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Cisco Fabric Manager Web Services Programming Guide

Cisco MDS NX-OS Release 5.0(1a)
Cisco MDS 9000 FabricWare Release 5.x
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Cisco Fabric Manager Web Services Programming Guide

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New and Changed Information

This document provides release-specific information for each new and changed feature in Cisco MDS Fabric Manager Release 4.x software. The *Cisco MDS 9000 Family Cisco Fabric Manager Web Services Programming Guide* is updated to address each new and changed feature.

To check for additional information about this release, refer to the *Cisco MDS 9000 Family Release Notes* available at the [Cisco MDS 9000 NX-OS Software Release Notes](#) website.

Table 1 summarizes the new and changed features for the *Cisco MDS 9000 Family Cisco Fabric Manager Web Services Programming Guide*, and tells you where they are documented. The table includes a brief description of each new feature and the release in which the change occurred.

Table 1 New and Changed Features for Cisco MDS Fabric Manager Release 4.x

Feature	GUI Changes	Description	Changed in Release	Where Documented
ZoneManagerWS	NA	Zone Manager Web Services	5.0(1a)	Chapter 2, “Fabric Manager Web Services”
StatisticsWS,	NA	Statistics Web Services	5.0(1a)	Chapter 2, “Fabric Manager Web Services”
Security WS	NA	Security Web Services	4.2(1)	Chapter 2, “Fabric Manager Web Services”
ProtocolWS	NA	Protocol Web Services	4.2(1)	Chapter 2, “Fabric Manager Web Services”
EventWS	NA	Event Web Services	4.2(1)	Chapter 2, “Fabric Manager Web Services”

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Preface

This preface describes the audience, organization, and conventions of the *Cisco MDS 9000 Family Cisco Fabric Manager Web Services Programming Guide*. It also provides information on how to obtain related documentation.

Audience

This guide is for experienced network administrators who are responsible for configuring and maintaining the Cisco MDS 9000 Family of multilayer directors and fabric switches.

Organization

The *Cisco Fabric Manager Web Services Programming Guide* is organized as follows: :

Chapter	Title	Description
Chapter 1	Web Services Overview	Overview Chapter
Chapter 2	Fabric Manager Web Services	Describes the Fabric Manager Web Services (FMWS) application program interface (API)

Document Conventions

Command descriptions use these conventions:

boldface font	Commands and keywords are in boldface.
<i>italic font</i>	Arguments for which you supply values are in italics.
[]	Elements in square brackets are optional.
[x y z]	Optional alternative keywords are grouped in brackets and separated by vertical bars.

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Screen examples use these conventions:

<code>screen font</code>	Terminal sessions and information the switch displays are in screen font.
boldface screen font	Information you must enter is in boldface screen font.
<i>italic screen font</i>	Arguments for which you supply values are in italic screen font.
< >	Nonprinting characters, such as passwords, are in angle brackets.
[]	Default responses to system prompts are in square brackets.
!, #	An exclamation point (!) or a pound sign (#) at the beginning of a line of code indicates a comment line.

This document uses the following conventions:



Note

Means reader *take note*. Notes contain helpful suggestions or references to material not covered in the manual.



Caution

Means *reader be careful*. In this situation, you might do something that could result in equipment damage or loss of data.

Related Documentation

The documentation set for the Cisco MDS 9000 Family includes the following documents. To find a document online, use the Cisco MDS NX-OS Documentation Locator at:

http://www.cisco.com/en/US/docs/storage/san_switches/mds9000/roadmaps/doclocator.htm

Release Notes

- *Cisco MDS 9000 Family Release Notes for Cisco MDS NX-OS Releases*
- *Cisco MDS 9000 Family Release Notes for Storage Services Interface Images*
- *Cisco MDS 9000 Family Release Notes for Cisco MDS 9000 EPLD Images*

Regulatory Compliance and Safety Information

- *Regulatory Compliance and Safety Information for the Cisco MDS 9000 Family*

Compatibility Information

- *Cisco MDS 9000 NX-OS Hardware and Software Compatibility Information*
- *Cisco MDS NX-OS Release Compatibility Matrix for Storage Service Interface Images*
- *Cisco MDS 9000 Family Interoperability Support Matrix*

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- *Cisco MDS NX-OS Release Compatibility Matrix for IBM SAN Volume Controller Software for Cisco MDS 9000*

Hardware Installation

- *Cisco MDS 9500 Series Hardware Installation Guide*
- *Cisco MDS 9200 Series Hardware Installation Guide*

Software Installation and Upgrade

- *Cisco MDS 9000 Family Software Upgrade and Downgrade Guide - For Cisco NX-OS*
- *Cisco MDS 9000 Family Storage Services Interface Image Install and Upgrade Guide - For Cisco NX-OS*
- *Cisco MDS 9000 Family Port Analyzer Adapter Installation and Configuration Note*

Cisco Fabric Manager

- *Cisco MDS 9000 Family Fabric Manager Configuration Guide*
- *Cisco Fabric Manager Fundamentals Configuration Guide*
- *CiscoFabric Manager System Management Configuration Guide*
- *Cisco Fabric Manager Interfaces Configuration Guide*
- *Cisco FabricManagerFabric Configuration Guide*
- *Cisco Fabric Manager Quality of Service Configuration Guide*
- *Cisco Fabric Manager Security Configuration Guide*
- *Cisco Fabric Manager IP Services Configuration Guide*
- *Cisco Fabric Manager Intelligent Storage Services Configuration Guide*
- *Cisco FabricManagerHigh Availability and RedundancyConfiguration Guide*
- *Cisco MDS 9000 Fabric Manager Online Help*
- *Cisco MDS 9000 Fabric Manager Web Services Online Help*
- *Cisco Fabric Manager Web Services Programming Guide*

Command-Line Interface

- *Cisco MDS 9000 Family CLI Configuration Guide*
- *Cisco MDS 9000 Family Command Reference*
- *Cisco MDS 9000 Family SAN Volume Controller Configuration Guide*

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Intelligent Storage Networking Services Configuration Guides

- *Cisco MDS 9000 Family SANTap Deployment Guide*
- *Cisco MDS 9000 Family Data Mobility Manager Configuration Guide*
- *Cisco MDS 9000 Family Storage Media Encryption Configuration Guide*
- *Cisco MDS 9000 Family Secure Erase Configuration Guide - For Cisco MDS 9500 and 9200 Series*

Troubleshooting and Reference

- *Cisco MDS 9000 Family Troubleshooting Guide*
- *Cisco MDS 9000 Family MIB Quick Reference*
- *Cisco MDS 9000 Family SMI-S Programming Reference*
- *Cisco MDS 9000 Family System Messages Reference*

Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, submitting a service request, and gathering additional information, see the monthly *What's New in Cisco Product Documentation*, which also lists all new and revised Cisco technical documentation, at:

<http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html>

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CHAPTER 1

Web Services Overview

Cisco Fabric Manager Web Services provide application programming interfaces (APIs) that expose Fabric Manager core software functionalities as remote procedure calls to third-party vendors. Software developers can use the APIs to design computer applications that interact with the Fabric Manager Server over the network.

Using Fabric Manager you can monitor MDS switch events, performance, and inventory, and you can perform administrative tasks. Applications can access Fabric Manager Web Services through many protocols and data formats such as HTTP, HTTPS, XML, SOAP and WSDL.

Fabric Manager Web Services provide cross-platform operations. Web Services can interact with .NET applications, C++ applications, and applications written in other programming languages, and Web Services must adhere to accepted conventions to make services interoperable with other applications. For this reason, Fabric Manager Web Services must follow the Java API for XML Web Services (JAX-WS) specification. Fabric Manager Web Services relies on JBoss Web Service (JBoss WS) as a service endpoint engine and as an entry point into the JAX-WS programming model. The framework also allows Fabric Manager Web Services to become an integral part of the Fabric Manager Server run-time environment.

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CHAPTER 2

Fabric Manager Web Services

This chapter describes the Fabric Manager Web Services (FMWS) application program interface (API). This chapter includes the following sections:

- [About Fabric Manager Web Services, page 2-1](#)
- [Web Services Specifications, page 2-1](#)
- [Logon Service, page 2-2](#)
- [San Service WS, page 2-4](#)
- [Zone Manager WS - SEI, page 2-23](#)
- [Statistics WS - SEI, page 2-33](#)
- [Security WS - SEI, page 2-36](#)
- [Protocol WS - SEI, page 2-43](#)
- [Event WS - SEI, page 2-47](#)
- [Cluster WS - SEI, page 2-45](#)
- [Error Codes, page 2-50](#)

About Fabric Manager Web Services

The Cisco Fabric Manager Web Services (FMWS) enables third-party vendors to access Fabric Manager core software functionalities as remote procedure calls. Web Services extend the World Wide Web infrastructure to provide a method to softwares connecting to other software applications. Applications access Web Services using many protocols and data formats such as HTTP, HTTPS, XML, and SOAP. Web Services combine the best aspects of component-based development and the web. Web Services makes Fabric Manager an enterprise class application allowing it to be interoperable with other software platforms.

This chapter defines the APIs exposed by the Fabric Manager Web Services feature.

Web Services Specifications

Web Services specifications combine together to provide interoperable protocols for security, communication and syntax for representing data.

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XML

XML is the data format that defines the structure of the message. XML Web Services architecture allows programs written in different languages on different platforms to communicate with each other in a standards-based way. XML Web Services expose useful functionality to Web users through a standard Web protocol (SOAP).

SOAP

Simple Object Access Protocol (SOAP) is the communications protocol for Web Services. SOAP is a specification that defines the XML format for messages. The advantage of SOAP is that it has been implemented on many different hardware and software platforms.

HTTP/HTTPS

HTTP/HTTPS is the transport layer of the service. HTTP/HTTPS allows data to traverse the network easily and is widely accepted. It is also considered as platform neutral. Every Fabric Manager Web Services operation is through HTTP/HTTPS.

WSDL

A WSDL definition is an XML document with a root definition element from the <http://schemas.xmlsoap.org/wsdl/> namespace. Fabric Manager Web Services uses the WSDL document to publish which operations of Fabric Manager are available. The definitions element may contain several other elements including types, message, portType, binding, and service, all of which come from the namespace. WSDL is published on FMServer at <http://localhost/LogonWSService/LogonWS?wsdl>

Logon Service

LogonWS makes IdentityManager's operations available as Web Service calls. LogonWS allows the following operations:

requestToken

This method returns a token string that must be passed in as the header of the SOAP message. Once the username and password is authentication using Fabric Manager's SecurityManager, the token is generated and is kept valid for the number of milliseconds specified in the expiration argument.

Parameters

username—Name of the user.

password—Password of the user.

expiration—Time (in milliseconds).

Return Value

Session token.

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Error

Error code: 201—Invalid argument in Web Service exception.

validateToken

This method returns true or false depending on the validity of the token. If the token has expired, it returns false, or else it returns true.

Parameters

token—Session Token.

Return Value

Boolean value “True“ if the Fabric Manager accepts the token.

Error

Error code: 201—Invalid argument in Web Service exception.

Authentication or Token

To interact with Fabric Manager Web Services, the user must obtain a token through LogonWS and attach this token to the header message of every SOAP requests. Fabric Manager Web Services verifies user credentials using a unique token string that is administered by LogonWS. At any given time, HTTPS should be deployed to secure the communication channel. The following example displays the format of the header message:

```
<?xml version="1.0" encoding="UTF-8"?>
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <SOAP-ENV:Header xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" >
    <m:Token xmlns:m="http://www.w3schools.com/transaction/">
      token string is put here
    </m:Token></SOAP-ENV:Header>
  <SOAP-ENV:Body>
    <getFabrics xmlns="http://ep.jaxws.dcbu.cisco.com/" />
  </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

IdentityManager

IdentityManager provides identity services and manages the user credentials that are required by Web Services. It is the token provider that administers and maintains tokens. It authenticates the user, generates tokens, and validates or expires tokens by periodically checking and clearing the cache.

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San Service WS

San Service is an Enterprise Java Beans (EJB) component that manages SAN-related service requests and executes queries on Fabric Manager for information. SanWS checks with IdentityManager for authentication before performing the request. A valid token string tells San Service that the user is a Fabric Manager user and it must honor and execute the request. After retrieving the required information it sends the result back to the user. SanWS logs errors in `fms_ws.log`. Service endpoint interface (SEI) of SanWS defines the operations of the service. These methods are published to the end users.

getFabrics

Returns the list of all open fabrics.

Return Value

An array of open fabrics.

Error

Error Code: 300— General SAN Service exception.

getFabricByIP

Returns the list of fabrics associated with the IP address of a given switch.

Parameters

`ipAddress`—IP address of the switch.

Return Value

List of all fabrics associated with the specificIP address.

Error

Error Code: 300— General SAN Service exception.

Error code: 201—Invalid argument in Web Service exception.

getFabricByKey

Returns the list of fabrics associated with the specified key.

Parameters

`key`—Key of the fabric.

Return Value

List of all fabrics associated with the specified key.

Error

Error Code: 300— General SAN Service exception.

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Error code: 201—Invalid argument in Web Service exception.

getFabricBySwitchKey

Returns the list of fabrics associated with the specified seed switch key (WWN).

Parameters

swkey—Seed switch key of the fabric.

Return Value

List of all fabrics associated with the specified seed switch key.

Error

Error Code: 300— General SAN Service exception.

Error code: 201—Invalid argument in Web Service exception.

getSwitchesByFabric

Returns the list of switches associated with the specified fabric key.

Parameters

key—Key of the fabric.

Return Value

List of all fabrics associated with the specified fabric key.

Error

Error Code: 300— General SAN Service exception.

getSwitch

Returns the list of switches on all the fabrics.

Parameters

key—Key of the fabric.

Return Value

List of all fabrics associated with the specified fabric key.

Error

Error Code: 300— General SAN Service exception.

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getSwitchByKey

Returns the switch associated with the specified switch key object.

Parameters

key—Key of the fabric.

Return Value

Switch associated with the specified switch key.

Error

Error Code: 300— General SAN Service exception.

Error code: 201—Invalid argument in Web Service exception.

getSwitchIPByName

Returns the IP address associated with the specified system name or switch name.

Parameters

sysname—Name of the system or switch.

Return Value

IP address associated with the specified system name.

Error

Error Code: 300— General SAN Service exception.

Error code: 201—Invalid argument in Web Service exception.

getSwitchIPByKey

Returns the IP address of the switch associated with the specified WwnKey object.

Parameters

key—WWN Key object.

Return Value

IP address associated with the specified WwnKey object.

Error

Error Code: 300— General SAN Service exception.

Error code: 201—Invalid argument in Web Service exception.

getNeighborSwitches

Returns the list of neighboring switches associated with the specified WwnKey.

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Parameters

key—Wwn Key object.

Return Value

List of neighboring switches associated with the specified WwnKey.

Error

Error Code: 300— General SAN Service exception.

Error code: 201—Invalid argument in Web Service exception.

Error code: 302—SAN does not found objects by query key exception.

getVsans

Returns the list of VSANs in the fabric associated with the specified fabric key.

Parameters

key—fabric key object.

Return Value

List of VSANs in the fabric associated with the specified fabric key.

Error

Error Code: 300— General SAN Service exception.

Error code: 201—Invalid argument in Web Service exception.

getVsan

Returns the VSAN in the fabric associated with the specified VSAN key object.

Parameters

key—VSAN key object.

Return Value

VSANs in the fabric associated with the specified VSAN key object.

Error

Error Code: 300— General SAN Service exception.

Error code: 201—Invalid argument in Web Service exception.

getIsIs

Returns the list of ISLs in the VSAN associated with the specified VSAN key.

Parameters

key—VSAN key.

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Return Value

Array of ISL objects in the VSAN associated with the specified VSAN key.

Error

Error Code: 300— General SAN Service exception.

Error code: 201—Invalid argument in Web Service exception.

discoverFabric

This API will open the fabric. This function requires the IP address of the seed switch and SNMP credentials.

Parameters

seed—IP address of the seed switch.

user—SNMP Credential.

Return Value

Boolean value is True, if the discovery was successful.

Error

Error Code: 300— General SAN Service exception.

Error code: 201—Invalid argument in Web Service exception.

Error Code: 100— Authentication failure exception.

Error code: 101—Invalid credentials exception.

manageFabric

Returns true or false depending managability of the fabric.

Parameters

key—Fabric key.

Return Value

Returns true if the fabric can be identified or managed. Returns false if the fabric cannot be identified or managed.

Error

Error Code: 300— General SAN Service exception.

Error code: 201—Invalid argument in Web Service exception.

unManageFabric

This function is used to unmanage a fabric.

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Parameters

key—Fabric key.

Return Value

None.

Error

Error Code: 300— General SAN Service exception.

Error code: 201—Invalid argument in Web Service exception.

closeFabric

This functions is used to unmanage and close a fabric.

Parameters

key—Fabric key.

Return Value

None.

Error

Error Code: 300— General SAN Service exception.

Error code: 201—Invalid argument in Web Service exception.

purgeFabric

This functions is used to purge the specified fabric data both from Fabric Manager cache and database.

Parameters

key—Fabric key.

Return Value

None.

Error

Error Code: 300— General SAN Service exception.

Error code: 201—Invalid argument in Web Service exception.

Error code: 302—SAN does not found objects by query key exception.

getEndpoints

Returns the list of all the end ports known to the Fabric Manager.

Return Value

An array of all the end ports.

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Error

Error Code: 300— General SAN Service exception.

getEnclosures

Returns the list of all the enclosures known to the Fabric Manager.

Return Value

An array of enclosure objects.

Error

Error Code: 300— General SAN Service exception.

getEndPointByKey

Returns the end port based on the Switch WWN.

Parameters

key—WWN of the node.

Return Value

Returns the end port based on the Switch WWN. Returns null if there are no end ports associated with the Switch.

Error

Error Code: 300— General SAN Service exception.

Error code: 201—Invalid argument in Web Service exception.

getEndPointAttachedToSw

Returns the end ports that are associated with a switch.

Parameters

key—IP address of the switch.

Return Value

Returns the end ports based on switch.

Error

Error Code: 300— General SAN Service exception.

Error code: 201—Invalid argument in Web Service exception.

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getEnclosureByName

Returns the enclosure based on the name.

Parameters

name—Name of the enclosure object.

Return Value

Returns the enclosure object..

Error

Error Code: 300— General SAN Service exception.

Error code: 201—Invalid argument in Web Service exception.

getEnclosureByKey

Returns the enclosure based on the name.

Parameters

name—Name of the enclosure object.

Return Value

Returns the enclosure object.

Error

Error Code: 300— General SAN Service exception .

Error code: 201—Invalid argument in Web Service exception.

getEnclosureByPwwn

Returns the enclosure that are associated with a physical WWN.

Parameters

wwn—Physical WWN of the switch.

Return Value

Returns the enclosure based on physical WWN.

Error

Error Code: 300— General SAN Service exception.

Error code: 201—Invalid argument in Web Service exception.

updateEnclosure

Update the enclosure with the value that is passed as parameter.

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Parameters

value—Value to update the enclosure.

Return Value

None.

Error

Error Code: 300— General SAN Service exception.

Error code: 201—Invalid argument in Web Service exception.

updateEndpointEnclosure

Update the end port enclosure with the value that is passed as parameter.

Parameters

endpointKey—Value for the endpointKey.

enclosureKey—Value for the enclosureKey.

Return Value

None.

Error

Error Code: 300— General SAN Service exception.

Error code: 201—Invalid argument in Web Service exception.

getHosts

Returns the list of all the host enclosures known to Fabric Manager.

Return Value

Returns the list of all the host enclosures known to Fabric Manager.

Error

Error Code: 300— General SAN Service exception.

getHost

Returns the name of hosts in a VSAN.

Parameters

key—Name of the VSAN.

Return Value

Returns the name of the hosts in the specified VSAN.

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Error

Error Code: 300— General SAN Service exception.

Error code: 201—Invalid argument in Web Service exception.

getHostByFabric

Returns the name of hosts in a fabric.

ValidationException is thrown if any of the following situation occurs:

- If the argument passed is null.
- If the argument does not contain a valid key.

Parameters

key—Name of the fabric.

Return Value

Returns the name of the hosts in the specified VSAN.

Error

Error Code: 300— General SAN Service exception.

Error code: 201—Invalid argument in Web Service exception.

getStorages

Returns the list of all the storage device enclosures known to Fabric Manager.

Return Value

An array of all the storage device enclosures known to Fabric Manager.

Error

Error Code: 300— General SAN Service exception.

getStorageByFabric

Returns the name of storage device enclosures in a fabric.

Parameters

key—Name of the fabric.

Return Value

Returns the name of the storages in the specified fabric.

Error

Error Code: 300— General SAN Service exception.

Error code: 201—Invalid argument in Web Service exception.

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getHostPorts

Returns the list of all the host end ports in a fabric.

Parameters

key—Name of the fabric.

Return Value

An array of all the host ports in a fabric.

Error

Error Code: 300— General SAN Service exception.

Error code: 201—Invalid argument in Web Service exception.

getDomainId

Returns the domain address.

Parameters

key—Wwn

vsanid—Unique identifier of the VSAN

Return Value

Domain IP Address

Error

Error Code: 300— General SAN Service exception.

Error code: 201—Invalid argument in Web Service exception.

getVsanIp

Returns the IP Address of a VSAN

Parameters

key—Wwn

vsanid—Unique identifier of the VSAN

Return Value

IP Address of a VSAN

Error

Error Code: 300— General SAN Service exception.

Error code: 201—Invalid argument in Web Service exception.

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getVsanDomains

Returns all VSAN domains in a switch.

Parameters

Key—Wwnkey

Return Value

VSAN domains in a switch.

Error

Error Code: 300— General SAN Service exception.

Error code: 201—Invalid argument in Web Service exception.

getIvrEnfZoneSetName

Returns the fabric IVR enforced zone set name.

Parameters

Key—Fabric key

Return Value

Zone set name.

Error

Error Code: 300— General SAN Service exception.

Error code: 201—Invalid argument in Web Service exception.

getIvrEnfZoneSetNumber

Returns the fabric IVR enforced zone number.

Parameters

Key—Fabric key

Return Value

Zone number.

Error

Error Code: 300— General SAN Service exception.

Error code: 201—Invalid argument in Web Service exception.

getIvrEnfZoneSetActivateTime

Returns the fabric IVR enforced zone set activate time.

Parameters

Key—Fabric key

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Return Value

Time stamp in the long integer format.

Error

Error Code: 300— General SAN Service exception.

Error code: 201—Invalid argument in Web Service exception.

getIvrEnfZoneSet

Returns the fabric IVR enforced zone set.

Parameters

Key—Fabric key

Return Value

List of zone objects.

Error

Error Code: 300— General SAN Service exception.

Error code: 201—Invalid argument in Web Service exception.

getIvrActiveZonesetChecksum

Returns the IVR active zone set checksum.

Parameters

Key—Fabric key

Return Value

Checksum value.

Error

Error Code: 300— General SAN Service exception.

Error code: 201—Invalid argument in Web Service exception.

getAliases

Returns all the aliases used by the fabric.

Parameters

Key—Fabric key

Return Value

Aliases used by the fabric.

Error

Send documentation comments to fm-docfeedback@cisco.com

Error Code: 300— General SAN Service exception.

Error code: 201—Invalid argument in Web Service exception.

useFcAlias

Returns all the FC aliases used by the fabric.

Parameters

Key—Fabric key

Return Value

FC aliases used by the fabric.

Error

Error Code: 300—General SAN Service exception.

Error code: 201—Invalid argument in Web Service exception.

getEnfZoneSet

Returns all the VSAN enforced zone set.

Parameters

Key—Fabric key

Return Value

List of zones.

Error

Error Code: 300— General SAN Service exception.

Error code: 201—Invalid argument in Web Service exception.

getEnfZoneSetName

Returns all the VSAN enforced zone set name.

Parameters

Key—Fabric key

Return Value

List of zone set names.

Error

Error Code: 300— General SAN Service exception.

Error code: 201—Invalid argument in Web Service exception.

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getEnfZoneSetName

Returns all the VSAN enforced zone set name.

Parameters

Key—Fabric key

Return Value

List of zone set names.

Error

Error Code: 300— General SAN Service exception.

Error code: 201—Invalid argument in Web Service exception.

getFCAliases

Returns all the FC aliases for the fabric.

Parameters

Key—Fabric key

Return Value

List of aliases.

Error

Error Code: 300— General SAN Service exception.

Error code: 201—Invalid argument in Web Service exception.

getFCAliasesByVsan

Returns all the FC aliases for the VSAN.

Parameters

Key—Fabric key

Return Value

List of aliases for the VSAN.

Error

Error Code: 300— General SAN Service exception.

Error code: 201—Invalid argument in Web Service exception.

getCFS

Returns CFS.

Parameters

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Key—Fabric key

Return Value

List of CFS features.

Error

Error Code: 300— General SAN Service exception.

Error code: 201—Invalid argument in Web Service exception.

getCFSBySwitch

Returns CFS.

Parameters

Key—Switch key

Return Value

List of CFS features.

Error

Error Code: 300— General SAN Service exception.

Error code: 201—Invalid argument in Web Service exception.

getFcipProfiles

Returns FCIP profiles.

Parameters

Key—Fabric key

Return Value

List of FCIP profiles.

Error

Error Code: 300— General SAN Service exception.

Error code: 201—Invalid argument in Web Service exception.

getFcipProfilesBySwitch

Returns FCIP profiles based on a switch.

Parameters

Key—Switch key

Return Value

List of FCIP profiles.

Error

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Error Code: 300— General SAN Service exception.

Error code: 201—Invalid argument in Web Service exception.

getFcipTunnels

Returns FCIP tunnels.

Parameters

Key—Fabric key

Return Value

List of FCIP tunnels.

Error

Error Code: 300— General SAN Service exception.

Error code: 201—Invalid argument in Web Service exception.

getFcipTunnelsBySwitch

Returns FCIP tunnels based on a switch.

Parameters

Key—Switch key

Return Value

List of FCIP tunnels.

Error

Error Code: 300— General SAN Service exception.

Error code: 201—Invalid argument in Web Service exception.

getFcipTunnelErrors

Returns FCIP tunnels errors.

Parameters

Key—Fabric key

Return Value

List of FCIP tunnel errors.

Error

Error Code: 300— General SAN Service exception.

Error code: 201—Invalid argument in Web Service exception.

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getFcipTunnelErrorsBySwitch

Returns FCIP tunnels errors based on a switch.

Parameters

Key—Switch key

Return Value

List of FCIP tunnels errors.

Error

Error Code: 300— General SAN Service exception.

Error code: 201—Invalid argument in Web Service exception.

getFcipTunnelErrorsBySwitch

Returns FCIP tunnels errors based on a switch.

Parameters

Key—Switch key

Return Value

List of FCIP tunnels errors.

Error

Error Code: 300— General SAN Service exception.

Error code: 201—Invalid argument in Web Service exception.

getZoneMode

Returns zone operation modes.

Parameters

Key—Fabric key

Return Value

List of zone operation modes.

Error

Error Code: 300— General SAN Service exception.

Error code: 201—Invalid argument in Web Service exception.

getZoneModeByVsan

Returns zone operation modes for VSAN.

Parameters

Key—VSAN key

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Return Value

List of zone operation modes.

Error

Error Code: 300— General SAN Service exception.

Error code: 201—Invalid argument in Web Service exception.

getZoneAttributes

Returns zone attributes.

Parameters

Key—Fabric key

Return Value

Zone attributes.

Error

Error Code: 300— General SAN Service exception.

Error code: 201—Invalid argument in Web Service exception.

getZoneAttributesByVsan

Returns zone attributes for VSAN.

Parameters

Key—VSAN key

Return Value

Zone attributes for VSAN.

Error

Error Code: 300— General SAN Service exception.

Error code: 201—Invalid argument in Web Service exception.

getSwitchPorts

Returns ports for the switch.

Parameters

Key—Fabric key

Return Value

List of ports for a given switch.

Error

Error Code: 300— General SAN Service exception.

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Error code: 201—Invalid argument in Web Service exception.

isIVREnabled

Returns a boolean value depending on whether the IVR is enabled on the switch or not.

Parameters

Key—Switch key

Return Value

Boolean value.

Error

Error Code: 300—General SAN Service exception.

Error code: 201—Invalid argument in Web Service exception.

getSwitchDateAndTime

Returns the switch time and date.

Parameters

Key—Switch key

Return Value

Boolean value.

Error

Error Code: 400—SnmpException.

Zone Manager WS - SEI

activateZoneset

Activates the zone set.

Parameters

key—WwnKey

key—Name of the VSAN

Return Value

Operational status of the zone set.

Error

Error Code: 300—General SAN Service exception.

Error Code: 201—Invalid argument in Web Service exception..

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addZone

Add a new zone to the list of zones.

Parameters

key—WwnKey

key—Name of the VSAN

Return Value

Zone object.

Error

Error Code: 300—General SAN Service exception.

Error Code: 201—Invalid argument in Web Service exception..

addZoneAlias

Adds a zone alias.

Parameters

key—WwnKey

key—Name of the VSAN

Return Value

Zone object.

Error

Error Code: 300—General SAN Service exception.

Error Code: 201—Invalid argument in Web Service exception..

addZoneMemberToZone

Adds a new zone member to the specific zone.

Parameters

key—WwnKey

key—Name of the VSAN

Return Value

ID of the zone member.

Error

Error Code: 300—General SAN Service exception.

Error Code: 201—Invalid argument in Web Service exception..

Send documentation comments to fm-docfeedback@cisco.com

addZoneMemberToZoneAlias

Adds a zone member to the zone alias.

Parameters

key—WwnKey

key—Name of the VSAN

Return Value

Zone member.

Error

Error Code: 300—General SAN Service exception.

Error Code: 201—Invalid argument in Web Service exception..

createZone

Creates a new zone.

Parameters

key—WwnKey

key—Name of the VSAN

Return Value

Zone object.

Error

Error Code: 300—General SAN Service exception.

Error Code: 201—Invalid argument in Web Service exception..

createZoneAlias

Creates a zone alias.

Parameters

key—WwnKey

key—Name of the VSAN

Return Value

Zone alias object.

Error

Error Code: 300—General SAN Service exception.

Error Code: 201—Invalid argument in Web Service exception..

Send documentation comments to fm-docfeedback@cisco.com

createZoneMemberInZone

Creates a zone member in the specified zone.

Parameters

key—WwnKey

key—Name of the VSAN

Return Value

Member ID.

Error

Error Code: 300—General SAN Service exception.

Error Code: 201—Invalid argument in Web Service exception..

createZoneMemberInZoneAlias

Creates a zone member in the specified zone alias.

Parameters

key—WwnKey

key—Name of the VSAN

Return Value

Member ID.

Error

Error Code: 300—General SAN Service exception.

Error Code: 201—Invalid argument in Web Service exception..

createZoneSet

Creates a zone set.

Parameters

key—WwnKey

key—Name of the VSAN

Return Value

ID of the zone set.

Error

Error Code: 300—General SAN Service exception.

Error Code: 201—Invalid argument in Web Service exception..

Send documentation comments to fm-docfeedback@cisco.com

deActivateZoneset

Returns the operational status of the zone set.

Parameters

key—WwnKey

key—Name of the VSAN

Return Value

Operational status of the zone set.

Error

Error Code: 300—General SAN Service exception.

Error Code: 201—Invalid argument in Web Service exception..

getEnfZoneSet

Returns the enforced zone set.

Parameters

key—WwnKey.

key—Name of the VSAN.

Return Value

ID of the zone set.

Error

Error Code: 300—General SAN Service exception.

Error Code: 201—Invalid argument in Web Service exception..

getEnfZoneSetName

Returns the name of the enforced zone set.

Parameters

key—WwnKey

key—Name of the VSAN

Return Value

ID of the zone set.

Error

Error Code: 300—General SAN Service exception.

Error Code: 201—Invalid argument in Web Service exception..

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getlvrActiveZonesetChecksum

Returns the IVR active zoneset checksum.

Parameters

key—FabricKey

Return Value

Checksum value.

Error

Error Code: 300—General SAN Service exception.

Error Code: 201—Invalid argument in Web Service exception..

getlvrEnfZoneNumber

Returns the fabric IVR enforced zone number.

Parameters

key—FabricKey

Return Value

Zone number.

Error

Error Code: 300—General SAN Service exception.

Error Code: 201—Invalid argument in Web Service exception..

getlvrEnfZoneSet

Returns the fabric IVR enforced zone set ID.

Parameters

key—FabricKey

Return Value

Zone set ID.

Error

Error Code: 300—General SAN Service exception.

Error Code: 201—Invalid argument in Web Service exception..

getlvrEnfZoneSetActivateTime

Returns the fabric IVR enforced zone set activate time.

Parameters

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key—FabricKey

Return Value

System time as the number of seconds elapsed since the start of the Unix epoch at 1 January 1970 00:00:00 UT.

Error

Error Code: 300—General SAN Service exception.

Error Code: 201—Invalid argument in Web Service exception..

getIvrEnfZoneSetName

Returns the fabric IVR enforced zone set name.

Parameters

key—WWNKey

Return Value

Zone ID.

Error

Error Code: 300—General SAN Service exception.

Error Code: 201—Invalid argument in Web Service exception..

getZone

Returns an array of zone IDs.

Parameters

key—WwnKey

Return Value

Zone object.

Error

Error Code: 300—General SAN Service exception.

Error Code: 201—Invalid argument in Web Service exception..

getZoneAlias

Returns zone alias.

Parameters

key—WwnKey

key—VSAN Key

Return Value

Zone alias object.

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Error

Error Code: 300—General SAN Service exception.

Error Code: 201—Invalid argument in Web Service exception..

getZoneAliases

Returns an array of zone aliases.

Parameters

key—WwnKey

key—VSAN Key

Return Value

List of zone aliases.

Error

Error Code: 300—General SAN Service exception.

Error Code: 201—Invalid argument in Web Service exception..

getZoneAttributes

Returns all the attributes for the zone.

Parameters

key—WwnKey

key—VSAN Key

Return Value

List of zone attributes.

Error

Error Code: 300—General SAN Service exception.

Error Code: 201—Invalid argument in Web Service exception..

getZoneAttributesByVsan

Returns all the zone attributes for the VSAN.

Parameters

key—WwnKey

Return Value

List of zone attributes for the VSAN.

Error

Error Code: 300—General SAN Service exception.

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Error Code: 201—Invalid argument in Web Service exception..

getZoneCapabilitiesByFabric

Returns the zone information associated with the specified fabric key.

Parameters

key—Fabric key

Return Value

ZoneCapabilities object.

Error

Error Code: 300—General SAN Service exception.

Error Code: 201—Invalid argument in Web Service exception..

getZoneCapabilitiesByVsan

Returns all zone information for the VSAN.

Parameters

key—WwnKey

Return Value

ZoneCapabilities object.

Error

Error Code: 300—General SAN Service exception.

Error Code: 201—Invalid argument in Web Service exception..

getZoneMode

Returns the list of zone modes.

Parameters

key—WwnKey

Return Value

Zone information.

Error

Error Code: 300—General SAN Service exception.

Error Code: 201—Invalid argument in Web Service exception..

getZoneModeByVsan

Returns the list of zone modes for the VSAN.

Send documentation comments to fm-docfeedback@cisco.com

Parameters

key—VSAN key

Return Value

Zone information for the VSAN.

Error

Error Code: 300—General SAN Service exception.

Error Code: 201—Invalid argument in Web Service exception..

getZoneSet

Returns the zone set.

Parameters

key—WwnKey

Return Value

Zone sets.

Error

Error Code: 300—General SAN Service exception.

Error Code: 201—Invalid argument in Web Service exception..

getZoneSets

Returns the list of zone sets.

Parameters

key—WwnKey

Return Value

List of zone sets.

Error

Error Code: 300—General SAN Service exception.

Error Code: 201—Invalid argument in Web Service exception..

getZones

Returns the list of zones.

Parameters

key—WwnKey

Return Value

List of zones.

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Error

Error Code: 300—General SAN Service exception.

Error Code: 201—Invalid argument in Web Service exception..

Statistics WS - SEI

getEndDeviceStatistics

Returns the statistics of the end device.

Parameters

key—WwnKey.

Return Value

Statistics of the end device.

Error

Error Code: 201—Invalid argument in Web Service exception..

getEndDeviceStatisticsByAlias

Returns the statistics of the end devices by device alias.

Parameters

key—WwnKey

Return Value

Statistics of the end devices.

Error

Error Code: 201—Invalid argument in Web Service exception..

getEthPortStatisticsByKey

Returns the statistics of the Ethernet port.

Parameters

key—WwnKey

Return Value

Statistics of the Ethernet port.

Error

Error Code: 201—Invalid argument in Web Service exception..

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getEthPortStatisticsBySwitch

Returns the statistics of the Ethernet port based on a switch.

Parameters

key—WwnKey

Return Value

Statistics of the Ethernet port based on a switch.

Error

Error Code: 201—Invalid argument in Web Service exception..

getFcPortStatistics

Returns the statistics of the Fibre Channel port.

Parameters

key—WwnKey

Return Value

Statistics of the Fibre Channel port.

Error

Error Code: 201—Invalid argument in Web Service exception..

getFcPortStatisticsByKey

Returns the statistics of the Fibre Channel port based on the Switch WWN.

Parameters

key—WwnKey

Return Value

Statistics of the Fibre Channel port.

Error

Error Code: 201—Invalid argument in Web Service exception..

getFcPortStatisticsBySwitch

Returns the statistics of the Fibre Channel port based on a switch.

Parameters

key—WwnKey

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Return Value

Port statistics of the Fibre Channel port.

Error

Error Code: 201—Invalid argument in Web Service exception..

getIPEndPointStatisticsByKey

Returns the statistics of the IPEndPoint based on a Switch WWN.

Parameters

key—WwnKey

Return Value

Statistics of the IPEndPoint.

Error

Error Code: 201—Invalid argument in Web Service exception..

getIPEndPointStatisticsBySwitch

Returns the statistics of the IPEndPoint based on a switch.

Parameters

key—WwnKey

Return Value

Statistics of the IPEndPoint.

Error

Error Code: 201—Invalid argument in Web Service exception..

getTCPEndPointStatisticsByKey

Returns the statistics of the TCPEndPoint based on a Switch WWN.

Parameters

key—WwnKey

Return Value

Statistics of the TCPEndPoint.

Error

Error Code: 201—Invalid argument in Web Service exception..

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getTCPEndPointStatisticsBySwitch

Returns the statistics of the TCPEndPoint based on a switch.

Parameters

key—WwnKey

Return Value

Statistics of the TCPEndPoint on a switch.

Error

Error Code: 201—Invalid argument in Web Service exception.

Security WS - SEI

getAaaMaxServer

Returns a value for the maximum number of server entries in a server group of AAA configuration.

Parameters

key—WwnKey

Return Value

Maximum number of server entries in a server group of AAA configuration.

Error

Error Code: 400—SnmpException

getAaaMaxAppServer

Returns a value for the maximum number of server entries in the AAA configuration for an application type.

Parameters

key—WwnKey

Return Value

Maximum number of server entries in a server group of AAA configuration.

Error

Error Code: 400—SnmpException

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isMSCHAPRequired

Returns a boolean value to indicate if MSCHAP authentication mechanisms are required for authenticating a user.

Parameters

key—WwnKey

Return Value

Boolean value to indicate if MSCHAP authentication mechanisms are required for authenticating a user.

Error

Error Code: 400—SnmpException

getAaaSetup

Returns the AAA configuration.

Parameters

key—WwnKey

Return Value

AAA configuration.

Error

Error Code: 400—SnmpException

getAaaAppServerGroups

Returns the AAA server groups for a specific application type.

Parameters

key—WwnKey

Return Value

AAA server groups for a specific application type.

Error

Error Code: 400—SnmpException

getAaaServerGroups

Returns all the AAA server group entries (a server group consists of a number of AAA servers implementing the same AAA protocol).

Parameters

key—WwnKey

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Return Value

AAA server group entries.

Error

Error Code: 400—SnmpException

getSnmpUsers

Returns information about SNMP users.

Parameters

key—WwnKey

Return Value

Information about SNMP users.

Error

Error Code: 400—SnmpException

getIPACLProfiles

Returns all the IP ACL profiles.

Parameters

key—WwnKey

Return Value

All the IP ACL profiles.

Error

Error Code: 400—SnmpException

getSSHConfig

Returns the SSH configuration information.

Parameters

key—WwnKey

Return Value

SSH configuration information.

Error

Error Code: 400—SnmpException

getSSHEnabled

Returns a boolean value to indicate if the SSH is enabled.

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Parameters

key—WwnKey

Return Value

Boolean value to indicate if the SSH is enabled

Error

Error Code: 400—SnmpException

isTelnetEnabled

Returns a boolean value to indicate if the telnet is enabled.

Parameters

key—WwnKey

Return Value

Boolean value to indicate if the telnet is enabled.

Error

Error Code: 400—SnmpException.

getPkiRsaKeys

Returns the PKI RSA key-pair entries.

Parameters

key—WwnKey

Return Value

PKI RSA key-pair entries.

Error

Error Code: 400—SnmpException.

getPkiTrustPointNames

Returns a list of PKI trustpoint names.

Parameters

key—WwnKey

Return Value

A list of PKI trustpoint names.

Error

Error Code: 400—SnmpException.

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getPkiTrustPointNames

Returns a list of PKI trustpoint names.

Parameters

key—WwnKey

Return Value

A list of PKI trustpoint names.

Error

Error Code: 400—SnmpException.

getPkiCert

Returns certificate information of a PKI trustpoint.

Parameters

key—WwnKey

Return Value

Certificate information of a PKI trustpoint.

Error

Error Code: 400—SnmpException.

getPkiAction

Returns the PKI support action of a trustpoint.

Parameters

key—WwnKey

Return Value

PKI support action of a trustpoint.

Error

Error Code: 400—SnmpException.

getPkiTrustPoint

Returns the PKI trust point information which consists the key-pair name, a list revocation methods and the contact HTTP URL of the external OCSP server for certificate revocation.

Parameters

key—WwnKey

Return Value

PKI trust point information.

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Error

Error Code: 400—SnmpException.

getFeatureControls

Returns all of the feature control names and their respective statuses.

Parameters

key—WwnKey

Return Value

Feature control names and statuses.

Error

Error Code: 400—SnmpException.

getIkeFailRecoveryCfg

Returns the IKE configuration.

Parameters

key—WwnKey

Return Value

IKE configuration.

Error

Error Code: 400—SnmpException

getIkeCfgPolicies

Returns the policy that is used to set up the IKE tunnels.

Parameters

key—WwnKey

Return Value

Policy that is used to set up the IKE tunnels.

Error

Error Code: 400—SnmpException.

getIkeCfgInitiators

Returns the IKE initiator configuration information.

Parameters

Send documentation comments to fm-docfeedback@cisco.com

key—WwnKey

Return Value

IKE initiator configuration information.

Error

Error Code: 400—SnmpException.

getIkeTunnels

Returns the IKE tunnels information.

Parameters

key—WwnKey

Return Value

IKE tunnels information.

Error

Error Code: 400—SnmpException.

getIPsecGlobalCfg

Returns the IPsec tunnel configuration information.

Parameters

key—WwnKey

Return Value

IPsec tunnel configuration information.

Error

Error Code: 400—SnmpException.

getIPsecXformSets

Returns the IPsec transform set information.

Parameters

key—WwnKey

Return Value

IPsec transform set information.

Error

Error Code: 400—SnmpException.

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getIPsecCryptoMaps

Returns the IPsec cryptomap set.

Parameters

key—WwnKey

Return Value

IPsec cryptomap set.

Error

Error Code: 400—SnmpException.

getIfsFromCryptoMap

Returns the interface name from the IPsec cryptomap.

Parameters

key—WwnKey

Return Value

Interface name from the IPsec cryptomap.

Error

Error Code: 400—SnmpException.

getIPsecTunnels

Returns the information about IPsec tunnels.

Parameters

key—WwnKey

Return Value

Information about IPsec tunnels.

Error

Error Code: 400—SnmpException.

Protocol WS - SEI

getNtpPeers

Returns NTP peer information.

Parameters

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key—WwnKey

Return Value

NTP peer information.

Error

Error Code: 400—SnmpException

getNtpInfo

Returns NTP system information

Parameters

key—WwnKey

Return Value

NTP system information.

Error

Error Code: 400—SnmpException

getFspfConfig

Returns the FSPF protocol configuration.

Parameters

key—WwnKey

Return Value

Configuration settings of the FSPF protocol.

Error

Error Code: 400—SnmpException

queryInterfaceFspfConfig

Returns the FSPF configuration on the interface pertaining to the specified VSAN.

Parameters

key—WwnKey

vsanid—Unique identifier of the VSAN

Return Value

FSPF configuration settings on the interface of a specified VSAN

Error

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Error Code: 400—SnmpException

Cluster WS - SEI

Service endpoint interface (SEI) of Cluster WS defines the operations of the service. These methods are published to the end users.

getSwitchesByFabricKey

Returns all the switches related to a fabric key.

Parameters

key—Name of the fabric.

Return Value

All the switches associated with the fabric.

Error

Error Code: 400—SnmpException

getServerIpByFabricKey

Returns the managing server IP address from a fabric key.

Parameters

key—Name of the fabric.

Return Value

IP Address of the server.

Error

Error Code: 400—SnmpException

getServerIpBySwitchKey

Returns the managing server IP address from a switch key.

Parameters

key—Name of the switch.

Return Value

IP Address of the Server.

Error

Error Code: 400—SnmpException

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getFabricsByServerIp

Returns name of the fabric by server IP address.

Parameters

key—IP Address.

Return Value

Name of the fabric.

Error

Error Code: 400—SnmpException

getAllServers

Returns all the servers in this federation

Parameters

key—

Return Value

All the servers in the federation.

Error

Error Code: 400—SnmpException

getFabricByEnclosureKey

Returns the fabric key from an enclosure key

Parameters

key—Name of the enclosure.

Return Value

Name of the fabric.

Error

Error Code: 400—SnmpException

getServerIpByEnclosureKey

Returns the server IP address from an enclosure key

Parameters

key—Name of the fabric.

Return Value

IP Address of the server.

Error

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Error Code: 400—SnmpException

getServerIpByVsanKey

Returns the server IP address from a VSAN key

Parameters

key—Name of the VSAN

Return Value

IP Address of the server.

Error

Error Code: 400—SnmpException

Event WS - SEI

Service endpoint interface (SEI) of Event WS defines the operations of the service. These methods are published to the end users.

isCallHomeEnabled

Returns a boolean value depending upon the activation of callhome feature.

Parameters

key—WwnKey

Return Value

Boolean value

Error

Error Code: 400—SnmpException

getCallHomeDestProfile

Returns the callhome destination profile.

Parameters

key—WwnKey

Return Value

Error

Error Code: 400—SnmpException

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getCallHomeSysInfo

Returns system information about the callhome feature.

Parameters

key—WwnKey

Return Value

System information about the callhome feature.

Error

Error Code: 400—SnmpException

getEmailMaxEntries

Returns the maximum number of email address entries for callhome feature.

Parameters

key—WwnKey

Return Value

Number of email address entries for callhome feature

Error

Error Code: 400—SnmpException

getEmailSetup

Returns the email setup details of callhome feature.

Parameters

key—WwnKey

Return Value

Email setup details of callhome feature.

Error

Error Code: 400—SnmpException

getSyslogServers

Returns the list of syslog servers.

Parameters

key—WwnKey

Return Value

List of syslog servers.

Error

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Error Code: 400—SnmpException

getSyslogMessageControl

Returns a list of syslog message configuration.

Parameters

key—WwnKey

Return Value

List of syslog message configuration.

Error

Error Code: 400—SnmpException

getSyslogLoggingCfg

Returns syslog logging configuration.

Parameters

key—WwnKey

Return Value

Configuration information on syslog credentials.

Error

Error Code: 400—SnmpException

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Error Codes

Error Code	Description
100	Authentication failure.
101	Invalid credential.
102	Invalid privilege.
103	Invalid token.
200	Web Service error.
201	Invalid argument in Web Service function.
202	Unreachable Web Service server.
300	SAN service error.
301	Invalid query key
400	Snmp Error
201	InvalidArgument



Note

Fabric Manager Web Services supports server federation. Service requests to SanWS, SecurityWS, ProtocolWS, EventWS, and InventoryWS automatically dispatches the calls to correct server in the federation. If you are using server federation, the following methods will not automatically mediate to the corresponding server in the federation.

SanWS:

```
getEnclosures()
getEndpoints()
getFabricByIP()
getHosts()
getStorages()
getSwitchIPByName()
getSwitches()
```

InventoryWS:

```
getAllHbas()
getLicenseFlags()
```

In those specific instances, you may need to depend on ClusterWS to determine the server that you need to send the request.



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