Extreme Fabric Automation 2.2.0

Command Reference

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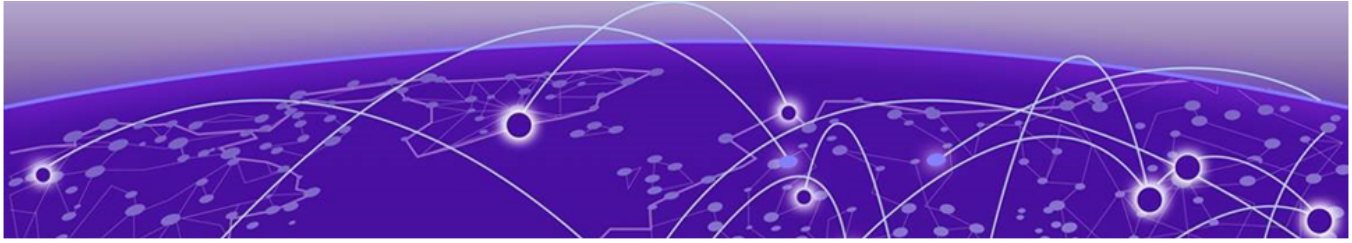

Table of Contents

Preface

This section describes the text conventions used in this document, where you can find additional information, and how you can provide feedback to us.

Text Conventions

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.

Table 1: Notes and warnings (continued)

Icon	Notice type	Alerts you to...
	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 appears on the screen.
The words *enter* and *type*	When you see the word *enter* 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 *type*.
Key names	Key names are written in boldface, for example **Ctrl** or **Esc**. If you must press two or more keys simultaneously, the key names are linked with a plus sign (+). Example: Press **Ctrl**+**Alt**+**Del**
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.
NEW!	New information. In a PDF, this is searchable text.

Table 3: Command syntax

Convention	Description
bold text	Bold text indicates command names, keywords, and command options.
italic text	Italic text indicates variable content.
`[ ]`	Syntax components displayed within square brackets are optional. Default responses to system prompts are enclosed in square brackets.
`{ x | y | z }`	A choice of required parameters is enclosed in curly brackets separated by vertical bars. You must select one of the options.
`x | y`	A vertical bar separates mutually exclusive elements.
< >	Nonprinting characters, such as passwords, are enclosed in angle brackets.
...	Repeat the previous element, for example, *member*`[`*member*`...]`.
\	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/software compatibility matrices for Campus and Edge products

Supported transceivers and cables for Data Center products

Other resources, like white papers, data sheets, and case studies

Extreme Networks offers product training courses, both online and in person, as well as specialized certifications. For details, visit www.extremenetworks.com/education/.

Getting Help

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

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 Service Notifications

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

1. Go to www.extremenetworks.com/support/service-notification-form.
2. Complete the form (all fields are required).

3. Select the products for which you would like to receive notifications.

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

4. Select **Submit**.

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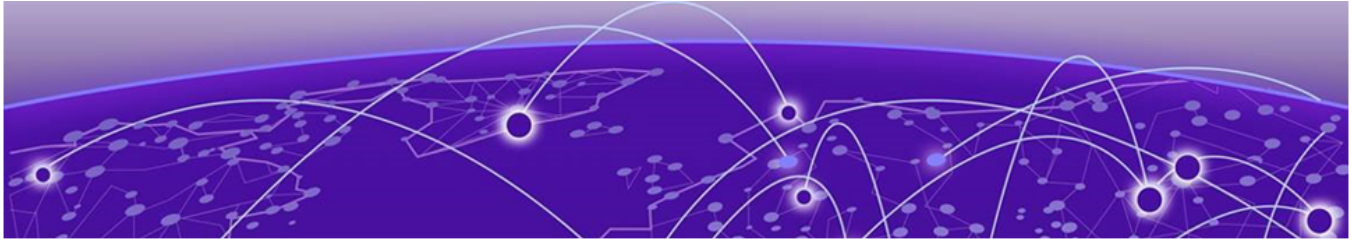
The Information Development team at Extreme Networks has made every effort to ensure the accuracy and completeness of this document. We are always striving to improve our documentation and help you work better, so we want to hear from you. We welcome all feedback, but we especially want to know about:

- Content errors, or confusing or conflicting information.
- Improvements that would help you find relevant information in the document.
- Broken links or usability issues.

If you would like to provide feedback, you can do so in three ways:

- In a web browser, select the feedback icon and complete the online feedback form.
- Access the feedback form at https://www.extremenetworks.com/documentation-feedback/.
- Email us at 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

What's New in this Document

There are new and modified commands in this release.

New commands

The following commands are introduced in this release.

- **efa auth apikey**
- **efa auth client register**
- **efa auth generatekey**
- **efa auth ldapconfig**
- **efa auth rolemapping**
- **efa auth settings token**
- **efa certificate device install**
- **efa certificate server**
- **efa inventory config-backup**
- **efa inventory config-replay**
- **efa inventory device compare**
- **efa inventory device delete**
- **efa inventory device discovery-time list**
- **efa inventory device discovery-time update**
- **efa inventory device execute-cli**
- **efa inventory device health-status**
- **efa inventory device interface set-admin-state**
- **efa inventory device interface set-breakout**
- **efa inventory device interface set-mtu**
- **efa inventory device interface set-speed**
- **efa inventory device interface unset-breakout**
- **efa inventory device list**

- **efa inventory device register**
- **efa inventory device setting show**
- **efa inventory device setting update**
- **efa inventory device system set-mtu**
- **efa inventory drift-reconcile**
- **efa inventory execution**
- **efa inventory kvstore**
- **efa inventory rma**
- **efa login**
- **efa logout**
- **efa notification subscribers add-https**
- **efa notification subscribers delete**
- **efa notification subscribers get**
- **efa notification subscribers list**
- **efa openstack execution**
- **efa rbac execution**
- **efa rbac role show**
- **efa show-running-config**
- **efa scvmm delete**
- **efa scvmm links physical**
- **efa scvmm links virtual**
- **efa scvmm list**
- **efa scvmm register**
- **efa scvmm settings show**
- **efa scvmm settings update**
- **efa scvmm update**
- **efa system backup**
- **efa system restore**
- **efa system supportsave**
- **efa tenant debug device drift**
- **efa tenant debug set**
- **efa tenant epg configure**
- **efa tenant epg create**
- **efa tenant epg delete**
- **efa tenant epg detach**
- **efa tenant epg error show**
- **efa tenant epg show**
- **efa tenant execution**

- **efa tenant service bgp create**
- **efa tenant service bgp delete**
- **efa tenant service bgp show**
- **efa tenant service bgp update**
- **efa version**
- **efactl commands**

Modified commands

The following commands are modified in this release.

- **efa supportsave**
- **efa tenant epg error show**
- **efa tenant po create**
- **efa tenant show**
- **efa tenant update**
- **efa tenant vrg create**
- **efa tenant vrg delete**

Supported Platform Matrix

EFA provides seamless support for upgrade and downgrade of SLX devices across pre-20.1.x and 20.1.x images to keep the device and application configuration in sync.

Extreme Fabric Automation: Deployment Models

Table 4: EFA Deployment on an External Server

Version	Deployment	Managed SLX Devices	Multi-Fabric Support	Ubuntu Version	Server Requirement
EFA 2.1.0	External server (Bare metal or OVA)	More than 24	Yes	16.04	CPU: 4 cores Storage: 50 GB RAM: 8 GB
EFA 2.2.0	External server (Bare metal)	More than 24	Yes	16.04, 18.04	
EFA 2.2.0	External server (OVA)	More than 24	Yes	18.04	

Table 5: EFA Deployment on a TPVM

Version	Deployment	Managed SLX Devices	Multi-Fabric Support	Ubuntu Version	Minimum SLX-OS version
EFA 2.1.0	SLX 9150, SLX 9250, or SLX 9640 TPVM	Up to 24	Yes	16.04	20.1.1
EFA 2.2.0	SLX 9150, SLX 9250, or SLX 9640 TPVM	Up to 24	Yes	18.04	20.1.2

Table 6: TPVM Versions

TPVM Version	SLX-OS 20.1.1	SLX-OS 20.1.2	Ubuntu Version	EFA Version
3.0	Yes	Yes	16.04	2.1.0
4.0	No	Yes	18.04	2.2.0

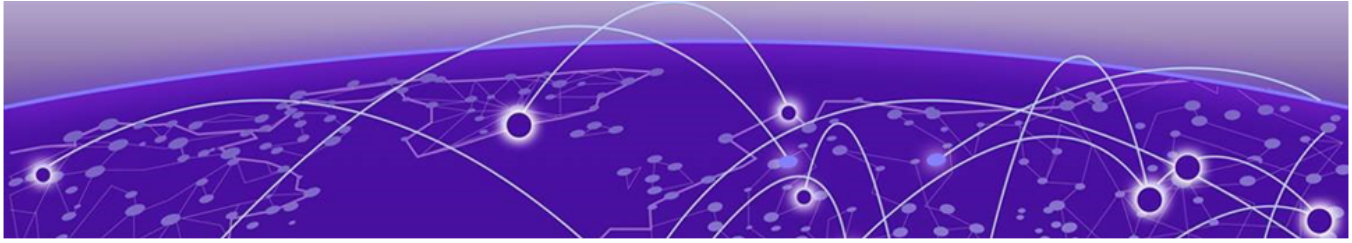
Extreme IP Fabric: Topologies and PINs

Table 7: Extreme IP Fabric: Topologies and PINs

Platforms	SLX-OS Release	Leaf	Spine	Super Spine	Border Leaf	Small DC Fabric
SLX 9150	20.1.1, 20.1.2a	✔				✔
SLX 9250	20.1.1, 20.1.2a	✔	✔			✔

Table 7: Extreme IP Fabric: Topologies and PINs (continued)

Platforms	SLX-OS Release	Leaf	Spine	Super Spine	Border Leaf	Small DC Fabric
SLX 9540	18r.1.00aa, 18r.1.00b,18r.1.00c, 18r.1.00cc, 20.1.1, 20.1.2a	✔			✔	
SLX 9640	20.1.1, 20.1.2a				✔	
SLX 9140	18s.1.01, 18s.1.01a, 18s.1.01c, 18s.1.03	✔				✔
SLX 9240	18s.1.01, 18s.1.01a, 18s.1.01c, 18s.1.03	✔	✔	✔		
SLX 9030	18x.1.00, 18x.1.00a, 18x.1.00b	✔				
SLX 9850	18r.1.00aa, 18r.1.00b, 18r.1.00c		✔	✔		



Extreme Fabric Automation Commands

efa auth apikey

Creates or displays the API Key for the OpenStack instance.

Syntax

efa auth apikey generate--client-id *id*

efa auth apikey show

Parameters

generate--client-id *id*

Generates the API Key for the indicated client ID.

show

Displays the generated API Key.

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.
eyJhbGciOiJSUzI1NiIsImtZCI6IjEuMCIssInR5cCI6IkpX...
--- Time Elapsed: 506.458623ms ---
```

efa auth client register

Registers an OpenStack tenant as a client to EFA.

Syntax

efa auth client register --name *tenant-name* **--type** *client-type*

Parameters

--name *tenant-name*

Specifies the name of the tenant to register.

--type *client-type*

Specifies the type of client you are registering. In this case, the type is `OpenStack`.

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 executionshow

efa auth execution delete *days*

Parameters

show

Displays a list of executions.

delete *days*

Deletes execution entries that are older than the specified number of days.

Examples

This example deletes entries older than 15 days.

```
efa auth execution delete 15
```

efa auth generatekey

Creates an API key for the OpenStack instance.

Syntax

efa auth generatekey --clientID *id*

Parameters

--clientid *id*

Specifies the client ID.

Usage Guidelines

The client ID is generated when you run the **efa auth client register** command.

Examples

This example creates an API key for the specified client ID.

```
# efa auth generatekey --clientID d6d7340e-7cd0-11ea-b7a6-aaa8d3cb654e
API key is created successfully.
eyJhbGciOiJSUzI1NiIsImtpZCI6IjEuMCIsInR5cCI6IkpX...
-- Time Elapsed: 506.458623ms --
```

efa auth ldapconfig

Configures an external LDAP server for user validation and to fetch user groups

Syntax

efa auth ldapconfig { **add** | **delete** | **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** *pword* |**--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

Parameters

add | **delete** | **update**

Designates the type of action to perform for the LDAP configuration.

show

Displays the current LDAP server configuration.

--name *ldap-name*

Specify the name of the LDAP connection.

--primary *value*

Specify 1 when multiple LDAP connections are available.

--host *hostname*

Specify the hostname or IP address of the host server.

--port *port-num*

Specify 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*

Specify the location of the Certificate Authority certificate.

--timeout *value*

Specify the number of seconds that must elapse before the LDAP server is considered unreachable. The default is 5 seconds.

--bind-user-name *dn*

Specify the Distinguished Name (DN) of the user that you want to use to bind, search, and retrieve LDAP entries.

--bind-user-password *pword*

Specify the password of the bind user.

--user-search-base *dn*

Specify the DN of the node in the directory tree from which searches for user objects will start.

--user-object-class *obj-class*

Specify the name of the object class to use for user objects. The default is `inetOrgPerson`.

--user-login-attribute *att-value*

Specify 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*

Specify the attribute from which the user role is read.

--user-role-attribute-key *att-value*

Specify the attribute that reads the role value from the role attribute.

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

Specify the attribute that reads the member of the group that the user is part of.

--group-search-base *dn*

Specify the DN of the node in the directory tree from which searches for group objects begins.

--group-object-class *obj-class*

Specify the name of the object class to use for group searches. The default is `groupOfNames`.

--group-attribute *att-value*

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

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

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

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

Specify 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.

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
```

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 following:
--type cli | **access** | **refresh**

Specifies the type of token you want to update.

--hours *num* | **--minutes** *num*

Specifies the number of hours or 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 backup

Backs up the EFA database and services.

Syntax

efa backup

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.

Run this command as a root user with administrative privileges. When prompted, provide the directory path for the backup tar file.

Examples

This example backs up the database to the `/root/backup/bk_v1` directory.

```
efa backup
Backup file ::  /apps/efa_logs/backup//EFA-2020.06.08-15.52.09.tar
--- Time Elapsed: 9.603815206s ---
```

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 disabled 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 http
```

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

Cloning can expedite the deployment of fabrics across different sites / 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.

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

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**]

Command Default

If the --force option is used, all the devices will be removed and added back to the fabric. This 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.

Parameters

--name

Name of the fabric

--force

Force the configuration on the devices

Examples

```
efa fabric configure --name extr-fabric

efa fabric configure --name extr-fabric --force
```

efa fabric create

Creates a fabric.

Syntax

efa fabric create [**--name** *<fabric-name>* | **--type** *< clos | non-clos >* |**--stage** *< 3 | 5 >* |**--description** *<description>*]

Parameters

--name

Name of the fabric.

--description

Description of the product.

--type *< clos | non-clos >*

Type of the fabric (default: clos).

--stage

Stage of the fabric [3 | 5] (default: 3).

Examples

```
efa fabric create --name extr-fabric  --type non-clos
```

efa fabric debug clear-config

Clears the underlay/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

The device IP address

--reference-fabric

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

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 delete

Deletes the fabric from inventory.

Syntax

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

Parameters

--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 fabric but not from 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** *<id>* **--pod** *<pod-name>* **--username** *<username>* **--password** *<password>*]

Command Default

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

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

If user provides “username” and “password”, then the device will be auto registered with the inventory service.

If user doesn’t provide “username” and “password”, then user would need to explicitly register the device with the inventory service.

Parameters

--name

Name of the fabric

--ip

Device IP

--role

Device Role (leaf | spine | super-spine | border-leaf)

--leaf-type

Leaf Type (single-homed | multi-homed)

--hostname

Host Name

--asn

ASN

--vtep-loopback

VTEP Loopback

--loopback

Loopback Port Number

--pod

Name of the pod

--rack

Name of the rack

--username

Username for the device

--password

password for the device

Examples

```
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 an existing fabric.

Syntax

```
efa fabric device add-bulk { --name <fabric-name> | --rack <rack name> |
   --ip <pair --of-ips> | }[--username <username> | --password
   <password> ]
```

Command Default

If “username” and “password” are provided, the devices will be auto registered with the inventory service.

If “username” and “password” are not provided, the devices must be registered with the inventory service.

A single “three-stage-pod” and “five-stage-pod” can be provided per CLI execution.

Parameters

--name

Name of the fabric

--leaf

Comma separated list of leaf IP Address/Host names

--border-leaf

Comma separated list of borderLeaf IP Address/Host names

--three-stage-pod

Name of the leaf/spine pod

--five-stage-pod

Name of the super-spine pod

--spine

Comma separated list of spine IP Address/Host names

--super-spine

Comma separated list of super spine IP Address/Host names

--username

Username for the list of devices

--password

Password for the list of devices

Examples

```
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 existing device from a fabric.

Syntax

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

Command Default

If the "--no-device-cleanup" option is used, the configuration pushed by the automation engine will not be cleaned up from the fabric devices. Removal of a device from fabric doesn't delete the device from inventory. The device from inventory must be deleted.

Parameters

--name

Name of the fabric

--ip

Device IP

--no-device-cleanup

Do not clean up the configuration on the devices

Examples

```
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** *fabric name* | **--export** *file name*]

Command Default

During device add to the fabric and during fabric configure, validation errors (topology and configuration) are reported for corrective action.

Errors occurring during the add, validate, and configure phase will be persisted in the DB.

A CLI will be provided that lists the device errors.

Parameters

--name

Name of the fabric

--export

Export fabric details to a csv file

Examples

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

efa fabric execution show

Displays the REST API executions of Fabric service.

Syntax

efa fabric execution show [**--id** *execution id* | **--limit** *number of executions* | **--status** *failed* | *succeeded* | *all*]

Parameters

--id

Filter the executions based on the execution id. "Limit" and "status" flags are ignored when the "id" flag is given.

--limit

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

--status

Filter the executions based on the status (failed/succeeded/all). The default is "all".

Examples

```
efa fabric execution show
```

efa fabric export

Exports Fabric details to a .csv file.

Syntax

efa fabric export --name *fabric-name*

Parameters

--name *fabric-name*

Name of the fabric

efa fabric import

An embedded fabric DB file, available on the host where an EFA application is running, can be imported.

Syntax

efa fabric import

Command Default

If efa.db (Embedded fabric DB file) is available on the host where EFA application is run then it can be imported by providing the local file path. In this case server IP and server credentials are not required.

If efa.db is present on the TPVM user has to provide the db file path on TPVM for e.g. /var/efa/efa.db. Also, user needs to enter the TPVM server IP address and server credentials.

If db file path is incorrect or if the application is unable to open the db file then an appropriate error is returned.

If connection to TPVM server fails or unable to locate the DB file using the remote file path then an appropriate error is returned to the user.

Parameters

--db-file

EFA dbfile name including full path

--fabric-name

Name with which the fabric will get imported in the EFA

--server-ip

Remote server IP

--username

Remote server username

--password

Remote server password

Examples

Local DB file import

```
efa fabric import --db-file /root/efa/efa.db --fabric-name default

Successfully imported fabric to EFA
```

Remote DB file import

```
efa fabric import --db-file /var/efa/efa.db --fabric-name efa_fabric --server-ip
10.24.85.180 --username admin-password password
```

```
Successfully imported fabric to EFA
```

```
efa fabric import --db-file /root/efa/efa.db --fabric-name default

 Leaf Device 10.25.225.172 not connected to Spine Device
        10.24.80.137 [Failed]
 Spine Device 10.24.80.137 not connected to Leaf Device
        10.25.225.172 [Failed]
```

efa fabric setting update

Updates the fabric settings to overwrite the “default” fabric settings.

Syntax

efa fabric setting update [**<attribute-type>** *<attribute-value>*]

Parameters

--name*<string>*

The name of the fabric

--p2p-link-range*<string>*

IP Pool used for P2P Link Configuration

--loopback-ip-range*<string>*

IP Address Pool for Loopback interface, to be used for unnumbered and VTEP IP

--rack-l3-backup-ip-range*<string>*

IP Address Pool for L3 Back up

--loopback-port-number*<string>*

Loopback ID on the device to be used as donor IP interface for the link between Leaf and Spine <NUMBER: 1-255>

--vtep-loopback-port-number*<string>*

Loopback ID on the device to be used as VTEP IP interface <NUMBER: 1-255>

--spine-asn-block*<string>*

ASN Pool For Spine Nodes, or Single AS

--super-spine-asn-block*<string>*

Single AS

--leaf-asn-block*<string>*

ASN Pool For Leaf Nodes

--border-leaf-asn-block*<string>*

ASN Pool For Border Leaf Nodes

--rack-asn-block*<string>*

ASN Pool For Rack Nodes

--anycast-mac-address*<string>*

IPV4 ANY CAST MAC address.mac address HHHH.HHHH.HHHH

--ipv6-anycast-mac-address*<string>*

IPV6 ANY CAST MAC address.mac address HHHH.HHHH.HHHH

--mac-aging-timeout *<string>*

MAC Aging Timeout <NUMBER: 0|60-86400>

--mac-aging-conversation-timeout*<string>*

MAC Conversational Aging time in seconds<NUMBER: 0|60-100000>

--mac-move-limit*<string>*

MAC move detect limit <NUMBER: 5-500>

--duplicate-mac-timer*<string>*

Duplicate Mac Timer

--duplicate-mac-timer-max-count*<string>*

Duplicate Mac Timer Max Count

--configure-overlay-gateway*<string>*

ConfigureOverlayGateway Enabled Yes/No

--bfd-enable*<string>*

BFD enabled Yes/No

--bfd-tx *<string>*

BFD desired min transmit interval in milliseconds <NUMBER: 50-30000>

--bfd-rx *<string>*

BFD desired min receive interval in milliseconds <NUMBER: 50-30000>

--bfd-multiplier*<string>*

BFD detection time multiplier <NUMBER: 3-50>

--bgp-multihop*<string>*

Enable EBGP neighbors not on directly connected networks <Number:1-255>

--max-paths*<string>*

Forward packets over multiple paths <Number:1-64>

--allow-as-in*<string>*

Disables the AS_PATH check of the routes learned from the AS<Number:1-10>

--mtu*<string>*

For SLX-OS 21.1 and later versions: The MTU size in bytes is <Number:1500-9216>. For other SLX-OS versions: The MTU size in bytes is <Number:1548-9216>

--ip-mtu*<string>*

For SLX IPV4/IPV6 MTU size in bytes <Number:1300-9194>

--leaf-peer-group*<string>*

Leaf Peer Group Name <WORD: 1-63>

--spine-peer-group*<string>*

Spine Peer Group Name <WORD: 1-63>

--super-spine-peer-group*<string>*

Super Spine Peer Group Name <WORD: 1-63>

--rack-underlay-ebgp-peer-group *<string>*

Rack Underlay EBGP Peer Group Name <WORD: 1-63>

--rack-overlay-ebgp-peer-group *<string>*

Rack Overlay EBGP Peer Group Name <WORD: 1-63>

--mctlink-ip-range*<string>*

Address Pool to be used for MCT peering

--mct-port-channel*<string>*

Port-channel interface ID to be used as MCT peer-interface <NUMBER: 1-64>

--rack-l3-backup-port*<string>*

Rack L3 Backup port <STRING: default '0/48'>

--rack-mct-ports*<string>*

Rack Mct Ports <STRING: default '0/46,0/47'>

--rack-ld-l3-backup-port*<string>*

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

--rack-ld-mct-ports*<string>*

Rack Low Density Mct Ports <STRING: default '0/30,0/31'>

--control-vlan*<string>*

VLAN ID to be used as MCT cluster control VLAN <NUMBER: 1-4090>

--control-ve*<string>*

VE ID to be used as MCT cluster control VE <NUMBER: 1-4090>

--vni-auto-map*<string>*

VTEP VLAN/BD to VNI Mode Auto <STRING: Yes/No>

-h, --help*<string>*

Help for the update

efa fabric show

Displays the details of the fabric.

Syntax

efa fabric show [**--name** *fabric name*]

Command Default

Displays the details of all the fabrics when the “--name” option is not provided.

Displays the details of a given fabric when the “--name” option is provided.

Parameters

--name *<fabric-name>*

Name of the fabric

Examples

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

efa fabric show-config

Displays the config 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

Role of devices for which config needs to show (leaf | spine | super-spine | border-leaf)

--ip

The specific ip provided in conjuction 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 the summary of the fabric.

Syntax

efa fabric show summary [**--name** *<fabric-name>*]

Command Default

Displays the summary of all the fabrics when the “--name” option is not provided.

Displays the summary of a given fabric when the “--name” option is provided.

Parameters

--name *<fabric-name>*

Name of the fabric

Examples

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

efa fabric topology show overlay

Displays the overlay connectivity of the devices in a fabric.

Syntax

efa fabric topology show overlay [**--name** *<fabric name>*]

Parameters

--name

Name of the fabric

Examples

```
efa fabric topology show overlay --name BLR_FABRIC
```

efa fabric topology show physical

Displays physical connectivity of the devices in a fabric.

Syntax

efa fabric topology show physical [**--name** *<fabric name>*]

Parameters

--name

Name of the fabric

Examples

```
efa fabric topology show physical --name extr-fabric
```

efa fabric topology show underlay

Displays the underlay connectivity of the devices in a fabric.

Syntax

efa fabric topology show underlay [**--name** *<fabric name>*]

Parameters

--name

Name of the fabric

Examples

```
efa fabric topology show underlay --name  extr-fabric
```

efa inventory config-backup

Configures device configuration backup.

Syntax

efa inventory config-backup history[**--ip** *<ip address>* | **--help**]

efa inventory config-backup execute[**--ip** *<ip address>* | **--help**]

efa inventory config-backup delete[**--key** *<ip address>* | **--help**]

efa inventory config-backup detail[**--uuid** *<cb-uuid>* | **--show-config** | **--file-dump** | **--help**]

Parameters

--detail

Displays config-backup detail

--delete

Deletes config-backup record

--execute

Executes SLX configuration backup

--file-dump

Dumps config text to the given file

--help

Provides help for config-backup commands

--history

Displays config-backup history

--ip

Specifies IP address of the device

--key

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

--show-config

Displays configuration text

--uuid

Specifies config-backup id

Examples

The following example shows **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
```

```
<filename>
# 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** | **--help**]

efa inventory config-replay execute [**--ip** | **uuid** | **ssid** | **--help**]

efa inventory config-replay delete [**--key** | **--help**]

efa inventory config-replay detail [**uuid** *<cr-uuid>* |**--help**]

Parameters

--detail

Displays config-backup detail

--delete

Deletes config-backup record

--execute

Executes SLX configuration backup

--help

Provides help for config replay commands

--history

Displays config replay history

--ip

Specifies IP address of the device

--key

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

--ssid

Specifies SSID of config-backup execution

--uuid

Specifies config replay ID or UUID of config backup execution

Examples

The following example shows **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 device compare

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

Syntax

efa inventory device compare [**--ip** | **--help**]

Parameters

--ip

Specifies IP Address of the device to be compared.

--help

Provides help for compare.

efa inventory device delete

Deletes the device.

Syntax

efa inventory device delete [**--ip** | **--fabric** | **--help**]

Parameters

--ip

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

--fabric

Fabric name for which devices needs to deleted.

--help

Provides help for compare.

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.

Fabric and Tenant 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 2 hours for a Fabric named `myFabric`.

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

efa inventory device execute-cli

Executes CLI on the device.

Syntax

```
efa inventory device execute-cli [ --ip | --fabric | --role | --command |
   --config | --help ]
```

Parameters

--ip

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

--fabric

Specifies devices from the fabric.

--role

Specifies devices based on role from the fabric.

--command

Specifies comma/Semi-colon separated list of CLI commands to execute on the device(s).

--config

Indicates whether commands are for config-term or exec-mode.

--help

Provides help for execute-cli.

efa inventory device firmware-download execute

Starts the firmware upgrade with maintenance mode for devices in prepared state and clear out the prepared list.

Syntax

efa inventory device firmware-download execute --fabric *<fabric name>*

Command Default

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

Parameters

--fabric

Name of the fabric

Usage Guidelines

One or more devices are prepared.

Only allow one outstanding firmware-download execution per fabric.

efa inventory device firmware-download prepare add

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

Syntax

efa inventory device firmware-download prepare add [**--ip** *device ip address* | **--fabric** *fabric name* | **--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).

This command accepts only one device IP address and allows only one outstanding prepared device.

Parameters

--fabric

Name of the fabric

--firmware-host

Firmware download host IP address

--firmware-directory

Path to the target firmware build

--help

Help for add

--ip

IP address of the device

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

```
efa inventory device firmware-download prepare add --ip 10.24.12.122 --firmware-host
10.31.2.101 --firmware-directory /proj/buildsjc/sre/SQA/slxos/20.1.1/20.1.1_bld60

Fabric Name: stage5

+--------------+-----------+-------+--------------+-------+------+------------------
+---------------+-----------------------------------------------------
+--------------------------------+

|  IP Address  | Host Name | Model | Chassis Name |  ASN  | Role | Current Firmware |
Firmware Host |                Firmware Directory                |       Last Update
Time        |

+--------------+-----------+-------+--------------+-------+------+------------------
+---------------+-----------------------------------------------------
+--------------------------------+

| 10.24.12.122 | SLX       |  3010 | SLX9150-48XT | 65001 | Leaf | 20.1.1_bld59     |
10.31.2.101 | /proj/buildsjc/sre/SQA/slxos/20.1.1/20.1.1_bld60 | 2019-10-21
06:30:15.736483-07 |

+--------------+-----------+-------+--------------+-------+------+------------------
+---------------+-----------------------------------------------------
+--------------------------------+

Firmware Download Prepare Details

Prepare Device Firmware Download [Success]

10.24.12.122 [Succeeded]
```

efa inventory device firmware-download prepare list

Prepares a list of all devices for firmware download.

Syntax

efa inventory device firmware-download prepare list [**--ip** *<device ip address>* | **--fabric** *<fabric name>* | **--help**]

Command Default

Only a single prepared device will be allowed.

Parameters

--fabric

Name of the fabric

--help

Help for list

--ip

IP address of the device

Examples

```
efa inventory device firmware-download prepare list --fabric stage5

 Fabric Name: stage5

+--------------+-----------+-------+--------------+-------+------------+------------------
+---------------+-----------------------------------------------------
+--------------------------------+

|  IP Address  | Host Name | Model | Chassis Name |  ASN  |    Role    | Current Firmware
| Firmware Host |                Firmware Directory                |       Last Update
Time        |

+--------------+-----------+-------+--------------+-------+------------+------------------
+---------------+-----------------------------------------------------
+--------------------------------+

| 10.24.12.153 | SLX       |  3012 | SLX9250      | 64512 | SuperSpine | 20.1.1_bld59
|   10.31.2.101 | /proj/buildsjc/sre/SQA/slxos/20.1.1/20.1.1_bld60 | 2019-10-21
06:30:01.424591-07 |

| 10.24.12.146 | SLX       |  3012 | SLX9250      | 64521 | Spine      | 20.1.1_bld59
|   10.31.2.101 | /proj/buildsjc/sre/SQA/slxos/20.1.1/20.1.1_bld60 | 2019-10-21
06:30:01.424591-07 |

| 10.24.12.148 | SLX       |  3012 | SLX9250      | 64523 | Spine      | 20.1.1_bld59
|   10.31.2.101 | /proj/buildsjc/sre/SQA/slxos/20.1.1/20.1.1_bld60 | 2019-10-21
06:30:01.424591-07 |

| 10.24.12.121 | SLX       |  3010 | SLX9150-48XT | 65001 | Leaf       | 20.1.1_bld59
|   10.31.2.101 | /proj/buildsjc/sre/SQA/slxos/20.1.1/20.1.1_bld60 | 2019-10-21
```

```
06:30:01.424591-07 |

| 10.24.12.123 | SLX       |  3010 | SLX9150-48XT | 65002 | Leaf       | 20.1.1_bld59
|   10.31.2.101 | /proj/buildsjc/sre/SQA/slxos/20.1.1/20.1.1_bld60 | 2019-10-21
06:30:01.424591-07 |

| 10.24.12.125 | SLX       |  3010 | SLX9150-48XT | 65003 | Leaf       | 20.1.1_bld59
|   10.31.2.101 | /proj/buildsjc/sre/SQA/slxos/20.1.1/20.1.1_bld60 | 2019-10-21
06:30:01.424591-07 |

| 10.24.12.127 | SLX       |  3010 | SLX9150-48XT | 65004 | Leaf       | 20.1.1_bld59
|   10.31.2.101 | /proj/buildsjc/sre/SQA/slxos/20.1.1/20.1.1_bld60 | 2019-10-21
06:30:01.424591-07 |

+--------------+-----------+-------+--------------+-------+------------+------------------
+---------------+-------------------------------------------------
+--------------------------------+
```

efa inventory device firmware-download prepare remove

Removes the device from the prepared list.

Syntax

efa inventory device firmware-download prepare remove [**--fabric** *<fabric name>* |**--ip** *<device ip address>*]

Command Default

This command will unprepare the single device if it is prepared.

Parameters

--fabric

Name of the fabric

--ip

IP address of the device

efa inventory device firmware-download show

Shows the progress and status of the executed firmware-download.

Syntax

efa inventory device firmware-download show [**--fabric** *<fabric name>* | **--ip** *<device ip address>* | **--help**]

Parameters

--fabric

Name of the fabric

--help

Help for show

Examples

```
efa inventory device firmware-download show --fabric stage5

Fabric Name: stage5

+-----------+-------+--------------+-------+------------+------------------
+-----------------+--------------+--------------------------
+---------------------------------+

| Host Name | Model | Chassis Name |  ASN  |    Role    | Current Firmware | Target
Firmware | Update State |          Status          |       Last Update Time        |

+-----------+-------+--------------+-------+------------+------------------
+-----------------+--------------+--------------------------
+---------------------------------+

| SLX       |  3012 | SLX9250      | 64512 | SuperSpine | 20.1.1_bld60     |
20.1.1_bld60    | Completed    |                          | 2019-10-21 06:30:01.424591-07
|

| SLX       |  3012 | SLX9250      | 64513 | SpineSpine | 20.1.1_bld60     |
20.1.1_bld60    | Completed    |                          | 2019-10-21 06:30:09.744543-07
|

| SLX       |  3012 | SLX9250      | 64521 | Spine      | 20.1.1_bld60     |
20.1.1_bld60    | Completed    |                          | 2019-10-21 06:30:16.563591-07
|

| SLX       |  3012 | SLX9250      | 64522 | Spine      | 20.1.1_bld60     |
20.1.1_bld60    | Completed    |                          | 2019-10-21 06:30:15.736483-07
|

| SLX       |  3012 | SLX9250      | 64523 | Spine      | 20.1.1_bld60     |
20.1.1_bld60    | Completed    |                          | 2019-10-21 06:30:17.665491-07
|

| SLX       |  3012 | SLX9250      | 64524 | Spine      | 20.1.1_bld60     |
20.1.1_bld60    | Completed    |                          | 2019-10-21 06:30:20.244241-07
|
```

```
| SLX       |  3010 | SLX9150-48XT | 65001 | Leaf       | 20.1.1_bld60     |
20.1.1_bld60    | Completed    |                           | 2019-10-21 06:30:25.441725-07
|

| SLX       |  3010 | SLX9150-48XT | 65001 | Leaf       | 20.1.1_bld59     |
20.1.1_bld60    | In Progress  | Maintenance Mode Enabled | 2019-10-21 06:34:25.211744-07
|

| SLX       |  3010 | SLX9150-48XT | 65002 | Leaf       | 20.1.1_bld59     |
20.1.1_bld60    | Not Prepared |                           |
|

| SLX       |  3010 | SLX9150-48XT | 65002 | Leaf       | 20.1.1_bld59     |
20.1.1_bld60    | Not Prepared |                           |
|

| SLX       |  3010 | SLX9150-48XT | 65003 | Leaf       | 20.1.1_bld59     |
20.1.1_bld60    | Not Prepared |                           |
|

| SLX       |  3010 | SLX9150-48XT | 65003 | Leaf       | 20.1.1_bld59     |
20.1.1_bld60    | Not Prepared |                           |
|

| SLX       |  3010 | SLX9150-48XT | 65004 | Leaf       | 20.1.1_bld59     |
20.1.1_bld60    | Not Prepared |                           |
|

| SLX       |  3010 | SLX9150-48XT | 65004 | Leaf       | 20.1.1_bld59     |
20.1.1_bld60    | Not Prepared |                           |
|

+-----------+-------+--------------+-------+------------+------------------
+-----------------+--------------+--------------------------
+--------------------------------+
```

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 set-admin-state

Brings a physical port administratively up or down.

Syntax

efa inventory device interface set-admin-state --ip *device-ip* **--if-type** *ethernet* **--if-name** *if-list* **--state** { **up** | **down** }

Command Default

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

Parameters

--ip *device-ip*

Specifies the IP address of the device.

--if-type *ethernet*

Specifies that the interface type is Ethernet.

--if-name *if-list*

Specifies a comma-separated list of interface names.

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

Specifies a state of up or down.

Usage Guidelines

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 brings two ports into the up state.

```
# efa inventory device interface set-admin-state
--ip 10.x.x.x --if-type eth --if-name 0/31,0/32 --state up

Admin-State Updated Successfully
+----+------+----------------+--------------+
| ID | Name | Interface Type | Admin Status |
+----+------+----------------+--------------+
| 51 | 0/32 | ethernet       | up           |
+----+------+----------------+--------------+
| 15 | 0/31 | ethernet       | up           |
+----+------+----------------+--------------+
Interface Details
--- Time Elapsed: 18.235185378s ---
```

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** *ethernet* **--if-name** *if-list* **--mode** { **1x10g** | **1x25g** | **1x40g** | **1x100g** | **2x40g** | **2x50g** | **4x10g** | **4x25g**}

Parameters

--ip *device-ip*

Specifies the IP address of the device.

--if-type *ethernet*

Specifies that the interface type is Ethernet.

--if-name *if-list*

Specifies a comma-separated list of interface names.

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

Specifies the number of ports you want.

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.

Examples

This example breaks interface 0/52 into four 10g ports.

```
# efa inventory device interface set-breakout --ip 10.x.x.x
--if-type eth --if-name 0/52 --mode 4x10g

Breakout Created Successfully
+-----+--------+----------------+
| ID  | Name   | Interface Type |
+-----+--------+----------------+
| 975 | 0/52:3 | ethernet       |
+-----+--------+----------------+
| 976 | 0/52:1 | ethernet       |
+-----+--------+----------------+
| 977 | 0/52:4 | ethernet       |
+-----+--------+----------------+
| 978 | 0/52:2 | ethernet       |
+-----+--------+----------------+
Interface Details
--- Time Elapsed: 3m43.7323188s ---
```

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** *<string>***--if-name** *<string>* **--mtu int32** *<string>* **--ip-mtu int32** *<string>* **--ipv6-mtu int32***<string>* **--help**]

Parameters

--ip *device-ip*

Specifies the IP address of the device.

--if-type *<string>*

Optional Interface type default value is 'eth'. Current support is only for 'eth'.

--if-name *<string>*

Comma separated range of Interface names addresses and should unique. Example: 0/50-52,0/45.

--mtu int32 *<string>*

MTU value to configure global L2 mtu on device. For SLX-OS 21.1 and higher versions The MTU size in bytes is <Number:1500-9216>. For other SLX-OS versions: The MTU size in bytes is <Number:1548-9216>.

--ip-mtu int32 *<string>*

IP MTU value to configure global ip-mtu on device. For SLX IPV4/IPV6 MTU size in bytes <Number:1300-9194>

--ipv6-mtu int32 *<string>*

IPv6 MTU value to configure global ipv6-mtu on device. For SLX IPV4/IPV6 MTU size in bytes <Number:1300-9194>

--help

Help for set-mtu

Usage Guidelines

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

Examples

This example configures the MTU for two Ethernet interfaces for IP address 10.x.x.x.

```
# efa inventory device interface set-mtu --ip 10.x.x.x
--if-type eth --if-name 0/11,0/12 --mtu 1600 --ip-mtu 700 --ipv6-mtu 1800

Interface MTU Successfully Updated
+-----+------+----------------+------+--------+----------+
```

```
| ID  | Name | Interface Type | MTU  | IP MTU | IPv6 MTU |
+-----+------+----------------+------+--------+----------+
| 99  | 0/11 | ethernet       | 1600 | 1700   | 1800     |
+-----+------+----------------+------+--------+----------+
| 102 | 0/12 | ethernet       | 1600 | 1700   | 1800     |
+-----+------+----------------+------+--------+----------+
Interface MTU Details
--- Time Elapsed: 42.769852714s ---
```

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** *ethernet* **--if-name** *if-list* **--speed** { **100mbps** | **1gbps** | **10gbps** | **25gbps** | **40gbps** | **100gbps** | **auto**]

Parameters

--ip *device-ip*

Specifies the IP address of the device.

--if-type *ethernet*

Specifies that the interface type is Ethernet.

--if-name *if-list*

Specifies a comma-separated list of interface names.

--speed [**100mbps** | **1gbps** | **10gbps** | **25gbps** | **40gbps** | **100gbps** | **auto--help**]

Specifies the speed for the port.

Usage Guidelines

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

Examples

This example sets the speed to 10 Gbps for two ports.

```
# efa inventory device interface set-speed --ip 10.x.x.x --if-type eth
--if-name 0/31,0/32 --speed 10Gbps

Port Speed Updated Successfully
+----+------+----------------+------------+
| ID | Name | Interface Type | Port Speed |
+----+------+----------------+------------+
| 51 | 0/32 | ethernet       | 10Gbps     |
+----+------+----------------+------------+
| 15 | 0/31 | ethernet       | 10Gbps     |
+----+------+----------------+------------+
Interface Details
--- Time Elapsed: 18.0329535s ---
```

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

Parameters

--ip *device-ip*

Specifies the IP address of the device.

--if-type *ethernet*

Specifies that the interface type is Ethernet.

--if-name *if-list*

Specifies a comma-separated list of interface names.

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.

Examples

This example removes breakout mode on interface 0/52.

```
# efa inventory device interface unset-breakout --ip 10.x.x.x
--if-type eth --if-name 0/52
```

efa inventory device list

Lists all devices for a fabric. If fabric name is not provided, list of all devices not associated to a fabric is displayed.

Syntax

```
efa inventory device list [ --orphan | --fabric | --role | --ips | --
   help ]
```

Parameters

--orphan

Fetch devices not associated to a fabric.

--fabric

Specifies fabric name.

--role

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

--ips

Specifies comma separated device IPs.

--help

Provides help for list.

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 the device.

Syntax

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

Parameters

--ip

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

--username

Specifies username to connect to the device.

--password

Specifies password to connect to the device.

--maintmode-enable-on-reboot

Configures maintenance mode enable on reboot.

--help

Provides help for register.

efa inventory device setting show

Displays device setting show.

Syntax

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

Parameters

--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** | **--maint-mode-enable-on-reboot string** | **--maint-mode-enable** | **--health-check-enable** | **--health-check-interval** | **--health-check-heartbeat-miss-threshold** | **--config-backup-periodic-enable** | **--config-backup-interval** | **--number-of-config-backups** | **--help**]

Parameters

--ip

Specifies IP address of the device.

--maint-mode-enable-on-reboot string

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

--maint-mode-enable

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

--health-check-enable

Enter Yes to enable health check and No to disable health check.

--health-check-interval

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

--health-check-heartbeat-miss-threshold

Specifies health check heart miss threshold, valid values 2-5.

--config-backup-periodic-enable

Enter Yes to enable periodic config backup and No to disable periodic config backup.

--config-backup-interval

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

--number-of-config-backups

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

--help

Provides help for update.

efa inventory device system set-mtu

Configures the global MTU (maximum transmission unit) for Layer 2, IPv4, and IPv6.

Syntax

efa inventory device system set-mtu [**--ip** *device-ip* **--mtu** *l2-mtu* **--ip-mtu** *ipv4-mtu* **--ipv6-mtu** *ipv6-mtu*]

Parameters

--ip *device-ip*

Specifies the IP address of the device.

--mtu *l2-mtu*

Specifies the global MTU for Layer 2.

--ip-mtu *ipv4-mtu*

Specifies the global MTU for IPv4.

--ipv6-mtu *ipv6-mtu*

Specifies the global MTU for IPv6.

Usage Guidelines

In SLX-OS, you can use the **show running-config** command to see see the global MTU configuration.

Examples

This example configures the global MTU for IP address 10.x.x.x.

```
# efa inventory device system set-mtu --ip 10.x.x.x --mtu 1900
--ip- mtu 1800 --ipv6-mtu 1800

WARNING: Setting MTU at device level will set MTU for all the interfaces
where it's not explicitly set. This could cause some issues where traffic is
running. Do you want to proceed [y/n]?
y
Global MTU Updated Successfully
+--------------+------+--------+----------+
|  IP Address  | MTU  | IP MTU | IPv6 MTU |
+--------------+------+--------+----------+
| 10.x.x.x     | 1900 | 1800   | 1800     |
+--------------+------+--------+----------+
Global MTU Details
--- Time Elapsed: 53.09144911s ---
```

efa inventory device update ip

Synchronizes the IP address on a device with the Asset service.

Syntax

efa inventory device update ip *ip-addr*

Parameters

ip-addr

Specifies the IP address of the device that you want to synchronize.

Usage Guidelines

This command ensures that the Asset service has the latest information.

Examples

This example synchronizes IP address 10.x.x.x.

```
efa inventory device update ip -10.x.x.x
```

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>* | *<UUID>*] | **--help**]

efa inventory drift-reconcile detail [**--uuid** *<dr-uuid>* | **--help**]

Parameters

--detail

Displays drift-reconcile detail

--delete

Deletes drift-reconcile record

--execute

Executes drift-reconcile

--help

Provides help for drift-reconcile commands

--history

Displays drift-reconcile history

--ip

Specifies IP address of the device

--key

Specifies IP address of the device or drift and execution UUID to be deleted

--reconcile

Identifies drift and reconcile with device

--uuid

Specifies drift reconcile id

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 - 10)

--status

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

efa inventory firmware-host delete

Removes a firmware host.

Syntax

efa inventory firmware-host delete --ip *<firmware host ip address>*

Parameters

--ip

Firmware host IP address

efa inventory firmware-host list

Displays all registered firmware hosts.

Syntax

efa inventory firmware-host list [**--ip** *<comma separated Firmware Host IPs>* **--help** <help for list>]

Parameters

--ip*<string>*

Name of the fabric

--help

Help for list

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** *<firmware host ip address>* | **--protocol** *< scp | ftp | sftp | http >* |**--username** *<username credentials to login to the firmware download host>* | **--password** *<password credentials to login to the firmware download host>*]

Command Default

Simple connectivity test to the firmware-host by given IP. The complete firmware-host sanity check will be performed later when a device is prepared and again when firmware-download is executed.

Parameters

--ip

Firmware host IP address

--protocol

Protocol < scp | ftp | sftp | http >

--username

Username credentials to login to the firmware download host

--password

Password credentials to login to the firmware download host

efa inventory firmware-host update

Updates the login credentials or file transfer protocol to be used by a switch when downloading firmware from the firmware host.

Syntax

efa inventory firmware-host update [**--ip** *<firmware host ip address>* | **--protocol** *< scp | ftp | sftp | http >* | **--username** *<username credentials to login to the firmware download host>* | **--password** *<password credentials to login to the firmware download host>*]

Parameters

--ip

Firmware host IP address

--protocol

Protocol < scp | ftp | sftp | http >

--username

Username credentials to login to the firmware download host

--password

Password credentials to login to the firmware download host

efa inventory kvstore

Configures KV 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 KV Pair.

--decrypt

Decrypts secret fields.

delete

Deletes KV Pair.

--encrypt

Encrypts

--help

Provides help for kvstore.

--key

Specifies KV pair name.

list

Lists all KV Store entries or filtered by key.

--prefix

Retrieve list of KV pairs matching the prefix.

--value

Specifies Value for the key.

efa inventory rma

Initiates Return Material Authorization (RMA).

Syntax

efa inventory rma history [**--ip** *<ip address>* | **--help**]

efa inventory rma detail [**--uuid** *<drift-reconcile id>* | **--help**]

efa inventory rma delete [**--key** *<ip address>* | **--help**]

efa inventory rma execute [**--ip** *<ip address>* |**--config-backup-id** *<config-backup-uuid>* |**--help**]

Parameters

--config-backup-id

Specifies UUID of the configuration to be replayed

--detail

Displays device replace detail

--delete

Deletes RMA record

--execute

Executes RMA for device with the given IP

--help

Provides help for inventory commands

--history

Displays RMA history

--ip

Specifies IP address of the device

--key

Specifies IP address of the device or RMA execution UUID to be deleted

--uuid

Specifies drift reconcile id

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 notification subscribers add-https

Registers a new subscriber to the notification service with an HTTPS webhook.

Syntax

efa notification subscribers add-https --url *url address* **--username** *user name* **--password** *password* **--insecure**for insecure SSL connection and transfers

The following example registers a new HTTPS webhook subscriber to the Notification Service.

```
efa notification subscribers add-https --url https://notification56.efa220.sqa:5000 --
username jarvis --password vision --insecure
Successfully registered subscriber.

+-----------+-------------------------------------------------------------------------+
| attribute | value                                                                   |
+-----------+-------------------------------------------------------------------------+
| id        | 1                                                                       |
+-----------+-------------------------------------------------------------------------+
| handler   | http                                                                    |
+-----------+-------------------------------------------------------------------------+
| endpoint  | https://notification56.efa220.sqa:5000                                  |
+-----------+-------------------------------------------------------------------------+
| config    | {"cacert":"","insecure":true,"password":"vision","username":"jarvis"} |
+-----------+-------------------------------------------------------------------------+
Notication Subscriber ID=1
--- Time Elapsed: 2.203878641s ---
```

efa notification subscribers delete

Deletes the specified subscriber from the Notification Service.

Syntax

efa notification subscribers delete *notification subscriber id*

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

Lists all subscribers for the notification service.

Syntax

```
efa notification subscribers get --help
```

Parameters

--help

Provides help for list.

efa notification subscribers list

Provides the list of subscribers to the Notification Service.

Syntax

efa notification subscribers list

Examples

The following example lists the subscribers to the Notiofication Service.

```
efa notification subscribers list
+----+---------
+-------------------------------------------------------------------------------+
| id | handler |
endpoint                                                                        |
+----+---------
+-------------------------------------------------------------------------------+
| 1  | http    | https://notification56.efa220.sqa:
5000                                        |
+----+---------
+-------------------------------------------------------------------------------+
Notication 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*

efa openstack debug network-interface delete *--neutron-id*

efa openstack debug router delete *--router-id*

efa openstack debug router-interface delete --router-id *<router-id>* **--subnet-id** *<subnet-id>*

efa openstack debug tenant cleanup --name *tenant name*

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 the name of the network

network-interface

Specifies the name of the network-interface

tenant

Specifies the name of the tenant

router

Specifies the name of the router

router-interface

Specifies the name of the router-interface

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 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 10).

show

Lists all Networks and its summary information.

--status

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

efa openstack network show

Displays OpenStack network information.

Syntax

efa openstack network show

Parameters

network

Lists all networks

Examples

```
# efa openstack network show
+--------------------------------------+-----------+------+
|              Neutron ID              | Tenant    | CTAG |
+--------------------------------------+-----------+------+
| 123e4567-e89b-12d3-a456-426655440001 | RegionOne | 900  |
+--------------------------------------+-----------+------+
| 123e4567-e89b-12d3-a456-426655440002 | RegionOne | 950  |
+--------------------------------------+-----------+------+
```

efa openstack network-interface show

Displays OpenStack network-interface information.

Syntax

efa openstack network-interface show

Parameters

network-interface

Lists all network-interfaces

Examples

```
# 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

Parameters

Router

Lists all routers

Examples

```
# efa openstack router show

+--------------------------------------+-----------+
|              Router ID               | Tenant    |
+--------------------------------------+-----------+
| 523e4567-e89b-12d3-a456-426655440001 | RegionOne |
+--------------------------------------+-----------+
```

efa openstack router-interface show

Displays OpenStack router-interface information.

Syntax

efa openstack router-interface show

Parameters

router-interface

Lists all router-interfaces

Examples

```
# 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 subnet show

Displays OpenStack subnet information.

Syntax

efa openstack subnet show

Parameters

subnet

Lists all subnets

Examples

```
# efa openstack subnet show

+--------------------------------------+--------------------------------------
+---------------+------------+
|              Subnet ID               |              Network ID              |
CIDR      | Gateway IP |
+--------------------------------------+--------------------------------------
+---------------+------------+
| 323e4567-e89b-12d3-a456-426655440001 | 123e4567-e89b-12d3-a456-426655440001 |
20.32.45.0/24 | 20.32.45.1 |
+--------------------------------------+--------------------------------------
+---------------+------------+
| 323e4567-e89b-12d3-a456-426655440002 | 123e4567-e89b-12d3-a456-426655440002 |
10.32.45.0/24 | 10.32.45.1 |
+--------------------------------------+--------------------------------------
+---------------+------------+
```

efa rbac execution

Displays or deletes the execution logs of Auth and RBAC service.

Syntax

efa rbac execution show [**--id** | **--help**]

efa rbac execution delete [**--days int32** | **--help**]

Parameters

--day int32

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

delete

Deletes execution entries older than the specified days.

--help

Provides help for rbac execution.

--id

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

--limit int32

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

show

Displays the list of executions.

--status

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

efa rbac role show

Displays the roles available in EFA.

Syntax

efa rbac role show [**--name** | **--help**]

Parameters

--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	• Registers devices to the Fabric • Configures Fabric parameters • Validates all devices in the Fabric • Configures switches for IP Fabric with overlay and without overlay • Creates tenants • Creates networks inside tenants, such as VRF, EPG, and PO • Performs Fabric debug activities • Has privileges for OpenStack, Hyper-V, and vCenter operations
SecurityAdmin	Performs user management, PKI, and key management operations
NetworkOperator	• Has view-only privileges for Fabric configurations, information for tenants and inventory, and all ecosystem information • Cannot make changes in the system
SystemDebugger	• Has privileges to perform supportsave and system backup, and to view the running system configurations • Has privileges to perform Fabric debug operations • Sets debug levels for services • Has privileges to collect execution logs from services

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: • Adding networks to the tenant • Configuring network parameters • Configuring switches with tenant-specific information Cannot perform actions for any other tenant

efa restore

Restores the EFA database and services from a backup.

Syntax

efa restore [**--backup-tar** *tar-dir*] [**--force**]

Parameters

--backup-tar *tar-dir*

Specifies the file path and name for the backup tar file.

--force

Forces a restore from a backup of a different version of EFA.

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 prompts you for the directory path for EFA and the backup tar file.

Run this command as a root user with administrative privileges.

Examples

This syntax restores the database and prompts for the directory paths.

```
# efa restore --backup-tar EFA-2020.06.10-08.17.27.tar
Backup file name:l  EFA-2020.06.10-08.17.27.tar

Restore result :: Restore operation successful

--- Time Elapsed: 3m14.587062925s ---
```

efa scvmm delete

Deletes SCVMM Server.

Syntax

efa scvmm delete [**--host** | **--cleanup-epgs** | **--help**]

Parameters

--host

Specifies IP or Hostname 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** | **--hyperv** | **--help**]

Parameters

--host

Specifies IP/Hostname of the SCVMM server.

--hyperv

Specifies Hostname of the Hyper-V host.

--help

Provides help for SCVMM physical links.

efa scvmm links virtual

Configures SCVMM virtual Links.

Syntax

efa scvmm links virtual [**--hyperv** | **--help**]

Parameters

--hyperv

Specifies Hostname of the Hyper-V host.

--help

Provides help for SCVMM virtual links.

efa scvmm list

Lists all SCVMM Servers and their summary information.

Syntax

efa scvmm list [**--host** | **--help**]

Parameters

--host

Specifies Hostname/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 Hostname of the SCVMM server to connect to.

--username

Specifies Username 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 string** | **--help**]

Parameters

--poll-frequency string

Specifies polling frequency in hours between 1 to 24

--help

Provides help for SCVMM settings update.

efa scvmm update

Updates SCVMM Server.

Syntax

efa scvmm update [**--host** | **--username** | **--password** | **--help**]

Parameters

--host

Specifies IP or Hostname of the SCVMM Server to update.

--username

Specifies username to connect to the SCVMM Server.

--password

Specifies password to connect to the SCVMM Server.

--help

Provides help for update.

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 supportsave

Collects the support-save of the Inventory, Tenant, and Fabric service logs, and their associated database dumps.

Syntax

efa supportsave

Usage Guidelines

The supportsave file is saved to `/var/log/efa/efa_<log-id>.logs.zip`.

Examples

This example collects the supportsave logs.

```
# efa supportsave
Version : 2.2.0
Build: 41
Time Stamp: 20-06-03:03:15:47
INFO[0003] Using host IP : -h10.21.88.128
INFO[0019] Support Save File: /var/log/efa/efa_2020-06-04T09:46:32.logs.zip
Support Save File: /var/log/efa/efa_2020-06-04T09:46:32.logs.zip
--- Time Elapsed: 19.495622498s ---
```

efa system backup

Creates a backup for EFA.

Syntax

efa system backup

Examples

The following example creates a backup for EFA.

```
efa system backup
Backup operation successful
 /var/log/efa/backup//EFA-2020.06.04-09.48.11.tar

--- Time Elapsed: 3.138531746s ---
```

efa system restore

Restores the system files of the EFA.

Syntax

efa system restore --backup-tar-*EFA tar file*

Parameters

--backup-tar*EFA tar file*

Specifies the name of the backup file for EFA.

Examples

The following example restores the EFA system files.

```
efa system restore --backup-tar EFA-2020.06.04-09.48.11.tar
Backup file location:  EFA-2020.06.04-09.48.11.tar
Restore response reason:  Restore operation successful
Restore response result:  Success
--- Time Elapsed: 3m11.269648985s ---
```

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

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 system supportsave
Support Save File:  /var/log/efa/efa_2020-06-04T09:47:18.logs.zip
--- Time Elapsed: 21.059175138s ---
```

efa tenant create

Creates tenant reserved resources like total number of L3 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** *tenant-name* | **-- description** *tenant-description* | **--type** | **--l2-vni-start** *value* | **--l3-vni-start** *value* | **--vlan-range** *value* | **--vrf-count** *value* | **--enable-bd** |**port** *list of ports*]

Parameters

--name *tenant name*

Name of the tenant.

--description *tenant description*

Describes the tenant.

--l2-vni-start *value*

Contiguous Range of L2 VNIs in ascending order starting from l2-vni-start will be reserved for the tenant within the scope of a fabric.

--l3-vni-start *value*

Contiguous Range of L3 VNIs in ascending order starting from l3-vni-start will be reserved for the tenant within the scope of a fabric.

--vlan-range *value*

Range of Vlans to be reserved for the tenant.

--vni-range *value*

Contiguous Range of L2 and L3 VNIs in ascending order reserved for the tenant within the scope of a fabric.

--vrf-count *value*

Number of VRFs reserved for the tenant.

--enable-bd

Enable BD capability for networks created under this tenant.

--port *string*

List of physical ports of devices which will be reserved for the asset. Example SW1_IP[0/1],SW2_IP[0/5].

--type

POs/VRFs of shared tenant are available to other tenants. Create EPG is not allowed to share tenant. Default Type: private. Example: Shared

--help

Help for efa tenant create

Examples

```
efa tenant create --name vPOD1 --vrf-count 10 --vlan-range 2-4090 --port
172.31.254.13[0/1],172.31.254.20[0/1]
 --description Subscriber1
```

efa tenant debug

Identifies drift in device configuration. The API can be used to setup debug level and debug for the module.

Syntax

efa tenant debug device drift [**--device-ip** | **--filter** | **--help**| **--reconcile**]

efa tenant debug set [**--level** | **--help**]

Parameters

--device-ip

Specifies IP address of the device.

--filter

Filters displaying drift data (po/evpn/ovg/lif/bd/vlan,intf/ve/vrf/mct/routerbgp/pwprofile/all) (default "all").

--help

Provides help for debug.

--level

Specifies debug Level. Example: debug | info | debugdb | nodebugdb

--reconcile

Reconciles configuration on the device.

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 tenant delete --name tenant11
```

efa tenant epg configure

Configures to push or remove pending configuration

Syntax

efa tenant epg configure [**--name** | **--tenant** | **--help**]

Parameters

--name

Specifies name of the EPG.

--tenant

Specifies name of the tenant.

--help

Provides help for tenant epg configure.

efa tenant epg create

Creates an End Point Group (EPG). An EPG can be created from input CLI parameters such as name, po, mode, ctag, tag, port, and ept.

Syntax

efa tenant epg create [**--name** *epg-name* |**--tenant** *tenant name* |**--description** *<string>*{**--port** *port-list* **--po** *port-channel list* } **--switchport mode** *value* **--type--switchport-native-vlan-tagging --switchport-native-vlan --ctag-range** *value* **--vrf** *value* **--l3 vni** *value* **--l2 vni** *list of ctag:l2-vni* **--anycast-ip** *list of ctag:anycast-ip* **--anycast-ipv6** *Ipv6 anycast address* **--local-ip** *Ipv4 local address* **--local** *Ipv6 local address*--**bridge-domain** *list of ctag:bridge-domain value* **--help**]

Parameters

--name

Name of the EPG

--tenant

Name of the tenant.

--description

Description of the EPG.

--port

Device ip along with ethernet port details. Example: SW1_IP[0/1], SW2_IP[0/5,0/6], SW3_IP[0/7-10]

--po

List of portchannels. Example: po1, po2

--switchport-mode

Configures switch port mode on the interfaces. Valid values are `access, trunk, trunk-no-default-native. Default value is set to trunk.`

--type

Configures BGP service type. Valid values are l3-hand-off and extension. Default value is extension.

--switchport-native-vlan-tagging

Enable the native vlan characteristics on the ports of this endpoint group. Valid only if mode is set to trunk.

--switchport-native-vlan

Configures native vlan on the interfaces. Valid values are 2 through 4090 corresponding to the value of its Ctag-range.

--ctag-range

Customer vlan range in comma and hyphen separated format. Example: 2-20, 30, 40, 50-55.

--vrf

VRF to which these networks are attached.

--l3-vni

L3 VNI to be used for this VRF.

--l2-vni

L2 VNI to be used for this network in the format `ctag:l2-vni.`

--anycast-ip

Ipv4 anycast address in the format `ctag:anycast-ip.`

--anycast-ipv6

Ipv6 anycast address in the format ctag:anycast-ipv6

--local-ip

Ipv4 local address in the format ctag,device-ip:local-ip

--local-ipv6

Ipv6 local address in the format ctag,device-ip:local-ipv6

--bridge-domain

Bridge domain name in the format `ctag:bridge-domain.`

--help

Help for tenant epg create

Examples

```
efa tenant epg create --name dbase --tenant vPOD1 --po po5 --switchport-mode trunk --ctag-
range 90-94 --anycast-ip
 90:192.168.90.254/24,91:192.168.91.254/24,94:192.168.94.254/24 --vrf DB
```

efa tenant epg delete

Deletes an End Point Group (epg)

Syntax

efa tenant epg delete [**--name** *epg-name***--force --tenant** *tenant name*]

Parameters

--name

EPG name or comma separated EPG names to be deleted.

--force

Forces the deletion of any underling End Point Group tied to the tenant.

Note

Any EPG tied to a tenant should first be deleted before attempting to delete the tenant, as this removes any port level configurations on the switch that are defined by the EPG. Failure to do this will result in EFA returning an error, however using the –force option will override this error and delete the underlying EPG's configuration on the switch

--tenant

Tenant name

Examples

The following example deletes epg 11 on tenant 11.

```
efa tenant epg delete --name epg11 --tenant tenant11
```

efa tenant epg detach

Detaches an EPG.

Syntax

efa tenant epg detach --tenant *tenant name* **--source-epg** *source epg name* [**--destination-epg** *name* **--destination-epg-description** *description* **--destination-epg-ctag-range** *ctag range* **--help**]

Parameters

--tenant

Tenant name

--source-epg

Source EPG name

--destination-epg

Destination EPG name

--destination-epg-description

Destination EPG description

--destination-epg-ctag-range

Destination EPG ctag range

--help

Help for detach

Examples

The following is an example of using the `epg split` flag.

```
efa tenant epg show
================================================================================
Name          : epg11
Tenant        : tenant11
Description   :
Ports         :
POs           : po1315, po1215, po1115
Port Property : switchport mode     : trunk
        : native-vlan-tagging : false
NW Policy  : ctag-range          :211-212
             : vrf                  : blue11
             : l3-vni               : 14191
Network Property [Flags : * - Native Vlan]
+------+--------+---------------+---------+-------------+-------------+
| Ctag | L2-Vni |  Anycast-ip   | BD-name |  Dev-state  | App-state   |
+------+--------+---------------+---------+-------------+-------------+
| 211  | 10002  | 10.10.11.1/24 |         | provisioned | cfg-in-sync |
+------+--------+---------------+---------+-------------+-------------+
| 212  | 10003  | 10.10.12.1/24 |         | provisioned | cfg-in-sync |
+------+--------+---------------+---------+-------------+-------------+

================================================================================
```

```
efa tenant epg split --tenant tenant11 --source-epg epg11 --destination-epg epg12 --
destination-epg-ctag-range 212

efa tenant epg show
================================================================================
Name           : epg12
Tenant         : tenant11
Description    :
Ports          :
POs            : po1315, po1215, po1115
Port Property : switchport mode     : trunk
         : native-vlan-tagging : false
NW Policy   : ctag-range           : 212
               : vrf                 : blue11
               : l3-vni              : 14191
Network Property [Flags : * - Native Vlan]
+------+--------+---------------+---------+-------------+-------------+
| Ctag | L2-Vni |  Anycast-ip   | BD-name |  Dev-state  |  App-state  |
+------+--------+---------------+---------+-------------+-------------+
| 212  | 10003  | 10.10.12.1/24 |         | provisioned | cfg-in-sync |
+------+--------+---------------+---------+-------------+-------------+
================================================================================
Name           : epg11
Tenant         : tenant1
Description    :
Ports          :
POs            : po1315, po1215, po1115
Port Property : switchport mode     : trunk
               : native-vlan-tagging : false
NW Policy   : ctag-range           : 211
               : vrf                 : blue11
               : l3-vni              : 14191
Network Property [Flags : * - Native Vlan]
+------+--------+---------------+---------+-------------+-------------+
| Ctag | L2-Vni |  Anycast-ip   | BD-name |  Dev-state  |  App-state  |
+------+--------+---------------+---------+-------------+-------------+
| 211  | 10002  | 10.10.11.1/24 |         | provisioned | cfg-in-sync |
+------+--------+---------------+---------+-------------+-------------+
```

efa tenant epg error show

Errors reported to the user for epg create or update operation in the DB are shown with this command.

efa tenant epg error show [**--name** *epg-name* |**--tenant** *tenant name* | **--summary** |**--help**]

--name

Name of the EPG

--tenant

Tenant name

--summary

Summary of Epgs in the Error State

--help

Help for **efa tenant epg error show**

```
efa tenant epg error show --name e4 --tenant T10
```

efa tenant epg show

Shows EPG details for all flags or specific flags.

Syntax

efa tenant epg show [**--name** *epg-name* **--tenant** *tenant-name*]

Parameters

--name

Name of the EPG

--tenant

Tenant Name

efa tenant epg update

Updates an existing End Point Group (epg).

Syntax

efa tenant epg update [**--name** *epg-name***--tenant** *tenant-name* **--operation** *value* **--port** *port list* **--po** *portchannel list* **--switchport mode***value* **--switchport-native-vlan-tagging** *value* **--switchport-native-vlan***value***--ctag range** *value* **--vrf***value* **--l3 vni** *value* **--l2 vni** *ctag:l2-vni* **--anycast-ip***list of ctag:anycast-ip* **--anycast-ipv6***list of ctag:anycast-ipv6***--bridge-domain** *list of ctag:bridge-domain* **--local-ip** *list of ctag,device-ip:local-ip* **--local-ipv6***list of ctag,device-ip:local-ipv6*]

Parameters

--name

Name of the EPG

--tenant

Name of the tenant

--operation *value*

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.`

--port

Port or ports on the device where the tenant network is configured. For example, SW1_IP[0/1],SW2_IP[0/5].

--po

List of port channels where the tenant network is configured. Example; po1 or po1,po2.

--switchport-mode

Configures Switch port mode on the interfaces. Valid values are access | trunk | trunk-no-default-native

--switchport-native-vlan-tagging

Enable the native vlan characteristics on the ports of this endpoint group. Valid only if mode is set to trunk.

--switchport-native-vlan

Configures native VLAN on the interfaces. Valid values are 2 through 4090.

--ctag-range

Customer VLAN range in comma and hyphen separated format.

--vrf

VRF to which these networks are attached.

--l3 vni

L3 VNI to be used for this VRF.

--l2 vni

L2 VNI to be used for this network in the format `ctag:l2-vni.`

--anycast-ip

IPv4 anycast address in the format `ctag:anycast-ip.`

--anycast-ipv6

IPv6 anycast address in the format `ctag:anycast-ipv6.`

--bridge-domain

Bridge domain name in the format `ctag:bridge-domain.`

--local-ip

IPv4 local address in the format `ctag,device-ip:local-ip`

--local-ipv6

IPv6 local address in the format `ctag,device-ip:local-ipv6`

Usage Guidelines

An empty EPG is an EPG without any network-policy, network-property, or port-property.

An EPG can be created with a port-property and without a port-group. But an EPG cannot be created with a port-group and without a port-property.

ARP suppression is enabled for all the possible broadcast domains(VLAN/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 doesn't exist on the MCT neighbor.

The EPG update for a bridge domain-based EPG is similar to an update to a VLAN-based EPG. During a port-group add/delete operation, the logical interface configurations will be created/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 EPG.

During vrf-add or delete operation, the corresponding L3 configurations will be added or deleted to the EPG.

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.

Examples

The following example is an EPG update for a VLAN-based L3 EPG : port-group-delete.

```
efa tenant epg update --name epgb31 --tenant t4 --operation port-group-add --port
10.20.49.119[0/15]
EndpointGroup updated successfully.

--- Time Elapsed: 4.612255166s ---
```

efa tenant execution

Displays the list of executions, event histories, and deletes entries older than the specified days.

Syntax

efa tenant execution show

The following example shows **efa tenant execution show** command.

```
# efa tenant execution show
+--------------------+----------------------------------------+-----------
+----------------------+----------------------+-----------+
|         ID         |                 COMMAND                |  STATUS   |      START
TIME      |       END TIME       | USER NAME |
+--------------------+----------------------------------------+-----------
+----------------------+----------------------+-----------+
| 4c193423-a7bc-4dc5 | tenant update:updateTenant             | Failed    |
2020-05-20T10:20:19Z | 2020-05-20T10:20:19Z | root      |
| 4c95d4e5-ad96-4d81 | tenant update:updateTenant             | Failed    |
2020-05-20T10:20:14Z | 2020-05-20T10:20:14Z | root      |
| 6583f01f-87f1-4870 | delete executions time > 30            | Completed |
2020-05-19T23:53:23Z | 2020-05-19T23:53:23Z |           |
|                    | days:DeleteExecutions                  |
|                    |                      |           |
| d38c97d9-8596-4636 | po create:CreatePortChannel            | Failed    |
2020-05-19T11:54:01Z | 2020-05-19T11:54:01Z | root      |
| b1fd2aca-9b74-4b1b | po create:CreatePortChannel            | Failed    |
2020-05-19T11:54:01Z | 2020-05-19T11:54:01Z | root      |
| 68883d88-8c37-4cd3 | po create:CreatePortChannel            | Failed    |
2020-05-19T11:54:01Z | 2020-05-19T11:54:01Z | root      |
| bf41fcae-9d58-4399 | po create:CreatePortChannel            | Failed    |
2020-05-19T11:54:01Z | 2020-05-19T11:54:01Z | root      |
| e121f092-98e7-486d | tenant create:CreateTenant             | Failed    |
2020-05-19T11:54:00Z | 2020-05-19T11:54:00Z | root      |
| dc8cd04e-b82f-444a | show-running-config:GetCLIRunningConfig | Completed |
2020-05-19T11:04:02Z | 2020-05-19T11:04:02Z | root      |
| 06c4b6ab-b143-48ac | delete executions time > 30            | Completed |
2020-05-18T23:53:23Z | 2020-05-18T23:53:23Z |           |
|                    | days:DeleteExecutions                  |
|                    |                      |           |
+--------------------+----------------------------------------+-----------
+----------------------+----------------------+-----------+
--- Time Elapsed: 80.76863ms ---
```

efa tenant execution show-event

The following example shows **efa tenant execution show-event** command.

```
# efa tenant execution show-event
+----------------+------+---------+-------+--------+--------------+----------------
+---------+-------+
| EXECUTION UUID | DATE | SERVICE | EVENT | DEVICE | MESSAGE-TYPE | MESSAGE-OBJECT |
MESSAGE | ERROR |
+----------------+------+---------+-------+--------+--------------+----------------
+---------+-------+
+----------------+------+---------+-------+--------+--------------+----------------
+---------+-------+
--- Time Elapsed: 77.863544ms ---
```

efa tenant execution delete[**--days** *value*]

--days

Delete execution entries older than the specified days.

The following example shows **efa tenant execution delete** command.

```
# efa tenant execution delete --days 20
```

efa tenant po create

Creates a port channel.

Syntax

efa tenant po create [**--name** *portchannel-name* | **--tenant** *tenant-name* | **--speed** *speed-value* | **--negotiation** *neg-value* | **--port** *port-list* | **--number** *po-id* **--lacp-timeout***value*]

Parameters

--name *portchannel-name*

Specifies the port channel name.

--tenant *tenant-name*

Specifies the tenant name.

--speed *speed-value*

Configures the speed for the port channel and its member ports. Valid values are 100Mbps|1Gbps|10Gbps|25Gbps|40Gbps|100Gbps.

--negotiation *neg-value*

Configures LACP Negotiation mode for a port channel. Valid values are active|passive|static.

--port *port-list*

Specifies the device IP address and Ethernet port details. Example: SW1_IP[0/1],SW2_IP[0/5]

--number *po-id*

Specifies the port channel interface number generated by the service.

--lacp-timeout *value*

Specifies the length of the timeout. Valid values are short | long.

Examples

```
# efa tenant po create --name pob1 --port 10.20.49.119[0/11],10.20.49.118[0/11]
--speed  10Gbps --negotiation active --lacp-timeout short --tenant t4

PortChannel created successfully.

--- Time Elapsed: 3.7572288s ---
```

efa tenant po delete

Deletes a portchannel.

Syntax

efa tenant po delete [**--name** *tenant name* **--force**]

Parameters

name *tenant 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.

Examples

```
efa tenant po delete --name po1115,po1215,po1315 --tenant tenant11
```

efa tenant po show

Specifies the port channel of all tenants, a given tenant, or a given port channel.

Syntax

efa tenant po show [**--name** *portchannel name***--tenant** *tenant name*]

Parameters

--name *portchannel-name*

Specifies the port channel name.

--tenant *tenant -name*

Specifies the tenant name.

efa tenant po update

Updates a PortChannel. A portChannel can be updated from input CLI parameters such as name, operation, mgmtIP and port.

Syntax

efa tenant po update [**-- name** *po-name* | **--tenant** *tenant-name* | **-- operation** *port-add* | *port-delete* | **--port** *port-list* |**--lacp-timeout** | **--help**]

Parameters

--name *portchannel name*

Specifies portchannel.

--tenant *tenant name*

Specifies tenant name.

--operation *operation name*

Adds or deletes operation on the ports. Valid options are port-add | port-delete | lacp-timeout.

--port *value*

Specifies device ip along with ethernet port details. Example: SW1_IP [0/1], SW2_IP[0/5]

--lacp-timeout

Lacp timeout configuration. Valid values are short | long.

--help

Help for update.

Examples

```
efa tenant po update --name po1115 --tenant tenant11 --operation port-add --port
10.24.85.76[0/15]
efa tenant po update --name po1115 --tenant tenant11 --operation port-delete --port
10.24.85.76[0/15]
```

efa tenant service bgp create

Creates a BGP neighbor for a VRF on the fabric device.

Syntax

efa tenant service bgp create --name *service-name* **--tenant** *tenant-name*
--ipv4-unicast-neighbor *device-ip,vrf-name:ipv4-neighbor,remote-as,bfd-enable(t/f),bfd-interval,bfd-rx,bfd-mult* **, --ipv6-unicast-neighbor***device-ip,vrf-name:ipv4-neighbor,remote-as,bfd-enable(t/f),bfd-interval,bfd-rx,bfd-mult*

Examples

The following example creates a BGP neighbor for the VRF on the fabric device.

```
efa tenant service bgp create --name bgpservice1 --tenant tenant1 --ipv4-unicast-neighbor
10.24.80.134,red:10.20.30.40,5000
```

efa tenant service bgp delete

Deletes the BGP neighbors for a given VRF on the fabric device.

Syntax

efa tenant service bgp delete --name*service-name* **--tenant***tenant-name*

Examples

The following example deletes the BGP neighbors for a given VRF on the fabric device.

```
efa tenant service bgp delete --name bgpservice1 --tenant tenant1
```

efa tenant service bgp show

Displays the BGP neighbors for a given VRF on the fabric device.

Syntax

efa tenant service bgp show

Examples

The following example displays the BGP neighbors for a given VRF on the fabric device.

```
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 | BFD Rx | BFD Multiplier |  Dev-state  |  App-state  |
+--------------+-----+------+---------+-------------+------------+-------------
+--------------+--------+----------------+-------------+-------------+
| 10.24.80.134 | red | ipv4 | unicast | 10.20.30.40 | 5000       | false       |
0            | 0      | 0              | provisioned | cfg-in-sync |
+--------------+-----+------+---------+-------------+------------+-------------
+--------------+--------+----------------+-------------+-------------+

================================================================================================
================================================================
```

efa tenant service bgp update

Updates BGP neighbours for a given VRF on the fabric device. Updates can be either addition or deletion of a peer.

efa tenant service bgp update: peer-add

Adds BGP neighbours for a given VRF on the fabric device.

Syntax

efa tenant service bgp update --name*service-name* **--tenant***tenant-name***--operation peer-add --ipv4-unicast-neighbor** *nhbr-info***--ipv6-unicast-neighbor** *nhbr-info*

Examples

The following example adds peers to the BGP neighbours for a given VRF on the fabric device.

```
efa tenant service bgp update --name bgpservice1 --tenant tenant1 --operation peer-add --
ipv6-unicast-neighbor 10.24.80.134,red:10::40,5000,true,100,200,7

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 | BFD Rx | BFD Multiplier |  Dev-state  |  App-state  |
+--------------+-----+------+---------+-------------+------------+-------------
+--------------+--------+----------------+-------------+-------------+
| 10.24.80.134 | red | ipv6 | unicast | 10::40      | 5000       | true        |
100          | 200    | 7              | provisioned | cfg-in-sync |
+--------------+-----+------+---------+-------------+------------+-------------
+--------------+--------+----------------+-------------+-------------+
| 10.24.80.134 | red | ipv4 | unicast | 10.20.30.40 | 5000       | false       |
0            | 0      | 0              | provisioned | cfg-in-sync |
+--------------+-----+------+---------+-------------+------------+-------------
+--------------+--------+----------------+-------------+-------------+
================================================================================================
================================================================
```

efa tenant service bgp update: peer-delete

Deletes BGP neighbours for a given VRF on the fabric device.

Syntax

efa tenant service bgp update --name*service-name* **--tenant***tenant-name***--operation peer-delete --ipv4-unicast-neighbor** *nhbr-info***--ipv6-unicast-neighbor** *nhbr-info*

Examples

The following example deletes peers from the BGP neighbours for a given VRF on the fabric device.

```
efa tenant service bgp update --name bgpservice1 --tenant tenant1 --operation peer-delete
--ipv4-unicast-neighbor 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 | BFD Rx | BFD Multiplier |  Dev-state  |  App-state  |
+--------------+-----+------+---------+-------------+------------+-------------
+--------------+--------+----------------+-------------+-------------+
| 10.24.80.134 | red | ipv6 | unicast | 10::40      | 5000       | true        |
100          | 200    | 7              | provisioned | cfg-in-sync |
+--------------+-----+------+---------+-------------+------------+-------------
+--------------+--------+----------------+-------------+-------------+
================================================================================================
================================================================
```

efa tenant show

Displays the tenant details.

Syntax

efa tenant show -- **name** *tenant-name*

Parameters

name *tenant-name*

Specifies the name of the tenant.

Examples

This example shows the output of the command:

```
efa tenant show
+------+-------------+-------------+------------+-----------+-----------+---------
+---------------------------------+
| Name | L2VNI-Range | L3VNI-Range | VLAN-Range | VRF-Count | Enable-BD |  Type
|             Ports               |
+------+-------------+-------------+------------+-----------+-----------+---------
+---------------------------------+
| sv1  |             |             |            | 0         | False     | shared  |
10.20.50.208[0/21-30]           |
|      |             |             |            |           |           |         |
10.20.50.209[0/21-30]           |
|      |             |             |            |           |           |         |
10.20.49.118[0/21-25]           |
|      |             |             |            |           |           |         |
10.20.49.119[0/21-25]           |
+------+-------------+-------------+------------+-----------+-----------+---------
+---------------------------------+
| t3   | 10000-20000 | 1000-3000   | 2-4090     | 1024      | False     | private |
10.20.49.118[0/1-10,0/56:1-2]   |
|      |             |             |            |           |           |         |
10.20.50.206[0/1-10]            |
|      |             |             |            |           |           |         |
10.20.50.214[0/1-10]            |
|      |             |             |            |           |           |         |
10.20.50.205[0/1-10]            |
|      |             |             |            |           |           |         |
10.20.49.119[0/1-10,0/56:1-2]   |
+------+-------------+-------------+------------+-----------+-----------+---------
+---------------------------------+
| t4   | 30000-40000 | 4000-6550   | 2-4090     | 1024      | True      | private |
10.20.49.118[0/11-20,0/56:3-4] |
|      |             |             |            |           |           |         |
10.20.49.119[0/11-20,0/56:3-4] |
+------+-------------+-------------+------------+-----------+-----------+---------
+---------------------------------+
Tenant Details

--- Time Elapsed: 462.815224ms ---
```

```
Step 4: node details
==================================================
               k3s node details
==================================================
NAME   STATUS   ROLES    AGE     VERSION
tpvm   Ready    master   7m22s   v1.16.3-k3s.2


Step 5: EFA details
==================================================
             EFA application details
==================================================
NAME                                        READY   STATUS    RESTARTS   AGE
pod/efa-api-docs-5d457dc874-7rb7d           1/1     Running   0          4m5s
pod/godb-service-57bd99747-jj6xq            1/1     Running   0          4m3s
pod/rabbitmq-0                              1/1     Running   0          4m6s
pod/goinventory-service-55db6bc9c4-s57cd    1/1     Running   0          4m5s
pod/goopenstack-service-847777494c-vf58b    1/1     Running   4          4m1s
pod/gofabric-service-679f4c998-hw5nm        1/1     Running   0          4m5s
pod/gohyperv-service-8564db6f6c-5t7tf       1/1     Running   4          3m58s
pod/gotenant-service-7c785864b-m2r2r        1/1     Running   0          4m5s
pod/govcenter-service-6cc999d4b9-97npn      1/1     Running   5          3m59s

NAME                            TYPE        CLUSTER-IP      EXTERNAL-IP
PORT(S)                            AGE
service/gofabric-service        ClusterIP   10.43.62.102    <none>        8081/
TCP                             4m5s
service/goinventory-service     ClusterIP   10.43.65.52     <none>        8082/
TCP                             4m5s
service/gotenant-service        ClusterIP   10.43.90.204    <none>        8083/
TCP                             4m5s
service/efa-api-docs            ClusterIP   10.43.228.63    <none>        80/
TCP                             4m5s
service/rabbitmq                NodePort    10.43.9.29      <none>        15672:31672/TCP,
5672:30672/TCP   4m4s
service/db-service              NodePort    10.43.199.176   <none>        5432:30432/
TCP                    4m3s
service/goopenstack-service     NodePort    10.43.241.10    <none>        8085:30085/
TCP                    4m1s
service/govcenter-service       ClusterIP   10.43.241.91    <none>        8086/
TCP                             3m59s
service/gohyperv-service        ClusterIP   10.43.19.40     <none>        8087/
TCP                             3m58s

NAME                                    READY   UP-TO-DATE   AVAILABLE   AGE
deployment.apps/efa-api-docs            1/1     1            1           4m5s
deployment.apps/godb-service            1/1     1            1           4m3s
deployment.apps/goinventory-service     1/1     1            1           4m5s
deployment.apps/goopenstack-service     1/1     1            1           4m1s
deployment.apps/gofabric-service        1/1     1            1           4m5s
deployment.apps/gohyperv-service        1/1     1            1           3m58s
deployment.apps/gotenant-service        1/1     1            1           4m5s
deployment.apps/govcenter-service       1/1     1            1           3m59s

NAME                                              DESIRED   CURRENT   READY   AGE
replicaset.apps/efa-api-docs-5d457dc874           1         1         1       4m5s
replicaset.apps/godb-service-57bd99747            1         1         1       4m3s
replicaset.apps/goinventory-service-55db6bc9c4    1         1         1       4m5s
replicaset.apps/goopenstack-service-847777494c    1         1         1       4m1s
replicaset.apps/gofabric-service-679f4c998        1         1         1       4m5s
replicaset.apps/gohyperv-service-8564db6f6c       1         1         1       3m58s
replicaset.apps/gotenant-service-7c785864b        1         1         1       4m5s
replicaset.apps/govcenter-service-6cc999d4b9      1         1         1       3m59s
```

```
NAME                          READY   AGE
statefulset.apps/rabbitmq     1/1     4m6s

device#
```

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** *value* | --**l3-vni-range** *value* | --**vlan-range** *value* | --**vrf-count** *value* | --**enable-bd***value* **operation** *value***port***value*]

Parameters

name *tenant-name*

Specifies name of tenant.

description *tenant-description*

Describes the tenant.

l2-vni-range *value*

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 *value*

Specifies the contiguous Range of L3 VNIs in ascending order will be reserved for the tenant within the scope of a fabric.

vlan-range *value*

Specifies the range of Vlans to be reserved for the tenant.

vrf-count int *value*

Specifies the number of VRFs tobe reserved for the tenant.

enable-bd *value*

Enables BD capability for networks created under this tenant.

operation *value*

Specifies operation code. Valid values are desc-update | vni-update | port-add | port-delete | vlan-update | num-vrf-update | enable-bd-update

port *value*

Lists physical ports of devices which will be reserved for the asset. Example: SW1_IP[0/1],SW2_IP[0/5]

Examples

```
efa tenant update --name t3 --port 10.20.50.205[0/1-10],10.20.50.206[0/1-10] --operation
port-add

Tenant updated successfully.
```

efa tenant vrf create

Creates a VRF.

Syntax

efa tenant vrf create [**--name** *vrf name* **--tenant** *tenant name* **--rt-type***value***--rt***value***ipv4static-route-next-hop***destination, next-hop***ipv6static-route-next-hop** *destination, next-hop***--local-asn--ipv4-static-route-bfd***value***--ipv4-static-route-bfd***value***--ipv6-static-route-bfd***value*]

Parameters

name *VRF name*

Specifies the name of the VRF.

tenant *tenant name*

Specifies the name of the tenant.

rt-type *value*

Routes Target VPN Community.

ipv4static-route-next-hop *destination, next-hop*

Specifies the ipv4 static route.

ipv6static-route-next-hop *destination, next-hop*

Specifies the ipv6 static route.

local-asn *value*

Local ASN for the vrf.

ipv4-static-route-bfd *value*

IPv4 Static Route BFD in the format dest-ipv4-addr,source-ipv4-addr[interval,min-rx,multiplier].

ipv6-static-route-bfd *value*

IPv6 Static Route BFD in the format dest-ipv6-addr,source-ipv6-addr[interval,min-rx,multiplier].

Examples

```
efa tenant vrf create --name vrfb31 --tenant t4 --local-asn 65234 --ipv4-static-route-
next-hop 0.0.0.0/24,16.0.0.2 --ipv6-static-route-next-hop 3000:330::/120,4000:330::2 --
ipv6-static-route-bfd 200::2,200::3,123,455,5 --ipv4-static-route-bfd
16.0.0.2,16.0.0.3,123,456,3

Vrf created successfully.

--- Time Elapsed: 551.164847ms ---
```

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

```
efa tenant vrf delete --name red21 --tenant tenant21
efa tenant vrf delete --name blue11,red11 --tenant tenant11
```

efa tenant vrf show

Displays the VRF information of all tenants, a selected tenant, or a selected VRF.

Syntax

efa tenant vrf show [**--name** *vrf name* **--tenant** *tenant name*]

Parameters

name *vrf name*

Name of the VRF.

tenant *tenant name*

Name of the tenant.

Examples

```
efa tenant vrf show
+--------+----------+--------+--------+--------+----------------+
|  Name  |  Tenant  | L3-VNI | IRB-BD | IRB-VE |  Route Target  |
+--------+----------+--------+--------+--------+----------------+
| blue11 | tenant11 |        |        |        | import 100:100 |
|        |          |        |        |        | export 100:100 |
|        |          |        |        |        | import 200:200 |
|        |          |        |        |        | export 200:200 |
|        |          |        |        |        | import 300:300 |
|        |          |        |        |        | export 400:400 |
+--------+----------+--------+--------+--------+----------------+
| red11  | tenant11 |        |        |        | import 101:101 |
|        |          |        |        |        | export 101:101 |
|        |          |        |        |        | import 201:201 |
|        |          |        |        |        | export 201:201 |
|        |          |        |        |        | import 301:301 |
|        |          |        |        |        | export 401:401 |
+--------+----------+--------+--------+--------+----------------+
| red21  | tenant21 |        |        |        | import 101:103 |
|        |          |        |        |        | export 101:103 |
|        |          |        |        |        | import 201:203 |
|        |          |        |        |        | export 201:203 |
|        |          |        |        |        | import 301:303 |
|        |          |        |        |        | export 401:403 |
+--------+----------+--------+--------+--------+----------------+
| blue21 | tenant21 |        |        |        | import 100:102 |
|        |          |        |        |        | export 100:102 |
|        |          |        |        |        | import 200:202 |
|        |          |        |        |        | export 200:202 |
|        |          |        |        |        | import 300:302 |
|        |          |        |        |        | export 400:402 |
```

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                    |
|                      |       |        |                 | following interfaces:
10.25.225.46="ethernet-0/5"             |
|                      |       |        |                 | 10.24.82.20="ethernet-0/11"
10.24.81.10="ethernet-0/10"       |
|                      |       |        |                 | 10.24.85.76="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
+--------------------------------------------------------------+--------------------
+------------------------------+--------------------+--------+
|                          Description                         |       Target
|          Target Type         |        Time        |   ID   |
+--------------------------------------------------------------+--------------------
+------------------------------+--------------------+--------+
| 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 frequencty 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. When the *--cleanup-tenants* parameter is supplied, removes the registered ESXi hosts and EPGs for this VMware vCenter Server tenant.

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.

Examples

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. For VMware vCenter server tenants, physical and unconnected links are displayed. For ESXi hosts, physical, unconnected, and virtual links are displayed.

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.

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. When the *--host* parameter is supplied, lists the ESXi hosts for that VMware vCenter Server.

Syntax

efa vcenter list [**--host** *string*]

Parameters

--host *string*

IP address or hostname of the VMware vCenter Server to connect to.

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 ---
```

efactl

Starts, stops, restarts, and displays the status services for EFA.

Syntax

efactl start

efactl stop

efactl restart

efactl start-service *name of the service*

efactl restart-service *name of the service*

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.

```
# efactl status
NAME                STATUS   ROLES    AGE   VERSION        LABELS
administrator-08    Ready    master   14h   v1.18.2+k3s1   beta.kubernetes.io/
arch=amd64,beta.kubernetes.io/os=linux,keepalived=active,kubernetes.io/
arch=amd64,kubernetes.io/hostname=administrator-08,kubernetes.io/os=linux,node-
role.kubernetes.io/master=true
NAME                                          READY   STATUS    RESTARTS   AGE
IP             NODE               NOMINATED NODE   READINESS GATES
pod/gosystem-service-6d7b88bcf8-4vvdw         1/1     Running   0          3m19s
10.21.88.128   administrator-08   <none>           <none>
pod/goswitch-service-5646dd59b4-n6dtj         1/1     Running   0          3m15s
10.42.0.28     administrator-08   <none>           <none>
pod/godb-service-0                            1/1     Running   0          3m18s
10.42.0.23     administrator-08   <none>           <none>
pod/efa-api-docs-f5d4c9f6-c7nrk               1/1     Running   0          3m14s
10.42.0.32     administrator-08   <none>           <none>
pod/goopenstack-service-85bc8bb6f6-d2shq      1/1     Running   0          3m16s
10.42.0.27     administrator-08   <none>           <none>
pod/rabbitmq-0                                1/1     Running   0          3m14s
10.42.0.30     administrator-08   <none>           <none>
pod/gonotification-service-658f99657b-87bwx   1/1     Running   1          3m17s
10.21.88.128   administrator-08   <none>           <none>
pod/gorbac-service-5f5f58f474-5fr72           1/1     Running   4          3m18s
10.42.0.22     administrator-08   <none>           <none>
pod/govcenter-service-cd5755577-xq4wg         1/1     Running   4          3m15s
10.42.0.25     administrator-08   <none>           <none>
pod/gofabric-service-58d57686fb-kb8lt         1/1     Running   4          3m17s
10.42.0.31     administrator-08   <none>           <none>
pod/goauth-service-7d677d6b9f-gvqzp           1/1     Running   4          3m18s
10.42.0.21     administrator-08   <none>           <none>
pod/gohyperv-service-57cf444776-nvw4v         1/1     Running   4          3m16s
10.42.0.24     administrator-08   <none>           <none>
pod/gotenant-service-77cccb9cd9-sfblm         1/1     Running   4          3m16s
10.42.0.29     administrator-08   <none>           <none>
pod/goinventory-service-696596b65f-wtf4q      1/1     Running   4          3m17s
10.42.0.26     administrator-08   <none>           <none>
pod/goraslog-service-5b455774b-d6sp5          1/1     Running   0          3m14s
10.21.88.128   administrator-08   <none>           <none>

NAME                             TYPE        CLUSTER-IP      EXTERNAL-IP
PORT(S)                          AGE   SELECTOR
service/db-service               NodePort    10.43.69.174    <none>        5432:30432/
TCP                   14h   app=godb-service
service/gofabric-service         ClusterIP   10.43.90.92     <none>        8081/
TCP                          14h   app=gofabric-service
service/goinventory-service      ClusterIP   10.43.233.180   <none>        8082/
TCP                          14h   app=goinventory-service
service/gotenant-service         ClusterIP   10.43.39.65     <none>        8083/
TCP                          14h   app=gotenant-service
service/efa-api-docs             ClusterIP   10.43.114.116   <none>        80/
```

```
TCP                           14h   app=efa-api-docs
service/gonotification-service   ClusterIP   10.43.206.168   <none>        8088/
TCP                          14h   app=gonotification-service
service/goauth-service           ClusterIP   10.43.61.186    <none>        8080/
TCP                          14h   app=goauth-service
service/gorbac-service           ClusterIP   10.43.56.156    <none>        8089/
TCP                          14h   app=gorbac-service
service/rabbitmq                 NodePort    10.43.232.144   <none>        15672:31672/
TCP,5672:30672/TCP   14h   app=rabbitmq
service/goopenstack-service      NodePort    10.43.205.212   <none>        8085:30085/
TCP                    14h   app=goopenstack-service
service/govcenter-service        ClusterIP   10.43.49.249    <none>        8086/
TCP                          14h   app=govcenter-service
service/gohyperv-service         ClusterIP   10.43.38.199    <none>        8087/
TCP                          14h   app=gohyperv-service
service/gosystem-service         ClusterIP   10.43.114.115   <none>        8090/
TCP                          14h   app=gosystem-service
service/goswitch-service         ClusterIP   10.43.145.26    <none>        8084/
TCP                          14h   app=goswitch-service

NAME                                      READY   UP-TO-DATE   AVAILABLE   AGE
CONTAINERS               IMAGES                  SELECTOR
deployment.apps/gosystem-service          1/1     1            1           14h
gosystem                 gosystem:2.2.0          app=gosystem-service
deployment.apps/goswitch-service          1/1     1            1           14h
goswitch                 goswitch:2.2.0          app=goswitch-service
deployment.apps/efa-api-docs              1/1     1            1           14h   efa-api-
docs             efa-api-docs:2.2.0     app=efa-api-docs
deployment.apps/goopenstack-service       1/1     1            1           14h
openstack                goopenstack:2.2.0       app=goopenstack-service
deployment.apps/gonotification-service    1/1     1            1           14h
gonotification-service   gonotification:2.2.0    app=gonotification-service
deployment.apps/gorbac-service            1/1     1            1           14h   go-
rbac                  gorbac:2.2.0            app=gorbac-service
deployment.apps/govcenter-service         1/1     1            1           14h
vcenter                  govcenter:2.2.0         app=govcenter-service
deployment.apps/gofabric-service          1/1     1            1           14h   gofabric-
service          gofabric:2.2.0          app=gofabric-service
deployment.apps/goauth-service            1/1     1            1           14h   go-
auth                  goauth:2.2.0            app=goauth-service
deployment.apps/gohyperv-service          1/1     1            1           14h
hyperv                   gohyperv:2.2.0          app=gohyperv-service
deployment.apps/gotenant-service          1/1     1            1           14h   gotenant-
service          gotenant:2.2.0          app=gotenant-service
deployment.apps/goinventory-service       1/1     1            1           14h
goinventory-service      goinventory:2.2.0       app=goinventory-service
deployment.apps/goraslog-service          1/1     1            1           14h   goraslog-
service          goraslog:2.2.0          app=goraslog-service

NAME                                             DESIRED   CURRENT   READY   AGE
CONTAINERS               IMAGES                  SELECTOR
replicaset.apps/gosystem-service-6d7b88bcf8         1         1         1       14h
gosystem                 gosystem:2.2.0          app=gosystem-service,pod-template-
hash=6d7b88bcf8
replicaset.apps/goswitch-service-5646dd59b4         1         1         1       14h
goswitch                 goswitch:2.2.0          app=goswitch-service,pod-template-
hash=5646dd59b4
replicaset.apps/efa-api-docs-f5d4c9f6               1         1         1       14h   efa-
api-docs             efa-api-docs:2.2.0     app=efa-api-docs,pod-template-hash=f5d4c9f6
replicaset.apps/goopenstack-service-85bc8bb6f6      1         1         1       14h
openstack                goopenstack:2.2.0       app=goopenstack-service,pod-template-
hash=85bc8bb6f6
replicaset.apps/gonotification-service-658f99657b   1         1         1       14h
gonotification-service   gonotification:2.2.0    app=gonotification-service,pod-template-
```

```
hash=658f99657b
replicaset.apps/gorbac-service-5f5f58f474          1         1         1       14h   go-
rbac                  gorbac:2.2.0           app=gorbac-service,pod-template-
hash=5f5f58f474
replicaset.apps/govcenter-service-cd5755577        1         1         1       14h
vcenter               govcenter:2.2.0        app=govcenter-service,pod-template-
hash=cd5755577
replicaset.apps/gofabric-service-58d57686fb        1         1         1       14h
gofabric-service      gofabric:2.2.0         app=gofabric-service,pod-template-
hash=58d57686fb
replicaset.apps/goauth-service-7d677d6b9f          1         1         1       14h   go-
auth                  goauth:2.2.0           app=goauth-service,pod-template-
hash=7d677d6b9f
replicaset.apps/gohyperv-service-57cf444776        1         1         1       14h
hyperv                gohyperv:2.2.0         app=gohyperv-service,pod-template-
hash=57cf444776
replicaset.apps/gotenant-service-77cccb9cd9        1         1         1       14h
gotenant-service      gotenant:2.2.0         app=gotenant-service,pod-template-
hash=77cccb9cd9
replicaset.apps/goinventory-service-696596b65f     1         1         1       14h
goinventory-service   goinventory:2.2.0      app=goinventory-service,pod-template-
hash=696596b65f
replicaset.apps/goraslog-service-5b455774b         1         1         1       14h
goraslog-service      goraslog:2.2.0         app=goraslog-service,pod-template-
hash=5b455774b

NAME                            READY   AGE   CONTAINERS     IMAGES
statefulset.apps/godb-service   1/1     14h   godb           postgres-db:2.2.0
statefulset.apps/rabbitmq       1/1     14h   rabbitmq-efa   rabbitmq:2.2.0
```