



CHAPTER 12

InterfacesApp Service

This chapter describes the DCNM web services' API methods for the InterfacesApp service.

Information About InterfacesApp Service

This chapter defines the APIs exposed by the Interfaces service feature.

createLoopbackNetworkInterfaces

Creates one or more Loopback interface objects in a network element. Given the instance name Id of network element and list of loopback interface objects, creates the objects in the server and returns its instance name Ids. No associations will be considered for the given object while creating the interface in the server.

ValidationException is thrown if any of the following situations occurs:

- If neInstanceId is null.
- If neInstanceId is not a valid network element InstanceNameId.
- If the loopBackIns is null or the collection is empty.
- If the loopBackIns contains one or more null element, or the collection contains objects that are not of type LoopBackNetworkInterface.

PropertiesException is thrown if any of the following situations occurs:

- In the loopBackIns collection, if any of the LoopBackNetworkInterface attribute is not valid.

Example:

- Configuring attribute description with a String of length more than 240 will cause an PropertiesException, because description of an interface can only be up to a maximum of 240 characters.

IntegrityException is thrown incase of any of the LoopBackNetworkInterface already exists in the database.

Parameters

opContext—Operational context

neInstanceId—Instance name ID of the network element.

loopbackIns—loopback objects that need to be created.

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Return Value

Instance name IDs of the newly created Loopback interface objects.

createRoutedSubNetworkInterfaces

Create one or more routed sub-interfaces object for a routed physical interface. Given the instance name Id of routed interface and list of routed sub-network interfaces, creates the objects in the server and returns its instance name Ids.

Following associations will be updated for the given interfaces in the server:

- Encapsulation VLAN

ValidationException is thrown if any of the following situations occurs:

- If niId is null.
- If niId is not a valid InstanceNameId.
- If the subInfs is null or the collection is empty.
- If the subInfs contains one or more null element, or the collection contains objects that are not of type RoutedSubNetworkInterface.
- If there is no object existing in database corresponding to the InstanceNameId.
- If IP address (Ipv4AddressPrefix) being configured to the interface without creating a encapsulation VLAN (VLAN) association
- If the configured IP address (Ipv4AddressPrefix) overlaps with primary or secondary IP address of any other Layer 3 interfaces existing in the device.
- If the configured encapsulation VLAN (VLAN) is not available or already in use by any other interfaces.
- If encapsulation type (SubInterfaceEncapsulationType) is configured without specifying encapsulation VLAN.

PropertiesException is thrown if any of the following situations occurs:

- In the subInfs collection, if any of the RoutedSubNetworkInterface attribute is not valid.

Example:

- Configuring attribute description with a String of length more than 240 will cause an PropertiesException, because description of an interface can only be up to a maximum of 240 characters.

IntegrityException is thrown incase of any of the RoutedSubNetworkInterface already exists in the database.

Parameters

opContext—Operational context

niId—instance name Id of RoutedNetworkInterface

subInfs—List of RoutedSubNetworkInterface objects that need to be created

Return Value

Instance name Ids of newly created routed sub-network interface objects.

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createVlanNetworkInterfaces

Creates one or more VLAN interface (SVI) objects in a network element. Given the instance name `Id` of network element and list of SVI objects, creates the objects in the server and returns its instance name `Ids`. No associations will be considered for the given object while creating the interface in the server.

`ValidationException` is thrown if any of the following situations occurs:

- If `neInstanceId` is null.
- If `neInstanceId` is not a valid network element `InstanceId`.
- If the `vlanIns` is null or the collection is empty.
- If the `vlanIns` contains one or more null element, or the collection contains objects that are not of type `VlanNetworkInterface`.

`PropertiesException` is thrown if any of the following situations occurs:

- In the `vlanIns` collection, if any of the `VlanNetworkInterface` attribute is not valid.

Example:

- Configuring attribute `description` with a `String` of length more than 240 will cause an `PropertiesException`, because `description` of an interface can only be up to a maximum of 240 characters.

`IntegrityException` is thrown incase of any of the `VlanNetworkInterface` already exists in the database.

Parameters

`opContext`—Operational context

`neInstanceId`—Instance name ID of the network element.

`vlanIns`—SVI objects that need to be created.

Return Value

Instance name IDs of the newly created SVI objects.

deleteLogicalNetworkInterfaces

Delete one or more existing layer 3 logical network interface objects. This method can be used for the following logical interfaces:

- a) Loopback interfaces
- b) SVI
- c) Routed sub-network interface

`ValidationException` is thrown if any of the following situations occurs:

- If `niInstanceNameIds` collection is null or it is empty.
- If `niInstanceNameIds` collection contains an element that is not of type `IpNetworkInterface InstanceNameId`.
- If `niInstanceNameIds` collection contains a `NetworkInterface` that does not exist in the database.

Deletion of both `RoutedEtherChannelNetworkInterface` and `IpGreTunnelNetworkInterface` are not supported in this method.

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Parameters

opContext—Operational context

niInstanceNameIds—list of instance name Ids of the NetworkInterface objects.

Return Value

void

disableSviService

Disables SVI service for the given device Ids.

ValidationException is thrown if any of the following situations occurs:

- If the argument passed is null.
- If the neInstanceNameIdCol collection is empty or the collection contains object which are not a valid network element InstanceNameId

Parameters

opContext—Operational context

neInstanceNameIds—InstanceNameId corresponding to the network elements

Return Value

void

disableUdldService

Disables UDLD service for the given device Ids.

ValidationException is thrown if any of the following situations occurs:

- If the argument passed is null.
- If the neInstanceNameIdCol collection is empty or the collection contains object which are not a valid network element InstanceNameId

Parameters

opContext—Operational context

neInstanceNameIds—InstanceNameId corresponding to the network elements

Return Value

void

enableSviService

Enables SVI service for the given device Ids.

ValidationException is thrown if any of the following situations occurs:

- If the argument passed is null.

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- If the neInstanceIdCol collection is empty or the collection contains object which are not a valid network element InstanceNameId

Parameters

opContext—Operational context

neInstanceNameIds—InstanceNameId corresponding to the network elements

Return Value

void

enableUddService

Enables UDLD service for the given device Ids.

ValidationException is thrown if any of the following situations occurs:

- If the argument passed is null.
- If the neInstanceIdCol collection is empty or the collection contains object which are not a valid network element InstanceNameId

Parameters

opContext—Operational context

neInstanceNameIds—InstanceNameId corresponding to the network elements

Return Value

void

getAclAssociations

Return a collection of interface to ACL association objects corresponding to a given interface object.

ValidationException is thrown if the argument passed is null or it is not a valid network interface InstanceNameId.

Parameters

opContext—Operational context

interfaceId—InstanceNameId corresponding to the NetworkInterface

Return Value

Set of AclAppliesToNetworkInterface objects associated to given network interface

Following objects will be populated on other end of AclAppliesToNetworkInterface association:

- MacAccessControlList
- AccessControlList

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getActiveRoutedPortsCountInNetworkElement

Returns number of active routed ports present in the device

ValidationException is thrown if the argument passed is null or it is not a valid network element InstanceNameId.

Parameters

opContext—Operational context

neInstanceNameId—InstanceNameId corresponding to the network element

Return Value

Number of ports

getActiveSwitchedPortsCountInNetworkElement

Returns number of active switched ports present in the device for a given switch port mode

ValidationException is thrown if any of the following situations occurs:

- If the neInstanceNameId is null or it is not a valid network element InstanceNameId.
- If the mode is null

Parameters

opContext—Operational context

neInstanceNameId—InstanceNameId corresponding to the network element

mode—Switched network interface mode

Return Value

Number of ports

getAdminDownRoutedPortsCountInNetworkElement

Returns number of administration down routed ports present in the device

ValidationException is thrown if the argument passed is null or it is not a valid network element InstanceNameId.

Parameters

opContext—Operational context

neInstanceNameId—InstanceNameId corresponding to the network element

Return Value

Number of ports

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getAdminDownSwitchedPortsCountInNetworkElement

Returns number of administration down switched ports present in the device for a given switch port mode

ValidationException is thrown if any of the following situations occurs:

- If the neInstanceId is null or it is not a valid network element InstanceNameId.
- If the mode is null

Parameters

opContext—Operational context

neInstanceId—InstanceNameId corresponding to the network element

mode—Switched network interface mode

Return Value

Number of ports

getAllInterfacesInNetworkElement

Returns all types of interfaces present in a network element. Given the instance name ID of a network element, returns a collection of interface objects (Both physical and logical interfaces).

ValidationException is thrown if the argument passed is null or it is not a valid network element InstanceNameId.

Parameters

opContext—Operational context

neInstanceId—InstanceNameId corresponding to the network elements

Return Value

List of all interfaces present in the device. The following interface will be returned

- A) Switched ports
- B) Routed ports
- C) SVIs
- D) Port Channels
- E) Tunnel Interfaces
- D) Loopback Interfaces

Following associations will be available in case of physical port:

- Name
- Interface Status
- Port Setting
- Port Capability
- Port Status
- RoutedSubNetworkInterface's in case of routed port

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Following associations will be available for routed sub-network interface:

- NetworkInterfaceName
- NetworkInterfaceStatus
- VLAN

Following associations will be available in case of logical interface (PortChannel, SVI, Loopback, Tunnel):

- NetworkInterfaceName
- NetworkInterfaceStatus

getErrorDetectionSettings

Return a collection of port error detection setting for a list of network elements.

ValidationException is thrown if any of the following situations occurs:

- If the argument passed is null.
- If the neInstanceNameIds collection is empty or the collection contains object which are not a valid network element InstanceNameId

Parameters

opContext—Operational context

neInstanceNameIds—InstanceNameId corresponding to the network elements

Return Value

List of PortErrorDisableDetectionSetting for the given list of devices. No other associations will be available.

getErrorRecoverySettings

Return a collection of port error recovery setting for a list of network elements.

ValidationException is thrown if any of the following situations occurs:

- If the argument passed is null.
- If the neInstanceNameIds collection is empty or the collection contains object which are not a valid network element InstanceNameId

Parameters

opContext—Operational context

neInstanceNameIds—InstanceNameId corresponding to the network elements

Return Value

List of PortErrorDisableRecoverySetting for the given list of devices. No other associations will be available.

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getIpAclAssociationsForNetworkInterface

Returns collection of interface to IP ACL association objects corresponding to a given interface object.

ValidationException is thrown if the argument passed is null or it is not a valid network interface InstanceNameId.

Parameters

opContext—Operational context

interfaceId—InstanceNameId corresponding to the RoutedNetworkInterface

Return Value

List of AclAppliesToNetworkInterface objects associated to given network interface

Following objects will be populated on other end of AclAppliesToNetworkInterface association:

- AccessControlList

getLogicalInterfacesInNetworkElement

Returns all the logical interfaces present in a network element. Given the instance name ID of a network element, returns a collection of logical interface objects.

ValidationException is thrown if the argument passed is null or it is not a valid network element InstanceNameId.

Parameters

opContext—Operational context

neInstanceNameId—InstanceNameId of network element

Return Value

List of all the logical interfaces present in the network element. The following interfaces will be returned

- A) SVIs
- B) Tunnel Interfaces
- C) Loopback Intefaces
- D) Port Channels

Following associations will be available for each interface:

- NetworkInterfaceName
- NetworkInterfaceStatus

getLoopbackInterfacesInNetworkElement

Returns all the Loopback interfaces present in a network element. Given the instance name ID of a network element, returns a collection of LoopBack interface objects.

ValidationException is thrown if the argument passed is null or it is not a valid network element InstanceNameId.

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Parameters

opContext—Operational context

neInstanceId—InstanceId of network element

Return Value

List of all the LoopBackNetworkInterface present in the network element

Following associations will be available for each interface:

- NetworkInterfaceName
- NetworkInterfaceStatus

getMacAclAssociationsForNetworkInterface

Returns collection of interface to MAC ACL association objects corresponding to a given interface object.

ValidationException is thrown if the argument passed is null or it is not a valid network interface InstanceNameId.

Parameters

opContext—Operational context

interfaceId—InstanceId corresponding to the SwitchedNetworkInterface

Return Value

List of AclAppliesToNetworkInterface objects associated to given network interface

Following objects will be populated on other end of AclAppliesToNetworkInterface association:

- MacAccessControlList

getMgmtInterfaces

Returns the MgmtNetworkInterface for a given list of device. Returned list may have null entries if any of the NetworkElement corresponding to neInstanceIdCol has no MgmtNetworkInterface. Ex: Catalyst 6500 series switches devices has no MgmtNetworkInterface. If null or empty list is passed for neInstanceIdCol, then MgmtNetworkInterface of all Nexus 7000 series switch devices will be returned.

- If neInstanceIdCol contains invalid NetworkElement InstanceNameId or null value.
- If there is no equivalent NetworkElement object with the given InstanceNameId in the neInstanceIdCol.

Parameters

opContext—Operational context

neInstanceIdCol—InstanceId corresponding to the network elements

Return Value

List of management interfaces present in the device.

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getNetworkInterfaceSettings

Returns a a collecton of network interface global settings for a given list of device Ids.

ValidationException is thrown if any of the following situations occurs:

- If the argument passed is null.
- If the neInstanceNameIds collection is empty or the collection contains object which are not a valid network element InstanceNameId

Parameters

opContext—Operational context

neInstanceNameIds—InstanceNameId corresponding to the network elements

Return Value

List of NetworkInterfaceSetting for the given list of devices. No association will be avaiable.

getNetworkInterfaces

Returns a collection of network interface objects for the given list of interface Ids.

ValidationException is thrown if any of the following situations occurs:

- If the argument passed is null.
- If the interfaceIds collection is empty or the collection contains object which are not a valid network interface InstanceNameId

Parameters

opContext—Operational context

interfaceIds—instance ids of list interface for which the information is required

Return Value

List of instance ids of NetworkInterface NetworkInterface instance

Following associations will be available in case of physical port:

- NetworkInterfaceName
- NetworkInterfaceStatus
- PortSetting
- PortCapability
- PortStatus
- Routed sub-network interfaces in case of routed port

Following associations will be available for routed sub-network interface:

- NetworkInterfaceName
- NetworkInterfaceStatus
- Encapsulation VLAN

Following associations will be available in case of logical interface (PortChannel, SVI, Loopback):

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- NetworkInterfaceName
- NetworkInterfaceStatus

getNetworkInterfacesByName

Returns the List of NetworkInterface objects given the names or range of the NetworkInterface.

ValidationException is thrown if the neInstanceId passed is null or it is not a valid network element InstanceNameId.

Parameters

opContext—Operational context

neInstanceId—InstanceNameId corresponding to the network element

interfaceRange—Interface names or range to be returned.

Return Value

List of NetworkInterface objects corresponding to the interfaceRange provided. If there is no NetworkInterface object with the name given, ignores it.

getOperDownRoutedPortsCountInNetworkElement

Returns number of operationally down routed ports present in the device

ValidationException is thrown if the argument passed is null or it is not a valid network element InstanceNameId.

Parameters

opContext—Operational context

neInstanceId—InstanceNameId corresponding to the network element

Return Value

Number of ports

getOperDownSwitchedPortsCountInNetworkElement

Return number of operationally down switched ports present in the device for a given switch port mode

ValidationException is thrown if any of the following situations occurs:

- If the neInstanceId is null or it is not a valid network element InstanceNameId.
- If the mode is null

Parameters

opContext—Operational context

neInstanceId—InstanceNameId corresponding to the network element

mode—switched network interface mode

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Return Value

Number of ports

getPortStatusSummary

Returns status summary for both Switched and Routed ports, here status summary includes count of ports which are operationally up/down, administration up/down and the total count of switched/routed ports.

ValidationException is thrown if any of the following situations occurs:

- If the argument passed is null.
- If the neInstanceNameIds collection is empty or the collection contains object which are not a valid network element InstanceNameId

Parameters

opContext—Operational context

neInstanceNameIds—InstanceNameId corresponding to the network elements

Return Value

List of

getPortUsedForDiscovery

Returns a instance of network interface with IP address equal to the management IP address (either IPv4 or IPv6 primary address) of the network element corresponding to neInstanceNameId.

ValidationException is thrown if any of the following situations occurs:

- If the neInstanceNameId is null

Parameters

opContext—Operational context

neInstanceNameId—instance id of NetworkElement.

Return Value

A IpNetworkInterface instance.

Following associations will be available

- NetworkInterfaceName
- Ipv6 Address Setting collection

getPortsInModule

Returns all the physical ports present in the module for a given slot. Given the instance name ID of a network element and the slot number of a module, returns a collection of physical interface objects corresponding to the module.

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ValidationException is thrown if the argument passed is null or it is not a valid routed port InstanceNameId.

Parameters

opContext—Operational context

neInstanceNameId—InstanceNameId corresponding to the network elements

slotNo—slot number of the module whose ports are required

Return Value

List of SwitchedNetworkInterface instances and RoutedNetworkInterface instances present in a module

Following associations will be available:

- NetworkInterfaceName
- NetworkInterfaceStatus
- PortSetting
- PortCapability
- PortStatus
- Routed sub-network interfaces in case of routed port

Following associations will be available for routed sub-network interface:

- NetworkInterfaceName
- NetworkInterfaceStatus
- Encapsulation

getPortsInNetworkElement

Returns a collection of switched and routed physical interface objects present in a network element. Given the instance name ID of a network element, returns a collection of interface objects.

ValidationException is thrown if the argument passed is null or it is not a valid network element InstanceNameId.

Parameters

opContext—Operational context

neInstanceNameId—InstanceNameId corresponding to the network elements

Return Value

List of SwitchedNetworkInterface instances and RoutedNetworkInterface instances present in the device. In the returned list of objects only the following associations will be available and all other associations will be cleared.

- NetworkInterfaceName
- NetworkInterfaceStatus
- PortSetting
- PortCapability
- PortStatus

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- RoutedSubNetworkInterface in case of routed port

Following association will be available for routed sub-network interface:

- NetworkInterfaceName
- NetworkInterfaceStatus
- VLAN

getPortsWithPortChannelAssociations

Returns the network interface objects with port-channel associations populated.

ValidationException is thrown if any of the following situations occurs:

- If interfaceIds is null or it is empty.
- If interfaceIds contains invalid NetworkInterface InstanceNameId or null value.
- If there is no equivalent NetworkInterface object with the given InstanceNameId in the interfaceIds.

Parameters

opContext—Operational context

interfaceIds—A List of InstanceNameId objects of SwitchedNetworkInterface and RoutedNetworkInterface objects for which the port-channel associations are required.

Return Value

Returns a List of SwitchedNetworkInterface and RoutedNetworkInterface objects populated with port-channel associations

Following associations will be populated for each interface:

- Switched EtherChannel setting if the port is in switched mode
- Routed EtherChannel setting if the port is in routed mode

getPortsWithSpanAssociations

Returns network interface object with SPAN associations populated for a given network interface.

ValidationException is thrown if the argument passed is null or it is not a valid network interface InstanceNameId.

Parameters

opContext—Operational context

interfaceIdCol—InstanceNameId corresponding to the NetworkInterface

Return Value

Instance of NetworkInterface with span associations populated

Following associations will be populated for each interface:

- Local SPAN to source interfaces

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Following objects will be populated on other end of LocalSpanSessionAppliesToNetworkInterface association:

- LocalSpanSession

getPortsWithVlanAssociations

Return a switched network interface object populated with VLAN associations.

ValidationException is thrown if the argument passed is null or it is not a valid switched network interface InstanceNameId.

Parameters

opContext—Operational context

interfaceIdCol—InstanceNameId corresponding to the SwitchedNetworkInterface

Return Value

Instance of SwitchedNetworkInterface

Following associations will be populated for the SwitchedNetworkInterface:

- SwitchedNetworkInterfaceBelongsToVlan which includes access VLAN, Native VLAN, Voice VLAN
- PromiscuousPvlanMapping Primary and corresponding secondary VLANs

Following associations will be populated for each VLAN which are available as part of above associations:

- VLAN collection incase of Primary VLAN
- VLAN reference in case of Secondary VLAN

getRoutedPortsInModule

Returns all the routed physical ports present in the module for a given slot. Given the instance name ID of a network element and the slot number of a module, returns a collection of routed interface objects corresponding to the specified module.

ValidationException is thrown if the argument passed is null or it is not a network element InstanceNameId.

Parameters

opContext—Operational context

neInstanceNameId—InstanceNameId corresponding to the network elements

slotNo—slot number of the module whose ports are required

Return Value

List of RoutedNetworkInterface instances present in a module

Following associations will be available:

- NetworkInterfaceName

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- NetworkInterfaceStatus
- PortSetting
- PortCapability
- PortStatus
- Routed sub-network interfaces in case of routed port

Following associations will be available for routed sub-network interface:

- NetworkInterfaceName
- NetworkInterfaceStatus
- Encapsulation VLAN

getRoutedPortsInNetworkElement

Returns all the routed physical ports present in the device. Given the instance name ID of a network element, returns a collection of routed interface objects present in the device.

ValidationException is thrown if the argument passed is null or it is not a network element InstanceNameId.

Parameters

opContext—Operational context

neInstanceNameId—InstanceNameId corresponding to the network elements

Return Value

Set of RoutedNetworkInterface instances present in a module

Following associations will be available:

- NetworkInterfaceName
- NetworkInterfaceStatus
- PortSetting
- PortCapability
- PortStatus
- Routed sub-network interfaces in case of routed port

Following associations will be available for routed sub-network interface:

- NetworkInterfaceName
- NetworkInterfaceStatus
- Encapsulation VLAN

getRoutedPortsWithSecurityAssociations

Return a routed network interface object populated with all security associations.

ValidationException is thrown if the argument passed is null or it is not a valid routed network interface InstanceNameId.

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Parameters

opContext—Operational context

interfaceIdCol—InstanceNameId corresponding to the RoutedNetworkInterface

Return Value

Instance of RoutedNetworkInterface with security associations populated.

Following associations will be populated for each interface:

- CtsNetworkInterfaceSetting
- Dot1xNetworkInterfaceSetting

getRoutedSubNetworkInterfacesInNetworkElement

Returns all the routed sub-interfaces objects present in a network element. Given the instance name ID of a network element, returns a collection of routed sub-interface objects.

ValidationException is thrown if the argument passed is null or it is not a valid network element InstanceNameId.

Parameters

opContext—Operational context

neInstanceNameId—InstanceNameId of network element

Return Value

void

getSubInterfacesForRoutedNetworkInterface

Returns all the routed sub interface objects that are associated to a routed port. Given the instance name ID of a physical routed port, returns a collection of routed sub-interface objects associated with it.

ValidationException is thrown if the argument passed is null or it is not a valid routed port InstanceNameId.

Parameters

opContext—Operational context

routedInfId—InstanceNameId of a routed interface

Return Value

List of all the RoutedSubNetworkInterface objects associated for a routed ports

Following associations will be available for each interface:

- NetworkInterfaceName
- NetworkInterfaceStatus
- VLAN

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getSviServiceStateForNetworkElements

Returns a collection of Boolean, representing the SVI service state (Enabled / Disabled) for the given device Ids. SVI service state will be null for Catalyst 6500 series switches devices.

ValidationException is thrown if any of the following situations occurs:

- If the argument passed is null.
- If the neInstanceNameIdCol collection is empty or the collection contains object which are not a valid network element InstanceNameId

Parameters

opContext—Operational context

neInstanceNameIds—InstanceNameId corresponding to the network elements

Return Value

List of Boolean representing the SVI service state for the given list of devices.

getSwitchedPortsCountInModule

Returns number of switched ports present in the device for a given module

ValidationException is thrown if the argument passed is null or it is not a valid network element InstanceNameId.

Parameters

opContext—Operational context

neInstanceNameId—InstanceNameId corresponding to the network element

moduleNum—Module Number

Return Value

Number of ports

getSwitchedPortsInModule

Returns all the switched ports present in the device for a given slot. Given the instance name ID of a network element and the slot number of a module, returns a collection of switched interface objects corresponding to the specified module.

ValidationException is thrown if the argument passed is null or it is not a network element InstanceNameId.

Parameters

opContext—Operational context

neInstanceNameId—InstanceNameId corresponding to the network elements

slotNo—slot number of the module whose ports are required

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Return Value

Set of SwitchedNetworkInterface instances present in a module

Following associations will be available:

- NetworkInterfaceName
- NetworkInterfaceStatus
- PortSetting
- PortCapability
- PortStatus

getSwitchedPortsInModuleByMode

Returns specific switched ports present in the module for a given slot. Given the instance name ID of a network element, slot number of a module and the switchport mode, returns a collection of switched interface objects corresponding to the specified module and mode.

ValidationException is thrown if the argument passed is null or it is not a network element InstanceNameId.

Parameters

opContext—Operational context

neInstanceNameId—InstanceNameId corresponding to the network elements

slotNo—slot number of the module whose ports are required

mode—switch port mode. If mode is null, return switch ports of all the modes present in a module

Return Value

List of SwitchedNetworkInterface instances present in a module Following associations will be available:

Following associations will be available:

- NetworkInterfaceName
- NetworkInterfaceStatus
- PortSetting
- PortCapability
- PortStatus

getSwitchedPortsInNetworkElement

Returns specific switched ports present in the module for a given mode. Given the instance name ID of a network element and the switchport mode, returns a collection of switched interface objects with specified mode.

ValidationException is thrown if the argument passed is null or it is not a network element InstanceNameId.

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Parameters

opContext—Operational context

neInstanceId—InstanceId corresponding to the network elements

mode—switch port mode. If mode is null, return switch ports of all the modes present in a module

Return Value

List of SwitchedNetworkInterface instances present in a module

Following associations will be available:

- NetworkInterfaceName
- NetworkInterfaceStatus
- PortSetting
- PortCapability
- PortStatus

getSwitchedPortsWithSecurityAssociations

Return a switched network interface object populated with all security associations.

ValidationException is thrown if the argument passed is null or it is not a valid switched network interface InstanceNameId.

Parameters

opContext—Operational context

interfaceIdCol—InstanceId corresponding to the SwitchedNetworkInterface

Return Value

Instance of SwitchedNetworkInterface with security associations populated.

Following associations will be populated for each interface:

- CtsNetworkInterfaceSetting
- Dot1xNetworkInterfaceSetting
- IpSourceGuardSetting
- TrafficStormControlSetting
- Port Security setting. VLAN details will not be populated for this association.

getTotalPortsCountInNetworkElement

Returns number of physical ports present in the device

ValidationException is thrown if the argument passed is null or it is not a valid network element InstanceNameId.

Parameters

opContext—Operational context

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neInstanceId—InstanceId corresponding to the network element

Return Value

Number of physical ports

getTotalRoutedPortsCountInNetworkElement

Returns number of routed ports present in the device

ValidationException is thrown if the argument passed is null or it is not a valid network element InstanceNameId.

Parameters

opContext—Operational context

neInstanceId—InstanceId corresponding to the network element

Return Value

Number of ports

getTotalSwitchedPortsCountInNetworkElement

Returns number of switched ports present in the device for a given switch port mode

ValidationException is thrown if the argument passed is null or it is not a valid network element InstanceNameId.

Parameters

opContext—Operational context

neInstanceId—InstanceId corresponding to the network element

mode—switched network interface mode

Return Value

Number of ports

getTunnelInterfacesInNetworkElement

Returns all the tunnel interfaces present in a network element. Given the instance name ID of a network element, returns a collection of tunnel interface objects.

ValidationException is thrown if the argument passed is null or it is not a valid network element InstanceNameId.

Parameters

opContext—Operational context

neInstanceId—InstanceId of network element

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Return Value

List of all the Tunnel present in the network element

Following associations will be available for each interface:

- NetworkInterfaceName
- NetworkInterfaceStatus

getUddServiceStateForNetworkElements

Returns a collection of Boolean, representing the UDLD service state (Enabled / Disabled) for the given device Ids. UDLD service state will be null for Catalyst 6500 series switches devices.

ValidationException is thrown if any of the following situations occurs:

- If the argument passed is null.
- If the neInstanceNameIdCol collection is empty or the collection contains object which are not a valid network element InstanceNameId

Parameters

opContext—Operational context

neInstanceNameIds—InstanceNameId corresponding to the network elements

Return Value

List of Boolean representing the UDLD service state for the given list of devices.

getVlanNetworkInterfacesInNetworkElement

Returns all the VLAN network interfaces (SVIs) present in a network element. Given the instance name ID of a network element, returns a collection of VLAN interface objects.

ValidationException is thrown if the argument passed is null or it is not a valid network element InstanceNameId.

Parameters

opContext—Operational context

neInstanceNameId—InstanceNameId of network element

Return Value

List of all the VlanNetworkInterface present in the network element

Following associations will be available for each interface:

- NetworkInterfaceName
- NetworkInterfaceStatus

modifyErrorDetectionSettingInNetworkElement

Modify the existing error detection settings for a given network element Id.

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ValidationException is thrown if any of the following situations occurs:

- If neInstanceId is null.
- If neInstanceId is not a valid network element InstanceNameId.
- If the modifiedErrorDetection is null.

Parameters

opContext—Operational context

neInstanceId—InstanceNameId corresponding to the network element

modifiedErrorDetection—modified PortErrorDisableDetectionSetting

Return Value

void

modifyErrorRecoverySettingInNetworkElement

Modify the existing error recovery settings for a given network element Id.

ValidationException is thrown if any of the following situations occurs:

- If neInstanceId is null.
- If neInstanceId is not a valid network element InstanceNameId.
- If the modifiedErrorRecovery is null.

PropertiesException is thrown if any of the following situations occurs:

- If the recoveryInterval, attribute is invalid.

Example:

- recoveryInterval is out of range. Valid range is between 30 to 86400. Any value configured which is less than 30 or greater than 86400 will cause an PropertiesException

Parameters

opContext—Operational context

neInstanceId—InstanceNameId corresponding to the network element

modifiedErrorRecovery—modified PortErrorDisableRecoverySetting

Return Value

void

modifyNetworkInterfaceSetting

Modify the network interface global setting for a given network element Id.

ValidationException is thrown if any of the following situations occurs:

- If neInstanceId is null.
- If neInstanceId is not a valid network element InstanceNameId.
- If the modifiedNetInt is null.

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PropertiesException is thrown if any of the following situations occurs:

- In the jumboMtu, attribute is invalid.

Example:

- jumboMtu is out of range. Valid range is between 1500 to 9219. Any value configured which is less than 1500 or greater than 9216 will cause an PropertiesException

Parameters

opContext—Operational context

neInstanceId—InstanceId of the network element

modifiedNetInt—

Return Value

void

modifyNetworkInterfaces

Modify one or more physical and logical interface (except port-channel) objects. In case the interface is a kind of IpNetworkInterface then the secondary and helper IP address collection will be updated. If the interface is a mode change (say switched to routed or visa-versa), need to set the AbstractNetworkElement reference.

Following associations will be updated:

- Port Setting

Remaining associations will be taken from the existing object in the server in case of modification. If the change is for a port mode (say switched to routed or visa-versa) as well, then what every associations are applicable for both the modes will be moved to new object based on the device platform.

ValidationException is thrown if any of the following situations occurs:

- If the modifiedNetworkInterfaceCol is null or the collection is empty.
- If the modifiedNetworkInterfaceCol contains one or more null element, or the collection contains objects that are not of type NetworkInterface.
- If the modifiedNetworkInterfaceCol contains one or more NetworkInterface objects without AbstractNetworkElement association.
- If the modifiedNetworkInterfaceCol contains objects that are of type SwitchedEtherChannelNetworkInterface or RoutedEtherChannelNetworkInterface. Port-Channels are not supported in this API.
- If the configured IP address (Ipv4AddressPrefix) overlaps with primary or secondary IP address of any other Layer 3 interfaces existing in the device.
- The following ValidationException situations occur in case modified interface being RoutedSubNetworkInterface
 - If IP address (Ipv4AddressPrefix) being configured to the interface without creating a encapsulation VLAN (VLAN) association.
 - If the configured encapsulation VLAN (VLAN) is not available or already in use by any other interfaces.

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- If encapsulation type (SubInterfaceEncapsulationType) is configured without specifying encapsulation VLAN.

PropertiesException is thrown if any of the following situations occurs:

- In the modifiedNetworkInterfaceCol collection, if any of the NetworkInterface attribute is not valid.

Example:

- Configuring attribute description with a String of length more than 240 will cause a PropertiesException, because description of an interface can only be up to a maximum of 240 characters.

Parameters

opContext—Operational context

modifiedNetworkInterfaceCol—

Return Value

List of instance name Id of create/modified network interfaces

modifyPortModeToRouted

Modify the port mode from switched to routed for a given network interface. On the server, when this method is called all the Layer2 associations will be cleared/retained base on the device platform. Remaining associations will be re-associated to the new object. All attributes present for the old object will be reassigned to the new object.

ValidationException is thrown if any of the following situations occurs:

- If switchedInterfaceNameIdCol collection is null or it is empty.
- If switchedInterfaceNameIdCol collection contains an object that is not of type SwitchedNetworkInterface InstanceName id.
- If switchedInterfaceNameIdCol collection contains a SwitchedNetworkInterface that does not exist in the database.

Parameters

opContext—Operational context

switchedInterfaceNameIdCol—List of instance name Ids of switched ports

Return Value

List of newly create routed ports

modifyPortModeToSwitched

Modify the port mode from routed to switched for a given network interface. On the server, when this method is called all the Layer 3 associations will be cleared/retained base on the device platform. Remaining associations will be re-associated to the new object. All attributes present for the old object will be reassigned to the new object.

ValidationException is thrown if any of the following situations occurs:

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- If routedInterfaceNameIdCol collection is null or it is empty.
- If routedInterfaceNameIdCol collection contains an object that is not of type RoutedNetworkInterface InstanceName id.
- If routedInterfaceNameIdCol collection contains a RoutedNetworkInterface that does not exist in the database.

Parameters

opContext—Operational context

routedInterfaceNameIdCol—List of instance name Ids of routed ports

switchPortMode—Switchport mode

trunkMode—Trunk port mode. Based on this mode, trunk encapsulation and non-negotiate will be set to corresponding defaults. If the trunk mode is static, change the encapsulation to dot1q and non-negotiation to true

Return Value

List of newly create switched ports

modifyRoutedSubNetworkInterfaces

Modify one or more existing routed sub-interface objects.

Following associations will be updated:

- Port Setting
- Encapsulation VLAN

ValidationException is thrown if any of the following situations occurs:

- If the modifiedRoutedSubNetworkInfs is null or the collection is empty.
- If the modifiedRoutedSubNetworkInfs contains one or more null element, or the collection contains objects that are not of type RoutedSubNetworkInterface.
- If IP address (Ipv4AddressPrefix) being configured to the interface without creating an encapsulation VLAN (VLAN) association
- If the configured IP address (Ipv4AddressPrefix) overlaps with primary or secondary IP address of any other Layer 3 interfaces existing in the device.
- If the configured encapsulation VLAN (VLAN) is not available or already in use by any other interfaces.
- If encapsulation type (SubInterfaceEncapsulationType) is configured without specifying encapsulation VLAN.

PropertiesException is thrown if any of the following situations occurs:

- In the subInfs collection, if any of the RoutedSubNetworkInterface attribute is not valid.

Example:

- Configuring attribute description with a String of length more than 240 will cause an PropertiesException, because description of an interface can only be up to a maximum of 240 characters.

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Parameters

opContext—Operational context

modifiedRoutedSubNetworkInfs—modified list of RoutedSubNetworkInterface objects.

Return Value

void

modifySwitchPortMode

Modify the switch port mode for a given list of switch ports. This will enable to specify the new switch port mode (e.g., access, trunk, etc.) and trunk mode.

This API will not re-create a new instance name id. It will just apply the new attributes specified to the existing objects.

Trunk mode can be specified if the port mode is getting changed to Trunk mode. If the trunk mode is not specified, default trunk mode will be change to static mode. Trunk mode will be ignore if the port mode is getting changes to any mode other than trunk.

ValidationException is thrown if any of the following situations occurs:

- If switchedInterfaceNameIdCol collection is null or it is empty.
- If switchedInterfaceNameIdCol collection contains an object that is not of type SwitchedNetworkInterface InstanceName id.
- If switchedInterfaceNameIdCol collection contains a SwitchedNetworkInterface that does not exist in the database.

Parameters

opContext—Operational context

switchedInterfaceNameIdCol—List of instance name Ids of routed ports

switchPortMode—New switchport mode

trunkMode—Trunk port mode. This is applicable only if the mode is changed to trunk mode. Based on this mode set, trunk encapsulation and non-negotiate will be set to corresponding defaults. If the trunk mode is static, change the encapsulation to dot1q (if supported by the interface) and non-negotiation to true. Similarly if the trunk mode is changes to dynamic auto/desirable, non-negotiation will be set to false and encapsulation will be set to negotiate (if supported by the interface).

Return Value

void