Name of the fabric.

**--device-role leaf | spine | super-spine | border-leaf**

Role of devices for which configuration is displayed.

**--ip**

The specific ip provided in conjunction with the `device-role` field.

### Examples

```
efa fabric show-config --name BLR_FABRIC --device-role border-leaf --ip 10.25.225.58
```

---

## efa fabric show summary

---

Displays a summary of the specified fabric.

### Syntax

```
efa fabric show summary [--name fabric-name ]
```

### Parameters

**--name** *fabric-name*

Specifies the name of the fabric.

### Usage Guidelines

Displays the details of all fabrics when the `name` option is not provided.

Displays the details of the specified fabric when the `name` option is provided.

### Examples

This example displays a summary for the BLR\_FABRIC fabric.

```
efa fabric show summary --name BLR_FABRIC
```

## efa fabric topology show overlay

Displays the overlay connectivity (VxLAN tunnels) of the devices in a fabric.

### Syntax

```
efa fabric topology show overlay [--name name ]
```

### Parameters

**--name** *name*

Specifies the name of the fabric.

### Examples

This example displays the overlay topology information for the fabric.

```
# efa fabric topology show overlay --name clos_fabric
```

OVERLAY ECAP	TYPE	TUNNEL TYPE	SOURCE LEAF IP	DESTINATION LEAF IP	SOURCE VTEP IP	DESTINATION VTEP IP	OVERLAY ADMIN STATE	OVERLAY OPER STATE
vxlan	172.31.254.9	unicast	10.24.80.158	10.24.80.159	172.31.254.7	172.31.254.9	up	up
vxlan	172.31.254.7	unicast	10.24.80.159	10.24.80.158	172.31.254.9	172.31.254.7	up	up
vxlan	239.1.1.1	multicast	10.24.80.158		172.31.254.7		up	up
vxlan	239.1.1.1	multicast	10.24.80.159		172.31.254.9		up	up

## efa fabric topology show physical

Displays the physical connectivity (LLDP neighbors) of the devices in a fabric.

### Syntax

```
efa fabric topology show physical [--name name]
```

### Parameters

**--name** *name*

Specifies the name of the fabric.

### Examples

This example displays a portion of the physical topology information for the fabric.

```
efa fabric topology show physical --name clos_fabric
+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+
| SOURCE      | SOURCE      | DESTINATION | DESTINATION | SOURCE      | DESTINATION |
| SOURCE DEVICE| DESTINATION DEVICE|             |             | NODE IP     | NODE         |
| INTERFACE   | MULTI HOMED | MULTI HOMED |             | NODE ROLE   | NODE         |
+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+
| 10.24.80.135 | LEAF        | 10.25.225.163 | LEAF        | 0/39        | 0/39        |
| TRUE         | FALSE       |                |             |             |             |
| 10.24.80.135 | LEAF        | 10.25.225.163 | LEAF        | 0/40        | 0/40        |
| TRUE         | FALSE       |                |             |             |             |
| 10.24.80.135 | LEAF        | 10.24.80.134  | LEAF        | 0/46        | 0/46        |
| TRUE         | TRUE        |                |             |             |             |
|              |             |                |             |             |             |
| 10.24.80.134 | LEAF        | 10.24.80.135  | LEAF        | 0/46        | 0/46        |
| TRUE         | TRUE        |                |             |             |             |
```

## efa fabric topology show underlay

Displays the underlay connectivity (BGP peers) of the devices in a fabric. Gets information about “default-vrf” only.

### Syntax

```
efa fabric topology show underlay [--name name ]
```

### Parameters

**--name** *name*

Specifies the name of the fabric.

### Examples

This example displays the underlay topology information for the fabric.

```
efa fabric topology show underlay --name nc
+-----+-----+-----+-----+
+-----+-----+-----+-----+
+-----+
| SOURCE DEVICE IP | DESTINATION DEVICE IP | SOURCE DEVICE ROUTER ID | NEIGHBOR IP |
| SOURCE DEVICE ASN | DESTINATION DEVICE ASN | NEIGHBOR AFI STATE | NEIGHBOR SAFI |
| UNDERLAY STATE |
+-----+-----+-----+-----+
+-----+-----+-----+-----+
+-----+
| 10.20.61.90      | 10.20.61.91          | 172.31.254.1          | 10.20.20.3 |
| 4200000000      | 4200000000          | ipv4                  | unicast    |
|                 |                     |                       |            |
| 10.20.61.91      | 10.20.61.90          | 172.31.254.3          | 10.20.20.2 |
| 4200000000      | 4200000000          | ipv4                  | unicast    |
|                 |                     |                       |            |
+-----+-----+-----+-----+
+-----+-----+-----+-----+
+-----+
--- Time Elapsed: 14.729342579s ---
```

## efa inventory admin-state

---

Changes, displays, and deletes device state, state change history, or state change record.

### Syntax

```
efa inventory admin-state up [ --ip ipaddr ]
efa inventory admin-state down [--ip ipaddr ]
efa inventory admin-state detail [--uuid uuid ]
efa inventory admin-state delete [ --key ipaddr ]
efa inventory admin-state history [--ip ipaddr ]
efa inventory admin-state show [--ip ipaddr ]
```

### Parameters

**up** --ip ipaddr

Changes the state of the specified device to "admin up" and generates a UUID for the instance.

**down** --ip ipaddr

Changes the state of the specified device to "admin down." Also puts the device in maintenance mode and generates a UUID for the instance.

**detail** --uuid uuid

Displays details of the admin state change for the specified UUID.

**delete** --key ipaddr

Deletes the instance of the admin state change for the specified IP address.

**history** --ip ipaddr

Displays the admin status history for the specified device.

**show** --ip ipaddr

Displays details of the state of the specified device. Derives the operational up or down status from the health status of the device.

### Usage Guidelines

When a device changes to "admin down" state, the device goes into maintenance mode.

When a device changes to "admin up" state, the device is taken out of maintenance mode.

For more information, see "Administered Partial Success" in the *Extreme Fabric Automation Administration Guide*.



## Examples

This example changes the device state to "admin up" and generates a UUID to use in the **efa inventory admin-state detail** version of the command.

```
$ efa inventory admin-state up --ip 10.24.80.158
AdminStateUp [success]
Admin State Up execution UUID: 8d9fa0cf-dc76-42cc-ac7a-57902a47c1b2
```

This example changes the device state to "admin down" generates a UUID to use in the **efa inventory admin-state detail** version of the command.

```
$ efa inventory admin-state down --ip 10.24.80.158
AdminStateDown [success]
Admin State Down execution UUID: 28eb0845-7a7a-4851-b453-b3020c6900f2
```

This example displays the history of the admin status for the specified device.

```
# efa inventory admin-state history --ip 10.24.80.158
-----
UUID                               Device IP      Admin State  Status
-----
8d9fa0cf-dc76-42cc-ac7a-57902a47c1b2  10.24.80.158  up           success
-----
28eb0845-7a7a-4851-b453-b3020c6900f2  10.24.80.158  down        success
-----
Device State Change Records
- Time Elapsed: 172.640786ms -
```

This example shows details of admin state changes for the specified UUID.

```
$ efa inventory admin-state detail --uuid 28eb0845-7a7a-4851-b453-b3020c6900f2
-----+
NAME          VALUE
-----+
UUID          28eb0845-7a7a-4851-b453-b3020c6900f2
-----+
Device IP     10.24.80.158
-----+
Admin State Action down
-----+
Status        success
-----+
Maintenance Mode Enable Status    success
-----+
Start Time    2020-07-30 10:04:33.982447 +0000 UTC
-----+
Last Modified 2020-07-30 10:04:38.437425 +0000 UTC
-----+
Duration      4.454976211s
-----+
- Time Elapsed: 183.253381ms -
```

This example shows details of the state of the specified device.

```
$ efa inventory admin-state show --ip 10.24.80.158
-----+
NAME          VALUE
-----+
Device IP     10.24.80.158
-----+
Admin State   up
-----+
Health Check Status  Disable
-----+
- Time Elapsed: 241.831181ms -
```

This example deletes the state change instance for the specified IP address.

```
$ efa inventory admin-state delete --key 10.24.80.159
-----
USERKEY      STATUS      ERROR
-----
10.24.80.159  deleted
-----
- Time Elapsed: 216.332171ms -
```

## efa inventory config-backup

Configures the backup for device configuration.

### Syntax

```
efa inventory config-backup history [ --ip ip-address ]  
efa inventory config-backup execute [ --ip ip-address ]  
efa inventory config-backup delete [ --key ip-address ]  
efa inventory config-backup detail [ --uuid cb-uuid | --show-config | --file-dump filename ]
```

### Parameters

#### **detail**

Displays details of the configuration backup.

#### **delete**

Deletes the configuration backup record.

#### **execute**

Runs the configuration backup for the SLX device.

**--file-dump** *filename*

Dumps configuration text to the specified file.

#### **history**

Displays the history of configuration backup.

**--ip** *ip-address*

Specifies the IP address of the device.

**--key** *ip-address*

Specifies the IP address of the device or config-backup UUID to be deleted.

**--show-config**

Displays configuration text.

**--uuid** *cb-uuid*

Specifies the ID of the configuration backup.

### Examples

The following examples show **#efa inventory config-backup** commands.

```
# efa inventory config-backup execute --ip 10.24.14.133  
# efa inventory config-backup history --ip 10.24.14.133  
# efa inventory config-backup detail --uuid 1111-1111-1111 --show-config  
# efa inventory config-backup detail --uuid 1111-1111-1111 --show-config --file-dump  
fileABC  
# efa inventory config-backup delete --key 10.24.14.133  
# efa inventory config-backup delete --key 1111-1111-111
```

## efa inventory config-replay

---

Configures device config-replay.

### Syntax

```
efa inventory config-replay history [--ip ip-addr ]  
efa inventory config-replay execute [--ip ip-addr | --uuid cr-uuid | --  
  ssid ssid | --startup-config | --no-reboot ]  
efa inventory config-replay delete [--key ip-addr ]  
efa inventory config-replay detail [--uuid cr-uuid ]
```

### Parameters

**--detail**

Displays config-backup detail.

**--delete**

Deletes the config-backup record.

**--execute**

Runs the SLX configuration backup.

**--history**

Displays the config-replay history.

**--ip** *ip-addr*

Specifies the IP address of the device.

**--key** *ip-addr*

Specifies the IP address of the device or config-replay UUID to be deleted.

**--ssid** *ssid*

Specifies the SSID of config-backup execution.

**--startup-config**

Copies the backup file to the startup-config file.

**--no-reboot**

Configures replay without rebooting the device.

**--uuid** *cr-uuid*

Specifies the config replay ID or UUID of config backup execution.

### Examples

The following examples show **efa inventory config-replay** commands.

```
# efa inventory config-replay execute --ip 10.24.14.133 --uuid 1111-1111-111  
# efa inventory config-replay history --ip 10.24.14.133  
# efa inventory config-replay detail --uuid 1111-1111-1111  
# efa inventory config-replay delete --key 10.24.14.133
```

```
# efa inventory config-replay delete --key 1111-1111-111
# efa inventory config-replay execute --ip 10.24.14.133 --uuid 1111-1111-111 --startup-
config
# efa inventory config-replay execute --ip 10.24.14.133 --uuid 1111-1111-111 --no-reboot
```

## efa inventory debug devices-lock

Displays lock status of the devices.

### Syntax

```
efa inventory debug devices-lock
```

### Usage Guidelines

Diagnostic commands are developed and intended for specialized troubleshooting. Work closely with Extreme Networks technical support when running **debug** or **show system internal** commands and interpreting their results.

### Examples

```
(efa:ubuntu)ubuntu@efa:~/efa$ efa inventory debug devices-lock
+-----+
|           IP Address           | Locked |
+-----+-----+
| 10.139.44.156                   | false |
+-----+-----+
| 10.139.44.155                   | false |
+-----+-----+
| Global DeviceWalkListLock       | false |
+-----+-----+
| Global DeviceLockCollectionMapLock | false |
+-----+-----+
| Global FabricEventLock          | false |
+-----+-----+
| Global MapLock of Events        | false |
+-----+-----+
| GoSwitch Repository             | false |
+-----+-----+
| Service Lock                     | false |
+-----+-----+
```

## efa inventory debug devices-unlock

Unlocks devices forcefully if they were locked during the configuration backup process.

### Syntax

```
efa inventory debug devices-unlock [--ip ip-list | --fabric fabric-name |
  --servicelock ]
```

### Parameters

**--ip** *ip-list*

List of IPs to unlock.

**--fabric** *fabric-name*

Fabric with which devices are associated.

**--servicelock**

Specify to unlock all service locks.

### Examples

```
efa-client inventory debug devices-unlock --ip 10.20.246.5,10.20.246.6
+-----+-----+
| IP Address | Status |
+-----+-----+
| 10.20.246.6 | Success |
+-----+-----+
| 10.20.246.5 | Success |
+-----+-----+
Force Unlock Devices
--- Time Elapsed: 100.5453ms ---
```

```
efa-client inventory debug devices-unlock --servicelock
+-----+-----+
| IP Address | Status |
+-----+-----+
| Service Lock | Success |
+-----+-----+
Force Unlock Devices
--- Time Elapsed: 39.3574572s ---
```

```
efa-client inventory debug devices-unlock --fabric fabric1
+-----+-----+
| IP Address | Status |
+-----+-----+
| 10.20.246.6 | Success |
+-----+-----+
| 10.20.246.5 | Success |
+-----+-----+
Force Unlock Devices
```

## efa inventory debug unblock-from-fwdl

Unlocks devices forcefully if they were locked during a firmware download.

### Syntax

```
efa inventory debug unblock-from-fwdl [--ip ip-list | --fabric fabric-name ]
```

### Parameters

**--ip** *ip-list*

List of IPs to unlock.

**--fabric** *fabric-name*

Fabric with which devices are associated.

### Usage Guidelines

During firmware download, a lock is activated to prevent other services from doing any operations. This debug command allows you to unlock the lock in case, for some reason, the system does not unlock on its own.

### Examples

```
efa-client inventory debug unblock-from-fwdl --ip 10.20.246.1,10.20.246.2
+-----+-----+
| IP Address | Status |
+-----+-----+
| 10.20.246.2 | Success |
+-----+-----+
| 10.20.246.1 | Failed |
+-----+-----+
Force Removal of FWDL
Status
--- Time Elapsed: 42.0891034s ---
```

```
efa-client inventory debug unblock-from-fwdl --fabric non-clos
+-----+-----+
| IP Address | Status |
+-----+-----+
| 10.20.246.2 | Success |
+-----+-----+
| 10.20.246.1 | Success |
+-----+-----+
Force Removal of FWDL
```



## efa inventory device compare

---

Compares the device configuration with the configuration details that are saved in the application.

### Syntax

```
efa inventory device compare [ --ip ]
```

### Parameters

**--ip**

Specifies the IP address of the device to be compared.

## efa inventory device delete

---

Deletes the device.

### Syntax

```
efa inventory device delete [ --ip ip-addr | --fabric fabric-name ]
```

### Parameters

**--ip** *ip-addr*

Specifies comma-separated range of device IP addresses. Example: 1.1.1-3,1.1.2,2.2.2.2.

**--fabric** *fabric-name*

Fabric name for which devices needs to be deleted.

## efa inventory device discovery-time list

---

Displays the configured device discovery interval for devices or for a fabric.

### Syntax

```
efa inventory device discovery-time list { --ips ip-addr | --fabric fabric-name }
```

### Command Default

The default discovery interval is one hour.

### Parameters

**--ips** *ip-addr*

Specifies a comma-separated list of the IP addresses for which you want to see the configured interval. For example, `1.1.1.1,2.2.2.2`.

**--fabric** *fabric-name*

Specifies the name of the fabric for which you want to see the configured interval for every device.

### Examples

This example displays the device discovery interval for each device in the fabric named `myFabric`.

```
efa inventory device discovery-time list --fabric myFabric
```

This example displays the device discovery interval for two device IP addresses.

```
efa inventory device discovery interval --ips 1.1.1.1,2.2.2.2
```

## efa inventory device discovery-time update

---

Configures the interval for periodic discovery of devices.

### Syntax

```
efa inventory device discovery-time update { --ip ip-addr | --fabric fabric-name } { --min minutes | --hour hours}
```

### Command Default

The default discovery interval is one hour.

### Parameters

**--ip** *ip-addr*

Specifies the IP address of the device for which you are configuring the interval.

**--fabric** *fabric-name*

Specifies the name of the fabric for which you are configuring the interval. All devices in this fabric will have the same interval.

**--min** *minutes*

Specifies the interval in minutes.

**--hour** *hours*

Specifies the interval in hours.

### Usage Guidelines

Tenant and Fabric Services use periodic discovery to detect out-of-sync configurations on the devices.

These services act on the published events and update the database to reflect the status of the devices as in-sync and out-of-sync.

### Examples

This example configures an interval of 20 minutes for a specific IP address.

```
efa inventory device discovery-time update --ip 1.1.1.1 --min 20
```

This example configures an interval of two hours for a fabric named myFabric.

```
efa inventory device discovery-time update -- fabric myFabric --hour 2
```

## efa inventory device execute-cli

Runs CLI on the device.

### Syntax

```
efa inventory device execute-cli [ --ip ip-addr | --fabric fabric-devices
  | --role role-devices | --command command | --config config-term |
  exec-mode ]
```

### Parameters

**--ip** *ip-addr*

Specifies comma-separated range of device IP addresses. Example: 1.1.1.1-3,1.1.2,2.2.2.2.

**--fabric** *fabric-devices*

Specifies all devices in the specified fabric.

**--role** *role-devices*

Specifies devices in the fabric, based on their role.

**--command** *command*

Specifies a comma-separated or semicolon-separated list of CLI commands to run on the devices.

**--config** *config-term* | **exec-mode**

Indicates whether commands are for config-term or exec-mode. The default value is `exec-mode`.

```
# efa inventory device execute-cli --ip 10.18.120.187 --command "Interface ethernet 0/1,
no reload-delay enable" --config
```

## efa inventory device firmware-download commit

Commits new firmware where the firmware download was started with the `NoAutoCommit` flag.

```
efa inventory device firmware-download commit [ --fabric fabric-name | --ip
  ip-addr ]
```

**--fabric** *fabric-name*

Specifies the name of the fabric.

**--ip** *ip-addr*

Specifies a comma-separated list of device IP addresses.

```
efa inventory device firmware-download commit --fabric fabric1
Firmware Download Commit for fabric fabric1 - [success]
+-----+-----+-----+-----+
| DeviceIP   | Device FWDL Status           | Error |
+-----+-----+-----+-----+
| 10.20.246.6 | Firmware Committed Successfully |      |
+-----+-----+-----+-----+
--- Time Elapsed: 1m25.765540754s ---
```

## efa inventory device firmware-download execute

Clears out the prepared list for successfully completed devices. Any failed devices will remain in the prepared list to allow for the run to be retried.

### Syntax

```
efa inventory device firmware-download execute --fabric fabric-name |
  [ --noAutoCommit ] | [ --noMaintMode ] | --group-execution continue-
on-error | stop-on-error ]
```

### Parameters

**--fabric** *fabric-name*

Specifies the name of the fabric.

**--noAutoCommit**

Configures auto commit in firmware download. By default, the firmware download process auto-commits the firmware following successful completion. Only if you add the `noAutoCommit` flag, must you manually run a new `efa inventory device firmware-download commit` command to commit the downloaded firmware on the SLX device.

**--noMaintMode**

You can use the `noMaintMode` flag to ignore Maintenance Mode operations during firmware download. The flag defaults to `FALSE`, which means Maintenance Mode is turned off during Firmware Download. If you add the `noMaintMode` flag, no Maintenance mode operations are performed during the firmware download process.

The following table describes situations in which the `noMaintMode` flag works in conjunction with configuration of `MaintModeOnReboot` on the switch.

MaintModeOnReboot	NoMaintMode(FWDL)	DRC Behavior
True	True	DRC is triggered after reboot.
True	False	DRC is triggered.
False	True	No DRC is triggered.
False	False	DRC is triggered.

**--group-execution** *continue-on-error* | *stop-on-error*

Use the `--group-execution` parameter to specify the group run policy when a firmware download process failure occurs on one or more devices defined in a group. When all devices defined in the group have completed the firmware download process and there is one or more device that has failed, the group run policy rules if the firmware download workflow continues to process the remaining groups or not.

There are two options:

- Under the `continue-on-error` group run policy (the default), in case of a device upgrade failure, the workflow continues to the next group, until all groups have been processed.
- Under the `stop-on-error` group run policy, in case of a device upgrade failure, the workflow does not continue to the next group.

## Usage Guidelines

General warning for traffic loss for single-homed servers if any leaf devices or non-Clos devices are prepared for firmware-download.

One or more devices are prepared.

Run only one instance of this command per fabric.

```
efa inventory device firmware-download execute --noAutoCommit --fabric fabric
Firmware Download Execute [success]
Monitor firmware download execution progress using:

efa inventory device firmware-download show --fabric fabric

Please don't execute other commands on these devices until firmware download is in
progress

Firmware download execution initiated with '--noAutoCommit' flag, please commit/restore
after completion using:

efa inventory device firmware-download commit --fabric fabric
efa inventory device firmware-download restore --fabric fabric

--- Time Elapsed: 126.85805ms ---
```

```
efa inventory device firmware-download show --fabric fabric
+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+
| IP Address | Host Name | Model | Chassis Name | ASN | Role | Current
Firmware    | Target Firmware | Update State |
Status      | Last Update Time |
+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+
| 10.20.246.5 | NHF-Leaf1 | 3009 | SLX9150-48Y | 0 | Leaf |
20.2.2slxos20.2.2b_201208_0600 | | Not Prepared
|
+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+
| 10.20.246.6 | NHF-Leaf2 | 3009 | SLX9150-48Y | 0 | Leaf |
20.2.2slxos20.2.2b_201211_1800 | 20.2.2slxos20.2.2b_201211_1800 | Completed | Firmware
Not Committed | 2020-12-11 19:54:25 -0800 PST |
+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+

Firmware Download Show Details

Firmware Download Show Overall Status [Completed]

If Firmware download execution initiated with '--noAutoCommit' flag, please commit/
```

```
restore after completion using:

efa inventory device firmware-download commit --fabric fabric

efa inventory device firmware-download restore --fabric fabric

--- Time Elapsed: 176.290954ms ---

efa inventory device firmware-download execute --fabric fabric1 --noMaintMode
Firmware Download Execute [success]
Monitor firmware download execution progress using:
efa inventory device firmware-download show --fabric fabric1

Please don't execute other commands on these devices until firmware download is in
progress

--- Time Elapsed: 137.250437ms ---
```



## efa inventory device firmware-download prepare add

---

Prepares a device for a firmware download. Firmware host sanity validations are done at this time. If the validations are successful, the device is prepared.

### Syntax

```
efa inventory device firmware-download prepare add --fabric fabric name  
  [ --ip device ip address | --group group number | --force | --  
  firmware-host firmware download host ip address | --firmware-  
  directory path to the target firmware build | --help ]
```

### Command Default

Traffic loss expected for non-redundant devices (single non-MCT leaf, spine, or super spine).

### Parameters

#### --fabric

Name of the fabric. Using the `--fabric` parameter automatically generates a group-based prepared list. The `--group` parameter is not permitted with the `--fabric` parameter.

#### --group

Group number. Using the `--ip` and optionally `--group` parameters adds the specified devices in the prepared list group. Group 1 is implicitly used if not specified with the `--ip` parameter.

#### --force

Bypasses all validations and forcefully prepares the device. The `--force` parameter can be used to download the same existing firmware version on the device. Normally, this is not allowed. However, using the `--force` parameter implicitly performs a full installation to carry out the same firmware version download.

#### --firmware-host

Firmware download host IP address

#### --firmware-directory

Path to the target firmware build

#### --ip

Specifies a comma-separated list of device IP addresses.

- Using the `--ip` and optionally `--group` parameters adds the specified devices in the prepared list group. Group 1 is implicitly used if not specified with the `--ip` parameter.
- Using the `--ip` and optionally `--force` parameters bypasses all validations and forcefully prepare the device in the default group 1 or in any group number if the `--group` parameter is specified. This can be used if the user does not care about traffic loss and wants to perform the firmware download simultaneously on all devices. The firmware restart-ability should allow for both EFA hosted node's SLX firmware to be upgraded simultaneously.

#### --help

Help for add

## Usage Guidelines

Firmware host must be registered.

Device IPs belong to the same fabric (for Clos topologies).

Do not allow devices to be prepared if a firmware-download is in progress.

Allow a device to be prepared after a firmware-download has completed or in an unprepared state.

Do not allow for both MCT leaf pairs to be prepared together.

Do not allow for all spines in the same pod of the same fabric to be prepared together.

Do not allow for all super-spines in the fabric to be prepared together.

Firmware sanity check performed for the registered firmware-host and firmware-directory on the given device.

## Examples

This example prepares half of the devices in Group 1. Group 1 is default when a `--group` parameter is not provided.

```
$ efa inventory device firmware-download prepare add --ip
10.20.245.1,10.20.245.3,10.20.245.5,10.20.245.9 --firmware-host 10.20.241.101 --firmware-
directory /build/slx/slxos20.2.3a
```

Group	IP Address	Host Name	Model	Chassis Name	ASN	Role	Current Firmware	Firmware Host	Firmware Directory	Target Firmware	Last Update Time
1	10.20.245.1	L1	3012	SLX9250-32C	0	Leaf	20.2.3	10.20.241.101	/build/slx/slxos20.2.3a	20.2.3a	2021-03-19 20:14:30 +0000 UTC
1	10.20.245.3	L3	3012	SLX9250-32C	0	Leaf	20.2.3	10.20.241.101	/build/slx/slxos20.2.3a	20.2.3a	2021-03-19 20:14:30 +0000 UTC
1	10.20.245.5	L5	3012	SLX9250-32C	0	Leaf	20.2.3	10.20.241.101	/build/slx/slxos20.2.3a	20.2.3a	2021-03-19 20:14:30 +0000 UTC
1	10.20.245.9	S1	3012	SLX9250-32C	0	Spine	20.2.3	10.20.241.101	/build/slx/slxos20.2.3a	20.2.3a	2021-03-19 20:14:30 +0000 UTC

```
Firmware Download Prepare Add Details
Validate Firmware Download Prepare Add [success]
```

This example prepares the remaining half of devices in Group 3.

```
$ efa inventory device firmware-download prepare add --ip
10.20.245.2,10.20.245.4,10.20.245.6,10.20.245.10 --group 3 --firmware-host 10.20.241.101
--firmware-directory /build/slx/slxos20.2.3a
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+
| Group | IP Address | Host Name | Model | Chassis Name | ASN | Role | Current
Firmware | Firmware Host | Firmware Directory | Target Firmware | Last Update
Time |
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+
| 3 | 10.20.245.2 | L2 | 3012 | SLX9250-32C | 0 | Leaf |
20.2.3 | 10.20.241.101 | /build/slx/slxos20.2.3a | 20.2.3a | 2021-03-19
20:14:38 +0000 UTC |
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+
| 3 | 10.20.245.4 | L4 | 3012 | SLX9250-32C | 0 | Leaf |
20.2.3 | 10.20.241.101 | /build/slx/slxos20.2.3a | 20.2.3a | 2021-03-19
20:14:38 +0000 UTC |
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+
| 3 | 10.20.245.6 | L6 | 3012 | SLX9250-32C | 0 | Leaf |
20.2.3 | 10.20.241.101 | /build/slx/slxos20.2.3a | 20.2.3a | 2021-03-19
20:14:38 +0000 UTC |
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+
| 3 | 10.20.245.10 | S2 | 3012 | SLX9250-32C | 0 | Spine |
20.2.3 | 10.20.241.101 | /build/slx/slxos20.2.3a | 20.2.3a | 2021-03-19
20:14:38 +0000 UTC |
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+
Firmware Download Prepare Add Details
Validate Firmware Download Prepare Add [success]
```

This example lists all groups of devices that are prepared in the fabric.

```
$ efa inventory device firmware-download prepare list --fabric fab_3stg
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+
| Group | IP Address | Host Name | Model | Chassis Name | ASN | Role | Current
Firmware | Firmware Host | Firmware Directory | Target Firmware | Last Update
Time |
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+
| 1 | 10.20.245.1 | L1 | 3012 | SLX9250-32C | 0 | Leaf |
20.2.3 | 10.20.241.101 | /build/slx/slxos20.2.3a | 20.2.3a | 2021-03-19
20:14:30 +0000 UTC |
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+
| 1 | 10.20.245.3 | L3 | 3012 | SLX9250-32C | 0 | Leaf |
20.2.3 | 10.20.241.101 | /build/slx/slxos20.2.3a | 20.2.3a | 2021-03-19
20:14:30 +0000 UTC |
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+
```

```

+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+
| 1      | 10.20.245.5 | L5          | 3012 | SLX9250-32C | 0 | Leaf |
20.2.3   | 10.20.241.101 | /build/slx/slxos20.2.3a | 20.2.3a | 2021-03-19
20:14:30 +0000 UTC |
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+
| 1      | 10.20.245.9 | S1          | 3012 | SLX9250-32C | 0 | Spine |
20.2.3   | 10.20.241.101 | /build/slx/slxos20.2.3a | 20.2.3a | 2021-03-19
20:14:30 +0000 UTC |
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+
| 3      | 10.20.245.2 | L2          | 3012 | SLX9250-32C | 0 | Leaf |
20.2.3   | 10.20.241.101 | /build/slx/slxos20.2.3a | 20.2.3a | 2021-03-19
20:14:38 +0000 UTC |
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+
| 3      | 10.20.245.4 | L4          | 3012 | SLX9250-32C | 0 | Leaf |
20.2.3   | 10.20.241.101 | /build/slx/slxos20.2.3a | 20.2.3a | 2021-03-19
20:14:38 +0000 UTC |
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+
| 3      | 10.20.245.6 | L6          | 3012 | SLX9250-32C | 0 | Leaf |
20.2.3   | 10.20.241.101 | /build/slx/slxos20.2.3a | 20.2.3a | 2021-03-19
20:14:38 +0000 UTC |
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+
| 3      | 10.20.245.10 | S2         | 3012 | SLX9250-32C | 0 | Spine |
20.2.3   | 10.20.241.101 | /build/slx/slxos20.2.3a | 20.2.3a | 2021-03-19
20:14:38 +0000 UTC |
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+
Firmware Download Prepare List Details
Validate Firmware Download Prepare List [success]

```

This example prepares the fabric and lets EFA automatically generate the group-based prepared list for the fabric.

```

$ efa inventory device firmware-download prepare add --fabric fab_3stg --firmware-host
10.20.241.101 --firmware-directory /build/slx/slxos20.2.3a
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+
| Group | IP Address | Host Name | Model | Chassis Name | ASN | Role | Current
Firmware | Firmware Host | Firmware Directory | Target Firmware | Last Update
Time |
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+
| 1      | 10.20.245.1 | L1          | 3012 | SLX9250-32C | 0 | Leaf |
20.2.3   | 10.20.241.101 | /build/slx/slxos20.2.3a | 20.2.3a | 2021-03-19
20:36:21 +0000 UTC |
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+
| 1      | 10.20.245.3 | L3          | 3012 | SLX9250-32C | 0 | Leaf |
20.2.3   | 10.20.241.101 | /build/slx/slxos20.2.3a | 20.2.3a | 2021-03-19
20:36:21 +0000 UTC |
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+

```

```

+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+
| 1 | 10.20.245.5 | L5 | | 3012 | SLX9250-32C | 0 | Leaf |
20.2.3 | 10.20.241.101 | /build/slx/slxos20.2.3a | 20.2.3a | 2021-03-19
20:36:21 +0000 UTC |
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+
| 2 | 10.20.245.2 | L2 | | 3012 | SLX9250-32C | 0 | Leaf |
20.2.3 | 10.20.241.101 | /build/slx/slxos20.2.3a | 20.2.3a | 2021-03-19
20:36:22 +0000 UTC |
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+
| 2 | 10.20.245.4 | L4 | | 3012 | SLX9250-32C | 0 | Leaf |
20.2.3 | 10.20.241.101 | /build/slx/slxos20.2.3a | 20.2.3a | 2021-03-19
20:36:22 +0000 UTC |
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+
| 2 | 10.20.245.6 | L6 | | 3012 | SLX9250-32C | 0 | Leaf |
20.2.3 | 10.20.241.101 | /build/slx/slxos20.2.3a | 20.2.3a | 2021-03-19
20:36:22 +0000 UTC |
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+
| 3 | 10.20.245.9 | S1 | | 3012 | SLX9250-32C | 0 | Spine |
20.2.3 | 10.20.241.101 | /build/slx/slxos20.2.3a | 20.2.3a | 2021-03-19
20:36:23 +0000 UTC |
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+
| 4 | 10.20.245.10 | S2 | | 3012 | SLX9250-32C | 0 | Spine |
20.2.3 | 10.20.241.101 | /build/slx/slxos20.2.3a | 20.2.3a | 2021-03-19
20:36:24 +0000 UTC |
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+
Firmware Download Prepare Add Details
Validate Firmware Download Prepare Add [success]

```

## efa inventory device firmware-download prepare list

Prepares a list of all the devices in the prepared list for a given fabric.

### Syntax

```
efa inventory device firmware-download prepare list [ --fabric fabric-name | --help ]
```

### Parameters

- fabric** *fabric-name*  
Specifies the name of the fabric.
- help**  
Provides help for the command.

### Usage Guidelines

The command displays all prepared devices per group. The group column is the first column displayed in the output. The output is sorted in ascending order by group, then by IP address.

### Examples

This example prepares the fabric and lets EFA automatically generate the group-based prepared list for the fabric.

```
$ efa inventory device firmware-download prepare list --fabric fab_3stg
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+
| Group | IP Address | Host Name | Model | Chassis Name | ASN | Role | Current
Firmware | Firmware Host | Firmware Directory | Target Firmware | Last Update
Time |
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+
| 1 | 10.20.245.1 | L1 | 3012 | SLX9250-32C | 0 | Leaf |
20.2.3 | 10.20.241.101 | /build/slx/slxos20.2.3a | 20.2.3a | 2021-03-19
20:14:30 +0000 UTC |
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+
| 1 | 10.20.245.3 | L3 | 3012 | SLX9250-32C | 0 | Leaf |
20.2.3 | 10.20.241.101 | /build/slx/slxos20.2.3a | 20.2.3a | 2021-03-19
20:14:30 +0000 UTC |
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+
| 1 | 10.20.245.5 | L5 | 3012 | SLX9250-32C | 0 | Leaf |
20.2.3 | 10.20.241.101 | /build/slx/slxos20.2.3a | 20.2.3a | 2021-03-19
20:14:30 +0000 UTC |
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+
| 1 | 10.20.245.9 | S1 | 3012 | SLX9250-32C | 0 | Spine |
```

```

20.2.3          | 10.20.241.101 | /build/slx/slxos20.2.3a | 20.2.3a      | 2021-03-19
20:14:30 +0000 UTC |
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+
| 3          | 10.20.245.2 | L2          | 3012 | SLX9250-32C | 0 | Leaf |
20.2.3          | 10.20.241.101 | /build/slx/slxos20.2.3a | 20.2.3a      | 2021-03-19
20:14:38 +0000 UTC |
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+
| 3          | 10.20.245.4 | L4          | 3012 | SLX9250-32C | 0 | Leaf |
20.2.3          | 10.20.241.101 | /build/slx/slxos20.2.3a | 20.2.3a      | 2021-03-19
20:14:38 +0000 UTC |
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+
| 3          | 10.20.245.6 | L6          | 3012 | SLX9250-32C | 0 | Leaf |
20.2.3          | 10.20.241.101 | /build/slx/slxos20.2.3a | 20.2.3a      | 2021-03-19
20:14:38 +0000 UTC |
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+
| 3          | 10.20.245.10 | S2         | 3012 | SLX9250-32C | 0 | Spine |
20.2.3          | 10.20.241.101 | /build/slx/slxos20.2.3a | 20.2.3a      | 2021-03-19
20:14:38 +0000 UTC |
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+
Firmware Download Prepare List Details
Validate Firmware Download Prepare List [success]
    
```

## efa inventory device firmware-download prepare remove

Removes the specified device from the prepared list and unprepares the device if it is already prepared.

### Syntax

```
efa inventory device firmware-download prepare remove [ --fabric fabric-name | --ip device-ip-address | --group group-number | --help ]
```

### Parameters

**--fabric** *fabric-name*

Specifies the name of the fabric. Using this parameter completely deletes the prepared list for the fabric, including all groups.

**--ip** *device-ip-address*

Specifies a comma-separated list of device IP addresses. Using this parameter deletes the prepared devices, even if they are prepared in separate groups.

**--group** *group-number*

Specifies a group number. Using this parameter removes all devices prepared in the given group.

**--help**

Displays help for the command.

### Usage Guidelines

The **--fabric**, **--group**, and **--ip** parameters cannot be used together.

### Examples

#### Firmware Download Prepare Add (Fabric-based)

Prepare the fabric and let EFA automatically generate the group-based prepared list for the fabric. See the following examples.

```
$ efa inventory device firmware-download prepare add --fabric fab_3stg --firmware-host 10.20.241.101 --firmware-directory /build/slx/slxos20.2.3a
```

Group	IP Address	Host Name	Model	Chassis Name	ASN	Role	Current Firmware	Firmware Host	Firmware Directory	Target Firmware	Last Update Time
1	10.20.245.1	L1	3012	SLX9250-32C	0	Leaf	20.2.3	10.20.241.101	/build/slx/slxos20.2.3a	20.2.3a	2021-03-19 20:36:21 +0000 UTC
1	10.20.245.3	L3	3012	SLX9250-32C	0	Leaf	20.2.3	10.20.241.101	/build/slx/slxos20.2.3a	20.2.3a	2021-03-19



```

20:36:21 +0000 UTC |
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+
| 1      | 10.20.245.5 | L5          | 3012 | SLX9250-32C | 0 | Leaf |
20.2.3   | 10.20.241.101 | /build/slx/slxos20.2.3a | 20.2.3a          | 2021-03-19
20:36:21 +0000 UTC |
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+
| 2      | 10.20.245.2 | L2          | 3012 | SLX9250-32C | 0 | Leaf |
20.2.3   | 10.20.241.101 | /build/slx/slxos20.2.3a | 20.2.3a          | 2021-03-19
20:36:22 +0000 UTC |
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+
| 2      | 10.20.245.4 | L4          | 3012 | SLX9250-32C | 0 | Leaf |
20.2.3   | 10.20.241.101 | /build/slx/slxos20.2.3a | 20.2.3a          | 2021-03-19
20:36:22 +0000 UTC |
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+
| 2      | 10.20.245.6 | L6          | 3012 | SLX9250-32C | 0 | Leaf |
20.2.3   | 10.20.241.101 | /build/slx/slxos20.2.3a | 20.2.3a          | 2021-03-19
20:36:22 +0000 UTC |
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+
| 3      | 10.20.245.9 | S1          | 3012 | SLX9250-32C | 0 | Spine |
20.2.3   | 10.20.241.101 | /build/slx/slxos20.2.3a | 20.2.3a          | 2021-03-19
20:36:23 +0000 UTC |
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+
| 4      | 10.20.245.10 | S2         | 3012 | SLX9250-32C | 0 | Spine |
20.2.3   | 10.20.241.101 | /build/slx/slxos20.2.3a | 20.2.3a          | 2021-03-19
20:36:24 +0000 UTC |
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+
Firmware Download Prepare Add Details
Validate Firmware Download Prepare Add [success]

```

**Firmware Download Prepare Delete (IP-based)**

Given the prepared list from the previous example, delete an MCT leaf pair prepared across groups.

```

$ efa inventory device firmware-download prepare remove --ip 10.20.245.5,10.20.245.6
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+
| Group | IP Address | Host Name | Model | Chassis Name | ASN | Role | Current
Firmware | Firmware Host | Firmware Directory | Target Firmware | Last Update
Time
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+
| 1      | 10.20.245.5 | L5          | 3012 | SLX9250-32C | 0 | Leaf |
20.2.3   | 10.20.241.101 | /build/slx/slxos20.2.3a | 20.2.3a          | 2021-03-19
20:36:21 +0000 UTC |
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+
| 2      | 10.20.245.6 | L6          | 3012 | SLX9250-32C | 0 | Leaf |

```

```

20.2.3          | 10.20.241.101 | /build/slx/slxos20.2.3a | 20.2.3a          | 2021-03-19
20:36:22 +0000 UTC |
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+
Firmware Download Prepare Remove Details
Validate Firmware Download Prepare Remove [success]

```

**Firmware Download Prepare Delete (Group-based)**

Continuing from the previous example, delete devices prepared in Group 2.

```

$ efa inventory device firmware-download prepare remove --group 2
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+
| Group | IP Address | Host Name | Model | Chassis Name | ASN | Role | Current
Firmware | Firmware Host | Firmware Directory | Target Firmware | Last Update
Time |
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+-----+-----+
| 2 | 10.20.245.2 | L2 | 3012 | SLX9250-32C | 0 | Leaf |
20.2.3 | 10.20.241.101 | /build/slx/slxos20.2.3a | 20.2.3a | 2021-03-19
20:36:22 +0000 UTC |
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+-----+-----+
| 2 | 10.20.245.4 | L4 | 3012 | SLX9250-32C | 0 | Leaf |
20.2.3 | 10.20.241.101 | /build/slx/slxos20.2.3a | 20.2.3a | 2021-03-19
20:36:22 +0000 UTC |
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+
Firmware Download Prepare Remove Details
Validate Firmware Download Prepare Remove [success]

```

**Firmware Download Prepare Delete (Fabric-based)**

Continuing from the previous example, delete the remaining devices in the fabric.

```

$ efa inventory device firmware-download prepare remove --fabric fab_3stg
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+
| Group | IP Address | Host Name | Model | Chassis Name | ASN | Role | Current
Firmware | Firmware Host | Firmware Directory | Target Firmware | Last Update
Time |
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+-----+-----+
| 1 | 10.20.245.1 | L1 | 3012 | SLX9250-32C | 0 | Leaf |
20.2.3 | 10.20.241.101 | /build/slx/slxos20.2.3a | 20.2.3a | 2021-03-19
20:36:21 +0000 UTC |
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+-----+-----+
| 1 | 10.20.245.3 | L3 | 3012 | SLX9250-32C | 0 | Leaf |
20.2.3 | 10.20.241.101 | /build/slx/slxos20.2.3a | 20.2.3a | 2021-03-19
20:36:21 +0000 UTC |
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+-----+-----+
| 3 | 10.20.245.9 | S1 | 3012 | SLX9250-32C | 0 | Spine |

```

```

20.2.3          | 10.20.241.101 | /build/slx/slxos20.2.3a | 20.2.3a          | 2021-03-19
20:36:23 +0000 UTC |
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+
| 4          | 10.20.245.10 | S2          | 3012 | SLX9250-32C | 0 | Spine |
20.2.3          | 10.20.241.101 | /build/slx/slxos20.2.3a | 20.2.3a          | 2021-03-19
20:36:24 +0000 UTC |
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+
Firmware Download Prepare Remove Details
Validate Firmware Download Prepare Remove [success]

```

## efa inventory device firmware-download restore

Where firmware download was started with the `NoAutoCommit` flag, this command restores the installed firmware.

```
efa inventory device firmware-download restore [ --fabric | --ip | --help ]
```

**--fabric** *fabric-name*

Specifies the name of the fabric.

**--ip**

Specifies a comma-separated list of device IP addresses.

**--help**

Displays help for the command.

The restore operation involves a reload of the device. Careful selection of which devices to restore together should be done to minimize traffic loss.

```

efa inventory device firmware-download restore --fabric fabric1
Firmware Download Restore for fabric fabric1 - [success]
+-----+-----+-----+-----+-----+
| DeviceIP    | Device FWDL Status | Error |
+-----+-----+-----+-----+-----+
| 10.20.246.6 | Firmware Restored Successfully |      |
+-----+-----+-----+-----+-----+
--- Time Elapsed: 1m25.765540754s ---

```

## efa inventory device firmware-download show

Shows the progress and status of the running firmware download.

### Syntax

```
efa inventory device firmware-download show [ --fabric fabric-name | --ip
device-ip-address | --help ]
```

### Parameters

**--fabric** *fabric-name*

Specifies the name of the fabric.

**--ip** *device-ip-address*

Specifies a comma-separated list of device IP addresses.

**--help**

Displays help for the command.

### Examples

This example shows a running firmware download where Group 1 has completed and Group 2 is in progress.

```
$ efa inventory device firmware-download show --fabric fab_3stg
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+-----+-----+
| Group | IP Address | Host Name | Model | Chassis Name | ASN | Role | Current
Firmware | Target Firmware | Update State | Status | Last Update
Time |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 1 | 10.20.245.1 | L1 | 3012 | SLX9250-32C | 0 | Leaf |
20.2.3a | 20.2.3a | Completed | Firmware Committed |
2021-03-19 21:18:51 +0000 UTC |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 1 | 10.20.245.3 | L3 | 3012 | SLX9250-32C | 0 | Leaf |
20.2.3a | 20.2.3a | Completed | Firmware Committed |
2021-03-19 21:21:42 +0000 UTC |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 1 | 10.20.245.5 | L5 | 3012 | SLX9250-32C | 0 | Leaf |
20.2.3a | 20.2.3a | Completed | Firmware Committed |
2021-03-19 21:19:21 +0000 UTC |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 2 | 10.20.245.2 | L2 | 3012 | SLX9250-32C | 0 | Leaf |
20.2.3 | 20.2.3a | In Progress | Firmware Download Started |
2021-03-19 21:22:56 +0000 UTC |
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+-----+-----+
```

```

+-----+
| 2      | 10.20.245.4 | L4      | 3012 | SLX9250-32C | 0 | Leaf |
20.2.3   | 20.2.3a     |         | In Progress | Firmware Download Started |
2021-03-19 21:23:27 +0000 UTC |
+-----+-----+-----+-----+-----+
+-----+
| 2      | 10.20.245.6 | L6      | 3012 | SLX9250-32C | 0 | Leaf |
20.2.3   | 20.2.3a     |         | In Progress | Firmware Download Started |
2021-03-19 21:23:03 +0000 UTC |
+-----+-----+-----+-----+-----+
+-----+
| 3      | 10.20.245.9 | S1      | 3012 | SLX9250-32C | 0 | Spine |
20.2.3   | 20.2.3a     |         | Prepared   |                   |
2021-03-19 21:06:23 +0000 UTC |
+-----+-----+-----+-----+-----+
+-----+
| 4      | 10.20.245.10 | S2     | 3012 | SLX9250-32C | 0 | Spine |
20.2.3   | 20.2.3a     |         | Prepared   |                   |
2021-03-19 21:06:24 +0000 UTC |
+-----+-----+-----+-----+-----+
+-----+
Firmware Download Show Details
Firmware Download Show Overall Status [In Progress]

```

## efa inventory device health status

---

Displays device health status.

### Syntax

```
efa inventory device health status [ --ip | --help ]
```

### Parameters

**--ip**

Specifies IP address of the device.

**--help**

Provides help for status.

## efa inventory device interface list

Displays the list of interfaces and details for the specified IP address, including the application state that indicates if the configuration on the device is in sync or has drifted (refreshed or deleted) with respect to EFA.

### Syntax

```
efa inventory device interface list [ --ip ip-addr | --type interface-type | physical | loopback | ve | po | all | --admin-state state | up | down | all | --oper-state oper-state | up | down | all | --rme list ]
```

### Parameters

**--ip** *ip-addr*

Specifies the IP address of the device for which you want to see a list of interfaces. Example: 1.1.1-3,1.1.2,2.2.2.2.

**--type** *interface-type* **physical** | **loopback** | **ve** | **po** | **all**

Type of interfaces of the devices. Default is `physical`.

**--admin-state** *state* **up** | **down** | **all**

Admin state of interfaces of the device. Default is `all`.

**--oper-state** *oper-state* **up** | **down** | **all**

Oper state (line protocol) of interfaces of the device. Default is `all`.

**--rme** *list* **up** | **down** | **all**

Lists redundant management enabled interface. Default is `all`.

### Examples

The following example shows typical output for the command.

```
$ efa inventory device interface list --ip 10.20.62.145
+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+-----+
| DeviceIP | Name | Interface Type | Admin Status | Oper Status | Description | Line
Speed |      MAC      | Switchport Mode | IP Address | App State |
+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+-----+
| 10.20.62.145 | 0/1 | ethernet | up | up | |
40Gbps | 00:04:96:d6:f2:8b | unknown | | | cfg-in-sync |
+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+-----+
| | 0/2 | ethernet | up | down | |
unknown | 00:04:96:d6:f2:8c | unknown | | | cfg-in-sync |
+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+-----+
| | 0/3 | ethernet | up | down | |
unknown | 00:04:96:d6:f2:8d | unknown | | | cfg-in-sync |
+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+-----+
~~
~~
```

```

+-----+-----+-----+-----+-----+-----+-----+-----+
| 0/29 | ethernet | up | up | | | | |
40Gbps | 00:04:96:d6:f2:a7 | unknown | 10.10.10.1/31 | cfg-in-sync |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 0/30 | ethernet | up | up | | | | |
100Gbps | 00:04:96:d6:f2:a8 | unknown | 10.10.10.15/31 | cfg-in-sync |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 0/31 | ethernet | up | down | | | | |
unknown | 00:04:96:d6:f2:a9 | unknown | | | | | | | | |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 0/32 | ethernet | up | down | | | | | |
unknown | 00:04:96:d6:f2:aa | unknown | | | | | | | | |
+-----+-----+-----+-----+-----+-----+-----+-----+
Interface Details
--- Time Elapsed: 79.1761ms ---

```

## efa inventory device interface list-breakout

Lists breakout ports, including the application state that indicates if the configuration on the device is in sync or has drifted (refreshed or deleted) with respect to EFA.

```
efa inventory device interface list-breakout [ --ip device-ip | --help]
```

### Parameters

**--ip** *device-ip*

Comma separated range of device IP addresses. Example: 1.1.1-3,1.1.2,2.2.2.2.

The following example shows the list breakout for devices on a specific IP.

```

$ efa inventory device interface list-breakout --ip 10.20.246.18
+-----+-----+-----+-----+
| IP Address | Name | AppState |
+-----+-----+-----+-----+
| 10.20.246.18 | 0/52:1 | cfg-refreshed |
+-----+-----+-----+-----+
| | 0/52:2 | cfg-refreshed |
+-----+-----+-----+-----+
| | 0/52:3 | cfg-refreshed |
+-----+-----+-----+-----+
| | 0/52:4 | cfg-refreshed |
+-----+-----+-----+-----+
| | 0/53:1 | cfg-in-sync |
+-----+-----+-----+-----+
| | 0/53:2 | cfg-in-sync |
+-----+-----+-----+-----+
| | 0/53:3 | cfg-in-sync |
+-----+-----+-----+-----+
| | 0/53:4 | cfg-in-sync |
+-----+-----+-----+-----+

```



## efa inventory device interface redundant-management

Configures redundant management Ethernet (RME) on the SLX interface.

```
efa inventory device interface redundant-management [--ip device-ip | --  
if-name if-list | --enable true | false | --help]
```

### Parameters

**--ip** *device-ip*

Specifies a comma-separated range of device IP addresses. Example: 1.1.1.1-3,1.1.1.2,2.2.2.2.

**--if-name** *if-list*

Specifies a comma-separated list of interface names. Example: 0/50-52,0/45,0/5:4,0/5:1-2.

**--enable** **true** | **false**

Turns redundant management on or off.

### Usage Guidelines

The configuration you set is persisted in the EFA database.

DRC and idempotency are supported.

The command is supported only on the 9150, 9250, and 9740 SLX platforms where this feature is supported.

Internally, EFA sets PPS (packets per second) to some value when RME is enabled. For SLX 9150 and 9250, PPS will be set to 8000.

On SLX 9740, Bps (bits per second) will be set to 20000 Kbps (kilobits per second) when RME is enabled.

```
efa inventory device interface redundant-management --ip 10.20.246.10  
--if-type eth --if-name 0/17 --enable true
```

This example turns off RME:

```
efa inventory device interface redundant-management --ip 10.20.246.10  
--if-type eth --if-name 0/17 --enable false
```

## efa inventory device interface set-admin-state

Brings an interface administratively up or down.

### Syntax

```
efa inventory device interface set-admin-state [--ip device-ip | --if-type eth | --if-name if-list | --state up | down ]
```

### Command Default

By default, all ports on the SLX device are down.

### Parameters

**--ip** *device-ip*

Specifies a comma-separated list of device IP addresses. Example: 1.1.1.1-3,1.1.1.2,2.2.2.2.

**--if-type** **eth**

Specifies that the interface type is Ethernet, which is the default setting.

**--if-name** *if-list*

Specifies a comma-separated list of interface names. Example: 0/50-52,0/45,0/5:4,0/5:1-2.

**--state** **up** | **down**

State. Can be up or down.

### Usage Guidelines

The configuration you set is persisted.

DRC and idempotency are supported.

In SLX-OS, you can use the **show interface ethernet** command to see the status of the Ethernet interfaces on your device.

### Examples

This example changes the Admin Status on one IP address.

```
efa inventory device interface set-admin-state --ip 10.25.225.167
--if-name 0/20-22 --state down
+-----+-----+-----+-----+-----+-----+-----+
| DeviceIP | ID | Name | Interface Type | Admin Status | Result | Reason |
+-----+-----+-----+-----+-----+-----+-----+
| 10.25.225.167 | 9 | 0/21 | ethernet | down | Success | |
+-----+-----+-----+-----+-----+-----+-----+
| | 89 | 0/20 | ethernet | down | Success | |
+-----+-----+-----+-----+-----+-----+-----+
| | 1 | 0/22 | ethernet | down | Success | |
+-----+-----+-----+-----+-----+-----+-----+
Interface Details
--- Time Elapsed: 19.5606145s ---
```

This example attempts to change the Admin Status on two IP addresses, however one IP address is invalid.

```
efa inventory device interface set-admin-state --ip 10.25.225.167,10.10.10.10
--if-name 0/20-22 --state down
```

DeviceIP	ID	Name	Interface Type	Admin Status	Result	Reason
10.10.10.10					Failed	Device does not exist with IP: 10.10.10.10
10.25.225.167	9	0/21	ethernet	down	Success	
	89	0/20	ethernet	down	Success	
	1	0/22	ethernet	down	Success	

Interface Details  
--- Time Elapsed: 20.740265s ---

This example changes the Admin State on multiple valid IP addresses.

```
efa inventory device interface set-admin-state
--ip 10.25.225.167,10.24.48.131,10.24.51.135 --if-name 0/20-22 --state up
```

DeviceIP	ID	Name	Interface Type	Admin Status	Result	Reason
10.24.48.131	110	0/21	ethernet	up	Success	
	142	0/20	ethernet	up	Success	
	148	0/22	ethernet	up	Success	
10.24.51.135	16	0/21	ethernet	up	Success	
	48	0/22	ethernet	up	Success	
	86	0/20	ethernet	up	Success	
10.25.225.167	9	0/21	ethernet	up	Success	
	89	0/20	ethernet	up	Success	
	1	0/22	ethernet	up	Success	

Interface Details  
--- Time Elapsed: 56.4964544s ---

This example changes the Admin Status for the specified fabric name.

```
efa inventory device interface set-admin-state --fabric nc_no_vni
--if-name 0/20-22 --state up
```

DeviceIP	ID	Name	Interface Type	Admin Status	Result	Reason
10.24.51.135	48	0/22	ethernet	up	Success	
	16	0/21	ethernet	up	Success	
	86	0/20	ethernet	up	Success	
10.24.48.131	148	0/22	ethernet	up	Success	

```
|          | 142 | 0/20 | ethernet      | up          | Success |          |
+-----+-----+-----+-----+-----+-----+-----+
|          | 110 | 0/21 | ethernet      | up          | Success |          |
+-----+-----+-----+-----+-----+-----+-----+
Interface Details
--- Time Elapsed: 37.9236481s ---
```

## efa inventory device interface set-breakout

Breaks a port into multiple interfaces, such as breaking one 40G port into four 10G ports.

### Syntax

```
efa inventory device interface set-breakout [--ip device-ip | --if-type
eth | --if-name if-list | --mode 1x10g | 1x25g | 1x40g | 1x100g |
2x40g | 2x50g | 4x10g | 4x25g | --help ]
```

### Parameters

**--ip** *device-ip*

Specifies a comma-separated list of device IP addresses. Example: 1.1.1.1-3,1.1.1.2,2.2.2.2.

**--if-type** **eth**

Specifies that the interface type is Ethernet, which is the default setting.

**--if-name** *if-list*

Specifies a comma-separated list of interface names. Example: 0/50-52,0/45.

**--mode** **1x10g** | **1x25g** | **1x40g** | **1x100g** | **2x40g** | **2x50g** | **4x10g** | **4x25g**

Configures breakout mode for the ports.

**--help**

Displays help.

### Usage Guidelines

In SLX-OS, you can use the **show running-config hardware** command to see whether breakout mode is configured for a device.

The new breakout interfaces you create are identified by the name of the original interface followed by a suffix.

The configuration you set is persisted.

DRC and idempotency are supported.

### Examples

This example breaks three interfaces into four ports each.

```
efa inventory device interface set-breakout --ip 10.24.80.158
+-----+-----+-----+-----+
| DeviceIP | ID | Name | Interface Type | Result |
+-----+-----+-----+-----+
| 10.24.80.158 | 73 | 0/2:2 | ethernet | Success |
+-----+-----+-----+-----+
| | 72 | 0/1:4 | ethernet | Success |
+-----+-----+-----+-----+
| | 74 | 0/3:2 | ethernet | Success |
```

```

+-----+-----+-----+-----+
|      | 78 | 0/3:3 | ethernet | Success |
+-----+-----+-----+-----+
|      | 75 | 0/3:4 | ethernet | Success |
+-----+-----+-----+-----+
|      | 70 | 0/1:1 | ethernet | Success |
+-----+-----+-----+-----+
|      | 71 | 0/1:3 | ethernet | Success |
+-----+-----+-----+-----+
|      | 80 | 0/2:1 | ethernet | Success |
+-----+-----+-----+-----+
|      | 79 | 0/1:2 | ethernet | Success |
+-----+-----+-----+-----+
|      | 76 | 0/2:3 | ethernet | Success |
+-----+-----+-----+-----+
|      | 69 | 0/3:1 | ethernet | Success |
+-----+-----+-----+-----+
|      | 77 | 0/2:4 | ethernet | Success |
+-----+-----+-----+-----+
Interface Details
--- Time Elapsed: 48.3801684s ---

```

This example attempts to break out ports on two devices, but one IP address is invalid.

```

efa inventory device interface set-breakout
--ip 10.24.80.158,10.10.10
+-----+-----+-----+-----+-----+
| DeviceIP | ID | Name | Interface Type | Result | Reason |
+-----+-----+-----+-----+-----+
| 10.10.10.10 | | | | Failed | Device does not |
| | | | | | exist with IP: |
| | | | | | 10.10.10.10 |
+-----+-----+-----+-----+-----+
| 10.24.80.158 | 94 | 0/8:3 | ethernet | Success |
+-----+-----+-----+-----+-----+
| | 91 | 0/9:3 | ethernet | Success |
+-----+-----+-----+-----+-----+
| | 83 | 0/9:4 | ethernet | Success |
+-----+-----+-----+-----+-----+
| | 86 | 0/6:3 | ethernet | Success |
+-----+-----+-----+-----+-----+
| | 82 | 0/7:1 | ethernet | Success |
+-----+-----+-----+-----+-----+
| | 88 | 0/7:3 | ethernet | Success |
+-----+-----+-----+-----+-----+
| | 89 | 0/7:4 | ethernet | Success |
+-----+-----+-----+-----+-----+
| | 90 | 0/9:2 | ethernet | Success |
+-----+-----+-----+-----+-----+
| | 81 | 0/9:1 | ethernet | Success |
+-----+-----+-----+-----+-----+
| | 95 | 0/6:1 | ethernet | Success |
+-----+-----+-----+-----+-----+
| | 93 | 0/8:2 | ethernet | Success |
+-----+-----+-----+-----+-----+
| | 92 | 0/8:4 | ethernet | Success |
+-----+-----+-----+-----+-----+
| | 96 | 0/6:2 | ethernet | Success |
+-----+-----+-----+-----+-----+
| | 84 | 0/7:2 | ethernet | Success |
+-----+-----+-----+-----+-----+
| | 87 | 0/6:4 | ethernet | Success |
+-----+-----+-----+-----+-----+
| | 85 | 0/8:1 | ethernet | Success |
+-----+-----+-----+-----+-----+

```

```

+-----+-----+-----+-----+-----+-----+
Interface Details
--- Time Elapsed: 59.3971958s ---
    
```

This example breaks out ports on multiple devices.

```

efa inventory device interface set-breakout
--ip 10.24.80.158,10.24.80
+-----+-----+-----+-----+-----+-----+
| DeviceIP | ID | Name | Interface Type | Result | Reason |
+-----+-----+-----+-----+-----+-----+
| 10.24.80.158 | 0 | 0/9 | ethernet | Failed | Interface [0/9] from the
| | | | | | range [0/9-12] does not
| | | | | | exist or port is already
| | | | | | breakout for device
| | | | | | IP 10.24.80.158. Specify
| | | | | | a valid interface.
+-----+-----+-----+-----+-----+-----+
| | 105 | 0/10:2 | ethernet | Success |
+-----+-----+-----+-----+-----+-----+
| | 108 | 0/12:2 | ethernet | Success |
+-----+-----+-----+-----+-----+-----+
| | 102 | 0/12:3 | ethernet | Success |
+-----+-----+-----+-----+-----+-----+
| | 101 | 0/10:3 | ethernet | Success |
+-----+-----+-----+-----+-----+-----+
| | 99 | 0/11:1 | ethernet | Success |
+-----+-----+-----+-----+-----+-----+
| | 107 | 0/12:1 | ethernet | Success |
+-----+-----+-----+-----+-----+-----+
| | 103 | 0/10:1 | ethernet | Success |
+-----+-----+-----+-----+-----+-----+
| | 104 | 0/11:4 | ethernet | Success |
+-----+-----+-----+-----+-----+-----+
| | 97 | 0/12:4 | ethernet | Success |
+-----+-----+-----+-----+-----+-----+
| | 106 | 0/10:4 | ethernet | Success |
+-----+-----+-----+-----+-----+-----+
| | 98 | 0/11:2 | ethernet | Success |
+-----+-----+-----+-----+-----+-----+
| | 100 | 0/11:3 | ethernet | Success |
+-----+-----+-----+-----+-----+-----+
| 10.24.80.159 | 120 | 0/10:1 | ethernet | Success |
+-----+-----+-----+-----+-----+-----+
| | 114 | 0/9:4 | ethernet | Success |
+-----+-----+-----+-----+-----+-----+
| | 118 | 0/10:3 | ethernet | Success |
+-----+-----+-----+-----+-----+-----+
| | 116 | 0/10:2 | ethernet | Success |
+-----+-----+-----+-----+-----+-----+
| | 111 | 0/9:2 | ethernet | Success |
+-----+-----+-----+-----+-----+-----+
| | 121 | 0/11:2 | ethernet | Success |
+-----+-----+-----+-----+-----+-----+
| | 122 | 0/11:3 | ethernet | Success |
+-----+-----+-----+-----+-----+-----+
| | 124 | 0/11:4 | ethernet | Success |
+-----+-----+-----+-----+-----+-----+
| | 117 | 0/12:4 | ethernet | Success |
+-----+-----+-----+-----+-----+-----+
| | 112 | 0/9:1 | ethernet | Success |
+-----+-----+-----+-----+-----+-----+
| | 123 | 0/12:1 | ethernet | Success |
+-----+-----+-----+-----+-----+-----+
    
```

```

|           | 119 | 0/9:3 | ethernet | Success |           |
+-----+-----+-----+-----+-----+-----+
|           | 109 | 0/11:1 | ethernet | Success |           |
+-----+-----+-----+-----+-----+
|           | 110 | 0/12:3 | ethernet | Success |           |
+-----+-----+-----+-----+-----+
|           | 113 | 0/10:4 | ethernet | Success |           |
+-----+-----+-----+-----+-----+
|           | 115 | 0/12:2 | ethernet | Success |           |
+-----+-----+-----+-----+-----+
Interface Details
--- Time Elapsed: 1m16.6280022s ---

```

This example configures break out for the specified fabric name.

```

efa inventory device interface set-breakout --if-name 0/19-20
--mode 4x25g --fabric fabric1
+-----+-----+-----+-----+-----+-----+
| DeviceIP | ID | Name | Interface Type | Result | Reason |
+-----+-----+-----+-----+-----+-----+
| 10.24.80.158 | 188 | 0/20:2 | ethernet | Success | |
+-----+-----+-----+-----+-----+
|           | 184 | 0/20:3 | ethernet | Success | |
+-----+-----+-----+-----+-----+
|           | 190 | 0/20:4 | ethernet | Success | |
+-----+-----+-----+-----+-----+
|           | 191 | 0/19:1 | ethernet | Success | |
+-----+-----+-----+-----+-----+
|           | 187 | 0/19:2 | ethernet | Success | |
+-----+-----+-----+-----+-----+
|           | 189 | 0/19:3 | ethernet | Success | |
+-----+-----+-----+-----+-----+
|           | 185 | 0/19:4 | ethernet | Success | |
+-----+-----+-----+-----+-----+
|           | 186 | 0/20:1 | ethernet | Success | |
+-----+-----+-----+-----+-----+
| 10.24.80.159 | 196 | 0/19:2 | ethernet | Success | |
+-----+-----+-----+-----+-----+
|           | 194 | 0/19:3 | ethernet | Success | |
+-----+-----+-----+-----+-----+
|           | 197 | 0/19:4 | ethernet | Success | |
+-----+-----+-----+-----+-----+
|           | 199 | 0/20:1 | ethernet | Success | |
+-----+-----+-----+-----+-----+
|           | 193 | 0/20:2 | ethernet | Success | |
+-----+-----+-----+-----+-----+
|           | 195 | 0/20:3 | ethernet | Success | |
+-----+-----+-----+-----+-----+
|           | 192 | 0/20:4 | ethernet | Success | |
+-----+-----+-----+-----+-----+
|           | 198 | 0/19:1 | ethernet | Success | |
+-----+-----+-----+-----+-----+
Interface Details
--- Time Elapsed: 1m6.2210288s ---

```

## efa inventory device interface set-fec

Configures Forwarding Error Correction (FEC) on the SLX interface.

```

efa inventory device interface set-fec [--ip device-ip | --if-type eth --
  if-name if-list --mode fs-fec | rs-fec | auto | disabled | --help]

```



## Parameters

**--ip** *device-ip*

Specifies a comma-separated range of device IP addresses. Example: 1.1.1.1-3,1.1.1.2,2.2.2.2.

**--if-type** **eth**

Specifies that the interface type is **eth** (Ethernet), which is the default setting.

**--if-name** *if-list*

Specifies a comma-separated list of interface names. Example: 0/50-52,0/45,0/5:4,0/5:1-2.

**--mode** **fs-fec** | **rs-fec** | **auto** | **disabled**

Specifies the FEC mode for the ports.

**--help**

Displays help.

## Usage Guidelines

The configuration you set is persisted in the EFA database.

The default value of FEC configured by SLX is auto, that is auto-negotiation.

DRC and idempotency are supported.

```
efa inventory device interface set-fec --ip 10.20.246.10
--if-type ethernet --if-name
0/20 -mode rs-fec
```

## efa inventory device interface set-link-error-disable

Configures port dampening (link-error-disable) on the SLX interface. Minimizes excessive interface flapping.

```
efa inventory device interface set-link-error-disable [--ip device-ip |
--if-type eth --if-name if-list | --toggle-threshold value | --
sampling-time value | --wait-time value | --help]
```

## Parameters

**--ip** *device-ip*

Specifies a comma-separated range of device IP addresses. Example: 1.1.1.1-3,1.1.1.2,2.2.2.2.

**--if-type** **eth**

Specifies that the interface type is Ethernet, which is the default setting.

**--if-name** *if-list*

Specifies a comma-separated list of interface names. Example: 0/50-52,0/45,0/5:4,0/5:1-2.

**--toggle-threshold** *value*

Valid values are 1-50.

**--sampling-time** *value*

Valid values in seconds, are 1-65565. The default is 1.

**--wait-time** *value*

Valid values, in seconds, are 0-65565.

**--help**

Displays help.

## Usage Guidelines

The configuration you set is persisted in the EFA database.

DRC and idempotency are supported.

```
efa inventory device interface set-link-error-disable --ip 10.20.246.10
--if-type eth --if-name 0/20 --toggle-threshold 10 --sampling-time 20 --wait-time 10
```

## efa inventory device interface set-mtu

Configures the MTU (maximum transmission unit) at the physical port level for Layer 2, IPv4, and IPv6.

### Syntax

```
efa inventory device interface set-mtu [--ip device-ip | --if-type eth |
  --if-name if-list | --mtu int mtu-value | --ip-mtu int ip-mtu-value |
  --ipv6-mtu int32 ipv6-mtu-value ]
```

### Parameters

**--ip** *device-ip*

Specifies a comma-separated range of device IP addresses. Example: 1.1.1.1-3,1.1.1.2,2.2.2.2.

**--if-type** **eth**

Specifies that the interface type is Ethernet, which is the default setting.

**--if-name** *if-list*

Specifies a comma-separated list of interface names. Example: 0/50-52,0/45.

**--mtu** *mtu-value*

Specifies the global Layer 2 MTU on a device. For SLX-OS 21.1 and later, valid values range from 1500 through 9216. For other SLX-OS versions, valid values range from 1548 through 9216.

**--ip-mtu** *ip-mtu-value*

Specifies the global IP MTU value on a device. For SLX IPv4 or IPv6, valid values range from 1300 through 9194.

**--ipv6-mtu** *ipv6-mtu-value*

Specifies the global IPv6 MTU on a device. For SLX IPv4 or IPv6, valid values range from 1300 through 9194.

### Usage Guidelines

In SLX-OS, you can use the **show interface ethernet** command to see the MTU configuration for an interface.

The configuration you set is persisted.

DRC and idempotency are supported.

### Examples

This example configures the MTU on one device.

```
efa inventory device interface set-mtu --ip 10.25.225.167 --if-name 0/20-22
--mtu 2000 --ip-mtu 2000 --ipv6-mtu 3000
+-----+-----+-----+-----+-----+-----+-----+-----+
| DeviceIP | ID | Name | Interface Type | MTU | IP MTU | IPv6 MTU | Result |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 10.25.225.167 | 1 | 0/22 | ethernet | 2000 | 2000 | 3000 | Success |
+-----+-----+-----+-----+-----+-----+-----+-----+
```

```

|          | 9 | 0/21 | ethernet          | 2000 | 2000 | 3000 | Success
+-----+-----+-----+-----+-----+-----+-----+-----+
|          | 89 | 0/20 | ethernet          | 2000 | 2000 | 3000 | Success
+-----+-----+-----+-----+-----+-----+-----+
Interface MTU Details
--- Time Elapsed: 18.6886395s ---

```

This example attempts to configure the MTU for two IP addresses, however one IP address is invalid.

```

efa inventory device interface set-mtu --ip 10.25.225.167,10.10.10.10
--if-name 0/20-22 --mtu 2500 --ip-mtu 2500 --ipv6-mtu 2500
+-----+-----+-----+-----+-----+-----+-----+-----+
| DeviceIP | ID | Name | Interface Type | MTU | IP MTU | IPv6 MTU | Result
+-----+-----+-----+-----+-----+-----+-----+-----+
| 10.10.10.10 | | | | | Failed | Device does not
| | | | | | exist with IP:
| | | | | | 10.10.10.10
+-----+-----+-----+-----+-----+-----+-----+-----+
| 10.25.225.167 | 89 | 0/20 | ethernet          | 2500 | 2500 | 2500 | Success
+-----+-----+-----+-----+-----+-----+-----+-----+
| | | | | | | | Success
+-----+-----+-----+-----+-----+-----+-----+-----+
| | | | | | | | Success
+-----+-----+-----+-----+-----+-----+-----+-----+
| | | | | | | | Success
+-----+-----+-----+-----+-----+-----+-----+-----+
Interface MTU Details
--- Time Elapsed: 18.6252821s ---

```

This example configures the MTU on multiple IP addresses.

```

efa inventory device interface set-mtu --ip 10.25.225.167,10.24.48.131,10.24.51.135
--if-name 0/20-22 --mtu 3600 --ip-mtu 3600 --ipv6-mtu 3600
+-----+-----+-----+-----+-----+-----+-----+-----+
| DeviceIP | ID | Name | Interface Type | MTU | IP MTU | IPv6 MTU | Result
+-----+-----+-----+-----+-----+-----+-----+-----+
| 10.25.225.167 | 9 | 0/21 | ethernet          | 3600 | 3600 | 3600 | Success
+-----+-----+-----+-----+-----+-----+-----+-----+
| | | | | | | | Success
+-----+-----+-----+-----+-----+-----+-----+-----+
| | | | | | | | Success
+-----+-----+-----+-----+-----+-----+-----+-----+
| 10.24.48.131 | 142 | 0/20 | ethernet          | 3600 | 3600 | 3600 | Success
+-----+-----+-----+-----+-----+-----+-----+-----+
| | | | | | | | Success
+-----+-----+-----+-----+-----+-----+-----+-----+
| | | | | | | | Success
+-----+-----+-----+-----+-----+-----+-----+-----+
| 10.24.51.135 | 16 | 0/21 | ethernet          | 3600 | 3600 | 3600 | Success
+-----+-----+-----+-----+-----+-----+-----+-----+
| | | | | | | | Success
+-----+-----+-----+-----+-----+-----+-----+-----+
| | | | | | | | Success
+-----+-----+-----+-----+-----+-----+-----+-----+
Interface MTU Details
--- Time Elapsed: 59.5462548s ---

```

This example configures the MTU for the specified fabric name.

```

efa inventory device interface set-mtu --fabric nc_no_vni --if-name 0/20-22,0/55-58
--mtu 3200 --ip-mtu 3200 --ipv6-mtu 3200
+-----+-----+-----+-----+-----+-----+-----+-----+
| DeviceIP | ID | Name | Interface Type | MTU | IP MTU | IPv6 MTU | Result |
Reason
+-----+-----+-----+-----+-----+-----+-----+-----+

```

```

+-----+
| 10.24.51.135 | 16 | 0/21 | ethernet | 3200 | 3200 | 3200 | Success
|
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+-----+-----+
| | 48 | 0/22 | ethernet | 3200 | 3200 | 3200 | Success
|
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+-----+-----+
| | 86 | 0/20 | ethernet | 3200 | 3200 | 3200 | Success
|
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+-----+-----+
| | 0 | 0/55-58 | ethernet | 0 | 0 | 0 | Failed | Interfaces
[0/55-58]
| | | | | | | | | do not exist
for
device IP 10.24.51.135
Specify a valid
interface
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+-----+-----+
| 10.24.48.131 | 0 | 0/55-58 | ethernet | 0 | 0 | 0 | Failed | Interfaces
[0/55-58]
| | | | | | | | | does not exist
for
device IP 10.24.51.131
Specify a valid
interface
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+-----+-----+
| | 110 | 0/21 | ethernet | 3200 | 3200 | 3200 | Success
|
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+-----+-----+
| | 148 | 0/22 | ethernet | 3200 | 3200 | 3200 | Success
|
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+-----+-----+
| | 142 | 0/20 | ethernet | 3200 | 3200 | 3200 | Success
|
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+-----+-----+
Interface MTU Details
--- Time Elapsed: 37.3021602s ---

```

## efa inventory device interface set-speed

Configures the speed for receiving and transmitting data on a physical port.

### Syntax

```
efa inventory device interface set-speed [--ip device-ip | --if-type eth
  | --if-name if-list | --speed 100mbps | 1gbps | 10gbps | 25gbps |
  40gbps | 100gbps | 1GbpsAN | AUTO ]
```

### Parameters

**--ip** *device-ip*

Specifies a comma-separated list of device IP addresses.

**--if-type** **eth**

Specifies that the interface type is Ethernet, which is the default setting.

**--if-name** *if-list*

Specifies a comma-separated list of interface names. Example: 0/50-52,0/45.

**--speed** **100mbps** | **1gbps** | **10gbps** | **25gbps** | **40gbps** | **100gbps** | **1GbpsAN** | **AUTO**

Specifies the speed for the port.

**--help**

Displays help.

### Usage Guidelines

In SLX-OS, you can use the **show interface ethernet** command to see the speed of the Ethernet interfaces on your device.

The configuration you set is persisted.

DRC and idempotency are supported.

### Examples

This example sets the port speed on one device.

```
efa inventory device interface set-speed --ip 10.25.225.167 --if-name 0/20-22 --speed
10gbps
+-----+-----+-----+-----+-----+-----+-----+-----+
| DeviceIP | ID | Name | Interface Type | Port Speed | Result | Reason |
+-----+-----+-----+-----+-----+-----+-----+
| 10.25.225.167 | 89 | 0/20 | ethernet | 10gbps | Success | |
+-----+-----+-----+-----+-----+-----+-----+
| | 1 | 0/22 | ethernet | 10gbps | Success | |
+-----+-----+-----+-----+-----+-----+-----+
| | 9 | 0/21 | ethernet | 10gbps | Success | |
+-----+-----+-----+-----+-----+-----+-----+
Interface Details
--- Time Elapsed: 17.9586487s ---
```

This example attempts to set the port speed on two IP addresses, however one IP address is invalid.

```
efa inventory device interface set-speed --ip 10.25.225.167,10.10.10.10 --if-name
0/20-22 --speed 25gbps
```

DeviceIP	ID	Name	Interface Type	Port Speed	Result	Reason
10.10.10.10					Failed	Device does not exist with IP: 10.10.10.10
10.25.225.167	89	0/20	ethernet	25gbps	Success	
	1	0/22	ethernet	25gbps	Success	
	9	0/21	ethernet	25gbps	Success	

Interface Details  
--- Time Elapsed: 18.3503896s ---

This example sets the port speed on multiple valid IP addresses.

```
efa inventory device interface set-speed --ip 10.25.225.167,10.24.48.131,10.24.51.135 --
if-name 0/20-22 --speed 25gbps
```

DeviceIP	ID	Name	Interface Type	Port Speed	Result	Reason
10.25.225.167	9	0/21	ethernet	25gbps	Success	
	89	0/20	ethernet	25gbps	Success	
	1	0/22	ethernet	25gbps	Success	
10.24.51.135	16	0/21	ethernet	25gbps	Success	
	86	0/20	ethernet	25gbps	Success	
	48	0/22	ethernet	25gbps	Success	
10.24.48.131	142	0/20	ethernet	25gbps	Success	
	110	0/21	ethernet	25gbps	Success	
	148	0/22	ethernet	25gbps	Success	

Interface Details  
--- Time Elapsed: 53.8631425s ---

This example sets the port speed for the specified fabric name.

```
efa inventory device interface set-speed --fabric nc_no_vni --if-name 0/20-22 --speed
25gbps
```

DeviceIP	ID	Name	Interface Type	Port Speed	Result	Reason
10.24.51.135	86	0/20	ethernet	25gbps	Success	
	48	0/22	ethernet	25gbps	Success	
	16	0/21	ethernet	25gbps	Success	
10.24.48.131	142	0/20	ethernet	25gbps	Success	
	110	0/21	ethernet	25gbps	Success	

```
+-----+-----+-----+-----+-----+
|          | 148 | 0/22 | ethernet      | 25gbps      | Success |
+-----+-----+-----+-----+-----+
Interface Details
--- Time Elapsed: 36.9974805s ---
```



## efa inventory device interface unset-breakout

Reverts the breakout of multiple ports back to the original configuration.

### Syntax

```
efa inventory device interface unset-breakout [--ip device-ip | --if-type
  eth | --if-name if-list | --help]
```

### Parameters

**--ip** *device-ip*

Specifies a comma-separated list of device IP addresses. Example: 1.1.1.1-3,1.1.1.2,2.2.2.2.

**--if-type** **eth**

Specifies that the interface type is Ethernet, which is the default setting.

**--if-name** *if-list*

Specifies a comma-separated list of interface names. Example: 0/50-52,0/45.

**--help**

Displays help.

### Usage Guidelines

In SLX-OS, you can use the **show running-config hardware** command to see whether breakout mode is configured for a device.

When you run this command, the breakout interfaces are deconfigured and deleted. The original Ethernet interface in the default configuration is created automatically.

The configuration you set is persisted.

DRC and idempotency are supported.

### Examples

This example removes breakout mode on one device.

```
efa inventory device interface unset-breakout --ip 10.24.80.158
--if-name 0/1-3
+-----+-----+-----+-----+
| DeviceIP | Interface ID | Interface Name | Interface Type | Result |
+-----+-----+-----+-----+
| 10.24.80.158 | 171          | 0/2          | ethernet      | Success |
+-----+-----+-----+-----+
|              | 175          | 0/3          | ethernet      | Success |
+-----+-----+-----+-----+
|              | 182          | 0/1          | ethernet      | Success |
+-----+-----+-----+-----+
Interface Details
```

This example attempts to remove breakout mode on two devices, however one IP address is invalid.

```
efa inventory device interface unset-breakout --ip 10.24.80.158,10.10.10.10
--if-name 0/6-9
```

DeviceIP	Interface ID	Interface Name	Interface Type	Result	Reason
10.10.10.10				Failed	Device does not exist with IP: 10.10.10.10
10.24.80.158	229	0/6	ethernet	Success	
	227	0/7	ethernet	Success	
	228	0/8	ethernet	Success	
	230	0/9	ethernet	Success	

```
Interface Details
--- Time Elapsed: 1m6.5402944s ---
```

This example removes breakout mode on multiple devices.

```
efa inventory device interface unset-breakout
--ip 10.24.80.158,10.24.80.159 --if-name 0/9-12
```

DeviceIP	Interface ID	Interface Name	Interface Type	Result
10.24.80.158	248	0/10	ethernet	Success
	250	0/11	ethernet	Success
	249	0/12	ethernet	Success
	247	0/9	ethernet	Success
10.24.80.159	252	0/10	ethernet	Success
	254	0/11	ethernet	Success
	253	0/12	ethernet	Success
	251	0/9	ethernet	Success

```
Interface Details
--- Time Elapsed: 1m52.8562333s ---
```

This example removes breakout mode for the specified fabric name.

```
efa inventory device interface unset-breakout --if-name 0/19-20
--fabric fabric1
```

DeviceIP	Interface ID	Interface Name	Interface Type	Result
10.24.80.159	279	0/19	ethernet	Success
	280	0/20	ethernet	Success
10.24.80.158	281	0/19	ethernet	Success
	282	0/20	ethernet	Success

```
Interface Details
--- Time Elapsed: 1m19.226463s ---
```

## efa inventory device interface unset-fec

Unsets port Forwarding Error Correction (FEC) on the SLX interface.

```
efa inventory device interface unset-fec [--ip device-ip | --if-type eth
| --if-name if-list ]
```

### Parameters

**--ip** *device-ip*

Specifies a comma-separated range of device IP addresses. Example: 1.1.1.1-3,1.1.2,2.2.2.2.

**--if-type** **eth**

Specifies that the interface type is **eth** (Ethernet), which is the default setting.

**--if-name** *if-list*

Specifies a comma-separated list of interface names. Example: 0/50-52,0/45,0/5:4,0/5:1-2.

### Usage Guidelines

The configuration you set is persisted in the EFA database.

The default value of FEC configured by SLX is **auto**, that is auto-negotiation.

DRC and idempotency are supported.

```
efa inventory device interface unset-fec --ip 1.1.1.1 --if-name 0/10
+-----+-----+-----+-----+-----+-----+
| DeviceIP | ID | Name | Interface Type | Result | Reason |
+-----+-----+-----+-----+-----+-----+
| 10.1.1.1 | 3 | 0/10 | ethernet | Success | |
+-----+-----+-----+-----+-----+-----+
Interface Details
--- Time Elapsed: 5.263239407s ---
```

## efa inventory device interface unset-link-error-disable

Unsets port dampening (link-error-disable) on the SLX interface.

```
efa inventory device interface unset-link-error-disable [--ip device-ip
| --if-name if-list | --help]
```

### Parameters

**--ip** *device-ip*

Specifies a comma-separated range of device IP addresses. Example: 1.1.1.1-3,1.1.2,2.2.2.2.

**--if-name** *if-list*

Specifies a comma-separated list of interface names. Example: 0/50-52,0/45,0/5:4,0/5:1-2.

**--help**

Displays help.

## Usage Guidelines

The configuration you set is persisted in the EFA database.

DRC and idempotency are supported.

```
efa inventory device interface unset-link-error-disable --ip 10.20.246.10 --if-type eth --  
if-name 0/20
```

## efa inventory device list

Lists all devices known to the inventory.

### Syntax

```
efa inventory device list [ --orphan | --fabric name | --role leaf |
    spine | super-spine | --ips device-ips | --help ]
```

### Parameters

#### --orphan

Fetches all devices that are not associated to a fabric.

#### --fabric *name*

Specifies fabric name. If this modifier is used, the command shows only those devices in the specified fabric.

#### --role

Specifies device role (leaf | spine | super-spine).

#### --ips *device-ips*

Specifies comma separated device IPs.

#### --help

Provides help for list.

### Examples

```
(efa:ubuntu)ubuntu@efa:~/efa$ efa inventory device list
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+-----+-----+
| IP Address | Host Name | Model | Chassis Name | Firmware |
ASN | Role | Fabric | LastDiscoveryTime | Cert/Key Saved | Admin State |
Maintenance Mode | Syslog Registered | SNMP Registered |
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+-----+-----+
| 10.139.44.156 | SLX | 4000 | BR-SLX9540 | 20.2.2slxos20.2.2_200914_1800 |
4200000000 | Leaf | fabric1 | 2021-07-12 12:08:21 EDT | Y | up |
Disable | Y | Y | |
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+-----+-----+
| 10.139.44.155 | SLX | 4000 | BR-SLX9540 | 20.2.2slxos20.2.2_200914_1800 |
4200000000 | Leaf | fabric1 | 2021-07-12 12:08:35 EDT | Y | up |
Disable | Y | Y | |
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+-----+-----+
Device Details
--- Time Elapsed: 50.054451ms ---

(efa:ubuntu)ubuntu@efa:~/efa$ efa inventory device register --ip 10.139.44.154
--username=admin --password=password
```

```

+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+
| ID | IP Address | Host Name | Model | Chassis Name | Firmware |
Status | Reason |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+
| 5 | 10.139.44.154 | SLX | 4000 | BR-SLX9540 | 20.2.2slxos20.2.2_200914_1800 |
Success |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+
Device Details
--- Time Elapsed: 1m3.894741089s ---

(efa:ubuntu)ubuntu@efa:~/efa$ efa inventory device list
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| IP Address | Host Name | Model | Chassis Name | Firmware |
ASN | Role | Fabric | LastDiscoveryTime | Cert/Key Saved | Admin State |
Maintenance Mode | Syslog Registered | SNMP Registered |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| 10.139.44.156 | SLX | 4000 | BR-SLX9540 | 20.2.2slxos20.2.2_200914_1800 |
4200000000 | Leaf | fabric1 | 2021-07-12 12:08:21 EDT | Y | up |
Disable | Y | Y |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| 10.139.44.155 | SLX | 4000 | BR-SLX9540 | 20.2.2slxos20.2.2_200914_1800 |
4200000000 | Leaf | fabric1 | 2021-07-12 12:08:35 EDT | Y | up |
Disable | Y | Y |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| 10.139.44.154 | SLX | 4000 | BR-SLX9540 | 20.2.2slxos20.2.2_200914_1800
| | | | 2021-07-12 13:16:20 EDT | Y | up |
Disable | Y | Y |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
Device Details
--- Time Elapsed: 55.690394ms ---

```

## efa inventory device lldp list

Lists the LLDP neighbors for a device.

```
efa inventory device lldp list [--ip device-ip | --type all | edge |
fabric | --help]
```

### Parameters

**--ip** *device-ip*

Specifies a comma-separated range of device IP addresses. Example: 1.1.1.1-3,1.1.2,2.2.2.2.

**--type** **all** | **edge** | **fabric**

Type of neighbors. The default is **all**.

**--help**

Displays help.

This example demonstrates how to fetch LLDP neighbors of type fabric:

```
efa inventory device lldp list --ip 10.20.246.1 --type fabric
+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+
| DeviceIP   | Local Interface | Local Int MAC | PO Number | Remote Interface | Remote
Interface MAC | Remote System Name | Remote Interface Description |
+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+
| 10.20.246.1 | Ethernet 0/13   | f46e.95a2.b813 |           | Ethernet 0/13   |
f46e.95a0.c813 | NH-2           | Eth 0/13       |           |                   |
+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+
|              | Ethernet 0/14   | f46e.95a2.b814 |           | Ethernet 0/14   |
f46e.95a0.c815 | NH-2           | clusterPeerIntfMember |           |                   |
+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+
|              | Ethernet 0/15   | f46e.95a2.b815 |           | Ethernet 0/15   |
f46e.95a0.c815 | NH-2           | clusterPeerIntfMember |           |                   |
+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+
|              | Ethernet 0/31   | f46e.95a2.b825 |           | Ethernet 0/3    |
489b.d57f.f009 | B11            | Link to 10.20.246.1 Spine |           |                   |
+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+
|              | Ethernet 0/32   | f46e.95a2.b826 |           | Ethernet 0/3    |
489b.d57f.6809 | B12            | Link to 10.20.246.1 Spine |           |                   |
+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+

LLDP Neighbor Details

--- Time Elapsed: 30.864116ms ---
```

To fetch all LLDP neighbors of type edge:

```
efa inventory device lldp list --ip 10.20.246.1 --type edge
+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+
| DeviceIP   | Local Interface | Local Int MAC | PO Number | Remote Interface | Remote
Interface MAC | Remote System Name | Remote Interface Description |
+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+
| 10.20.246.1 | Ethernet 0/1    | f46e.95a2.b807 |           | Ethernet 0/1    |
609c.9f87.0a05 | SLX            | Eth 0/1       |           |                   |
+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+
|              | Ethernet 0/2    | f46e.95a2.b808 |           | Ethernet 0/2    |
609c.9f87.0a06 | SLX            | Eth 0/2       |           |                   |
+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+
|              | Ethernet 0/4    | f46e.95a2.b80a |           | Ethernet 0/4    |
609c.9f87.0c08 | SLX            | Eth 0/4       |           |                   |
+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+
|              | Ethernet 0/5    | f46e.95a2.b80b |           | Ethernet 0/5    |
609c.9fcd.f309 | Cedar_06       | Eth 0/5       |           |                   |
+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+
|              | Ethernet 0/6    | f46e.95a2.b80c |           | Ethernet 0/6    |
609c.9fcd.f30a | Cedar_06       | Eth 0/6       |           |                   |
+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+
```

```

+-----+-----+-----+-----+
|           | Ethernet 0/7   | f46e.95a2.b80d |           | Ethernet 0/7   |
609c.9fcd.d50b | SLX           | Eth 0/7         |           |
+-----+-----+-----+-----+
|           | Ethernet 0/8   | f46e.95a2.b80e |           | Ethernet 0/8   |
609c.9fcd.d50c | SLX           | Eth 0/8         |           |
+-----+-----+-----+-----+
|           | Ethernet 0/21  | f46e.95a2.b81b |           | Ethernet 0/25  |
78a6.e145.5c2f | L41           | Link to 10.20.246.1 Spine |           |
+-----+-----+-----+-----+
|           | Ethernet 0/22  | f46e.95a2.b81c |           | Ethernet 0/25  |
d884.66ea.012f | L42           | Link to 10.20.246.1 Spine |           |
+-----+-----+-----+-----+
|           | Ethernet 0/24  | f46e.95a2.b81e |           | Ethernet 0/53  |
f46e.959f.1744 | SLX           | Eth 0/53        |           |
+-----+-----+-----+-----+

```

LLDP Neighbor Details

--- Time Elapsed: 28.056793ms ---

To get all LLDP neighbors, either specify `-type` as `all` or skip that parameter:

```

efa inventory device lldp list --ip 10.20.246.1 --type all
+-----+-----+-----+-----+-----+-----+
| DeviceIP   | Local Interface | Local Int MAC  | PO Number | Remote Interface | Remote
Interface MAC | Remote System Name | Remote Interface Description |
+-----+-----+-----+-----+-----+-----+
| 10.20.246.1 | Ethernet 0/1   | f46e.95a2.b807 |           | Ethernet 0/1   |
609c.9f87.0a05 | SLX           | Eth 0/1         |           |
+-----+-----+-----+-----+-----+-----+
|           | Ethernet 0/2   | f46e.95a2.b808 |           | Ethernet 0/2   |
609c.9f87.0a06 | SLX           | Eth 0/2         |           |
+-----+-----+-----+-----+-----+-----+
|           | Ethernet 0/4   | f46e.95a2.b80a |           | Ethernet 0/4   |
609c.9f87.0c08 | SLX           | Eth 0/4         |           |
+-----+-----+-----+-----+-----+-----+
|           | Ethernet 0/5   | f46e.95a2.b80b |           | Ethernet 0/5   |
609c.9fcd.f309 | Cedar_06      | Eth 0/5         |           |
+-----+-----+-----+-----+-----+-----+
|           | Ethernet 0/6   | f46e.95a2.b80c |           | Ethernet 0/6   |
609c.9fcd.f30a | Cedar_06      | Eth 0/6         |           |
+-----+-----+-----+-----+-----+-----+
|           | Ethernet 0/7   | f46e.95a2.b80d |           | Ethernet 0/7   |
609c.9fcd.d50b | SLX           | Eth 0/7         |           |
+-----+-----+-----+-----+-----+-----+
|           | Ethernet 0/8   | f46e.95a2.b80e |           | Ethernet 0/8   |
609c.9fcd.d50c | SLX           | Eth 0/8         |           |
+-----+-----+-----+-----+-----+-----+
|           | Ethernet 0/13  | f46e.95a2.b813 |           | Ethernet 0/13  |
f46e.95a0.c813 | NH-2          | Eth 0/13        |           |

```



```

+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+
|         | Ethernet 0/14 | f46e.95a2.b814 |         | Ethernet 0/14 |
f46e.95a0.c815 | NH-2         | clusterPeerIntfMember |         |
+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+
|         | Ethernet 0/15 | f46e.95a2.b815 |         | Ethernet 0/15 |
f46e.95a0.c815 | NH-2         | clusterPeerIntfMember |         |
+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+
|         | Ethernet 0/21 | f46e.95a2.b81b |         | Ethernet 0/25 |
78a6.e145.5c2f | L41          | Link to 10.20.246.1 Spine |         |
+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+
|         | Ethernet 0/22 | f46e.95a2.b81c |         | Ethernet 0/25 |
d884.66ea.012f | L42          | Link to 10.20.246.1 Spine |         |
+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+
|         | Ethernet 0/24 | f46e.95a2.b81e |         | Ethernet 0/53 |
f46e.959f.1744 | SLX          | Eth 0/53          |         |
+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+
|         | Ethernet 0/31 | f46e.95a2.b825 |         | Ethernet 0/3   |
489b.d57f.f009 | B11          | Link to 10.20.246.1 Spine |         |
+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+
|         | Ethernet 0/32 | f46e.95a2.b826 |         | Ethernet 0/3   |
489b.d57f.6809 | B12          | Link to 10.20.246.1 Spine |         |
+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+

LLDP Neighbor Details

--- Time Elapsed: 139.100194ms ---

```

## efa inventory device ntp disable-server

Lists NTP servers configured using EFA.

```
efa inventory device ntp disable-server [ --ip device-ip | --enable yes | no | --list | --fabric name ]
```

### Parameters

**--ip** *device-ip*

Specifies a comma-separated range of device IP addresses. Example: 1.1.1-3,1.1.2,2.2.2.2.

**--enable** **yes** | **no**

Turns off NTP server

**--list**

Lists disable-server on devices

**--fabric** *name*

Fabric name

To turn off an NTP server on a given device:

```
efa inventory device ntp disable-server --enable yes --ip 10.20.246.10
```

To turn on an NTP server on a given device:

```
efa inventory device ntp disable-server --enable no --ip 10.20.246.10
```

To turn off an NTP server at the fabric level:

```
efa inventory device ntp disable-server --enable yes --fabric clos_fabric
```

To turn on an NTP server at the fabric level:

```
efa inventory device ntp disable-server --enable no --fabric clos_fabric
```

## efa inventory device ntp server create

Creates an NTP server.

```
efa inventory device ntp server create [ --ip device-ip | --ntp-ip ntp-ip  
  | --auth-key key | --auth-key-name key-name | --encryption-type md5 |  
  sha1 | --trusted-key | --fabric name | --help ]
```

### Parameters

**--ip** *device-ip*

Specifies a comma-separated range of device IP addresses. Example: 1.1.1.1-3,1.1.2,2.2.2.2.  
Required if you do not specify *fabric*.

**--ntp-ip** *ntp-ip*

NTP server IP address

**--auth-key** *key*

Authentication key ID. Values can be from 1 to 65535.

**--auth-key-name** *key-name*

Key name

**--encryption-type** **md5** | **sha1**

Encryption type. Valid values are md5 and sha1.

**--trusted-key** *key*

Trusted key

**--fabric** *name*

Fabric name. Required if you do not specify *ip*.

**--help**

Provides help for create command.

### Usage Guidelines

The command creates an NTP server. By default, EFA sets the key name to be encrypted 7. SLX supports encryption levels of 0 (clear text) and 7 (encrypted).

Here, one `auth-key` id can be used by different NTP servers in SLX. To simplify, EFA enforces a unique key id per NTP server. Here, device IP addresses and fabric options are mutually exclusive.

```
efa inventory device ntp server create -ntp-ip 3.3.3.3
--auth-key 1 --auth-key-name ntpsecret --encryption-type md5 -trusted-key
--ip 10.20.246.10
```

```
efa inventory device ntp server create -ntp-ip 3.3.3.3 --auth-key 1
--auth-key-name ntpsecret --encryption-type md5 -trusted-key --fabric clos_fabric
```

## efa inventory device ntp server delete

Deletes an NTP server.

```
efa inventory device ntp server delete [ --ip device-ip | --ntp-ip ntp-ip
| --fabric name | --help ]
```

### Parameters

**--ip** *device-ip*

Specifies a comma-separated range of device IP addresses. Example: 1.1.1-3,1.1.2,2.2.2.2.

**--ntp-ip** *ntp-ip*

NTP server IP address

**--fabric** *name*

Fabric name

**--help**

Provides help for delete command.

```
efa inventory device ntp server delete --ntp-ip 3.3.3.3
--ip 10.20.246.10
```

```
efa inventory device ntp server delete
--ntp-ip 3.3.3.3 --fabric clos_fabric
```

## efa inventory device ntp server list

Lists NTP servers configured using EFA.

```
efa inventory device ntp server list [ --ip device-ip | --fabric name |
--help ]
```

### Parameters

**--ip** *device-ip*

Specifies a comma-separated range of device IP addresses. Example: 1.1.1-3,1.1.2,2.2.2.2.

**--fabric** *name*

Fabric name

**--help**

Provides help for list.

```
efa inventory device ntp server list --ip 10.20.246.10
```

```
efa inventory device ntp server list --fabric clos_fabric
```

## efa inventory device running-config persist

Saves the running-config to the startup-config on SLX devices.

### Syntax

```
efa inventory device running-config persist { --ip ip-addr | --fabric fabric-name }
```

### Parameters

**--ip** *ip-addr*

Specifies a comma-separated list of IP address and IP address ranges of the devices for which you want the configuration to persist.

**--fabric** *fabric-name*

Specifies the fabric that contains the devices for which you want the configuration to persist.

### Usage Guidelines

Device configurations configured by the Fabric Service and Tenant Service do not automatically persist on SLX devices.

Use this command to specify the IP addresses or fabric for which configurations should persist.

### Examples

This example configures persistence for two IP addresses.

```
# efa inventory device running-config persist --ip 10.20.50.212,10.20.50.213

Persist Devices Running-Config (success)
IP Address      Device Name      Fabric           Status
10.20.50.212    Leaf-1-3         stage5           Success
10.20.50.213    Leaf-1-3         stage5           Success

Persist Running-Config Details
--- Time Elapsed: 12.2902836s ---
```

This example configures persistence for the same devices, but by fabric instead of IP address.

```
# efa inventory device running-config persist --fabric stage5

Persist Devices Running-Config (success)
IP Address      Device Name      Fabric           Status
10.20.50.212    Leaf-1-3         stage5           Success
10.20.50.213    Leaf-1-3         stage5           Success

Persist Running-Config Details
--- Time Elapsed: 11.4899986s ---
```

---

## efa inventory device register

---

Registers a device.

### Syntax

```
efa inventory device register [ --ip ip-list | --username username | --password password | --maintmode-enable-on-reboot | --help ]
```

### Parameters

**--ip** *ip-ist*

Specifies a comma separated range of device IP addresses. Example: 1.1.1-3,1.1.2,2.2.2.2.

**--username** *username*

Specifies the user name to connect to the device.

**--password** *password*

Specifies password to connect to the device.

**--maintmode-enable-on-reboot**

Configures a device to reboot in maintenance mode.

**--help**

Provides help for the command.

## efa inventory device setting show

---

Displays device setting show.

### Syntax

```
efa inventory device setting show [ --ip device-ip | --help ]
```

### Parameters

**--ip** *device-ip*

Specifies IP address of the device.

**--help**

Provides help for show.

---

## efa inventory device setting update

---

Configures device settings.

### Syntax

```
efa inventory device setting update [ --ip device-ip | --maint-mode-  
enable-on-reboot Yes | No | --maint-mode-enable Yes | No | --health-  
check-enable Yes | No | --health-check-interval minutes | --health-  
check-heartbeat-miss-threshold 2 | 3 | 4 | 5 | --config-backup-  
periodic-enable Yes | No | --config-backup-interval interval | --  
number-of-config-backups count | --help]
```

### Parameters

**--ip** *device-ip*

Specifies IP address of the device.

**--maint-mode-enable-on-reboot** **Yes** | **No**

Enter Yes to configure maintenance mode enable on reboot and No to de-configure.

**--maint-mode-enable** **Yes** | **No**

Enter Yes to configure maintenance mode enable and No to de-configure.

**--health-check-enable** **Yes** | **No**

Enter Yes to turn on health check and No to turn off health check.

**--health-check-interval** *minutes*

Specifies health check interval in minutes, valid values 6 m-24 h.

**--health-check-heartbeat-miss-threshold** **2** | **3** | **4** | **5**

Specifies health check miss threshold. Valid values are 2-5.

**--config-backup-periodic-enable** **Yes** | **No**

Enter Yes to turn on periodic config backup and No to turn off periodic config backup.

**--config-backup-interval** *interval*

Specifies config backup interval in minutes, valid values 3m-30h, default 24h.

**--number-of-config-backups** *count*

Specifies config backup count, valid values 2-20, default 4.

**--help**

Provides help for update.

---

## efa inventory device snmp community create

---

Creates an SNMP community and SNMP group.

```
efa inventory device snmp community create [--ip device-ip | --name  
community | --group group | --enable-read-access | --enable-write-  
access | --enable-notify-access ]
```



## Parameters

- ip** *device-ip*  
Specifies a comma-separated range of device IP addresses. Example: 1.1.1.1-3,1.1.1.2,2.2.2.2.
- name** *community*  
Specifies an SNMP community name.
- group** *group*  
Specifies an SNMP group name.
- enable-read-access**  
Specifies read access for the view.
- enable-write-access**  
Specifies write access for the view.
- enable-notify-access**  
Specifies notify access for the view.

## Usage Guidelines

The command creates the SNMP community along with the SNMP group. This command is valid for SNMP v2c version only.

EFA internally creates the v2 group and manages the community to group mapping. The group is created on the first community that is associated with the group.

## Examples

```
efa inventory device snmp community create --name tempv2community
--group tempv2group --enable-read-access --enable-write-access
--enable-notify-access --ip 10.20.246.10
```

## efa inventory device snmp community delete

Deletes an SNMP community.

```
efa inventory device snmp community delete [--ip device-ip --name
community --help]
```

## Parameters

- ip** *device-ip*  
Specifies a comma-separated range of device IP addresses. Example: 1.1.1.1-3,1.1.1.2,2.2.2.2.
- name** *community*  
Specifies an SNMP community name.
- help**  
Displays help.

## Usage Guidelines

The command deletes the SNMP community. This command is valid for SNMP v2c version only.

EFA internally manages the community to group mapping and deletes the group if this is the last community associated with the group.

The SNMP group is automatically deleted when the last SNMP community associated with the group is removed. If you want to edit SNMP group attributes, all the corresponding communities must be deleted and created with modified group settings.

```
efa inventory device snmp community delete --name tempv2community
--ip 10.20.246.10
```

## efa inventory device snmp community list

Lists SNMP communities.

```
efa inventory device snmp community list [--ip device-ip | --help]
```

### Parameters

**--ip** *device-ip*

Specifies a comma-separated range of device IP addresses. Example: 1.1.1.1-3,1.1.1.2,2.2.2.2.

**--help**

Displays help.

The command lists SNMP communities. This command is valid for SNMP v2c version only.

```
efa inventory device snmp community list --ip 10.20.246.1-2

+-----+-----+-----+-----+-----+
+-----+
| IP Address | Community Name | Group | Read view | Write view | Notify
view | AppState |
+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+
| 10.20.246.2 | $9$jcpLTpu9FlqFFcWN7uhHig== | | | |
| | cfg-not-managed |
+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+
| 10.20.246.2 | $9$smklvisSghOZEQvXJKBDeA== | cgrp1 | efav3View | efav3View
| | cfg-in-sync |
+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+
| 10.20.246.1 | $9$Y4Cy6IcflH9B0KM932JUNw== | v2group | efav3View | efav3View
| | cfg-not-managed |
+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+
| 10.20.246.1 | $9$yS/jSs6dBJyG5o0yy+coKw== | | | |
| | cfg-not-managed |
+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+
| 10.20.246.1 | $9$kR+plantb3TRIGkiBkV83Q== | v2group | efav3View | efav3View
| | cfg-not-managed |
+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+
| 10.20.246.1 | $9$mdDwWNPg2OmO4Fqnodl+Bw== | gtest1 | efav3View | efav3View
```

```

|           | cfg-not-managed |
+-----+-----+-----+-----+
+-----+-----+
| 10.20.246.1 | $9$smklvisSghOZEQvXJKBDeA== | cgrp1 | efav3View | efav3View
|           | cfg-in-sync |
+-----+-----+-----+-----+
+-----+-----+

Snmp community details

```

## efa inventory device snmp host create

Creates an SNMP v2c or v3 host.

```

efa inventory device snmp host create [--ip device-ip | --host-ip IPv4 |
  IPv6 | FQDN | --community community | --user user | --version v2c | v3
  | --notify-type traps | informs | --engine-id remote_id | --help]

```

### Parameters

**--ip** *device-ip*

Specifies a comma-separated range of device IP addresses. Example: 1.1.1.1-3,1.1.2.2,2.2.2.2.

**--host-ip** IPv4 | IPv6 | FQDN

Host IP address.

**--community** *community*

Community name. Applicable for v2c only.

**--user** *user*

SNMP v3 user.

**--version** v2c | v3

SNMP version.

**--notify-type** traps | informs

Notification type. Informs are valid for v3 only.

**--engine-id** *remote\_id*

Remote engine Id of manager.

Hex string format with colon as separator. String size must be between 10-65. Example:  
02:03:04:05:06.

**--help**

Displays help.

### Usage Guidelines

The command creates an SNMP v2c or v3 host.

Engine-id and informs are applicable only for SNMP v3 hosts.

```
efa inventory device snmp host create --host-ip 20.20.20.2
--community tempv2community --version v2c --notify-type traps
--ip 10.20.246.10
```

```
efa inventory device snmp host create -host-ip 30.30.30.2
--user v3user --version v3 --notify-type informs -engine-id 02:03:04:05:06
--ip 10.20.246.10
```

## efa inventory device snmp host delete

Deletes an SNMP v2c or v3 host.

```
efa inventory device snmp host delete [--ip device-ip | --host-ip IPv4 |
IPv6 | FQDN | --community community | --user username | --help]
```

### Parameters

**--ip** *device-ip*

Specifies a comma-separated range of device IP addresses. Example: 1.1.1.1-3,1.1.1.2,2.2.2.2.

**--host-ip** IPv4 | IPv6 | FQDN

Specifies an SNMP host address.

**--community** *community*

SNMP community. Applicable for v2c only.

**--user** *username*

SNMP v3 user.

**--help**

Displays help.

```
efa inventory device snmp host delete
--host-ip 20.20.20.2 --community tempv2community --ip 10.20.246.10
```

```
efa inventory device snmp host delete
--host-ip 30.30.30.2 --user v3user --ip 10.20.246.10
```

## efa inventory device snmp host list

Lists SNMP v2c or v3 hosts.

```
efa inventory device snmp host list [--ip device-ip | --help]
```

### Parameters

**--ip** *device-ip*

Specifies a comma-separated range of device IP addresses. Example: 1.1.1.1-3,1.1.1.2,2.2.2.2.

**--help**

Displays help.

```
efa inventory device snmp host list --ip 10.20.246.2
```

```

+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+
+-----+
| IP Address | Host IP | User | Community | Notify Type
| EngineID | Source Interface | Vrf | UDP port | Severity
| AppState |
+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+
+-----+
| 10.20.246.2 | 10.20.255.241 | efav3User | | traps |
00:00:00:00:00:00:00:00 | management chassis-ip | mgmt-vrf | 162 | None |
cfg-not-managed |
+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+
+-----+
| 10.20.246.2 | 10.20.241.10 | efav3User | | traps |
00:00:00:00:00:00:00:00 | management chassis-ip | mgmt-vrf | 162 | None |
cfg-not-managed |
+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+
+-----+
| 10.20.246.2 | 10.20.241.24 | efav3User | | traps |
00:00:00:00:00:00:00:00 | management chassis-ip | mgmt-vrf | 162 | None |
cfg-not-managed |
+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+
+-----+
| 10.20.246.2 | 10.20.241.7 | efav3User | | traps |
00:00:00:00:00:00:00:00 | management chassis-ip | mgmt-vrf | 162 | None |
cfg-not-managed |
+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+
+-----+
| 10.20.246.2 | 10.20.241.85 | efav3User | | traps |
00:00:00:00:00:00:00:00 | management chassis-ip | mgmt-vrf | 162 | None |
cfg-not-managed |
+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+
+-----+
| 10.20.246.2 | 10.20.255.115 | efav3User | | traps |
00:00:00:00:00:00:00:00 | management chassis-ip | mgmt-vrf | 162 | None |
cfg-not-managed |
+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+
+-----+
| 10.20.246.2 | 3.3.3.3 | user7 | | informs |
02:03:04:05:06 | management chassis-ip | mgmt-vrf | 162 | None |
cfg-in-sync |
+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+
+-----+

```

## efa inventory device snmp user create

Creates an SNMP user and SNMP group.

```

efa inventory device snmp user create [--ip device-ip | --name community
| --group group | --enable-read-access | --enable-write-access | --
enable-notify-access | --auth-protocol md5 | sha | --auth-passphrase
authphrase | --priv-protocol AES128 | DES | --priv-passphrase
privphrase | --help]

```

## Parameters

- ip** *device-ip*  
Specifies a comma-separated range of device IP addresses. Example: 1.1.1.1-3,1.1.1.2,2.2.2.2.
- name** *community*  
Specifies an SNMP community name.
- group** *group*  
Specifies an SNMP group name.
- enable-read-access**  
Specifies read access for the view.
- enable-write-access**  
Specifies write access for the view.
- enable-notify-access**  
Specifies notify access for the view.
- auth-protocol** *md5* | *sha*  
Specifies notify access for the view. This parameter is set to off by default.
- auth-passphrase** *passphrase*  
Authentication password.
- priv-protocol** *AES128* | *DES*  
Privacy protocol.
- priv-passphrase** *privphrase*  
Privacy password.

## Usage Guidelines

The command creates an SNMP user along with an SNMP group. This command is valid for SNMP v3 version only.

SLX stores the `auth-passphrase` and `priv-passphrase` in encrypted format. By default, EFA encrypts all passwords.

EFA internally creates the `v3` group and manages the user to group mapping. The group is created with the first user associated with the group.

The SNMP group is automatically deleted when the last SNMP community associated with the group is removed. If you want to edit SNMP group attributes, all the corresponding users must be deleted and created with modified group settings.

```
efa inventory device snmp user create --ip 10.20.246.10 --name tempv3user --group tempv3group --enable-read-access --enable-write-access --enable-notify-access --auth-protocol md5 --auth-passphrase tempv3passwd --priv-protocol AES128 --priv-passphrase tempv3priv
```

## efa inventory device snmp user delete

Deletes an SNMP user.

```
efa inventory device snmp user delete [--ip device-ip --name user --help]
```

### Parameters

**--ip** *device-ip*

Specifies a comma-separated range of device IP addresses. Example: 1.1.1.1-3,1.1.1.2,2.2.2.2.

**--name** *user*

Specifies an SNMP user name.

**--help**

Displays help.

### Usage Guidelines

The command deletes the SNMP user. This command is valid for SNMP v3 version only.

```
efa inventory device snmp user delete --name tempv3user --ip 10.20.246.10
```

## efa inventory device snmp user list

Lists SNMP users.

```
efa inventory device snmp user list [--ip device-ip --help]
```

### Parameters

**--ip** *device-ip*

Specifies a comma-separated range of device IP addresses. Example: 1.1.1.1-3,1.1.1.2,2.2.2.2.

**--help**

Displays help.

### Usage Guidelines

The command lists SNMP users. This command is valid for SNMP v3 version only.

```
+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+
+-----+
| IP Address | User   | Group   | Read view | Write view | Notify view | Auth
| proto     | Auth  |         | Priv proto | Priv       |              |
| AppState  | passphrase |         |           | passphrase |              |
+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+
+-----+
| 10.20.246.2 | efav3User | efav3Group |           |           |           | efav3View
|           | LlgMJxyldZfAfPydPDdFTNNtkpw= | AES128 | 53IJSJKiK/A6UFLVd9+ZkkclIJs= |
| cfg-not-managed |           |           |           |           |           |           |
+-----+-----+-----+-----+-----+-----+
```

```

+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+
+-----+
| 10.20.246.2 | user7      | grp7      | efav3View | efav3View | efav3View |
md5          | b5aBENIRB81C387SzMk2gw== | DES      | b5aBENIRB81C387SzMk2gw== |
cfg-in-sync  |
+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+
+-----+
| 10.20.246.1 | efav3User | efav3Group |           |           | efav3View
|           | LlgMJxyldZfAfPydPddFTNntkpw= | AES128   | 53IJSJKiK/A6UFLVd9+ZkkclIJs= |
cfg-not-managed |
+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+
+-----+
| 10.20.246.1 | user7      | grp7      | efav3View | efav3View | efav3View |
md5          | b5aBENIRB81C387SzMk2gw== | DES      | b5aBENIRB81C387SzMk2gw== |
cfg-in-sync  |
+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+
+-----+
Snmp user details

```

## efa inventory device timezone

Configures the timezone on SLX device.

```
efa inventory device timezone [ --ip device-ip | --set string | --unset |
--list | --debug-show ]
```

### Parameters

**--ip** *device-ip*

Specifies a comma-separated range of device IP addresses. Example: 1.1.1.1-3,1.1.1.2,2.2.2.2.

**--set** *string*

Timezone value. Valid values are America/Los\_Angeles, Asia/Kolkata, Europe/Paris, Africa/Algiers...

**--unset**

Unsets the timezone. Default timezone of switch GMT will be set.

**--list**

Lists the timezone for each device.

**--debug-show**

Displays the list of valid timezones supported.

```
efa inventory device timezone --set America/Los_Angeles --ip 10.20.246.10
```

```
efa inventory device timezone --set Europe/Paris --ip 10.20.246.12
```

```
efa inventory device timezone --unset --ip 10.20.246.13
```



## efa inventory device tpvm-upgrade execute

Asynchronously launches the TPVM upgrade process.

```
efa inventory device tpvm-upgrade execute [--ip device-ip | --firmware-host firmware-host-ip-address | --tpvm-image tpvm-image-path-on-firmware-host | --trusted-peer-sudo-user sudo-user-id | --trusted-peer-password sudo-user-password]
```

### Parameters

**--ip** *device-ip*

Specifies the IP address of the device.

**--firmware-host** *firmware-host-ip-address*

Specifies the IP address of the firmware host. The host must be registered beforehand.

**--tpvm-image** *tpvm-image-path-on-firmware-host*

Specifies the path and file name of the TPVM deb file located on the `firmware-host`.

**--trusted-peer-sudo-user** *sudo-user-id*

Specifies the user ID of the trusted peer sudo user to be reconfigured after TPVM is upgraded. If you do not specify a user, the default sudo user is used: `extreme`.

**--trusted-peer-password** *sudo-user-password*

Specifies the password of the trusted peer sudo user to be reconfigured after TPVM is upgraded.

This example successfully upgrades TPVM.

```
$ efa inventory device tpvm-upgrade execute --ip 10.20.245.9
--firmware-host 10.20.241.101 --tpvm-image /build/slx/tpvm/tpvm-4.2.2-1.amd64.deb
--trusted-peer-sudo-user <sudo-user-id> --trusted-peer-password <sudo-user-password>

TPVM Upgrade Execute [success]

Monitor TPVM upgrade execution progress using:

efa inventory device tpvm-upgrade show --ip 10.20.245.9

efa inventory device tpvm-upgrade show --uuid b32eee26-8b59-4bc5-8ab3-1f9884e89929
```

## efa inventory device tpvm-upgrade show

Polls and monitors the progress of the TPVM upgrade workflow.

```
efa inventory device tpvm-upgrade show [--ip device-ip | --uuid uuid | --help]
```

### Parameters

**--ip** *device-ip*

Specifies the IP address of the device.

**--uuid** *uuid*

The UUID provided from the `tpvm-upgrade execute` command. This parameter can be used instead of the `--ip` parameter.

```

+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+
| IP Address | Host Name | Model | Chassis Name | ASN | Role | Current TPVM Version |
Target TPVM Version | Update State |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 10.24.0.54 | SLX      | 4004 | SLX9740-40C | 0   | Leaf | 4.2.4                |
4.2.4          | In Progress |
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+
|          Status          | Detailed Status          |          Start Time          |
|          Last Update Time          |                          |                              |
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+
| TPVM Upgrade Started | Starting the new TPVM instance | 2021-06-23 08:58:48 -0700 PDT |
2021-06-23 09:04:00 -0700 PDT |
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+

--- Time Elapsed: 159.138103ms -
TPVM Upgrade Show Details
TPVM Upgrade Show Status [In Progress]
--- Time Elapsed: 159.138103ms ---

```

## efa inventory device update

Updates the Asset service with the latest information from the switch.

### Syntax

```
efa inventory device update --ip device-ip | --fabric fabric-name | --  
username username | --password password
```

### Parameters

**--ip** *device-ip*

Specifies the IP address of the device that you want to synchronize.

**--fabric** *fabric-name*

Specifies the fabric of the devices that you want to synchronize.

**--username** *username*

Specifies the user name to connect to the device. If the user name must be updated, use this option.

**--password** *password*

Specifies the password to connect to the device. If the password must be updated, use this option.

### Examples

This example synchronizes IP address 10.24.80.158.

```
(efa:extreme)extreme@tpvm:~$ efa inventory device update --ip 10.24.80.158
-----
ID      IP Address      Host Name      Model      Chassis Name      Firmware      ASN
Role    Fabric          Status         Reason
-----
2       10.24.80.158    SLX           3012      SLX9250-32C
20.1.2slxos20.1.2x_patch_200531_2152  4200000000    Leaf      fabric-2
Success
-----
Device Details
- Time Elapsed: 12.210281486s -
```

## efa inventory drift-reconcile

---

Identifies drift in device configuration and performs reconciliation.

### Syntax

```
efa inventory drift-reconcile history [ --ip ip-address | --help ]  
efa inventory drift-reconcile execute [ --ip ip-address | --reconcile |  
  --help ]  
efa inventory drift-reconcile delete [ --key ip-address | dr-uuid | --  
  help ]  
efa inventory drift-reconcile detail [ --uuid dr-uuid | --help ]
```

### Parameters

#### **detail**

Displays drift-reconcile detail.

#### **delete**

Deletes the drift-reconcile record.

#### **execute**

Runs drift-reconcile.

#### **history**

Displays drift-reconcile history.

#### **--ip** *ip-address*

Specifies the IP address of the device.

#### **--key** *ip-address|dr-uuid*

Specifies IP address of the device or the drift and reconcile UUID to be deleted.

#### **--reconcile**

Identifies drift and reconcile with device

#### **--uuid** *dr-uuid*

Specifies the UUID for the drift reconcile.

#### **--help**

Provides help for drift-reconcile commands.

### Examples

The following example shows **efa inventory drift-reconcile** commands.

```
# efa inventory drift-reconcile execute --ip 10.24.14.133 --reconcile  
# efa inventory drift-reconcile history --device-ip 10.24.14.133  
# efa inventory drift-reconcile detail --uuid 1111-1111-1111  
# efa inventory drift-reconcile delete --key 10.24.14.133  
# efa inventory drift-reconcile delete --key 1111-1111-1111
```

## efa inventory execution

---

Displays the list of inventory executions.

### Syntax

```
efa inventory execution [ --show | --help ]
```

```
efa inventory execution show [ --id | --limit int32 | --status | --help]
```

### Parameters

**--id**

Filters the executions based on execution id. If --id is available, --limit and --status are ignored.

**--help**

Provides help for execution commands

**--limit int32**

Limits the number of executions to be listed. Value 0 lists all the executions. Default is 10.

**--status**

Filters the executions based on the status (failed, succeeded, all). Default is all.

## efa inventory firmware-host delete

---

Removes a firmware host.

### Syntax

```
efa inventory firmware-host delete --ip host-ip
```

### Parameters

**--ip** *host-ip*

Specifies the IP address of the firmware host.

---

## efa inventory firmware-host list

---

Displays all registered firmware hosts.

### Syntax

```
efa inventory firmware-host list [ --ip host-ips --help ]
```

### Parameters

**--ip** *host-ips*

Specifies a comma-separated list of firmware host IP addresses.

**--help**

Provides help for the command.

---

## efa inventory firmware-host register

---

Registers a firmware host, which will be used to download firmware builds to the devices.

### Syntax

```
efa inventory firmware-host register [--ip host-ip | --protocol scp | ftp  
| sftp | http | --username username | --password password ]
```

### Parameters

**--ip** *host-ip*

Specifies the IP address of the firmware host.

**--protocol** **scp** | **ftp** | **sftp** | **http**

Specifies the protocol to use for downloading the firmware.

**--username** *user name*

Specifies the user name to use to log in to the firmware download host.

**--password** *password*

Specifies the password for the user name.

### Usage Guidelines

Simple connectivity test to the firmware-host by given IP. The complete firmware-host sanity check is performed later when a device is prepared and again when firmware-download is run.



---

## efa inventory firmware-host update

---

Updates the login credentials or file transfer protocol to be used by a device when downloading firmware from the firmware host.

### Syntax

```
efa inventory firmware-host update [--ip host-ip | --protocol scp | ftp | sftp | http | --username username | --password password ]
```

### Parameters

**--ip** *host-ip*

Specifies the IP address of the firmware host.

**--protocol** **scp** | **ftp** | **sftp** | **http**

Specifies the protocol to use for downloading the firmware.

**--username** *user name*

Specifies the user name to use to log in to the firmware download host.

**--password** *password*

Specifies the password for the user name.

## efa inventory kvstore

---

Configures a key-value pair.

### Syntax

```
efa inventory kvstore create [ --key | --value | --encrypt | --help ]
```

```
efa inventory kvstore delete [ --key | --help]
```

```
efa inventory kvstore list [ --decrypt | --key | --prefix | --help ]
```

### Parameters

#### **create**

Creates a key-value pair.

#### **delete**

Deletes a key-value pair.

#### **list**

Lists all a key-value store entries or filtered by key.

#### **--decrypt**

Decrypts secret fields.

#### **--encrypt**

Encrypts

#### **--key**

Specifies a key-value pair name.

#### **--prefix**

Retrieve list of a key-value pairs matching the prefix.

#### **--value**

Specifies a value for the key.

#### **--help**

Provides help.

## efa inventory rma

---

Initiates Return Material Authorization (RMA).

### Syntax

```
efa inventory rma history [ --ip ip-address | --help ]  
efa inventory rma detail [ --uuid uuid | --help ]  
efa inventory rma delete [ --key ip-address | --help ]  
efa inventory rma execute [ --ip ip-address | --config-backup-id uuid | --help ]
```

### Parameters

#### **history**

Displays RMA history for the specified IP address.

#### **detail**

Displays device replacement detail.

#### **delete**

Deletes the RMA record for the specified IP address.

#### **execute**

Performs RMA for the device with the given IP address.

**--config-backup-id** *uuid*

Specifies the UUID of the configuration to be replayed.

**--ip** *ip-address*

Specifies IP address of the device.

**--key** *ip-address*

Specifies IP address of the device or RMA execution UUID to be deleted.

**--uuid** *uuid*

Specifies the UUID of the drift reconcile.

#### **--help**

Provides help for the commands.

### Examples

The following example shows **efa inventory rma** commands.

```
# efa inventory rma execute --ip 10.24.14.133 --config-backup-id 1111-1111-111  
# efa inventory rma history -ip 10.24.14.133  
# efa inventory rma detail -uuid 123e4567-e89b-12d3-a456-426614174000
```

## efa login

---

Logs into the EFA application.

### Syntax

```
efa login [ --username | --password | --help ]
```

### Parameters

**--username**

Specifies name of the user to login.

**--password**

Specifies password of the user.

**--help**

Provides help for login.

## efa logout

---

Logs out of the EFA application.

### Syntax

```
efa logout --help
```

### Parameters

**--help**

Provides help for logout.

## efa mgmt route create

---

Creates a virtual management route in a multi-node deployment for the Multiple Management IP Networks feature.

### Syntax

```
efa mgmt route create { --src mmip-vip --to dest-cidr --via next-hop-ip }
```

### Parameters

**--src** *mmip-vip*

Identifies the source IP address for the route.

**--to** *dest-cidr*

Identifies the destination network for outbound traffic, in CIDR format: x.x.x/xx.

**--via** *next-hop-ip*

Identifies the next-hop or gateway IP address through which access to the destination network is provided.

### Examples

The following example creates a virtual route.

```
$ efa mgmt route create --src 10.21.30.40 --to 192.168.100.0/24 --via 10.21.30.41
```

```
Virtual Route created successfully
```

## efa mgmt route delete

---

Deletes a virtual management route in a multi-node deployment for the Multiple Management IP Networks feature.

### Syntax

```
efa mgmt route delete { --src mmip-vip --to dest-cidr --via next-hop-ip }
```

### Parameters

**--src** *mmip-vip*

Identifies the source IP address for the route.

**--to** *dest-cidr*

Identifies the destination network for outbound traffic, in CIDR format: x.x.x.x/xx.

**--via** *next-hop-ip*

Identifies the next-hop or gateway IP address through which access to the destination network is provided.

### Examples

The following example deletes a virtual route.

```
$ efa mgmt route delete --src 10.21.30.40 --to 192.168.100.0/24 --via 10.21.30.41
```

```
Virtual Route deleted successfully
```

## efa mgmt route show

---

Displays a list of all virtual management routes in a multi-node deployment for the Multiple Management IP Networks feature.

### Syntax

```
efa mgmt route show
```

### Examples

The following example shows typical output for the command.

```
$ efa mgmt route show

+-----+-----+-----+
| Route-Src | Route-To | Route-Via |
+-----+-----+-----+
| 10.21.30.40 | 192.168.100.0/24 | 10.21.30.41 |
+-----+-----+-----+
```



## efa mgmt subinterface create

---

Creates a subinterface in a multiple management IP network deployment.

### Syntax

```
efa mgmt subinterface create --name name | --vlan-id vlan-id | --ip-addr  
ip-addr
```

### Parameters

**--name** *name*

Defines the name of the new subinterface.

**--vlan-id** *vlan-id*

Specifies the ID of the VLAN for the subinterface.

**--ip-addr** *ip-addr*

Specifies the IP address of the subinterface, including the subnet mask. For example:  
10.24.80.150/24.

### Examples

The following example creates a subnet with a name of sub2, a VLAN ID of 20, and an IP address of 20.20.20.2/24.

```
$ efa mgmt subinterface create --name sub2 --vlan-id 20 --ip-address 20.20.20.2/24  
SubInterface sub2 created successfully
```

---

## efa mgmt subinterface delete

---

Deletes a specified subinterface in a multiple management IP network deployment.

### Syntax

```
efa mgmt subinterface delete --name name
```

### Parameters

**--name** *name*

Specifies the name of the subinterface that you want to delete.

### Examples

The following example deletes the server1 subinterface.

```
$ efa mgmt subinterface delete --name server1  
Subinterface server1 deleted successfully
```

## efa mgmt subinterface show

Displays the details of all subinterfaces in a multiple management IP network deployment or the details for a specified subinterface.

### Syntax

```
efa mgmt subinterface show [ --name name ]
```

### Parameters

**--name** *name*

Specifies the name of the subinterface for which you want to see details.

### Examples

The following example shows the details for all configured subinterfaces.

```
$ efa mgmt subinterface show
+-----+-----+-----+-----+
| Name | Parent Interface | Vlan | IP Subnet |
+-----+-----+-----+-----+
| sub2 | eth0           | 20  | 20.20.20.2/24 |
+-----+-----+-----+-----+
| sub1 | eth0           | 50  | 50.50.50.2/24 |
+-----+-----+-----+-----+
```

The following example shows the details for the specified subinterface.

```
$ efa mgmt subinterface show --name sub2
+-----+-----+-----+-----+
| Name | Parent Interface | Vlan | IP Subnet |
+-----+-----+-----+-----+
| sub2 | eth0           | 20  | 20.20.20.2/24 |
+-----+-----+-----+-----+
```

## efa notification subscribers add-https

Registers a new subscriber to the notification service with an HTTPS webhook.

### Syntax

```
efa notification subscribers add-https --url address --username name --password password --insecure
```

### Parameters

**--url** *address*

Specifies the URL of the subscriber.

**--username** *name*

Specifies the user name for access to the URL.

**--password** *password*

Specifies the password for the user name.

**--insecure**

(Optional) Indicates that insecure SSL connection and transfers are used for sending notifications. By default, the SSL connection and transfers are secure.

The following example registers a new HTTPS webhook subscriber to the Notification Service.

```
efa notification subscribers add-https --url https://path/to/my/service:port
--username myusername --password mypassword --insecure
Successfully registered subscriber.
```

```
+-----+-----+-----+-----+-----+-----+-----+-----+
| attribute | value |
+-----+-----+-----+-----+-----+-----+-----+-----+
| id        | 1     |
+-----+-----+-----+-----+-----+-----+-----+-----+
| handler   | http  |
+-----+-----+-----+-----+-----+-----+-----+-----+
| endpoint  | https://path/to/my/service:port |
+-----+-----+-----+-----+-----+-----+-----+-----+
| config    | {"cacert":"","insecure":true,"password":"mypassword",
      "username":"myusername"} |
+-----+-----+-----+-----+-----+-----+-----+-----+
Notification Subscriber ID=1
--- Time Elapsed: 2.203878641s ---
```

## efa notification subscribers add-syslog-relp

Registers a syslog subscriber to receive notifications over RELP from the EFA Notification Service.

### Syntax

```
efa notification subscribers add-syslog-relp { --address host:port } [ --
  insecure][ --cacert local-path] [ --conn-timeout seconds]
```

### Command Default

By default, subscribers do not receive syslog notifications over RELP.

### Parameters

**--address** *host:port*

Specifies the address of the syslog server in `host:port` format. The default port is 514.

**--insecure**

(Optional) Indicates that insecure SSL connection and transfers are used for sending notifications. By default, the SSL connection and transfers are secure.

**--cacert** *local-path*

Specifies the local path to the cacert.pem file for SSL verification. Required *only* when the **--insecure** parameter is not specified.

**--conn-timeout** *seconds*

(Optional) Specifies the maximum amount of time allowed to open a connection to the syslog server before the request times out. The default is 10 seconds.

### Usage Guidelines

Any external server that is configured with RELP can be registered as a subscriber to EFA notifications. For more information, see "Notification Service" in the *Extreme Fabric Automation Administration Guide*.

### Examples

The following example registers 10.x.x.x:20514 as a subscriber for insecure notifications.

```
$ efa notification subscribers add-syslog-relp --address
10.x.x.x:20514 --insecure
Successfully registered subscriber.

+-----+-----+-----+
| attribute | value |
+-----+-----+-----+
| id        | 1     |
+-----+-----+-----+
| handler   | relp  |
+-----+-----+-----+
| endpoint  | 10.x.x.x:20514 |
+-----+-----+-----+
```

```
| config      | {"cacert":"","conn-timeout":10,"insecure":true}|
+-----+-----+
Notification Subscriber ID=1
--- Time Elapsed: 2.399195253s ---
```

---

## efa notification subscribers delete

---

Deletes the specified subscriber from the Notification service.

### Syntax

```
efa notification subscribers delete id
```

### Parameters

*id*

Specifies the ID of the subscriber that you want to delete.

### Examples

The following example deletes the specified subscriber from the Notification service.

```
efa notification subscribers delete 1
Successfully unregistered subscriber.
--- Time Elapsed: 186.568274ms ---
```

## efa notification subscribers get

Retrieves subscription details about the Notification service for the specified subscriber.

### Syntax

```
efa notification subscribers get id --help
```

### Parameters

*id*

Specifies the ID of the subscriber that you want to review.

**--help**

Provides help for command.

### Examples

The following is sample output for the subscriber with the ID of '1'.

```
efa notification subscribers get 1

+-----+-----+
| attribute | value |
+-----+-----+
| id        | 1     |
+-----+-----+
| handler   | http  |
+-----+-----+
| endpoint  | https://path/to/my/service:port |
+-----+-----+
| config    | {"cacert":"","insecure":true,"password":"mypassword",
      "username":"myusername"} |
+-----+-----+
Notification Subscriber ID=1
--- Time Elapsed: 2.203878641s ---
```



## efa notification subscribers list

---

Provides a list of subscribers to the Notification service.

### Syntax

```
efa notification subscribers list
```

### Examples

The following example lists the subscribers to the Notification service.

```
efa notification subscribers list
+-----+-----+-----+
| id | handler | endpoint |
+-----+-----+-----+
| 1  | http   | https://path/to/my/service:port |
+-----+-----+-----+
Notification Subscribers Count=1
--- Time Elapsed: 121.443493ms ---
```

## efa openstack debug

---

Displays OpenStack debug information.

### Syntax

```
efa openstack debug [ network | network-interface | tenant | router | router-interface ]
```

```
efa openstack debug network delete --neutron-id
```

Deletes the network and its summary information.

```
efa openstack debug network-interface delete --neutron-id
```

Deletes the network interface and its summary information.

```
efa openstack debug router delete --router-id
```

Deletes the router and its summary information.

```
efa openstack debug router-interface delete --router-id <router-id> --subnet-id <subnet-id>
```

Deletes the router interface and its summary information.

```
efa openstack debug tenant cleanup --name tenant name
```

Deletes a network.

### Parameters

**cleanup** *--name*

Cleans up all OpenStack assets associated to a tenant

**delete** *--neutron-id* | *--router-id* | *subnet-id*

Deletes the selected network element

**network**

Specifies network commands

**network-interface**

Specifies network interface commands

**tenant**

Specifies tenant commands

**router**

Specifies router commands

**router-interface**

Specifies router interface commands

**neutron-id** *string*

Neutron ID of the network

**router-id** *string*  
Router ID

**subnet-id** *string*  
Subnet ID

**name** *string*  
Tenant name

**help** *string*  
Displays help on the command

---

## efa openstack debug router-route delete

---

Debug command for deleting routes in the specified router.

```
efa openstack debug router-route delete [--router-id router-id | --  
destination destination | --nexthop ip]
```

### Parameters

**--router-id** *router-id*  
Specifies a comma-separated range of router IDs.

**--destination** *destination*  
Submask

**--nexthop** *ip*  
IP

For IPv4:

```
efa openstack debug router-route delete --router-id f8a44de0-fc8e-45df-93c7-f79bf3b01c95  
--destination 10.56.6.0/22 --nexthop 10.56.6.1
```

For IPv6:

```
efa openstack debug router-route delete  
--router-id f8a44de0-fc8e-45df-93c7-f79bf3b01c95 --destination 101::/64 --nexthop 11::1
```

## efa openstack execution

---

Provides OpenStack execution commands.

### Syntax

```
efa openstack execution delete [ --days int32 | --help ]
```

```
efa openstack execution show [ --help | --id | --limit int32 | --status ]
```

### Parameters

#### **delete**

Deletes execution entries older than the specified days

#### **--days int32**

Deletes execution entries older than the specified days. Default is 30.

#### **--id**

Filters the executions based on execution id. "limit" and "status" flags are ignored when "id" flag is given.

#### **--help**

Provides help for execution

#### **--limit int32**

Limits the number of executions to be listed. Value "0" will list all the executions. Default is 10.

#### **show**

Displays the list of executions.

#### **--status**

Filters the executions based on the status (failed, succeeded, all). Default is all.

## efa openstack network show

---

Displays OpenStack network information.

### Syntax

```
efa openstack network show
```

### Examples

This example shows typical results.

```
efa openstack network show
+-----+-----+-----+-----+
|           Neutron ID           | Tenant | MTU | CTAG |
+-----+-----+-----+-----+
| 9237b75d-6fa9-404b-8fab-979b7d384c40 | RegionOne | 2100 | 3 |
+-----+-----+-----+-----+
| 23313c80-0b91-455a-8dce-91e6cb7424a7 | RegionOne | 2100 | 2 |
+-----+-----+-----+-----+
```

## efa openstack network-interface show

Displays OpenStack network-interface information.

### Syntax

```
efa openstack network-interface show
```

### Examples

This example shows typical results.

```
# efa openstack network-interface show

+-----+-----+
+-----+-----+
|           Neutron Port ID           |           Neutron Network ID           | Switch
IP   | Switch Interface |           |           |
+-----+-----+-----+-----+
| 123e4567-e89b-12d3-a456-426655440001 | 123e4567-e89b-12d3-a456-426655440001 |
10.24.80.134 | 0/9           |
+-----+-----+-----+-----+
| 123e4567-e89b-12d3-a456-426655440003 | 123e4567-e89b-12d3-a456-426655440001 |
10.24.80.133 | 0/9           |
+-----+-----+-----+-----+
| 123e4567-e89b-12d3-a456-426655440005 | 123e4567-e89b-12d3-a456-426655440002 |
10.24.80.134 | 0/9           |
+-----+-----+-----+-----+
| 123e4567-e89b-12d3-a456-426655440007 | 123e4567-e89b-12d3-a456-426655440002 |
10.24.80.133 | 0/9           |
+-----+-----+-----+-----+
+-----+-----+
```

## efa openstack router show

Displays OpenStack router information.

### Syntax

```
efa openstack router show
```

### Examples

This example shows typical results.

```
efa openstack router show
+-----+-----+-----+
+-----+
|           Router ID           |           VRF Name           | Tenant |
Routing type |
+-----+-----+-----+
+-----+
| bc482e46-8896-442c-a29d-2dd76abca2ae | bc482e468896442ca29d2dd76abca2ae | RegionOne |
centralized |
+-----+-----+-----+
+-----+
| 99ec4fd8-fbc4-4117-a529-5e9a40049906 | 99ec4fd8fbc44117a5295e9a40049906 | RegionOne |
distributed |
+-----+-----+-----+
+-----+
```

## efa openstack router-interface show

Displays OpenStack router-interface information.

### Syntax

```
efa openstack router-interface show
```

### Examples

This example shows typical results.

```
# efa openstack router-interface show

+-----+-----+
|          Subnet ID          |          Router ID          |
+-----+-----+
| 323e4567-e89b-12d3-a456-426655440001 | 523e4567-e89b-12d3-a456-426655440001 |
+-----+-----+
| 323e4567-e89b-12d3-a456-426655440002 | 523e4567-e89b-12d3-a456-426655440001 |
+-----+-----+
```

## efa openstack router-route show

Shows routes on the specified router.

```
efa openstack router-route show [--id router-id]
```

### Parameters

**--id** *router-id*

Router ID

```
efa openstack router-route show --id f8a44de0-fc8e-45df-93c7-f79bf3b01c95

+-----+-----+-----+-----+
|          Router ID          | Destination | Nexthop IP | Device |
+-----+-----+-----+-----+
| f8a44de0-fc8e-45df-93c7-f79bf3b01c95 | 10.56.6.0/22 | 10.56.6.1 | 10.25.25.100,10.25.25.100 |
+-----+-----+-----+-----+
| f8a44de0-fc8e-45df-93c7-f79bf3b01c95 | 10.56.6.0/22 | 10.56.6.1 | 10.25.25.100,10.25.25.101 |
+-----+-----+-----+-----+
| f8a44de0-fc8e-45df-93c7-f79bf3b01c95 | 101::/64     | 11:::1     | 10.25.25.100,10.25.25.101 |
+-----+-----+-----+-----+
| f8a44de0-fc8e-45df-93c7-f79bf3b01c95 | 101::/64     | 11:::1     | 10.25.25.100,10.25.25.101 |
+-----+-----+-----+-----+
```



## efa openstack subnet show

Displays OpenStack subnet information.

### Syntax

```
efa openstack subnet show
```

### Examples

This example shows typical results.

```
efa openstack subnet show
+-----+-----+
+-----+-----+-----+-----+
|          Subnet ID          |          Network ID          |
| CIDR      | Gateway IP | IPv6RAMode | IPv6AddressMode |
+-----+-----+-----+-----+
| 869dbbcd-2c80-440a-a42f-1e85cab60b98 | 9237b75d-6fa9-404b-8fab-979b7d384c40 |
| 110:2000::/64 | 110:2000::1 | dhcpv6-stateful | |
+-----+-----+-----+-----+
| 063eec5a-dbb3-480b-b1d0-1d7fc4715b67 | 23313c80-0b91-455a-8dce-91e6cb7424a7 |
| 10:2000::/64 | 10:2000::1 | | |
+-----+-----+-----+-----+
| ea233dda-b692-4a46-adc8-ea58ac07f4d2 | 23313c80-0b91-455a-8dce-91e6cb7424a7 |
| 8.8.8.0/24 | 8.8.8.1 | | |
+-----+-----+-----+-----+
| db91323d-fcdd-4450-87b2-57bb7e033c0c | 9237b75d-6fa9-404b-8fab-979b7d384c40 |
| 18.8.8.0/24 | 18.8.8.1 | | |
+-----+-----+-----+-----+
+-----+-----+-----+-----+
```

## efa openstack sync start

---

Syncs entries such as networks, network interfaces, routers, and router interfaces from OpenStack to a tenant if they are out of sync.

### Syntax

```
efa openstack sync start [ --tenant tenant name | --help ]
```



#### Note

There is no output for this command.

### Parameters

#### **--tenant**

The name of the tenant

#### **--help**

Provides help for execution

## efa rbac execution

---

Displays or deletes the execution logs of the Auth and RBAC services.

### Syntax

```
efa rbac execution show [ --id | --limitexec-limit | --statusfailed | succeeded | all | --help ]
```

```
efa rbac execution delete [ --daydays | --help ]
```

### Parameters

**--day** *days*

Deletes log entries older than the specified number of days. The default is 30 days.

**delete**

Deletes log entries older than the specified number of days.

**--help**

Provides help for command.

**--id**

Filters the log entries based on execution ID. The "limit" and "status" flags are ignored when the "id" flag is used.

**--limit** *exec-limit*

Limits the number of log entries to be listed. Enter "0" to show all of the executions. The default is 10.

**show**

Displays the log entries.

**--status** **failed** | **succeeded** | **all**

Filters the log entries based on the status. The default is "all."

## efa rbac role show

Displays the roles available in EFA.

### Syntax

```
efa rbac role show [ --name role-name | --help ]
```

### Parameters

**--name** *role-name*

Specifies name of the role.

**--help**

Provides help for the command.

### Usage Guidelines

Output of the command is similar to the following.

Role	Description
FabricAdmin	<ul style="list-style-type: none"> <li>Registers devices to the fabric</li> <li>Configures fabric parameters</li> <li>Validates all devices in the fabric</li> <li>Configures switches for IP fabric with overlay and without overlay</li> <li>Creates tenants</li> <li>Creates networks inside tenants, such as VRF, EPG, and PO</li> <li>Performs fabric debug activities</li> <li>Has privileges for OpenStack, Hyper-V, and vCenter operations</li> </ul>
SecurityAdmin	Performs user management, PKI, and key management operations
NetworkOperator	<ul style="list-style-type: none"> <li>Has view-only privileges for fabric configurations, information for tenants and inventory, and all ecosystem information</li> <li>Cannot make changes in the system</li> </ul>
SystemDebugger	<ul style="list-style-type: none"> <li>Has privileges to perform supportsave and system backup, and to view the running system configurations</li> <li>Has privileges to perform fabric debug operations</li> <li>Sets debug levels for services</li> <li>Has privileges to collect execution logs from services</li> </ul>

Role	Description
SystemAdmin	Has complete privileges to all operations in the system
<Tenant>Admin * Created dynamically per tenant	Performs tenant administration within the assigned tenant, such as the following: <ul data-bbox="907 401 1409 527" style="list-style-type: none"><li>• Adding networks to the tenant</li><li>• Configuring network parameters</li><li>• Configuring switches with tenant-specific information</li></ul> Cannot perform actions for any other tenant

## efa scvmm delete

---

Deletes SCVMM server

### Syntax

```
efa scvmm delete [--host | --cleanup-epgs | --help ]
```

### Parameters

**--host**

Specifies IP or host name of the SCVMM server to be deleted

**--cleanup-epgs**

Cleans up EPGs from tenant service when SCVMM server is deleted

**--help**

Provides help for delete

## efa scvmm links physical

---

Configures SCVMM physical links.

### Syntax

```
efa scvmm links physical [ --host ip-host | --hyperv hostname | --help ]
```

### Parameters

**--host** *ip-host*

Specifies the IP address or host name of the SCVMM server.

**--hyperv** *hostname*

Specifies the host name of the Hyper-V host.

**--help**

Provides help for the command.

## efa scvmm links virtual

---

Configures SCVMM virtual links.

### Syntax

```
efa scvmm links virtual [ --hyperv hostname | --help ]
```

### Parameters

**--hyperv** *hostname*

Specifies the host name of the Hyper-V host.

**--help**

Provides help for the command.



## efa scvmm list

---

Lists all SCVMM Servers and their summary information.

### Syntax

```
efa scvmm list [ --host | --help ]
```

### Parameters

**--host**

Specifies hostname or IP of the SCVMM server.

**--help**

Provides help for SCVMM list.

---

## efa scvmm register

---

Registers SCVMM

### Syntax

```
efa scvmm register [ --host | --username | --password | --tenant | --  
help ]
```

### Parameters

**--host**

Specifies IP or host name of the SCVMM server to connect to

**--username**

Specifies user name to connect to the SCVMM server

**--password**

Specifies password to connect to the SCVMM server

**--tenant**

Specifies tenant name for the SCVMM server

**--help**

Provides help for register

## efa scvmm settings show

---

Lists SCVMM Service Settings.

### Syntax

```
efa scvmm settings show --help
```

### Parameters

**--help**

Provides help for show.

## efa scvmm settings update

---

Updates SCVMM service settings.

### Syntax

```
efa scvmm settings update [ --poll-frequency frequency | --help ]
```

### Parameters

**--poll-frequency** *frequency*

Specifies the polling frequency in hours. Valid values range from 1 to 24.

**--help**

Provides help for the command.

## efa scvmm update

---

Updates the SCVMM server.

### Syntax

```
efa scvmm update [ --host ip-host | --username user name | --password password | --help ]
```

### Parameters

**--host** *ip-host*

Specifies the IP address or host name of the SCVMM server you want to update.

**--username** *user name*

Specifies the user name to connect to the SCVMM server.

**--password** *password*

Specifies the password to connect to the SCVMM server.

**--help**

Provides help for the command.

## efa snmp subscriber

Adds, unregisters, or lists SNMP trap subscribers.

### Syntax

```
efa snmp subscriber [command] [ list | add|unregister | --help ]
```

### Parameters

#### list

Lists all trap subscribers.

#### add

Registers an SNMP trap subscriber.

#### unregister

Unregisters a trap receiver.

#### --help

Provides help for execution.

### Examples

This example shows how to add a version 2c trap receiver.

```
efa snmp subscriber add --host 10.20.241.86 --type v2c --community
    testcommunity
Register SNMP Trap forwarding
Successfully registered trap subscriber.
+-----+-----+
| attribute | value          |
+-----+-----+
| id        | 1              |
+-----+-----+
| host      | 10.20.241.86  |
+-----+-----+
| type      | v2c           |
+-----+-----+
| community | testcommunity |
+-----+-----+
| v3 user   | efaUser       |
+-----+-----+
| v3 Auth Type |              |
+-----+-----+
| v3 Priv Type |              |
+-----+-----+
Trap Subscriber Host=10.20.241.86
```

This example shows how to add an SMTP version 3 trap receiver.

```
efa snmp subscriber add --host 2.1.1.1 --type v3 --v3user efaUser --auth SHA1
    --authpassword testing --priv AES --privpassword testingPrivacy
Register SNMP Trap forwarding
Successfully registered trap subscriber.
+-----+-----+
| attribute | value          |
+-----+-----+
```

```

| id          | 2          |
+-----+-----+
| host        | 2.1.1.1    |
+-----+-----+
| type        | v3         |
+-----+-----+
| community   |            |
+-----+-----+
| v3 user     | efaUser    |
+-----+-----+
| v3 Auth Type | SHA1      |
+-----+-----+
| v3 Priv Type | AES       |
+-----+-----+
Trap Subscriber
Host=2.1.1.1

```

This example lists currently registered trap subscribers.

```

efa snmp subscriber list
+-----+-----+-----+-----+-----+-----+
| id | type | host   | community | user   | Auth Protocol | Privacy Protocol |
+-----+-----+-----+-----+-----+-----+
| 64 | v3   | 2.1.1.1 |           | efaUser | SHA1          | AES              |
+-----+-----+-----+-----+-----+-----+
SNMP Trap Subscribers Count=2
--- Time Elapsed: 263.997115ms ---

```

This example deletes the trap subscriber.

```

efa snmp subscriber unregister --host 2.1.1.1
Delete SNMP Trap forwarding subscriber
Successfully unregistered trap subscriber

```

## efa show-running-config

---

Displays the running-config of all current EFA configurations.

### Syntax

```
efa show-running-config
```

### Usage Guidelines

Run this command to display the running-config of current configurations for core services.

The output is displayed in the following order: Asset, Fabric, Tenant commands.

The command output contains the default values for each configuration line item.

You can use the command output for CLI playback on an empty EFA deployment, which is a useful tool for recovery.

This example shows a partial list of typical output.

```
$ efa show-running-config

efa inventory device register --ip "10.24.80.191" --username admin --password password

efa inventory device setting update --ip "10.24.80.191" --maint-mode-enable-on-reboot No
--maint-mode-enable No --health-check-enable No --health-check-interval 6m
--health-check-heartbeat-miss-threshold 2 --config-backup-periodic-enable Yes
--config-backup-interval 24h --number-of-config-backups 4

efa inventory device register --ip "10.24.80.192" --username admin --password password

efa inventory device setting update --ip "10.24.80.192" --maint-mode-enable-on-reboot No
--maint-mode-enable No --health-check-enable No --health-check-interval 6m
--health-check-heartbeat-miss-threshold 2 --config-backup-periodic-enable Yes
--config-backup-interval 24h --number-of-config-backups 4

efa fabric create --name "default" --type clos --stage 3 --description "Default Fabric"
```



## efa status

Displays the role and the status of the nodes in a single-node or multi-node deployment.

### Syntax

```
efa status
```

### Usage Guidelines

Roles are either Active or Standby.

### Examples

The following example shows output for a single node installation.

```
xmcddev@xmcddev-virtual-machine:~$ efa status
+-----+-----+-----+-----+
| Node Name           | Role  | Status | IP           |
+-----+-----+-----+-----+
| xmcddev-virtual-machine | active | up      | 10.20.255.114 |
+-----+-----+-----+-----+
--- Time Elapsed: 2.224282775s ---
```

The following example shows output for a multi-node installation.

```
(efa:extreme)extreme@tpvm:~$ efa status
+-----+-----+-----+-----+
| Node Name | Role   | Status | IP           |
+-----+-----+-----+-----+
| tpvm      | active | up     | 10.20.255.114 |
+-----+-----+-----+-----+
| tpvm2     | standby | up    | 10.20.255.115 |
+-----+-----+-----+-----+
--- Time Elapsed: 2.318350499s ---
```

## efa system backup

Backs up the EFA system, including the database and certificates.

### Syntax

```
efa system backup [ --fabric-name string | --fabric-all | --device-ip stringArray | --remote ]
```

### Parameters

**--fabric-name** *string*

Indicates to back up all devices that are part of this fabric running the configuration backup.

**--fabric-all**

Indicates to back up all devices that are part of all fabrics running the configuration backup.

**--device-ip** *stringArray*

Specifies a comma-separated range of device IPs for which the configuration backup will be taken. Example: 1.1.1.1-3,1.1.1.2,2.2.2.2

**--remote** *boolean*

Specifies if backup should be stored remotely. Default is false (only on local). When set to true, backup is store both locally and remotely.

### Usage Guidelines

You can restore a backed-up database for various reasons, such as if the database becomes corrupted or you want to revert to a previous configuration. The backup process creates a backup tar file, which you specify for the restore process. The backup tar file is saved to one of the following locations.

- Server: `/var/log/efa/backup`
- TPVM: `/apps/efa_logs/backup`

Run this command as a sudo user for the base operating system.

### Examples

This example performs system backup without device configuration backup.

```
efa system backup -remote
Generating backup of EFA...
Backup Location: root@10.10.10.10:/tmp/efa/EFA-2021-04-07T03-04-48.735.tar
--- Time Elapsed: 5.741750131s ---
```

This example performs system backup by taking configuration backup of all devices that are part of the fabric specified.

```
efa system backup --fabric default -remote
Generating backup of EFA...
Backup Location: root@10.10.10.10:/tmp/efa/EFA-2021-04-07T03-04-48.736.tar
--- Time Elapsed: 5.741750131s ---
```

This example performs system backup by taking configuration backup of all fabrics and its devices.

```
efa system backup --fabric-all -remote
Generating backup of EFA...
Backup Location: root@10.10.10.10:/tmp/efa/EFA-2021-04-07T03-04-48.734.tar
--- Time Elapsed: 5.741750131s ---
```

This example performs system backup by taking configuration backup of all devices that are specified.

```
efa system backup --device-ip 10.20.1.2,10.20.1.3,10.20.1.4 -remote
Generating backup of EFA...
Backup Location: root@10.10.10.10:/tmp/efa/EFA-2021-04-07T03-04-48.737.tar
--- Time Elapsed: 5.741750131s ---
```

This example shows the error message: Fabric does not exist.

```
efa system backup --fabric default -remote
Generating backup of EFA...
Backup Location: root@10.10.10.10:/tmp/efa/EFA-2021-04-07T03-04-48.733.tar
Backup is partially success:
    Fabric does not exist
--- Time Elapsed: 5.741750131s ---
```

This example shows the error message: Device not found.

```
efa system backup --device-ip 10.20.1.5,10.20.1.6 -remote
Generating backup of EFA...
Backup Location: root@10.10.10.10:/tmp/efa/EFA-2021-04-07T03-04-48.738.tar
Backup is partially success:
    Device 10.20.1.5 not found
--- Time Elapsed: 5.741750131s ---
```

This example shows the error message: Operation not allowed.

```
efa system backup --device-ip 10.20.1.2,10.20.1.3 -remote
Generating backup of EFA...
Backup Location: root@10.10.10.10:/tmp/efa/EFA-2021-04-07T03-04-48.739.tar
Backup is partially success:
    Devices [10.20.1.2] failed to get config backup as its locked for configuration
change by process [Firmware download].
--- Time Elapsed: 5.741750131s ---
```

## efa system backup-list

Displays a list of all available EFA backup files.

### Syntax

```
efa system backup-list
```

### Examples

This example shows two backup .tar files that are available to use in a restore operation.

```
efa system backup-list
+---+-----+-----+-----+
+-----+
| ID |           File           | Version  | Generated By |
Location      |
+---+-----+-----+-----+
+-----+
| 1  | EFA-2021-04-07T00-00-00.000.tar | 2.4.1-8799 | System
|           |
+---+-----+-----+-----+
+-----+
| 2  | EFA-2021-04-07T03-04-48.736.tar | 2.5.0-1   | User
10.10.10.10:/tmp/efa |
+---+-----+-----+-----+
+-----+
--- Time Elapsed: 16.263551ms ---
```

## efa system cleanup

---

Cleans up archives.

### Syntax

```
efa system cleanup [ --archive-type backup | support | --name string ]
```

### Parameters

**--archive-type backup | support**

Type of archive to delete. The default is Backup.

**--name *string***

Name of archive to delete.

## efa system feature show

---

Displays the status of the automatic in-progress transaction recovery feature.

### Syntax

```
efa system feature show
```

### Usage Guidelines

Use the **efa system feature update** command to enable the feature.

For more information about the feature, see the "Transaction Handling after Failover or Restart" topic in the *Extreme Fabric Automation Administration Guide*.

### Examples

The following example shows that the feature is turned off.

```
# efa system feature show
+-----+-----+
|          FEATURE NAME          | STATUS |
+-----+-----+
| Inflight Transaction Auto Recovery | Disabled |
+-----+-----+
```

## efa system feature update

---

Enables the automatic recovery of in-flight (in-progress) transactions after a service restart or high-availability failover.

### Syntax

```
efa system feature update --inflight-transaction-auto-recovery {enable | disable}
```

### Parameters

```
--inflight-transaction-auto-recovery {enable | disable}
```

Turns on or turns off the automatic recovery of in-flight transactions after a service restart or high-availability failover.

### Usage Guidelines

After a service restart or high-availability failover, EFA can recover in-progress transactions by rolling them back or rolling them forward. In-progress transactions are those that are outstanding in the execution log after a restart or a failover.

- When transactions are rolled back, the requested action is undone. This category includes transactions launched by create commands and by update commands with add operations.
- When transactions are rolled forward, the requested action is completed. This category includes transactions launched by delete commands and by update commands with delete operations.

When this feature is enabled, all Day-1 to Day-N tenant operations support automatic in-progress transaction recovery. This feature is enabled by default.

When this feature is turned off, Day-1 to Day-N tenant operations do not support automatic in-progress transaction recovery.

### Examples

This example enables automatic in-flight transaction recovery.

```
efa system feature update --inflight-transaction-auto-recovery enable
Feature Setting Updated Successful
--- Time Elapsed: 634.557118ms ---
```

This example turns off automatic in-flight transaction recovery.

```
efa system feature update --inflight-transaction-auto-recovery disable
Feature Setting Updated Successful
--- Time Elapsed: 634.557125ms ---
```

## efa system restore

---

Restores the EFA system from a backup.

### Syntax

```
efa system restore [ --backup-tar filename]
```

### Parameters

**--backup-tar** *filename*

Specifies the file name for the backup tar file.

### Usage Guidelines

You can restore a backed-up database for various reasons, such as if the database becomes corrupted or you want to revert to a previous configuration. The backup process creates a backup tar file, which you specify for the restore process.

If you do not specify the **--backup-tar** parameter, the restore process displays the list of available backup files for you to choose from.

After the database is restored, a list of all pods is displayed, showing their status, number of restarts, and age.

Run this command as a sudo user for the base operating system.

### Examples

This syntax restores the database.

```
efa system restore --backup-tar EFA-2020.06.08-15.52.09.tar
Backup file name:  EFA-2020.06.08-15.52.09.tar
Restore result :: Restore operation successful
--- Time Elapsed: 3m11.269648985s ---
```



## efa system settings reset

---

Resets system settings to default values.

### Syntax

```
efa system settings reset [ -max-backup-files | --max-supportsave-files  
| --backup-schedule | --remote-server-settings | --periodic-device-  
config-backup ]
```

### Parameters

#### **--max-backup-files**

The default is five backup files.

#### **--max-supportsave-files**

The default is five supportsave files.

#### **--backup-schedule**

The default time is scheduled for Sunday 12 AM.

#### **--remote-server-settings**

By specifying this flag, you set the following remote server settings to **null**: **remote-server-ip**, **remote-server-username**, **remote-server-password**, **remote-server-directory** and the **remote-server-protocol** setting to **scp**.

#### **--periodic-device-config-backup**

By specifying this flag, you turn off the backup.

### Usage Guidelines

You must issue the **efa system settings reset** command with at least one flag. For the flags that you specify, the command resets values to their defaults.

### Examples

The following command sets all the flags that you specify to their default values: **--max-backup-files** to 5, **--max-supportsave-files** to 5, **--backup-schedule** to 0 \* \* \*, **--remote-server-settings** to null **--periodic-device-config-backup** to off.

```
efa system settings reset --max-backup-files --max-supportsave-files  
--backup-schedule --remote-server-settings --periodic-device-config-backup
```

## efa system settings show

Displays the settings for the maximum number of backup and supportsave files to save, and the schedule for backing up the database.

### Syntax

```
efa system settings show
```

### Examples

This example shows typical output for the command.

```
efa system settings show
+-----+
|          SETTING          | VALUE |
+-----+-----+
| Max Backup File Limit    | 5     |
+-----+-----+
| Max Supportsave File Limit | 5     |
+-----+-----+
| Backup Schedule          | 0 0 * * * |
+-----+-----+
| Remote Server IP         | 10.10.10.10 |
+-----+-----+
| Remote Server Username   | root      |
+-----+-----+
| Remote Server Password   | *****  |
+-----+-----+
| Remote Server Directory  | /tmp/efa  |
+-----+-----+
--- Time Elapsed: 831.836375ms ---
```

## efa system settings update

Configures the schedule for automatic database backups and determines the maximum number of backup and supportsave files to save before they are deleted.

### Syntax

```
efa system settings update [--backup-schedule time | --max-backup-files num | --max-supportsave-files num | --remote-server-ip ip | --remote-transfer-protocol ftp | scp | --remote-server-username name | --remote-server-password password | --remote-server-directory directory | --periodic-device-config-backup Yes | No ]
```

### Parameters

**--backup-schedule** *time*

Specifies the schedule for periodic, automatic backups, in the format HOUR:DOM:MON:DOW (hour, day of month, month, day of week). The default time is scheduled for Sunday 12 AM.

**--max-backup-files** *num*

Specifies the maximum number of backup files to keep. As new backup files are created, older backup files in excess of this value are deleted. The default is 5 backup files.

**--max-supportsave-files** *num*

Specifies the maximum number of supportsave files to keep. As new supportsave files are created, older files in excess of this value are deleted. The default is 5 supportsave files.

**--remote-server-ip** *ip*

Specifies the remote server IP where backup is copied.

**--remote-transfer-protocol** **ftp** | **scp**

Specifies a valid transfer protocol.

**--remote-server-username** *name*

Specifies the remote server user name.

**--remote-server-password** *password*

Specifies the remote server password.

**--remote-server-directory** *directory*

Specifies the remote server directory where backup is copied.

**--periodic-device-config-backup** **Yes** | **No**

Specifies whether to include device configuration backup in periodic backup. Default is No.

## Usage Guidelines

The settings described here enable you to configure details of the remote server where the backup is copied.



### Note

The details of the remote server are verified before configuring the remote parameters. If you specify a value for any **one** of the following, you must specify values for **all the others**:

- `remote-server-ip`
- `remote-server-username`
- `remote-server-password`
- `remote-server-directory`

If the four values have already been set, they are retained in the database. If you then modify any one of them, the other values are used.

The transfer of backup on remote servers is performed through the Secure Copy Protocol (SCP).

## Examples

```
efa system settings update --remote-server-ip 10.20.255.177 --remote-server-username
extreme
--remote-server-password password --remote-server-directory efa/backup
Setting Update Successful
```

```
efa system settings update --remote-server-ip 10.20.255.177
Error: Remote server settings missing or incomplete
```

```
efa system settings update --remote-server-username extreme
Error: Remote server settings missing or incomplete
```

```
efa system settings update --remote-server-ip 10.20.241.7
--remote-server-username root --remote-server-password pass
--remote-server-directory /root/vinod/ --remote-transfer-protocol scp

Setting Update Successful

--- Time Elapsed: 148.800033ms ---
```

## efa system supportsave

Collects the system support-save of the Inventory, Tenant, and Fabric service logs, and their associated database dumps.

### Syntax

```
efa system supportsave [--fabric-name string | --fabric-all | --device-  
ip stringArray ]
```

### Parameters

**--fabric-name** *string*

Indicates to collect supportsave from all devices that are part of the specified fabric.

**--fabric-all**

Indicates to collect supportsave from all devices.

**--device-ip** *stringArray*

Specifies a comma-separated range of device IPs to collect supportsave from. Example:  
1.1.1.1-3,1.1.1.2,2.2.2.2

### Usage Guidelines

The supportsave file is saved to `/var/log/efa/efa_<log_id>.logs.zip`.

### Examples

This example collects the system supportsave logs.

```
(efa:root)root@admin1-00:~# efa system supportsave  
Capturing Database Snapshot..  
Capturing Database Snapshot took 1.697961249s  
Capturing Pod logs for all services...  
Capturing Pod logs for all services took 17.148416322s  
Capturing logs for database error, k3s and EFA running config...  
Capturing logs for database errors, k3s and EFA running config took 2.674920598s  
Archiving...  
Archiving took 2.048826234s  
Cleaning up files...  
Cleaning up files took 165.106125ms  
  
Support Save File: /var/log/efa/efa_2020-10-08T07:11:01.logs.zip  
--- Time Elapsed: 28.695437855s ---  
(efa:root)root@admin1-00:~#
```

## efa tenant create

---

Creates tenant reserved resources such as the total number of Layer 3 VNIs, VLANs, VRFs, and bridge domains for fabrics with non-auto VNI settings, which can later be applied to an end point group.

### Syntax

```
efa tenant create [ --name name | --description description | --type private | shared | --l2-vni-range range | --l3-vni-range range | --vlan-range range | --vrf-count vrfs | --enable-bd true | false | --port ports | --help ]
```

### Parameters

**--name** *name*

Specifies the name of the tenant.

**--description** *description*

Describes the tenant.

**--l2-vni-range** *range*

Specifies the contiguous range of Layer 2 VNIs in ascending order to be reserved for the tenant within the scope of a fabric. Valid VNI values are 1 through 16777215. Example: 14201-14300.

**--l3-vni-range** *range*

Specifies the contiguous range of Layer 3 VNIs in ascending order starting from l3-vni-range to be reserved for the tenant within the scope of a fabric. Valid VNI values are 1 through 16777215. Example: 14201-14300.

**--vlan-range** *range*

Specifies the contiguous range of VLANs to be reserved for the tenant. Valid values are 2 through 4090. Example: 2-100.

**--vrf-count** *vrf*s

Specifies the number of VRFs reserved for the tenant.

**--enable-bd** **true** | **false**

Enables bridge domain capability for networks created under this tenant. Use the following format: `--enable-bd=true` or `--enable-bd=false`.

**--port** *ports*

Lists physical ports of devices that are reserved for the tenant. Example:

```
SW1_IP[0/1,0/2,0/12-15,0/5:4],SW2_IP[0/1,0/4,0/5:1-2,0/5:3,0/9-20].
```

**--type** **private** | **shared**

Specifies whether the endpoints and VRFs of a shared tenant are available to other tenants. The default is private.

**--help**

Displays help for the command.

## Examples

This example creates a VLAN-based tenant with manual VNI mapping.

```
(efa:extreme)extreme@node-1:~$ efa tenant create --name tenant11 --l2-vni-range
10002-14190
--l3-vni-range 14191-14200 --vlan-range 2-4090 --vrf-count 10 --port
10.20.216.15[0/11-20],10.20.216.16[0/11-20]
--description Subscriber1

Tenant created successfully.

--- Time Elapsed: 455.141597ms ---
```

This example creates a BD-based tenant.

```
(efa:extreme)extreme@node-1:~$ efa tenant create --name tenant21 --l2-vni-range
30002-34190
--l3-vni-range 34191-34200 --vlan-range 2-4090 --vrf-count 10 --enable-bd
--port 10.20.216.15[0/21-28],10.20.216.16[0/21-28]

Tenant created successfully.

--- Time Elapsed: 501.176996ms ---
```

This example creates a tenant with auto-VNI with breakout ports.

```
(efa:extreme)extreme@node-1:~$ efa tenant create --name tenant12
--vlan-range 2-100 --vrf-count 10 --port
10.20.216.103[0/1-10],10.20.216.104[0/1-5,0/6:1-4]

Tenant created successfully.

--- Time Elapsed: 427.73527ms ---
```

This example creates a shared tenant.

```
(efa:extreme)extreme@node-1:~$ efa tenant create --name ST
--type shared --port 10.20.216.15[0/1-10],10.20.216.16[0/1-10]

Tenant created successfully.

--- Time Elapsed: 381.182892ms ---
```

## efa tenant debug

Identifies drift in device configuration.

### Syntax

```
efa tenant debug device drift [ --device-ip | --filter po | evpn | ovg |
    lif | bd | vlan | intf | ve | vrf | mct | routerbgp | pwprofile | all
    | --help | --reconcile ]
```

```
efa tenant debug set [ --level debug | info | debugdb | nodebugdb | --
    help]
```

```
efa tenant debug device config sync [ --device-ip ip-addr | --help ]
```

### Parameters

**--device-ip** *ip-addr*

Specifies a comma-separated list of device IP addresses.

**--filter** *po | evpn | ovg | lif | bd | vlan | intf | ve | vrf | mct | routerbgp | pwprofile | all*

Filters the displayed draft data by the type of data you select. The default is all.

**--level** *debug | info | debugdb | nodebugdb*

Specifies the debug level.

**--reconcile**

Reconciles configuration on the device.

**--help**

Provides help for the command.

### Usage Guidelines

You can also use the API to set up debug level and debug for the module.

### Examples

This example identifies drift.

```
$ efa tenant debug device drift --device-ip 10.20.216.15
=====
Device           : 10.20.216.15

Operation succeeded.

--- Time Elapsed: 626.727571ms ---
```

This example reconciles the drifted configuration.

```
$ efa tenant debug device drift --device-ip 10.20.216.15 --reconcile
=====
Device           : 10.20.216.15
```



```

===== VLAN Drift =====
VLAN          : 10
App-state     : cfg-refreshed

Drifted Interface
+-----+-----+-----+
| Interface-Type | Interface-Name | App-State |
+-----+-----+-----+
| ethernet      | 0/11           | cfg-refreshed |
+-----+-----+-----+

===== Interface Drift =====

Drifted Interface
+-----+-----+-----+
| Interface-Type | Interface-Name | App-State |
+-----+-----+-----+
| ethernet      | 0/11           | cfg-in-sync |
+-----+-----+-----+

===== Reconciliation Status =====
+-----+-----+-----+
| CONFIG TYPE | STATUS | ERROR |
+-----+-----+-----+
| Port-Property | Success |      |
| Portchannel   | Success |      |
| Vlan          | Success |      |
+-----+-----+-----+

Operation succeeded.

--- Time Elapsed: 32.202412126s ---

```

This example synchronizes the tenant database with the inventory database.

```

$ efa tenant debug device config sync --device-ip 10.20.216.15

+-----+-----+-----+-----+-----+
| IP Address | Role | State | Result |
+-----+-----+-----+-----+-----+
| 10.20.216.15 | Leaf | READY | Device 10.20.216.15 is already present in Tenant |
|              |      |      | DB with READY state |
+-----+-----+-----+-----+-----+

Device Details

--- Time Elapsed: 451.271557ms ---

```

This example sets the debug level.

```

$ efa tenant debug set --level debugdb

Level debugdb set successfully.

--- Time Elapsed: 116.43581ms ---

```

## efa tenant delete

---

Deletes a tenant.

### Syntax

```
efa tenant delete [ -- name tenant-name --force ]
```

### Command Default

### Parameters

**--name** *tenant-name*

Specifies a tenant and a tenant name.

**--force**

Forces the deletion on the tenant if the option is provided.

### Examples

The following example deletes a tenant.

```
(efa:extreme)extreme@node-1:~$ efa tenant delete --name tenant12
Tenant deleted successfully.
--- Time Elapsed: 1.972258324s ---
```

The following example deletes the tenant and all the related entities forcibly.

```
(efa:extreme)extreme@node-1:~$ efa tenant delete --name tenant12 --force
Tenant delete with force will delete associated Vrfs, EndpointGroups and PortChannels.
Do you want to proceed (Y/N): y
Tenant deleted successfully.
--- Time Elapsed: 3.258645739s ---
```

## efa tenant epg configure

---

Pushes or removes a pending endpoint group configuration.

### Syntax

```
efa tenant epg configure [ --name name | --tenant name | --help ]
```

### Parameters

**--name** *name*

Specifies name of the endpoint group.

**--tenant** *name*

Specifies name of the tenant.

**--help**

Provides help for the command.

Pushes or removes a pending endpoint group configuration.

```
(efa:extreme)extreme@node-1:~$ efa tenant epg configure --name epg1 --tenant tenant11  
EndpointGroup configured successfully.  
--- Time Elapsed: 444.898897ms ---
```

## efa tenant epg create

Creates a Layer 3 endpoint group.

### Syntax

```
efa tenant epg create [--name epg-name|--tenant tenant-name|--description desc| --port ip-ethport|--po po-name|--switchport-mode access | trunk | trunk-no-default-native |--type l3-hand-off | extension |--switchport-native-vlan-tagging |--switchport-native-vlan value| --ctag-range range| --ctag description desc|--vrf vrf-name| --l3-vni vni| --l2-vni vni| --anycast-ip ipv4| --anycast-ipv6 ipv6|--local-ip ipv4| --local-ipv6 ipv6| --bridge-domain bd-name| --ipv6-nd-mtu mtu-value| --ipv6-nd-managed-config flag | --ipv6-nd-other-config other-flag| --ipv6-nd-prefix ipv6-prefix| --ipv6-nd-prefix-valid-lifetime lifetime| --ipv6-nd-prefix-preferred-lifetime pref-lifetime| --ipv6-nd-prefix-no-advertise | --ipv6-nd-prefix-config-type no-autoconfig | no-onlink | off-link | --single-homed-bfd-session-type auto | software | hardware | --ip-mtu mtu-value ]
```

### Parameters

**--name** *epg-name*

Specifies the name of the endpoint group.

**--tenant** *tenant-name*

Specifies the name of the associated tenant.

**--description** *desc*

Describes the endpoint group.

**--port** *ip-ethport*

Specifies the device IP address and Ethernet port details. Example: SW1\_IP[0/1], SW2\_IP[0/5,0/6], SW3\_IP[0/7-10]

**--po** *po-name*

Lists port channels. Example: po1, po2

**--switchport-mode** **access** | **trunk** | **trunk-no-default-native**

Configures switch port mode on the interfaces. Valid values are access, trunk, and trunk-no-default-native. The default is trunk.

**--type** **l3-hand-off** | **extension**

Configures the BGP service type. Valid values are l3-hand-off or extension. The default is extension.

**--switchport-native-vlan-tagging**

Enables the native VLAN characteristics on the ports of this endpoint group. Valid only if the **--switchport-mode** parameter is set to trunk.

**--switchport-native-vlan** *value*

Configures native VLAN on the interfaces. Valid values are 2 through 4090 corresponding to the value of the **--ctag-range** parameter.

**--ctag-range** *range*

Specifies the customer VLAN range in comma and hyphen separated format. Example: 2-20,30,40,50-55.

**--ctag-description** *desc*

Specifies a unique description of the ctag in the following format: ctag:12-vni.

**--vrf** *vrf-name*

Specifies the VRF to which these networks are attached.

**--l3-vni** *vni*

Specifies the Layer 3 VNI to be used for this VRF.

**--l2-vni** *vni*

Specifies the Layer 2 VNI to be used for this network in the following format: ctag:12-vni.

**--anycast-ip** *ipv4*

Specifies the IPv4 anycast address in the following format: ctag:anycast-ip.

**--anycast-ipv6** *ipv6*

Specifies the IPv6 anycast address in the following format: ctag:anycast-ipv6.

**--local-ip** *ipv4*

Specifies the IPv4 local address in the following format: ctag,device-ip:local-ip.

**--local-ipv6** *ipv6*

Specifies the IPv6 local address in the following format: ctag,device-ip:local-ipv6.

**--bridge-domain** *bd-name*

Specifies the bridge domain name in the following format; ctag:bridge-domain.

**--ipv6-nd-mtu** *mtu-value*

Sets the maximum transmission unit (MTU) for IPv6 neighbor discovery. Valid values range from 1280 through 65535. The format is ctag:mtu.

**--ipv6-nd-managed-config** *flag*

Sets the managed configuration flag for IPv6 router advertisement. The format is ctag:managedflag.

**--ipv6-nd-other-config** *other-flag*

Sets the other configuration flag for IPv6 router advertisement. The format is ctag:otherflag.

**--ipv6-nd-prefix** *ipv6-prefix*

Configures the IPv6 prefix address in the following format: ctag:prefix1,prefix2,.

**--ipv6-nd-prefix-valid-lifetime** *lifetime*

Sets IPv6 prefix valid lifetime. A valid range is from 0 through 4294967295 to infinite. The format is ctag,prefix:validTime.

**--ipv6-nd-prefix-preferred-lifetime** *pref-lifetime*

Sets the IPv6 prefix preferred lifetime. A valid range is from 0 through 4294967295 to infinite. The format is `ctag,prefix:preferredTime`.

**--ipv6-nd-prefix-no-advertise**

Enables the prevention of prefix advertisement. The format is `ctag,prefix:noadvertiseflag`.

**--ipv6-nd-prefix-config-type no-autoconfig | no-onlink | off-link**

Sets the configuration type for the IPv6 prefix. Valid values are `no-autoconfig`, `no-onlink`, or `off-link`. The format is `ctag,prefix:configType`.

**--single-homed-bfd-session-type auto | software | hardware**

Specifies the BFD session type for the endpoint group. Valid values are `auto`, `software`, or `hardware`. The default is `auto`, which means that the BFD session type is automatically determined based on the value of the `--type` parameter: extension or L3 hand-off.

**--ip-mtu mtu-value**

Sets the IP maximum transmission unit (MTU) for the tenant network. Valid values range from 1280 through 9194. The format is `ctag:ip-mtu`.

**--suppress-arp value**

Sets `suppress-arp` flag to this network. The format is `ctag:suppress-arp`. Example: `1002:true`.

**--suppress-nd value**

Sets `suppress-nd` flag to this network. The format is `ctag:suppress-nd`. Example: `1002:true`.

## Usage Guidelines

An empty endpoint group has no `network-policy`, `network-property`, or `port-property`.

An endpoint group can be created with a `port-property` but without a `port-group`. But an endpoint group cannot be created with a `port-group` but without a `port-property`.

ARP suppression is enabled for all the possible broadcast domains, VLAN or BD, on the device.

CEP is handled by replicating all the tenant configuration on the MCT neighbor except for the endpoint configuration, because the endpoint does not exist on the MCT neighbor.

Event handling sets the corresponding tenant networks to the `cfg-refreshed` state. However, there is no way to re-push the refreshed configuration onto the devices.

The value of `--single-homed-bfd-session-type` is configured for one endpoint group and then propagated to all Ethernet and single-homed port channel interfaces defined for that endpoint group.

EFA does not distinguish between SRIOV (single-root input/output virtualization) and non-SRIOV connections. Therefore, it treats both connections the same way. If you want to use hardware-based BFD sessions for CEP non-SRIOV connections, then create an endpoint group that contains all the CEP non-SRIOV connections and set the `--single-homed-bfd-session-type` to `hardware`.

You use the `--ip-mtu` parameter to configure the Maximum Transmission Unit (MTU) for the tenant network. This value is then configured on the interface VE on the SLX device. The output of the `efa tenant epg show --detail` command includes the configured `--ip-mtu <mtu-value>`.

## Examples

This example creates a VLAN-based Layer 3 endpoint group.

```
$ efa tenant epg create --name epg1 --tenant tenant11 --switchport-mode trunk
--switchport-native-vlan 10 --switchport-native-vlan-tagging --port
10.20.216.15[0/11],10.20.216.16[0/11]
--po po1 --vrf blue11 --ctag-range 10 --l2-vni 10:10010 --l3-vni 14191 --anycast-ip
10:10.10.1/24
--anycast-ipv6 10:10::1/125 --local-ip 10,10.20.216.15:1.1.10.3/28 --local-ip
10,10.20.216.16:1.1.10.4/28
--local-ipv6 10,10.20.216.15:10a:10::3/125 --local-ipv6 10,10.20.216.16:10a:10::4/125 --
ipv6-nd-mtu 10:9000
--ipv6-nd-prefix 10:1002::/125,1003::/125,1004::/125 --ipv6-nd-prefix-valid-lifetime
10,1002::/125:infinite
--ipv6-nd-prefix-preferred-lifetime 10,1002::/125:1020304 --ipv6-nd-prefix-valid-lifetime
10,1003::/125:1020304
--ipv6-nd-prefix-preferred-lifetime 10,1003::/125:1020304 --ipv6-nd-prefix-valid-lifetime
10,1004::/125:1020304
--ipv6-nd-prefix-preferred-lifetime 10,1004::/125:infinite --ipv6-nd-prefix-config-type
10,1004::/125:no-onlink
--ipv6-nd-prefix-config-type 10,1003::/125:off-link --ipv6-nd-prefix-config-type
10,1002::/125:no-autoconfig
--ipv6-nd-managed-config 10:true --ipv6-nd-other-config 10:true --ctag-description
10:Network-10

EndpointGroup created successfully.

--- Time Elapsed: 16.922083265s ---
```

This example creates a VLAN-based L3-hand-off endpoint group.

```
$ efa tenant epg create --tenant tenant11 --name epg2
--type l3-hand-off --switchport-mode trunk --port 10.20.216.15[0/18],10.20.216.16[0/18] --
po po2
--vrf blue11 --ctag-range 12 --l2-vni 12:10012 --l3-vni 14191 --local-ipv6
12,10.20.216.16:10:12a::1/127
--local-ipv6 12,10.20.216.15:10:12a::2/127 --local-ip 12,10.20.216.16:1.1.12.1/29
--local-ip 12,10.20.216.15:1.1.12.2/29

EndpointGroup created successfully.

--- Time Elapsed: 8.605943783s ---
```

This example creates a bridge-domain-based Layer 3 endpoint group.

```
$ efa tenant epg create --tenant tenant21 --name epg3 --type extension
--switchport-mode trunk --po po11 --ctag-range 1002 --bridge-domain 1002:Net-30002 --l2-
vni 1002:30002
--vrf red11 --anycast-ip 1002:10.20.30.1/24

EndpointGroup created successfully.

--- Time Elapsed: 13.469697138s ---
```

This example creates a VLAN-based Layer 2 endpoint group.

```
$ efa tenant epg create --name epg4 --tenant tenant11
--ctag-range 101-103 --switchport-mode trunk-no-default-native --port 10.20.216.15[0/17]

EndpointGroup created successfully.
```

```
--- Time Elapsed: 19.83265s ---
```

This example creates an endpoint group for which the BFD session type is automatically determined.

```
$ efa tenant epg create --name epg5 --tenant tenant11 --port 10.20.216.15[0/11]  
,10.20.216.16[0/11] --po po1 --switchport-mode trunk --single-homed-bfd-session-type auto
```

This example creates an endpoint group with MTU values for Ctag 11 and Ctag 12.

```
$ efa tenant epg create --name tenlepg1 --tenant ten1 --port 10.20.246.17[0/1],  
10.20.246.18[0/1] --switchport-mode trunk --ctag-range 11-12 --anycast-ip11:10.0.11.1/24  
--anycast-ip12:10.0.12.1/24 --anycast-ipv6 11:11::1/127 --anycast-ipv6 12:12::1/127  
--vrf ten1vrf1 --ip-mtu 11:7900 --ip-mtu 12:8900
```



## efa tenant epg delete

---

Deletes an endpoint group.

### Syntax

```
efa tenant epg delete [ --force | --name epg-name | --tenant tenant-name | --help ]
```

### Parameters

**--force**

Forces the deletion of any endpoint group that is tied to the tenant.

**--help**

Displays help for delete.

**--name** *epg-name*

Specifies the name of the endpoint group or a comma separated list of names to be deleted.

Example: EPG-1 or EPG-1,EPG2,EPG3.

**--tenant** *tenant-name*

Specifies the tenant name.

### Usage Guidelines

Before deleting a tenant, delete any endpoint group that is tied to the tenant to remove any port level configurations on the device that are defined by the endpoint group. Failure to do this causes EFA to return an error. Using the `-force` option overrides this error and deletes the underlying endpoint group configuration on the device.

### Examples

The following example deletes a specific EPG.

```
(efa:extreme)extreme@node-1:~$ efa tenant epg delete --name epg2 --tenant tenant11  
EndpointGroup: epg2 deleted successfully.  
--- Time Elapsed: 5.853148185s ---
```

The following example deletes a specific EPG forcefully and ignores any error.

```
(efa:extreme)extreme@node-1:~$ efa tenant delete --name tenant12 --force  
Tenant delete with force will delete associated Vrfs, EndpointGroups and PortChannels.  
Do you want to proceed (Y/N): y  
Tenant deleted successfully.  
--- Time Elapsed: 3.258645739s ---
```

## efa tenant epg detach

Splits an endpoint group into multiple endpoint groups.

### Syntax

```
efa tenant epg detach [ --tenant name | --source-epg epg-name | --
  destination-epg epg-name | --destination-epg-description | --
  destination-epg-ctag-range ctag-range | --help ]
```

### Parameters

- tenant** *name*  
Specifies the tenant name.
- source-epg** *epg-name*  
Specifies the name of the source endpoint group.
- destination-epg** *epg-name*  
Specifies the name of the destination endpoint group.
- destination-epg-description**  
Displays destination endpoint group description.
- destination-epg-ctag-range** *ctag-range*  
Specifies the destination endpoint group CTAG range.
- help**  
Displays help for the command.

The following example shows an existing endpoint group, splits it into multiple endpoint groups, and then shows the individual endpoint groups.

```
$ efa tenant epg show --name epg4 --tenant tenant11
+-----+-----+-----+-----+-----+-----+
+-----+
| Name | Tenant | Type | Ports | PO | SwitchPort |
Native Vlan |
| | | | | | Mode |
Tagging |
+-----+-----+-----+-----+-----+-----+
+-----+
| epg4 | tenant11 | extension | 10.20.216.15[0/17] | | trunk-no-default-native |
false |
| | | | | |
| | |
+-----+-----+-----+-----+-----+-----+
+-----+
+-----+-----+-----+-----+
| Ctag Range | Vrf | L3Vni | State |
+-----+-----+-----+-----+
| 101-103 | | | |
| | | |
+-----+-----+-----+-----+
EndpointGroup Details
```

```

PO/Vrf [Flags : * - Unstable]

For 'unstable' entities, run 'efa tenant po/vrf show' for details

--- Time Elapsed: 156.85406ms ---

$ efa tenant epg detach --tenant tenant11 --source-epg epg4
--destination-epg epg5 --destination-epg-ctag-range 103

EndpointGroup: epg4 split successfully.

--- Time Elapsed: 263.570996ms ---

$ efa tenant epg show --name epg4 --tenant tenant11
+-----+-----+-----+-----+-----+-----+
+-----+
| Name | Tenant | Type | Ports | PO | SwitchPort | Native |
| Vlan | | | | | | Mode |
| Tagging | | | | | | |
+-----+-----+-----+-----+-----+-----+
+-----+
| epg4 | tenant11 | extension | 10.20.216.15[0/17] | | trunk-no-default-native |
| false | | | | | |
| | | | | | |
+-----+-----+-----+-----+-----+-----+
+-----+
+-----+-----+-----+-----+
| Ctag Range | Vrf | L3Vni | State |
| | | | |
+-----+-----+-----+-----+
| 101-102 | | | |
| | | | |
+-----+-----+-----+-----+
EndpointGroup Details

PO/Vrf [Flags : * - Unstable]

For 'unstable' entities, run 'efa tenant po/vrf show' for details

--- Time Elapsed: 155.775375ms ---
$ efa tenant epg show --name epg5 --tenant tenant11
+-----+-----+-----+-----+-----+-----+
+-----+
| Name | Tenant | Type | Ports | PO | SwitchPort | Native |
| Vlan | | | | | | Mode |
| Tagging | | | | | | |
+-----+-----+-----+-----+-----+-----+
+-----+
| epg5 | tenant11 | | 10.20.216.15[0/17] | | trunk-no-default-native |
| false | | | | | |
| | | | | | |
+-----+-----+-----+-----+-----+-----+
+-----+
+-----+-----+-----+-----+
| Ctag Range | Vrf | L3Vni | State |
| | | | |
+-----+-----+-----+-----+
| 103 | | | |
| | | | |

```

```
|          |      |          |
+-----+-----+-----+
EndpointGroup Details

PO/Vrf [Flags : * - Unstable]

For 'unstable' entities, run 'efa tenant po/vrf show' for details

--- Time Elapsed: 154.028719ms ---
```

## efa tenant epg error show

Reports errors related to the creation or update of endpoint groups.

### Syntax

```
efa tenant epg error show [ --name epg-name | --tenant tenant-name | --
summary | --help ]
```

### Parameters

**--name** *epg-name*

Specifies the name of the endpoint group.

**--tenant** *tenant-name*

Specifies the tenant name.

**--summary**

Displays a summary of endpoint groups in the error state.

**--help**

Displays help for the command.

### Examples

```
efa tenant epg error show --name epg_nonclos --tenant tenant1
=====
Name : epg_nonclos
Tenant : tenant1
Errors
-----
MgmtIp Ctag NetworkPolicyErrorList
-----
10.25.225.173 2001 Adding/Removing VLANs under MCT Cluster failed due to
netconf rpc [error] '"2001:2002:2003" is an invalid value.'
-----
10.25.225.173 2002 Adding/Removing VLANs under MCT Cluster failed due to
netconf rpc [error] '"2001:2002:2003" is an invalid value.'
-----
10.25.225.173 2003 Adding/Removing VLANs under MCT Cluster failed due to
netconf rpc [error] '"2001:2002:2003" is an invalid value.'
-----
10.25.225.174 2001 Adding/Removing VLANs under MCT Cluster failed due to
netconf rpc [error] '"2001:2002:2003" is an invalid value.'
-----
10.25.225.174 2002 Adding/Removing VLANs under MCT Cluster failed due to
netconf rpc [error] '"2001:2002:2003" is an invalid value.'
-----
10.25.225.174 2003 Adding/Removing VLANs under MCT Cluster failed due to
netconf rpc [error] '"2001:2002:2003" is an invalid value.'
-----
```

## efa tenant epg show

Shows brief or detailed endpoint group informaton for all endpoint groups or a specific endpoint group.

### Syntax

```
efa tenant epg show [ --name epg-name | --detail | --tenant tenant-name |
  --vrf vrf-name | --help ]
```

### Parameters

**--name** *epg-name*

Specifies the name of the endpoint group.

**--detail**

Displays all attributes of the specified endpoint group or all endpoint groups. When this parameter is not used, only brief tabular output is returned.

**--tenant** *tenant-name*

Specifies the name of the tenant.

**--vrf** *vrf-name*

Specifies the name of the VRF.

**--help**

Provides help for the command.

This example shows brief details for all configured endpoint groups.

```
$ efa tenant epg show
+-----+-----+-----+-----+-----+-----+
| Name | Tenant | Type | Ports | PO | SwitchPort |
Native Vlan |
| | | | | | Mode |
Tagging |
+-----+-----+-----+-----+-----+-----+
| epg1 | tenant11 | extension | 10.20.216.15[0/11] | po1 | trunk |
| true | | | 10.20.216.16[0/11] | | |
| | | | | | |
+-----+-----+-----+-----+-----+-----+
| epg2 | tenant11 | 13-hand-off | 10.20.216.16[0/18] | po3 | trunk |
| false | | | 10.20.216.15[0/18] | | |
| | | | | | |
+-----+-----+-----+-----+-----+-----+
| epg4 | tenant11 | extension | 10.20.216.15[0/17] | | trunk-no-default-native |
| false | | | | | |
| | | | | | |
+-----+-----+-----+-----+-----+-----+
| epg5 | tenant11 | | 10.20.216.15[0/17] | | trunk-no-default-native |
| false | | | | | |
| | | | | | |
```

```

|
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+
| epg3 | tenant21 | extension | | po11 | | trunk
| false | | | | | |
| | | | | | |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+
| Ctag Range | Vrf | L3Vni | State |
| | | | |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| 10 | blue11 | 14191 | |
| | | | |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| 12 | blue11 | 14191 | |
| | | | |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| 101-102 | | | |
| | | | |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| 103 | | | |
| | | | |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| 1002 | red11 | 34191 | |
| | | | |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+

EndpointGroup Details

PO/Vrf [Flags : * - Unstable]

For 'unstable' entities, run 'efa tenant po/vrf show' for details

--- Time Elapsed: 621.668778ms ---

```

This example shows details for all configured endpoint groups.

```

$ efa tenant epg show --detail
Name : epg1
Tenant : tenant11
Type : extension
State :
Description :

Ports : 10.20.216.15[0/11]
       : 10.20.216.16[0/11]
POs : po1
Port Property : SwitchPort Mode : trunk
               : Native Vlan Tagging : true
NW Policy : Ctag Range : 10
           : VRF : blue11
           : L3Vni : 14191

+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+
| Ctag | Ctag | L2Vni | BD Name | Anycast IPv4 | Anycast IPv6 | Local
IP | | | | | | |
| | Description | | | | | | [Device-IP-
>Local-IP] |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+
| 10* | Network-10 | 10010 | | 10.10.10.1/24 | 10::1/125 | 10.20.216.15-
>10a:10::3/125 |

```

```

|          |          |          |          |          |
1.1.10.3/28 |          |          |          |          |
|          |          |          |          |          | 10.20.216.16-
>1.1.10.4/28 |          |          |          |          |
|          |          |          |          |          |
10a:10::4/125 |          |          |          |          |
+-----+-----+-----+-----+-----+
+-----+
+-----+-----+-----+-----+-----+
| IPv6 ND | IPv6 ND | IPv6 ND | Dev State | App State |
| Mtu    | Managed Config | Other Config |          |          |
+-----+-----+-----+-----+-----+
| 9000   | true    | true    | provisioned | cfg-in-sync |
|          |          |          |          |          |
|          |          |          |          |          |
|          |          |          |          |          |
+-----+-----+-----+-----+-----+

Network Property [Flags : * - Native Vlan]

+-----+-----+-----+-----+-----+
+-----+
| Ctag | IPv6 ND Prefix | No Advertise | Valid Lifetime | Preferred Lifetime | Config
Type |
+-----+-----+-----+-----+-----+
+-----+
| 10* | 1002::/125 | false | infinite | 1020304 | no-
autoconfig |
+-----+-----+-----+-----+-----+
+-----+
| 10* | 1003::/125 | false | 1020304 | 1020304 | off-
link |
+-----+-----+-----+-----+-----+
+-----+
| 10* | 1004::/125 | false | 1020304 | infinite | no-
onlink |
+-----+-----+-----+-----+-----+
+-----+
IPv6 ND Prefix Flags

For 'unstable' entities, run 'efa tenant po/vrf show' for details

=====
====
=====

Name          : epg2
Tenant        : tenant11
Type          : l3-hand-off
State         :
Description   :

Ports         : 10.20.216.15[0/18]
               : 10.20.216.16[0/18]
POs           : po3
Port Property : SwitchPort Mode      : trunk
               : Native Vlan Tagging    : false
NW Policy     : Ctag Range           : 12
               : VRF                          : blue11
               : L3Vni                          : 14191

+-----+-----+-----+-----+-----+
+-----+

```



```

| Ctag |          Ctag          | L2Vni | BD Name | Anycast IPv4 | Anycast IPv6
|          Local IP      |        |         |               |               |
|          Description    |        |         |               |               |
[Device-IP->Local-IP] |
+-----+-----+-----+-----+-----+-----+
+-----+
| 12 | Tenant L3 Hand-off VLAN | 10012 |         |               |               |
10.20.216.15->10:12a::2/127 |
|          |               |        |         |               |               |
|          1.1.12.2/29    |        |         |               |               |
|          |               |        |         |               |               |
10.20.216.16->1.1.12.1/29 |
|          |               |        |         |               |               |
10:12a::1/127          |
+-----+-----+-----+-----+-----+-----+
+-----+
| IPv6 ND | IPv6 ND | IPv6 ND | Dev State | App State |
| Mtu | Managed Config | Other Config |           |           |
+-----+-----+-----+-----+-----+-----+
|          | false | false | provisioned | cfg-in-sync |
|          |       |       |           |             |
|          |       |       |           |             |
|          |       |       |           |             |
+-----+-----+-----+-----+-----+-----+
Network Property [Flags : * - Native Vlan]

+-----+-----+-----+-----+-----+-----+
+-----+
| Ctag | IPv6 ND Prefix | No Advertise | Valid Lifetime | Preferred Lifetime | Config
Type |
+-----+-----+-----+-----+-----+-----+
+-----+
IPv6 ND Prefix Flags

For 'unstable' entities, run 'efa tenant po/vrf show' for details

=====
=
=====
=
Name          : epg4
Tenant        : tenant11
Type          : extension
State         :
Description   :

Ports         : 10.20.216.15[0/17]
POs           :
Port Property : SwitchPort Mode      : trunk-no-default-native
NW Policy     : Ctag Range           : 101-102

+-----+-----+-----+-----+-----+-----+
+-----+
| Ctag |          Ctag          | L2Vni | BD Name | Anycast IPv4 | Anycast IPv6 |
Local IP      |        |         |         |               |               |
|          | Description    |        |         |               |               |
[Device-IP->Local-IP] |
+-----+-----+-----+-----+-----+-----+
+-----+
| 101 | Tenant L2 Extended VLAN | 10002 |         |               |               |

```

```

|
+-----+-----+-----+-----+-----+-----+-----+
+-----+
| 102 | Tenant L2 Extended VLAN | 10003 | | |
|
+-----+-----+-----+-----+-----+-----+
+-----+

+-----+-----+-----+-----+-----+-----+
| IPv6 ND | IPv6 ND | IPv6 ND | Dev State | App State |
| Mtu | Managed Config | Other Config | | |
+-----+-----+-----+-----+-----+-----+
| | false | false | provisioned | cfg-in-sync |
+-----+-----+-----+-----+-----+-----+
| | false | false | provisioned | cfg-in-sync |
+-----+-----+-----+-----+-----+-----+

Network Property [Flags : * - Native Vlan]

+-----+-----+-----+-----+-----+-----+
+-----+
| Ctag | IPv6 ND Prefix | No Advertise | Valid Lifetime | Preferred Lifetime | Config
Type |
+-----+-----+-----+-----+-----+-----+
+-----+
IPv6 ND Prefix Flags

For 'unstable' entities, run 'efa tenant po/vrf show' for details

=====
Name : epg5
Tenant : tenant11
Type :
State :
Description :

Ports : 10.20.216.15[0/17]
POs :
Port Property : SwitchPort Mode : trunk-no-default-native
NW Policy : Ctag Range : 103

+-----+-----+-----+-----+-----+-----+
+-----+
| Ctag | Ctag | L2Vni | BD Name | Anycast IPv4 | Anycast IPv6 |
Local IP |
| | Description | | | | |
[Device-IP->Local-IP] |
+-----+-----+-----+-----+-----+-----+
+-----+
| 103 | Tenant L2 Extended VLAN | 10004 | | |
|
+-----+-----+-----+-----+-----+-----+
+-----+

+-----+-----+-----+-----+-----+-----+
| IPv6 ND | IPv6 ND | IPv6 ND | Dev State | App State |
| Mtu | Managed Config | Other Config | | |
+-----+-----+-----+-----+-----+-----+
| | false | false | provisioned | cfg-in-sync |
+-----+-----+-----+-----+-----+-----+

Network Property [Flags : * - Native Vlan]

```

```

+-----+-----+-----+-----+-----+
+-----+
| Ctag | IPv6 ND Prefix | No Advertise | Valid Lifetime | Preferred Lifetime | Config
Type |
+-----+-----+-----+-----+-----+
+-----+
IPv6 ND Prefix Flags
    
```

For 'unstable' entities, run 'efa tenant po/vrf show' for details

```

=====
=====
    
```

```

Name          : epg3
Tenant        : tenant21
Type          : extension
State         :
Description   :

Ports        :
POs          : poll
Port Property : SwitchPort Mode      : trunk
              : Native Vlan Tagging : false
NW Policy    : Ctag Range          : 1002
              : VRF                          : red11
              : L3Vni                          : 34191
    
```

```

+-----+-----+-----+-----+-----+-----+
+-----+
| Ctag |          Ctag          | L2Vni | BD Name | Anycast IPv4 | Anycast IPv6 |
Local IP |
|      | Description            |      |      |      |      |
[Device-IP->Local-IP] |
+-----+-----+-----+-----+-----+-----+
+-----+
| 1002 | Tenant L3 Extended BD | 30002 | Net-30002 | 10.20.30.1/24 |
|      |                        |      |      |      |
+-----+-----+-----+-----+-----+
+-----+
    
```

```

+-----+-----+-----+-----+-----+
| IPv6 ND | IPv6 ND | IPv6 ND | Dev State | App State |
| Mtu    | Managed Config | Other Config |      |      |
+-----+-----+-----+-----+-----+
|      | false | false | provisioned | cfg-in-sync |
+-----+-----+-----+-----+-----+
Network Property [Flags : * - Native Vlan]
    
```

```

+-----+-----+-----+-----+-----+
+-----+
| Ctag | IPv6 ND Prefix | No Advertise | Valid Lifetime | Preferred Lifetime | Config
Type |
+-----+-----+-----+-----+-----+
+-----+
IPv6 ND Prefix Flags
    
```

For 'unstable' entities, run 'efa tenant po/vrf show' for details

```

=====
=====
    
```

--- Time Elapsed: 650.424994ms ---

This example shows details for the specified endpoint group.

```

$ efa tenant epg show --name epg3 --tenant tenant21 --detail
=====
Name          : epg3
Tenant        : tenant21
Type          : extension
State         :
Description   :

Ports         :
POs           : poll
Port Property : SwitchPort Mode      : trunk
               Native Vlan Tagging  : false
NW Policy     : Ctag Range           : 1002
               VRF                   : red11
               L3Vni                  : 34191

+-----+-----+-----+-----+-----+-----+
+-----+
| Ctag |          Ctag          | L2Vni | BD Name | Anycast IPv4 | Anycast IPv6 |
Local IP |          |
|      | Description            |      |      |      |      |
[Device-IP->Local-IP] |
+-----+-----+-----+-----+-----+-----+
+-----+
| 1002 | Tenant L3 Extended BD | 30002 | Net-30002 | 10.20.30.1/24 |
|      |          |
+-----+-----+-----+-----+-----+-----+
+-----+
+-----+
|      Local IP          | IPv6 ND | IPv6 ND | IPv6 ND | Dev State | App
State |
| [Device-IP->Local-IP] | Mtu    | Managed Config | Other Config |
|      |
+-----+-----+-----+-----+-----+-----+
+-----+
|      |          |          | false   | false   | provisioned | cfg-in-
sync |
+-----+-----+-----+-----+-----+-----+
+-----+

Network Property [Flags : * - Native Vlan]

+-----+-----+-----+-----+-----+-----+
+-----+
| Ctag | IPv6 ND Prefix | No Advertise | Valid Lifetime | Preferred Lifetime | Config
Type |
+-----+-----+-----+-----+-----+-----+
+-----+
IPv6 ND Prefix Flags

For 'unstable' entities, run 'efa tenant po/vrf show' for details

=====

--- Time Elapsed: 144.329232ms ---

```

This example shows brief output for all endpoint groups associated with a VRF.

```

$ efa tenant epg show --vrf red11 --tenant tenant21
+-----+-----+-----+-----+-----+-----+-----+
+-----+
| Name | Tenant | Type   | Ports | PO | SwitchPort | Native Vlan | Ctag Range |

```

```

Vrf | L3Vni | State |
| | | | | Mode | Tagging |
| | | | | | |
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+
| epg3 | tenant21 | extension | | poll | trunk | false | 1002 |
red11 | 34191 | | | | | | |
| | | | | | | | |
| | | | | | | | |
+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+
EndpointGroup Details

PO/Vrf [Flags : * - Unstable]

For 'unstable' entities, run 'efa tenant po/vrf show' for details

--- Time Elapsed: 165.216476ms ---

```

This example shows detailed output of all endpoint groups associated with a tenant.

```

$ efa tenant epg show --tenant tenant21 --detail
=====
Name          : epg3
Tenant        : tenant21
Type          : extension
State         :
Description   :

Ports        :
POs           : poll
Port Property : SwitchPort Mode      : trunk
               : Native Vlan Tagging : false
NW Policy     : Ctag Range           : 1002
               : VRF                             : red11
               : L3Vni                            : 34191

+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+
| Ctag |          Ctag          | L2Vni | BD Name | Anycast IPv4 | Anycast IPv6 |
Local IP |          |
|          | Description          | | | | |
[Device-IP->Local-IP] |
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+
| 1002 | Tenant L3 Extended BD | 30002 | Net-30002 | 10.20.30.1/24 |
|          |
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+-----+-----+
| IPv6 ND | IPv6 ND | IPv6 ND | Dev State | App State |
| Mtu | Managed Config | Other Config | | |
+-----+-----+-----+-----+-----+-----+-----+-----+
|          | false | false | provisioned | cfg-in-sync |
+-----+-----+-----+-----+-----+-----+-----+-----+
Network Property [Flags : * - Native Vlan]

+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+
| Ctag | IPv6 ND Prefix | No Advertise | Valid Lifetime | Preferred Lifetime | Config
Type |
+-----+-----+-----+-----+-----+-----+-----+-----+

```

```
+-----+  
IPv6 ND Prefix Flags
```

```
For 'unstable' entities, run 'efa tenant po/vrf show' for details
```

```
=====
```

```
--- Time Elapsed: 150.765431ms ---
```

## efa tenant epg update

Updates an endpoint group.

### Syntax

```
efa tenant epg update [--name epg-name | --tenant tenant-name | --operation
  [ port-group-add | port-group-delete | ctag-range-add | ctag-range-
  delete | vrf-add | vrf-delete | local-ip-add | local-ip-delete |
  anycast-ip-add | anycast-ip-delete ] | --port ip-ethport | --po po-
  name | --switchport-mode access | trunk | trunk-no-default-native | --
  type 13-hand-off | extension | --switchport-native-vlan-tagging | --
  switchport-native-vlan value | --ctag-range range | --ctag description
  desc | --vrf vrf-name | --l3-vni vni | --l2-vni vni | --anycast-ip ipv4 |
  --anycast-ipv6 ipv6 | --local-ip ipv4 | --local-ipv6 ipv6 | --bridge-
  domain bd-name | --ipv6-nd-mtu mtu-value | --ipv6-nd-managed-config
  flag | --ipv6-nd-other-config other-flag | --ipv6-nd-prefix ipv6-
  prefix | --ipv6-nd-prefix-valid-lifetime lifetime | --ipv6-nd-prefix-
  preferred-lifetime pref-lifetime | --ipv6-nd-prefix-no-advertise | --
  ipv6-nd-prefix-config-type no-autoconfig | no-onlink | off-link | --
  single-homed-bfd-session-type auto | software | hardware | --ip-mtu
  mtu-value ]
```

### Parameters

**--name** *epg-name*

Specifies the name of the endpoint group.

**--tenant** *tenant-name*

Specifies the name of the associated tenant.

**--operation** port-group-add | port-group-delete | ctag-range-add | ctag-range-delete | vrf-add, vrf-delete | local-ip-add | local-ip-delete | anycast-ip-add | anycast-ip-delete

Defines the operation to be performed. Valid values are port-group-add, port-group-delete, ctag-range-add, ctag-range-delete, vrf-add, vrf-delete, local-ip-add, local-ip-delete, anycast-ip-add, or anycast-ip-delete.

**--port** *ip-ethport*

Specifies the device IP address and Ethernet port details. Example: SW1\_IP[0/1], SW2\_IP[0/5,0/6], SW3\_IP[0/7-10]

**--po** *po-name*

Lists port channels. Example: po1, po2

**--switchport-mode** access | trunk | trunk-no-default-native

Configures switch port mode on the interfaces. Valid values are access, trunk, and trunk-no-default-native. The default is trunk.

**--type** 13-hand-off | extension

Configures the BGP service type. Valid values are I3-hand-off or extension. The default is extension.

**--switchport-native-vlan-tagging**

Enables the native VLAN characteristics on the ports of this endpoint group. Valid only if the **--switchport-mode** parameter is set to trunk.

**--switchport-native-vlan** *value*

Configures native VLAN on the interfaces. Valid values are 2 through 4090 corresponding to the value of the **--ctag-range** parameter.

**--ctag-range** *range*

Specifies the customer VLAN range in comma and hyphen separated format. Example: 2-20,30,40,50-55.

**--ctag-description** *desc*

Specifies a unique description of the ctag in the following format: ctag:12-vni.

**--vrf** *vrf-name*

Specifies the VRF to which these networks are attached.

**--l3-vni** *vni*

Specifies the Layer 3 VNI to be used for this VRF.

**--l2-vni** *vni*

Specifies the Layer 2 VNI to be used for this network in the following format: ctag:12-vni.

**--anycast-ip** *ipv4*

Specifies the IPv4 anycast address in the following format: ctag:anycast-ip.

**--anycast-ipv6** *ipv6*

Specifies the IPv6 anycast address in the following format: ctag:anycast-ipv6.

**--local-ip** *ipv4*

Specifies the IPv4 local address in the following format: ctag,device-ip:local-ip.

**--local-ipv6** *ipv6*

Specifies the IPv6 local address in the following format: ctag,device-ip:local-ipv6.

**--bridge-domain** *bd-name*

Specifies the bridge domain name in the following format; ctag:bridge-domain.

**--ipv6-nd-mtu** *mtu-value*

Sets the maximum transmission unit (MTU) for IPv6 neighbor discovery. Valid values range from 1280 through 65535. The format is ctag:mtu.

**--ipv6-nd-managed-config** *flag*

Sets the managed configuration flag for IPv6 router advertisement. The format is ctag:managedflag.

**--ipv6-nd-other-config** *other-flag*

Sets the other configuration flag for IPv6 router advertisement. The format is ctag:otherflag.

**--ipv6-nd-prefix** *ipv6-prefix*



Configures the IPv6 prefix address in the following format: `ctag:prefix1,prefix2,..`

**--ipv6-nd-prefix-valid-lifetime** *lifetime*

Sets IPv6 prefix valid lifetime. A valid range is from 0 through 4294967295 to infinite. The format is `ctag,prefix:validTime`.

**--ipv6-nd-prefix-preferred-lifetime** *pref-lifetime*

Sets the IPv6 prefix preferred lifetime. A valid range is from 0 through 4294967295 to infinite. The format is `ctag,prefix:preferredTime`.

**--ipv6-nd-prefix-no-advertise**

Prevents prefix advertisement. The format is `ctag,prefix:noadvertiseFlag`.

**--ipv6-nd-prefix-config-type no-autoconfig | no-onlink | off-link**

Sets the configuration type for the IPv6 prefix. Valid values are `no-autoconfig`, `no-onlink`, or `off-link`. The format is `ctag,prefix:configType`.

**--single-homed-bfd-session-type auto | software | hardware**

Specifies the BFD session type for the endpoint group. Valid values are `auto`, `software`, or `hardware`. The default is `auto`, which means that the BFD session type is automatically determined based on the value of the **--type** parameter: `extension` or `L3 hand-off`.

**--ip-mtu** *mtu-value*

Sets the IP maximum transmission unit (MTU) for the tenant network. Valid values range from 1280 through 9194. The format is `ctag:ip-mtu`.

## Usage Guidelines

An empty endpoint group has no `network-policy`, `network-property`, or `port-property`.

An endpoint group can be created with a `port-property` and without a `port-group`. But an endpoint group cannot be created with a `port-group` and without a `port-property`.

ARP suppression is enabled for all the possible broadcast domains VLAN or BD on the device.

CEP is handled by replicating all the tenant configuration on the MCT neighbor except for the endpoint configuration, since the endpoint does not exist on the MCT neighbor.

The update operation for a bridge domain-based endpoint group is similar to that of a VLAN-based endpoint group. During a `port-group add` or `delete` operation, the logical interface configurations will be created or deleted for the existing `ctags`, and the corresponding bridge-domains.

During a `ctag-range-add` or `delete` operation, the logical interface and bridge-domain configurations are updated on the endpoint group.

During `vrf-add` or `delete` operation, the corresponding Layer 3 configurations are added to or deleted from the endpoint group.

Event handling sets the corresponding tenant networks to the `cfg-refreshed` state. However, there is no way to re-push the refreshed configuration onto the devices.

The value of `--single-homed-bfd-session-type` is configured for one endpoint group and then propagated to all Ethernet and single-homed port channel interfaces defined for that endpoint group.

EFA does not distinguish between SRIOV (single-root input/output virtualization) and non-SRIOV connections. Therefore, it treats both connections the same way. If you want to use hardware-based BFD sessions for CEP non-SRIOV connections, then create an endpoint group that contains all the CEP non-SRIOV connections and set the `--single-homed-bfd-session-type` to `hardware`.

During `vrf-add` and `ctag-range-add` operations, you can use the `--ip-mtu` parameter to configure the MTU for the tenant network. This value is then configured on the interface VE on the SLX device. The output of the `efa tenant epg show --detail` command includes the configured `--ip-mtu <mtu-value>`.

## Examples

The following example adds a port to the endpoint group.

```
$ efa tenant epg update --name epg1
--tenant tenant11 --operation port-group-add --port 10.20.216.15[0/20]

EndpointGroup updated successfully.

--- Time Elapsed: 32.208253521s ---
```

The following example adds a Ctag with network properties to endpoint group.

```
$ efa tenant epg update --name epg1 --tenant tenant11
--operation ctag-range-add --ctag-range 100 --anycast-ip 100:1.1.100.1/24
--local-ip 100,10.20.216.15:100.100.1.1/28

EndpointGroup updated successfully.

--- Time Elapsed: 37.428381252s ---
```

The following example adds a automatic BFD session type to an endpoint group.

```
$ efa tenant epg update --name epg5 --tenant tenant11 --operation port-group-add
--port 10.20.216.15[0/11],10.20.216.16[0/11] --po po1 --switchport-mode trunk
--single-homed-bfd-session-type auto
```

The following example configures the MTU during a `vrf-add` operation.

```
$ efa tenant epg update --name tenlepg1 --tenant ten1 --operation vrf-add
--anycast-ip11:10.0.11.1/24 --anycast-ipv6 11:11::1/127 --vrf ten1vrf1 --ip-mtu 11:5990
```

The following example configures the MTU during a `ctag-range-add` operation.

```
$ efa tenant epg update --name tenlepg1 --tenant ten1 --operation ctag-range-add
--ctag-range 12 --anycast-ip12:10.0.12.1/24 --anycast-ipv6 12:12::1/127 --ip-mtu 12:6990
```

## efa tenant execution

Displays the list of runs, event histories, and deletes entries older than the specified days.

### Syntax

```
efa tenant execution delete [--days int32 | --help]
efa tenant execution show [--help | --limit int32 | --status failed |
    succeeded | all ]
efa tenant execution show-event [--device | --execution-id | --help]
```

### Parameters

#### --days int32

Deletes run entries older than the specified days (default 30).

#### --device

Filters run entries on IP address.

#### --help

Provides help for the selected command.

#### --limit int32

Limits the number of runs to be listed. Value "0" will list all the runs. Default is 10.

#### --status

Filters the runs based on the status (failed, succeeded, all). Default is all.

#### --execution-id

Filters run entries on run UUID.

The following example shows the commands performed, with the user.

```
(efa:extreme)extreme@node-1:~$ efa tenant execution show
+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+
|          ID          | ENTITY   | COMMAND   | STATUS   | START TIME |
|          END TIME   | USER NAME |           |          |            |
+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+
| c8e2a628-9633-4903 | EndpointGroup | Show      | succeeded | 2021-01-27T13:27:29Z |
2021-01-27T13:27:29Z | extreme      |           |          |                    |
| a99df80f-b462-4cd0 | EndpointGroup | Show      | succeeded | 2021-01-27T13:27:22Z |
2021-01-27T13:27:22Z | extreme      |           |          |                    |
| 9f612208-92dc-42c1 | EndpointGroup | DetachNetwork | succeeded | 2021-01-27T13:27:15Z |
2021-01-27T13:27:15Z | extreme      |           |          |                    |
| ee25aa95-b99d-4231 | EndpointGroup | Show      | succeeded | 2021-01-27T13:25:55Z |
2021-01-27T13:25:56Z | extreme      |           |          |                    |
| a0249657-b1fe-4d2b | EndpointGroup | ShowAll   | succeeded | 2021-01-27T13:25:27Z |
2021-01-27T13:25:27Z | extreme      |           |          |                    |
| 55ec0bef-89a1-42ff | Tenant       | ShowAll   | succeeded | 2021-01-27T13:25:26Z |
2021-01-27T13:25:26Z | extreme      |           |          |                    |
| c18ad360-826e-42c1 | EndpointGroup | ShowAll   | succeeded | 2021-01-27T13:25:26Z |
2021-01-27T13:25:26Z | extreme      |           |          |                    |
| b0b94b89-bdaa-435f | EndpointGroup | ShowAll   | succeeded | 2021-01-27T13:25:26Z |
2021-01-27T13:25:26Z | extreme      |           |          |                    |
```

```

| d9c88574-9dea-44a2 | EndpointGroup | Show          | failed   | 2021-01-27T13:20:32Z |
2021-01-27T13:20:32Z | extreme      |
| 0b9944d6-a8e4-42f8 | EndpointGroup | Show          | succeeded | 2021-01-27T13:20:21Z |
2021-01-27T13:20:21Z | extreme      |
+-----+-----+-----+-----+-----+
+-----+-----+
For more details of execution, run 'efa tenant execution show --id <ID>'
=====
-----
--- Time Elapsed: 156.392772ms ---

```

**efa tenant execution show-event**

The following example shows the list of event histories.

```

(efa:extreme)extreme@node-1:~$ efa tenant execution show-event
+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+
| EXECUTION UUID | DATE           | SERVICE | EVENT |
DEVICE          | MESSAGE-TYPE | MESSAGE-OBJECT | MESSAGE
|                | ERROR        |
+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+
| 76b8e798-adb0-459f | 2021-01-27T13:08:03Z | tenant | po-create |
10.20.216.15,10.20.216.16 | po | poll | Portchannel creation
succeeded |
|                |                |                |                |
|                |                |                |                | for ports on device
poll |
| 76b8e798-adb0-459f | 2021-01-27T13:08:04Z | tenant | po-create |
10.20.216.15,10.20.216.16 | po | poll | Configuration on
devices |
|                |                |                |                |
|                |                |                |                | succeeded for Port
Channel |
|                |                |                |                |
|                |                |                |                |
poll |
| 76b8e798-adb0-459f | 2021-01-27T13:08:04Z | tenant | po-create |
10.20.216.15,10.20.216.16 | po | poll | Updating Dev state on
database |
|                |                |                |                |
|                |                |                |                | succeeded for Port
Channel |
|                |                |                |                |
|                |                |                |                |
poll |
+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+
--- Time Elapsed: 189.538402ms ---

```

**efa tenant execution delete [ --days value ]**

**--days**

Delete run entries older than the specified days.

The following example deletes run entries older than the specified number of days.

```
(efa:extreme)extreme@node-1:~$ efa tenant execution delete --days 1
```

```
Execution entries deleted successfully.  
--- Time Elapsed: 210.106127ms ---
```

## efa tenant po configure

---

Pushes or removes pending PO configuration.

### Syntax

```
efa tenant po configure [ --name | --tenant | --help ]
```

### Parameters

**--name**

Specifies the name of the port channel.

**--tenant**

Specifies the name of the tenant.

**--help**

Provides help for the selected command.

This example pushes or removes pending PO configuration.

```
(efa:extreme)extreme@node-1:~$ efa tenant po configure --name po1 --tenant tenant11  
PortChannel: po1 configured successfully.  
--- Time Elapsed: 318.075604ms ---
```

## efa tenant po create

Creates a port channel for a tenant.

### Syntax

```
efa tenant po create [ --name po-name | --tenant tenant-name | --description description | --speed speed | --negotiation active | passive | static | --port port-info | --min-link-count num-links | --number interface_number | --lACP-timeout long | short | --mtu int32 ]
```

### Parameters

**--name** *po-name*

Specifies the port channel name.

**--tenant** *tenant-name*

Specifies the tenant name.

**--description** *description*

Describes the port channel.

**--speed** *speed*

Configures the speed for the port channel and its member ports. Valid values are 100Mbps, 1Gbps, 10Gbps, 25Gbps, 40Gbps, and 100Gbps.

**--negotiation active | passive | static**

Configures LACP Negotiation mode for a port channel. Valid values are active, passive, and static.

**--port** *port-info*

Specifies the device IP address and Ethernet port details. Example: SW1\_IP[0/1],SW2\_IP[0/5]

**--min-link-count** *num-links*

Specifies the least number of links that need to be operationally up to declare the port channel as operationally up. The default value is 1. Valid values are 1 through 64.

**--number** *interface\_number*

Specifies the port channel interface number generated by the service.

**--lACP-timeout long | short**

Specifies the length of the timeout. Valid values are short and long.

**--mtu int32**

MTU configuration for the PortChannel. Valid values are 1500 through 9216.

### Examples

This example creates a dual-homed PO.

```
(efa:extreme)extreme@node-1:~$ efa tenant po create --tenant tenant11 --name po1
--speed 100Gbps --negotiation active --lACP-timeout short --port 10.20.216.15[0/12-13],
10.20.216.16[0/12-13]
--min-link-count 2
```

```
PortChannel created successfully.
```

This example creates a single-homed PO.

```
((efa:extreme)extreme@node-1:~$ efa tenant po create --tenant "tenant11" --name "po2"  
--speed 10Gbps --negotiation static --port 10.20.216.15[0/15] --min-link-count 1  
--description po2
```

```
PortChannel created successfully.
```

```
--- Time Elapsed: 3.894884521s ---
```



## efa tenant po delete

---

Deletes a portchannel.

### Syntax

```
efa tenant po delete [ --name | --force | --tenant | --help]
```

### Parameters

**--name**

Specifies portchannel name or comma-separated portchannel names. Ex: po1 or po1,po2,po3.

**--force**

Forces the portchannel deletion if the option is provided.

**--tenant**

Specifies the tenant name.

**--help**

Displays help for delete.

### Examples

This example deletes the specified POs.

```
(efa:extreme)extreme@node-1:~$ efa tenant po delete --name po1,po2 --tenant tenant11  
PortChannel: po1 deleted successfully.  
PortChannel: po2 deleted successfully.  
--- Time Elapsed: 1.133774283s ---
```

This example deletes a PO even when it is associated with an EPG.

```
(efa:extreme)extreme@node-1:~$ efa tenant po delete --name po1 --tenant tenant11 --force  
PortChannel Delete with force will update associated EndpointGroups and Networks and  
deletes them if there are no other ports associated to them (N/Y): y  
PortChannel: po1 deleted successfully.  
--- Time Elapsed: 1.890092303s ---
```

## efa tenant po show

Shows brief or detailed output of the port channel of all tenants, a given tenant, or a given port channel.

### Syntax

```
efa tenant po show [--name po-name | --tenant tenant-name | --detail | --help]
```

### Parameters

**--name** *po-name*

Specifies the port channel name.

**--tenant** *tenant-name*

Specifies the tenant name.

**--detail**

Displays detailed output of the port channel. When this parameter is not used, only brief tabular output is returned.

**--help**

Displays help for the command.

### Examples

This example shows brief output of all port channels.

```
$ efa tenant po show
+-----+-----+-----+-----+-----+-----+-----+
| Name | Tenant | ID | Description | Speed | Negotiation | MinLinkCount |
+-----+-----+-----+-----+-----+-----+-----+
| po1 | tenant11 | 1 | EFA Port-channel po1 | 100Gbps | active | 2 |
| | | | | | | |
+-----+-----+-----+-----+-----+-----+-----+
| po2 | tenant11 | 2 | po2 | 10Gbps | static | 1 |
| | | | | | | |
+-----+-----+-----+-----+-----+-----+-----+
| po11 | tenant21 | 3 | EFA Port-channel po11 | 25Gbps | active | 1 |
| | | | | | | |
+-----+-----+-----+-----+-----+-----+-----+
| Ports | LacpTimeout | State | Dev-State | App-State |
+-----+-----+-----+-----+-----+-----+
| 10.20.216.15[0/12-13] | short | po-created | provisioned | cfg-in-sync |
| 10.20.216.16[0/12-13] | | | | |
+-----+-----+-----+-----+-----+-----+-----+
| 10.20.216.15[0/15] | | po-created | provisioned | cfg-in-sync |
| 10.20.216.16[0/15] | | | | |
+-----+-----+-----+-----+-----+-----+-----+
| 10.20.216.15[0/22] | short | po-created | provisioned | cfg-in-sync |
| 10.20.216.16[0/22] | | | | |
+-----+-----+-----+-----+-----+-----+-----+

PortChannel Details

--- Time Elapsed: 832.496716ms ---
```

This example shows detailed output of all port channels.

```

$ efa tenant po show --detail
=====
Name          : po1
Tenant        : tenant11
ID            : 1
Description    : EFA Port-channel po1
Speed         : 100Gbps
Negotiation    : active
Min Link Count : 2
Lacp Timeout   : short
Ports         : 10.20.216.15[0/12-13]
               : 10.20.216.16[0/12-13]

State         : po-created
Dev State     : provisioned
App State     : cfg-in-sync

=====
Name          : po2
Tenant        : tenant11
ID            : 2
Description    : EFA Port-channel po3
Speed         : 10Gbps
Negotiation    : static
Min Link Count : 1
Lacp Timeout   :
Ports         : 10.20.216.15[0/15]
               : 10.20.216.16[0/15]

State         : po-created
Dev State     : provisioned
App State     : cfg-in-sync

=====
Name          : po11
Tenant        : tenant21
ID            : 3
Description    : EFA Port-channel po11
Speed         : 25Gbps
Negotiation    : active
Min Link Count : 1
Lacp Timeout   : short
Ports         : 10.20.216.15[0/22]
               : 10.20.216.16[0/22]

State         : po-created
Dev State     : provisioned
App State     : cfg-in-sync

=====

--- Time Elapsed: 506.117046ms ---

```

This example shows brief output of a specific port channel.

```

$ efa tenant po show --tenant tenant11 --name po1
+-----+-----+-----+-----+-----+-----+
| Name | Tenant | ID | Speed | Negotiation | Min Link | Lacp |
|      |        |   |       |              | Count    | Timeout |
+-----+-----+-----+-----+-----+-----+
| po1  | tenant11 | 1 | 100Gbps | active      | 1        | short |
|      |          |   |         |             |          |      |
+-----+-----+-----+-----+-----+
| Lacp |        | Ports | State | Dev State | App State |
+-----+-----+-----+-----+-----+

```

```

| Timeout |           |           |           |           |
+-----+-----+-----+-----+-----+
| short   | 10.20.216.15[0/12] | po-created | provisioned | cfg-in-sync |
|         | 10.20.216.16[0/12] |           |           |           |
+-----+-----+-----+-----+-----+

```

PortChannel Details

--- Time Elapsed: 150.30883ms ---

This example shows detailed output of all port channels belonging to a tenant.

```
$ efa tenant po show --tenant tenant21 --detail
```

```

=====
Name           : po11
Tenant         : tenant21
ID             : 3
Description    : EFA Port-channel po11
Speed         : 25Gbps
Negotiation    : active
Min Link Count : 1
Lacp Timeout  : short
Ports         : 10.20.216.15[0/22]
               : 10.20.216.16[0/22]
State         : po-created
Dev State     : provisioned
App State     : cfg-in-sync
=====

```

--- Time Elapsed: 223.892847ms ---

## efa tenant po update

Updates port channel parameters such as name, operation, management IP, and port.

### Syntax

```
efa tenant po update [ --name po-name | --tenant tenant-name | --operation port-add | port-delete | lACP-timeout | description | min-link-count | mtu-add | mtu-delete | --port port-list | --lACP-timeout long | short | --min-link-count num-links | --description description | --mtu int32 ]
```

### Parameters

**--name** *po-name*

Specifies the name of the port channel.

**--tenant** *tenant-name*

Specifies tenant name.

**--operation** **port-add** | **port-delete** | **lACP-timeout** | **description** | **min-link-count** | **mtu-add** | **mtu-delete**

Adds or deletes operation on the ports. Valid options are port-add | port-delete | lACP-timeout | description | min-link-count | mtu-add | mtu-delete.

**--port** *port-list*

Specifies device IP along with ethernet port details. Example: SW1\_IP [0/1], SW2\_IP[0/5]

**--lACP-timeout** **long** | **short**

Specifies LACP timeout configuration. Valid values are short | long.

**--min-link-count** *num-links*

Specifies the least number of links that need to be operationally up to declare the port channel as operationally up. The default value is 1. Valid values are 1 through 64.

**--description**

Describes the port channel.

**--mtu int32**

MTU configuration for the PortChannel. Valid values are 1500 through 9216.

### Examples

This example updates the min-link-count of an existing PO.

```
(efa:extreme)extreme@node-1:~$ efa tenant po update --name po11 --tenant tenant21
--operation min-link-count --min-link-count 1

PortChannel: po11 updated successfully.

--- Time Elapsed: 378.143836ms ---
```

This example updates the lACP-timeout of an existing PO.

```
(efa:extreme)extreme@node-1:~$ efa tenant po update --name po11 --tenant tenant21
--operation lACP-timeout --lACP-timeout long

PortChannel: po11 updated successfully.

--- Time Elapsed: 5.883514246s ---
```

## efa tenant service bgp peer configure

---

Pushes or removes a pending configuration for a BGP peer instance.

### Syntax

```
efa tenant service bgp peer configure [ --help | --name peer-name | --tenant tenant-name ]
```

### Parameters

**--help**

Provides help for the command.

**--name** *peer-name*

Specifies the name of the BGP peer instance.

**--tenant** *tenant-name*

Specifies the name of the tenant.

This example pushes or removes a pending configuration for a BGP peer instance.

```
(efa:extreme)extreme@node-1:~$ efa tenant service bgp peer configure --name B2 --tenant
tenant11

BgpService configured successfully.

--- Time Elapsed: 860.504374ms ---
```

## efa tenant service bgp peer create

Creates a BGP peer for a specified VRF.

### Syntax

```
efa tenant service bgp peer create [ --description description | --ipv4-uc-dyn-nbr string | --ipv4-uc-nbr string | --ipv4-uc-nbr-bfd string | --ipv4-uc-nbr-next-hop-self string | --ipv4-uc-nbr-update-source-ip string | --ipv6-uc-dyn-nbr string | --ipv6-uc-nbr string | --ipv6-uc-nbr-bfd string | --ipv4-uc-nbr-md5-password string | --ipv6-uc-nbr-md5-password string | --ipv6-uc-nbr-next-hop-self string | --ipv6-uc-nbr-update-source-ip string | --name peer-name peer-add | peer-delete | desc-update | --tenant tenant-name | --md5-password-prompt-enable true | false ]
```

### Parameters

**--description** *description*

Describes the BGP service.

**--ipv4-uc-dyn-nbr** *string*

Identifies the IPv4 unicast dynamic neighbor with a string in the following format: *device-ip,vrf-name:ipv4-listen-range,peer-group-name,listen-limit*. For example: *10.x.x.x,red:11::22/127*. The *listen-limit* value is optional.

**--ipv4-uc-nbr** *string*

Identifies the IPv4 unicast neighbor with a string in the following format: *device-ip,vrf-name:ipv4-neighbor,remote-as*. For example: *10.x.x.x,red:10.20.30.40,5000*.

**--ipv4-uc-nbr-bfd** *string*

Identifies the IPv4 BFD unicast neighbor with a string in the following format: *device-ip,vrf-name:ipv4-neighbor,bfd-enable (true/false),bfd-interval,bfd-min-rx,bfd-multiplier*. For example:

*10.x.x.x,red:10.20.30.40,true,100,200,5*.

**--ipv4-uc-nbr-next-hop-self** *string*

Identifies the next-hop-self for the IPv4 unicast neighbor with a string in the following format: *device-ip,vrf-name:ipv4-neighbor,next-hop-self (true/false/always)*. For example: *10.x.x.x,red:10.y.y.y,true*.

**--ipv4-uc-nbr-update-source-ip** *string*

Updates the source IP for the IPv4 unicast neighbor with a string in the following format: *device-ip,vrf-name:ipv4-neighbor,update-source-ip*. For example: *10.x.x.x,red:10.y.y.y,11.x.x.x*.

**--ipv6-uc-dyn-nbr** *string*

Identifies the IPv6 unicast dynamic neighbor with a string in the following format: *device-ip,vrf-name:ipv6-listen-range,peer-group-name,listen-limit*. The *listen-limit* value is optional.



**--ipv6-uc-nbr** *string*

Identifies the IPv6 unicast neighbor with a string in the following format: `device-ip,vrf-name:ipv6-neighbor,remote-as`. For example: `10.x.x.x,red:10::40,5000`.

**--ipv6-uc-nbr-bfd** *string*

Identifies the IPv6 BFD unicast neighbor with a string in the following format: `device-ip,vrf-name:ipv6-neighbor,bfd-enable(true/false),bfd-interval,bfd-min-rx,bfd-multiplier`. For example: `10.x.x.x,red:10::40,true,100,200,5`.

**--ipv4-uc-nbr-md5-password** *string*

IPv4 Unicast Neighbor md5-password, in the format `device-ip,vrf-name:ipv4-neighbor,ipv4-md5-password`.

Example for encrypted/password containing special characters: `--ipv4-uc-nbr-md5-password device-ip,vrf-name:ipv4-neighbor,'$9$MCgKGaNt6OASX68/7TC6Lw=='`

**--ipv6-uc-nbr-md5-password** *string*

IPv6 Unicast Neighbor md5-password, in the format `device-ip,vrf-name:ipv6-neighbor,ipv6-md5-password`.

Example for encrypted/password containing special characters: `--ipv6-uc-nbr-md5-password device-ip,vrf-name:ipv6-neighbor,'$9$MCgKGaNt6OASX68/7TC6Lw=='`

**--ipv6-uc-nbr-next-hop-self** *string*

Identifies the next-hop-self for the IPv6 unicast neighbor with a string in the following format: `device-ip,vrf-name:ipv6-neighbor,next-hop-self(true/false/always)`. For example: `10.x.x.x,red:10::40,true`.

**--ipv6-uc-nbr-update-source-ip** *string*

Updates the source IP for the IPv6 unicast neighbor with a string in the following format: `device-ip,vrf-name:ipv6-neighbor,update-source-ip`. For example: `10.x.x.x,red:10::40,11::22`.

**--name** *peer-name*

Identifies the name of the BGP peer instance.

**--tenant** *tenant-name*

Identifies the name of the tenant.

**--md5-password-prompt-enable** **true | false**

Turns on secure input for the MD5 password. The default is false.

The following examples create a static BGP peer (IPv4/IPv6).

```
(efa:extreme)extreme@node-1:~$ efa tenant service bgp peer create --name B1 --tenant
tenant11 --ipv4-uc-nbr 10.20.216.16,blue11:1.1.1.11,95001 --ipv4-uc-nbr-bfd
10.20.216.16,blue11:1.1.1.11,true,50,5000,50 --ipv4-uc-nbr-next-hop-self
10.20.216.16,blue11:1.1.1.11,always --ipv4-uc-nbr-update-source-ip
10.20.216.16,blue11:1.1.1.11,10.11.12.13 --ipv6-uc-nbr
10.20.216.16,blue11:20a1:a::10,95001 --ipv6-uc-nbr-bfd
10.20.216.16,blue11:20a1:a::10,true,50,5000,50 --ipv6-uc-nbr-next-hop-self
10.20.216.16,blue11:20a1:a::10,always --ipv6-uc-nbr-update-source-ip
```

```
10.20.216.16,blue11:20a1:a::10,20::10
```

```
BgpService created successfully.
```

```
--- Time Elapsed: 4.144354035s ---
```

The following examples create a dynamic BGP peer (IPv4/IPv6).

```
(efa:extreme)extreme@node-1:~$ efa tenant service bgp peer create --name B2 --tenant
tenant11 --ipv6-uc-dyn-nbr 10.20.216.16,blue11:15::/127,pg1,10 --ipv4-uc-dyn-nbr
10.20.216.16,blue11:15.15.15.0/28,pg1,10
```

```
BgpService created successfully.
```

```
--- Time Elapsed: 1.852356132s ---
```

The following example creates a BGP peer md5-password in a secure manner.

For the complete procedure, see the topic “Configure BGP MD5 Authentication for Tenant BGP Peer and Peer-group Securely” topic in the ExtremeFabric Security Guide.

```
efa tenant service bgp peer create --name bgp173-2501 --tenant tenant11
--ipv4-uc-nbr 10.20.246.6,v1:25.1.1.3,5901
--ipv4-uc-nbr-bfd 10.20.246.6,v1:25.1.1.3,true
--ipv6-uc-nbr 10.20.246.5,v1:25:1::3,5901
--ipv6-uc-nbr-bfd 10.20.246.5,v1:25:1::3,true
--md5-password-prompt-enable=true
```

## efa tenant service bgp peer delete

Deletes the BGP neighbors for a given VRF on the fabric device.

### Syntax

```
efa tenant service bgp peer delete [ --force | --help | --name service-name | --tenant tenant-name ]
```

### Parameters

**--force**

Forces BGP service deletion when set to true.

**--help**

Displays help for delete.

**--name**

Specifies the name of the BGP service instance.

**--tenant**

Specifies the name of the tenant.

### Examples

The following example deletes the BGP peer instance.

```
(efa:extreme)extreme@node-1:~$ efa tenant service bgp peer delete --name B1 --tenant
tenant11

BgpService deleted successfully.

--- Time Elapsed: 4.301665698s ---
```

The following example deletes the BGP peer instance forcefully avoiding any error.

```
(efa:extreme)extreme@node-1:~$ efa tenant service bgp peer delete --name B1 --tenant
tenant11 --force

Bgp Service delete with "force" option will delete the device configuration corresponding
to the bgp and also deletes the Bgp record from the application. Do you want to proceed
(Y/N): y

BgpService deleted successfully.

--- Time Elapsed: 4.301665698s ---
```

## efa tenant service bgp peer operational show

Gets the operational state of the BGP peers belonging to both default-vrf and tenant-vrf.

### Syntax

```
efa tenant service bgp peer operational show [--tenant name | --vrf
name ]
```

### Parameters

**--tenant** *name*

Specifies the name of the tenant.

**--vrf** *name*

Specifies the name of the VRF.

### Examples

```
efa tenant service bgp peer operational show --tenant tenant2 --vrf vrf101
+-----+-----+-----+-----+-----+-----+-----+-----+
| Tenant | VRF   | Source | Destination | Source Device | BGP Peer |
| BGP Peer | BGP Peer | Device IP | Device IP | Router ID | BGP Peer |
| Source ASN | Destination ASN | AFI | SAFI | Session State | IP |
+-----+-----+-----+-----+-----+-----+-----+-----+
| tenant2 | vrf101 | 10.20.246.24 | 172.31.254.178 | 10.40.40.251 |
65000 | 65000 | ipv4 | unicast | CONN |
+-----+-----+-----+-----+-----+-----+-----+-----+
| tenant2 | vrf101 | 10.20.246.24 | 172.31.254.178 | 121.10.1.1 |
65000 | 4200000000 | ipv4 | unicast | CONN |
+-----+-----+-----+-----+-----+-----+-----+-----+
| tenant2 | vrf101 | 10.20.246.24 | 172.31.254.178 | 121:a::1 |
65000 | 4200000000 | ipv6 | unicast | CONN |
+-----+-----+-----+-----+-----+-----+-----+-----+
| tenant2 | vrf101 | 10.20.246.24 | 172.31.254.178 | fd40:4040:4040:1::fd |
65000 | 65000 | ipv6 | unicast | CONN |
+-----+-----+-----+-----+-----+-----+-----+-----+
| tenant2 | vrf101 | 10.20.246.23 | 172.31.254.114 | 10.40.40.250 |
65000 | 65000 | ipv4 | unicast | CONN |
+-----+-----+-----+-----+-----+-----+-----+-----+
| tenant2 | vrf101 | 10.20.246.23 | 172.31.254.114 | 121.10.1.2 |
65000 | 4200000000 | ipv4 | unicast | CONN |
+-----+-----+-----+-----+-----+-----+-----+-----+
| tenant2 | vrf101 | 10.20.246.23 | 172.31.254.114 | fd40:4040:4040:1::fc |
65000 | 65000 | ipv6 | unicast | CONN |
+-----+-----+-----+-----+-----+-----+-----+-----+
```

```

+-----+-----+-----+-----+-----+
BGP Summary
+-----+-----+-----+-----+-----+
efa tenant service bgp peer operational show
+-----+-----+-----+-----+-----+
+-----+
| Tenant | VRF | Source | Destination | Source Device | BGP
Peer | BGP Peer | BGP Peer | BGP Peer | BGP Peer | BGP Peer |
| | | Device IP | Device IP | Router ID |
IP | Source ASN | Destination ASN | AFI | SAFI | Session State |
+-----+-----+-----+-----+-----+
+-----+
| tenant2 | vrf102 | 10.20.246.24 | | 172.31.254.178 |
10.40.40.251 | 65000 | 34566 | ipv4 | unicast | CONN
|
+-----+-----+-----+-----+-----+
+-----+
| tenant2 | vrf102 | 10.20.246.24 | | 172.31.254.178 |
121.10.1.1 | 65000 | 4200000000 | ipv4 | unicast | CONN
|
+-----+-----+-----+-----+-----+
+-----+
| tenant2 | vrf102 | 10.20.246.24 | | 172.31.254.178 |
121:a::1 | 65000 | 4200000000 | ipv6 | unicast | CONN
|
+-----+-----+-----+-----+-----+
+-----+
| tenant2 | vrf102 | 10.20.246.24 | | 172.31.254.178 |
fd40:4040:4040:1::fd | 65000 | 34566 | ipv6 | unicast | CONN
|
+-----+-----+-----+-----+-----+
+-----+
| tenant2 | vrf102 | 10.20.246.23 | | 172.31.254.114 |
10.40.40.250 | 65000 | 34566 | ipv4 | unicast | CONN
|
+-----+-----+-----+-----+-----+
+-----+
| tenant2 | vrf102 | 10.20.246.23 | | 172.31.254.114 |
121.10.1.2 | 65000 | 4200000000 | ipv4 | unicast | CONN
|
+-----+-----+-----+-----+-----+
+-----+
| tenant2 | vrf102 | 10.20.246.23 | | 172.31.254.114 |
fd40:4040:4040:1::fc | 65000 | 34566 | ipv6 | unicast | CONN
|
+-----+-----+-----+-----+-----+
+-----+
| tenant2 | vrf101 | 10.20.246.23 | | 172.31.254.114 |
10.40.40.250 | 65000 | 65000 | ipv4 | unicast | CONN
|
+-----+-----+-----+-----+-----+
+-----+
| tenant2 | vrf101 | 10.20.246.23 | | 172.31.254.114 |
121.10.1.2 | 65000 | 4200000000 | ipv4 | unicast | CONN

```

```

|
+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+
+-----+
| tenant2 | vrf101      | 10.20.246.23 |          | 172.31.254.114 |
fd40:4040:4040:1::fc | 65000      | 65000          | ipv6      | unicast  | CONN
|
+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+
+-----+
| tenant2 | vrf101      | 10.20.246.24 |          | 172.31.254.178 |
10.40.40.251      | 65000      | 65000          | ipv4      | unicast  | CONN
|
+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+
+-----+
| tenant2 | vrf101      | 10.20.246.24 |          | 172.31.254.178 |
121.10.1.1        | 65000      | 4200000000    | ipv4      | unicast  | CONN
|
+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+
+-----+
| tenant2 | vrf101      | 10.20.246.24 |          | 172.31.254.178 |
121:a::1          | 65000      | 4200000000    | ipv6      | unicast  | CONN
|
+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+
+-----+
| tenant2 | vrf101      | 10.20.246.24 |          | 172.31.254.178 |
fd40:4040:4040:1::fd | 65000      | 65000          | ipv6      | unicast  | CONN
|
+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+
+-----+
|          | default-vrf | 10.20.246.21 |          | 172.31.254.237 |
10.10.10.13      | 66000      | 64512          | ipv4      | unicast  | ESTAB
|
+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+
+-----+
|          | default-vrf | 10.20.246.21 |          | 172.31.254.237 |
10.10.10.15      | 66000      | 64512          | ipv4      | unicast  | ESTAB
|
+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+
+-----+
|          | default-vrf | 10.20.246.21 |          | 172.31.254.237 |
10.10.10.13      | 66000      | 64512          | l2vpn     | evpn     | ESTAB
|
+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+
+-----+
|          | default-vrf | 10.20.246.21 |          | 172.31.254.237 |
10.10.10.15      | 66000      | 64512          | l2vpn     | evpn     | ESTAB
|
+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+
+-----+
|          | default-vrf | 10.20.246.21 |          | 172.31.254.237 |
10.20.20.9       | 66000      | 66000          | l2vpn     | evpn     | ESTAB
|
+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+
+-----+

```

```

|          | default-vrf | 10.20.246.22 |          | 172.31.254.218 |
10.10.10.5          | 66000      | 64512          | ipv4      | unicast | ESTAB
|
+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+
+-----+
|          | default-vrf | 10.20.246.22 |          | 172.31.254.218 |
10.10.10.7          | 66000      | 64512          | ipv4      | unicast | ESTAB
|
+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+
+-----+
|          | default-vrf | 10.20.246.22 |          | 172.31.254.218 |
10.10.10.5          | 66000      | 64512          | l2vpn     | evpn    | ESTAB
|
+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+
+-----+
|          | default-vrf | 10.20.246.22 |          | 172.31.254.218 |
10.10.10.7          | 66000      | 64512          | l2vpn     | evpn    | ESTAB
|
+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+
+-----+
|          | default-vrf | 10.20.246.22 |          | 172.31.254.218 |
10.20.20.8          | 66000      | 66000          | l2vpn     | evpn    | ESTAB
|
+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+
+-----+
|          | default-vrf | 10.20.246.14 |          | 172.31.254.239 |
10.10.10.0          | 64512      | 65000          | ipv4      | unicast | ESTAB
|
+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+
+-----+
|          | default-vrf | 10.20.246.14 |          | 172.31.254.239 |
10.10.10.2          | 64512      | 65000          | ipv4      | unicast | ESTAB
|
+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+
+-----+
|          | default-vrf | 10.20.246.14 |          | 172.31.254.239 |
10.10.10.4          | 64512      | 66000          | ipv4      | unicast | ESTAB
|
+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+
+-----+
|          | default-vrf | 10.20.246.14 |          | 172.31.254.239 |
10.10.10.6          | 64512      | 66000          | ipv4      | unicast | ESTAB
|
+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+
+-----+
|          | default-vrf | 10.20.246.14 |          | 172.31.254.239 |
10.10.10.8          | 64512      | 65000          | ipv4      | unicast | ESTAB
|
+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+
+-----+
|          | default-vrf | 10.20.246.14 |          | 172.31.254.239 |
10.10.10.10         | 64512      | 65000          | ipv4      | unicast | ESTAB
|
+-----+-----+-----+-----+-----+

```

```

+-----+-----+-----+-----+-----+
+-----+
|          | default-vrf | 10.20.246.14 |          | 172.31.254.239 |
10.10.10.12 | 64512      | 66000        | | ipv4      | unicast | ESTAB
|
+-----+-----+-----+-----+-----+
+-----+
|          | default-vrf | 10.20.246.14 |          | 172.31.254.239 |
10.10.10.14 | 64512      | 66000        | | ipv4      | unicast | ESTAB
|
+-----+-----+-----+-----+-----+
+-----+
|          | default-vrf | 10.20.246.14 |          | 172.31.254.239 |
10.10.10.0  | 64512      | 65000        | | l2vpn     | evpn    | ESTAB
|
+-----+-----+-----+-----+-----+
+-----+
|          | default-vrf | 10.20.246.14 |          | 172.31.254.239 |
10.10.10.2  | 64512      | 65000        | | l2vpn     | evpn    | ESTAB
|
+-----+-----+-----+-----+-----+
+-----+
|          | default-vrf | 10.20.246.14 |          | 172.31.254.239 |
10.10.10.4  | 64512      | 66000        | | l2vpn     | evpn    | ESTAB
|
+-----+-----+-----+-----+-----+
+-----+
|          | default-vrf | 10.20.246.14 |          | 172.31.254.239 |
10.10.10.6  | 64512      | 66000        | | l2vpn     | evpn    | ESTAB
|
+-----+-----+-----+-----+-----+
+-----+
|          | default-vrf | 10.20.246.14 |          | 172.31.254.239 |
10.10.10.8  | 64512      | 65000        | | l2vpn     | evpn    | ESTAB
|
+-----+-----+-----+-----+-----+
+-----+
|          | default-vrf | 10.20.246.14 |          | 172.31.254.239 |
10.10.10.10 | 64512      | 65000        | | l2vpn     | evpn    | ESTAB
|
+-----+-----+-----+-----+-----+
+-----+
|          | default-vrf | 10.20.246.14 |          | 172.31.254.239 |
10.10.10.12 | 64512      | 66000        | | l2vpn     | evpn    | ESTAB
|
+-----+-----+-----+-----+-----+
+-----+
|          | default-vrf | 10.20.246.14 |          | 172.31.254.239 |
10.10.10.14 | 64512      | 66000        | | l2vpn     | evpn    | ESTAB
|
+-----+-----+-----+-----+-----+
+-----+
|          | default-vrf | 10.20.246.23 |          | 172.31.254.114 |
10.10.10.9  | 65000      | 64512        | | ipv4      | unicast | ESTAB

```



```
|
+-----+-----+-----+-----+-----+
+-----+
|          | default-vrf | 10.20.246.23 |          | 172.31.254.114 |
10.10.10.11      | 65000      | 64512          | ipv4     | unicast  | ESTAB
|
+-----+-----+-----+-----+-----+
+-----+
|          | default-vrf | 10.20.246.23 |          | 172.31.254.114 |
10.10.10.9       | 65000      | 64512          | l2vpn    | evpn     | ESTAB
|
+-----+-----+-----+-----+-----+
+-----+
|          | default-vrf | 10.20.246.23 |          | 172.31.254.114 |
10.10.10.11      | 65000      | 64512          | l2vpn    | evpn     | ESTAB
|
+-----+-----+-----+-----+-----+
+-----+
|          | default-vrf | 10.20.246.23 |          | 172.31.254.114 |
10.20.20.6       | 65000      | 65000          | l2vpn    | evpn     | ESTAB
|
+-----+-----+-----+-----+-----+
+-----+
|          | default-vrf | 10.20.246.24 |          | 172.31.254.178 |
10.10.10.1       | 65000      | 64512          | ipv4     | unicast  | ESTAB
|
+-----+-----+-----+-----+-----+
+-----+
|          | default-vrf | 10.20.246.24 |          | 172.31.254.178 |
10.10.10.3       | 65000      | 64512          | ipv4     | unicast  | ESTAB
|
+-----+-----+-----+-----+-----+
+-----+
|          | default-vrf | 10.20.246.24 |          | 172.31.254.178 |
10.10.10.1       | 65000      | 64512          | l2vpn    | evpn     | ESTAB
|
+-----+-----+-----+-----+-----+
+-----+
|          | default-vrf | 10.20.246.24 |          | 172.31.254.178 |
10.10.10.3       | 65000      | 64512          | l2vpn    | evpn     | ESTAB
|
+-----+-----+-----+-----+-----+
+-----+
|          | default-vrf | 10.20.246.24 |          | 172.31.254.178 |
10.20.20.7       | 65000      | 65000          | l2vpn    | evpn     | ESTAB
|
+-----+-----+-----+-----+-----+
+-----+
BGP Summary
--- Time Elapsed: 21.822450796s ---
```

## efa tenant service bgp peer show

Shows brief or detailed output of the BGP neighbors for a given tenant.

### Syntax

```
efa tenant service bgp peer show [ --name peer-name | --tenant tenant-name
  | --detail | --help]
```

### Parameters

**--name** *peer-name*

Specifies the name of the BGP peer instance.

**--tenant** *tenant-name*

Specifies the name of the tenant.

**--detail**

Displays detailed output of the BGP peer instance. When this parameter is not used, only brief tabular output is returned.

**--help**

Displays help for the command.

### Examples

The following example shows brief output of all BGP peer instances.

```
(efa:extreme)extreme@node-1:~$ efa tenant service bgp peer show
=====
Name       : B2
Tenant     : tenant11
State      : bs-state-created

+-----+-----+-----+-----+-----+-----+-----+-----+
| Device IP | VRF  | AFI  | SAFI  | Remote IP | Remote ASN | Next Hop | Update |
|           |      |      |      |           |           | Self    | Source IP |
+-----+-----+-----+-----+-----+-----+-----+-----+
| BFD       |      |      |      |           |           | Dev State | App State |
| Enabled   | [Interval,Rx,Multiplier] |           |           |
+-----+-----+-----+-----+-----+-----+-----+
Static Peer Details

+-----+-----+-----+-----+-----+-----+-----+-----+
| Device-IP | VRF  | AFI  | SAFI  | Listen Range | Listen | Peer Group |
|           |      |      |      |              | Limit  |            |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 10.20.216.16 | blue11 | ipv4 | unicast | 15.15.15.0/28 | 10 | pg1 |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 10.20.216.16 | blue11 | ipv6 | unicast | 15::/127 | 10 | pg1 |
+-----+-----+-----+-----+-----+-----+-----+-----+
| Dev State | App State |
|           |           |
+-----+-----+-----+
| provisioned | cfg-in-sync |
```

```

+-----+-----+
| provisioned | cfg-in-sync |
+-----+-----+

Dynamic Peer Details

=====
Name          : B1
Tenant        : tenant11
State         : bs-state-created

+-----+-----+-----+-----+-----+-----+-----+
| Device IP  | VRF  | AFI  | SAFI  | Remote IP  | Remote ASN | Next Hop |
|            |      |      |      |            |            | Self     |
+-----+-----+-----+-----+-----+-----+-----+
| 10.20.216.16 | blue11 | ipv4 | unicast | 1.1.1.11  | 95001      | always   |
+-----+-----+-----+-----+-----+-----+-----+
| 10.20.216.16 | blue11 | ipv6 | unicast | 20a1:a::10 | 95001      | always   |
+-----+-----+-----+-----+-----+-----+-----+

| Update    | BFD   | BFD   | Dev State | App State |
| Source IP | Enabled | [Interval,Rx,Multiplier] |           |           |
+-----+-----+-----+-----+-----+-----+-----+
| 10.11.12.13 | true  | 50, 5000, 50 | provisioned | cfg-in-sync |
+-----+-----+-----+-----+-----+-----+-----+
| 20::10     | true  | 50, 5000, 50 | provisioned | cfg-in-sync |
+-----+-----+-----+-----+-----+-----+-----+

Static Peer Details

+-----+-----+-----+-----+-----+-----+-----+
+-----+
| Device-IP | VRF  | AFI  | SAFI  | Listen Range | Listen | Peer Group | Dev State | App
State |
|           |      |      |      |              | Limit  |           |           |
+-----+-----+-----+-----+-----+-----+-----+
+-----+
Dynamic Peer Details

=====

--- Time Elapsed: 482.525744ms ---

```

The following example shows detailed output of a specific BGP peer instance.

```

efa tenant service bgp peer show --name B2 --tenant tenant11 --detail
=====
Name          : B2
Tenant        : tenant11
State         : bs-state-created
Description   :

Static Peer
-----
          0 Records

Dynamic Peer
-----
Device IP      : 10.20.216.16
VRF           : blue11
AFI           : ipv4
SAFI          : unicast
Listen Range  : 15.15.15.0/28

```

```

Listen Limit      : 10
Peer Group       : pg1
Dev State        : provisioned
App State        : cfg-in-sync

Device IP        : 10.20.216.16
VRF              : blue11
AFI              : ipv6
SAFI             : unicast
Listen Range     : 15::/127
Listen Limit     : 10
Peer Group       : pg1
Dev State        : provisioned
App State        : cfg-in-sync

=====

--- Time Elapsed: 129.553981ms ---

```

The following example shows brief output of all BGP peer instances belonging to a tenant.

```

$ efa tenant service bgp peer show --tenant tenant11
=====
Name      : B1
Tenant    : tenant11
State     : bs-state-created

+-----+-----+-----+-----+-----+-----+-----+
| Device IP | VRF | AFI | SAFI | Remote IP | Remote ASN | Next Hop |
|           |     |     |     |           |           | Self     |
+-----+-----+-----+-----+-----+-----+-----+
| 10.20.216.16 | blue11 | ipv4 | unicast | 1.1.1.11 | 95001 | always |
+-----+-----+-----+-----+-----+-----+-----+
| 10.20.216.16 | blue11 | ipv6 | unicast | 20a1:a::10 | 95001 | always |
+-----+-----+-----+-----+-----+-----+-----+
| Update | BFD | BFD | Dev State | App State |
| Source IP | Enabled | [Interval,Rx,Multiplier] | | |
+-----+-----+-----+-----+-----+-----+-----+
| 10.11.12.13 | true | 50, 5000, 50 | provisioned | cfg-in-sync |
+-----+-----+-----+-----+-----+-----+-----+
| 20::10 | true | 50, 5000, 50 | provisioned | cfg-in-sync |
+-----+-----+-----+-----+-----+-----+-----+
Static Peer Details

+-----+-----+-----+-----+-----+-----+-----+
+-----+
| Device-IP | VRF | AFI | SAFI | Listen Range | Listen | Peer Group | Dev State | App
State |
|           |     |     |     |           | Limit |           |           |
|           |     |     |     |           |       |           |           |
+-----+-----+-----+-----+-----+-----+-----+
+-----+
Dynamic Peer Details

=====
Name      : B2
Tenant    : tenant11
State     : bs-state-created

+-----+-----+-----+-----+-----+-----+-----+
| Device IP | VRF | AFI | SAFI | Remote IP | Remote ASN | Next Hop |
|           |     |     |     |           |           | Self     |
+-----+-----+-----+-----+-----+-----+-----+

```

```
+-----+-----+-----+-----+-----+-----+-----+
| Update | BFD | BFD | Dev State | App State |
| Source IP | Enabled | [Interval,Rx,Multiplier] | | |
+-----+-----+-----+-----+-----+-----+-----+
Static Peer Details

+-----+-----+-----+-----+-----+-----+-----+
| Device-IP | VRF | AFI | SAFI | Listen Range | Listen |
| | | | | | Limit |
+-----+-----+-----+-----+-----+-----+-----+
| 10.20.216.16 | blue11 | ipv6 | unicast | 15::/127 | 10 |
+-----+-----+-----+-----+-----+-----+-----+
| 10.20.216.16 | blue11 | ipv4 | unicast | 15.15.15.0/28 | 10 |
+-----+-----+-----+-----+-----+-----+-----+
| Peer Group | Dev State | App State |
| | | |
+-----+-----+-----+-----+-----+-----+
| pg1 | provisioned | cfg-in-sync |
+-----+-----+-----+-----+-----+-----+
| pg1 | provisioned | cfg-in-sync |
+-----+-----+-----+-----+-----+-----+
Dynamic Peer Details

=====

--- Time Elapsed: 138.308272ms ---
```

## efa tenant service bgp peer update

Adds, deletes, or updates a BGP peer instance.

### Syntax

```
efa tenant service bgp peer update [ --description description | --ipv4-uc-dyn-nbr string | --ipv4-uc-nbr string | --ipv4-uc-nbr-bfd string | --ipv4-uc-nbr-next-hop-self string | --ipv4-uc-nbr-update-source-ip string | --ipv6-uc-dyn-nbr string | --ipv6-uc-nbr string | --ipv6-uc-nbr-bfd string | --ipv4-uc-nbr-md5-password password | --ipv6-uc-nbr-md5-password password | --ipv6-uc-nbr-next-hop-self string | --ipv6-uc-nbr-update-source-ip string | --name peer-name | --operation peer-add | peer-delete | desc-update | --tenant tenant-name --md5-password-prompt-enable true | false ]
```

### Parameters

**--description** *description*

Describes the BGP service.

**--ipv4-uc-dyn-nbr** *string*

Identifies the IPv4 unicast dynamic neighbor with a string in the following format: *device-ip,vrf-name:ipv4-listen-range,peer-group-name,listen-limit*. For example: *10.x.x.x,red:11::22/127*. The *listen-limit* value is optional.

**--ipv4-uc-nbr** *string*

Identifies the IPv4 unicast neighbor. For *peer-add* operations, enter a string in the following format: *device-ip,vrf-name:ipv4-neighbor,remote-as*. For example: *10.x.x.x,red:10.20.30.40,5000*. The *remote-as* value is not required for *peer-delete* operations.

**--ipv4-uc-nbr-bfd** *string*

Identifies the IPv4 BFD unicast neighbor with a string in the following format: *device-ip,vrf-name:ipv4-neighbor,bfd-enable (true/false),bfd-interval,bfd-min-rx,bfd-multiplier*. For example: *10.x.x.x,red:10.20.30.40,true,100,200,5*. BFD parameters are optional for *peer-add* operations and not required for *peer-delete* operations.

**--ipv4-uc-nbr-next-hop-self** *string*

Identifies the next-hop-self for the IPv4 unicast neighbor with a string in the following format: *device-ip,vrf-name:ipv4-neighbor,next-hop-self (true/false/always)*. For example: *10.x.x.x,red:10.y.y.y,true*.

**--ipv4-uc-nbr-update-source-ip** *string*

Updates the source IP for the IPv4 unicast neighbor with a string in the following format: *device-ip,vrf-name:ipv4-neighbor,update-source-ip*. For example: *10.x.x.x,red:10.y.y.y,11.x.x.x*.

**--ipv6-uc-dyn-nbr** *string*

Identifies the IPv6 unicast dynamic neighbor with a string in the following format: `device-ip,vrf-name:ipv6-listen-range,peer-group-name,listen-limit`. The `listen-limit` value is optional.

**--ipv6-uc-nbr** *string*

Identifies the IPv6 unicast neighbor. For `peer-add` operations, enter a string in the following format: `device-ip,vrf-name:ipv6-neighbor,remote-as`. For example: `10.x.x.x,red:10::40,5000`. The `remote-as` value is not required for `peer-delete` operations.

**--ipv6-uc-nbr-bfd** *string*

Identifies the IPv6 BFD unicast neighbor with a string in the following format: `device-ip,vrf-name:ipv6-neighbor,bfd-enable(true/false),bfd-interval,bfd-min-rx,bfd-multiplier`. For example: `10.x.x.x,red:10::40,true,100,200,5`. BFD parameters are optional for `peer-add` operations and are not required for `peer-delete` operations.

**--ipv4-uc-nbr-md5-password** *password*

IPv4 Unicast Neighbor md5-password in the format `device-ip,vrf-name:ipv4-neighbor,ipv4-md5-password`.

Example for encrypted/password containing special characters: `--ipv4-uc-nbr-md5-password device-ip,vrf-name:ipv4-neighbor,'$9$MCgKGaNT6OASX68/7TC6Lw=='`

**--ipv6-uc-nbr-md5-password** *password*

IPv6 Unicast Neighbor md5-password in the format `device-ip,vrf-name:ipv6-neighbor,ipv6-md5-password`.

Example for encrypted/password containing special characters: `--ipv6-uc-nbr-md5-password device-ip,vrf-name:ipv6-neighbor,'$9$MCgKGaNT6OASX68/7TC6Lw=='`

**--ipv6-uc-nbr-next-hop-self** *string*

Identifies the next-hop-self for the IPv6 unicast neighbor with a string in the following format: `device-ip,vrf-name:ipv6-neighbor,next-hop-self(true/false/always)`. For example: `10.x.x.x,red:10::40,true`.

**--ipv6-uc-nbr-update-source-ip** *string*

Updates the source IP for the IPv6 unicast neighbor with a string in the following format: `device-ip,vrf-name:ipv6-neighbor,update-source-ip`. For example: `10.x.x.x,red:10::40,11::22`.

**--name** *peer-name*

Identifies the name of the BGP peer instance.

**--operation** `peer-add` | `peer-delete` | `desc-update`

Identifies the type of operation you are performing: add a peer, delete a peer, or update a description.

**--tenant** *tenant-name*

Identifies the name of the tenant.

**--md5-password-prompt-enable true | false**

Turns on secure input for the MD5 password. The default is false.

## Examples

The following example adds a new peer to an existing instance B2.

```
(efa:extreme)extreme@node-1:~$ efa tenant service bgp peer update --name B2 --tenant
tenant11 --operation peer-add --ipv6-uc-nbr 10.20.216.15,blue11:18::1,98100 --ipv4-uc-
nbr 10.20.216.16,blue11:1.1.1.12,95001

BGP service updated successfully.

--- Time Elapsed: 32.856185284s ---
```

The following example deletes a BGP peer for the specified VRF (red) in the bgpservice1 instance for tenant1. You can use the show command to verify the changes.

```
efa tenant service bgp peer update --name bgpservice1 --tenant tenant1
--operation peer-delete --ipv4-uc-nbr 10.24.80.134,red:10.20.30.40
efa tenant service bgp show

=====
=====
Name      : bgpservice1
Tenant    : tenant1
State     : bs-state-created
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+
| Device IP | VRF | AFI | SAFI | REMOTE IP | REMOTE ASN | BFD Enabled | BFD
Interval |
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+
| 10.24.80.134 | red | ipv6 | unicast | 10::40 | 5000 | true |
100 |
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+

+-----+-----+-----+-----+-----+
| BFD Rx | BFD Multiplier | Dev-state | App-state |
+-----+-----+-----+-----+-----+
| 200 | 7 | provisioned | cfg-in-sync |
+-----+-----+-----+-----+-----+
=====
=====
```



## efa tenant service bgp peer-group configure

---

Pushes or removes a partial configuration for a peer-group.

### Syntax

```
efa tenant service bgp peer-group configure [ --help | --name peer-group-name | --tenant tenant-name ]
```

### Parameters

**--help**

Displays help for the command.

**--name** *peer-group-name*

Specifies the name of the BGP peer group instance.

**--tenant** *tenant-name*

Specifies the name of the tenant.

Pushes or removes a partial configuration for a peer-group.

```
(efa:extreme)extreme@node-1:~$ efa tenant service bgp peer-group configure --name PG1 --
tenant tenant11
BgpService configured successfully.

--- Time Elapsed: 790.953838ms ---
```

## efa tenant service bgp peer-group create

Creates a BGP peer group for the specified tenant.

### Syntax

```
efa tenant service bgp peer-group create [ --name peer-group-name | --tenant tenant-name | --pg-asn string | --pg-bfd string | --pg-name string | --pg-next-hop-self string | --pg-update-source-ip string | --pg-md5-password string | --md5-password-prompt-enable true | false ]
```

### Parameters

**--name** *peer-group-name*

Specifies the name of the BGP peer group instance.

**--tenant** *tenant-name*

Specifies the name of the tenant.

**--pg-asn** *string*

Specifies the ASN of the BGP peer group with a string in the following format: device-ip:peer-group-name,remote-asn.

**--pg-bfd** *string*

Specifies the BFD properties of the BGP peer group with a string in the following format: device-ip: peer-group-name,bfd-enable (true/false),interval,bfd-min-rx,bfd-multiplier.

**--pg-name** *string*

Specifies the BGP peer group name with a string in the following format: device-ip:peer-group-name.

**--pg-next-hop-self** *string*

Specifies the next-hop-self for the BGP peer group with a string in the following format: device-ip:peer-group-name,next-hop-self (true/false/always).

**--pg-update-source-ip** *string*

Updates the source IP of the BGP peer group with a string in the following format: device-ip:peer-group-name,update-source-ip.

**--pg-md5-password** *string*

Indicates the MD5 password.



#### Important

BGP MD5 authentication for tenant dynamic peers is not yet supported.

**--md5-password-prompt-enable** **true** | **false**

Turns on secure input for the MD5 password. The default is false.



### Important

BGP MD5 authentication for tenant dynamic peers is not yet supported.

## Examples

This example creates a peer group instance.

```
(efa:extreme)extreme@node-1:~$ efa tenant service bgp peer-group create --name PG1 --
tenant tenant11
--pg-name 10.20.216.16:pg1 --pg-asn 10.20.216.16,pg1:95002 --pg-bfd-enable
10.20.216.16,pg1:true
--pg-bfd 10.20.216.16,pg1:660,506,20 --pg-next-hop-self 10.20.216.16,pg1:true
--pg-update-source-ip 10.20.216.16,pg1:10.10.10.3 --pg-md5-password 10.20.246.24,v1-
PeerGrp:'$9$MCgKGaT6OASX68/7TC6Lw=='

BgpService created successfully.

--- Time Elapsed: 1.965046891s ---
```

The following example creates a BGP peer-group md5-password in a secure manner.

For the complete procedure, see the topic “Configure BGP MD5 Authentication for Tenant BGP Peer and Peer-group Securely” topic in the ExtremeFabric Security Guide.

```
efa tenant service bgp peer-group create --tenant "tenant11" --name "v1-PeerGrp"
--pg-name 10.20.246.5:v1-PeerGrp --pg-asn 10.20.246.5,v1-
PeerGrp:5200
--pg-bfd-enable 10.20.246.5,v1-PeerGrp:true
--pg-name 10.20.246.5:v3-PeerGrp --pg-asn 10.20.246.5,v3-
PeerGrp:5201
--pg-bfd-enable 10.20.246.5,v3-PeerGrp:true
--pg-name 10.20.246.6:v1-PeerGrp --pg-asn 10.20.246.6,v1-
PeerGrp:5200
--pg-bfd-enable 10.20.246.6,v1-PeerGrp:true
--pg-md5-password-prompt-enable=true
```

## efa tenant service bgp peer-group delete

Deletes the specified BGP peer group.

### Syntax

```
efa tenant service bgp peer-group delete [ --force | --help | --name peer-group-name | --tenant tenant-name ]
```

### Parameters

**--force**

Forces the deletion of the BGP service when set to true.

**--help**

Displays help for the command.

**--name** *peer-group-name*

Specifies the name of the BGP peer instance.

**--tenant** *tenant-name*

Specifies the name of the tenant.

### Examples

This example removes a peer-group instance.

```
(efa:extreme)extreme@node-1:~$ efa tenant service bgp peer-group delete --name PG1 --tenant tenant11

BgpService deleted successfully.

--- Time Elapsed: 1.359719067s ---
```

This example removes an instance forcefully and ignores any error.

```
(efa:extreme)extreme@node-1:~$ efa tenant service bgp peer-group delete --name PG1 --tenant tenant11 --force

Bgp service peer-group delete with "force" option will delete the device configuration corresponding to the bgp and also deletes the bgp record from the application. Do you want to proceed (Y/N): y

BgpService deleted successfully.

--- Time Elapsed: 1.359719067s ---
```

## efa tenant service bgp peer-group show

Displays brief or detailed output of BGP peer groups for the specified tenant.

### Syntax

```
efa tenant service bgp peer-group show [ --name peer-group-name | --tenant
  tenant-name | --detail | --help ]
```

### Parameters

**--name** *peer-group-name*

Specifies the name of the BGP peer group instance.

**--tenant** *tenant-name*

Specifies the name of the tenant.

**--detail**

Displays detailed output of the BGP peer group instance. When this parameter is not used, only brief tabular output is returned.

**--help**

Displays help for the command.

### Examples

The following example shows brief output of all instances.

```
$ efa tenant service bgp peer-group show
=====
Name       : PG1
Tenant    : tenant11
State     : bgp-pg-state-created

+-----+-----+-----+-----+-----+-----+
| Device IP | Peer Group | Remote | Next Hop | Update | BFD |
|           |           | ASN   | Self    | Source IP | Enabled |
+-----+-----+-----+-----+-----+-----+
| 10.20.216.16 | pg1 | 95002 | true | 10.10.10.3 | true |
+-----+-----+-----+-----+-----+-----+
|           | BFD | Dev State | App State |
| [Interval,Rx,Multiplier] | | |
+-----+-----+-----+-----+
|           | 660, 506, 20 | provisioned | cfg-in-sync |
+-----+-----+-----+-----+
BGP PeerGroup Details
=====

--- Time Elapsed: 541.906975ms ---
```

The following example shows detailed output of a specific instance.

```
$ efa tenant service bgp peer-group show --name PG1 --tenant tenant11
--detail
=====
```

```

Name           : PG1
Tenant         : tenant11
State          : bgp-pg-state-created
Description    :

Peer Group
-----
Device IP      : 10.20.216.16
Peer Group    : pg1
Remote ASN     : 95002
Next Hop Self  : true
Update Source IP : 10.10.10.3
BFD Enabled    : true
BFD Interval   : 660
BFD Rx         : 506
BFD Multiplier : 20
Dev State      : provisioned
App State      : cfg-in-sync

=====

--- Time Elapsed: 111.316727ms ---

```

The following example shows brief output of all instances created for a tenant.

```

$ efa tenant service bgp peer-group show --tenant tenant11
=====
Name           : PG1
Tenant         : tenant11
State          : bgp-pg-state-created

+-----+-----+-----+-----+-----+
| Device IP | Peer Group | Remote | Next Hop | Update |
|           |            | ASN    | Self     | Source IP |
+-----+-----+-----+-----+-----+
| 10.20.216.16 | pg1      | 95002  | true     | 10.10.10.3 |
+-----+-----+-----+-----+-----+

+-----+-----+-----+-----+
| BFD       | BFD       | Dev State | App State |
| Enabled   | [Interval,Rx,Multiplier] |           |           |
+-----+-----+-----+-----+
| true      | 660, 506, 20 | provisioned | cfg-in-sync |
+-----+-----+-----+-----+

BGP PeerGroup Details

=====

--- Time Elapsed: 99.370646ms ---

```

## efa tenant service bgp peer-group update

Adds, deletes, or updates a BGP peer group for the specified tenant.

### Syntax

```
efa tenant service bgp peer-group update [ --operation peer-group-add |
peer-group-delete | desc-update | --pg-asn string | --pg-bfd string |
--pg-name string | -pg-next-hop-self string | --pg-update-source-ip
string| --name peer-group-name | --tenant tenant-name --pg-md5-
passwordstring| --md5-password-prompt-enable true | false ]
```

### Parameters

**--operation peer-group-add | peer-group-delete | desc-update**

Specifies the type of operation you are performing: add a peer group, delete a peer group, or update a description.

**--pg-asn string**

Specifies the ASN of the BGP peer group with a string in the following format: device-ip;peer-group-name,remote-asn.

**--pg-bfd string**

Specifies the BFD properties of the BGP peer group with a string in the following format: device-ip:peer-group-name,bfd-enable (true/false),interval,min-rx,multiplier.

**--pg-name string**

Specifies the name of the BGP peer group with a string in the following format: device-ip:peer-group-name.

**--pg-next-hop-self string**

Specifies the next-hop-self for the BGP peer group with a string in the following format: device-ip:peer-group-name,next-hop-self (true/false/always).

**--pg-update-source-ip string**

Updates the source IP for the BGP peer group with a string in the following format: device-ip:peer-group-name,update-source-ip.

**--name peer-group-name**

Specifies the name of the BGP peer group instance.

**--tenant tenant-name**

Specifies the name of the tenant.

**--pg-md5-password string**

Indicates the MD5 password.



#### Important

BGP MD5 authentication for tenant dynamic peers is not yet supported.

**--md5-password-prompt-enable true | false**

Turns on secure input for the MD5 password. The default is false.

**Important**

BGP MD5 authentication for tenant dynamic peers is not yet supported.

## Examples

This example updates an existing peer-group instance and adds a new peer-group to an existing instance.

```
(efa:extreme)extreme@node-1:~$ efa tenant service bgp peer-group update
--name PG1 --tenant tenant11 --operation peer-group-add --pg-name 10.20.216.15:pg1
--pg-asn 10.20.216.15,pg1:65000 --pg-bfd-enable 10.20.216.15,pg1:false
--pg-bfd 10.20.216.15,pg1:6000,5600,50 --pg-next-hop-self 10.20.216.15,pg1:always
--pg-update-source-ip 10.20.216.15,pg1:10.10.10.4

--- Time Elapsed: 2.218s ---
```

This example updates an existing peer-group instance and deletes a peer-group from an existing instance.

```
(efa:extreme)extreme@node-1:~$ efa tenant service bgp peer-group update
--name PG1 --tenant tenant11 --operation peer-group-delete
--pg-name 10.20.216.15:pg1

--- Time Elapsed: 3.146454s ---
```



## efa tenant show

Displays brief or detailed tenant details.

### Syntax

```
efa tenant show [ --name tenant-name | --detail | --help ]
```

### Parameters

**--name** *tenant-name*

Specifies the name of the tenant.

**--detail**

Displays detailed output of the tenant. When this parameter is not used, only brief tabular output is returned.

**--help**

Displays help for the command.

### Examples

This example shows brief output of all configured tenants.

```
$ efa tenant show
+-----+-----+-----+-----+
| Name | L2VNI-Range | L3VNI-Range | VLAN-Range | VRF-Count |
+-----+-----+-----+-----+
| ST | | | | 0 |
+-----+-----+-----+-----+
| tenant11 | 10002-14190 | 14191-14200 | 2-4090 | 10 |
+-----+-----+-----+-----+
| tenant12 | | | 2-100 | 10 |
+-----+-----+-----+-----+
| tenant21 | 30002-34190 | 34191-34200 | 2-4090 | 10 |
+-----+-----+-----+-----+

+-----+-----+-----+
| Enable-BD | Type | Ports |
+-----+-----+-----+
| False | shared | 10.20.216.15[0/1-10] |
| | | 10.20.216.16[0/1-10] |
+-----+-----+-----+
| False | private | 10.20.216.16[0/11-20] |
| | | 10.20.216.15[0/11-20] |
+-----+-----+-----+
| False | private | 10.20.216.103[0/1-10] |
| | | 10.20.216.104[0/1-5,0/6:1-4] |
+-----+-----+-----+
| True | private | 10.20.216.15[0/21-28] |
| | | 10.20.216.16[0/21-28] |
+-----+-----+-----+
Tenant Details
```

```
--- Time Elapsed: 373.898409ms ---
```

This example shows brief output of a specific tenant.

```
$ efa tenant show --name tenant21
+-----+-----+-----+-----+-----+-----+
| Name | Type | VLAN Range | L2VNI Range | L3VNI Range | VRF Count |
+-----+-----+-----+-----+-----+-----+
| tenant21 | private | 2-4090 | 30002-34190 | 34191-34200 | 10 |
| | | | | | |
+-----+-----+-----+-----+-----+-----+
| Enable BD | Ports |
+-----+-----+-----+-----+-----+
| true | 10.20.216.15[0/21-28] |
| | 10.20.216.16[0/21-28] |
+-----+-----+-----+-----+-----+
Tenant Details
--- Time Elapsed: 134.679221ms ---
```

This example shows detailed output of a specific tenant.

```
$ efa tenant show --name tenant21 --detail
=====
Name          : tenant21
Description   :
L2VNI-Range   : 30002-34190
L3VNI-Range   : 34191-34200
VLAN-Range    : 2-4090
VRF-Count     : 10
Enable-BD     : True
Type          : private
Ports         : 10.20.216.16[0/21-28]
              : 10.20.216.15[0/21-28]
=====
--- Time Elapsed: 228.653259ms ---
```

## efa tenant update

---

Allows changes to be made to a tenant after it has been created.

### Syntax

```
efa tenant update [ --name tenant-name | --description tenant-description
| --l2-vni-range | --l3-vni-range | --vlan-range | --vrf-count | --
enable-bd | --operation desc-update | vni-update | port-add | port-
delete | vlan-add | vlan-delete | vlan-update | num-vrf-update |
enable-bd-update | --port | --force | --help]
```

### Parameters

**--name** *tenant-name*

Specifies name of tenant.

**--description** *tenant-description*

Describes the tenant.

**--l2-vni-range**

Specifies the contiguous range of Layer 2 VNIs in ascending order that are reserved for the tenant within the scope of a fabric.

**--l3-vni-range**

Specifies the contiguous Range of L3 VNIs in ascending order will be reserved for the tenant within the scope of a fabric.

**--vlan-range**

Specifies the range of VLANs to be reserved for the tenant.

**--vrf-count** *int*

Specifies the number of VRFs to be reserved for the tenant.

**--enable-bd**

Enables BD capability for networks created under this tenant.

**--operation**

Specifies operation code. Valid values are desc-update, vni-update, port-add, port-delete, vlan-add, vlan-delete, vlan-update, num-vrf-update, and enable-bd-update.

**--port**

Lists physical ports of devices which will be reserved for the asset. Example:

```
SW1_IP[0/1],SW2_IP[0/5]
```

**--force**

Forces the deletion on the tenant if the option is provided.

**--help**

Displays help for update.

## Examples

This example removes a VLAN range from the tenant.

```
(efa:extreme)extreme@node-1:~$ efa tenant update --name tenant21 --operation vlan-delete --vlan-range 201-300
```

```
Tenant updated successfully.
```

```
--- Time Elapsed: 387.469634ms ---
```

This example adds a port to an existing tenant.

```
(efa:extreme)extreme@node-1:~$ efa tenant update --name tenant21 --operation port-add --port 10.20.216.15[0/29]
```

```
Tenant updated successfully.
```

```
--- Time Elapsed: 472.431968ms ---
```

## efa tenant vrf create

Creates a tenant VRF.

### Syntax

```
efa tenant vrf create [ --name vrf-name | --tenant tenant-name | --rt-  
type { both | import | export } | --rt value | --local-asn local-asn |  
--ipv4-static-route-bfd route | --ipv6-static-route-bfd route | --  
ipv4-static-route-next-hop route | --ipv6-static-route-next-hop route  
| --max-path unit | --redistribute { static | connected } | --rh-max-  
path { 8 | 16 | 64 } | --rh-ecmp-enable= { true | false } | --graceful-  
restart-enable= { true | false } | --routing-type { distributed |  
centralized } | --help ]
```

### Parameters

**--name** *vrf-name*

Specifies the name of the VRF.

**--tenant** *tenant-name*

Specifies the name of the tenant.

**--rt-type** { both | import | export }

Specifies the route's target VPN community. Valid values are both, import, or export.

**--rt** *value*

Specifies the unique number for forming the Route Target and the Route Distinguisher.

**--local-asn** *local-asn*

Specifies the local ASN for the VRF.

**--ipv4-static-route-bfd** *route*

Specifies the IPv4 static route BFD in the following format: device IP, destination IPv4 address, source IPv4 address[interval,min-rx,multiplier]. For example:

```
10.25.25.100,1.1.1.1,2.2.2.2,123,456,3.
```

**--ipv6-static-route-bfd** *route*

Specifies the IPv6 static route BFD in the following format: device IP, destination IPv6 address, source IPv6 address[interval,min-rx,multiplier]. For example:

```
10.25.25.100,1::1,2::2,300,300,3.
```

**--ipv4-static-route-next-hop** *route*

Specifies the IPv4 static route next hop in the following format: device IP, IPv4 static route network, next hop IP, and route distance separated by commas. For example:

```
10.25.25.100,20.0.0.0/24,16.0.0.2,3. Valid values for the route distance are 1 through 254.
```

**--ipv6-static-route-next-hop** *route*

Specifies the IPv4 static route next hop in the following format: device IP, IPv6 static route network, next hop IP, and route distance separated by commas. For example:

10.25.25.100,2001:1::/64,3001::2,3. Valid values for the route distance are 1 through 254.

**--max-path** *unit*

Specifies the number of load-sharing paths for the VRF. Valid values are 1 through 64.

**--redistribute** { **static** | **connected** }

Specifies the redistribute type for routes. Valid values are static or connected.

**--rh-max-path** { **8** | **16** | **64** }

Specifies the maximum number of resilient hashing paths allowed per tenant VRF. Valid values are 8, 16, or 64.

**--rh-ecmp-enable=** { **true** | **false** }

Turns on or turns off resilient hashing for a tenant VRF. Valid values are true or false.

**--graceful-restart-enable=** { **true** | **false** }

Turns on or turns off graceful restart for a tenant VRF. Valid values are true or false.

**--routing-type** { **distributed** | **centralized.** }

VRF routing type. Default value is distributed.

**--centralized-router**

Comma-separated list of border-leaf IP addresses.

**--help**

Provides help for the command.

## Usage Guidelines

The **--max-path** and **--rh-max-path** parameters can co-exist.

You cannot choose the specific devices on which to configure resilient hashing. Configuration applies to all SLX devices in the tenant VRF.

## Examples

This example creates a distributed VRF.

```
(efa:extreme)extreme@node-1:~$ efa tenant vrf create --tenant tenant11
--name blue11 --local-asn 65001 --rt-type import --rt 100:100 --rt-type export
--rt 100:100 --rt-type import --rt 200:200 --rt-type export --rt 200:200 --rt-type import
--rt 300:300 --rt-type export --rt 400:400 --max-path 50 --redistribute connected
--redistribute static --ipv4-static-route-next-hop
10.20.216.16,192.168.0.0/24,10.10.10.1,5
--ipv4-static-route-next-hop 10.20.216.15,192.168.10.0/24,10.10.10.5,5
--ipv6-static-route-next-hop 10.20.216.16,2020:20::1/128,3001::2,6
--ipv6-static-route-next-hop 10.20.216.15,2020:30::1/128,3001::3,5
--ipv6-static-route-bfd 10.20.216.16,3001::3,3001::1,100,200,5
--ipv6-static-route-bfd 10.20.216.16,3001::2,3001::1
--ipv6-static-route-bfd 10.20.216.16,3001::4,3001::1,100,300,6
--ipv4-static-route-bfd 10.20.216.15,10.10.10.1,10.10.10.254,200,300,6
--ipv4-static-route-bfd 10.20.216.16,10.10.10.5,10.10.10.252 --rh-ecmp-enable
--rh-max-path 16 --graceful-restart-enable --routing-type distributed

Vrf created successfully.
```

```
--- Time Elapsed: 762.819499ms ---
```

This example creates a centralized VRF.

```
(efa:extreme)extreme@node-1:~$ efa tenant vrf create --name red13
--tenant tenant21 --max-path 50 --redistribute connected --redistribute static
--local-asn 65002 --ipv4-static-route-next-hop 10.20.216.104,192.168.0.0/24,10.10.10.1,5
--ipv4-static-route-next-hop 10.20.216.104,192.168.10.0/24,10.10.10.5,5
--ipv6-static-route-next-hop 10.20.216.104,2020:20::1/128,3001::2,6
--ipv6-static-route-next-hop 10.20.216.104,2020:30::1/128,3001::3,5
--ipv6-static-route-bfd 10.20.216.104,3001::3,3001::1,100,200,5
--ipv6-static-route-bfd 10.20.216.104,3001::2,3001::1
--ipv6-static-route-bfd 10.20.216.104,3001::4,3001::1,100,300,6
--ipv4-static-route-bfd 10.20.216.104,10.10.10.1,10.10.10.254,200,300,6
--ipv4-static-route-bfd 10.20.216.104,10.10.10.5,10.10.10.252 --rh-max-path 64
--routing-type centralized --centralized-router 10.20.216.103,10.20.216.104
```

Vrf created successfully.

```
--- Time Elapsed: 726.425268ms ---
```

## efa tenant vrf delete

---

Deletes a VRF.

### Syntax

```
efa tenant vrf delete [--name vrf name | --tenant tenant name ]
```

### Parameters

**--name** *vrf name*

Specifies the name of the VRF.

**--tenant** *tenant name*

Specifies the name of the tenant.

### Examples

This example deletes the specified VRFs.

```
(efa:extreme)extreme@node-1:~$ efa tenant vrf delete --name red12,red13 --tenant tenant21
Vrf: red12 deleted successfully.
Vrf: red13 deleted successfully.
--- Time Elapsed: 1.530242792s ---
```



## efa tenant vrf error show

Displays VRF errors.

### Syntax

```
efa tenant vrf error show [ --name vrf-name | --tenant tenant-name ]
```

### Parameters

**--name** *vrf-name*

Specifies the name of the VRF.

**--tenant** *tenant-name*

Specifies the name of the tenant.

### Examples

This example shows output of VRF errors for a specific VRF and tenant.

```
efa tenant vrf error show --tenant tnt1 --name vrf1
=====
Name : vrf1
Tenant : tnt1
Errors
+-----+-----+
| MgmtIp | ErrorList |
+-----+-----+
| 10.20.246.29 | Configure RemoteAsn under Router BGP failed for Vrf : |
| | vrf1 due to Netconf <x> error |
+-----+-----+
| 10.20.246.30 | Configure RemoteAsn under Router BGP failed for Vrf : |
| | vrf1 due to Netconf <x> error |
+-----+-----+
--- Time Elapsed: 195.971ms ---
```

## efa tenant vrf show

Displays brief or detailed output of the VRF for all tenants, a selected tenant, or a selected VRF.

### Syntax

```
efa tenant vrf show [ --name vrf-name | --tenant tenant-name | --detail |
  --help]
```

### Parameters

**--name** *vrf-name*

Specifies the name of the VRF.

**--tenant** *tenant-name*

Specifies the name of the tenant.

**--detail**

Displays detailed output of the VRF. When this parameter is not used, only brief tabular output is returned.

**--help**

Displays help for the command.

### Examples

This example shows brief output of all VRFs.

```
$ efa tenant vrf show
+-----+-----+-----+-----+-----+-----+
| Name | Tenant | Routing Type | Centralized Routers | Redistribute | Max Path |
+-----+-----+-----+-----+-----+-----+
| blue11 | tenant11 | distributed | | connected,static | 50 |
+-----+-----+-----+-----+-----+-----+
| red13 | tenant21 | centralized | 10.20.216.103 | connected,static | 50 |
| | | | 10.20.216.104 | | |
+-----+-----+-----+-----+-----+-----+
| red11 | tenant21 | distributed | | connected | 8 |
+-----+-----+-----+-----+-----+-----+

+-----+-----+-----+-----+-----+-----+
| Local Asn | Enable GR | State | Dev State | App State |
+-----+-----+-----+-----+-----+-----+
| 65001 | true | vrf-device-created | provisioned | cfg-in-sync |
+-----+-----+-----+-----+-----+-----+
| 65002 | false | vrf-create | not-provisioned | cfg-ready |
| | | | | |
+-----+-----+-----+-----+-----+-----+
| | false | vrf-device-created | provisioned | cfg-in-sync |
+-----+-----+-----+-----+-----+-----+
Vrf Details
--- Time Elapsed: 551.819339ms ---
```

This example shows detailed output of a specific VRF.

```
$ efa tenant vrf show --tenant tenant11 --name blue11 --detail
=====
```

```

Name                : blue11
Tenant              : tenant11
Routing Type       : distributed
Centralized Routers :
Redistribute        : connected,static
Max Path           : 50
Local Asn          : 65001
L3VNI              : 14191
EVPN IRB BD        : 4096
EVPN IRB VE        : 8192
BR VNI             : 14192
BR BD              : 4095
BR VE              : 8191
RH Max Path        : 16
Enable RH ECMP     : true
Enable Graceful Restart : true
Route Target        : import 100:100
                   : export 100:100
                   : import 200:200
                   : export 200:200
                   : import 300:300
                   : export 400:400
Static Route        : Switch-IP->Network,Nexthop-IP[Route-Distance], ...
                   : 10.20.216.15->192.168.10.0/24,10.10.10.5[5]
2020:30::1/128,3001::3[5]
                   : 10.20.216.16->192.168.0.0/24,10.10.10.1[5]
2020:20::1/128,3001::2[6]
Static Route BFD    : Switch-IP->[DestIP,SourceIP][Interval,Min-Rx,Multiplier], ...
                   : 10.20.216.15->10.10.10.1,10.10.10.254[200,300,6]
                   : 10.20.216.16->10.10.10.5,10.10.10.252
3001::3,3001::1[100,200,5]
                   : 3001::2,3001::1 3001::4,3001::1[100,300,6]
State               : vrf-device-created
Dev State           : provisioned
App State           : cfg-in-sync

=====

--- Time Elapsed: 160.103127ms ---

```

This example shows detailed output of all VRFs belonging to a specific tenant.

```

$ efa tenant vrf show --tenant tenant21 --detail
=====
Name                : red13
Tenant              : tenant21
Routing Type       : centralized
Centralized Routers : 10.20.216.103
                   : 10.20.216.104
Redistribute        : connected,static
Max Path           : 50
Local Asn          : 65002
L3VNI              :
EVPN IRB BD        :
EVPN IRB VE        :
BR VNI             :
BR BD              :
BR VE              :
RH Max Path        : 64
Enable RH ECMP     : false
Enable Graceful Restart : false
Route Target        :
Static Route        : Switch-IP->Network,Nexthop-IP[Route-Distance], ...
                   : 10.20.216.104->192.168.0.0/24,10.10.10.1[5] 192.168.10.0/24,
                   : 10.10.10.5[5] 2020:20::1/128,3001::2[6]

```

```

2020:30::1/128,3001::3[5]
Static Route BFD      : Switch-IP->[DestIP,SourceIP][Interval,Min-Rx,Multiplier], ...
                      : 10.20.216.104->10.10.10.1,10.10.10.254[200,300,6]
10.10.10.5,10.10.10.252
                      3001::3,3001::1[100,200,5] 3001::2,3001::1
3001::4,3001::1[100,300,6]
State                 : vrf-create
Dev State             : not-provisioned
App State             : cfg-ready

=====
Name                  : red11
Tenant                : tenant21
Routing Type         : distributed
Centralized Routers  :
Redistribute          : connected
Max Path              : 8
Local Asn             :
L3VNI                 : 34191
EVPN IRB BD          : 4094
EVPN IRB VE          : 8190
BR VNI               : 34192
BR BD                 : 4093
BR VE                : 8189
RH Max Path          :
Enable RH ECMP       : false
Enable Graceful Restart : false
Route Target          : import 101:101
                      : export 101:101
Static Route          :
Static Route BFD     :
State                 : vrf-device-created
Dev State             : provisioned
App State             : cfg-in-sync

=====

--- Time Elapsed: 167.110904ms ---

```

## efa tenant vrf update

Updates the tenant VRF for various operations and parameters, such as ASN and IPv6 static route.

### Syntax

```
efa tenant vrf update [--name vrf-name | --tenant tenant-name | --
  operation code | --local-asn local-asn | --ipv4-static-route-bfd route
  | --ipv6-static-route-bfd route | --ipv4-static-route-next-hop route
  | --ipv6-static-route-next-hop route | --max-path unit | --
  redistribute {static | connected} | --rh-max-path {8 | 16 | 64} | --
  rh-ecmp-enable= {true | false} | --graceful-restart-enable= {true |
  false } | --routing-type {distributed | centralized }]
```

### Parameters

**--name** *vrf-name*

Specifies the VRF name.

**--tenant** *tenant-name*

Specifies the tenant name

**--operation** *code*

Identifies the operation you want to perform. Valid values are:

- local-asn-add
- local-asn-delete
- redistribute-add
- redistribute-delete
- centralized-router-add
- centralized-router-delete



#### Note

Idempotency is supported for the following additional valid operations:

- max-path-add
- max-path-delete
- rh-max-path-add
- rh-max-path-delete
- rh-ecmp-update
- graceful-restart-update
- static-route-add
- static-route-delete
- static-route-bfd-add
- static-route-bfd-delete

**--local-asn** *local-asn*

Specifies the local ASN for the VRF.

**--ipv4-static-route-bfd** *route*

Specifies the IPv4 static route BFD in the following format: device IP, destination IPv4 address, source IPv4 address[interval, min-rx, multiplier]. For example:

10.25.25.100,1.1.1.1,2.2.2.2,123,456,3.

**--ipv6-static-route-bfd** *route*

Specifies the IPv6 static route BFD in the following format: device IP, destination IPv6 address, source IP address[interval, min-rx, multiplier]. For example:

10.25.25.100,1::1,2::2,300,300,3.

**--ipv4-static-route-next-hop** *route*

Specifies the IPv4 static route next hop in the following format: device IP, IPv4 static route network, next hop IP, and route distance separated by commas. For example:

10.25.25.100,20.0.0.0/24,16.0.0.2. Valid values for the route distance are 1 through 254.

**--ipv6-static-route-next-hop** *route*

Specifies the IPv6 static route next hop in the following format: device IP, IPv6 static route network, next hop IP, and route distance separated by commas. For example:

10.25.25.100,2001:1::/64,3001::2,3. Valid values for the route distance are 1 through 254.

**--max-path** *unit*

Specifies the number of load-sharing paths for the VRF. Valid values are 1 through 64.

**--redistribute** { **static** | **connected** }

Specifies the redistribute type for routes. Valid values are static or connected.

**--rh-max-path** { **8** | **16** | **64** }

Specifies the maximum number of resilient hashing paths allowed per tenant VRF. Valid values are 8, 16, or 64.

**--rh-ecmp-enable=** { **true** | **false** }

Turns on or turns off resilient hashing for a tenant VRF. Valid values are true or false.

**--graceful-restart-enable=** { **true** | **false** }

Turns on or turns off graceful restart for a tenant VRF. Valid values are true or false.

**--routing-type** { **distributed** | **centralized** }

VRF routing type. Default value is distributed.

**--centralized-router**

Comma-separated list of border-leaf IP addresses.

## Usage Guidelines

The **--max-path** and **--rh-max-path** parameters can co-exist.

You cannot choose the specific devices on which to configure resilient hashing. Configuration applies to all SLX devices in the tenant VRF.

This example adds redistribution connected to a VRF.

```
(efa:extreme)extreme@node-1:~$ efa tenant vrf update
--name blue11 --tenant tenant11 --operation redistribute-add --redistribute connected

Vrf updated successfully.

--- Time Elapsed: 879.908437ms ---
```

This example removes the max-path from the VRF.

```
(efa:extreme)extreme@node-1:~$ efa tenant vrf update
--name blue12 --tenant tenant1 --operation rh-max-path-delete

Vrf updated successfully.

--- Time Elapsed: 879.908437ms ---
```

## efa vcenter debug

---

A set of debug commands for troubleshooting EFA vCenter issues. This command also sets configuration parameters for vCenter tenants.

### Syntax

```
efa vcenter debug tenant show --host string
```

```
efa vcenter debug event show --host string { --page int32 | --page-size int32 }
```

```
efa vcenter debug setting show
```

```
efa vcenter debug setting update { --poll-requency string | --dead-link-clearing-time string }
```

```
efa vcenter debug set --level { info | debug }
```

### Command Default

This command has no defaults.

### Parameters

#### **tenant show**

Shows a list of tenants for a particular VMware vCenter Server host.

#### **event show**

Shows a list of events recorded for a particular VMware vCenter Server host.

#### **setting show**

Shows the different settings configured on the VMware vCenter Server host. These settings are global in nature and are applicable to all VMware vCenter Server hosts registered with this EFA vCenter Service instance.

#### **setting update**

Updates the different settings for the added VMware vCenter Server hosts registered with this EFA vCenter Service instance. These settings are applicable to all the VMware vCenter Server hosts.

#### **set**

Sets the debug level for this instance of EFA vCenter service. Debug levels can be set to receiving information level messages or complete debugging messages.

**--host** *string*

IP address or hostname of the VMware vCenter Server to connect to.

**--page** *int32*

Events are fetched for the page number specified in this parameter. When this parameter is not passed, page number 1 is always fetched by default.

**--page-size** *int32*



The number of events to display per page. When this parameter is not passed, twenty (20) records are shown per page.

**--poll-requency** *string*

The poll duration in hours. The EFA vCenter Service polls all the VMware vCenter Servers registered with it after this time duration has expired.

**--dead-link-clearing-time** *string*

The time duration in days. This is the time duration for which dead links are removed from the EFA vCenter service database.

**--level** { *info* | *debug* }

Sets the debug level for this EFA vCenter Service instance. Can be one of *info* or *debug*. Use *info* to view only messages of the level *info*. Use *debug* to view all debug messages.

## Examples

The following example shows the debug information for tenant creation failure for a VMware vCenter Server with IP 10.24.85.111. It also displays other errors if they have been reported.

```
$ efa vcenter debug tenant --host 10.24.85.111
Tenant Configuration Details for vCenter 10.24.85.111
+-----+-----+-----+-----+
+-----+-----+-----+-----+
| Tenant Name          | Ports | VLANs | Status          |
Reason                |
+-----+-----+-----+-----+
+-----+-----+-----+-----+
| vcenter-10.24.85.111 |      | 2-4089 | Creation Failed | Tenant vcenter-10.24.85.111
is missing the
|
| 10.25.225.46="ethernet-0/5"
|
| 10.24.81.10="ethernet-0/10"
|
| 10.25.225.11="ethernet-0/5"
|
+-----+-----+-----+-----+
+-----+-----+-----+-----+
Tenant Details

EPG Configuration Details for vCenter 10.24.85.111
+-----+-----+-----+-----+
+-----+-----+-----+-----+
| EPG Name                | Ports          | POs |
Switchport Mode | VLANs | Status          |
Reason                |
+-----+-----+-----+-----+
+-----+-----+-----+-----+
+-----+-----+-----+-----+
| vCenter_10.24.85.111_10.24.82.20_vSwitch1_VMNetwork2 | 10.24.82.20[0/11] |
trunk          | 101   | Creation Failed | EPG cannot be created for a tenant having no
ports |
+-----+-----+-----+-----+
+-----+-----+-----+-----+
Endpoint Group Details
```

```
--- Time Elapsed: 381.0047ms ---
```

This example shows the output for the `efa vcenter debug setting show` command.

```
$ efa vcenter debug setting show

vCenter service settings
+-----+-----+-----+-----+
| Poll Frequency Hours | Dead Link Clearing Time Days |
+-----+-----+-----+-----+
| 4                     | 3                             |
+-----+-----+-----+-----+
Setting Details
--- Time Elapsed: 11.409207ms ---
```

This example shows the output for the `efa vcenter debug tenant` command.

```
$ efa vcenter debug tenant --host 10.24.85.111

+-----+-----+-----+-----+-----+
| Tenant Name          | Ports | VLANs | Status           | Reason |
+-----+-----+-----+-----+-----+
| vcenter-10.24.85.111 |      | 2-4089 | Created Successfully |       |
+-----+-----+-----+-----+-----+
Tenant Details

EPG Configuration Details for vCenter 10.24.85.111
+-----+-----+-----+-----+-----+-----+
| EPG Name | Ports | POs | Switchport Mode | VLANS | Status | Reason |
+-----+-----+-----+-----+-----+-----+
Endpoint Group Details
--- Time Elapsed: 429.0076ms ---
```

This example shows the output for the `efa vcenter debug event` command.

```
$ efa vcenter debug event --host 10.24.85.111

+-----+-----+-----+-----+-----+
| Task: Update network configuration | 10.24.81.10 |
ESXi Host | 2020.03.03 23:44:25 | 188872 |
+-----+-----+-----+-----+-----+
| dvPort group VM network 200-220 in SRA-Dev-DC | VM network 200-220 |
Distributed Virtual Portgroup | 2020.03.03 16:23:26 | 188569 |
| was reconfigured. Modified: |
| config.defaultPortConfig.vlan: (inherited = false, vlanId |
| = 200) -> (inherited = false, vlanId = ((start = 0, end = |
| 200))); Added: Deleted: |
+-----+-----+-----+-----+-----+
| Task: Update network configuration | 10.24.82.20 |
ESXi Host | 2020.03.03 16:21:10 | 188565 |
+-----+-----+-----+-----+-----+
```

```

+-----+-----+-----+
| dvPort group VM network 200-220 in SRA-Dev-DC | VM network 200-220 |
Distributed Virtual Portgroup | 2020.03.03 16:19:04 | 188564 |
| was reconfigured.      Modified:
|
| config.defaultPortConfig.vlan: (inherited = false, vlanId =
|
| ((start = 200, end = 220))) -> (inherited = false, vlanId =
|
| 200);      Added:      Deleted:
|
+-----+-----+-----+
Events Details
--- Time Elapsed: 507.006ms ---
    
```

The following is an example of the `efa vcenter debug tenant` command.

```

$ efa vcenter debug tenant --host 10.24.85.111

Tenant Configuration Details for vCenter 10.24.85.111
+-----+-----+-----+-----+-----+
| Tenant Name | Ports | VLANs | Status | Reason |
+-----+-----+-----+-----+-----+
| vcenter-10.24.85.111 | | 2-4089 | Created Successfully | |
+-----+-----+-----+-----+-----+

Tenant Details

EPG Configuration Details for vCenter 10.24.85.111
+-----+-----+-----+-----+-----+
| EPG Name | Ports | POs | Switchport Mode | VLANs | Status | Reason |
+-----+-----+-----+-----+-----+

Endpoint Group Details
--- Time Elapsed: 429.0076ms ---
    
```

```

$ efa vcenter debug event --host 10.24.85.111

vCenter Events Total Count (4) for host 10.24.85.111
+-----+-----+-----+-----+-----+
| Target Type | Description | Time | ID | Target |
+-----+-----+-----+-----+-----+
| Task: Update network configuration | 10.24.81.10 |
ESXi Host | 2020.03.03 23:44:25 | 188872 |
+-----+-----+-----+-----+-----+
| dvPort group VM network 200-220 in SRA-Dev-DC | VM network 200-220 |
Distributed Virtual Portgroup | 2020.03.03 16:23:26 | 188569 |
| was reconfigured.      Modified:
|
| config.defaultPortConfig.vlan: (inherited = false, vlanId
|
| = 200) -> (inherited = false, vlanId = ((start = 0, end =
|
| 200)));      Added:      Deleted:
|
+-----+-----+-----+-----+-----+
    
```

```

+-----+-----+-----+
| Task: Update network configuration | 10.24.82.20 |
ESXi Host | 2020.03.03 16:21:10 | 188565 |
+-----+-----+-----+
+-----+-----+-----+
| dvPort group VM network 200-220 in SRA-Dev-DC | VM network 200-220 |
Distributed Virtual Portgroup | 2020.03.03 16:19:04 | 188564 |
| was reconfigured. Modified: |
| | |
| config.defaultPortConfig.vlan: (inherited = false, vlanId = |
| | |
| ((start = 200, end = 220))) -> (inherited = false, vlanId = |
| | |
| 200); Added: Deleted: |
| | |
+-----+-----+-----+
Events Details
--- Time Elapsed: 507.006ms ---

```

This command sets the polling frequency to 5 minutes.

```

$ efa vcenter debug setting update --poll-frequency=5

vCenter service settings updated successfully
--- Time Elapsed: 366.992ms ---

```

This example command sets the dead-link-cleaning-time value to 4 days.

```

$ efa vcenter debug setting update --dead-link-clearing-time=4

vCenter service settings updated successfully
--- Time Elapsed: 381.2133ms ---

```

This example sets the log level to debug for this EFA instance.

```

$ efa vcenter debug set --level=debug

Level debug set successfully.
--- Time Elapsed: 12.0073ms ---

```

## efa vcenter delete

---

Deletes the VMware vCenter Server registered as a tenant with this EFA instance.

### Syntax

```
efa vcenter delete --host string [ --cleanup-tenants ]
```

### Parameters

**--host** *string*

IP address or hostname of the VMware vCenter Server tenant to delete.

**--cleanup-tenants**

When included, the tenants and EPGs associated to the VMware vCenter Server are deleted.

When not included, the tenants and EPGs associated with the VMware vCenter Server are retained when the server is removed.

When the `--cleanup-tenants` parameter is supplied, the command removes the registered ESXi hosts and EPGs for this VMware vCenter Server tenant.

### Examples

When the `--cleanup-tenants` parameter is supplied, removes the registered ESXi hosts and EPGs for this VMware vCenter Server tenant.

This example deletes the VMware vCenter Server with host IP 10.24.85.111 while retaining the associated tenants and EPGs.

```
$ efa vcenter delete --host 10.24.85.111
```

This example deletes the VMware vCenter Server with host IP 10.24.85.111 and removes the associated tenants and EPGs.

```
$ efa vcenter delete --host 10.24.85.111 --cleanup-tenants
```

## efa vcenter links

Displays the links for VMware vCenter server tenants and their ESXi hosts.

### Syntax

```
efa vcenter links { physical | unconnected } { --host string | --esxi string }
```

```
efa vcenter links virtual --esxi string
```

### Parameters

#### physical

Displays the physical links for the selected device. Device can be a VMware vCenter Server or an ESXi server.

#### unconnected

Displays the unconnected (unused) links for the selected device. Device can be a VMware vCenter Server or an ESXi server.

#### virtual

Displays the virtual links created on a ESXi server.

#### --host

The IP address or host name of the VMware vCenter Server for which to view the physical and unconnected (unused) links.

#### --esxi

The IP address or host name of the ESXi tenant for which to view the physical, virtual, and unconnected (unused) links.

For VMware vCenter server tenants, physical and unconnected links are displayed. For ESXi hosts, physical, unconnected, and virtual links are displayed.

### Examples

This example is list of ESXi device managed by the VMware vCenter Server with the IP 10.24.85.111.

```
$ efa vcenter links physical --host 10.24.85.111
Physical Links for vCenter 10.24.85.111
+-----+-----+-----+-----+-----+-----+-----+
| ESXi Host   | PNIC   | Driver | PNIC MAC           | Interface   | PO Number | PO
Name | Device       | Missing | Missing Time |              |           |
+-----+-----+-----+-----+-----+-----+-----+
| 10.24.81.10 | vmnic3 | ntg3   | 40:f2:e9:bb:4c:83 | Ethernet 0/10 |
|              | 10.9.9.20 |       |                   |              |           |
+-----+-----+-----+-----+-----+-----+-----+
| 10.24.82.20 | vmnic2 | ntg3   | 40:f2:e9:bb:58:b2 | Ethernet 0/10 |
|              | 10.9.9.30 |       |                   |              |           |
+-----+-----+-----+-----+-----+-----+-----+
```

```

+-----+-----+-----+-----+
| 10.24.83.30 | vmnic3 | ntg3 | 40:f2:e9:bb:58:b3 | Ethernet 0/10 |
|           | 10.9.9.40 |           |           |           |
+-----+-----+-----+-----+
Physical Link Details
--- Time Elapsed: 359.1528ms ---

```

This example is a list of virtual machines and their virtual links on the ESXi host with the IP 10.24.81.10.

```

$ efa vcenter links virtual --esxi 10.24.81.10
Virtual Links for ESXi server 10.24.81.10
+-----+-----+-----+-----+-----+-----+
| Virtual Machine | vNIC           | MAC           | VLAN | Port Group |
vSwitch         | Distributed |
+-----+-----+-----+-----+-----+
| 20200221 v1    | Network adapter 1 | 00:50:56:9c:75:29 | 3048 | VM Network |
vSwitch0       | false         |
+-----+-----+-----+-----+-----+
| test_vm2      | Network adapter 2 | 00:50:56:9c:7e:83 | 3048 | VM Network |
vSwitch0       | false         |
+-----+-----+-----+-----+-----+
| 20200221 v1    | Network adapter 2 | 00:50:56:9c:f6:13 | 3048 | VM Network |
vSwitch0       | false         |
+-----+-----+-----+-----+-----+
| vMotionVm     | Network adapter 1 | 00:50:56:9c:8f:fd | 10   | DPortGroup | Real-DV-
Switch | true         |
+-----+-----+-----+-----+-----+
| test_vm2      | Network adapter 1 | 00:50:56:9c:1d:09 | 10   | DPortGroup | Real-DV-
Switch | true         |
+-----+-----+-----+-----+-----+
vNIC Link Details
--- Time Elapsed: 500.4792ms ---

```

## efa vcenter list

Lists the VMware vCenter servers registered as tenants.

### Syntax

```
efa vcenter list [ --host string ]
```

### Parameters

**--host** *string*

IP address or hostname of the VMware vCenter Server to connect to.

When the `--host` parameter is supplied, the command lists the ESXi hosts for that VMware vCenter Server.

### Examples

This example lists a VMware vCenter Server that has just been added as a tenant with this EFA instance.

```
$ efa vcenter list
+-----+-----+-----+-----+
+-----+-----+-----+-----+
| Host Name | Name | Version | Discovery Status |
Datacenters Count | Host Count | VM Count |
+-----+-----+-----+-----+
| 10.24.85.111 | VMware vCenter Server | 6.7.0 | Pending Complete Discovery |
1 | 1 | 0 |
+-----+-----+-----+-----+
+-----+-----+-----+-----+
```

This example lists a VMware vCenter Server with its status updated to this EFA instance.

```
$ efa vcenter list
+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+
| Host Name | Name | Version | Discovery Status | Datacenters Count |
Host Count | VM Count |
+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+
| 10.24.85.111 | VMware vCenter Server | 6.7.0 | Update Completed | 5 |
4 | 13 |
+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+
```

This example lists the ESXi devices managed by the VMware vCenter Server with IP address 10.24.85.111.

```
$ efa vcenter list --host 10.24.85.111
```



## efa vcenter register

---

The command to register VMware vCenter server as a tenant with the EFA instance. Tenant details must be registered before running this command.

### Syntax

```
efa vcenter register --host string --username string --password string  
--tenant string
```

### Command Default

This command has no defaults.

### Parameters

**--host** *string*

IP address or hostname of the VMware vCenter Server to connect to.

**--username** *string*

Username to connect to the VMware vCenter Server.

**--password** *string*

Password to connect to the VMware vCenter Server.

**--tenant** *string*

Tenant associated with the VMware vCenter Server host.

### Examples

This example registers a VMware vCenter Server as a tenant with EFA vCenter service.

```
$ efa vcenter register --host 10.24.85.111 --username administrator@vmvcenter.local  
--password 'aBc123#' --tenant tenant-10.24.85.111
```

## efa vcenter update

---

Updates the local database with configuration changes made to the VMware vCenter Server and the ESXi servers managed by it.

### Syntax

```
efa vcenter update --host string --username string --password string
```

### Command Default

This command has no defaults.

### Parameters

**--host** *string*

IP address or Hostname of the VMware vCenter Server from which the local EFA vCenter service database needs to be updated.

**--username** *string*

Username to connect to the VMware vCenter Server.

**--password** *string*

Password to connect to the VMware vCenter Server.

### Examples

This example updates the local EFA vCenter service database with the latest state of the VMware vCenter Server with the IP address 10.24.85.111.

```
$ efa vcenter update --host 10.24.85.111 --username administrator@vmvcenter.local --password 'aBc123#'
```

## efa version

---

Displays the version of EFA installed.

### Syntax

```
efa version
```

### Examples

The following example shows typical output for the command

```
# efa version
Version : 2.2.0
Build: 41
Time Stamp: 20-06-03:03:15:47
Mode: Insecure
Deployment Type: single-node
Deployment Platform: SERVER
--- Time Elapsed: 8.986817ms ---
```

## efa-blpair-mapping

---

Adds, removes, or lists border leaf pairs.

```
efa-blpair-mapping add [ --name name | --switch-ips switches ]
```

```
efa-blpair-mapping remove [ --name name ]
```

```
efa-blpair-mapping list
```

### Parameters

#### **add**

Adds the specified border leaf pair.

#### **remove**

Removes the specified border leaf pair.

#### **list**

Lists border leaf pairs.

#### **--name** *name*

Specifies the IP address of the device for which you want to see a list of interfaces.

#### **--switch-ips**

Comma separated IP addresses of border-leaf on fabric. For example, 10.2.2.2,10.2.2.3.

The following example adds the specified border leaf pair.

```
$ efa-blpair-mapping add --name blp2 --switch-ips 10.2.2.4,10.2.2.3
```

The following example removes the specified border leaf pair.

```
$ efa-blpair-mapping remove --name blp2
```

The following example lists the configured border leaf pairs.

```
$ efa-blpair-mapping list
+-----+-----+-----+
|           ID           | Name |      Switches      |
+-----+-----+-----+
| 8f3d786b-70e3-4c8e-888c-4f95adc162f4 | blp2 | 10.2.2.4,10.2.2.3 |
+-----+-----+-----+
```

## efa-change-hostname

---

Changes the host name in the EFA system after EFA is deployed.

### Syntax

```
efa-change-hostname old-host-name
```

### Parameters

*old-host-name*

Specifies the host name that you are changing.

### Usage Guidelines

Host name changes are supported in single-node and multi-node deployments.

Running this command by itself does not change the host name. For the complete procedure, see the "Change the Host Name or IP Address" topic in the "System Management" section of the *Extreme Fabric Automation Administration Guide*.

Run this command as a root user or as a user with sudo privileges.

In a TPVM deployment, run this command from `/apps/bin/`.

In a single-node deployment, EFA is not operational while this command is running. In a multi-node deployment, EFA remains operational if the command is running on the standby node. EFA is not operational if the command is running on the active node.

### Examples

This example shows standard output for the command.

```
$ sudo efa-change-hostname <old-host-name>

Reading host name of the system
Restarting mariadb service
Restarting k3s service
Checking k3s for the new host name
Host is in ready state in k3s
Setting current host as active node
Deleting old host name references
Waiting for EFA containers to start
Successfully updated host name in EFA
```

## efa-change-ip

---

Changes the IP address after EFA is deployed.

### Syntax

```
efa-change-ip
```

### Usage Guidelines

IP address changes are supported in single-node deployments.

Run this command as a root user or as a user with sudo privileges.

In a TPVM deployment, run the command from `/apps/bin/`.

EFA is not operational while this command is running.

After the IP address is changed, either run `source /etc/profile` or open a new EFA session to log in.

### Examples

This example shows standard output for the command.

```
$ sudo efa-change-ip

Updating IP in EFA
Restarting k3s service
Updating all files with new IP
Deleting EFA services: gonotification-service gofabric-service gotenant-service
goauth-service gorbac-service goinventory-service goopenstack-service
govcenter-service gohyperv-service goraslog-service efa-api-docs gosystem-service
Waiting for EFA containers to start
Successfully updated IP in EFA
```

## efa-change-vip

---

Changes the virtual IP address (VIP) after EFA is deployed.

### Syntax

```
efa-change-vip new-vip
```

### Parameters

*new-vip*

Specifies the new VIP for the multi-node deployment.

### Usage Guidelines

VIP changes are supported in multi-node deployments.

Run this command as a root user or as a user with sudo privileges.

In a TPVM deployment, run this command from `/apps/bin/`.

EFA is not operational while this command is running.

After the VIP is changed, run `source /etc/profile` or open a new EFA session to log in.

### Examples

This example shows standard output for the command.

```
$ sudo efa-change-vip <new vip>
Updating all files with new VIP.
Restarting services on nodes
Waiting for EFA containers to start
Updating services with new VIP
Waiting for EFA containers to start
Successfully updated VIP for the installation.
```

## efa-health show

Verifies the following: connectivity with EFA, database write operations, OpenStack journal thread status, and the status of the EFA Kubernetes cluster.

### Syntax

```
efa-health show [--advanced ]
```

### Parameters

#### **--advanced**

Provides detailed status about EFA pods and the cluster. Omit this parameter to return basic status information.

### Usage Guidelines

In the output, the EFA Health entry represents EFA reachability and EFA database health.

In the output, the EFA High Availability Status entry shows DOWN even if only one node is DOWN. However, even with one node down, EFA Health remains UP because EFA is still operational.

### Examples

This example shows basic output for the command.

```
$ sudo efa-health show
EFA Host                : efa.extremenetworks.com
EFA Health              : UP
EFA Health Failure Reason :
EFA High Availability Status : UP
EFA Master              : UP
EFA Slave               : UP

EFA Neutron Journal Size within Threshold : NO
EFA Neutron Journal Size Threshold Setting : 5
EFA Neutron Current Journal Size         : 7
EFA Neutron Journal Maintenance Status   : UP
```

Run `efa-health show` with the `--advanced` option, which can give EFA POD or cluster status, in detail. This can be used to infer the pods running status on EFA.

```
$ sudo efa-health show --advanced
EFA Host                : efa.extremenetworks.com
EFA Health              : UP
EFA Health Failure Reason :
EFA High Availability Status : UP
EFA Master              : UP
EFA Slave               : UP

EFA Neutron Journal Size within Threshold : NO
EFA Neutron Journal Size Threshold Setting : 5
EFA Neutron Current Journal Size         : 7
EFA Neutron Journal Maintenance Status   : UP

EFA Cluster Status      : 18/28 Pods Running
```



```
rabbitmq-0 : Running
efa-api-docs-67b8c76ddb-2hg7s : Running
gosnmp-service-546d76b6f9-7wb6t : Running
goopenstack-service-5b687f9f8c-srlxx : Running
gosystem-service-76bbbc6d-jzkng : Running
goauth-service-75c88f4986-vqppm : Running
goraslog-service-7467fb7759-jm28m : Running
gotenant-service-5f8bc9f458-zbz21 : Running
gohyperv-service-b546d647f-ws7t8 : Running
gorbac-service-b546dbdd5-v9dml : Running
gofabric-service-65b6f7d4cf-rfq6f : Running
gotification-service-5fb74fc959-2x91t : Running
goinventory-service-79d6545c69-s66tx : Running
govcenter-service-7c6cb944dd-2d81t : Running
goinventory-service-79d6545c69-gxtn6 : Running
efa-api-docs-67b8c76ddb-n8zfp : Running
gosnmp-service-546d76b6f9-fv8tz : Init:0/1
goraslog-service-7467fb7759-rvppq : Running
gorbac-service-b546dbdd5-s9qxh : Init:1/2
gosystem-service-76bbbc6d-x8x8g : Running
govcenter-service-7c6cb944dd-rx7gd : Init:0/2
gohyperv-service-b546d647f-zjq97 : Init:0/2
goauth-service-75c88f4986-9fbn7 : Init:0/2
gofabric-service-65b6f7d4cf-q7qns : Init:0/2
gotification-service-5fb74fc959-rr724 : Init:0/2
gotenant-service-5f8bc9f458-n7gm8 : Init:0/3
goopenstack-service-5b687f9f8c-bfssf : Init:0/2
rabbitmq-1 : Running
```

## efa-journal clear

---

Removes all entries or entries specified according to state from the journal.

### Syntax

```
efa-journal clear [ pending | failed | completed | processing | all ]
```

### Parameters

**pending**

Clears all entries in Pending state.

**failed**

Clears all entries in Failed state.

**completed**

Clears all entries in Completed state.

**processing**

Clears all entries in Processing state.

**all**

Clears all entries.

### Usage Guidelines

**Important**

Stop the Neutron service before clearing entries using the **all**, **pending**, **failed**, or **processing** parameters. Otherwise, the processing thread can repopulate the entries in the journal.

### Examples

The following example clears all entries in the Failed state.

```
$ efa-journal clear failed
```

The following example clears all entries. Note the warning to stop the Neutron service.

```
$ efa-journal clear all
Warning!!! Clearing states pending/processing/all should be executed after shutting
down neutron service. Otherwise the entries can be re-populated by the processing thread.
```

The following example clears all entries in Processing state.

```
$ efa-journal clear processing
Warning!!! Clearing states pending/processing/all should be executed after shutting
down neutron service.
Otherwise the entries can be re-populated by the processing thread.
```

The following example clears all entries in Pending state.

```
$ efa-journal clear pending
Warning!!! Clearing states pending/processing/all should be executed after shutting down
neutron service.
Otherwise the entries can be re-populated by the processing thread.
```

## efa-journal list

Lists all journal entries that are present in the extreme journaling database, along with their statuses.

### efa-journal list

This example lists all journal entries and their statuses.

```
$ efa-journal list
+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+
| Id | Object Type | Object UUID | Operation | state |
Retry Count | Reason |
+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+
| 77 | network | 208421ad-483e-4e45-8c6f-d135146a1ee7 | create | failed |
5 | EFA connection timed out |
| 78 | subnet | 0443d876-eafb-4b8c-9c83-7d32c2cccad6 | create | failed |
0 | Parent Journal ID: 77 failed |
| 79 | port | 9cb6d418-d916-4be8-aad5-1cb07d388d5f | update | failed |
0 | Parent Journal ID: 77 failed |
| 80 | network | b22415ef-afdc-46fa-834f-8506c132da08 | create | failed |
5 | EFA connection timed out |
| 81 | subnet | 2a1e3aea-c996-45f1-94f9-84b604597dc3 | create | failed |
0 | Parent Journal ID: 80 failed |
| 82 | port | 4f3fe359-8de9-45f6-be4b-b9d7c565399f | update | failed |
0 | Parent Journal ID: 80 failed |
| 83 | network | 2237342e-95ec-44c2-92e6-706092bleda3 | create | processing |
0 | |
+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+
```

## efa-journal list deps

Debug command: dumps the journal dependency table in user-readable format.

### efa-journal list deps

This example dumps the journal dependency table.

```
$ efa-journal list deps
+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+
| Parent | Parent-obj | Parent-uuid | Parent-op | Parent-state |
Child | Child-obj | Child-uuid | Child-op | Child-state |
+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+
| 77 | network | 208421ad-483e-4e45-8c6f-d135146a1ee7 | create | failed |
| 78 | subnet | 0443d876-eafb-4b8c-9c83-7d32c2cccad6 | create | failed |
| 77 | network | 208421ad-483e-4e45-8c6f-d135146a1ee7 | create | failed |
| 79 | port | 9cb6d418-d916-4be8-aad5-1cb07d388d5f | update | failed |
| 78 | subnet | 0443d876-eafb-4b8c-9c83-7d32c2cccad6 | create | failed |
| 79 | port | 9cb6d418-d916-4be8-aad5-1cb07d388d5f | update | failed |
| 80 | network | b22415ef-afdc-46fa-834f-8506c132da08 | create | failed |
| 81 | subnet | 2a1e3aea-c996-45f1-94f9-84b604597dc3 | create | failed |
```

	80		network		b22415ef-afdc-46fa-834f-8506c132da08		create		failed
	82		port		4f3fe359-8de9-45f6-be4b-b9d7c565399f		update		failed
	81		subnet		2a1e3aea-c996-45f1-94f9-84b604597dc3		create		failed
	82		port		4f3fe359-8de9-45f6-be4b-b9d7c565399f		update		failed
	83		network		2237342e-95ec-44c2-92e6-706092b1eda3		create		failed
	84		subnet		51c32ef1-c15e-4a1a-ad89-6e2adfdf8da5		create		failed
	83		network		2237342e-95ec-44c2-92e6-706092b1eda3		create		failed
	85		port		aab84828-5e08-4a95-aef6-2498f6ef5991		update		failed
	84		subnet		51c32ef1-c15e-4a1a-ad89-6e2adfdf8da5		create		failed
	85		port		aab84828-5e08-4a95-aef6-2498f6ef5991		update		failed
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+									
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+									

## efa-journal reset

---

Resets the retry count for all or specified failed journal entries and retries the operation.

### Syntax

```
efa-journal reset [ Journal_ID ]
```

### Parameters

*Journal\_ID*

Specifies the journal ID that you want to reset.

### Usage Guidelines

You can return journal IDs by running the `efa-journal list` command.

### Examples

The following example resets specific failed entries - 77 and 78.

```
$ efa-journal reset 77 78  
5dc0bf8b-674c-4c9f-944e-dc048bd184f0
```

The following example resets all failed entries.

```
$ efa-journal reset
```

## efa-sync execute

Syncs EFA with Neutron. Displays summary or detailed information about entities that are out of sync between Neutron and EFA configurations.

### Syntax

**efa-sync execute**

**efa-sync check-summary**

**efa-sync check-detail**

### Usage Guidelines

The command also logs console output into efa-sync-console.log.

The efa-sync tool uses Neutron APIs and keystone authentication. The authentication parameters are selected from the neutron.conf file. Before running efa-sync, make sure that all the parameters under the [keystone-authtoken] section are set to the correct values.



#### Note

In case of default OpenStack settings in neutron.conf, the following parameters need to be edited to 'default' -- lowercase 'd' under [keystone\_authtoken]:

```
project_domain_name = default
user_domain_name = default
```

Journal entries that are completed or failed are cleared from the journal list if the execution of efa-sync is successful. In case of failure, the journal entries are not cleared.

### Examples

This example syncs EFA with Neutron.

```
$ efa-sync execute
Starting Sync
Syncing Networks..
  Add Network to EFA Id: 9e63bc57-568f-488e-9214-21db3fd3cd12
  (Succeeded)
Syncing Ports..
  Add Port to EFA Id:
  9e63bc57-568f-488e-9214-21db3fd3cd12-10.25.225.11-port-channel-lag_1
  (Succeeded)
  Add Port to EFA Id:
  9e63bc57-568f-488e-9214-21db3fd3cd12-10.25.225.46-port-channel-lag_1
  (Succeeded)
Completed Sync
```

This example displays summary information about entities that are out of sync between Neutron and EFA configurations.

```
$ efa-sync check-summary
05-November-2020 11:04:15 : Starting Check
Summary:
  Neutron Networks to be added to EFA : 1
```

```
Neutron Networks to be deleted from EFA : 0
Neutron Ports to be added to EFA : 2
Neutron Ports to be deleted from EFA : 0
Total # of resources to be resynced : 3
05-November-2020 11:04:16 : Completed Check
```

This example displays detailed information about entities that are out of sync between Neutron and EFA configurations.

```
$ efa-sync check-detail
05-November-2020 11:04:22 : Starting Check
  Neutron Networks to be added to EFA :
    Id: 9e63bc57-568f-488e-9214-21db3fd3cd12
  Neutron Ports to be added from EFA :
    Id: 9e63bc57-568f-488e-9214-21db3fd3cd12-10.25.225.11-port-channel-
lag_1
    Id: 9e63bc57-568f-488e-9214-21db3fd3cd12-10.25.225.46-port-channel-lag_1
05-November-2020 11:04:22 : Completed Check
```

## efactl

Starts, stops, restarts, and displays the status services for EFA.

### Syntax

```
efactl start  
efactl stop  
efactl restart  
efactl start-service service-name  
efactl restart-service service-name  
efactl clean  
efactl status
```

### Examples

The following example starts all services.

```
# efactl start  
Are you sure you want to start all services? [Y/n]  
Y  
gosystem-service has been started  
goauth-service has been started  
gorbac-service has been started  
godb-service has been started  
gonotification-service has been started  
goinventory-service has been started  
gofabric-service has been started  
gotenant-service has been started  
goopenstack-service has been started  
gohyperv-service has been started  
govcenter-service has been started  
goswitch-service has been started  
goraslog-service has been started  
efa-api-docs has been started  
rabbitmq has been started  
Services have been started
```

The following example stops all services.

```
# efactl stop  
Are you sure you want to stop all services? [Y/n]  
Y  
gosystem-service has been stopped  
goauth-service has been stopped  
gorbac-service has been stopped  
godb-service has been stopped  
gonotification-service has been stopped  
goinventory-service has been stopped  
gofabric-service has been stopped  
gotenant-service has been stopped  
goopenstack-service has been stopped  
gohyperv-service has been stopped  
govcenter-service has been stopped  
goswitch-service has been stopped
```



```
goraslog-service has been stopped
efa-api-docs has been stopped
rabbitmq has been stopped
Services have been stopped
root@administrator-08:~#
```

The following example restarts all services.

```
efactl restart
Are you sure you want to restart all services? [Y/n]
Y
gosystem-service has been stopped
goauth-service has been stopped
gorbac-service has been stopped
godb-service has been stopped
gonotification-service has been stopped
goinventory-service has been stopped
gofabric-service has been stopped
gotenant-service has been stopped
goopenstack-service has been stopped
gohyperv-service has been stopped
govcenter-service has been stopped
goswitch-service has been stopped
goraslog-service has been stopped
efa-api-docs has been stopped
rabbitmq has been stopped
Services have been stopped
gosystem-service has been started
goauth-service has been started
gorbac-service has been started
godb-service has been started
gonotification-service has been started
goinventory-service has been started
gofabric-service has been started
gotenant-service has been started
goopenstack-service has been started
gohyperv-service has been started
govcenter-service has been started
goswitch-service has been started
goraslog-service has been started
efa-api-docs has been started
rabbitmq has been started
Services have been started
All services have been restarted
```

The following example starts one service.

```
# efactl start-service gofabric-service
Are you sure you want to start gofabric-service? [Y/n]
Y
gofabric-service has been started
```

The following example stops one service.

```
# efactl stop-service gorbac-service
Are you sure you want to stop gorbac-service? [Y/n]
Y
gorbac-service has been stopped
```

The following example restarts one service.

```
# efactl restart-service rabbitmq
Are you sure you want to restart rabbitmq? [Y/n]
Y
```

```
rabbitmq has been stopped
rabbitmq has been started
rabbitmq has been restarted
```

The following example deletes all logs.

```
# efactl clean
This will delete all logs. Are you sure [Y/n]?
Y
Cleaning efa Logs...
Cleaned logs
```

The following example shows EFA status.

```
(efa:extreme)extreme@tpvm:~$ efactl status
NAME      STATUS    ROLES    AGE    VERSION    LABELS
tpvm      Ready     primary  50m    v1.18.6+k3s1  beta.kubernetes.io/arch=amd64,beta.kubernetes.io/os=linux,keepalived=active,kubernetes.io/arch=amd64,kubernetes.io/hostname=tpvm,kubernetes.io/os=linux,node-role.kubernetes.io/primary=true
tpvm2     Ready     primary  50m    v1.18.6+k3s1  beta.kubernetes.io/arch=amd64,beta.kubernetes.io/os=linux,keepalived=standby,kubernetes.io/arch=amd64,kubernetes.io/hostname=tpvm2,kubernetes.io/os=linux,node-role.kubernetes.io/primary=true
NAME      IP           NODE      NOMINATED NODE    READY    STATUS    RESTARTS    AGE
pod/gofabric-service-cb547d7db-1k6r9  10.42.2.8    tpvm2     <none>             0/1      Init:0/2    0      45m
pod/gonotification-service-ffccd5bf6-w196v  10.20.255.114  tpvm2     <none>             0/1      Init:0/2    0      45m
pod/goauth-service-5fdd67574-g6jw5  10.42.2.9    tpvm2     <none>             0/1      Init:0/2    0      45m
pod/gotenant-service-7db6648b97-rvft9  10.42.2.10   tpvm2     <none>             0/1      Init:0/3    0      45m
pod/efa-api-docs-5886cb6fb4-vnq8x  10.42.2.12   tpvm2     <none>             1/1      Running     0      45m
pod/efa-api-docs-5886cb6fb4-h7lrb  10.42.0.11   tpvm      <none>             1/1      Running     0      45m
pod/gosnmp-service-56dc6c46c8-hd8nk  10.20.255.114  tpvm2     <none>             0/1      Init:0/1    0      45m
pod/goopenstack-service-798b445769-sgdc6  10.42.2.13   tpvm2     <none>             0/1      Init:0/2    0      45m
pod/goinventory-service-5c7f7b57c4-txr9m  10.42.2.14   tpvm2     <none>             0/1      Init:0/2    0      45m
pod/gosnmp-service-56dc6c46c8-vbtbv  10.20.255.230  tpvm      <none>             1/1      Running     0      45m
pod/govcenter-service-6ff99bf8b8-dx2dk  10.42.2.15   tpvm2     <none>             0/1      Init:0/2    0      45m
pod/goopenstack-service-798b445769-v7dzzr  10.42.0.13   tpvm      <none>             1/1      Running     0      45m
pod/gohyperv-service-7f8d87d55-xspkg  10.42.2.16   tpvm2     <none>             0/1      Init:0/2    0      45m
pod/gosystem-service-67767c4796-n7rc4  10.20.255.114  tpvm2     <none>             1/1      Running     0      45m
pod/gosystem-service-67767c4796-14w4m  10.20.255.230  tpvm      <none>             1/1      Running     0      45m
pod/rabbitmq-0  10.42.0.6    tpvm      <none>             1/1      Running     0      46m
pod/gorbac-service-69c665497b-bdlkh  10.42.2.11   tpvm2     <none>             0/1      Init:1/2    0      45m
pod/goauth-service-5fdd67574-5h4rx  10.42.0.9    tpvm      <none>             1/1      Running     0      45m
pod/gorbac-service-69c665497b-slkr2  10.42.0.10   tpvm      <none>             1/1      Running     0      45m
```

pod/goinventory-service-5c7f7b57c4-68b7w	1/1	Running	0	45m
10.42.0.12	tpvm <none>	<none>		
pod/gonotification-service-ffccd5bf6-7551d	1/1	Running	0	45m
10.20.255.230	tpvm <none>	<none>		
pod/goraslog-service-6d89f667bd-6d46n	1/1	Running	0	45m
10.20.255.114	tpvm2 <none>	<none>		
pod/gofabric-service-cb547d7db-nntlb	1/1	Running	0	45m
10.42.0.7	tpvm <none>	<none>		
pod/gotenant-service-7db6648b97-6wdht	1/1	Running	0	45m
10.42.0.8	tpvm <none>	<none>		
pod/goraslog-service-6d89f667bd-jgkww	1/1	Running	0	45m
10.20.255.230	tpvm <none>	<none>		
pod/rabbitmq-1	1/1	Running	0	43m
10.42.2.17	tpvm2 <none>	<none>		
pod/govcenter-service-6ff99bf8b8-lvm46	1/1	Running	2	45m
10.42.0.14	tpvm <none>	<none>		
pod/gohyperv-service-7f8d87d55-bqzllz	1/1	Running	2	45m
10.42.0.15	tpvm <none>	<none>		

NAME	AGE	TYPE	CLUSTER-IP	EXTERNAL-IP
service/rabbitmq		NodePort	10.43.215.4	<none>
15672:31672/TCP	46m	app=rabbitmq		
service/gofabric-service		ClusterIP	10.43.76.230	<none>
8081/TCP	46m	app=gofabric-service		
service/goinventory-service		ClusterIP	10.43.63.133	<none>
8082/TCP	46m	app=goinventory-service		
service/goinventory-cluster-service		ClusterIP	10.43.55.0	<none>
8082/TCP	46m	app=goinventory-service		
service/gotenant-service		ClusterIP	10.43.51.68	<none>
8083/TCP	46m	app=gotenant-service		
service/efa-api-docs		ClusterIP	10.43.243.140	<none>
80/TCP	46m	app=efa-api-docs		
service/goraslog-service		ClusterIP	10.43.207.123	<none>
8091/TCP	46m	app=goraslog-service		
service/gosnmp-service		ClusterIP	10.43.122.218	<none>
8092/TCP	46m	app=gosnmp-service		
service/gonotification-service		ClusterIP	10.43.95.30	<none>
8088/TCP	46m	app=gonotification-service		
service/goauth-service		ClusterIP	10.43.106.23	<none>
8080/TCP	46m	app=goauth-service		
service/gorbac-service		ClusterIP	10.43.10.15	<none>
8089/TCP	46m	app=gorbac-service		
service/goopenstack-service		ClusterIP	10.43.91.98	<none>
8085/TCP	45m	app=goopenstack-service		
service/govcenter-service		ClusterIP	10.43.25.206	<none>
8086/TCP	45m	app=govcenter-service		
service/gohyperv-service		ClusterIP	10.43.44.224	<none>
8087/TCP	45m	app=gohyperv-service		
service/gosystem-service		ClusterIP	10.43.210.54	<none>
8090/TCP	45m	app=gosystem-service		

NAME	IMAGES	READY	UP-TO-DATE	AVAILABLE	AGE	
CONTAINERS						
deployment.apps/efa-api-docs		2/2	2	2	46m	efa-api-
docs	efa-api-docs:2.4.0	app=efa-api-docs				
deployment.apps/gosystem-service		2/2	2	2	45m	
gosystem	gosystem:2.4.0	app=gosystem-service				
deployment.apps/goraslog-service		2/2	2	2	45m	goraslog-
service	goraslog:2.4.0	app=goraslog-service				
deployment.apps/gosnmp-service		1/2	2	1	45m	gosnmp-
service	gosnmp:2.4.0	app=gosnmp-service				
deployment.apps/goopenstack-service		1/2	2	1	45m	
openstack	goopenstack:2.4.0	app=goopenstack-service				

```

deployment.apps/goauth-service      1/2      2          1          46m      go-
auth                                goauth:2.4.0      app=goauth-service
deployment.apps/gorbac-service      1/2      2          1          46m      go-
rbac                                gorbac:2.4.0      app=gorbac-service
deployment.apps/goinventory-service  1/2      2          1          46m
goinventory-service                goinventory:2.4.0  app=goinventory-service
deployment.apps/gonotification-service 1/2      2          1          46m
gonotification-service              gonotification:2.4.0 app=gonotification-service
deployment.apps/gofabric-service     1/2      2          1          46m      gofabric-
service                             gofabric:2.4.0    app=gofabric-service
deployment.apps/gotenant-service     1/2      2          1          46m      gotenant-
service                             gotenant:2.4.0    app=gotenant-service
deployment.apps/govcenter-service    1/2      2          1          45m
vcenter                             govcenter:2.4.0   app=govcenter-service
deployment.apps/gohyperv-service     1/2      2          1          45m
hyperv                              gohyperv:2.4.0   app=gohyperv-service

NAME                                DESIRED    CURRENT    READY    AGE
CONTAINERS                          IMAGES
replicaset.apps/efa-api-docs-5886cb6fb4 2          2          2        45m      efa-
api-docs                            efa-api-docs:2.4.0 app=efa-api-docs,pod-template-hash=5886cb6fb4
replicaset.apps/gosnmp-service-56dc6c46c8 2          2          1        45m
gosnmp-service                       gosnmp:2.4.0      app=gosnmp-service,pod-template-
hash=56dc6c46c8
replicaset.apps/goopenstack-service-798b445769 2          2          1        45m
openstack                             goopenstack:2.4.0 app=goopenstack-service,pod-template-
hash=798b445769
replicaset.apps/gosystem-service-67767c4796 2          2          2        45m
gosystem                              gosystem:2.4.0    app=gosystem-service,pod-template-
hash=67767c4796
replicaset.apps/goauth-service-5fdd67574 2          2          1        46m      go-
auth                                goauth:2.4.0      app=goauth-service,pod-template-
hash=5fdd67574
replicaset.apps/gorbac-service-69c665497b 2          2          1        45m      go-
rbac                                gorbac:2.4.0      app=gorbac-service,pod-template-
hash=69c665497b
replicaset.apps/goinventory-service-5c7f7b57c4 2          2          1        46m
goinventory-service                  goinventory:2.4.0 app=goinventory-service,pod-template-
hash=5c7f7b57c4
replicaset.apps/gonotification-service-ffccd5bf6 2          2          1        46m
gonotification-service                gonotification:2.4.0 app=gonotification-service,pod-template-
hash=ffccd5bf6
replicaset.apps/gofabric-service-cb547d7db 2          2          1        46m
gofabric-service                     gofabric:2.4.0    app=gofabric-service,pod-template-
hash=cb547d7db
replicaset.apps/gotenant-service-7db6648b97 2          2          1        46m
gotenant-service                     gotenant:2.4.0    app=gotenant-service,pod-template-
hash=7db6648b97
replicaset.apps/goraslog-service-6d89f667bd 2          2          2        45m
goraslog-service                     goraslog:2.4.0    app=goraslog-service,pod-template-
hash=6d89f667bd
replicaset.apps/govcenter-service-6ff99bf8b8 2          2          1        45m
vcenter                              govcenter:2.4.0   app=govcenter-service,pod-template-
hash=6ff99bf8b8
replicaset.apps/gohyperv-service-7f8d87d55 2          2          1        45m
hyperv                              gohyperv:2.4.0   app=gohyperv-service,pod-template-
hash=7f8d87d55

NAME                                READY    AGE    CONTAINERS    IMAGES
statefulset.apps/rabbitmq 2/2      46m    rabbitmq-node rabbitmq:2.4.0
(efa:extreme) extreme@tpvm:~$

```

## openstack network efa-bl-pair-map create

Maps a border-leaf pair and specifies the border-leaf pair on which the route will be installed.

### Syntax

```
openstack network efa-bl-pair-map create [--name name | --switch-ips  
    switches]
```

### Parameters

**--name** *name*

Specifies the name of the border-leaf pair

**--switch-ips** *switches*

Comma separated IP addresses of border-leaf on fabric. For example, 10.2.2.2,10.2.2.3.

### Examples

```
openstack network efa-bl-pair-map create --name blp1 --switch-ips 10.2.2.2,10.2.2.3  
+-----+  
| Field      | Value                                     |  
+-----+  
| id         | 0d19abc5-d31b-4682-b86d-cc1617ea0c97 |  
| name       | blp1                                     |  
| switch_ips | 10.2.2.2,10.2.2.3                       |  
+-----+
```

## openstack network efa-topology-link-map create

---

Creates a topology link

### Syntax

```
openstack network efa-topology-link-map create [--host HOST | --nic NIC |  
--provider-network PROVIDER_NETWORK | --port PORT | --po-name PO_NAME  
| --help ]
```

### Parameters

**host**

Host name of the compute node which connects to the switch

**nic**

Physical NIC on the compute host which connects to the switch

**provider-network**

Provider network name on compute host. For example, physnet1 (default).

**port**

Switch port to which the physical NIC on the compute host is connected

**po-name**

Switch PO name where physical ports are aggregated to NIC where compute host is connected.

**help**

Displays help for the command

### Examples

```
# openstack network efa-topology-link-map create --host  
Openstack115 --nic eth1 --pn default --switch 10.24.14.133 --port 0/1 --po-name  
lag_1
```

## openstack network efa-topology-link-map delete

---

Deletes a topology link

### Syntax

```
openstack network efa-topology-link-map delete [--help ]
```

```
openstack network efa-topology-link-map delete [-h] <link> [<link> ...]
```

Specify the UUID of the link to delete.

### Examples

```
openstack network efa-topology-link-map delete  
08bb90b6-ac37-4b7f-aa80-d1d08de7e54b  
012b90b6-ac12-427f-a220-d1d08de7e123
```

## openstack network efa-topology-link-map list

Lists topology links

### Syntax

```
openstack network efa-topology-link-map list [--help ]
```

### Examples

The following example configures....

```
# openstack network efa-topology-link-map list
+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+
| ID                                     | Host           | Nic | Provider Network |
Switch      | Port | Po Name |                                     |
+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+
| 08fa6b52-8c25-4193-8e4b-00ce3d81f392 | DCGW1          |     | external_nw      |
10.20.246.8 | 0/14 | lag_4   |                                     |
| 0977490d-f07a-4b2c-b683-8359bde19fcc | niyer-devstack | eth3 | physnet3         |
10.20.246.8 | 0/15 |         |                                     |
| 14486fd7-1bd7-4ba0-a159-b2e76f775fdd | niyer-devstack | eth4 | default          |
10.20.246.8 | 0/16 |         |                                     |
| 4ce69af9-03ce-49d7-a0dc-0b5c64e25ded | niyer-devstack | eth1 | physnet11       |
10.20.246.8 | 0/13 | lag_1   |                                     |
| c3879465-ecdd-492b-918e-981c104005ba | DCGW1          |     | external_nw      |
10.20.246.7 | 0/14 | lag_4   |                                     |
| c9663e8d-f91c-44ff-b4a1-fb97e603bda2 | niyer-devstack | eth0 | physnet11       |
10.20.246.7 | 0/13 | lag_1   |                                     |
| daf3c58a-9b24-4069-afe8-94d2a20004c9 | niyer-devstack | eth2 | physnet2         |
10.20.246.7 | 0/15 |         |                                     |
+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+
```



## openstack router create

---

Creates a router in centralized mode.

### Syntax

```
openstack router create [ router-name --centralized ]
```

### Parameters

*router-name* **--centralized**

Creates a router in centralized mode.

### Usage Guidelines

In centralized mode, routing is configured only on the border leaf pairs.

When you create a router, the default mode is centralized. You can create a router with or without the **--centralized** option and achieve the same result.



#### Note

EFA does not support routers configured in distributed mode, although the feature was supported in a previous release. The functionality to configure distributed mode is turned off.

Each of these examples creates 1 centralized router called R2.

```
$ openstack router create R2  
  
$ openstack router create R2 --centralized
```