RUCKUS FastIron RESTCONF Programmers Guide, 10.0.10

Supporting FastIron Software Release 10.0.10

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Contacting RUCKUS Customer Services and Support

The Customer Services and Support (CSS) organization is available to provide assistance to customers with active warranties on their RUCKUS products, and customers and partners with active support contracts.

For product support information and details on contacting the Support Team, go directly to the RUCKUS Support Portal using https://support.ruckuswireless.com, or go to https://www.ruckusnetworks.com and select **Support**.

What Support Do I Need?

Technical issues are usually described in terms of priority (or severity). To determine if you need to call and open a case or access the self-service resources, use the following criteria:

- Priority 1 (P1)—Critical. Network or service is down and business is impacted. No known workaround. Go to the **Open a Case** section.
- Priority 2 (P2)—High. Network or service is impacted, but not down. Business impact may be high. Workaround may be available. Go to the **Open a Case** section.
- Priority 3 (P3)—Medium. Network or service is moderately impacted, but most business remains functional. Go to the **Self-Service Resources** section.
- Priority 4 (P4)—Low. Requests for information, product documentation, or product enhancements. Go to the **Self-Service Resources** section.

Open a Case

When your entire network is down (P1), or severely impacted (P2), call the appropriate telephone number listed below to get help:

- Continental United States: 1-855-782-5871
- Canada: 1-855-782-5871
- Europe, Middle East, Africa, Central and South America, and Asia Pacific, toll-free numbers are available at https://support.ruckuswireless.com/contact-us and Live Chat is also available.
- Worldwide toll number for our support organization. Phone charges will apply: +1-650-265-0903

We suggest that you keep a physical note of the appropriate support number in case you have an entire network outage.

Self-Service Resources

The RUCKUS Support Portal at https://support.ruckuswireless.com offers a number of tools to help you to research and resolve problems with your RUCKUS products, including:

- Technical Documentation—https://support.ruckuswireless.com/documents
- Community Forums—https://community.ruckuswireless.com
- Knowledge Base Articles—https://support.ruckuswireless.com/answers
- Software Downloads and Release Notes—https://support.ruckuswireless.com/#products_grid
- Security Bulletins—https://support.ruckuswireless.com/security

Using these resources will help you to resolve some issues, and will provide TAC with additional data from your troubleshooting analysis if you still require assistance through a support case or RMA. If you still require help, open and manage your case at https://support.ruckuswireless.com/case_management.

Document Feedback

RUCKUS is interested in improving its documentation and welcomes your comments and suggestions.

You can email your comments to RUCKUS at #Ruckus-Docs@commscope.com.

When contacting us, include the following information:

- Document title and release number
- Document part number (on the cover page)
- Page number (if appropriate)

For example:

- RUCKUS SmartZone Upgrade Guide, Release 5.0
- Part number: 800-71850-001 Rev A
- Page 7

RUCKUS Product Documentation Resources

Visit the RUCKUS website to locate related documentation for your product and additional RUCKUS resources.

Release Notes and other user documentation are available at https://support.ruckuswireless.com/documents. You can locate the documentation by product or perform a text search. Access to Release Notes requires an active support contract and a RUCKUS Support Portal user account. Other technical documentation content is available without logging in to the RUCKUS Support Portal.

White papers, data sheets, and other product documentation are available at https://www.ruckusnetworks.com.

Online Training Resources

To access a variety of online RUCKUS training modules, including free introductory courses to wireless networking essentials, site surveys, and products, visit the RUCKUS Training Portal at https://commscopeuniversity.myabsorb.com/. The registration is a two-step process described in this video. You create a CommScope account and then register for, and request access for, CommScope University.

Document Conventions

The following table lists the text conventions that are used throughout this guide.

TABLE 1 Text Conventions

Convention	Description	Example
`monospace`	Identifies command syntax examples	`device(config)# interface ethernet 1/1/6`
bold	User interface (UI) components such as screen or page names, keyboard keys, software buttons, and field names	On the **Start** menu, click **All Programs**.
italics	Publication titles	Refer to the *RUCKUS Small Cell Release Notes* for more information.

Notes, Cautions, and Safety Warnings

Notes, cautions, and warning statements may be used in this document. They are listed in the order of increasing severity of potential hazards.

NOTE
A NOTE provides a tip, guidance, or advice, emphasizes important information, or provides a reference to related information.

ATTENTION
An ATTENTION statement indicates some information that you must read before continuing with the current action or task.

CAUTION
A CAUTION statement alerts you to situations that can be potentially hazardous to you or cause damage to hardware, firmware, software, or data.

DANGER
A DANGER statement indicates conditions or situations that can be potentially lethal or extremely hazardous to you. Safety labels are also attached directly to products to warn of these conditions or situations.

Command Syntax Conventions

Bold and italic text identify command syntax components. Delimiters and operators define groupings of parameters and their logical relationships.

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

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New in This Document

The following tables describe information added or modified in this guide for the FastIron 10.0.10 software release.

TABLE 2 Summary of Enhancements in FastIron Release 10.0.10

Feature	Description	Described in
Updates to address defects	**Updated**: Minor updates on content throughout to address defects.	All chapters
Minor editorial updates	**Updated**: Minor editorial updates were made throughout the guide.	All chapters

Supported Hardware

This guide supports the following RUCKUS products:

- RUCKUS ICX 8200 Switches
- RUCKUS ICX 7850 Switches
- RUCKUS ICX 7650 Switches
- RUCKUS ICX 7550 Switches

For information about what models and modules these devices support, refer to the hardware installation guide for the specific product family.

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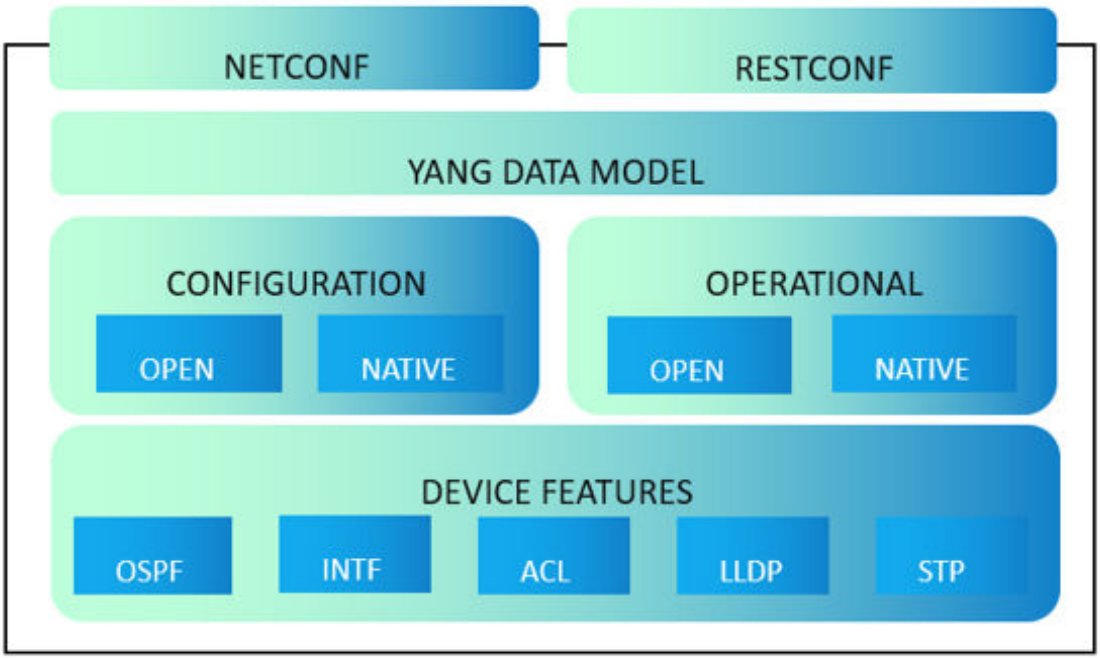
Introduction

The RUCKUS ICX platform supports the RESTCONF protocol as defined in IETF RFC 8040. RESTCONF is a Hypertext Transfer Protocol (HTTP)-based protocol that uses Transport Layer Security (TLS) and provides a programmatic interface for accessing data defined in YANG, using the datastore concepts defined in the Network Configuration Protocol (NETCONF). RESTCONF is an IETF standard protocol, which is a successor of RESTful APIs and NETCONF and is used to configure and retrieve operational data on ICX. It is driven by YANG models that describe the configuration and operation of the ICX platform including validation rules and dependencies.

FIGURE 1 RESTCONF Protocol Stack



The following components make up the RESTCONF protocol stack:

- NETCONF
- YANG
- REST
- RESTCONF

NETCONF: Network Configuration Protocol (NETCONF) is a protocol used to manage networking devices like switches and routers. NETCONF uses Remote procedure calls (RPCs) to read, write configuration data into networking devices. Remote procedure calls use XML to send and receive configuration data from NETCONF management station to networking devices.

YANG: Yet Another Next Generation (YANG) is a data modeling language which can be used to send, receive and store data with network management protocols like RESTCONF and NETCONF. Yang is used to store both configuration and state of network elements.

REST: Representational state transfer (REST) is an API (Application programmer interface) used by web services. REST is a stateless client/server protocol uses http methods for requests between clients and servers. REST uses http methods for requests and responses with XLM or JASON for data encoding.

A Web server which uses REST APIs for client/server requests and responses is called RESTful.

RESTCONF: Is similar to REST API which is defined in RFC 8040. It is an HTTP-based protocol that provides a programmatic interface for accessing data defined in YANG, using the datastore concepts defined in NETCONF. As laid out in RFC 8040, "RESTCONF is an HTTP-based protocol that provides a programmatic interface for accessing data defined in YANG, using the datastore concepts defined in NETCONF."

Because RESTCONF uses an HTTP-based protocol to send and receive messages for networking devices, it has become a better option than NETCONF.

HTTP: Methods like GET, POST, PUT, DELETE, etc are used by REST/RESTCONF to send requests/responses. Organizations can use REST APIs to manage web services and RESTCONF to manage networking devices. Both use HTTP-based protocols, making it easy for operations and maintenance.

An external client can use XML or JSON YANG-based configurations to program the ICX platform configuration. The validation rules and dependencies described in the YANG model are useful to check user input even before sending the configuration request to the ICX platform. The data exchange format between clients and the ICX platform is JSON over a TLS/HTTP or HTTPS connection.

The OpenConfig working group has defined a common set of models to configure and operate network devices. The ICX utilizes the OpenConfig YANG model for its configuration and operation. The IETF has several YANG models which may be used when there is no model for a specific feature. An ICX custom model will be created if no standard-based models exist. YANG models will be deviated from and augmented to fit the ICX features and behaviors.

Refer tohttp://www.openconfig.net/projects/models/ for more information on the OpenConfig working group.

RESTCONF-Supported HTTP Methods

The following configuration operations are supported:

TABLE 3 RESTCONF-Supported HTTP Methods

HTTP Method	Operation	Media Type
POST	Create (config)	application/yang.data
PUT	Replace (config)	application/yang.data
PATCH	Merge (config)	application/yang.data
DELETE	Delete (config)	application/yang.data
POST	Operation	application/yang.operation
GET	Read (config and operational)	application/yang.data
OPTIONS		application/yang.data
HEAD	Header metadata	No response body

Actions and operations are invoked using POST operations (for example, reboot).

RESTCONF Supported Modules

The following features are targeted for this release, only a subset of the equivalent CLIs for each feature will be supported.

NOTE
For the initial release of RESTCONF for ICX these are the features supported and even for these features not all functionality is supported.

ICX Feature	Openconfig Model
ICX Feature	Openconfig Model
Interface/Port	Config/Operational state
Vlan	Config
VE	Config
LAG	Config
POE	Config

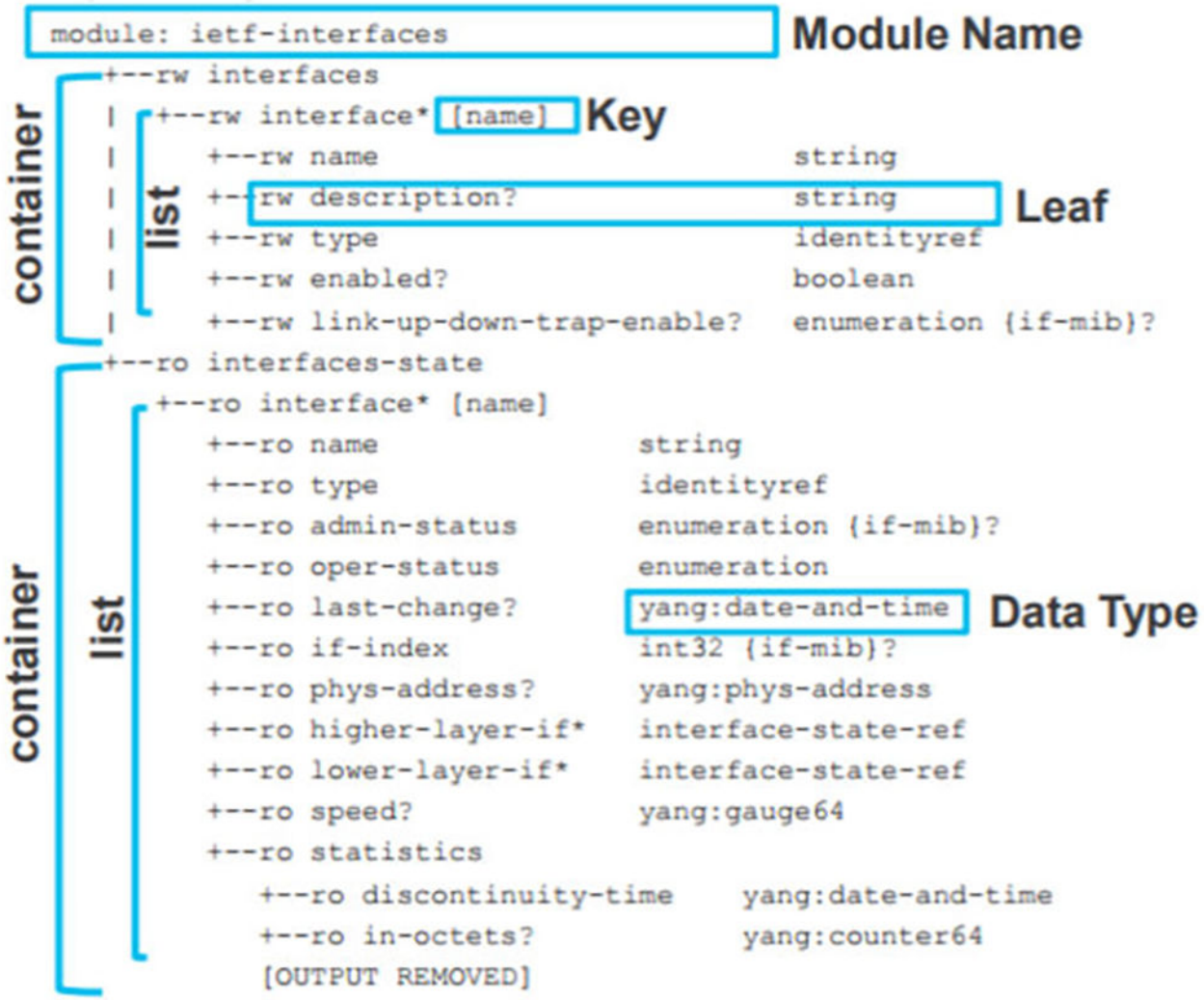
ICX Feature	Openconfig Model
LLDP	Config
Static Route	Config
OSPF	Config
ACL	Config
AAA	Config
Username / Passwords	Config
DNS	Config
IGMP Snooping	Config
Protected Port	Config
MAC Address Table (Static and Dynamic)	Config
BPDU Guard	Config
Spanning Tree Admin-edge Port	Config
STP	Config
Flexauth	Config
DHCPv4 Snoop	Config
DHCPv6 Snoop	Config
DAI	Config
NDI	Config
IPSG	Config
IPv6SG	Config
Storm Control	Config

ICX Management

RUCKUS ICX supports Web management and RESTCONF interfaces. The HTTPS Web service and RESTCONF use default TCP port 443. RESTCONF supports only HTTPS requests. RESTCONF requests are authenticated with a username and password (mandatory) and using SSL certificates (optional).

The following components make up the YANG model:

FIGURE 2 YANG Components



- Container: A collection of information logically grouped, such as a container for configuration and a container for state.
- List: Within a container you can have a list or even multiple lists, such as a list of interfaces.
- Key: Each item within the list is referenced with a key.
- Leaf: Within the list, a list contains the information.
- Data Type: Each leaf is associated with at data type.

RESTCONF Resources

URI

The Uniform Resource Identifier (URI) identifies the resource. The resources are represented with URIs in the following format:

`/restconf/<path>? <query>`

- restconf: The entry point of the URI in the device, and the root of the API configured on the device is discovered by getting the "/.well-known/host-meta" resource.
- path: The target resource URI, which is used for identifying the resource being accessed by the HTTP operation.
- query: A query parameter lists with the form of "name=value" pairs. Most query parameters (such as depth) are optional to implement by the server and optional to use by the client. Any reserved characters must be percent-encoded, according to RFC 3986. Refer to the supported query parameters at https://tools.ietf.org/html/rfc8040#section-4.8.

Base URI

The API resource contains the RESTCONF root resource for the RESTCONF datastore and operation resources. It is the top-level resource located at {+restconf} and has the media type "application/yang-data+xml" or "application/yang-data+json".

YANG tree diagram for an API resource:

```
+---- {+restconf}
+---- data
| ...
+---- operations?
| ...
+--ro yang-library-version string
```

The base URI for the RESTCONF API is : /restconf/.

The base URI /restconf contains the child resources below. The YANG representation is:

```
$ curl https://10.176.156.34/restconf --insecure -u testuser:testpassword -H "Accept: application/xml" |
xmllint --format - % Total % Received % Xferd
Average Speed Time Time Time Current Dload Upload Total Spent Left Speed 100 323 0 323 0 0 2323 0 --:--:--
--:--:-- --:--:-- 2323 2016-06-21 $ curl
https://10.176.156.34/restconf --insecure -u testuser:testpassword | json_pp % Total % Received % Xferd
Average Speed Time Time Time Current Dload
Upload Total Spent Left Speed 100 149 0 149 0 0 1006 0 --:--:-- --:--:-- --:--:-- 1000 { "ietf-
restconf:restconf" : { "yumaworks-restconf:yang" : [ null ], "data" :
{}, "yang-library-version" : "2016-06-21", "operations" : { "yuma-system:no-op" : [ null ] } } }
```

Data

Data is a mandatory resource representing the combined configuration and state data resources that can be accessed by a client. It cannot be created or deleted by the client. The "{+restconf}/data" subtree represents the datastore resource, which is a collection of configuration data and state data nodes.

YANG Library Version

The "yang-library-version" is a mandatory leaf identifying the revision date of the "ietf-yang-library" YANG module that is implemented by this server.

Operation Resource

The operation resource represents an Remote Procedure Call (RPC) operation defined with the YANG "rpc" statement or a data-model-specific action defined with a YANG "action" statement. The statement is invoked using a POST method on the operation resource. You can use the GET Method on the /restconf/operations to check the list of RPCs it supports.

CRUD Operations

The RESTCONF protocol uses HTTP methods to identify the CRUD operations requested for a particular resource. The HTTP methods are used for manipulating the resource defined in the YANG model for the create, read, update, and delete (CRUD) operations.

POST Method

The RESTCONF POST method represents the NETCONF "create" operation. The POST method is sent by the client to create a data resource or invoke an operation resource. The server uses the target resource type to determine how to process the request.

Both the POST and PUT methods can be used to create data resources. The difference is that for POST, the client does not provide the resource identifier for the resource that will be created. The target resource for the POST method for resource creation is the parent of the new resource. The target resource for the PUT method for resource creation is the new resource itself.

TABLE 4 Resource Types Supporting POST

Type	Description
Datastore	Creates a top-level configuration data resource
Data	Creates a configuration data child resource
Operation	Invokes an RPC operation

PUT Method

The RESTCONF PUT method represents the NETCONF "create" or "replace" operation.

> **NOTE**
> A request message representing the new data resource must be present or the server will return a "400 Bad Request" message. The error tag value "invalid-value" is used in this case.

The PUT method on the datastore resource is used to replace the entire contents of the datastore. The PUT method on a data resource only replaces that data resource within the datastore.

TABLE 5 Resource Types Supporting PUT

Type	Description
Datastore	Replaces the entire contents of the datastore
Data	Replaces that data resource within the datastore

The "insert" and "point" query parameters are supported by the PUT method for data resources. These parameters are only allowed if the list or leaf-list is "ordered-by user". The query parameters are not allowed for the requests for a datastore resource.

- If the PUT request creates a new resource, a "201 Created" message is returned. If an existing resource is modified, a "204 No Content" message is returned.
- If the user is not authorized to create or replace the target resource, a "403 Forbidden" message is returned. The error tag value "access-denied" is used in this case.

- If the target resource represents a YANG leaf-list, then the PUT method *must not* change the value of the leaf-list instance.
- If the target resource represents a YANG list instance, then the key leaf values in the message-body representation *must* be the same as the key leaf values in the request URI. The PUT method *must not* be used to change the key leaf values for a data resource instance.

PATCH Method

RESTCONF uses the HTTP PATCH method defined to provide an extensible framework for resource-patching mechanisms. Each patch mechanism requires a unique media type.

For a leaf-list case, the PATCH method *must not* be used to change the key values of the leaf-list instance.

- If the target resource instance does not exist, the server *must not* create it.
- If the PATCH request succeeds, a "200 OK" message is returned if there is a message-body. The "204 No Content" message is returned if no response message-body is sent.
- If the user authentication fails, the "401 Unauthorized" message is returned.
- If the user is not authorized to alter the target resource, an error response containing a "403 Forbidden" status-line will be returned. A server may return a "404 Not Found" status-line. The error-tag value "invalid-value" is used in this case.

DELETE Method

RESTCONF uses the HTTP DELETE method defined to delete a resource if it exists. If the resource does not exists, the "404 Not Found" message is returned. The corresponding error tag value "data-missing" is also returned.

If the DELETE requests succeed, a "204 No Content" message is returned. In the case of a user authentication a "401 Unauthorized" message is returned.

XML Representation

A resource is represented as an XML element which contains the values of the resource (if any) with child elements to represent the sub-resources. An XML representation of a resource is used in both the request payload and in the response. The "xmlns" XML attribute is mentioned in the representation. This attribute has the name of the YANG module of the resource specified in the representation.

The UTF-8 character set is used for the XML message encoding.

TABLE 6 XML Message Encoding

Special Character	Encoded Character	Description of the Special Character
<	<	less-than symbol
>	>	greater-than symbol
&	&	ampersand
'	'	apostrophe
"	"	quotation mark

JSON Representation

The ICX platform supports JSON format to represent the resource. The YANG elements in the resource models are mapped into JSON elements for the proper serialization.

- A leaf element is mapped into a single key-value pair. The key and the value are separated by a colon.

- A container element is mapped into a JSON object. Therefore, the equivalent representation of a container starts with a left curly bracket and ends with a right curly bracket. The elements within the container are separated with a comma.
- A list element is mapped into a JSON array. Therefore, the equivalent representation of the list starts with a left square bracket and ends with a right square bracket. The instances of the list element are separated by a comma.

Media Types

Media types determine the type of data contained within a resource representation. There are two media types to identify the different kinds of resources. It is specified in the Accept and Content-Type header values for the request and the response respectively.

TABLE 7 Media Types

Media Type	Resource
application/yang-data+xml	Represents the data resource derived from a YANG module in the XML format.
application/yang-data+jsonl	Represents any data resource derived from a YANG module in the JSON format.

Capabilities

This mandatory container holds the RESTCONF protocol capability URIs supported by the server. The server may maintain a last-modified timestamp for this container and return the "Last-Modified" header field when this data node is retrieved with the GET or HEAD methods. Note that the last-modified timestamp for the datastore resource is not affected by changes to this subtree.

The server maintains an entity-tag for this container and returns the "ETag" header field when this data node is retrieved with the GET or HEAD methods. Note that the entity-tag for the datastore resource is not affected by changes to this subtree. The server must include a "capability" URI leaf-list entry for the "defaults" mode used by the server.

The server must include a "capability" URI leaf-list entry identifying each supported optional protocol feature. This entry includes optional query parameters and may include other capability URIs (not defined in this document).

FIGURE 3 Capabilities Example

Schema Resources

You can retrieve YANG modules using the URL shown in the schema. The leaf "schema" must be present in the associated "module" list entry. To retrieve a YANG module, you must first get the URL for retrieving the schema, which is stored in the "schema" leaf. The client can get the URL to retrieve the schema. When the client responds, the URL and the corresponding YANG module can be obtained.

```
<module xmlns="urn:ietf:params:xml:ns:yang:ietf-yang-library">
  <name>icx-openconfig-if-poe-aug</name>
  <revision>2020-01-04</revision>
  <schema>http://localhost/restconf/yang/icx-openconfig-if-poe-aug/2020-01-04</schema>
  <namespace>http://commscope.com/ns/yang/icx/icx-openconfig-if-poe-aug</namespace>
```

```
    <conformance-type>implement</conformance-type>
  </module>
```

To download a specific YANG model, retrieve and module using the URL provided in the schema.

YANG Module Retrieval

The "ietf-yang-library" module provides the information about the YANG modules and submodules defined in the FastIron software. All YANG modules and submodules must be identified in the YANG module library.

- modules: This mandatory container holds the identifiers for the YANG data model modules supported by the server.
- modules/module: This mandatory list contains one entry for each YANG data model module supported by the server. There must be an instance of this list for every YANG module that is used by the server. This ietf-yang-library module is defined in the RFC 7895.

Query Parameters

Each RESTCONF operation allows zero or more query parameters to be present in the requested URI. The specific parameters that are allowed depend on the resource type, and sometimes the specific target resource used in the request.

Query parameters can be given in any order. Each parameter can appear once at most in a requested URI. A default value may apply if the parameter is missing.

TABLE 8 RESTCONF Query Parameters

Value	Methods	Description
content	GET	Used to select the types of data child resources (configuration and/or non-configuration) that are returned by the server.
depth	GET	Requests limited subtree depth in the reply content.
fields	GET	Request a subset of the target resource contents filter.
filter	GET	Boolean notification filter for event stream resources.
insert	POST/PUT	Insertion mode for user-ordered data resources.
point	POST/PUT	Insertion point for user-ordered data resources.
start-time	GET	Replay buffer start time for event stream resources.
stop-time	GET	Replay buffer stop time for event stream resources.
with-defaults	GET	Controls the retrieval of default values.

Transport Protocol Requirements

RESTCONF requires the following transport protocols:

- RESTCONF server is not supported over HTTP. To support data integrity and confidentiality, RESTCONF requires HTTPS.
- RESTCONF supports the "https" URI scheme, and ICX uses the IANA assigned default port 443.
- The RESTCONF server must authenticate client access to any protected resource. If the RESTCONF client is not authenticated, the server must send an HTTP response with "401 Authorization Required".

Web Requests with Tools (curl)

- To send a simple GET request, the following command can be used: curl https://%3Cmgmt%20IP%3E/restconf/data/restconf-state/capabilities%20-H%20%22Accept:application/yang-data+xml%22%20--insecure%20-u%20%3Cusername%3E:%3Cpassword%3E
- In order to retrieve data in different encoding use --header (-H) parameter with specific Accept header value (XML or JSON). The following request "Accepts" replies in JSON encoding: curl https://%3Cmgmt%20IP%3E/restconf/data/restconf-state/capabilities%20-H%20%22Accept:application/yang-data+json%22%20--insecure%20-u%20%3Cusername%3E:%3Cpassword%3E
- The same request with RESTCONF query parameters, for example, "depth" would look as follows: curl https://%3Cmgmt%20IP%3E/restconf/data/restconf-state/capabilities?depth=1

RESTCONF Configuration

Configuring ICX Using the RESTCONF Management Interface

```
HTTPS OPTIONS Request
curl -i -k -X "OPTIONS" https://<MGMT-IP>/restconf/data/lldp  -H 'Accept: application/yang-data+json' -u
<username>:<password>
HTTP/1.1 204 No Content
Server: nginx/1.14.0
Date: Tue, 06 Jan 1970 10:10:35 GMT
Connection: keep-alive
Allow: OPTIONS,HEAD,GET,POST,PUT,PATCH,DELETE  □ Allowed methods on this URL
Accept-Patch: application/yang-patch

HTTPS HEAD Request
$ curl -i -k -I https://<MGMT-IP>/restconf/data/lldp -u <username>:<password>
HTTP/1.1 200 OK
Server: nginx/1.14.0
Date: Tue, 06 Jan 1970 10:38:08 GMT
Content-Type: application/json
Transfer-Encoding: chunked
Connection: keep-alive
Cache-Control: no-cache
Pragma: no-cache
```

To create a new entry using the PUT method and an input file, use the following PUT request.

```
HTTPS PUT Request (Create or Replace Configuration)
curl -vX PUT -d @input.json --header "Content-Type: application/yang-data+json" https://<MGMT-IP>/restconf/
data/network-instances/network-instance/default-vrf/vlans/vlan=200 --insecure -u
<username>:<password>
Where input.json is:
{
 "vlan": [
  {
   "vlan-id": "200",
   "config": {
     "vlan-id":"200",
     "name":"VLAN 200"
    }
  }
  ]
}
$ curl -i -k -X "PUT" https://<MGMT-IP>/restconf/data/network-instances/network-instance/default-vrf/vlans/
vlan=200 -H 'Content-Type: application/yang-data+json' -H 'Accept:
application/yang-data+json' -u <username>:<password> -d @"input.json"
HTTP/1.1 201 Created
Server: nginx/1.14.0
Date: Tue, 06 Jan 1970 10:34:10 GMT
Transfer-Encoding: chunked
Connection: keep-alive
```

```
Location: http://localhost/restconf/data/network-instances/network-instance/default-vrf/vlans/vlan=200
Cache-Control: no-cache
Pragma: no-cache
Last-Modified: Tue, 06 Jan 1970 10:34:10 GMT
ETag: 258
```

To create a new entry using the PATCH method and an input file, use the following PATCH request.

```
HTTPS PATCH Request (Merge Resource Configuration)
curl -vX PATCH https://<MGMT-IP>/restconf/data/network-instances/network-instance/default-vrf/vlans -d
@input.json --header "Content-Type:
application/yang-data+json" --insecure -u <username>:<password>
Where, input.json is
{
  "vlans" : {
     "vlan": [
     {
       "vlan-id": "100",
      "config": {
        "vlan-id":"100",
        "name":"VLAN 100"
      }
     }
     ]
    }
  }
$ curl -i -k -X "PATCH" https://<MGMT-IP>/restconf/data/network-instances/network-instance/default-vrf/
vlans -H 'Content-Type: application/
yang-data+json' -H 'Accept: application/yang-data+json' -u <username>:<password> -d @"vlan_patch.json"
HTTP/1.1 204 No Content
Server: nginx/1.14.0
Date: Tue, 06 Jan 1970 10:31:09 GMT
Connection: keep-alive
Cache-Control: no-cache
Pragma: no-cache
Last-Modified: Tue, 06 Jan 1970 10:31:09 GMT
ETag: 253
```

To create a new entry using the POST method and an input file, use the following POST request.

```
HTTPS POST Request (Create resource)
curl -vX POST https://<MGMT-IP>/restconf/data/network-instances/network-instance/default-vrf/protocols/
protocol/STATIC,icx-static/static-routes -d @input.json --
header "Content-Type: application/yang-data+json" --insecure -u <username>:<password>
Where, input.json is
{
 "static": [
  {
   "prefix": "55.55.55.55/32",
   "config": {
     "prefix": "55.55.55.55/32"
   }
  }
  ]
}

$curl -i -k -X "POST" https://<MGMT-IP>/restconf/data/network-instances/network-instance/default-vrf/
protocols/protocol/STATIC,icx-static/static-routes -H
'Content-Type: application/yang-data+json' -H 'Accept: application/yang-data+json' -u <username>:<password>
-d @"static_route_v0.json"
HTTP/1.1 201 Created
Server: nginx/1.14.0
Date: Tue, 06 Jan 1970 10:25:12 GMT
Transfer-Encoding: chunked
Connection: keep-alive
Location: http://localhost/restconf/data/network-instances/network-instance/default-vrf/protocols/protocol/
STATIC,icx-static/static-routes/static=55.55.55.55%2F32
Cache-Control: no-cache
Pragma: no-cache
Last-Modified: Tue, 06 Jan 1970 10:25:12 GMT
ETag: 250
```

To delete an existing configuration, use the following Delete request:

```
HTTPS Delete Request
curl -vX DELETE https://<MGMT-IP>/restconf/data/network-instances/network-instance/default-vrf/vlans/
vlan=100 --insecure -u <username>:<password>
```

- https://<MGMT-IP>/restconf/data/lldp/config?with-defaults=report-all
- https://<MGMT-IP>/restconf/data/network-instances/network-instance/default-vrf/protocols/protocol/STATIC,icx-static/static-routes
- https://<MGMT-IP>/restconf/data/network-instances/network-instance/default-vrf/protocols/protocol/STATIC,icx-static?depth=3
- https://<MGMT-IP>/restconf/data/openconfig-interfaces:interfaces/interface=ethernet%201%2F1%2F1
- https://<MGMT-IP>/restconf/data?fields=ietf-yang-library:modules-state/module(name;revision)
- https://<MGMT-IP>/restconf/yang/icx-openconfig-aaa-aug/2019-09-04

AAA Authentication Login

Configures, modifies, and retrieves AAA authentication login configuration. The URI to configure data for AAA authentication login is:

```
/system/aaa/authentication/login
```

To create AAA authentication login configuration using PUT method:

```
/system/aaa/authentication
```

To modify AAA authentication login configuration using PATCH method:

```
/system/aaa/authentication
```

To delete AAA authentication login configuration in the system:

```
/system/aaa/authentication/login/default=radius
```

Supported HTTP Operations

GET method

```
URL: https://<host>/restconf/data/system/aaa/authentication/login

Request body: None
Response body:
{
   "icx-openconfig-aaa-aug:login" : {
      "default" : [
         "local",
         "radius"
      ]
   }
}
```

PUT method

```
URL: https://<host>/restconf/data/system/aaa/authentication

Request body:
 {
   "authentication" : {
      "login" : {
         "default" : "radius"
      }
   }
}
Response body: None
```

PATCH method

```
URL: https://<host>/restconf/data/system/aaa/authentication

Request body:
 {
   "authentication" : {
      "login" : {
         "default" : "tacacs+"
      }
   }
}
Response body: None
```

DELETE

```
URL: https://<host>/restconf/data/system/aaa/authentication/login/default=radius

Request body: None
Response body: None
```

AAA Authentication Users

Configures, modifies, and retrieves AAA authentication users configuration. The URI to configure data for AAA authentication users is:

```
/system/aaa/authentication/users
```

To add AAA authentication user configuration using POST method:

```
https://<host>/restconf/data/system/aaa/authentication

{
   "openconfig-system:users" : {
      "user" : [
         {
            "username" : "test",
            "config" : {
               "username" : "test",
               "password" : "test",
               "icx-openconfig-aaa-aug:privilege" : 0
            }
         }
      ]
   }
}
```

To modify AAA authentication user configuration using PATCH method:

```
https://<host>/restconf/data/system/aaa/authentication/users

{
   "openconfig-system:users" : {
      "user" : [
         {
            "username" : "test",
            "config" : {
               "username" : "test",
               "password" : "check",
               "icx-openconfig-aaa-aug:privilege" : 5
            }
         }
      ]
   }
}
```

Supported HTTP Operations

GET method

```
URL: https://<host>/restconf/data/system/aaa/authentication/users

Request body: None
Response body:
{
   "openconfig-system:users" : {
      "user" : [
         {
            "config" : {
               "password" : "$6$M78fhauw$O0ZK6GGdGNYYQnIIWPMPDYRZpZ5lKkMrl82FE/P1Elw4FQ/
KZ46V6bKY8KfNKOEaQsRC/4NyRpJQY0qE5gFJN/",
               "icx-openconfig-aaa-aug:privilege" : 0,
               "username" : "super"
            },
            "state" : {},
            "username" : "super"
         },
         {
            "config" : {
               "password" : "$6$M78fhauw$RVLowACi5AjfbeFatYk/T3L7PASVgBxnzpLIgq8yun/
rs8EHTtJUrSaojHJXliEOPFOCoCiBbjpvtaXYOBsXQ1",
               "icx-openconfig-aaa-aug:privilege" : 0,
               "username" : "test"
            },
            "state" : {},
            "username" : "test"
         }
      ]
   }
}
```

PUT method

```
URL: https://<host>/restconf/data/system/aaa/authentication/users

Request body:
 {
   "openconfig-system:users" : {
      "user" : [
         {
            "username" : "test",
            "config" : {
               "username" : "test",
               "password" : "test",
               "icx-openconfig-aaa-aug:privilege" : 0
            }
         }
      ]
   }
}

Response body: None
```

PATCH method

```
URL: https://<host>/restconf/data/system/aaa/authentication/users

Request body:
 {
   "openconfig-system:users" : {
      "user" : [
         {
            "username" : "check",
            "config" : {
               "username" : "check",
               "password" : "test",
               "icx-openconfig-aaa-aug:privilege" : 5
```

```
            }
         }
      ]
   }
}

Response body: None
```

DELETE

```
URL: https://<host>/restconf/data/system/aaa/authentication/users/user=check

Request body: None
Response body: None
```

AAA Authorization Commands

Configures, modifies, and retrieves AAA authorization commands configuration. The URI to configure data for AAA authorization commands is:

```
/system/aaa/authorization/commands
```

To create AAA authorization commands configuration using PUT method:

```
/system/aaa/authorization
```

To modify AAA authorization commands configuration using PATCH method:

```
/system/aaa/authorization
```

To delete AAA authentication commands configuration in the system:

```
/system/aaa/authorization/commands
```

Supported HTTP Operations

GET method

```
URL: https://<host>/restconf/data/system/aaa/authorization/commands

Request body: None
Response body:
{
   "icx-openconfig-aaa-aug:commands" : {
      "default" : [
         "radius",
         "tacacs+"
      ],
      "privilege" : 5
   }
}
```

PUT method

```
URL: https://<host>/restconf/data/system/aaa/authorization/commands

Request body:
 {
      "commands" : {
         "privilege" : 4,
         "default" : "none"
      }
}
Response body: None
```

PATCH method

```
URL: https://<host>/restconf/data/system/aaa/authorization

Request body:
 {
   "authorization" : {
      "commands" : {
         "default" : "tacacs+"
      }
   }
}
Response body: None
```

DELETE

```
URL: https://<host>/restconf/data/system/aaa/authorization/commands

Request body: None
Response body: None
```

AAA Authorization EXEC

Configures, modifies, and retrieves AAA authorization EXEC configuration. The URI to configure data for AAA authorization EXEC is:

```
/system/aaa/authorization/exec
```

To create AAA authorization EXEC configuration using PUT method:

```
/system/aaa/authorization
```

To modify AAA authorization EXEC configuration using PATCH method:

```
/system/aaa/authorization
```

To delete AAA authorization EXEC configuration in the system:

```
/system/aaa/authorization/exec
```

Supported HTTP Operations

GET method

```
URL: https://<host>/restconf/data/system/aaa/authorization/exec

Request body: None
Response body:

{
   "icx-openconfig-aaa-aug:exec" : {
      "default" : [
         "radius",
         "tacacs+"
      ]
   }
}
```

PUT method

```
URL: https://<host>/restconf/data/system/aaa/authorization/exec

Request body:
 {
      "exec" : {
         "default" : "none"
      }
```

```
}
Response body: None
```

PATCH method

```
URL: https://<host>/restconf/data/system/aaa/authorization

Request body:
 {
   "authorization" : {
      "exec" : {
         "default" : "tacacs+"
      }
   }
}
Response body: None
```

DELETE

```
URL: https://<host>/restconf/data/system/aaa/authorization/exec

Request body: None
Response body: None
```

AAA Accounting Commands

Configures, modifies, and retrieves AAA accounting commands configuration. The URI to configure data for AAA accounting commands is:

```
/system/aaa/accounting/commands
```

To create AAA accounting commands configuration using PUT method:

```
/system/aaa/accounting
```

To modify AAA accounting commands configuration using PATCH method:

```
/system/aaa/accounting
```

To delete AAA accounting commands configuration in the system:

```
/system/aaa/accounting/commands
```

Supported HTTP Operations

GET method

```
URL: https://<host>/restconf/data/system/aaa/accounting/commands

Request body: None
Response body:     {
   "icx-openconfig-aaa-aug:commands" : {
      "privilege" : 4,
      "default-start-stop" : [
         "radius",
         "none"
      ]
   }
}
```

PUT method

```
URL: https://<host>/restconf/data/system/aaa/accounting/commands

Request body:
{
      "commands" : {
         "privilege" : 4,
```

```
            "default-start-stop" : "none"
         }
   }
   Response body: None
```

PATCH method

```
   URL: https://<host>/restconf/data/system/aaa/accounting

   Request body:
    {
      "accounting" : {
         "commands" : {
            "default-start-stop" : "tacacs+"
         }
      }
   }
   Response body: None
```

DELETE

```
   URL: https://<host>/restconf/data/system/aaa/accounting/commands

   Request body: None
   Response body: None
```

AAA Accouting EXEC

Configures, modifies, and retrieves AAA accounting EXEC configuration. The URI to configure data for AAA accounting EXEC is:

```
   /system/aaa/accounting/exec
```

To create AAA accounting EXEC configuration using PUT method:

```
   /system/aaa/accounting
```

To modify AAA accounting EXEC configuration using PATCH method:

```
   /system/aaa/accounting
```

To delete AAA accounting EXEC configuration in the system:

```
   /system/aaa/accounting/exec
```

Supported HTTP Operations

GET method

```
   URL: https://<host>/restconf/data/system/aaa/accounting/exec

   Request body: None
   Response body:
   {
      "icx-openconfig-aaa-aug:exec" : {
         "default-start-stop" : [
            "radius",
            "tacacs+"
         ]
      }
   }
```

PUT method

```
   URL: https://<host>/restconf/data/system/aaa/accounting/exec

   Request body:
        {
```

```
      "exec" : {
         "default-start-stop" : "none"
      }
}
Response body: None
```

PATCH method

```
URL: https://<host>/restconf/data/system/aaa/accounting

Request body:
 {
   "accounting" : {
      "exec" : {
         "default-start-stop" : "tacacs+"
      }
   }
}
Response body: None
```

DELETE

```
URL: https://<host>/restconf/data/system/aaa/accounting/exec

Request body: None
Response body: None
```

AAA Server Groups (RADIUS/TACACS)

Configures, modifies, and retrieves RADIUS/TACACS server configuration. The URI to configure RADIUS/TACACS server group is:

```
/system/aaa/server-groups
```

> **NOTE**
> The valid server group names are "radius-default-group" and "tacacs-default-group".

To create or modify RADIUS server:

```
/system/aaa/server-groups
```

To create or modify TACACS server:

```
/system/aaa/server-groups
```

To delete RADIUS server configuration in the system:

```
/system/aaa/server-groups/server-group/radius-default-group
```

To delete TACACS server configuration in the system:

```
/system/aaa/server-groups/server-group/tacacs-default-group
```

To delete the entire AAA server configuration in the system:

```
/system/aaa/server-groups
```

Supported HTTP Operations

GET method

```
URL: https://<host>/restconf/data/system/aaa/server-groups

Request body: None
Response body:
"openconfig-system:server-groups":{
```

```
    "server-group":[{
      "name":"radius-default-group",
      "config":{
        "name":"radius-default-group",
        "type":"openconfig-aaa:RADIUS"
      },
      "state":{},
      "servers":{
        "server":[{
          "address":"63.1.1.1",
          "config":{
            "name":"radius1",
            "address":"63.1.1.1"
          },
          "state":{},
          "radius":{
            "config":{
              "icx-openconfig-aaa-aug:purpose" : "accounting-only",
              "auth-port":101,
              "acct-port":201,
              "secret-key":"$P2lnRA==",
              "retransmit-attempts":4
            },
            "state":{
              "counters":{}
            }
          }
        }
      ]}
    },
    {
      "name":"tacacs-default-group",
      "config":{
        "name":"tacacs-default-group",
        "type":"openconfig-aaa:TACACS",
    "icx-openconfig-aaa-aug:retransmit-attempts" : 4
      },
      "state":{},
      "servers":{
        "server":[{
          "address":"93.1.1.1",
          "config":{
            "name":"tacacs1",
            "address":"93.1.1.1"
          },
          "state":{},
          "tacacs":{
            "config":{
              "icx-openconfig-aaa-aug:purpose" : "accounting-only",
              "auth-port":101,
              "secret-key":"$P2lnRA=="
            },
            "state":{
              "counters":{}
            }
          }
        }
      ]}
    }
  ]}
}
```

PATCH or PUT method to add or modify RADIUS server:

```
URL: https://{{dut}}/restconf/data/system/aaa/server-groups

Request body:{
            "server-groups": {
                "server-group": [
                {
                    "name": "radius-default-group",
                    "config": {
```

```
                        "name": "radius-default-group",
                        "type": "RADIUS"
                    },
                    "servers": {
                        "server": [
                        {
                    "address": "63.1.1.1",
                            "config": {
                                "name": "radius1",
                                "address": "63.1.1.1"
                            },
                           "radius": {
                               "config": {
                                   "auth-port": "101",
                                   "acct-port": "201",
                                   "secret-key": "radius",
                                   "retransmit-attempts": "4",
                                   "purpose": "accounting-only"
                               }
                           }
                       }
                       ]
                   }
               }
               ]
           }
}

Response body: None
```

PATCH or PUT method to add or modify TACACS server:

```
URL: https://{{dut}}/restconf/data/system/aaa/server-groups

Request body:
 {
            "server-groups": {
                "server-group": [
                {
                    "name": "tacacs-default-group",
                    "config": {
                        "name": "tacacs-default-group",
                        "type": "TACACS",
                        "retransmit-attempts" : 4
                    },
                    "servers": {
                    "server": [
                        {
                            "address": "93.1.1.1",
                            "config": {
                                "name": "tacacs1",
                                "address": "93.1.1.1"
                            },
                           "tacacs": {
                               "config": {
                                   "port": "101",
                                   "secret-key": "tacacs",
                                   "purpose": "accounting-only"
                               }
                           }
                       }
                       ]
                   }
               }
               ]
           }
}
Response body: None
```

To DELETE all the configured AAA server:

```
URL: https://{{dut}}/restconf/data/system/aaa/server-groups

Request body: None
Response body: None
```

Logging Host

Configures, modifies, and retrieves logging host configuration. The URI to configure data for remote log servers is:

```
/system/logging
```

To create logging host configuration using POST method:

```
/system
```

To modify logging host configuration using PATCH method:

```
/system/logging
```

To delete logging host configuration in the system:

```
/system/logging
```

Supported HTTP Operations

GET method

```
URL: https://<host>/restconf/data/system/logging

Request body: None
Response body:
{
   "openconfig-system:logging" : {
      "remote-servers" : {
         "remote-server" : [
            {
               "config" : {
                  "remote-port" : 514,
                  "host" : "10.10.10.10"
               },
               "host" : "10.10.10.10"
            },
            {
               "config" : {
                  "remote-port" : 2345,
                  "host" : "6001::1"
               },
               "host" : "6001::1"
            }
         ]
      }
   }
}
```

PUT method

```
URL: https://<host>/restconf/data/system/logging

Request body:
 {
   "openconfig-system:logging" : {
      "remote-servers" : {
         "remote-server" : [
            {
               "config" : {
```

```
                  "remote-port" : 1000,
                  "host" : "100.100.100.100"
               },
               "host" : "100.100.100.100"
            },
            {
               "config" : {
                  "remote-port" : 3000,
                  "host" : "3001::1"
               },
               "host" : "3001::1"
            },
            {
               "config" : {
                  "remote-port" : 2000,
                  "host" : "120.120.120.120"
               },
               "host" : "120.120.120.120"
            },
            {
               "config" : {
                  "remote-port" : 5000,
                  "host" : "5001::1"
               },
               "host" : "5001::1"
            },
            {
               "config" : {
                  "remote-port" : 6000,
                  "host" : "160.160.160.160"
               },
               "host" : "160.160.160.160"
            },
            {
               "config" : {
                  "remote-port" : 7000,
                  "host" : "7001::1"
               },
               "host" : "7001::1"
            }
         ]
      }
   }
}
Response body: None
```

PATCH method

```
URL: https://<host>/restconf/data/system/logging

Request body:
{
   "openconfig-system:logging" : {
      "remote-servers" : {
         "remote-server" : [
            {
               "config" : {
                  "remote-port" : 1000,
                  "host" : "50.50.50.50"
               },
               "host" : "50.50.50.50"
            }
         ]
      }
   }
}
Response body: None
```

DELETE

```
URL: https://<host>/restconf/data/system/logging

Request body: None
Response body: None
```

NTP

Configures, modifies and retrieves NTP server configuration. The URI to configure data for NTP servers is:

```
/system/ntp
```

The URI to add NTP server configuration using POST method is:

```
/system

{
   "openconfig-system:ntp" : {
      "servers" : {
         "server" : [
            {
               "config" : {
                  "address" : "xx.xx.xx.xx"
               },
               "address" : "xx.xx.xx.xx"
            }
         ]
      },
      "config" : {
         "enabled" : false
      }
   }
}
```

The URI to modify NTP server configuration using PATCH method is:

```
/system/ntp

{
   "openconfig-system:ntp" : {
      "servers" : {
         "server" : [
            {
               "config" : {
                  "address" : "xx.xx.xx.xx"
               },
               "address" : "xx.xx.xx.xx"
            }
         ]
      },
      "config" : {
         "enabled" : false
      }
   }
}
```

DELETE method

```
/system/ntp
```

Supported HTTP Operations

GET method

```
URL: https://<host>/restconf/data/system/ntp

Request body: None

Response body:
   {
   "openconfig-system:ntp" : {
      "servers" : {
         "server" : [
            {
               "config" : {
                  "address" : "xx.xx.xx.xx"
               },
               "address" : "xx.xx.xx.xx"
            },
            {
               "config" : {
                  "address" : "3001::1"
               },
               "address" : "3001::1"
            },
            {
               "config" : {
                  "address" : "ntp.ruckuswireless.com"
               },
               "address" : "ntp.ruckuswireless.com"
            }
         ]
      },
      "config" : {
         "enabled" : false
      }
   }
}
```

PATCH method

```
URL: https://<host>/restconf/data/system/ntp

Request body:
     {
   "openconfig-system:ntp" : {
      "servers" : {
         "server" : [
            {
               "config" : {
                  "address" : "90.90.90.90"
               },
               "address" : "90.90.90.90"
            },
            {
               "config" : {
                  "address" : "xx.xx.xx.xx"
               },
               "address" : "xx.xx.xx.xx"
            },
            {
               "config" : {
                  "address" : "3001::1"
               },
               "address" : "3001::1"
            },
            {
               "config" : {
                  "address" : "ntp.ruckuswireless.com"
               },
               "address" : "ntp.ruckuswireless.com"
```

```
            }
         ]
      },
      "config" : {
         "enabled" : false
      }
   }
}
Response body: None
```

PUT method

```
URL: https://<host>/restconf/data/system/ntp

Request body:
     {
   "openconfig-system:ntp" : {
       "config" : {
            "enabled": "false"
        },
      "servers" : {
         "server" : [
            {
               "config" : {
                  "address" : "xx.xx.xx.xx"
               },
               "address" : "xx.xx.xx.xx"
            },
            {
               "config" : {
                  "address" : "5001::1"
               },
               "address" : "5001::1"
            },
            {
               "config" : {
                  "address" : "stp.ruckuswireless.com"
               },
               "address" : "stp.ruckuswireless.com"
            }
         ]
      }
   }
}

Response body: None
```

DELETE method

```
URL: https://<host>/restconf/data/system/ntp

URL: https://<host>/restconf/data/system/ntp/servers/server=xx.xx.xx.xx

URL: https://<host>/restconf/data/system/ntp/config/enabled

Request body: None

Response body: None
```

DHCP Server

Configures, modifies, and retrieves DHCP server configuration. The URI to configure data for DHCP server is:

```
 /dhcp-server
```

To create DHCP server configuration using PUT method:

```
dhcp-server/config/ipv4-config
```

To modify DHCP server configuration using PATCH method:

```
/dhcp-server/config/ipv4-config/dhcpv4-pool=mnop
```

To delete DHCP server configuration in the system:

```
/data/dhcp-server
```

Supported HTTP Operations

GET method

```
URL: https://<host>/restconf/data/dhcp-server

Request body: None
Response body:     {
   "icx-openconfig-dhcp-server:dhcp-server" : {
      "config" : {
         "ipv4-config" : {
            "enable" : false,
            "dhcpv4-pool" : [
               {
                  "lease-time" : {
                     "hour" : 2,
                     "minute" : 1,
                     "day" : 3
                  },
                  "dhcp-default-router" : [
                     "10.10.10.1"
                  ],
                  "subnet_network" : "10.10.10.0",
                  "prefix-length" : 24,
                  "name" : "abcd"
               },
               {
                  "excl-ip-address-range" : [
                     {
                        "end-ip" : "20.20.20.39",
                        "start-ip" : "20.20.20.30"
                     },
                     {
                        "end-ip" : "20.20.20.49",
                        "start-ip" : "20.20.20.40"
                     }
                  ],
                  "lease-time" : {
                     "hour" : 10,
                     "minute" : 20,
                     "day" : 3
                  },
                  "dhcp-default-router" : [
                     "20.20.20.11",
                     "20.20.20.12",
                     "20.20.20.13"
                  ],
                  "subnet_network" : "20.20.20.0",
                  "prefix-length" : 24,
                  "name" : "efgh",
                  "option" : {
                     "dhcp-option" : [
                        {
                           "option-num" : 6,
                           "ip-format" : "20.20.20.8"
                        },
                        {
                           "option-num" : 42,
                           "ip-format" : "20.20.20.100"
                        }
                     ]
```

```
                    },
                    "excl-ip-address" : [
                       "20.20.20.21",
                       "20.20.20.22",
                       "20.20.20.23",
                       "20.20.20.24",
                       "20.20.20.25"
                    ]
                 }
              ]
           }
        },
        "state" : {
           "ipv6-state" : {},
           "ipv4-state" : {}
        }
     }
  }
```

PUT method

```
URL: https://<host>/restconf/data/dhcp-server/config/ipv4-config

Request body:
 {
         "ipv4-config" : {
            "enable" : "false",
            "dhcpv4-pool" : [
               {
                  "name" : "qrst",
                  "subnet_network" : "50.50.50.0",
                  "prefix-length" : "24",
                  "excl-ip-address" : "50.50.50.21",
                  "excl-ip-address" : "50.50.50.22",
                  "excl-ip-address" : "50.50.50.23",
                  "excl-ip-address" : "50.50.50.24",
                  "excl-ip-address" : "50.50.50.25",
                  "excl-ip-address-range" : [
                     {
                        "start-ip" : "50.50.50.30",
                        "end-ip" : "50.50.50.39"
                     },
                     {
                        "start-ip" : "50.50.50.40",
                        "end-ip" : "50.50.50.49"
                     }
                  ],
                  "lease-time" : {
                     "day" : "3",
                     "hour" : "10",
                     "minute" : "50"
                  },
                  "dhcp-default-router" : "50.50.50.11",
                  "dhcp-default-router" : "50.50.50.12",
                  "dhcp-default-router" : "50.50.50.14",
                  "option" : {
                     "dhcp-option" : [
                        {
                           "option-num" : "6",
                           "ip-format" : "50.50.50.8"
                        },
                        {
                           "option-num" : "42",
                           "ip-format" : "50.50.50.100"
                        }
                     ]
                  }
               }
            ]
         }
```

```
}
Response body: None
```

PATCH method

```
URL: https://<host>/restconf/data/dhcp-server/config/ipv4-config/dhcpv4-pool=mnop

Request body:
{
            "dhcpv4-pool" : [
               {
                  "name" : "mnop",
                  "subnet_network" : "40.40.40.0",
                  "prefix-length" : "24",
                  "excl-ip-address" : "40.40.40.41",
                  "excl-ip-address" : "40.40.40.42",
                  "lease-time" : {
                     "day" : "4",
                     "hour" : "20",
                     "minute" : "50"
                  }
               }
            ]
}
Response body: None
```

DELETE

```
URL: https://<host>/restconf/data/dhcp-server

Request body: None
Response body: None
```

DHCP Client

Configures, modifies, and retrieves DHCP client configuration. The URI to configure data for DHCP client is:

```
 /dhcp-client
```

To modify DHCP client configuration using PATCH method:

```
/dhcp-client
```

To delete DHCP client configuration in the system:

```
/dhcp-client
```

Supported HTTP Operations

GET method

```
URL: https://<host>/restconf/data/dhcp-client

Request body: None
Response body:
    {
   "icx-openconfig-dhcp-client:dhcp-client" : {
      "ve-id" : "default",
      "disable" : false
   }
}
```

PUT method

```
URL: https://<host>/restconf/data/dhcp-client

Request body:
        {
   "icx-openconfig-dhcp-client:dhcp-client" : {
       "disable" : "false",
       "ve-id"   : "default"
   }
}
Response body: None
```

PATCH method

```
URL: https://<host>/restconf/data/dhcp-client

Request body:
{
   "icx-openconfig-dhcp-client:dhcp-client" : {
       "disable" : "false",
       "ve-id"   : "123"
   }
}
Response body: None
```

DELETE

```
URL: https://<host>/restconf/data/dhcp-client

Request body: None
Response body: None
```

LLDP-MED

Configures, modifies, and retrieves LLDP-MED configuration. The URI to configure data for LLDP-MED is:

```
/lldp/med
```

To add LLDP-MED configuration using POST method:

```
/lldp
```

To modify LLDP-MED configuration using PATCH method:

```
/lldp/med
```

To delete LLDP-MED configuration in the system:

```
/lldp/med
```

Supported HTTP Operations

GET method

```
URL: https://10.177.125.153/restconf/data/lldp/med

Request body: None
Response body:
    {
   "icx-openconfig-lldp-aug:med" : {
      "network-policy" : [
         {
            "traffic" : "priority-tagged",
            "priority-tagged" : [
               {
                  "priority" : 1,
```

```
            "ports" : [
               "ethernet 1/1/7",
               "ethernet 1/1/9"
            ],
            "dscp" : 10
         },
         {
            "priority" : 1,
            "ports" : [
               "ethernet 1/1/11"
            ],
            "dscp" : 20
         }
      ],
      "application" : "voice"
   },
   {
      "untagged" : [
         {
            "ports" : [
               "ethernet 1/1/1",
               "ethernet 1/1/3"
            ],
            "dscp" : 10
         },
         {
            "ports" : [
               "ethernet 1/1/5"
            ],
            "dscp" : 20
         }
      ],
      "traffic" : "untagged",
      "application" : "voice"
   },
   {
      "traffic" : "tagged",
      "tagged" : [
         {
            "priority" : 1,
            "ports" : [
               "ethernet 1/1/13",
               "ethernet 1/1/15"
            ],
            "dscp" : 10,
            "vlan" : 100
         },
         {
            "priority" : 1,
            "ports" : [
               "ethernet 1/1/17"
            ],
            "dscp" : 20,
            "vlan" : 200
         }
      ],
      "application" : "voice"
   },
   {
      "traffic" : "priority-tagged",
      "priority-tagged" : [
         {
            "priority" : 1,
            "ports" : [
               "ethernet 1/1/8",
               "ethernet 1/1/10"
            ],
            "dscp" : 10
         },
         {
            "priority" : 1,
            "ports" : [
```

```
                        "ethernet 1/1/12"
                     ],
                     "dscp" : 20
                  }
               ],
               "application" : "video-signaling"
            },
            {
               "untagged" : [
                  {
                     "ports" : [
                        "ethernet 1/1/2",
                        "ethernet 1/1/4"
                     ],
                     "dscp" : 10
                  },
                  {
                     "ports" : [
                        "ethernet 1/1/6"
                     ],
                     "dscp" : 20
                  }
               ],
               "traffic" : "untagged",
               "application" : "video-signaling"
            },
            {
               "traffic" : "tagged",
               "tagged" : [
                  {
                     "priority" : 1,
                     "ports" : [
                        "ethernet 1/1/14",
                        "ethernet 1/1/16"
                     ],
                     "dscp" : 10,
                     "vlan" : 300
                  },
                  {
                     "priority" : 1,
                     "ports" : [
                        "ethernet 1/1/18"
                     ],
                     "dscp" : 20,
                     "vlan" : 400
                  }
               ],
               "application" : "video-signaling"
            }
         ]
      }
   }
```

PUT method

```
   URL: https://10.177.125.153/restconf/data/lldp/med

   Request body:
          {
      "icx-openconfig-lldp-aug:med" : {
         "network-policy" : [
            {
               "traffic" : "priority-tagged",
               "priority-tagged" : [
                  {
                     "priority" : 7,
                     "ports" : [
                        "ethernet 1/1/31",
                        "ethernet 1/1/33"
                     ],
                     "dscp" : 25
```

```
                },
                {
                   "priority" : 7,
                   "ports" : [
                      "ethernet 1/1/35"
                   ],
                   "dscp" : 50
                }
             ],
             "application" : "video-signaling"
          }
       ]
    }
}
Response body: None
```

PATCH method

```
URL: https://10.177.125.153/restconf/data/lldp/med

Request body:
{
   "icx-openconfig-lldp-aug:med" : {
      "network-policy" : [
         {
            "traffic" : "priority-tagged",
            "priority-tagged" : [
               {
                  "priority" : 1,
                  "ports" : [
                     "ethernet 1/1/7",
                     "ethernet 1/1/9",
                     "ethernet 1/1/23"
                  ],
                  "dscp" : 10
               },
               {
                  "priority" : 1,
                  "ports" : [
                     "ethernet 1/1/11"
                  ],
                  "dscp" : 20
               },
               {
                  "priority" : 2,
                  "ports" : [
                     "ethernet 1/1/25"
                  ],
                  "dscp" : 30
               }
            ],
            "application" : "voice"
         },
         {
            "untagged" : [
               {
                  "ports" : [
                     "ethernet 1/1/1",
                     "ethernet 1/1/3",
                     "ethernet 1/1/19"
                  ],
                  "dscp" : 10
               },
               {
                  "ports" : [
                     "ethernet 1/1/5"
                  ],
                  "dscp" : 20
               },
               {
                  "ports" : [
```

```
            "ethernet 1/1/21"
         ],
         "dscp" : 30
      }
   ],
   "traffic" : "untagged",
   "application" : "voice"
},
{
   "traffic" : "tagged",
   "tagged" : [
      {
         "priority" : 1,
         "ports" : [
            "ethernet 1/1/13",
            "ethernet 1/1/15",
            "ethernet 1/1/27"
         ],
         "dscp" : 10,
         "vlan" : 100
      },
      {
         "priority" : 1,
         "ports" : [
            "ethernet 1/1/17"
         ],
         "dscp" : 20,
         "vlan" : 200
      },
      {
         "priority" : 2,
         "ports" : [
            "ethernet 1/1/29"
         ],
         "dscp" : 30,
         "vlan" : 300
      }
   ],
   "application" : "voice"
},
{
   "traffic" : "priority-tagged",
   "priority-tagged" : [
      {
         "priority" : 1,
         "ports" : [
            "ethernet 1/1/8",
            "ethernet 1/1/10",
            "ethernet 1/1/24"
         ],
         "dscp" : 10
      },
      {
         "priority" : 1,
         "ports" : [
            "ethernet 1/1/12"
         ],
         "dscp" : 20
      },
      {
         "priority" : 2,
         "ports" : [
            "ethernet 1/1/26"
         ],
         "dscp" : 30
      }
   ],
   "application" : "video-signaling"
},
{
   "untagged" : [
      {
```

```
                    "ports" : [
                       "ethernet 1/1/2",
                       "ethernet 1/1/4",
                       "ethernet 1/1/20"
                    ],
                    "dscp" : 10
                 },
                 {
                    "ports" : [
                       "ethernet 1/1/6"
                    ],
                    "dscp" : 20
                 },
                 {
                    "ports" : [
                       "ethernet 1/1/22"
                    ],
                    "dscp" : 30
                 }
              ],
              "traffic" : "untagged",
              "application" : "video-signaling"
           },
           {
              "traffic" : "tagged",
              "tagged" : [
                 {
                    "priority" : 1,
                    "ports" : [
                       "ethernet 1/1/28"
                    ],
                    "dscp" : 10,
                    "vlan" : 100
                 },
                 {
                    "priority" : 1,
                    "ports" : [
                       "ethernet 1/1/14",
                       "ethernet 1/1/16"
                    ],
                    "dscp" : 10,
                    "vlan" : 300
                 },
                 {
                    "priority" : 2,
                    "ports" : [
                       "ethernet 1/1/30"
                    ],
                    "dscp" : 30,
                    "vlan" : 300
                 },
                 {
                    "priority" : 1,
                    "ports" : [
                       "ethernet 1/1/18"
                    ],
                    "dscp" : 20,
                    "vlan" : 400
                 }
              ],
              "application" : "video-signaling"
           }
        ]
     }
}
Response body: None
```

DELETE

```
URL: https://10.177.125.153/restconf/data/lldp/med

Request body: None
Response body: None
```

SNMP-Server Group

Configures, modifies, and retrieves SNMP server group configuration. The URI to configure data for SNMP server group is:

```
 /snmp-server
```

To create SNMP server group configuration using POST method:

```
/snmp-server
```

To delete SNMP server group configuration in the system:

```
/snmp-server/group
```

Supported HTTP Operations

NOTE
PUT operation is not supported.

GET method

```
URL: https://10.177.125.153/restconf/data/snmp-server

Request body: None
Response body:                                  },
                  "excl-ip-address" : [
                     "20.20.20.21",
                     "20.20.20.22",
                     "20.20.20.23",
                     "20.20.20.24",
                     "20.20.20.25"
                  ]
               }
            ]
         }
      },
      "state" : {
         "ipv6-state" : {},
         "ipv4-state" : {}
      }
   }
}
```

POST method

```
URL: https://10.177.125.153/restconf/data/snmp-server

Request body:
 {
         "ipv4-config" : {
            "enable" : "false",
            "dhcpv4-pool" : [
               {
                  "name" : "qrst",
                  "subnet_network" : "50.50.50.0",
                  "prefix-length" : "24",
                  "excl-ip-address" : "50.50.50.21",
                  "excl-ip-address" : "50.50.50.22",
                  "excl-ip-address" : "50.50.50.23",
```

```
                    "excl-ip-address" : "50.50.50.24",
                    "excl-ip-address" : "50.50.50.25",
                    "excl-ip-address-range" : [
                       {
                          "start-ip" : "50.50.50.30",
                          "end-ip" : "50.50.50.39"
                       },
                       {
                          "start-ip" : "50.50.50.40",
                          "end-ip" : "50.50.50.49"
                       }
                    ],
                    "lease-time" : {
                       "day" : "3",
                       "hour" : "10",
                       "minute" : "50"
                    },
                    "dhcp-default-router" : "50.50.50.11",
                    "dhcp-default-router" : "50.50.50.12",
                    "dhcp-default-router" : "50.50.50.14",
                    "option" : {
                       "dhcp-option" : [
                          {
                             "option-num" : "6",
                             "ip-format" : "50.50.50.8"
                          },
                          {
                             "option-num" : "42",
                             "ip-format" : "50.50.50.100"
                          }
                       ]
                    }
                 }
              ]
        }
}
Response body: None
```

PATCH method

```
URL: https://10.177.125.152/restconf/data/dhcp-server/config/ipv4-config/dhcpv4-pool=mnop

Request body:
{
            "dhcpv4-pool" : [
               {
                  "name" : "mnop",
                  "subnet_network" : "40.40.40.0",
                  "prefix-length" : "24",
                  "excl-ip-address" : "40.40.40.41",
                  "excl-ip-address" : "40.40.40.42",
                  "lease-time" : {
                     "day" : "4",
                     "hour" : "20",
                     "minute" : "50"
                  }
               }
            ]
}
Response body: None
```

DELETE

```
URL: https://10.177.125.152/restconf/data/dhcp-server

Request body: None
Response body: None
```

SNMP-Server User

Configures, modifies, and retrieves SNMP server user configuration. The URI to configure data for SNMP server user data is:

```
/snmp-server/user
```

To create SNMP server user configuration using POST method:

```
/snmp-server
```

To delete SNMP server user configuration in the system:

```
/snmp-server/user
```

Supported HTTP Operations

NOTE
PUT operation is supported only if data is posted with new key and data with existing key is considered as PATCH operation. Therefore, PUT operation is not supported.

GET method

```
URL: https://10.177.125.153/restconf/data/snmp-server

Request body: None
Response body:
 {
   "icx-openconfig-snmp-server:snmp-server" : {
      "user" : [
         {
            "groupname" : "grp1",
            "name" : "user1"
         },
         {
            "aesprivpass" : "2b33998a1de6593623b96518d15d9da3",
            "groupname" : "grp2",
            "name" : "user2",
            "md5authpass" : "9ac1e14f12160fa7dcdbfd6a627e87b9"
         }
      ]
   }
}
```

POST method

```
URL: https://10.177.125.153/restconf/data/snmp-server

Request body:
    {
   "snmp-server" : {
    "user" : [
        {
          "name" : "user3",
            "groupname" : "grp3",
            "md5authpass" : "12345678",
            "aesprivpass" : "123456789123"
         }
      ]
   }
  }

Response body: None
```

DELETE

```
URL: https://10.177.125.153/restconf/data/snmp-server

Request body: None
Response body: None
```

Stacking

Configures, modifies, and retrieves stacking configuration. The URI for stacking is:

```
/stack
```

Supported HTTP Operations

GET method

```
URL: https://10.176.157.150/restconf/data/stack

Request body: None
Response body:
{
   "icx-openconfig-stack:stack" : {
      "config" : {
         "zero-touch-enable" : true,
         "stack-units" : {
            "stack-unit" : [
               {
                  "unit-id" : 1,
                  "config" : {
                     "priority" : 2,
                     "unit-id" : 1,
                     "unit-name" : "test2"
                  }
               }
            ]
         },
         "suggested-id" : 5,
         "mac-address" : "d4c1.9e16.a541",
         "ztp-force" : false,
         "enabled" : true
      },
      "state" : {
         "zero-touch-enable" : true,
         "stack-units" : {
            "stack-unit" : [
               {
                  "state" : {
                     "priority" : 2,
                     "mac-address" : "d4c1.9e16.a541",
                     "unit-type" : "ICX7850-32Q",
                     "unit-name" : "test2",
                     "state" : "local",
                     "stack-ports" : {},
                     "dynamic-static" : "Static",
                     "comment" : "None:0",
                     "unit-id" : 1,
                     "role" : "alone",
                     "trunks" : {}
                  },
                  "icx-openconfig-stack:unit-id" : 1
               }
            ]
         },
         "suggested-id" : 5,
         "mac-address" : "d4c1.9e16.a541",
         "ztp-force" : false,
         "enabled" : true
```

```
        }
     }
  }
```

PATCH or PUT method

```
URL: https://10.176.157.150/restconf/data/stack

Request body:
 {"icx-openconfig-stack:stack":{"config":{"zero-touch-enable":true}}}
Response body: None
```

PATCH or PUT method

```
URL: https://10.176.157.150/restconf/data/stack

Request body:
{"icx-openconfig-stack:stack":{"config":{"suggested-id":10}}}
Response body: None
```

PATCH or PUT method

```
URL: https://10.176.157.150/restconf/data/stack

Request body:
   {
   "icx-openconfig-stack:stack":{
      "config":{
         "enabled":true,
         "suggested-id":5,
         "zero-touch-enable":true,
         "ztp-force":true,
         "stack-units":{
            "stack-unit":[
               {
                  "unit-id":1,
                  "config":{
                     "unit-id":1,
                     "priority":2,
                     "unit-name":"test2"
                  }
               }
            ]
         }
      }
   }
}
Response body:
Configures both priority and unit-name of unit '1'.

GET:

{
   "icx-openconfig-stack:stack" : {
      "config" : {
         "zero-touch-enable" : true,
         "stack-units" : {
            "stack-unit" : [
               {
                  "unit-id" : 1,
                  "config" : {
                     "priority" : 2,
                     "unit-id" : 1,
                     "unit-name" : "test2"
                  }
               }
            ]
         },
         "suggested-id" : 5,
         "mac-address" : "d4c1.9e16.a541",
         "ztp-force" : true,
```

```
            "enabled" : true
         },
         "state" : {
            "zero-touch-enable" : true,
            "stack-units" : {
               "stack-unit" : [
                  {

                     "state" : {
                        "priority" : 2,
                        "mac-address" : "d4c1.9e16.a541",
                        "unit-type" : "ICX7850-32Q",
                        "unit-name" : "test2",
                        "state" : "local",
                        "stack-ports" : {},
                        "dynamic-static" : "Static",
                        "comment" : "None:0",
                        "unit-id" : 1,
                        "role" : "alone",
                        "trunks" : {}
                     },
                     "icx-openconfig-stack:unit-id" : 1
                  }
               ]
            },
            "suggested-id" : 5,
            "mac-address" : "d4c1.9e16.a541",
            "ztp-force" : true,
            "enabled" : true
         }
      }
   }
```

Static Routes

Configures, modifies, and retrieves IP route configurations. The URI to configure data for static IP route is:

```
network-instances/network-instance/default-vrf/protocols/protocol/STATIC/icx-static/static-routes
```

Supported HTTP Operations

POST method

```
URL: https://<host>/restconf/data/network-instances/network-instance/default-vrf/protocols/protocol/STATIC/
icx-static/static-routes

Request body: {
    "static": [
        {
            "prefix": "xx.xx.xx.xx/32",
            "config": {
                "prefix": "xx.xx.xx.xx/32"
            },
            "next-hops": {
                "next-hop": [
                    {
                        "index": "xx.xx.xx.xx",
                        "config": {
                            "index": "xx.xx.xx.xx",
                            "next-hop": "xx.xx.xx.xx",
                            "metric": 200
                        }
                    }
                ]
            }
        }
    ]
```

```
}
Response body: IP route gets reflected as below:

DUT1# sh running config | include ip route
ip route 0.0.0.0/0 xx.xx.xx.xx
ip route xx.xx.xx.xx/32 xx.xx.xx.xx distance 200
```

GET method

```
URL: https://<host>/restconf/data/network-instances/network-instance/default-vrf/protocols/protocol/STATIC/
icx-static/static-routes

Request body: None
Response body:  {
   "openconfig-network-instance:static-routes" : {
      "static" : [
         {
            "next-hops" : {
               "next-hop" : [
                  {
                     "index" : "xx.xx.xx.xx",
                     "interface-ref" : {
                        "state" : {}
                     },
                     "config" : {
                        "next-hop" : "xx.xx.xx.xx",
                        "index" : "xx.xx.xx.xx",
                        "metric" : 200
                     },
                     "state" : {}
                  }
               ]
            },
            "config" : {
               "prefix" : "xx.xx.xx.xx/32"
            },
            "state" : {},
            "prefix" : "xx.xx.xx.xx/32"
         }
      ]
   }
}
```

PUT method

```
URL: https://<host>/restconf/data/network-instances/network-instance/default-vrf/protocols/protocol/STATIC/
icx-static/static-routes/static/xx.xx.xx.xx//32/next-hops

Request body:
 {
   "openconfig-network-instance:next-hops" : {
      "next-hop" : [
         {
            "index" : "xx.xx.xx.xx",
            "config" : {
               "next-hop" : "xx.xx.xx.xx",
               "index" : "xx.xx.xx.xx",
               "metric" : 100
            }
         }
      ]
   }
}

Response body: DUT1(config)# sh running config | include ip route
ip route 0.0.0.0/0 xx.xx.xx.xx
ip route xx.xx.xx.xx/32 ethernet 1/1/5
ip route xx.xx.xx.xx/32 xx.xx.xx.xx distance 200
ip route xx.xx.xx.xx/32 xx.xx.xx.xx distance 200
```

PATCH method

```
URL: https://<host>/restconf/data/network-instances/network-instance/default-vrf/protocols/protocol/STATIC/
icx-static/static-routes

Request body:{
 "openconfig-network-instance:static-routes": {
 "static": [
            {
                "prefix": "xx.xx.xx.xx/32",
                "config": {
                   "prefix": "xx.xx.xx.xx/32"
                },
                "next-hops": {
                    "next-hop": [
                        {
                           "index": "xx.xx.xx.xx",
                            "config": {
                            "index": "xx.xx.xx.xx",
                                "next-hop": "xx.xx.xx.xx",
                                "metric": 200
                            }
                        }
                    ]
                }
            }
        ]
    }
}
Response body: None
```

DELETE

```
URL: https://<host>/restconf/data/network-instances/network-instance/default-vrf/protocols/protocol/STATIC/
icx-static/static-routes/static/160.80.80.80//32/next-hops/next-hop/10.177.113.1

Request body: None
Response body: Unconfigure the static route.

GET:{
   "openconfig-network-instance:static-routes" : {
      "static" : [
         {
        null
         }
      ]
   }
}
```

IP Address on Management Interface for Router Image

Configures, modifies, and retrieves IP address configuration. The URI to configure data for IP address on management interface for router is:

```
/interfaces/interface/management%201
```

Supported HTTP Operations

GET method

```
/interfaces/interface/management%201/subinterfaces/subinterface/0/ipv4/addresses/address

Request body: {
   "openconfig-if-ip:address" : [
      {
         "ip" : "xx.xx.xx.xx",
         "config" : {
            "ip" : "xx.xx.xx.xx",
```

```
            "prefix-length" : 25
          }
       }
    ]
}

Response body: None
```

PUT method

```
/interfaces/interface/management%201/subinterfaces/subinterface/0/ipv4/addresses/address/xx.xx.xx.xx

Request body:
{
    "openconfig-if-ip:address": [
        {
            "ip": "xx.xx.xx.xx",
            "config": {
                "ip": "xx.xx.xx.xx",
                "prefix-length": 24
            }
        }

    ]
}
Response body: None
```

PATCH method

```
/restconf/data/interfaces/interface/management%201/subinterfaces

Request body:
 {

    "openconfig-interfaces:subinterfaces": {
        "subinterface": [
        {
            "index": 0,
                "config": {
                    "index": 0
                },
                "openconfig-if-ip:ipv4": {
                    "addresses": {
                        "address": [
                        {
                            "ip": "xx.xx.xx.xx",
                            "config": {
                                "ip": "xx.xx.xx.xx",
                                "prefix-length": 25
                            }
                        }
                        ]
                    }
                }
        }
        ]
    }
}
Response body: None
```

POST method

```
/interfaces/interface/management%201/subinterfaces/subinterface/0/ipv4/addresses

Request body:
 {
    "openconfig-if-ip:address": [
                        {
        "ip": "xx.xx.xx.xx",
            "config": {
                "ip": "xx.xx.xx.xx",
```

```
                "prefix-length": 24
            }
        }
    ]
}
Response body: Configures management 1 interface with the IP address
```

DELETE

```
/interfaces/interface/management%201/subinterfaces/subinterface/0/ipv4/addresses/address/xx.xx.xx.xx

Request body: None
Response body: None
```

IP Address on Management Interface for Switch Image

Configures, modifies, and retrieves IP address configuration. The URI to configure data for IP address is:

```
/system/config/ipv4
```

Supported HTTP Operations

GET method

```
URL: https://<host>/restconf/data/system/config/ipv4

Request body: None
Response body:
{
   "icx-openconfig-system-aug:ipv4" : {
      "address" : [
         {
            "ip" : "xx.xx.xx.xx",
            "config" : {
               "ip" : "xx.xx.xx.xx",
               "prefix-length" : 25
            "addr_type" : "static"
         }
      ]
   }
}
```

PUT method

```
URL: https://<host>/restconf/data/system/config/ipv4

Request body:

{
   "icx-openconfig-system-aug:ipv4" : {
      "address" : [
      {
         "ip" : "xx.xx.xx.xx",
         "config" : {
            "ip" : "xx.xx.xx.xx",
            "prefix-length" : "24"
            "addr_type" : "static"
         }
      }
   ]
   }
}
Response body: None
```

PATCH method

```
URL: https://<host>/restconf/data/system/config/ipv4

Request body:
 {
   "icx-openconfig-system-aug:ipv4" : {
      "address" : [
      {
         "ip" : "xx.xx.xx.xx",
         "config" : {
            "ip" : "xx.xx.xx.xx",
            "prefix-length" : "24"
            "addr_type" : "static"
         }
      }
   ]
   }
}
Response body: None
```

POST method

```
URL: https://<host>/restconf/data/system/config/ipv4

Request body:
 {
   "address" : [
      {
         "ip" : "xx.xx.xx.xx",
         "config" : {
            "ip" : "xx.xx.xx.xx",
            "prefix-length" : 25,

            "addr_type" : "static"

          }
      }
   ]
}
Response body: None
```

DELETE

```
URL: https://<host>/restconf/data/system/config/ipv4

Request body: None
Response body: None
```

DHCP: Relay-Agent IP Helper Address

Configures, modifies, and retrieves IP helper address configuration. The URI to configure data for DHCP IP helper address is:

```
/openconfig-relay-agent:relay-agent/dhcp/interfaces
```

Supported HTTP Operations

GET method

```
URL: https://<host>/restconf/data/openconfig-relay-agent:relay-agent/dhcp/interfaces

Request body: None
Response body:
{
   "openconfig-relay-agent:interface" : [
      {
         "agent-information-option" : {
            "state" : {}
```

```
            },
            "interface-ref" : {
               "state" : {}
            },
            "config" : {
               "helper-address" : [
                  "29.2.2.2"
               ],
               "id" : "ve 100"
            },
            "id" : "ve 100",
            "state" : {
               "counters" : {}
            }
         }
      ]
}
```

PUT method

```
URL: https://<host>/restconf/data/openconfig-relay-agent:relay-agent/dhcp/interfaces

Request body:
 {
        "interface": {
            "id" : "ve 100",
                "config" : {
                    "helper-address": "18.2.2.2",
                    "id" : "ve 100"
                }

        }
}
Response body: None
```

PATCH method

```
URL: https://<host>/restconf/data/openconfig-relay-agent:relay-agent/dhcp/interfaces

Request body:
 {
    "openconfig-relay-agent:interfaces": {
        "interface" : {
            "id" : "ve 100",
                "config" : {
                    "helper-address": "29.2.2.2",
                    "id" : "ve 100"
                }

        }
    }
}
Response body: None
```

DELETE

```
URL: https://<host>/restconf/data/openconfig-relay-agent:relay-agent/dhcp/interfaces/interface/ve%20100/
config/helper-address/29.2.2.2

Request body: None
Response body: Unconfigures the CLI
```

Storm Control REST Configuration

Configures, updates, and deletes storm control REST configuration. The URI to configure data for storm control REST configuration is:

```
/openconfig-interfaces:interfaces/interface=ethernet%201%2F1%2F1/config/storm_control_config
```

Supported HTTP Operations

GET method

```
URL: https://<host>/restconf/data/openconfig-interfaces:interfaces/interface=ethernet%201%2F1%2F1/config/
storm_control_config
```

POST method

```
URL: curl -X PUT https://<host>/restconf/data/openconfig-interfaces:interfaces/interface=ethernet
%201%2F1%2F1/config -H "Content-Type: application/json" -d @stc.json -u super:sp-admin --insecure

file : stc.json

{
    "storm_control_config": {
        "broadcast": {
             "limit": 8787,
             "kbps": true
         },
         "multicast": {
             "limit": 777,
             "kbps": true
         },
         "unknown-unicast": {
             "limit": 888,
             "kbps": true
         }
     }
}
```

PUT method

```
URL: curl -X PUT https://<host>/restconf/data/openconfig-interfaces:interfaces/interface=ethernet
%201%2F1%2F1/config/storm_control_config -H "Content-Type: application/json" -d @stc.json -u super:sp-admin
--insecure

file : stc.json

{
    "storm_control_config": {
        "broadcast": {
             "limit": 8787,
             "kbps": true
         },
         "multicast": {
             "limit": 777,
             "kbps": true
         },
         "unknown-unicast": {
             "limit": 888,
             "kbps": true
         }

     }

}
```

PATCH method

```
URL: curl -X PATCH https://<host>/restconf/data/openconfig-interfaces:interfaces/interface=ethernet
%201%2F1%2F1/config/storm_control_config -H "Content-Type: application/json" -d @stc_patch.json -u super:sp-
admin --insecure

file : stc_patch.json

{
    "storm_control_config": {
        "broadcast": {
             "limit": 111,
             "kbps": true
```

```
            },
            "multicast": {
                "limit": 222,
                "kbps": true
            },
            "unknown-unicast": {
                "limit": 333,
                "kbps": true
            }
        }
    }
```

The following URI deletes the entire storm control configuration (broadcast, unknown-unicast, and multicast):

```
URL: curl -X DELETE https://<host>/restconf/data/openconfig-interfaces:interfaces/interface=ethernet
%201%2F1%2F1/config/storm_control_config -u super:sp-admin --insecure
```

The following URI deletes the broadcast storm control configuration:

```
curl -X DELETE https://<host>/restconf/data/openconfig-interfaces:interfaces/interface=ethernet%201%2F1%2F1/
config/storm_control_config/broadcast -u super:sp-admin --insecure
```

The following URI deletes the multicast storm control configuration:

```
curl -X DELETE https://<host>/restconf/data/openconfig-interfaces:interfaces/interface=ethernet%201%2F1%2F1/
config/storm_control_config/multicast -u super:sp-admin --insecure
```

The following URI deletes the unknown-unicastt storm control configuration:

```
curl -X DELETE https://<host>/restconf/data/openconfig-interfaces:interfaces/interface=ethernet%201%2F1%2F1/
config/storm_control_config/unknown-unicast -u super:sp-admin --insecure
```

FlexAuth REST Configuration

Configures, updates and deletes FlexAuth REST configuration. The URI to configure FlexAuth commands is:

```
https://<mgmt-ip>/restconf/data/authentication/config
```

The following are the list of supported CLIs for FlexAuth module:

- Authentication (mode)
- auth-default-vlan <id>
- auth-order mac-auth dot1x
- fail-action restricted-vlan {{vlanId}}
- auth-timeout-action critical-vlan <id>
- auth-timeout-action success
- auth-timeout-action failure
- dot1x enable
- dot1x enable ether <1/1/1>
- dot1x guest-vlan <guest-vlan >
- dot1x port-control auto ethernet <1/1/1>
- dot1x port-control force-authorized ethernet <1/1/1>
- dot1x port-control force-unaure-authenticationthorized ethernet <1/1/1>
- mac-authentication enable
- mac-authentication enable ethernet <1/1/1>
- mac-authentication dot1x-override

- mac-authentication dot1x-disable
- max-sessions <max-session>
- re-authentication
- restricted-vlan <vlan-id>
- critical-vlan <vlan-id>
- voice-vlan <vlan-id>

Supported HTTP Operations

GET request

```
curl -X GET https://<host>/restconf/data/authentication/config -u test:test1234 --insecure

curl -X GET https://<host>/restconf/data/authentication/config/dot1x -u test:test1234 --insecure

curl -X GET https://<host>/restconf/data/authentication/config/mac-authentication  -u test:test1234 --
insecure
```

POST or PATCH request

```
curl -X PATCH -H "Content-Type: application/json" -d @input.json https://<host>/restconf/data/
authentication/config -u super:sp-admin --insecure

file: input.json

{
    "config": {
        "max-sessions": 15,
        "re-authentication": true,
        "auth-default-vlan": 110,
        "restricted-vlan": 112,
        "critical-vlan":  113,
        "voice-vlan": 114
    }
}
```

POST or PATCH request

```
curl -X POST  -H "Content-Type: application/json" -d @dot1x.json https://<host>/restconf/data/
authentication/config -u test:test1234 --insecure

curl -X POST  -H "Content-Type: application/json" -d @mauth.json https://<host>/restconf/data/
authentication/config -u test:test1234 --insecure

dot1x.json

{
    "dot1x": {
            "port-control": {
                "force-unauthorized": "ethernet 1/1/3"
            },
            "guest-vlan": "107",
            "ethernet": "ethernet 1/1/3",
            "enable": true
    }
}

mauth.json

{
     "mac-authentication": {
        "dot1x-override": true,
        "dot1x-disable": true,
        "ethernet": "ethernet 1/1/13",
        "enable":true
```

```
      }
}

curl -X PATCH  -H "Content-Type: application/json" -d @dot1x.json https://<host>/restconf/data/
authentication/config/dot1x -u test:test1234 --insecure

cat
dot1x.json
          {
{
    "dot1x": {
        "guest-vlan": "107",
        "ethernet": "ethernet 1/1/3",
        "enable": true
    }
}

curl -X PATCH  -H "Content-Type: application/json" -d @port-control.json https://<host>/restconf/data/
authentication/config/dot1x/port-control -u test:test1234 --insecure

cat port-control.json
{
    "port-control": {
        "force-authorized": "ethernet 1/1/3"
    }
}

curl -X PATCH  -H "Content-Type: application/json" -d @auth_order.json https://<host>/restconf/data/
authentication/config -u test:test1234 --insecure

auth_order.json

{
    "config": {
     "auth-order": {
        "mac-auth": "dot1x"
      }
    }
}

curl -X PATCH  -H "Content-Type: application/json" -d @fail_action.json https://<host>/restconf/data/
authentication/config -u test:test1234 --insecure

fail_action.json

{
    "config": {
        "fail-action": {
            "fail-action": "restricted-vlan"
        }
    }
}

curl -X PATCH  -H "Content-Type: application/json" -d @time_out.json https://<host>/restconf/data/
authentication/config -u test:test1234 --insecure

{
time_out.json
    "config": {
        "timeout-action":{
            "success": true
        }
    }
}
```

The following URI deletes all the configuration:

```
curl -X DELETE https://<host>/restconf/data/authentication/config -u test:test1234 --insecure
```

The following URI deletes the MAC authentication container details:

```
curl -X DELETE https://<host>/restconf/data/authentication/config/mac-authentication -u test:test1234 --
insecure
```

The following URI deletes the port-control container in dot1x configuration:

```
curl -X DELETE https://<host>/restconf/data/authentication/config/dot1x/port-control -u test:test1234 --
insecure
```

The following URI deletes the entire dot1x container configuration:

```
curl -X DELETE https://<host>/restconf/data/authentication/config/dot1x -u test:test1234 --insecure
```

The following URI deletes the auth-order container configuration:

```
curl -X DELETE https://<host>/restconf/data/authentication/config/auth-order -u test:test1234 --insecure
```

The following URI deletes the auth-fail-action container configuration:

```
curl -X DELETE https://<host>/restconf/data/authentication/config/fail-action -u test:test1234 --
insecure
```

Ethernet

Configures the admin-status, port-speed, duplex, and clock mode of an Ethernet interface. Also, retrieves the operational and admin status, ifindex, total traffic, unicast, broadcast, multicast, and total discard packet details for the ingress and egress interfaces. The URI to configure data for Ethernet interface is:

```
/interfaces/interface/ethernet
```

Supported HTTP Operations

GET method

```
URL: https://<host>/restconf/data/openconfig-interfaces:interfaces/interface/ethernet 1%2F1%2F1

Request body: None
Response body:     {
    "openconfig-interfaces:interface": [
        {
            "name": "ethernet 1/1/1",
            "config": {
                "name": "ethernet 1/1/1",
                "type": "iana-if-type:ethernetCsmacd",
                "description": "",
                "enabled": true
            },
            "state": {
                "name": "ethernet 1/1/1",
                "type": "iana-if-type:ethernetCsmacd",
                "description": "",
                "enabled": true,
                "ifindex": 1,
                "admin-status": "UP",
                "oper-status": "DOWN",
                "counters": {
                    "in-octets": "0",
                    "in-pkts": "0",
                    "in-unicast-pkts": "0",
                    "in-broadcast-pkts": "0",
                    "in-multicast-pkts": "0",
                    "in-discards": "0",
                    "in-errors": "0",
                    "in-unknown-protos": "0",
                    "in-fcs-errors": "0",
```

```
                    "out-octets": "0",
                    "out-pkts": "0",
                    "out-unicast-pkts": "0",
                    "out-broadcast-pkts": "0",
                    "out-multicast-pkts": "0",
                    "out-discards": "0",
                    "out-errors": "0"
                }
            },
            "openconfig-if-ethernet:ethernet": {
                "config": {
                    "auto-negotiate": true,
                    "duplex-mode": "FULL",
                    "icx-openconfig-if-ethernet-aug:ethernet-clock": "none"
                },
                "state": {
                    "auto-negotiate": true,
                    "duplex-mode": "FULL",
                    "negotiated-duplex-mode": "FULL",
                    "negotiated-port-speed": "openconfig-if-ethernet:SPEED_UNKNOWN",
                    "icx-openconfig-if-ethernet-aug:negotiated-clock": "none"
                },
                "openconfig-vlan:switched-vlan": {
                    "state": {}
                },
                "openconfig-if-poe:poe": {
                    "config": {
                        "enabled": true
                    }
                }
            }
        }
    ]
}
```

PUT or PATCH method to set the speed to duplex mode:

```
URL: https://<host>/restconf/data/openconfig-interfaces:interfaces/interface/ ethernet1%2F1%2F8/ethernet/
config

Request body:For setting the speed, duplex mode and auto-negotiation of ethernet interface.
 {
    "config": {
            "auto-negotiate": false,
            "duplex-mode": "FULL",
            "port-speed": "openconfig-if-ethernet:SPEED_100MB"
    }
}
Response body: None
```

PUT or PATCH method to set the admin status of the port:

```
URL: https://<host>/restconf/data/openconfig-interfaces:interfaces/interface/ethernet 1%2F1%2F8/config

Request Body:For setting the admin-status of the ethernet port:

{
    "config": {
            "enabled":false
             }
}
Response Body: None
```

DELETE

```
URL: https://<host>/restconf/data/openconfig-interfaces:interfaces/interface/ethernet 3%2F1%2F2/ethernet

Request body: {
    "config": {
         "auto-negotiate": false,
         "duplex-mode": FULL,
```

```
            "port-speed": "openconfig-if-ethernet:SPEED_1GB"
        }
    }
    Response body: None
```

Firmware

Lists the system firmware including primary, secondary flash, current running code version, and free space available for the entire flash:

```
/data/flash
```

To list the primary partition including code version, code size, code name, boot version, boot size, and boot name:

```
/data/flash/primary
```

To list the secondary partition including code version, code size, code name, boot version, boot size, and boot name:

```
/data/flash/secondary
```

To list the current router or switch running image:

```
/data/flash/running
```

To list the current available free space of entire flash:

```
/data/flash/freespace
```

Supported HTTP Operations

GET method

```
URL: https://<host>/restconf/data/flash

Request body: None
Response body:  {"icx-openconfig-flash:flash":
    "primary":
     {
                "code_version":"09.0.10cT243",
                "code_size":67419316,
                "code_name":"GZR09010cdev.bin",
                "boot_size":1081856,
                "boot_version":"10.1.21T245",
                "boot_name":"gzu10121"
      },
      "secondary":
      {
                  "code_version":"10.0.00T243",
                  "code_size":75794644,
                   "code_name":"GZR10000_b367.bin",
                   "boot_size":1081856,
                   "boot_version":"10.1.22T245",
                   "boot_name":"gzu10122b30"
        },
        "running":
        {
                 "code_version":"09.0.10cT243"
        }
        "freespace":2150387712
}
```

ICX Health Check and Get Switch Mode

Configures the warning temperature of the chassis. This REST API is used to get the actual temperature, warning temperature, and shutdown temperature of the chassis. It provides the fan and power supply status. It is also used to get the model name of the switch or router.

```
/components/component
```

Supported HTTP Operations

GET method

```
URL: https://<host>/restconf/data/openconfig-platform:components

Request body: None
Response body:     {
    "openconfig-platform:components": {
        "component": [
            {
                "name": "ICX7650-48P POE 48-port Management Module",
                "config": {
                    "name": "ICX7650-48P POE 48-port Management Module"
                },
                "state": {
                    "temperature": {
                        "icx-openconfig-platform-aug:actual_temperature": 27,
                        "icx-openconfig-platform-aug:warning_temperature": 65,
                        "icx-openconfig-platform-aug:shutdown_temperature": 70
                    },
                    "icx-openconfig-platform-aug:switch-model": "ICX7650-48-HPOE"
                },
                "power-supply": {
                    "state": {
                        "icx-openconfig-platform-aug:power-supply-1-status": "Power supply 1 not present\n",
                        "icx-openconfig-platform-aug:power-supply-2-status": "Power supply 2 (AC - PoE)
present, status ok\n \t"
                    }
                },
                "fan": {
                    "state": {
                        "icx-openconfig-platform-aug:fan-1-status": "Fan 1 ok, ",
                        "icx-openconfig-platform-aug:fan-2-status": "Fan 2 ok"
                    }
                }
            }
        ]
    }
}
```

To set the warning temperature of the chassis using PATCH or PUT method:

```
URL: https://<host>/restconf/data/openconfig-platform:components/component=ICX7650-48P POE 48-port
Management Module/config

Request body:
 {
              "config": {
                  "stack_id": 1,
                  "warning_temperature": 66
            }
}
Response body: None
```

Inline Power Priority

Provides API support for configuring the power-limit, power-by-class, and priority class of PoE enabled ethernet interface. It also provides support for getting the power usage by a PoE port.

```
interfaces/interface
```

Supported HTTP Operations

GET method

```
URL: https://10.177.120.87/restconf/data/openconfig-interfaces:interfaces/interface/ethernet%201%2F1%2F11/
ethernet

Request body: None
Response body:     {
    "openconfig-if-ethernet:ethernet": {
        "config": {
            "auto-negotiate": true,
            "duplex-mode": "FULL",
            "icx-openconfig-if-ethernet-aug:ethernet-clock": "none"
        },
        "state": {
            "auto-negotiate": true,
            "duplex-mode": "FULL",
            "negotiated-duplex-mode": "FULL",
            "negotiated-port-speed": "openconfig-if-ethernet:SPEED_UNKNOWN",
            "icx-openconfig-if-ethernet-aug:negotiated-clock": "none"
        },
        "openconfig-vlan:switched-vlan": {
            "state": {}
        },
        "icx-openconfig-if-poe-aug:poe": {
            "config": {
                "enabled": true
            },
            "state": {
                "enabled": true,
                "priority": 3,
                "power-by-class": 0,
                "power-used": "0.0",
                "power-allocated": "0.0"
            }
        },
        "icx-openconfig-if-trust-dscp-aug:trust-dscp": {
            "config": {
                "enabled": false
            },
            "state": {
                "enabled": false
            }
        }
    }
}
```

PUT method:

```
URL: https://10.177.120.87/restconf/data/openconfig-interfaces:interfaces/interface/ethernet 1%2F1%2F11/
ethernet/poe/config

Request body:
 {
    "config": {
         "priority": 2,
         "power-by-class": 2
    }
}
Response body: None
```

PATCH method:

```
URL: https://10.177.120.87/restconf/data/openconfig-interfaces:interfaces/interface/ethernet 1%2F1%2F11/
ethernet/poe/config

Request body:
 {
    "config": {
         "priority": 3,
         "power-limit": 20000
    }
}
Response body: None
```

Boot

Reloads the system with primary or secondary flash partition provided by the user. The URI to reload the router with the selected boot partition is:

```
/operations/boot-sys-flash
```

Supported HTTP Operations

POST method

```
URL: https://<host>/restconf/operations/boot-sys-flash

Request body:
 For primary boot partition:
{
  "icx-openconfig-platform-aug:input":{
     "primary" : [null]
  }
}

For secondary boot partition:
{
  "icx-openconfig-platform-aug:input":{
     "secondary" : [null]
  }
}
Response body: None
```

POST method

By default, the "force-reboot" flag is set to false. For primary boot partition, if "force-reboot" flag is set to true, it will not check if the running-config of the system is changed or not. Reloads the system even if the running-config of the system is changed without throwing any error.

```
URL: https://<host>/restconf/operations/boot-sys-flash

Request body:
{
  "icx-openconfig-platform-aug:input":{
     "force-reboot": true,
     "primary" : [null]
  }
}

To boot from secondary partition:
{
  "icx-openconfig-platform-aug:input":{
     "force-reboot": true,
     "secondary" : [null]
  }
}

Response body: None
```

Forwarding Profile

Supported HTTP Operations

PATCH method

```
URL: https://<host>/restconf/data/forwarding-profile/current-profile-name

Request body: {
         "current-profile-name": "profile2"
}
Response body: None
```

PUT method

```
URL: https://<host>/restconf/data/forwarding-profile/current-profile-name

Request body: {
         "current-profile-name": "profile3"
}
Response body: None
```

DELETE method

```
URL: https://<host>/restconf/data/forwarding-profile

Request body: None
Response body: None
```

GET method

```
URL: https://<host>/restconf/data/forwarding-profile

Request body: None
Response body: {
    "icx-openconfig-forwarding-profile:forwarding-profile": {
        "current-profile-name": "profile1"
    }
}
```

Reload

Reloads the system with the configured boot-preference. The default value is Primary. Save the running config using **</operations/save-config>** before reload. The URI is:

```
/operations/boot-sys-flash
```

Supported HTTP Operations

POST method

```
URL: https://<host>/restconf/operations/boot-sys-flash

Request body: None
Response body: None
```

Write Memory

Saves the running-config of the system to the flash memory of the device. The URI is:

```
/operations/save-config
```

Supported HTTP operations

POST method

```
URL: https://<host>/restconf/operations/save-config

Request body: None
Response body: None
```

DHCPv4 Snooping

Supported HTTP Operations

The following HTTP operations are supported for the **ip dhcp snooping vlan** command.

GET method

```
URL: https://<host>/restconf/data/network-instances/network-instance/default-vrf/vlans/vlan=100/config/
dhcpsnoop_container

Request body: None
Response body:{
    "icx-openconfig-vlan-aug:dhcpsnoop_container": {
        "dhcpsnoop": false
    }
}
```

PUT method

```
URL: https://<host>/restconf/data/network-instances/network-instance/default-vrf/vlans/vlan=102/config/
dhcpsnoop_container

Request body:
 {
            "icx-openconfig-vlan-aug:dhcpsnoop_container": {
                "dhcpsnoop": false
            }
}
Response body: None
```

PATCH method

```
URL: https://<host>/restconf/data/network-instances/network-instance/default-vrf/vlans/vlan=78/config/
dhcpsnoop_container

Request body:
{
            "icx-openconfig-vlan-aug:dhcpsnoop_container": {
                "dhcpsnoop": true
            }
}
Response body: None
```

POST method

```
URL: https://<host>/restconf/data/network-instances/network-instance/default-vrf/vlans/vlan=102/config

Request body:
{
            "icx-openconfig-vlan-aug:dhcpsnoop_container": {
                "dhcpsnoop": true
            }
}
Response body: None
```

PATCH method for DHCP Snoop on multi VLAN

```
URL: https://<host>/restconf/data/network-instances/network-instance/default-vrf/vlans

{
    "openconfig-network-instance:vlans": {
        "vlan": [
            {
                "vlan-id": 11,
                "config": {
                    "vlan-id": 11,
                    "icx-openconfig-vlan-aug:dhcpsnoop_container": {
                        "dhcpsnoop": true
                    }
                }
            },
            {
                "vlan-id": 1,
                "config": {
                    "vlan-id": 1,
                     "icx-openconfig-vlan-aug:dhcpsnoop_container": {
                        "dhcpsnoop": true
                    }
                }
            }
        ]
    }
}
```

DELETE

```
URL: https://<host>/restconf/data/network-instances/network-instance/default-vrf/vlans/vlan=100/config/
dhcpsnoop_container

Request body: None
Response body: None
```

The following HTTP operations are supported for DHCP snooping trust.

GET method

```
URL: https://<host>restconf/data/openconfig-interfaces:interfaces/interface=ethernet%201%2F1%2F1/config/
dhcpsnoop_trust_container

Request body: None
Response body:{
    "icx-openconfig-if-dhcp-snoop-aug:dhcpsnoop_trust_container": {
        "dhcpsnoop_trust": true
    }
}
```

PUT method

```
URL: https://<host>/restconf/data/openconfig-interfaces:interfaces/interface=ethernet%201%2F1%2F1/config/
dhcpsnoop_trust_container

Request body:{
    "icx-openconfig-if-dhcp-snoop-aug:dhcpsnoop_trust_container": {
        "dhcpsnoop_trust": false
    }
}

Response body: None
```

PATCH method

```
URL: https://<host>/restconf/data/openconfig-interfaces:interfaces/interface=ethernet%201%2F1%2F1/config/
dhcpsnoop_trust_container

Request body: {
    "icx-openconfig-if-dhcp-snoop-aug:dhcpsnoop_trust_container": {
        "dhcpsnoop_trust": true
    }
}
Response body: None
```

POST method

```
URL: https://<host>/restconf/data/openconfig-interfaces:interfaces/interface=ethernet%201%2F1%2F2/config

Request body: {
    "icx-openconfig-if-dhcp-snoop-aug:dhcpsnoop_trust_container": {
        "dhcpsnoop_trust": true
    }
}
Response body: None
```

PATCH method for DHCP Snoop for multiple physical interfaces

```
https://<host>/restconf/data/openconfig-interfaces:interfaces

{
    "openconfig-interfaces:interfaces": {
        "interface": [
            {
                "name": "ethernet 1/1/1",
                "config": {
                    "name": "ethernet 1/1/1",
                                        "icx-openconfig-if-dhcp-snoop-aug:dhcpsnoop_trust_container": {
                                            "dhcpsnoop_trust": true
                    }
                                }
            },
            {
                "name": "ethernet 1/1/2",
                "config": {
                    "name": "ethernet 1/1/2",
                    "icx-openconfig-if-dhcp-snoop-aug:dhcpsnoop_trust_container": {
"dhcpsnoop_trust": true
                                        }
                }
            },
            {
                "name": "ethernet 1/1/3",
                "config": {
                    "name": "ethernet 1/1/3",
                    "icx-openconfig-if-dhcp-snoop-aug:dhcpsnoop_trust_container": {
                                            "dhcpsnoop_trust": true

                                        }
                }
            }
        ]
    }
}
```

PATCH method for DHCP Snoop trust for multiple LAG interfaces

```
URL: https://<host>/restconf/data/openconfig-interfaces:interfaces

{
    "openconfig-interfaces:interfaces": {
        "interface": [
            {
                "name": "lag 1",
```

```
                "config": {
                    "name": "lag 1",
                    "icx-openconfig-if-dhcp-snoop-aug:dhcpsnoop_trust_container": {
                        "dhcpsnoop_trust": true
                    }
                }
            },
            {
                "name": "lag 2",
                "config": {
                    "name": "lag 2",
                    "icx-openconfig-if-dhcp-snoop-aug:dhcpsnoop_trust_container": {
                        "dhcpsnoop_trust": true
                    }
                }
            }
        ]
    }
}
```

DELETE

```
URL: https://<host>/restconf/data/openconfig-interfaces:interfaces/interface=ethernet%201%2F1%2F1/config/
dhcpsnoop_trust_container

Request body: None
Response body: None
```

ARP Inspection

Supported HTTP Operations

The following HTTP operations are supported for the **ip arp inspection vlan** command.

GET method

```
URL: https://<host>/restconf/data/network-instances/network-instance/default-vrf/vlans/vlan=610/config/
dai_container

Request body: None
Response body:{
    "icx-openconfig-vlan-aug:dai_container": {
        "dai": true
    }
}
```

PUT method

```
URL: https://<host>/restconf/data/network-instances/network-instance/default-vrf/vlans/vlan=101/config/
dai_container

Request body:
 {
    "icx-openconfig-vlan-aug:dai_container": {
        "dai" : true
    }
}
Response body: None
```

PATCH method

```
URL: https://<host>/restconf/data/network-instances/network-instance/default-vrf/vlans/vlan=101/config/
dai_container

Request body:
{
    "icx-openconfig-vlan-aug:dai_container": {
        "dai" : true
```

```
    }
}
Response body: None
```

POST method

```
URL: https://<host>/restconf/data/network-instances/network-instance/default-vrf/vlans/vlan=102/config

Request body:
{
    "icx-openconfig-vlan-aug:dai_container": {
        "dai" : true
    }
}
Response body: None
```

PATCH method for DAI on multi VLAN

```
URL: https://<host>/restconf/data/network-instances/network-instance/default-vrf/vlans

{
    "openconfig-network-instance:vlans": {
        "vlan": [
            {
                "vlan-id": 11,
                "config": {
                    "vlan-id": 11,
                     "icx-openconfig-vlan-aug:dai_container": {
                        "dai" : true
                    }
                }
            },
            {
                "vlan-id": 1,
                "config": {
                    "vlan-id": 1,
                     "icx-openconfig-vlan-aug:dai_container": {
                        "dai" : true
                    }
                }
            }
        ]
    }
}
```

DELETE

```
URL: https://<host>/restconf/data/network-instances/network-instance/default-vrf/vlans/vlan=610/config/
dai_container

Request body: None
Response body: None
```

The following HTTP operations are supported for ARP inspection trust.

GET method

```
URL: https://<host>/restconf/data/openconfig-interfaces:interfaces/interface=ethernet%201%2F1%2F3/config/
dai_trust_container

Request body: None
Response body:{
        "icx-openconfig-if-dai-aug:dai_trust_container": {
        "dai_trust": true
    }
}
```

PUT method

```
URL: https://<host>/restconf/data/openconfig-interfaces:interfaces/interface=ethernet%201%2F1%2F1/config/
dai_trust_container

Request body:{
            "icx-openconfig-if-dai-aug:dai_trust_container": {
                "dai_trust": false
            }
}

Response body: None
```

PATCH method

```
URL: https://<host>/restconf/data/openconfig-interfaces:interfaces/interface=ethernet%201%2F1%2F2/config/
dai_trust_container

Request body: {
            "icx-openconfig-if-dai-aug:dai_trust_container": {
                "dai_trust": true
            }
}
Response body: None
```

POST method

```
URL: https://<host>/restconf/data/openconfig-interfaces:interfaces/interface=ethernet%201%2F1%2F3/config

Request body: {
            "icx-openconfig-if-dai-aug:dai_trust_container": {
                "dai_trust": true
            }
}
Response body: None
```

PATCH method for DAI Trust for multiple physical interfaces

```
URL: https://<host>/restconf/data/openconfig-interfaces:interfaces

{
    "openconfig-interfaces:interfaces": {
        "interface": [
            {
                "name": "ethernet 1/1/1",
                "config": {
                    "name": "ethernet 1/1/1",
                                  "icx-openconfig-if-dai-aug:dai_trust_container": {
                                    "dai_trust": true
                                }
                }
            },
            {
                "name": "ethernet 1/1/2",
                "config": {
                    "name": "ethernet 1/1/2",
                                  "icx-openconfig-if-dai-aug:dai_trust_container": {
                                    "dai_trust": true
}
                }
            },
            {
                "name": "ethernet 1/1/3",
                "config": {
                    "name": "ethernet 1/1/3",
                                  "icx-openconfig-if-dai-aug:dai_trust_container": {
                                    "dai_trust": true
                                }
                }
            }
        ]
```

```
        }
    }
```

PATCH method for DAI Trust for multiple LAG interfaces

```
    URL: https://<host>/restconf/data/openconfig-interfaces:interfaces

    {
        "openconfig-interfaces:interfaces": {
            "interface": [
                {
                    "name": "lag 1",
                    "config": {
                        "name": "lag 1",
                        "icx-openconfig-if-dai-aug:dai_trust_container": {
                            "dai_trust": true
                        }
                    }
                },
                {
                    "name": "lag 2",
                    "config": {
                        "name": "lag 2",
                        "icx-openconfig-if-dai-aug:dai_trust_container": {
                            "dai_trust": true
                        }
                    }
                }
            ]
        }
    }
```

DELETE

```
    URL: https://<host>/restconf/data/openconfig-interfaces:interfaces/interface=ethernet%201%2F1%2F3/config/
    dai_trust_container

    Request body: None
    Response body: None
```

DHCPv6 Snooping

Supported HTTP Operations

The following HTTP operations are supported for the **ipv6 dhcp6 snooping vlan** command.

GET method

```
    URL: https://<host>/restconf/data/network-instances/network-instance/default-vrf/vlans/vlan=610/config/
    dhcp6_snoop_container

    Request body: None
    Response body:{
        "icx-openconfig-vlan-aug:dhcp6_snoop_container": {
            "dhcp6_snoop": true
        }
    }
```

PUT method

```
    URL: https://<host>/restconf/data/network-instances/network-instance/default-vrf/vlans/vlan=102/config/
    dhcp6_snoop_container

    Request body:
     {
                "icx-openconfig-vlan-aug:dhcp6_snoop_container": {
                    "dhcp6_snoop": false
                }
```

```
  }
Response body: None
```

PATCH method

```
URL: https://<host>/restconf/data/network-instances/network-instance/default-vrf/vlans/vlan=102/config/
dhcp6_snoop_container

Request body:
 {
            "icx-openconfig-vlan-aug:dhcp6_snoop_container": {
                "dhcp6_snoop": true
            }
  }
Response body: None
```

POST method

```
URL: https://<host>/restconf/data/network-instances/network-instance/default-vrf/vlans/vlan=101/config

Request body:
 {
            "icx-openconfig-vlan-aug:dhcp6_snoop_container": {
                "dhcp6_snoop": true
            }
  }
Response body: None
```

PATCH method for DHCPv6 Snoop on multi VLAN

```
URL: https://<host>/restconf/data/network-instances/network-instance/default-vrf/vlans

{
    "openconfig-network-instance:vlans": {
        "vlan": [
            {
                "vlan-id": 11,
                "config": {
                    "vlan-id": 11,
                    "icx-openconfig-vlan-aug:dhcp6_snoop_container": {
                        "dhcp6_snoop": true
                    }
                }
            },
            {
                "vlan-id": 1,
                "config": {
                    "vlan-id": 1,
                    "icx-openconfig-vlan-aug:dhcp6_snoop_container": {
                        "dhcp6_snoop": true
                    }
                }
            }
        ]
    }
}
```

DELETE

```
URL: https://<host>/restconf/data/network-instances/network-instance/default-vrf/vlans/vlan=610/config/
dhcp6_snoop_container

Request body: None
Response body: None
```

The following HTTP operations are supported for DHCPv6 snooping trust.

GET method

```
URL: https://<host>/restconf/data/openconfig-interfaces:interfaces/interface=ethernet%201%2F1%2F4/config/
dhcp6_snoop_trust_container

Request body: None
Response body:{
    "icx-openconfig-if-dhcp-snoop-aug:dhcp6_snoop_trust_container": {
        "dhcp6_snoop_trust": true
    }
}
```

PUT method

```
URL: https://<host>/restconf/data/openconfig-interfaces:interfaces/interface=ethernet%201%2F1%2F1/config/
dhcp6_snoop_trust_container

Request body:{
    "icx-openconfig-if-dhcp-snoop-aug:dhcp6_snoop_trust_container": {
        "dhcp6_snoop_trust": true
    }
}
Response body: None
```

PATCH method

```
URL: https://<host>/restconf/data/openconfig-interfaces:interfaces/interface=ethernet%201%2F1%2F2/config/
dhcp6_snoop_trust_container

Request body: {
    "icx-openconfig-if-dhcp-snoop-aug:dhcp6_snoop_trust_container": {
        "dhcp6_snoop_trust": true
    }
}
Response body: None
```

POST method

```
URL: https://<host>/restconf/data/openconfig-interfaces:interfaces/interface=ethernet%201%2F1%2F4/config

Request body: {
    "icx-openconfig-if-dhcp-snoop-aug:dhcp6_snoop_trust_container": {
        "dhcp6_snoop_trust": true
    }
}
Response body: None
```

PATCH method for DHCP Snoop for multiple physical interfaces

```
URL: https://<host>/restconf/data/openconfig-interfaces:interfaces

{
    "openconfig-interfaces:interfaces": {
        "interface": [
            {
                "name": "ethernet 1/1/1",
                "config": {
                    "name": "ethernet 1/1/1",
                                    "icx-openconfig-if-dhcp-snoop-aug:dhcp6_snoop_trust_container": {
                                        "dhcp6_snoop_trust": true
                                        }
                }
            },
            {
                "name": "ethernet 1/1/2",
                "config": {
                    "name": "ethernet 1/1/2",
                    "icx-openconfig-if-dhcp-snoop-aug:dhcp6_snoop_trust_container": {
                                        "dhcp6_snoop_trust": true
  }
```

```
                }
            },
            {
                "name": "ethernet 1/1/3",
                "config": {
                    "name": "ethernet 1/1/3",
                    "icx-openconfig-if-dhcp-snoop-aug:dhcp6_snoop_trust_container": {
                                        "dhcp6_snoop_trust": true
                                }
                }
            }
        ]
    }
}
```

PATCH method for DHCPv6 Snoop trust for multiple LAG interfaces

```
URL: https://<host>/restconf/data/openconfig-interfaces:interfaces

{
    "openconfig-interfaces:interfaces": {
        "interface": [
            {
                "name": "lag 1",
                "config": {
                    "name": "lag 1",
                   "icx-openconfig-if-dhcp-snoop-aug:dhcp6_snoop_trust_container": {
                        "dhcp6_snoop_trust": true
                    }
                }
            },
            {
                "name": "lag 2",
                "config": {
                    "name": "lag 2",
                    "icx-openconfig-if-dhcp-snoop-aug:dhcp6_snoop_trust_container": {
                        "dhcp6_snoop_trust": true
                    }
                }
            }
        ]
    }
}
```

DELETE

```
URL: https://<host>/restconf/data/openconfig-interfaces:interfaces/interface=ethernet%201%2F1%2F4/config/
dhcp6_snoop_trust_container

Request body: None
Response body: None
```

IPv6 Neighbor Inspection

Supported HTTP Operations

The following HTTP operations are supported for the **ipv6 neighbor inspection vlan** command.

GET method

```
https://<host>/restconf/data/openconfig-interfaces:interfaces/interface=ethernet%201%2F1%2F3/config/
ipv6_neighbor_inspection_container

Request body: None
Response body:{
    "icx-openconfig-vlan-aug:ipv6_neighbor_inspection_container": {
        "ipv6_neighbor_inspection": true
```

```
    }
}
```

PUT method

```
URL: https://<host>/restconf/data/network-instances/network-instance/default-vrf/vlans/vlan=102/config/
ipv6_neighbor_inspection_container

Request body:
      {
            "icx-openconfig-vlan-aug:ipv6_neighbor_inspection_container": {
                "ipv6_neighbor_inspection": false
            }
  }
Response body: None
```

PATCH method

```
URL: https://<host>/restconf/data/network-instances/network-instance/default-vrf/vlans/vlan=102/config/
ipv6_neighbor_inspection_container

Request body:
 {
            "icx-openconfig-vlan-aug:ipv6_neighbor_inspection_container": {
                "ipv6_neighbor_inspection": true
            }
  }
Response body: None
```

POST method

```
URL: https://<host>/restconf/data/network-instances/network-instance/default-vrf/vlans/vlan=102/config

Request body:
   {
            "icx-openconfig-vlan-aug:ipv6_neighbor_inspection_container": {
                "ipv6_neighbor_inspection": true
            }
  }
Response body: None
```

PATCH method for NDI on multi VLAN

```
URL: https://<host>/restconf/data/network-instances/network-instance/default-vrf/vlans

{
    "openconfig-network-instance:vlans": {
        "vlan": [
            {
                "vlan-id": 11,
                "config": {
                    "vlan-id": 11,
                     "icx-openconfig-vlan-aug:ipv6_neighbor_inspection_container": {
                         "ipv6_neighbor_inspection": true
                    }
                }
            },
            {
                "vlan-id": 1,
                "config": {
                    "vlan-id": 1,
                     "icx-openconfig-vlan-aug:ipv6_neighbor_inspection_container": {
                         "ipv6_neighbor_inspection": true
                    }
                }
            }
        ]
    }
}
```

DELETE

```
URL: https://<host>/restconf/data/network-instances/network-instance/default-vrf/vlans/vlan=102/config/
ipv6_neighbor_inspection_container

Request body: None
Response body: None
```

The following HTTP operations are supported for the **ipv6-neighbor inspection trust** command.

GET method

```
URL: https://<host>/restconf/data/openconfig-interfaces:interfaces/interface=ethernet%201%2F1%2F3/config/
ndi_trust_container

Request body: None
Response body: {
    "icx-openconfig-if-ndi-aug:ndi_trust_container": {
        "ndi_trust": true
    }
}
```

PUT method

```
URL: https://<host>/restconf/data/openconfig-interfaces:interfaces/interface=ethernet%201%2F1%2F3/config/
ndi_trust_container

Request body:{
            "icx-openconfig-if-ndi-aug:ndi_trust_container": {
                "ndi_trust": false
            }
}
Response body: None
```

PATCH method

```
URL: https://<host>/restconf/data/openconfig-interfaces:interfaces/interface=ethernet%201%2F1%2F3/config/
ndi_trust_container

Request body: {
            "icx-openconfig-if-ndi-aug:ndi_trust_container": {
                "ndi_trust": true
            }
}
Response body: None
```

POST method

```
URL: https://<host>/restconf/data/openconfig-interfaces:interfaces/interface=ethernet%201%2F1%2F4/config

Request body:
{
            "icx-openconfig-if-ndi-aug:ndi_trust_container": {
                "ndi_trust": true
            }
}
Response body: None
```

PATCH method for NDI Trust for multiple physical interfaces

```
URL: https://<host>/restconf/data/openconfig-interfaces:interfaces

{
    "openconfig-interfaces:interfaces": {
        "interface": [
            {
                "name": "ethernet 1/1/1",
                "config": {
                    "name": "ethernet 1/1/1",
                                    "icx-openconfig-if-ndi-aug:ndi_trust_container": {
```

```
                                        "ndi_trust": true
                                    }
                }
            },
            {
                "name": "ethernet 1/1/2",
                "config": {
                    "name": "ethernet 1/1/2",
                    "icx-openconfig-if-ndi-aug:ndi_trust_container": {
                                        "ndi_trust": true
                                    }
                }
            },
            {
                "name": "ethernet 1/1/3",
                "config": {
                    "name": "ethernet 1/1/3",
                    "icx-openconfig-if-ndi-aug:ndi_trust_container": {
                                    "ndi_trust": true
 }
                }
            }
        ]
    }
}
```

PATCH method for NDI Trust for multiple LAG interfaces

```
URL: https://<host>/restconf/data/openconfig-interfaces:interfaces

{
    "openconfig-interfaces:interfaces": {
        "interface": [
            {
                "name": "lag 1",
                "config": {
                    "name": "lag 1",
                   "icx-openconfig-if-ndi-aug:ndi_trust_container": {
                        "ndi_trust": true
                    }
                }
            },
            {
                "name": "lag 2",
                "config": {
                    "name": "lag 2",
                    "icx-openconfig-if-ndi-aug:ndi_trust_container": {
                        "ndi_trust": true
                    }
                }
            }
        ]
    }
}
```

DELETE

```
URL: https://<host>/restconf/data/openconfig-interfaces:interfaces/interface=ethernet%201%2F1%2F3/config/
ndi_trust_container

Request body: None
Response body: None
```

Source Guard

Supported HTTP Operations

The following HTTP operations are supported for the **source-guard enable** command at the VLAN level.

GET method

```
URL: https://<host>/restconf/data/network-instances/network-instance/default-vrf/vlans/vlan=610/config/
source_guard_container

Request body: None
Response body:{
    "icx-openconfig-vlan-aug:source_guard_container": {
        "source_guard": true
    }
}
```

PUT method

```
URL: https://<host>/restconf/data/network-instances/network-instance/default-vrf/vlans/vlan=100/config/
source_guard_container

Request body:
 {
            "icx-openconfig-vlan-aug:source_guard_container": {
                "source_guard": false
            }
  }
Response body: None
```

PATCH method

```
URL: https://<host>/restconf/data/network-instances/network-instance/default-vrf/vlans/vlan=100/config/
source_guard_container

Request body:
 {
            "icx-openconfig-vlan-aug:source_guard_container": {
                "source_guard": true
            }
  }
Response body: None
```

POST method

```
URL: https://<host>/restconf/data/network-instances/network-instance/default-vrf/vlans/vlan=100/config

Request body:
 {
            "icx-openconfig-vlan-aug:source_guard_container": {
                "source_guard": true
            }
  }
Response body: None
```

PATCH method for source guard at multi VLAN

```
URL: https://<host>/restconf/data/network-instances/network-instance/default-vrf/vlans

{
    "openconfig-network-instance:vlans": {
        "vlan": [
            {
                "vlan-id": 11,
                "config": {
                    "vlan-id": 11,
                    "icx-openconfig-vlan-aug:source_guard_container": {
                        "source_guard": true
                    }
                }
            },
            {
                "vlan-id": 12,
                "config": {
                    "vlan-id": 12,
```

```
                    "icx-openconfig-vlan-aug:source_guard_container": {
                       "source_guard": true
                    }
                }
            }
        ]
    }
}
```

DELETE

```
URL: https://<host>/restconf/data/network-instances/network-instance/default-vrf/vlans/vlan=610/config/
source_guard_container

Request body: None
Response body: None
```

The following HTTP operations are supported for the **source-guard enable** command at the interface level.

GET method

```
URL: https://<host>/restconf/data/openconfig-interfaces:interfaces/interface=ethernet%201%2F1%2F40/config/
source_guard_container

Request body: None
Response body: {
            "icx-openconfig-if-source-guard-aug:source_guard_container": {
                "source_guard_enable": true
            }
}
```

PUT method

```
URL: https://<host>/restconf/data/openconfig-interfaces:interfaces/interface=ethernet%201%2F1%2F2/config/
source_guard_container

Request body: {
            "icx-openconfig-if-source-guard-aug:source_guard_container": {
                "source_guard_enable": true
            }
}
Response body: None
```

PATCH method

```
URL: https://<host>/restconf/data/openconfig-interfaces:interfaces/interface=ethernet%201%2F1%2F2/config/
source_guard_container

Request body: {
            "icx-openconfig-if-source-guard-aug:source_guard_container": {
                "source_guard_enable": true
            }
}
Response body: None
```

POST method

```
URL: https://<host>/restconf/data/openconfig-interfaces:interfaces/interface=ethernet%201%2F1%2F5/config

Request body: {
            "icx-openconfig-if-source-guard-aug:source_guard_container": {
                "source_guard_enable": true
            }
}
Response body: None
```

PATCH method for source guard enable for multiple physical interfaces

```
URL: https://<host>/restconf/data/openconfig-interfaces:interfaces

{
    "openconfig-interfaces:interfaces": {
        "interface": [
            {
                "name": "ethernet 1/1/1",
                "config": {
                    "name": "ethernet 1/1/1",
                                    "icx-openconfig-if-source-guard-aug:source_guard_container": {
                                        "source_guard_enable": true
                                    }
                }
            },
            {
                "name": "ethernet 1/1/2",
                "config": {
                    "name": "ethernet 1/1/2",
                                    "icx-openconfig-if-source-guard-aug:source_guard_container": {
                                        "source_guard_enable": true
                                    }
                }
            },
            {
                "name": "ethernet 1/1/3",
                "config": {
                    "name": "ethernet 1/1/3",
                                    "icx-openconfig-if-source-guard-aug:source_guard_container": {
                                        "source_guard_enable": true
                                  }
                }
            }
        ]
    }
}
```

PATCH method for source guard enable for multiple LAG interfaces

```
URL: https://<host>/restconf/data/openconfig-interfaces:interfaces

{
    "openconfig-interfaces:interfaces": {
        "interface": [
            {
                "name": "lag 1",
                "config": {
                    "name": "lag 1",
                    "icx-openconfig-if-source-guard-aug:source_guard_container": {
                        "source_guard_enable": true
                    }
                }
            },
            {
                "name": "lag 2",
                "config": {
                    "name": "lag 2",
                     "icx-openconfig-if-source-guard-aug:source_guard_container": {
                        "source_guard_enable": true
                    }
                }
            }
        ]
    }
}
```

DELETE

```
URL: https://<host>/restconf/data/openconfig-interfaces:interfaces/interface=ethernet%201%2F1%2F40/config/
source_guard_container

Request body: None
Response body: None
```

IPv6 Source Guard

The following HTTP operations are supported for the **ipv6 source-guard enable** command at the VLAN level.

GET method

```
URL: https://<host>/restconf/data/network-instances/network-instance/default-vrf/vlans/vlan=102/config/
ipv6_source_guard_container

Request body: None
Response body: {
    "icx-openconfig-vlan-aug:ipv6_source_guard_container": {
        "ipv6_source_guard": true
    }
}
```

PUT method

```
URL: https://<host>/restconf/data/network-instances/network-instance/default-vrf/vlans/vlan=102/config/
ipv6_source_guard_container

Request body:
  {
            "icx-openconfig-vlan-aug:ipv6_source_guard_container": {
                "ipv6_source_guard": true
            }
  }
Response body: None
```

PATCH method

```
URL: https://<host>/restconf/data/network-instances/network-instance/default-vrf/vlans/vlan=102/config/
ipv6_source_guard_container

Request body:
 {
            "icx-openconfig-vlan-aug:ipv6_source_guard_container": {
                "ipv6_source_guard": true
            }
  }
Response body: None
```

POST method

```
URL: https://<host>/restconf/data/network-instances/network-instance/default-vrf/vlans/vlan=102/config

Request body:
 {
            "icx-openconfig-vlan-aug:ipv6_source_guard_container": {
                "ipv6_source_guard": true
            }
  }
Response body: None
```

PATCH method for IPv6 source guard at multi VLAN

```
URL: https://<host>/restconf/data/network-instances/network-instance/default-vrf/vlans

{
    "openconfig-network-instance:vlans": {
        "vlan": [
```

```
            {
                "vlan-id": 11,
                "config": {
                    "vlan-id": 11,
                    "icx-openconfig-vlan-aug:ipv6_source_guard_container": {
                        "ipv6_source_guard": true
                    }
                }
            },
            {
                "vlan-id": 12,
                "config": {
                    "vlan-id": 12,
                      "icx-openconfig-vlan-aug:ipv6_source_guard_container": {
                        "ipv6_source_guard": true
                    }
                }
            }
        ]
    }
}
```

DELETE

```
URL: https://<host>/restconf/data/network-instances/network-instance/default-vrf/vlans/vlan=610/config/
ipv6_source_guard_container

Request body: None
Response body: None
```

The following HTTP operations are supported for the **ipv6 source-guard enable** command at the interface level.

GET method

```
URL: https://<host>/restconf/data/openconfig-interfaces:interfaces/interface=ethernet%201%2F1%2F39/config/
ipv6_source_guard_container

Request body: None
Response body: {
    "icx-openconfig-if-source-guard-aug:ipv6_source_guard_container": {
        "ipv6_source_guard_enable": true
    }
}
```

PUT method

```
URL: https://<host>/restconf/data/openconfig-interfaces:interfaces/interface=ethernet%201%2F1%2F40/config/
ipv6_source_guard_container

Request body: {
            "icx-openconfig-if-source-guard-aug:ipv6_source_guard_container": {
                "ipv6_source_guard_enable": true
            }
}
Response body: None
```

PATCH method

```
URL: https://<host>/restconf/data/openconfig-interfaces:interfaces/interface=ethernet%201%2F1%2F40/config/
ipv6_source_guard_container

Request body: {
            "icx-openconfig-if-source-guard-aug:ipv6_source_guard_container": {
                "ipv6_source_guard_enable": true
            }
}
Response body: None
```

POST method

```
URL: https://<host>/restconf/data/openconfig-interfaces:interfaces/interface=ethernet%201%2F1%2F39/config

Request body: {
            "icx-openconfig-if-source-guard-aug:ipv6_source_guard_container": {
                "ipv6_source_guard_enable": true
            }
}
Response body: None
```

PATCH method for IPv6 source guard enable for multiple physical interfaces

```
URL: https://<host>/restconf/data/openconfig-interfaces:interfaces

{
    "openconfig-interfaces:interfaces": {
        "interface": [
            {
                "name": "ethernet 1/1/1",
                "config": {
                    "name": "ethernet 1/1/1",
                                    "icx-openconfig-if-source-guard-aug:ipv6_source_guard_container": {
                                        "ipv6_source_guard_enable": true
                                    }
                }
            },
            {
                "name": "ethernet 1/1/2",
                "config": {
                    "name": "ethernet 1/1/2",
                                    "icx-openconfig-if-source-guard-aug:ipv6_source_guard_container": {
                                        "ipv6_source_guard_enable": true
                                    }
                }
            },
            {
                "name": "ethernet 1/1/3",
                "config": {
                    "name": "ethernet 1/1/3",
                                    "icx-openconfig-if-source-guard-aug:ipv6_source_guard_container": {
                                        "ipv6_source_guard_enable": true
                                    }
                                }
            }
        ]
    }
}
```

PATCH method for IPv6 source guard enable for multiple LAG interfaces

```
URL: https://<host>/restconf/data/openconfig-interfaces:interfaces

{
    "openconfig-interfaces:interfaces": {
        "interface": [
            {
                "name": "lag 1",
                "config": {
                    "name": "lag 1",
                    "icx-openconfig-if-source-guard-aug:ipv6_source_guard_container": {
                        "ipv6_source_guard_enable": true
                    }
                }
            },
            {
                "name": "lag 2",
                "config": {
                    "name": "lag 2",
                     "icx-openconfig-if-source-guard-aug:ipv6_source_guard_container": {
                        "ipv6_source_guard_enable": true
```

```
                    }
                }
            }
        ]
    }
}
```

DELETE

```
URL: https://<host>/restconf/data/openconfig-interfaces:interfaces/interface=ethernet%201%2F1%2F39/config/
ipv6_source_guard_container

Request body: None
Response body: None
```

IPSG and IPv6 Source Guard Selective Port

Supported HTTP Operations

The following HTTP operations are supported for IP source guard at selective ports in a VLAN.

GET method

```
URL: https://<host>/restconf/data/network-instances/network-instance/default-vrf/vlans/vlan=100/config/
source_guard_selective_ports

Request body: None
Response body: {
    "icx-openconfig-vlan-aug:source_guard_selective_ports": {
        "interfaces": [
            {
                "name": "ethernet 1/1/2"
            },
            {
                "name": "ethernet 1/1/3"
            },
            {
                "name": "ethernet 1/1/4"
            }
        ]
    }
}
```

PUT method (IPv4SG selective port replaces the existing configuration with new configuration at VLAN level)

```
URL: https://<host>/restconf/data/network-instances/network-instance/default-vrf/vlans/vlan=101/config/
source_guard_selective_ports

Request body:
 {
            "icx-openconfig-vlan-aug:source_guard_selective_ports": {
               "interfaces":[
                   {
                   "name" : "ethernet 1/1/48"
                   }
               ]
            }
}
Response body: None
```

PATCH method (IPv4SG selective port add the new configuration to existing configuration at VLAN level)

```
URL: https://<host>/restconf/data/network-instances/network-instance/default-vrf/vlans/vlan=101/config/
source_guard_selective_ports/interfaces

Request body:
 {
                "interfaces":[
```

```
                    {
                        "name": "ethernet 1/1/5"

                    },
                    {
                         "name": "ethernet 1/1/6"
                    },
                    {
                         "name": "ethernet 1/1/7"
                    }
                ]
 }
Response body: None
```

POST method

```
URL: https://<host>/restconf/data/network-instances/network-instance/default-vrf/vlans/vlan=100/config

Request body:
 {
            "icx-openconfig-vlan-aug:source_guard_selective_ports": {
               "interfaces":[
                    {
                    "name" : "ethernet 1/1/48"
                    }
               ]
            }
}
Response body: None
```

DELETE method

To delete from all interfaces:

```
URL: https://<host>/restconf/data/network-instances/network-instance/default-vrf/vlans/vlan=100/config/
source_guard_selective_ports

Request body: None
Response body: None
```

To delete from one interface:

```
URL: https://<host>/restconf/data/network-instances/network-instance/default-vrf/vlans/vlan=100/config/
source_guard_selective_ports

Request body: {
               "interfaces":[
                    {
                    "name" : "ethernet 1/1/48"
                    }
               ]
}
Response body: None
```

The following HTTP operations are supported for IPSGv6 at selective ports of a VLAN.

GET method

```
URL: https://<host>/restconf/data/network-instances/network-instance/default-vrf/vlans/vlan=100/config/
ipv6_source_guard_selective_ports

Request body: None
Response body: {
    "icx-openconfig-vlan-aug:ipv6_source_guard_selective_ports": {
        "interfaces": [
            {
                "name": "ethernet 1/1/2"
            },
            {
                "name": "ethernet 1/1/45"
            }
```

```
        ]
    }
}
```

PUT method (IPv6SG selective port replaces the existing configuration with new configuration at VLAN level)

```
URL: https://<host>/restconf/data/network-instances/network-instance/default-vrf/vlans/vlan=101/config/
ipv6_source_guard_selective_ports

Request body: {
            "icx-openconfig-vlan-aug:ipv6_source_guard_selective_ports": {
                "interfaces": [
                    {
                        "name": "ethernet 1/1/1"},
                    {
                         "name": "ethernet 1/1/2"
                    },
                    {
                         "name":"ethernet 1/1/45"
                    }
                ]
         }
  }
Response body: None
```

PATCH method (IPv6SG selective port add the new configuration to existing configuration at VLAN level)

```
URL: https://<host>/restconf/data/network-instances/network-instance/default-vrf/vlans/vlan=101/config/
ipv6_source_guard_selective_ports

Request body: {
            "icx-openconfig-vlan-aug:ipv6_source_guard_selective_ports": {
                "interfaces": [
                    {
                        "name": "ethernet 1/1/5"},
                    {
                         "name": "ethernet 1/1/6"
                    },
                    {
                         "name":"ethernet 1/1/7"
                    }
                ]
         }
  }
Response body: None
```

POST method

```
URL: https://<host>/restconf/data/network-instances/network-instance/default-vrf/vlans/vlan=100/config

Request body: {

    "icx-openconfig-vlan-aug:ipv6_source_guard_selective_ports": {
        "interfaces": [
            {
                "name": "ethernet 2/1/17"
            }
        ]
    }
}

Response body: None
```

DELETE method

To delete from all interfaces:

```
URL: https://<host>/restconf/data/network-instances/network-instance/default-vrf/vlans/vlan=100/config/
ipv6_source_guard_selective_ports

Request body: None
Response body: None
```

To delete a particular interface.

```
URL: https://<host>/restconf/data/network-instances/network-instance/default-vrf/vlans/vlan=100/config/
ipv6_source_guard_selective_ports

Request body: {
                            "interfaces": [
                    {
                        "name": "ethernet 1/1/1"
                    }
                ]
  }
Response body: None
```

IPv6 Address on Interfaces

Configures, modifies, and retrieves IPv6 address configurations. The URI to configure data for IPv6 address is:

```
openconfig-interfaces:interfaces/interface/ve%20100/routed-vlan/ipv6/addresses
```

Supported HTTP Operations

GET method

```
URL: https://<host>/restconf/data/openconfig-interfaces:interfaces/interface/ve%20100/routed-vlan/ipv6/
addresses

Request body: None
Response body: {
   "openconfig-if-ip:addresses" : {
      "address" : [
         {
            "ip" : "930::100",
            "vrrp" : {},
            "config" : {
               "ip" : "930::100",
               "prefix-length" : 64
            },
            "state" : {}
         }
      ]
   }
}
```

PUT method

```
URL: https://<host>/restconf/data/openconfig-interfaces:interfaces/interface/ve%20100/routed-vlan/ipv6

Request body:
 {
    "openconfig-if-ip:ipv6" : {
        "addresses" : {
        "address" : [
        {
            "ip" : "930::100",
                "config" : {
                    "ip" : "930::100",
                    "prefix-length" : 64
                }
        }
```

```
        ]
    }
}
}
Response body: Router(config-vif-100)#sh running interface ve 100
interface ve 100
 ip address 1.2.3.4 255.255.255.0
 ipv6 address 930::100/64
!
```

PATCH method

```
URL: https://<host>/restconf/data/openconfig-interfaces:interfaces/interface/ve%20100/routed-vlan/ipv6

Request body:
 {
    "openconfig-if-ip:ipv6" : {
        "addresses" : {
        "address" : [
        {
            "ip" : "930::100",
                "config" : {
                    "ip" : "930::100",
                    "prefix-length" : 64
                }
        }
        ]
    }
}
Response body: Configure ipv6 address on ve interface.

Router(config)#sh running interface ve 100
interface ve 100
 ip address 1.2.3.4 255.255.255.0
 ipv6 address 930::100/64
 ipv6 address 100::100/64
 ipv6 address 830::100/64
!
```

POST

```
URL: https://<host>/restconf/data/openconfig-interfaces:interfaces/interface/ve%20100/routed-vlan/ipv6/
addresses

Request body: {
        "address" : [
        {
            "ip" : "830::100",
                "config" : {
                    "ip" : "830::100",
                    "prefix-length" : 64
                }
        }
        ]
}
Response body: Router(config-vif-100)#sh running interface ve 100
interface ve 100
 ip address 1.2.3.4 255.255.255.0
 ipv6 address 830::100/64
 ipv6 address 930::100/64
 ipv6 address 100::100/64
!
```

DELETE

```
URL: https://<host>/restconf/data/openconfig-interfaces:interfaces/interface/ve%20100/routed-vlan/ipv6/
addresses/address/930::100

Request body: None
Response body: Unconfigure ipv6 address from ve interface
```

IPv6 Address on Management Port for Router Image

Configures, modifies, and retrieves IPv6 address configurations. The URI to configure data for an IPv6 address on management port is:

```
/restconf/data/interfaces/interface/management%201/subinterfaces/subinterface/0/ipv6
```

Supported HTTP Operations

GET method

```
/interfaces/interface/management%201/subinterfaces/subinterface/0/ipv6/addresses

Request body: None
Response body:
{
   "openconfig-if-ip:address" : [
      {
         "ip" : "990::67",
         "vrrp" : {},
         "config" : {
            "ip" : "990::67",
            "prefix-length" : 63
         },
         "state" : {}
      }
   ]
}
```

PUT method

```
/interfaces/interface/management%201/subinterfaces/subinterface/0/ipv6/addresses/address/990::67

Request body:
 {
    "openconfig-if-ip:address": [
        {
            "ip": "990::67",
            "config": {
                "ip": "990::67",
                "prefix-length": 63
            }
        }
    ]
}
Response body: None
```

POST method

```
/interfaces/interface/management%201/subinterfaces/subinterface/0/ipv6/addresses

Request body:
 {
        "openconfig-if-ip:address": [
            {
                "ip": "2620:107:90d0:ab17:ffff::252",
                "config": {
                    "ip": "2620:107:90d0:ab17:ffff::252",
                    "prefix-length": 64
                }
            }
        ]
}
Response body: None
```

PATCH method

```
/interfaces/interface/management%201/subinterfaces

Request body:
  {
    "openconfig-interfaces:subinterfaces": {
        "subinterface": [
        {
            "index": 0,
                "config": {
                    "index": 0
                },
                "openconfig-if-ip:ipv6": {
                    "addresses": {
                        "address": [
                        {
                            "ip": "2620:107:90d0:ab17:ffff::242",
                            "config": {
                                "ip": "2620:107:90d0:ab17:ffff::242",
                                "prefix-length": 64
                            }
                        }
                        ]
                    }
                }
        }
        ]
    }
}
Response body: None
```

DELETE

```
/interfaces/interface/management%201/subinterfaces/ipv6/addresses/address/991::67

Request body: None
Response body: Deletes IPv6 address
```

IPv6 Address on Management Port for Switch Image

Configures, modifies, and retrieves IPv6 address configurations. The URI to configure data for an IPv6 address on management port globally is:

```
restconf/data/system/config/ipv6
```

Supported HTTP Operations

GET method

```
URL: https://<host>/restconf/data/system/config/ipv6

Request body: None
Response body:
{
   "icx-openconfig-system-aug:ipv6" : {
      "address" : [
         {
            "ip" : "100:100::100",
            "config" : {
               "ip" : "100:100::100",
               "prefix-length" : 64
            },
            "state" : {}
         }
      ]
   }
}
```

PUT method

```
URL: https://<host>/restconf/data/system/config/ipv6

Request body:
 {
   "icx-openconfig-system-aug:ipv6" : {
      "address" : [
      {
         "ip" : "129:129::129",
         "config" : {
            "ip" : "129:129::129",
            "prefix-length" : "64"
         }
      }
   ]
   }
}
Response body: None
```

POST method

```
URL: https://<host>/restconf/data/system/config/ipv6

Request body:
 {
   "address" : [
      {
         "ip" : "999:999::999",
         "config" : {
            "ip" : "999:999::999",
            "prefix-length" : "64"
         }
      }
   ]
}
Response body: None
```

PATCH method

```
URL: https://<host>/restconf/data/system/config/ipv6

Request body:
  {
   "icx-openconfig-system-aug:ipv6" : {
      "address" : [
      {
         "ip" : "129:129::129",
         "config" : {
            "ip" : "129:129::129",
            "prefix-length" : "64"
         }
      }
   ]
   }
}
Response body: None
```

DELETE

```
URL: https://<host>/restconf/data/system/config/ipv6

Request body: None
Response body: Unconfigure IPv6 address
```

Default-Gateway Address on Managment VLAN for Switch Image

Configures, modifies, and retrieves default-gateway address on management VLAN. The URI to configure data for default-gateway is:

```
restconf/data/network-instances/network-instance/default-vrf/vlans/vlan/300/config/
management_vlan_default_gateway_container/addres
```

Supported HTTP operations

POST method

```
URL: https://<host>/restconf/data/network-instances/network-instance/default-vrf/vlans/vlan/300/config/
management_vlan_default_gateway_container

Request body: {
     "icx-openconfig-vlan-aug:address" : [
      {
         "default_gateway" : "xx.xx.xx.xx",
         "config" : {
            "default_gateway" : "xx.xx.xx.xx",
            "metric" : 2
         }
      }
    ]
}
Response body: None
```

PUT method

```
URL: https://<host>/restconf/data/network-instances/network-instance/default-vrf/vlans/vlan/300/config/
management_vlan_default_gateway_container/address/10.177.115.129

Request body: {
   "icx-openconfig-vlan-aug:address" : [
      {
         "default_gateway" : "xx.xx.xx.xx",
         "config" : {
            "default_gateway" : "xx.xx.xx.xx",
            "metric" : 2
         }
      }
   ]
}
Response body: None
```

PATCH method

```
URL: https://<host>/restconf/data/network-instances/network-instance/default-vrf/vlans/vlan/300/config/
management_vlan_default_gateway_container

Request body:
 {
   "icx-openconfig-vlan-aug:management_vlan_default_gateway_container" :
   {
          "address": [
          {
              "default_gateway" : "xx.xx.xx.xx",
              "config" : {
                  "default_gateway" : "xx.xx.xx.xx",
                  "metric" : "2"
              }
          }
       ]
    }
}
Response body: None
```

GET method

```
URL: https://<host>/restconf/data/network-instances/network-instance/default-vrf/vlans/vlan/300/config/
management_vlan_default_gateway_container/address

Request body: None
Response body: {
   "icx-openconfig-vlan-aug:address" : [
      {
         "default_gateway" : "xx.xx.xx.xx",
         "config" : {
            "default_gateway" : "xx.xx.xx.xx",
            "metric" : 1
         },
         "state" : {}
      }
   ]
}
```

DELETE

```
URL: https://<host>/restconf/data/network-instances/network-instance/default-vrf/vlans/vlan/300/config/
management_vlan_default_gateway_container/address/10.177.114.129

Request body: None
Response body: Unconfigures default-gateway address on management VLAN 300
```

Hostname

Modifies and retrieves hostname command configuration. The URI to configure data for hostname command is:

```
/system/config/hostname
```

Default Configuration

Hostname has preconfigured value based on the router box type and hardware, such as ICX 7650-48F.

Use the following PATCH method to update hostname configuration:

```
 {
   "openconfig-system:config" : {
      "hostname" : "patch"
   }
}
```

Use the following PUT method to replace hostname configuration:

```
 {
   "openconfig-system:config" : {
      "hostname" : "put"
   }
}
```

Supported HTTP Operations

GET method

```
URL: https://<host>/restconf/data/system/config/hostname

Request body: None
Response body:
{
   "openconfig-system:hostname" : "ICX7650-48F Router"
}
```

PUT method

```
URL: https://<host>/restconf/data/system/config

Request body:
 {
   "openconfig-system:config" : {
      "hostname" : "put"
   }
}
Response body: None
```

PATCH method

```
URL: https://<host>/restconf/data/system/config

Request body:
{
   "openconfig-system:config" : {
      "hostname" : "patch"
   }
}
Response body: None
```

DELETE

```
URL: https://<host>/restconf/data/system/config/hostname

Request body: None
Response body: None
```

Collectd SNMP Configuration

Configures, deletes, and retrieves SNMP configuration for collectd. The URI to configure data for collectd is:

```
/collectd/
```

Use the following POST method to modify collectd SNMP authentication login configuration:

```
https://<host>/restconf/data

 {
  "icx-collectd:collectd": {
    "snmp": {
      "key": "aaaaa-bbbbbb-cccccc-ddddddd",
      "data": [
      {
        "name": "single1",
          "table": false,
          "walktree": false,
          "group-name" : "group-1",
          "group-interval" : 30,
          "oid" : ".1.3.6.1.2.1.1.3.0",
          "oid" : ".1.3.6.1.2.1.1.4.0"
      },
      {
        "name": "table1",
        "table": true,
          "walktree": false,
          "group-name" : "group-2",
          "group-interval" : 60,
          "oid": ".1.3.6.1.2.1.1.3",
          "oid": ".1.3.6.1.4.1.1991.1.1.2.1.49",
          "oid": ".1.3.6.1.4.1.1991.1.1.1.4.1.1.2"
      },
      {
        "name": "tree1",
        "table": false,
          "walktree": true,
```

```
            "group-name" : "group-3",
            "group-interval" : 90,
            "oid": ".1.3.6.1.2.1.2"
        }
        ]
      }
    }
}
```

Supported HTTP Operations

GET method

```
URL: https://<host>/restconf/data/collectd

Request body: None
Response body:
Output-1
{
   "icx-collectd:collectd" : [
      null
   ]
}
Output-2
{
   "icx-collectd:collectd" : {
      "snmp" : {
         "data" : [
            {
               "walktree" : false,
               "oid" : [
                  ".1.3.6.1.2.1.1.3.0",
                  ".1.3.6.1.2.1.1.4.0"
               ],
               "group-name" : "group-1",
               "table" : false,
               "name" : "single1",
               "group-interval" : 30
            },
            {
               "walktree" : false,
               "oid" : [
                  ".1.3.6.1.2.1.1.3",
                  ".1.3.6.1.4.1.1991.1.1.2.1.49",
                  ".1.3.6.1.4.1.1991.1.1.1.4.1.1.2"
               ],
               "group-name" : "group-2",
               "table" : true,
               "name" : "table1",
               "group-interval" : 60
            },
            {
               "walktree" : true,
               "oid" : [
                  ".1.3.6.1.2.1.2"
               ],
               "group-name" : "group-3",
               "table" : false,
               "name" : "tree1",
               "group-interval" : 90
            }
         ],
         "key" : "aaaaa-bbbbbb-cccccc-ddddddd"
      }
   }
}
```

PATCH method

```
URL: https://<host>/restconf/data/collectd

Request body:
{
  "icx-collectd:collectd": {
    "snmp": {
      "key": "aaaaa-bbbbbb-cccccc-ddddddd",
      "data": [
      {
        "name": "single1",
          "table": false,
          "walktree": false,
          "group-name" : "group-1",
          "group-interval" : 30,
          "oid" : ".1.3.6.1.2.1.1.3.0",
          "oid" : ".1.3.6.1.2.1.1.4.0"
      },
      {
        "name": "table1",
        "table": true,
          "walktree": false,
          "group-name" : "group-2",
          "group-interval" : 60,
          "oid": ".1.3.6.1.2.1.1.3",
          "oid": ".1.3.6.1.4.1.1991.1.1.2.1.49",
          "oid": ".1.3.6.1.4.1.1991.1.1.1.4.1.1.2"
      },
      {
        "name": "tree1",
        "table": false,
          "walktree": true,
          "group-name" : "group-3",
          "group-interval" : 90,
          "oid": ".1.3.6.1.2.1.2"
      }
      ]
    }
  }
}

Response body: None
```

DELETE

```
URL: https://<host>/restconf/data/collectd/snmp/data=InterfaceValues1001

Request body: None
Response body: None
```

LAG

Configures, modifies, and retrieves LAG configurations. The URI to configure data for LAG is:

```
restconf/data/interfaces/interface
```

Supported HTTP Operations

POST method

```
URL: https://<host>/restconf/data/interfaces

Request body: {
        "interface": [
            {
                "name": "lag 14",
                "config": {
```

```
                    "name": "lag 14",
                    "type": "iana-if-type:ieee8023adLag",
                    "enabled": true
                },
                "openconfig-if-aggregate:aggregation": {
                    "config": {
                        "lag-type": "STATIC",
                        "openconfig-if-aggregate-aug:lag-name": "green"
                    }
                }
            }
        ]
}
Response body: None
```

The following example create a dynamic(LACP) LAG using POST method.

```
Request body:
{
        "interface": [
            {
                "name": "lag 15",
                "config": {
                    "name": "lag 15",
                    "type": "iana-if-type:ieee8023adLag",
                    "enabled": true
                },
                "openconfig-if-aggregate:aggregation": {
                    "config": {
                        "lag-type": "LACP",
                        "openconfig-if-aggregate-aug:lag-name": "black"
                    }
                }
            }
        ]
}

Response body: Created
```

PATCH method

```
URL: https://<host>/restconf/data/interfaces

Request body:
 {
    "interfaces": {
        "interface": [
            {
                "name": "lag 6",
                "config": {
                    "name": "lag 6",
                    "type": "iana-if-type:ieee8023adLag",
                    "enabled": true
                },
                "openconfig-if-aggregate:aggregation": {
                    "config": {
                        "lag-type": "STATIC",
                        "openconfig-if-aggregate-aug:lag-name": "black"
                    }
                }
            }
        ]
    }
}

Response body: None
```

The following example create a dynamic(LACP) LAG using PATCH method.

```
Request body:
{
```

```
    "interfaces": {
        "interface": [
            {
                "name": "lag 10",
                "config": {
                    "name": "lag 10",
                    "type": "iana-if-type:ieee8023adLag",
                    "enabled": true
                },
                "openconfig-if-aggregate:aggregation": {
                    "config": {
                        "lag-type": "LACP",
                        "openconfig-if-aggregate-aug:lag-name": "RED"

                    }
                }
            }
        ]
    }
}

Response body: None
```

GET method

```
URL: https://<host>/restconf/data/interfaces/interface

Request body: None
Response body: {
    "openconfig-interfaces:interface": [
        {
            "name": "lag 11",
            "config": {
                "name": "lag 11",
                "type": "iana-if-type:ieee8023adLag",
                "enabled": false
            },
            "state": {
                "name": "lag 11",
                "type": "iana-if-type:ethernetCsmacd",
                "description": "",
                "enabled": true,
                "ifindex": 3083,
                "admin-status": "UP",
                "oper-status": "DOWN",
                "counters": {
                    "in-octets": "0",
                    "in-pkts": "0",
                    "in-unicast-pkts": "0",
                    "in-broadcast-pkts": "0",
                    "in-multicast-pkts": "0",
                    "in-discards": "0",
                    "in-errors": "0",
                    "in-unknown-protos": "0",
                    "in-fcs-errors": "0",
                    "out-octets": "0",
                    "out-pkts": "0",
                    "out-unicast-pkts": "0",
                    "out-broadcast-pkts": "0",
                    "out-multicast-pkts": "0",
                    "out-discards": "0",
                    "out-errors": "0"
                }
            },
            "openconfig-if-aggregate:aggregation": {
                "config": {
                    "lag-type": "STATIC",
                    "openconfig-if-aggregate-aug:lag-name": "change"
                },
                "state": {},
                "openconfig-vlan:switched-vlan": {
```

```
                    "state": {}
                }
            }
        }
    ]
}
```

DELETE

```
URL: https://<host>/restconf/data/interfaces/interface/lag%d

Request body: None
Response body: None
```

Adding ports to LAG using PATCH method.

```
URL: https://<host>/restconf/data/interfaces/interface/ethernet1%2F1%2F2/ethernet/config

Request body: {
    "config": {
        "openconfig-if-aggregate:aggregate-id": "lag 7"
    }
}
Response body: None
```

To edit a LAG name using PATCH method.

```
URL: https://<host>/restconf/data/interfaces/interface/lag 14/aggregation/config/lag-name

Request body:
{
    "openconfig-if-aggregate-aug:lag-name": "red"
}
Response body: None
```

To add GET after editing a LAG name.

```
URL: https://<host>/restconf/data/interfaces/interface/lag 14/aggregation/config/lag-name

Request body: None

Response body:
{
    "openconfig-if-aggregate-aug:lag-name": "green"
}
```

DELETE method to remove ports from LAG.

```
URL: https://<host>/restconf/data/interfaces/interface/ethernet3%2F1%2F6/ethernet/config/aggregate-id

Request body: None
Response body: None
```

Protected Port

Configures, modifies, and retrieves protected port configurations. The URI to configure data for protected port is:

```
restconf/data/protectedport
```

Supported HTTP Operations

POST method

```
URL: https://<host>/restconf/data/protectedport

Request body: {
    "interfaces": {
```

```
      "interface": {
        "name": "ethernet 1/1/7",
        "config": {
          "name": "ethernet 1/1/7",
          "protectedport": true
        }
      }
    }
}
Response body: None
```

PATCH method

```
URL: https://<host>/restconf/data/protectedport

Request body: {
  "protectedport": {
    "interfaces": {
      "interface": {
        "name": "ethernet 1/1/9",
        "config": {
          "name": "ethernet 1/1/9",
          "protectedport": true
        }
      }
    }
  }
}
Response body: None
```

GET method

```
URL: https://<host>/restconf/data/protectedport

Request body: None
Response body: {
        {
            "name": "ethernet 1/1/7",
              "config": {
              "name": "ethernet 1/1/7",
              "protectedport": true
             }
        },
        {
        "name": "ethernet 1/1/9",
        "config": {
          "name": "ethernet 1/1/9",
          "protectedport": true
         }
       }
}
```

PUT method

```
URL: https://<host>/restconf/data/protectedport

Request body:
{
  "protectedport": {
    "interfaces": {
      "interface": {
        "name": "ethernet 1/1/9",
        "config": {
          "name": "ethernet 1/1/9",
          "protectedport": true
        }
      }
    }
  }
}
```

```
Response body: None
```

DELETE

```
URL: https://<host>/restconf/data/protectedport/interfaces/interface=ethernet%201%2F1%2F9

Request body: None
Response body: None
```

Spanning Tree Root Protect

Configures, modifies, and retrieves ports on root guard. The URI to configure data for root guard is:

```
/stp/interfaces
```

Supported HTTP Operations

POST method

```
URL: https://<host>/restconf/data/stp/interfaces

Request body: {
        "interface": [
            {
                "name": "ethernet 1/1/6",
                "config": {
                    "name": "ethernet 1/1/6",
                    "guard": "ROOT"
                }
            }
        ]
}
Response body: None
```

PUT method

```
URL: https://<host>/restconf/data/stp/interfaces

Request body: {
    "interfaces": {
        "interface": [
            {
                "name": "ethernet 1/1/4",
                "config": {
                 "name": "ethernet 1/1/4",
                   "guard": "ROOT"
                }
            }
        ]
    }
}
Response body: None
```

PATCH method

```
URL: https://<host>/restconf/data/stp/interfaces

Request body:
 {
    "interfaces": {
       "interface": [
            {
                "name": "ethernet 1/1/7",
                "config": {
                    "name": "ethernet 1/1/7",
                    "guard": "ROOT"
                }
```

```
            }
        ]
    }
}
Response body: None
```

GET method

```
URL: https://<host>/restconf/data/stp/interfaces

Request body: None
Response body: {
    "openconfig-spanning-tree:interfaces": {
        "interface": [
            {
                "name": "ethernet 1/1/4",
                "config": {
                    "name": "ethernet 1/1/4",
                    "guard": "ROOT"
                },
                "state": {}
            },
            {
                "name": "ethernet 1/1/6",
                "config": {
                    "name": "ethernet 1/1/6",
                    "guard": "ROOT"
                },
                "state": {}
            },
            {
                "name": "ethernet 1/1/7",
                "config": {
                    "name": "ethernet 1/1/7",
                    "guard": "ROOT"
                },
                "state": {}
            }
        ]
    }
}
```

PATCH method

Use the "NONE" keyword to disable root guard on the port.

```
URL: https://<host>/restconf/data/stp/interfaces

Request body: {
    "interfaces": {
        "interface": [
            {
                "name": "ethernet 1/1/4",
                "config": {
                    "name": "ethernet 1/1/4",
                    "guard": "NONE"
                }
            }
        ]
    }
}
Response body: Disables root guard on interface 1/1/4
```

DELETE

```
URL: https://<host>/restconf/data/stp/interfaces/interface/ethernet 1%2F1%2F7/config/guard

Request body: None
Response body: Disables root guard on interface 1/1/7
```

PVST

Configures, modifies, and retrieves spanning tree for the VLAN. The URI to configure data for spanning tree for the VLAN is:

```
/stp/icx-openconfig-spanning-tree-aug:pvst
```

Default Configuration

VLAN 1 with default priority 32768.

```
 {
    "icx-openconfig-spanning-tree-aug:pvst": {
        "vlan": [
            {
               "vlan-id": 1,
                "config": {
                    "vlan-id": 1,
                    "pvst-priority": 32768
                },
                "state": {}
            }
        ]
    }
}
```

Supported HTTP Operations

PATCH method

```
URL: https://<host>/restconf/data/stp/icx-openconfig-spanning-tree-aug:pvst

Request body: {
    "pvst": {
        "vlan": [
            {
                "vlan-id": 66,
                "config": {
                    "vlan-id": 66,
                    "pvst-priority": 2345
                }
            }
        ]
    }
}
Response body: None
```

POST method

```
URL: https://<host>/restconf/data/stp/icx-openconfig-spanning-tree-aug:pvst

Request body:
 {
        "vlan": [
            {
                "vlan-id": 35,
                "config": {
                    "vlan-id": 35,
                    "pvst-priority": 1824
                }
            }
        ]
}
Response body: None
```

GET method

```
URL: https://<host>/restconf/data/stp/icx-openconfig-spanning-tree-aug:pvst

Request body: None
Response body: {
    "icx-openconfig-spanning-tree-aug:pvst": {
        "vlan": [
            {
                "vlan-id": 1,
                "config": {
                    "vlan-id": 1,
                    "pvst-priority": 32768
                },
                "state": {}
            },
            {
                "vlan-id": 66,
                "config": {
                    "vlan-id": 66,
                    "pvst-priority": 2345
                },
                "state": {}
            },
            {
                "vlan-id": 35,
                "config": {
                    "vlan-id": 35,
                    "pvst-priority": 1824
                },
                "state": {}
            }
        ]
    }
}
```

PUT method

```
URL: https://<host>/restconf/data/stp/icx-openconfig-spanning-tree-aug:pvst

Request body: {
    "pvst": {
        "vlan": [
            {
                "vlan-id": 25,
                "config": {
                    "vlan-id": 25,
                    "pvst-priority": 200
                }
            }
        ]
    }
}
Response body: None
```

DELETE

```
URL: https://<host>/restconf/data/stp/icx-openconfig-spanning-tree-aug:pvst/vlan/66

Request body: None
Response body: Disables spanning tree on vlan 66.
GET :
{
    "icx-openconfig-spanning-tree-aug:pvst": {
        "vlan": [
            {
                "vlan-id": 1,
                "config": {
                    "vlan-id": 1,
                    "pvst-priority": 32768
                },
```

```
                "state": {}
            },
            {
                "vlan-id": 35,
                "config": {
                    "vlan-id": 35,
                    "pvst-priority": 1824
                },
                "state": {}
            }
        ]
    }
}
```

RSTP

Configures, modifies, and retrieves Rapid Spanning Tree (802.1w) and RSTP priority for the VLAN configurations. The default priority value is 32768. The URI to configure data for rapid spanning tree for the VLAN is:

```
/stp/rapid-pvst
```

Supported HTTP Operations

PUT method

```
URL: https://<host>/restconf/data/stp/rapid-pvst

Request body: {
    "rapid-pvst": {
        "vlan": [
            {
                "vlan-id": 20,
                "config": {
                    "vlan-id": 20,
                     "bridge-priority": 3478
                }
            }
        ]
    }
}
Response body: None
```

POST method

```
URL: https://<host>/restconf/data/stp/rapid-pvst

Request body: {
    "vlan": [
        {
            "vlan-id": 40,
            "config": {
                "vlan-id": 40,
                 "bridge-priority": 12345
            }
        }
    ]
}
Response body: None
```

PATCH method

```
URL: https://<host>/restconf/data/stp/rapid-pvst

Request body:
{
    "rapid-pvst": {
        "vlan": [
```

```
            {
                "vlan-id": 45,
                "config": {
                    "vlan-id": 45,
                     "bridge-priority": 86
                }
            }
        ]
    }
}
Response body: None
```

GET method

```
URL: https://<host>/restconf/data/stp/rapid-pvst

Request body: None

Response body: {
    "openconfig-spanning-tree:rapid-pvst": {
        "vlan": [
            {
                "vlan-id": 20,
                "config": {
                    "vlan-id": 20,
                     "bridge-priority": 3478
                },
                "state": {}
            },
            {
                "vlan-id": 40,
                "config": {
                    "vlan-id": 40,
                     "bridge-priority": 12345
                },
                "state": {}
              },
            {
                "vlan-id": 45,
                "config": {
                    "vlan-id": 45,
                     "bridge-priority": 86
                },
                "state": {}
            }
        ]
    }
}
```

DELETE method

```
URL: https://<host>/restconf/data/stp/rapid-pvst/vlan/45

Request body: None
Response body: None
```

Trunk VLAN and Access VLAN

Configures, modifies, and retrieves VLAN member ports configurations. The URI to configure data for tagged and untagged ports for the VLAN is:

```
openconfig-interfaces:interfaces/interface/interface-name/ethernet/switched-vlan
```

Supported HTTP Operations

PATCH method (Tagged and untagged ports)

```
URL: https://<host>/restconf/data/openconfig-interfaces:interfaces/interface/ethernet1%2F1%2F8/ethernet

Request body: {
    "ethernet": {
        "openconfig-vlan:switched-vlan": {
            "config": {
                "access-vlan": 41,
                "trunk-vlans": [
                    115
                ]
            }
        }
    }
}
Response body: None
```

PATCH method (Tagged ports)

```
URL: https://<host>/restconf/data/openconfig-interfaces:interfaces/interface/ethernet1%2F1%2F24/ethernet

Request body:
{
        "ethernet":{
        "openconfig-vlan:switched-vlan": {
            "config": {
                "trunk-vlans" : [
                    111,
                    114
                ]
            }
        }
    }
}
Response body: None
```

PATCH method (Untagged ports)

```
URL: https://<host>/restconf/data/openconfig-interfaces:interfaces/interface/ethernet1%2F1%2F22/ethernet

Request body:
{
        "ethernet":{
        "openconfig-vlan:switched-vlan": {
            "config": {
                "access-vlan": 74
            }
        }
    }
}
Response body: None
```

GET method

```
URL: https://<host>/restconf/data/openconfig-interfaces:interfaces/interface/ethernet1%2F1%2F8/ethernet/
switched-vlan

Request body: None

Response body: {
    "openconfig-vlan:switched-vlan": {
        "config": {
            "access-vlan": 41,
            "trunk-vlans": [
                115
            ]
        },
        "state": {}
```

```
    }
}
```

DELETE method

```
URL: https://<host>/restconf/data/openconfig-interfaces:interfaces/interface/ethernet1%2F1%2F24/ethernet/
switched-vlan/config/trunk-vlans/114

Request body: None
Response body: None

URL: https://<host>/restconf/data/openconfig-interfaces:interfaces/interface/ethernet1%2F1%2F22/ethernet/
switched-vlan/config/access-vlan

Request body: None
Response body: None
```

Management VLAN

Configures, modifies, and retrieves management VLAN configurations. The URI to configure data for management VLAN is:

```
/network-instances/network-instance/default-vrf/vlans/vlan/20/config/management_vlan_container/
management_vlan
```

Supported HTTP Operations

POST method

```
URL: https://<host>/restconf/data/network-instances/network-instance/default-vrf/vlans/vlan/70/config/
management_vlan_container

Request body: For enable

{
    "icx-openconfig-mgmt-vlan-aug:management_vlan": true
}
Response body: None
```

PATCH method

```
URL: https://<host>/restconf/data/network-instances/network-instance/default-vrf/vlans/vlan/20/config/
management_vlan_container/management_vlan

Request body: For enable

{
    "icx-openconfig-mgmt-vlan-aug:management_vlan": true
}

For disable

{
    "icx-openconfig-mgmt-vlan-aug:management_vlan": false
}
Response body: None
```

GET method

```
URL: https://<host>/restconf/data/network-instances/network-instance/default-vrf/vlans

Request body: None

Response body: {
                "vlan-id": 20,
                "config": {
                    "vlan-id": 20,
                    "icx-openconfig-mgmt-vlan-aug:management_vlan_container": {
                        "management_vlan": true
```

```
                    }
                },
                "state": {}
            },
```

GET method

```
URL: https://<host>/restconf/data/network-instances/network-instance/default-vrf/vlans/vlan/20/config/
management_vlan_container/management_vlan

Request body: None
Response body: {
    "icx-openconfig-mgmt-vlan-aug:management_vlan": true
}
```

PUT method

```
URL: https://<host>/restconf/data/network-instances/network-instance/default-vrf/vlans/vlan/30/config/
management_vlan_container/management_vlan

Request body: {
    "icx-openconfig-mgmt-vlan-aug:management_vlan": true
}
Response body: None
```

DELETE

```
URL: https://<host>/restconf/data/network-instances/network-instance/default-vrf/vlans/vlan/30/config/
management_vlan_container/management_vlan

Request body: None
Response body: None
```

Default VLAN

Configures, modifies, and retrieves default VLAN configurations. The URI to configure data for default VLAN is:

```
/network-instances/network-instance/default-vrf/vlans
```

Supported HTTP Operations

POST method

```
URL: https://<host>/restconf/data/network-instances/network-instance/default-vrf/vlans

Request body: {
        "vlan": [
            {
                "vlan-id": 33,
                "config": {
                    "vlan-id": 33,
                    "name": "DEFAULT-VLAN"
                }
            }
        ]
}
Response body: None
```

PATCH and PUT method

```
URL: https://<host>/restconf/data/network-instances/network-instance/default-vrf/vlans

Request body:
{
    "vlans": {
        "vlan": [
            {
```

```
                "vlan-id": 31,
                "config": {
                    "vlan-id": 31,
                    "name": "DEFAULT-VLAN"
                }
            }
        ]
    }
}
Response body: None
```

GET method

```
URL: https://<host>/restconf/data/network-instances/network-instance/default-vrf/vlans

Request body: None

Response body: {
    "vlans": {
        "vlan": [
            {
                "vlan-id": 31,
                "config": {
                    "vlan-id": 31,
                    "name": "DEFAULT-VLAN"
                }
            }
        ]
    }
}
```

MAC Address Table (Static and Dynamic)

Configures, modifies, and retrieves static MAC address for the VLANs with the port details. Also, retrieves the dynamic MAC address for the VLANs with the port details.

```
network-instances/network-instance/default-vrf/fdb/mac-table/entries
```

The URI to configure data for static and dynamic MAC address table is:

```
/network-instances/network-instance/default-vrf/fdb
```

Supported HTTP Operations

POST method for static MAC address

```
URL: https://<host>/restconf/data/network-instances/network-instance/default-vrf/fdb/mac-table/entries

Request body: {
    "entry": {
        "mac-address": "67:11:ab:89:33:41",
        "vlan": "60",
        "config": {
            "mac-address": "67:11:ab:89:33:41",
            "vlan": "60"
        },
        "interface": {
            "interface-ref": {
                "config": {
                    "interface": "ethernet 1/1/7"
                }
            }
        }
    }
}
Response body: None
```

PUT method for statc MAC address

```
URL: https://<host>/restconf/data/network-instances/network-instance/default-vrf/fdb

Request body:
 {
    "fdb" : {
        "mac-table" : {
            "entries": {
            "entry": {
                "mac-address": "15:11:ab:24:aa:21",
                "vlan": "44",
                "config": {
                    "mac-address": "15:11:ab:24:aa:21",
                    "vlan": "44"
                },
                "interface": {
                    "interface-ref": {
                        "config": {
                            "interface": "ethernet 1/1/5"
                        }
                    }
                }
            }
            }
        }
    }
}
Response body: None
```

PATCH method for static MAC address

```
URL: https://<host>/restconf/data/network-instances/network-instance/default-vrf/fdb

Request body: {
    "fdb" : {
        "mac-table" : {
            "entries": {
            "entry": {
                "mac-address": "67:11:ab:89:33:44",
                "vlan": "1023",
                "config": {
                    "mac-address": "67:11:ab:89:33:44",
                    "vlan": "1023"
                },
                "interface": {
                    "interface-ref": {
                        "config": {
                            "interface": "ethernet 2/1/10"
                        }
                    }
                }
            }
            }
        }
    }
}
Response body: None
```

GET method for static and dynamic MAC address

```
URL: https://<host>/restconf/data/network-instances/network-instance/default-vrf/fdb/mac-table/entries

Request body: None
Response body: {
    "openconfig-network-instance:entries": {
        "entry": [
            {
                "mac-address": "15:11:ab:24:aa:21",
                "vlan": 44,
                "config": {
```

```
                    "mac-address": "15:11:ab:24:aa:21",
                    "vlan": 44
                },
                "state": {},
                "interface": {
                    "interface-ref": {
                        "config": {
                            "interface": "ethernet 1/1/5"
                        },
                        "state": {}
                    }
                }
            },
            {
                "mac-address": "78:23:aa:bb:23:04",
                "vlan": 60,
                "config": {
                    "mac-address": "78:23:aa:bb:23:04",
                    "vlan": 60
                },
                "state": {},
                "interface": {
                    "interface-ref": {
                        "config": {
                            "interface": "ethernet 1/1/8"
                        },
                        "state": {}
                    }
                }
            }
        ]
    }
}
```

DELETE for static MAC address

```
URL: https://<host>/restconf/data/network-instances/network-instance/default-vrf/fdb/mac-table/entries/
entry/78:23:aa:bb:23:04/60

Request body: None
Response body: Deletes the entry in the device.
GET -

{
    "openconfig-network-instance:entries": {
        "entry": [
            {
                "mac-address": "15:11:ab:24:aa:21",
                "vlan": 44,
                "config": {
                    "mac-address": "15:11:ab:24:aa:21",
                    "vlan": 44
                },
                "state": {},
                "interface": {
                    "interface-ref": {
                        "config": {
                            "interface": "ethernet 1/1/5"
                        },
                        "state": {}
                    }
                }
            }
        ]
    }
}
```

CLI Template

Configures the provided configuration commands. The URI to input file with configuration commands is:

```
/cli-template/input-file
```

The following POST method is used to upload configuration command:

```
{
    "icx-openconfig-cli-template:input" : {
        "input-file-content" : "vlan 1000 by port",
        "type" : "restore"
    }
}

(or)

{
    "icx-openconfig-cli-template:input" : {
        "input-file-content" : "vlan 1100 by port\n interface ethernet 1/1/3\n disable",
        "type" : "restore"
    }
}
```

Supported HTTP Operations

POST method

```
URL: https://<host>/restconf/data/cli-template/input-file

Request body:
{
    "icx-openconfig-cli-template:input" : {
        "input-file-content" : "vlan 1000 by port",
        "type" : "restore"
    }
}

(or)

{
    "icx-openconfig-cli-template:input" : {
        "input-file-content" : "vlan 1100 by port\n interface ethernet 1/1/3\n disable",
        "type" : "restore"
    }
}

Response body: {
   "icx-openconfig-cli-template:output" : {
      "result" : "{\n\"config_apply_status\": \"SUCCESS\",\n}\n"
   }
}
```

Provision Backup Restore

Provision is used to apply startup configuration to ICX devices. Backup is used to get the running configuration, and restore is used to apply running configuration. The URI to input file with configuration commands is:

```
/cli-template/input-file
```

Consider the following guidelines for provision:

- Input should be in the same format as in **show running-config** command output.
- Input should have the existing configuration and the required configuration.
- The input sent for provision will be considered as the startup configuration.

- Do not enter the **write memory** command after provision RESTCONF, or the running configuration will overwrite the changes in the startup configuration.
- While reloading the device, opting to save the running configuration will result in loss of the required configuration.

Use the following POST method to update the startup-config in ICX with the inputted startup-config sent through the RESTCONF:

```
 {
    "icx-openconfig-cli-template:input" : {
        "input-file-content" : "ver 09.0.10cdevT213\n!\nstack unit 1\n........",

        "type" : "provision"
    }
}
```

Use the following POST method to export the current running-config in ICX to the sender through RESTCONF:

```
 {
    "icx-openconfig-cli-template:input" : {
        "type" : "backup"
    }
}
```

Use the following POST method to apply the running-config sent through RESTCONF into the ICX.

```
 {
    "icx-openconfig-cli-template:input" : {
        "input-file-content" : "ver 09.0.10cdevT213\n!\nstack unit 1\n........",
        "type" : "restore"
    }
}
```

Supported HTTP Operations

POST method

```
URL: https://<host>/restconf/data/cli-template/input-file

Request body: {
    "icx-openconfig-cli-template:input" : {
        "input-file-content" : "ver 09.0.10cdevT213\n!\nstack unit 1\n........",
        "type" : "provision"
    }
}
Response body:
{
   "icx-openconfig-cli-template:output" : {
      "result" : "success"
   }
}
```

POST method

```
URL: https://<host>/restconf/data/cli-template/input-file

Request body: {
    "icx-openconfig-cli-template:input" : {
        "type" : "backup"
    }
}
Response body:
{
   "icx-openconfig-cli-template:output" : {
      "result" : "ver 09.0.10cdevT213\n!\nstack unit 1....."
   }
}
```

POST method

```
URL: https://<host>/restconf/data/cli-template/input-file

Request body: {
    "icx-openconfig-cli-template:input" : {
        "input-file-content" : "ver 09.0.10cdevT213\n!\nstack unit 1\n........",
        "type" : "restore"
    }
}
Response body:
{
   "icx-openconfig-cli-template:output" : {
      "result" : "{\n\"config_apply_status\": \"SUCCESS\",\n}\n"
   }
}
```

Configuration File Upload and Download Operations

Startup Configuration File Operations

The URI to download startup configuration file is:

```
https://<host>/restconf/data/icx-openconfig-actions:icx-actions/startup-config/download
```

The URI to upload startup configuration file is:

```
https://<host>/restconf/data/icx-openconfig-actions:icx-actions/startup-config/upload
```

Supported HTTP Operations

POST method

```
https://<host>/restconf/data/icx-openconfig-actions:icx-actions/startup-config/download

Request body:
{"icx-openconfig-actions:input":
   {"t_type": "https",
  "ip-address" : "xx.xx.xx.xx",
  "port": "443",
   "filename": "startup-config-pk1107"}
}
Note: Port is optional

Response body: None, if successful.

For example, when there is an error:
{"ietf-restconf:errors":{"error":[{"error-type":"application",
"error-tag":"operation-failed",
"error-app-tag":"io-error","error-message":"read failed",
"error-info":{"bad-value":"Copy","error-number":240}}]}
```

POST method

```
https://<host>/restconf/data/icx-openconfig-actions:icx-actions/startup-config/download

Request body:
{"icx-openconfig-actions:input":
{"t_type": "tftp",
"ip-address" : "xx.xx.xx.xx",
"port": "69",
"filename": "startup-config-pk1107"}}

Note: Port is optional

Response body: None
```

POST method

```
https://<host>/restconf/data/icx-openconfig-actions:icx-actions/startup-config/upload

Request body:
{"icx-openconfig-actions:input":
{"t_type": "tftp",
"ip-address" : "xx.xx.xx.xx",
"port": "69",
"filename": "startup-config-pk1107-test"}}

Note: Port is optional

Response body: None
```

Running Configuration File Operations

The URI to download running configuration file is:

```
https://<host>/restconf/data/icx-openconfig-actions:icx-actions/running-config/download
```

The URI to upload running configuration file is:

```
/data/icx-openconfig-actions:icx-actions/running-config/upload
```

Supported HTTP Operations

POST method for HTTP

```
https://<host>/restconf/data/icx-openconfig-actions:icx-actions/running-config/download

Request body:
{"icx-openconfig-actions:input":
   {"t_type": "https",
  "ip-address" : "xx.xx.xx.xx",
  "port": "443",
   "filename": "running-config-pk1107"}
}
Note: Port is optional

Response body: None, if successful.

For example, when there is an error:
{"ietf-restconf:errors":{"error":[{"error-type":"application",
"error-tag":"operation-failed",
"error-app-tag":"io-error","error-message":"read failed",
"error-info":{"bad-value":"Copy","error-number":240}}]}
```

POST method for TFTP

```
https://<host>/restconf/data/icx-openconfig-actions:icx-actions/running-config/download

Request body:
{"icx-openconfig-actions:input":
{"t_type": "tftp",
"ip-address" : "xx.xx.xx.xx",
"port": "69",
"filename": "running-config-pk1107"}}

Note: Port is optional

Response body: None
```

POST method

```
https://<host>/restconf/data/icx-openconfig-actions:icx-actions/running-config/upload

Request body:
{"icx-openconfig-actions:input":
{"t_type": "tftp",
"ip-address" : "xx.xx.xx.xx",
"port": "69",
"filename": "running-config-pk1107-test"}}

Note: Port is optional

Response body: None
```

POST method

```
https://<host>/restconf/data/icx-openconfig-actions:icx-actions/running-config/download

Request body:
{"icx-openconfig-actions:input":
{"t_type": "https",
"ip-address" : "xx.xx.xx.xx",
"port": "443",
"filename": "running-config-pk1107-test"}}

Note: Port is optional

Response body: For example, config file parse error:
{"ietf-restconf:errors":{"error":[{"error-type":"application",
"error-tag":"operation-failed","error-app-tag":"general-error",
"error-message":"operation failed","error-info":{"bad-value":
"Running config file parse error","error-number":274}}]}}
```

Copy HTTPS Flash Operations

The URI to download firmware from the cloud is:

```
https://<host>/restconf/data/icx-openconfig-actions:icx-actions/copy-https-flash/download
```

Supported HTTP Operations

POST method (Primary partition)

```
https://<host>/restconf/data/icx-openconfig-actions:icx-actions/copy-https-flash/download

Request body:
{
      "icx-openconfig-actions:input" : {
        "download-link" : "https://device.devalto.ruckuswireless.com/external/file/download/bucket/
permanent/switch/09010/TNR09010c_devufi.bin",
        "path-filename" : "TNR09010c_devufi.bin",
        "partition" : "primary"
        }
}

Response body: None, if successful.

For example, when there is an error:
{
   "icx-openconfig-actions:output" : {
      "status" : "failure"
   }
}
```

POST method (Secondary partition)

```
https://<host>/restconf/data/icx-openconfig-actions:icx-actions/copy-https-flash/download

Request body:
{
      "icx-openconfig-actions:input" : {
        "download-link" : "https://device.devalto.ruckuswireless.com/external/file/download/bucket/
permanent/switch/09010/TNR09010c_devufi.bin",
        "path-filename" : "TNR09010c_devufi.bin",
        "partition" : "secondary"
        }
}

Response body: None
```

POST method (Wrong cloud address)

```
https://<host>/restconf/data/icx-openconfig-actions:icx-actions/copy-https-flash/download

Request body:{
      "icx-openconfig-actions:input" : {
        "download-link" : "https://device.devvvalto.ruckuswireless.com/external/file/download/bucket/
permanent/switch/09010/TNR09010c_devufi.bin",
        "path-filename" : "TNR09010c_devufi.bin",
        "partition" : "secondary"
        }
}

Response body: {
    "icx-openconfig-actions:output" : {
         "status" : "failure"
     }
}
```

Supportsave Operations

Collect the supportsave through the provided commands. The URI to invoke supportsave is:

```
https://<host>/restconf/data/invokeSS
```

Supported HTTP Operations

PATCH method

```
https://<host>/restconf/data/invokeSS

Request body: {
    "icx-openconfig-supportsave:invokeSS": {
        "modName": "core",
        "httpSrvrIP": "xx.xx.xx.xx"
    }
}

or

{
    "icx-openconfig-supportsave:invokeSS": {
        "modName": "all",
        "httpSrvrIP": "xx.xx.xx.xx"
    }
}
Response body: None
```

DELETE

```
https://<host>/restconf/data/invokeSS

Request body: None
Response body: None
```

Multicast-IGMP Snooping

Configures, modifies, deletes and retrieves IGMP snooping configuration at the global and VLAN levels. Currently, querier mode and version commands are supported. POST operation is not supported at global level and PUT operation is not supported at global and VLAN level.

The URI to configure IGMP snooping at global level is:

```
/restconf/data/igmp-mld-snooping/global
```

The URI to configure IGMP snooping at VLAN level is:

```
/restconf/data/igmp-mld-snooping/vlans
```

Supported HTTP Operations

GET method (Global level)

```
URL: https://<host>/restconf/data/igmp-mld-snooping/global

Request body: None
Response body:
{
    "icx-igmp-mld-snooping:global": {
        "igmp": {
            "config": {
                "querier-mode": "active",
                "version": 2
            }
        }
    }
}
```

PATCH method

```
URL: https://<host>/restconf/data/igmp-mld-snooping/global/igmp/config

Request body:
 {
    "config": {
        "querier-mode": "passive",
        "version": 3
    }
}
Response body: None
```

DELETE

```
URL: https://<host>/restconf/data/igmp-mld-snooping/global/igmp/config
```

GET method (VLAN level)

```
URL: https://<host>/restconf/data/igmp-mld-snooping/vlans

Request body: None
Response body: {
    "icx-igmp-mld-snooping:vlans": {
        "vlan": [
            {
                "vlan-id": 20,
```

```
                "proto": {
                    "vlan-id": 20,
                    "igmp": {
                        "config": {
                            "querier-mode": "passive",
                            "version": 2
                        },
                        "oper": {}
                    }
                }
            }
        ]
    }
}
```

POST method

```
URL: https://<host>/restconf/data/igmp-mld-snooping/vlans

Request body: {
          "vlan" : [
            {
                  "vlan-id" : 20,
                        "proto" : {
                           "vlan-id" : 20,
                          "igmp" : {
                             "config" : {
                                "querier-mode" : "active",
                                "version" : 3
                             }
                          }
                        }
            }
          ]
}

Response body: {
    "icx-igmp-mld-snooping:vlans": {
        "vlan": [
            {
                "vlan-id": 20,
                "proto": {
                    "vlan-id": 20,
                    "igmp": {
                        "config": {
                            "querier-mode": "active",
                            "version": 3
                        },
                        "oper": {}
                    }
                }
            }
        ]
    }
}
```

PATCH method

```
URL: https://<host>/restconf/data/igmp-mld-snooping/vlans

Request body: {
    "icx-igmp-mld-snooping:vlans": {
          "vlan" : [
            {
                  "vlan-id" : 20,
                        "proto" : {
                           "vlan-id" : 20,
                          "igmp" : {
                             "config" : {
                                "querie-mode" : "passive",
                                "version" : 2
```

```
                                }
                            }
                        }
                    }
                ]
            }
        }

    Response body: {
        "icx-igmp-mld-snooping:vlans": {
            "vlan": [
                {
                    "vlan-id": 20,
                    "proto": {
                        "vlan-id": 20,
                        "igmp": {
                            "config": {
                                "querier-mode": "passive",
                                "version": 2
                            },
                            "oper": {}
                        }
                    }
                }
            ]
        }
    }
```

DELETE

```
URL: https://<host>/restconf/data/igmp-mld-snooping/vlans/vlan/20/proto/igmp/config
```

Jumbo Frame

Enables or disables jumbo frame on an Ethernet interface. The URI to configure and delete jumbo frame is:

```
/jumbo
```

Use the following PUT method to enable jumbo:

```
 {
   "icx-openconfig-jumbo:jumbo":{
       "config":{
          "enabled":true
       }
   }
}
```

Use the following PATCH method to disable jumbo:

```
 {
   "icx-openconfig-jumbo:jumbo":{
       "config":{
          "enabled":false
       }
   }
}
```

Supported HTTP Operations

GET method

```
URL: https://<management IP port>/restconf/data/jumbo

Request body: None
Response body:
{
```

```
    "icx-openconfig-jumbo:jumbo":{
         "config":{
              "enabled":true
         },
         "operation-state":{
              "enabled":true
         }
    }
}
```

PUT method

```
URL: https://<management IP port>/restconf/data/jumbo

Request body:
 {
   "icx-openconfig-jumbo:jumbo":{
       "config":{
            "enabled":true
       }
    }
}
Response body: None
```

PATCH method

```
URL: https://<management IP port>/restconf/data/jumbo

Request body:
 {
   "icx-openconfig-jumbo:jumbo":{
       "config":{
            "enabled":true
       }
    }
}
Response body: None
```

Trust DSCP

Enables or disables Layer 3 trust mode on an Ethernet interface. The URI to enable or disable is:

```
/interfaces/interface=ethernet%201%2F1%2F1/ethernet/trust-dscp
```

Use the following PUT method to enable trust DSCP:

```
 {
   "icxopenconfig-if-trust-dscp-aug:trust-dscp":{
        "config":{
             "enabled":true
        }
    }
}
```

Use the following PATCH method to disable trust DSCP:

```
 {
   "icxopenconfig-if-trust-dscp-aug:trust-dscp":{
        "config":{
             "enabled":false
        }
    }
}
```

The DELETE URI is:

```
/interfaces/interface=ethernet%201%2F1%2F1/ethernet/trust-dscp
```

Supported HTTP Operations

GET method

```
URL: https://<management IP port>/restconf/data/interfaces/interface=ethernet%201%2F1%2F1/ethernet/trust-
dscp

Request body: None
Response body:
{
    "icx-openconfig-if-trust-dscp-aug:trust-dscp":{
         "config":{
              "enabled":true
         },
         "state":{
              "enabled":true
         }
    }
}
```

PATCH method

```
URL: https://<management IP port>/restconf/data/interfaces/interface=ethernet%201%2F1%2F1/ethernet/trust-
dscp

Request body:
{
    "icx-openconfig-if-trust-dscp-aug:trust-dscp":{
         "config":{
              "enabled":true
         }
    }
}
Response body: None
```

PUT method

```
URL: https://<management IP port>/restconf/data/interfaces/interface=ethernet%201%2F1%2F1/ethernet/trust-
dscp

Request body:
{
    "icx-openconfig-if-trust-dscp-aug:trust-dscp":{
         "config":{
              "enabled":true
         }
    }
}
Response body: None
```

Update Taggged/Untagged LAG under VLAN

Configures, modifies and retrieves the VLAN LAG ports configurations.

```
URI: openconfig-interfaces:interfaces/interface/interface-name/ethernet/switched-vlan
```

The URI to configure data for tagged and untagged LAG of VLAN is:

```
openconfig-interfaces:interfaces/interface/interface-name/aggregation/switched-vlan
```

PATCH method for tagged and untagged ports

```
URI: https://10.177.114.166/restconf/data/openconfig-interfaces:interfaces/interface/lag 2/aggregation/
switched-vlan

Request body: {
       "openconfig-vlan:switched-vlan": {
            "config": {
                "access-vlan": 41,
```

```
                "trunk-vlans": [
                    115
                ]
            }
        }
}

Response Body: None
```

GET method

```
URI: https://10.177.114.166/restconf/data/openconfig-interfaces:interfaces/interface/lag 2/aggregation/
switched-vlan

Request body: None

Response Body: {
    "openconfig-vlan:switched-vlan": {
        "config": {
            "access-vlan": 41,
            "trunk-vlans": [
                115
            ]
        },
        "state": {}
    }
}
```

PATCH method for tagged ports

```
URL: https://10.177.114.166/restconf/data/openconfig-interfaces:interfaces/interface/lag 2/aggregation/
switched-vlan

Request body: {
        "openconfig-vlan:switched-vlan": {
            "config": {
                "trunk-vlans" : [
                    111,
                    114
                ]
            }
        }
    }
Response body: None
```

PATCH method for untagged ports

```
URL: https://10.177.114.166/restconf/data/openconfig-interfaces:interfaces/interface/lag 2/aggregation/
switched-vlan

Request body:
{
        "openconfig-vlan:switched-vlan": {
            "config": {
                "access-vlan": 74
            }
        }
}
Response body: None
```

DELETE method

```
URL: https://10.177.114.166/restconf/data/openconfig-interfaces:interfaces/interface/lag 2/aggregation/
switched-vlan/config/trunk-vlans/100

URI: https://10.177.114.166/restconf/data/openconfig-interfaces:interfaces/interface/lag 2/aggregation/
switched-vlan/config/access-vlan

Request body: None
Response body: None
```

Ping

Performs Ping operation for destination IPv4 or IPv6 or Hostname. The URI to perform ping operation is:

```
restconf/operations/ping
```

Supported HTTP Operations

POST method

```
Hostname: https://<host>/restconf/operations/ping

Request body: {
    "icx-openconfig-ping:input": {
        "target": {
            "afi" : "IPV4",
            "destination" : "www.google.com",
            "count" : "5"
        }
    }
}

Response body:
   {
   "icx-openconfig-ping:output" : {
      "result" : "Sending 5, 16-byte ICMP Echo to 172.217.160.132, timeout 5000 msec, TTL 64\nType Control-
c to abort\nReply from 172.217.160.132 : bytes=16 time=10ms
TTL=112\nReply from 172.217.160.132 : bytes=16 time=9ms TTL=112\nReply from 172.217.160.132 : bytes=16
time=9ms TTL=112\nReply from 172.217.160.132 : bytes=16 time=9ms
TTL=112\nReply from 172.217.160.132 : bytes=16 time=9ms TTL=112\nSuccess rate is 100 percent (5/5), round-
trip min/avg/max=9/9/10 ms.\n"
   }
}
```

POST method

```
IPv4: https://<host>/restconf/operations/ping

Request body:
     {
    "icx-openconfig-ping:input": {
        "target": {
            "afi" : "IPV4",
            "destination" : "xx.xx.xx.xx",
            "count" : "5"
        }
    }
}
Response body: {
   "icx-openconfig-ping:output" : {
      "result" : "Sending 5, 16-byte ICMP Echo to 10.177.112.129, timeout 5000 msec, TTL 64\nType Control-c
to abort\nReply from 10.177.112.129 : bytes=16 time=1ms
TTL=64\nReply from 10.177.112.129 : bytes=16 time=5ms TTL=64\nReply from 10.177.112.129 : bytes=16 time<1ms
TTL=64\nReply from 10.177.112.129 : bytes=16 time<1ms
TTL=64\nReply from 10.177.112.129 : bytes=16 time<1ms TTL=64\nSuccess rate is 100 percent (5/5), round-trip
min/avg/max=0/1/5 ms.\n"
   }
}
```

POST method

```
IPv6: https://<host>/restconf/operations/ping

Request body:
 {
    "icx-openconfig-ping:input": {
        "target": {
            "afi" : "IPV6",
            "destination" : "1:2::3",
```

```
            "count" : "5"
        }
    }
}
Response body: None
```

Traceroute

Performs traceroute operation for destination IPv4 or IPv6 or Hostname. The URI to perform traceroute operation is:

```
restconf/operations/traceroute
```

Supported HTTP Operations

POST method

```
Hostname: https://<host>/restconf/operations/traceroute

Request body: {
    "icx-openconfig-traceroute:input": {
        "target": {
            "afi" : "IPV4",
            "destination" : "www.google.com",
            "maxttl" : "10"
        }
    }
}

Response body:
   {
   "icx-openconfig-traceroute:output" : {
      "result" : "\nType Control-c to abort\nTracing the route to IP node www.google.com(172.217.160.132)
from 1 to 10 hops\n\n  1     2 ms    <1 ms    <1 ms 10.177.112.129 \n  2    10 ms    <1 ms    2 ms
10.177.15.21 \n  3
 <1 ms    <1 ms    <1 ms 10.177.14.13 \n  4     1 ms    4 ms    3 ms 10.7.136.1 \n  5    <1 ms    <1 ms    1
ms 10.7.136.30 \n  6
 1 ms    1 ms    1 ms 134.242.238.225 \n  7    18 ms    22 ms    21 ms 14.143.35.181.static-
Bangalore.vsnl.net.in [14.143.35.181] \n  8
 2 ms    2 ms    2 ms 172.31.232.154 \n  9    10 ms    *       *     172.31.167.46 \n 10     9 ms    9 ms
9 ms 121.240.1.46 \n"
   }
}
```

POST method

```
IPv4: https://<host>/restconf/operations/traceroute

Request body:
     {
    "icx-openconfig-traceroute:input": {
        "target": {
            "afi" : "IPV4",
            "destination" : "10.177.16.144",
            "maxttl" : "10"
        }
    }
}
Response body: {
   "icx-openconfig-traceroute:output" : {
      "result" : "\nType Control-c to abort\nTracing the route to IP node (10.177.16.144) from 1 to 10 hops
\n\n  1
   1 ms    <1 ms    <1 ms 10.177.112.129 \n  2    <1 ms    <1 ms    <1 ms 10.177.15.21 \n  3     2 ms    2
ms
   2 ms 10.177.15.42 \n  4    <1 ms    <1 ms    <1 ms 10.177.16.144 \n"
   }
}
```

POST method

```
IPv6: https://<host>/restconf/operations/traceroute

Request body:
 {
    "icx-openconfig-traceroute:input": {
        "target": {
            "afi" : "IPV6",
            "destination" : "10:10:10::10",
            "maxttl" : "5"
        }
    }
}
Response body: {
   "icx-openconfig-traceroute:output" : {
      "result" : "\nType Control-c to abort\nTracing the route to IPv6 node 10:10:10::10 from 1 to 5 hops\n
\n  1
 *       *       *     ? \n  2    *       *       *     ? \n  3    *       *       *     ? \n  4    *
*       *     ? \n  5
  *       *       *     ? \nTrace route to target IPv6 node 10:10:10::10 failed. \nIP: Error, No response
from target or intermediate node.\n"
   }
}
```

IP Route Table

Displays the IPv4 route table information. The URI to to fetch the route table entries is:

```
restconf/operations/iproute
```

Supported HTTP Operations

POST method

```
URL: https://<host>/restconf/operations/iproute

Request body: {
    "icx-openconfig-iproute:input": {
        "route-table": {
           "all" : true
         }
    }
}

Response body:
   {
   "icx-openconfig-iproute:output" : {
      "result" : "show ip route\nTotal number of IP routes: 12\nType Codes - B:BGP D:Connected O:OSPF R:RIP
S:Static;
Cost - Dist/Metric\nBGP  Codes - i:iBGP e:eBGP\nOSPF Codes - i:Inter Area 1:External Type 1 2:External Type
2\nSTATIC
Codes - v:Inter-VRF\n        Destination        Gateway         Port          Cost          Type Uptime
\n1       0.0.0.0/0          10.177.112.1    e mgmt1       1/1           S    4m50s \n2
10.177.112.0/25    DIRECT          e mgmt1       0/0           D    4m51s \n3       70.1.31.0/24
DIRECT          ve 4001       0/0           D    4m52s \n4       70.1.32.0/24       DIRECT          ve
4002       0/0           D    4m52s \n5       70.1.33.0/24       DIRECT          ve 4003
0/0           D    4m52s \n6       70.1.34.0/24       DIRECT          ve 4004       0/0           D
4m52s \n7       70.1.35.0/24       DIRECT          ve 4005       0/0           D    4m52s \n8
70.1.36.0/24       DIRECT          ve 4006       0/0           D    4m52s \n9       70.1.37.0/24
DIRECT          ve 4007       0/0           D    4m52s \n10      70.1.38.0/24       DIRECT          ve
4008       0/0           D    4m52s \n11      70.1.39.0/24       DIRECT          ve 4009
0/0           D    4m52s \n12      70.1.40.0/24       DIRECT          ve 4010       0/0           D
4m52s \n"
   }
}
```

IP Voice VLAN

RestConf support for managing the voice VLANs. The URI to configure a voice VLAN on the specified interface is:

```
/restconf/data/interfaces/interface/<interface>/ethernet/config
```

The URI to modify IP voice VLAN for interface configuration using PATCH method is:

```
/restconf/data/interfaces/interface/ethernet%201%2F1%2F4/ethernet/config

{
   "openconfig-if-ethernet:config" : {
      "ip-voice-vlan" : 100
   }
}
```

DELETE method

```
/restconf/data/interfaces/interface/<interface>/ethernet/config/ip-voice-vlan
```

Supported HTTP Operations

GET method

```
URL: https://<host>/restconf/data/interfaces/interface/ethernet%201%2F1%2F4/ethernet/config

Request body: None

Response body:
   {
   "openconfig-if-ethernet:config" : {
      "duplex-mode" : "FULL",
      "auto-negotiate" : true,
      "icx-openconfig-if-ethernet-aug:ip-voice-vlan" : 100,
      "icx-openconfig-if-ethernet-aug:ip-dhcp-client-enable" : true,
      "icx-openconfig-if-ethernet-aug:ethernet-clock" : "none"
   }
}
```

PATCH or PUT method

```
URL: https://<host>/restconf/data/interfaces/interface/ethernet%201%2F1%2F4/ethernet/config

Request body:
     {
   "openconfig-if-ethernet:config" : {
      "ip-voice-vlan" : 100
   }
}

Response body: None
```

DELETE method

```
URL: https://<host>/restconf/data/interfaces/interface/ethernet%201%2F1%2F4/ethernet/config/ip-voice-vlan

Request body: None

Response body: None
```

BPDU Guard

Configure, modifies, and retrieves spanning tree protocol information to determine the best path for data flow.

Supported HTTP Operations

PATCH method

```
URL: https://<host>/restconf/data/stp/interfaces

Request body: {
                          "interfaces": {
                              "interface": [
                              {
                                  "name": "ethernet 1/1/1",
                                  "config": {
                                      "name": "ethernet 1/1/1",
                                      "bpdu-guard": 'true'
                                      }
                                  }
                              ]
                          }
                      }


Response body: None
```

PUT method

```
URL: https://<host>/restconf/data/stp/interfaces

Request body:
     {
                          "interfaces": {
                              "interface": [
                              {
                                  "name": "ethernet 1/1/1",
                                  "config": {
                                      "name": "ethernet 1/1/1",
                                      "bpdu-guard": 'true'
                                      }
                                  }
                              ]
                          }
                      }


Response body: None
```

DELETE method

```
To disable the BPDU guard, enter the value as "bpdu-guard": 'false'
```

Spanning Tree Admin-Edge Protect

Configures, modifies, and retrieves a port as an edge port.

Supported HTTP Operations

PATCH method

```
URL: https://<host>/restconf/data/stp/interfaces

Request body:
                               {
                                  "interfaces": {
                                      "interface": [
                                      {
                                          "name": "ethernet 1/1/10",
                                          "config": {
```

```
                                        "name": "ethernet 1/1/10",
                                        "edge-port": "openconfig-spanning-tree-types:EDGE_ENABLE"
                                        }
                                    }
                                ]
                            }
                        }

    Response body: None
```

PUT method

```
    URL: https://<host>/restconf/data/stp/interfaces

    Request body:
         {
                                "interfaces": {
                                    "interface": [
                                    {
                                        "name": "ethernet 1/1/12",
                                        "config": {
                                            "name": "ethernet 1/1/12",
                                            "edge-port": "openconfig-spanning-tree-types:EDGE_ENABLE"
                                            }
                                        }
                                    ]
                                }
                            }

    Response body: None
```

POST method

```
    URL: https://<host>/restconf/data/stp/interfaces

    Request body:
    {
                                    "interface": [
                                    {
                                        "name": "ethernet 1/1/15",
                                        "config": {
                                            "name": "ethernet 1/1/15",
                                            "edge-port": "openconfig-spanning-tree-types:EDGE_ENABLE"
                                            }
                                        }
                                    ]

                                }

    Response body: None
```

DELETE method

```
    To disable the BPDU guard, enter the value as "edge-port": "openconfig-spanning-tree-types:EDGE_DISABLE"
```

The following is an example to delete the edge port.

```
    {
                                "interfaces": {
                                    "interface": [
                                    {
                                        "name": "ethernet 1/1/11",
                                        "config": {
                                            "name": "ethernet 1/1/11",
                                            "edge-port": "openconfig-spanning-tree-types:EDGE_DISABLE"
                                            }
                                        }
                                    ]
                                }
                            }
```

IP Default-Gateway Address on Switch Image

Configures, modifies, and retrieves IP default-gateway address on a switch. The URI to configure data for IP default-gateway address is:

```
restconf/data/system/config/default_gateway
```

Supported HTTP Operations

GET method

```
URL: https://<host>/restconf/data/system/config/default_gateway

Request body: None
Response body:
{
    "icx-openconfig-system-aug:default_gateway" : {
         "address" : [
            {
               "ip" : "10.177.112.129",
               "config" : {
                  "ip" : "10.177.112.129",
                  "addr_type" : "static"
               },
               "state" : {}
            }
         ]
      }
}
```

PUT method

```
URL: https://<host>/restconf/data/system/config/default_gateway

Request body:
     {
   "icx-openconfig-system-aug:default_gateway" : {
      "address" : [
      {
         "ip" : "10.177.112.129",
         "config" : {
            "ip" : "10.177.112.129",
            "addr_type" : "static"
         }
      }
   ]
   }
}
Response body: None
```

PATCH method

```
URL: https://<host>/restconf/data/system/config/default_gateway

Request body:
 {
   "icx-openconfig-system-aug:default_gateway" : {
      "address" : [
      {
         "ip" : "10.177.112.129",
         "config" : {
            "ip" : "10.177.112.129",
            "addr_type" : "static"
         }
      }
   ]
   }
}
Response body: None
```

POST method

```
URL: https://<host>/restconf/data/system/config/default_gateway

Request body:
 {
   "address" : [
      {
         "ip" : "10.177.112.147",
         "config" : {
            "ip" : "10.177.112.147",
            "addr_type" : "static"

          }
      }
   ]
}
Response body: None
```

DELETE

```
URL: https://<host>//restconf/data/system/config/default_gateway/address/<ip-address>

Request body: None
Response body: None
```

Archive File Upload and Download Operations

The URI to download an archive file is:

```
data/icx-openconfig-archive:archive-top/management/xfer/archive-download
```

The URI to upload an archive file is:

```
data/icx-openconfig-archive:archive-top/management/xfer/archive-upload
```

Supported HTTP Operations

POST method

```
/data/icx-openconfig-archive:archive-top/management/xfer/archive-download

Request body:
{"icx-openconfig-archive:input":
{"t_type": "https",
"ip-address" : "xx.xx.xx.xx",
"port": "443",
"archive-name": "ICX7K_ARCHIVE_00",
"filename": "ext_ICX7K_ARCHIVE_00"}}

Note: Port is optional

Response body: If successful,HTTP/1.1 204 No Content
If there is an error,HTTP/1.1 500 Internal Server Error
```

The archive name "ICX7K_ARCHIVE_00" does not exist, but the filename "ext_ICX7K_ARCHIVE_00" must exist.

POST method

```
/data/icx-openconfig-archive:archive-top/management/xfer/archive-download

Request body:
{"icx-openconfig-archive:input":
{"t_type": "tftp",
"ip-address" : "xx.xx.xx.xx",
"port": "69",
"archive-name": "ICX7K_ARCHIVE_00",
```

```
"filename": "ext_ICX7K_ARCHIVE_00"}}

Note: Port is optional

Response body: If successful,HTTP/1.1 204 No Content
If there is an error,HTTP/1.1 500 Internal Server Error
```

The archive name "ICX7K_ARCHIVE_00" does not exist, but the filename "ext_ICX7K_ARCHIVE_00" must exist.

POST method

```
/data/icx-openconfig-archive:archive-top/management/xfer/archive-upload

Request body:
"icx-openconfig-archive:input":
{"t_type": "https",
"ip-address" : "xx.xx.xx.xx",
"port": "443",
"archive-name": "ICX7K_ARCHIVE_00",
"filename": "ext_ICX7K_ARCHIVE_00"}}}}

Note: Port is optional

Response body: If successful,HTTP/1.1 204 No Content
If there is an error,HTTP/1.1 500 Internal Server Error
```

The archive name "ICX7K_ARCHIVE_00" must exist. The filename "ext_ICX7K_ARCHIVE_00" may cause the upload failure like "write protection error", depending on the server.

POST method

```
/data/icx-openconfig-archive:archive-top/management/xfer/archive-upload

Request body:
{"icx-openconfig-archive:input":
{"t_type": "tftp",
"ip-address" : "10.176.195.253",
"port": "69",
"archive-name": "ICX7K_ARCHIVE_00",
"filename": "ext_ICX7K_ARCHIVE_00"}}

Note: Port is optional

Response body: If successful,HTTP/1.1 204 No Content
If there is an error,HTTP/1.1 500 Internal Server Error
```

The archive name "ICX7K_ARCHIVE_00" must exist. The filename "ext_ICX7K_ARCHIVE_00" may cause an upload failure such as "write protection error", depending on the server.

Listing of Archive Files

The URI to list all archives in a repository is:

```
/data/icx-openconfig-archive:archive-top/management/act-list
```

Supported HTTP Operations

POST method

```
/data/icx-openconfig-archive:archive-top/management/act-list

Request body:
{"icx-openconfig-archive:input":
{"order-type": "ascending-order"}}

Response body: {"icx-openconfig-archive:output":{"list-result":"current_archive_files=4
```

```
[maximum number of archives allowed=100]\n\nList of archives:\nICX7K_ARCHIVE_11 135 Mar 28
09:04\nICX7K_ARCHIVE_10     3203 Mar 27
09:35\nICX7K_ARCHIVE_01     3165 Mar 27
07:16\nICX7K_ARCHIVE_00     3165 Mar 27
07:15\n\n"}}

Error: HTTP/1.1 500 Internal Server Error
```

POST method

```
/data/icx-openconfig-archive:archive-top/management/act-list

Request body:
{"icx-openconfig-archive:input":
{"order-type": "descending-order"}}

Response body:
{"icx-openconfig-archive:output":{"list-result":"current_archive_files=4
[maximum number of archives allowed=100]\n\nList of archives:ICX7K_ARCHIVE_00 3165 Mar 27
07:15nICX7K_ARCHIVE_01     3165 Mar 27
07:16\nICX7K_ARCHIVE_10    3203 Mar 27
09:35\nICX7K_ARCHIVE_11    135 Mar 28
09:04\n\n"}}
```

Creating an Archive

The URI to create an archive is:

```
/data/icx-openconfig-archive:archive-top/management/act-create
```

Supported HTTP Operations

POST method

```
/data/icx-openconfig-archive:archive-top/management/act-create

Request body:
{"icx-openconfig-archive:input":
{"creation-type": "rename-archive",
"archive-name1": "ICX7K_ARCHIVE_00",
"archive-name2": "ext_ICX7K_ARCHIVE_00"}}

Response body: If successful,HTTP/1.1 204 No Content
If there is an error,HTTP/1.1 500 Internal Server Error
```

The archive-name1 must exist on a target system and the archive-name2 does not exist.

POST method

```
/data/icx-openconfig-archive:archive-top/management/act-create

Request body:
{"icx-openconfig-archive:input":
{"creation-type": "copy-archive",
"archive-name1": "ICX7K_ARCHIVE_00",
"archive-name2": "ext_ICX7K_ARCHIVE_10"}}

Response body: If successful,HTTP/1.1 204 No Content
If there is an error,HTTP/1.1 500 Internal Server Error
```

The archive-name1 must exist on a target system and the archive-name2 does not exist.

POST method

```
/data/icx-openconfig-archive:archive-top/management/act-create

Request body:{"icx-openconfig-archive:input":
{"creation-type": "copy-runcfg",
```

```
"archive-name1": "ICX7K_ARCHIVE_30"}}

Response body: If successful,HTTP/1.1 204 No Content
If there is an error,HTTP/1.1 500 Internal Server Error
```

The archive-name1 must not exist on a target system.

Deleting an Archive

The URI to delete an archive is:

```
/data/icx-openconfig-archive:archive-top/management/act-delete
```

Supported HTTP Operations

POST method

```
/data/icx-openconfig-archive:archive-top/management/act-delete

Request body:
{"icx-openconfig-archive:input":
{"delete-type" :"delete-archive",
"archive-name": "ICX7K_ARCHIVE_00"}}

Response body: If successful,HTTP/1.1 204 No Content
If there is an error,HTTP/1.1 500 Internal Server Error
```

The archive-name must exist on a target system.

POST method

```
/data/icx-openconfig-archive:archive-top/management/act-delete

Request body:
{"icx-openconfig-archive:input":
{"delete-type": "delete-backup"}}

Response body: If successful,HTTP/1.1 204 No Content
If there is an error,HTTP/1.1 500 Internal Server Error
```

Differences between Archives

The URI to get differences between two archives, an archive or startup-config, an archive or running-config is:

```
/data/icx-openconfig-archive:archive-top/diff
```

Supported HTTP Operations

POST method

```
/data/icx-openconfig-archive:archive-top/diff

Request body:
{"icx-openconfig-archive:input":
{"order-type": "diff-archives",
"archive-name1": "ICX7K_ARCHIVE_00",
"archive-name2": "ICX7K_ARCHIVE_01"}}

Response body: If successful, HTTP/1.1 204 No Content
{"icx-openconfig-archive:output":
{"diff-result":"--- baseline\n+++ comparison\n\n\n+
1: logging console\n+   2: vlan 10 by port\n\n"}}

If there is an error,HTTP/1.1 500 Internal Server Error
```

The two archives indicated by archive-name1 and archive-name2 must exist.

POST method

```
/data/icx-openconfig-archive:archive-top/diff

Request body:
{"icx-openconfig-archive:input":
{"order-type": "diff-archive-startup",
"archive-name1": "ICX7K_ARCHIVE_00"}}

Response body: If successful,HTTP/1.1 204 No Content
If there is an error,HTTP/1.1 500 Internal Server Error
```

The archive name indicated by archive-name1 must exist.

POST method

```
/data/icx-openconfig-archive:archive-top/diff

Request body:
{"icx-openconfig-archive:input":
{"order-type": "diff-archive-runcfg",
"archive-name1": "ICX7K_ARCHIVE_00"}}

Response body: If successful,HTTP/1.1 204 No Content
If there is an error,HTTP/1.1 500 Internal Server Error
```

The archive name indicated by archive-name1 must exist.

Reloading an Archive

Supported HTTP Operations

POST method

```
/data/icx-openconfig-archive:archive-top/archive-reload

Request body:
{"icx-openconfig-archive:input":
{"partition-type": "primary",
"archive-name": "ICX7K_ARCHIVE_00"}}

Response body: None
If there is an error, HTTP/1.1 500 Internal Server Error
```

The archive-name must exist on a target system.

POST method

```
/data/icx-openconfig-archive:archive-top/archive-reload

Request body:
{"icx-openconfig-archive:input":
{"partition-type": "secondary",
"archive-name": "ICX7K_ARCHIVE_00"}}

Response body: None
If there is an error, HTTP/1.1 500 Internal Server Error
```

Archiving a Backup File

Supported HTTP Operations

POST method

```
/data/icx-openconfig-archive:archive-top/backup-download/download-action

Request body:
{"icx-openconfig-archive:input":
{"t_type": "tftps",
"ip-address" : "xx.xx.xx.xx",
"port": "443",
"filename": "file1"}}

Response body: If successful, HTTP/1.1 204 No Content
If there is an error, HTTP/1.1 500 Internal Server Error
```

POST method

```
/data/icx-openconfig-archive:archive-top/backup-download/download-action

Request body:
{"icx-openconfig-archive:input":
{"t_type": "tftp",
"ip-address" : "xx.xx.xx.xx",
"port": "69",
"filename": "file1"}}

Response body: If successful, HTTP/1.1 204 No Content
If there is an error, HTTP/1.1 500 Internal Server Error
```

IPv4, IPv6 and MAC ACLs

Forwarding Reference is not supported in ACL. If ACL is not created for RESTCONF, then you cannot bind an ACL on an interface.

You cannot delete an ACL, if it is bind on any interface. For this, delete the ACL binding and then delete ACL for RESTCONF.

If you want to update a filter of a particular sequence ID, first delete the filter and then add it back with modification.

Standard Named ACL is not possible.

Supported HTTP Operations for IPv4 ACL

PATCH method

To create IPv4 ACL and adding filter

```
URL: https://<host>/restconf/data/acl/acl-sets

{
    "acl-sets": {
        "acl-set": [
            {
                "name": "ext3",
                "type": "ACL_IPV4",
                "config": {
                    "name": "ext3",
                    "type": "ACL_IPV4"
                },
                "acl-entries": {
                    "acl-entry": [
                        {
                            "sequence-id": 10,
                            "config": {
                                "sequence-id": 10
```

```
                                },
                                "ipv4": {
                                    "config": {
                                        "source-address": "10.0.0.0",
                                        "destination-address": "20.0.0.0/24",
                                        "dscp": 10,
                                        "protocol": 6,
                                        "internal-priority-marking": {
                                        "internal-priority-marking" : 7
                                        },
                                        "dscp-marking": {
                                        "dscp-marking" : 10
                                        }
                                    }
                                },
                                "transport": {
                                    "config": {
                                        "source-port": "0",
                                        "destination-port": "0"
                                    }
                                },
                                "actions": {
                                    "config": {
                                        "forwarding-action": "openconfig-acl:ACCEPT"
                                    }
                                }
                            }
                        ]
                    }
                }
            ]
        }
    }
```

POST method

To create IPv4 ACL and adding filter

```
    URL: https://<host>/restconf/data/acl/acl-sets

    {
        "acl-set": [
            {
                "name": "ext_acl1",
                "type": "ACL_IPV4",
                "config": {
                    "name": "ext_acl1",
                    "type": "ACL_IPV4"
                },
                "acl-entries": {
                    "acl-entry": [
                        {
                            "sequence-id": 10,
                            "config": {
                                "sequence-id": 10
                            },
                            "ipv4": {
                                "config": {
                                    "source-address": "20.0.0.0/24",
                                    "destination-address": "30.0.0.0/24",
                                    "dscp": 10,
                                    "protocol": 6,
                                    "internal-priority-marking": {
                                        "internal-priority-marking" : 7
                                        },
                                        "dscp-marking": {
                                        "dscp-marking" : 10
                                        }
                                }
                            },
                            "transport": {
```

```
                            "config": {
                                "source-port": "0",
                                "destination-port": "0"
                            }
                        },
                        "actions": {
                            "config": {
                                "forwarding-action": "openconfig-acl:ACCEPT"
                            }
                        }
                    }
                ]
            }
        }
    ]
}
```

POST method (Binding on interface)

```
URL: https://<host>/restconf/data/acl

{
    "interfaces": {
        "interface": [
            {
                "id": "ethernet 1/1/8",
                "config": {
                    "id": "ethernet 1/1/8"
                },
                "ingress-acl-sets": {
                    "ingress-acl-set": [
                        {
                            "set-name": "ext3",
                            "type": "ACL_IPV4",
                            "config": {
                                "set-name": "ext3",
                                "type": "ACL_IPV4"
                            }
                        }
                    ]
                }
            }
        ]
    }
}
```

PATCH method (Binding on ingress and egress interface)

```
URL: https://<host>/restconf/data/acl

{
    "interfaces": {
        "interface": [
            {
                "id": "ethernet 1/1/1",
                "config": {
                    "id": "ethernet 1/1/1"
                },
                "ingress-acl-sets": {
                    "ingress-acl-set": [
                        {
                            "set-name": "ext_acl1",
                            "type": "ACL_IPV4",
                            "config": {
                                "set-name": "ext_acl1",
                                "type": "ACL_IPV4"
                            }
                        }
                    ]
                }
            },
```

```
            {
                "id": "ethernet 1/1/2",
                "config": {
                    "id": "ethernet 1/1/2"
                },
                "egress-acl-sets": {
                    "egress-acl-set": [
                        {
                            "set-name": "ext_acl1",
                            "type": "ACL_IPV4",
                            "config": {
                                "set-name": "ext_acl1",
                                "type": "ACL_IPV4"
                            }
                        }
                    ]
                }
            }
        ]
    }
}
```

DELETE : To delete a specific IPv4 ACL binding

```
URL: https://<host>/restconf/data/acl/interfaces/interface/ethernet 1%2F1%2F8/ingress-acl-sets/ingress-acl-
set/ext3/ACL_IPV4

Request body: None
Response body: None
```

DELETE : To delete IPv4 ACL

```
URL: https://<host>/restconf/data/acl/acl-sets/acl-set/ext3/ACL_IPV4

Request body: None
Response body: None
```

GET method : To get or read specific IPv4 ACL configured in the system.

```
URL: https://<host>/restconf/data/acl/acl-sets/acl-set/ext3/ACL_IPV4

Request body: None
Response body: {
    "openconfig-acl:acl-set": [
        {
            "name": "ext3",
            "type": "openconfig-acl:ACL_IPV4",
            "config": {
                "name": "ext3",
                "type": "openconfig-acl:ACL_IPV4"
            },
            "state": {},
            "acl-entries": {
                "acl-entry": [
                    {
                        "sequence-id": 10,
                        "config": {
                            "sequence-id": 10
                        },
                        "state": {
                            "sequence-id": 10
                        },
                        "ipv4": {
                            "config": {
                                "source-address": "0.0.0.0",
                                "destination-address": "0.0.0.0",
                                "dscp": 0,
                                "protocol": 6,
                                "icx-openconfig-acl-aug:internal-priority-marking": {
                                    "internal-priority-marking": 7
                                },
```

```
                                "icx-openconfig-acl-aug:dscp-marking": {
                                    "dscp-marking": 10
                                }
                            },
                            "state": {
                               }
                        },
                        "transport": {
                            "config": {
                                "source-port": "0",
                                "destination-port": "0"
                            },
                            "state": {
                                }
                        },
                        "input-interface": {
                            "state": {},
                            "interface-ref": {
                                "state": {}
                            }
                        },
                        "actions": {
                            "config": {
                                "forwarding-action": "openconfig-acl:ACCEPT"
                            }
                        }
                    }
                ]
            }
        }
    ]
}
```

GET method : To get or read specific ACL binded interface.

```
URL: https://<host>/restconf/data/acl/interfaces/interface/ethernet 1%2F1%2F5

Request Body: None
Response Body: {
    "openconfig-acl:interfaces": {
        "interface": [
            {
                "id": "ethernet 1/1/5",
                "config": {
                    "id": "ethernet 1/1/5"
                },
                "state": {},
                "interface-ref": {
                    "config": {
                        "interface": "ethernet 1/1/5"
                    },
                    "state": {}
                },
                "ingress-acl-sets": {
                    "ingress-acl-set": [
                        {
                            "set-name": "ext3",
                            "type": "openconfig-acl:ACL_IPV4",
                            "config": {
                                "set-name": "ext3",
                                "type": "openconfig-acl:ACL_IPV4"
                            },
                            "state": {},
                            "acl-entries": {}
                        }
                    ]
                },
                "egress-acl-sets": {}
            }
        ]
```

```
    }
}
```

PATCH method for binding on ingress interface

```
URL: https://<host>/restconf/data/acl/interfaces

Request Body: {
    "interfaces": {
        "interface": [
            {
                "id": "ethernet 1/1/15",
                "config": {
                    "id": "ethernet 1/1/15"
                },
                "ingress-acl-sets": {
                    "ingress-acl-set": [
                        {
                            "set-name": "device-IPv4",
                            "type": "ACL_IPV4",
                            "config": {
                                "set-name": "device-IPv4",
                                "type": "ACL_IPV4"
                            }
                        }
                    ]
                }
            }
        ]
    }
}
Response Body: None
```

PATCH method for binding on an egress interface

```
URL: https://<host>/restconf/data/acl/interfaces

Request Body: {
    "interfaces": {
        "interface": [
            {
                "id": "ethernet 1/1/12",
                "config": {
                    "id": "ethernet 1/1/12"
                },
                "egress-acl-sets": {
                    "egress-acl-set": [
                        {
                            "set-name": "device-IPv4",
                            "type": "ACL_IPV4",
                            "config": {
                                "set-name": "device-IPv4",
                                "type": "ACL_IPV4"
                            }
                        }
                    ]
                }
            }
        ]
    }
}

Response Body: None
```

To DELETE filter by sequence ID

```
URL: https://<host>/restconf/data/acl/acl-sets/acl-set/<acl-name>/ACL_IPV4/acl-entries/acl-entry/10
```

PATCH method to create standard ACL and adding filter

```
URL: https://<host>/restconf/data/acl/acl-sets

Request Body: {
    "acl-sets": {
        "acl-set": [
            {
                "name": "acl-name",
                "type": "ACL_IPV4",
                "standard":true,
                "config": {
                    "name": "acl-name",
                    "type": "ACL_IPV4",
                    "standard":true
                },
                "acl-entries": {
                    "acl-entry": [
                        {
                            "sequence-id": 30,
                            "config": {
                                "sequence-id": 30
                            },
                            "ipv4": {
                                "config": {
                                    "source-address": "20.0.0.0/24"

                            }
                            },
                            "actions": {
                                "config": {
                                    "forwarding-action": "openconfig-acl:ACCEPT"
                                }
                            }
                        }
                    ]
                }
            }
        ]
    }
}
Response Body: None
```

PATCH method (Binding on VLAN)

```
URL: https://<host>/restconf/data/acl/interfaces
Request Body: {
    "interfaces": {
        "interface": [
            {
                "id": "vlan 55",
                "config": {
                    "id": "vlan 55"
                },
                "ingress-acl-sets": {
                    "ingress-acl-set": [
                        {
                            "set-name": "101",
                            "type": "ACL_IPV4",
                            "config": {
                                "set-name": "101",
                                "type": "ACL_IPV4"
                            }
                        }
                    ]
                }
            }
        ]
    }
}
Response Body: None
```

Supported HTTP operations for MAC ACL

To create MAC ACL and adding filters using PATCH method.

```
URL: https://<host>/restconf/data/acl/acl-sets

Request Body: {
    "acl-sets": {
        "acl-set": [
            {
                "name": "bj6",
                "type": "ACL_L2",
                "config": {
                    "name": "bj6",
                    "type": "ACL_L2"
                },
                "acl-entries": {
                    "acl-entry": [
                        {
                            "sequence-id": 100,
                            "config": {
                                "sequence-id": 100
                            },
                            "l2": {
                                "config": {
                                    "source-mac": "1111.2222.3333",
                                    "source-mac-mask": "1111.2222.3333",
                                    "destination-mac": "1111.2222.3333",
                                    "destination-mac-mask": "1111.2222.3333",
                                    "ethertype": 2048
                                }
                            },
                            "actions": {
                                "config": {
                                    "forwarding-action": "ACCEPT"
                                }
                            }
                        }
                    ]
                }
            }
        ]
    }
}

Response Body: None
```

To create MAC ACL and adding filters using POST method.

```
URL: https://<host>/restconf/data/acl/acl-sets

{
    "acl-set": [
        {
            "name": "bj7",
            "type": "ACL_L2",
            "config": {
                "name": "bj7",
                "type": "ACL_L2"
            },
            "acl-entries": {
                "acl-entry": [
                    {
                        "sequence-id": 100,
                        "config": {
                            "sequence-id": 100
                        },
                        "l2": {
                            "config": {
                                "source-mac": "1111.2222.3333",
```

```
                                    "source-mac-mask": "1111.2222.3333",
                                    "destination-mac": "1111.2222.3333",
                                    "destination-mac-mask": "1111.2222.3333",
                                    "ethertype": 2048
                                }
                            },
                            "actions": {
                                "config": {
                                    "forwarding-action": "ACCEPT"
                                }
                            }
                        }
                    ]
                }
            }
        ]
    }
    Response Body: None
```

PATCH method (Binding on ingress interface)

```
    URL: https://<host>/restconf/data/acl/interfaces

    {
        "interfaces": {
            "interface": [
                {
                    "id": "ethernet 1/1/19",
                    "config": {
                        "id": "ethernet 1/1/19"
                    },
                    "ingress-acl-sets": {
                        "ingress-acl-set": [
                            {
                                "set-name": "bj6",
                                "type": "ACL_L2",
                                "config": {
                                    "set-name": "bj6",
                                    "type": "ACL_L2"
                                }
                            }
                        ]
                    }
                }
            ]
        }
    }
```

POST method (Binding on an interface)

```
    URL: https://<host>/restconf/data/acl

    {
        "interfaces": {
            "interface": [
                {
                    "id": "ethernet 1/1/20",
                    "config": {
                        "id": "ethernet 1/1/20"
                    },
                    "ingress-acl-sets": {
                        "ingress-acl-set": [
                            {
                                "set-name": "bj6",
                                "type": "ACL_L2",
                                "config": {
                                    "set-name": "bj6",
                                    "type": "ACL_L2"
                                }
                            }
                        ]
```

```
                }
            }
        ]
    }
}
Response Body: None
```

PATCH method (Binding on a VLAN)

```
URL: https://<host>/restconf/data/acl/interfaces

{
    "interfaces": {
        "interface": [
            {
                "id": "vlan 100",
                "config": {
                    "id": "vlan 100"
                },
                "ingress-acl-sets": {
                    "ingress-acl-set": [
                        {
                            "set-name": "bj6",
                            "type": "ACL_L2",
                            "config": {
                                "set-name": "bj6",
                                "type": "ACL_L2"
                            }
                        }
                    ]
                }
            }
        ]
    }
}
Response Body: None
```

To GET the configured MAC ACL "bj6".

```
URL: https://<host>/restconf/data/acl/acl-sets/acl-set/bj6/ACL_L2

Request Body: None
Response Body: {
    "openconfig-acl:acl-set": [
        {
            "name": "bj6",
            "type": "openconfig-acl:ACL_L2",
            "config": {
                "name": "bj6",
                "type": "openconfig-acl:ACL_L2"
            },
            "state": {},
            "acl-entries": {
                "acl-entry": [
                    {
                        "sequence-id": 100,
                        "config": {
                            "sequence-id": 100
                        },
                        "state": {},
                        "l2": {
                            "config": {
                                "source-mac": "1111.2222.3333",
                                "source-mac-mask": "1111.2222.3333",
                                "destination-mac": "1111.2222.3333",
                                "destination-mac-mask": "1111.2222.3333",
                                "ethertype": 2048
                            },
                            "state": {}
                        },
                        "input-interface": {
```

```
                            "state": {},
                            "interface-ref": {
                                "state": {}
                            }
                        },
                        "actions": {
                            "config": {
                                "forwarding-action": "openconfig-acl:ACCEPT"
                            },
                            "state": {}
                        }
                    }
                ]
            }
        }
    ]
}
```

To GET MAC ACL binding on an interface

```
URL: https://<host>/restconf/data/acl/interfaces/interface/ethernet 1%2F1%2F19

Request Body: None
Response Body: {
    "openconfig-acl:interface": [
        {
            "id": "ethernet 1/1/19",
            "config": {
                "id": "ethernet 1/1/19"
            },
            "state": {},
            "interface-ref": {
                "config": {
                    "interface": "ethernet 1/1/19"
                },
                "state": {}
            },
            "ingress-acl-sets": {
                "ingress-acl-set": [
                    {
                        "set-name": "bj6",
                        "type": "openconfig-acl:ACL_L2",
                        "config": {
                            "set-name": "bj6",
                            "type": "openconfig-acl:ACL_L2"
                        },
                        "state": {},
                        "acl-entries": {}
                    }
                ]
            },
            "egress-acl-sets": {}
        }
    ]
}
```

To DELETE a specific MAC ACL from an interface

```
URL: https://<host>/restconf/data/acl/interfaces/interface/ethernet 1%2F1%2F19/ingress-acl-sets/ingress-acl-
set/bj6/ACL_L2
```

To DELETE MAC ACL "bj6"

```
URL: https://<host>/restconf/data/acl/acl-sets/acl-set/bj6/ACL_L2
```

Supported HTTP Operations for IPv6 ACL

PATCH method to create IPv6 ACL and adding filter

```
URL: https://<host>/restconf/data/acl/acl-sets

Request Body: {
    "acl-sets": {
        "acl-set": [
            {
                "name": "acl_ipv61",
                "type": "ACL_IPV6",
                "config": {
                    "name": "acl_ipv61",
                    "type": "ACL_IPV6"
                },
                "acl-entries": {
                    "acl-entry": [
                        {
                            "sequence-id": 10,
                            "config": {
                                "sequence-id": 10
                            },
                            "ipv6": {
                                "config": {
                                    "source-address": "1000::10/120",
                                    "destination-address": "2000::10/100",
                                    "dscp": 0,
                                    "internal-priority-marking": {
                                    "internal-priority-marking" : 7
                                    },
                                    "dscp-marking": {
                                    "dscp-marking" : 10
                                    }
                                }
                            },
                            "actions": {
                                "config": {
                                    "forwarding-action": "ACCEPT"
                                }
                            }
                        }
                    ]
                }
            }
        ]
    }
}
Response Body: None
```

POST method to create IPv6 ACL and adding filter

```
URL: https://<host>/restconf/data/acl/acl-sets

Request Body: {
        "acl-set": [
            {
                "name": "acl_ipv62",
                "type": "ACL_IPV6",
                "config": {
                    "name": "acl_ipv62",
                    "type": "ACL_IPV6"
                },
                "acl-entries": {
                    "acl-entry": [
                        {
                            "sequence-id": 10,
                            "config": {
                                "sequence-id": 10
                            },
                            "ipv6": {
```

```
                                    "config": {
                                        "source-address": "1000::10/120",
                                        "destination-address": "2000::10/64",
                                        "dscp":10,
                                        "internal-priority-marking": {
                                        "internal-priority-marking" : 7
                                        },
                                        "dscp-marking": {
                                        "dscp-marking" : 10
                                        }
                                    }
                                },
                                "actions": {
                                    "config": {
                                        "forwarding-action": "ACCEPT"
                                    }
                                }
                            }
                        ]
                    }
                }
            ]
        }
    Response Body: None
```

PATCH method for binding on ingress and egress interface

```
    URL: https://<host>/restconf/data/acl/interfaces

    Request Body: {
        "interfaces": {
            "interface": [
                {
                    "id": "ethernet 1/1/1",
                    "config": {
                        "id": "ethernet 1/1/1"
                    },
                    "ingress-acl-sets": {
                        "ingress-acl-set": [
                            {
                                "set-name": "acl_ipv61",
                                "type": "ACL_IPV6",
                                "config": {
                                    "set-name": "acl_ipv61",
                                    "type": "ACL_IPV6"
                                }
                            }
                        ]
                    }
                },
                {
                    "id": "ethernet 1/1/7",
                    "config": {
                        "id": "ethernet 1/1/7"
                    },
                    "egress-acl-sets": {
                        "egress-acl-set": [
                            {
                                "set-name": "acl_ipv61",
                                "type": "ACL_IPV6",
                                "config": {
                                    "set-name": "acl_ipv61",
                                    "type": "ACL_IPV6"
                                }
                            }
                        ]
                    }
                }
            ]
        }
```

```
}
Response Body: None
```

PATCH method for Ingress binding

```
URL: https://<host>/restconf/data/acl/interfaces

Request Body:     {
    "interfaces": {
        "interface": [
            {
                "id": "ethernet 1/1/7",
                "config": {
                    "id": "ethernet 1/1/7"
                },
                "ingress-acl-sets": {
                    "ingress-acl-set": [
                        {
                            "set-name": "acl_ipv62",
                            "type": "ACL_IPV6",
                            "config": {
                                "set-name": "acl_ipv62",
                                "type": "ACL_IPV6"
                            }
                        }
                    ]
                }
            }
        ]
    }
}
Response Body: None
```

PATCH method for egress binding

```
URL: https://<host>/restconf/data/acl/interfaces

Request Body: {
    "interfaces": {
        "interface": [
            {
                "id": "ethernet 1/1/12",
                "config": {
                    "id": "ethernet 1/1/12"
                },
                "egress-acl-sets": {
                    "egress-acl-set": [
                        {
                            "set-name": "device-IPv6",
                            "type": "ACL_IPV6",
                            "config": {
                                "set-name": "device-IPv6",
                                "type": "ACL_IPV6"
                            }
                        }
                    ]
                }
            }
        ]
    }
}
Response Body: None
```

To DELETE IPv6 ACL bindings

```
URL: https://<host>/restconf/data/acl/interfaces/interface/ethernet 1%2F1%2F7/ingress-acl-sets/ingress-acl-
set/acl_ipv62/ACL_IPV6
```

To DELETE IPv6 ACL

```
URL: https://<host>/restconf/data/acl/acl-sets/acl-set/acl_ipv61/ACL_IPV6
```

To GET specific IPv6 ACL configured in the system

```
URL: https://<host>/restconf/data/acl/acl-sets/acl-set/acl_ipv61/ACL_IPV6

Request Body: None
Response Body: {
 "openconfig-acl:acl-set": [
 {
 "name": "acl_ipv61",
 "type": "openconfig-acl:ACL_IPV6",
 "config": {
 "name": "acl_ipv61",
 "type": "openconfig-acl:ACL_IPV6"
 },
 "state": {},
 "acl-entries": {
 "acl-entry": [
 {
 "sequence-id": 10,
 "config": {
 "sequence-id": 10
 },
 "state": {
 },
 "ipv6": {
 "config": {
 "source-address": "1000::10/120",
 "destination-address": "2000::10/100",
 "dscp": 0,
 "protocol": 0,
 "icx-openconfig-acl-aug:internal-priority-marking": {
 "internal-priority-marking": 7
 },
 "icx-openconfig-acl-aug:dscp-marking": {
 "dscp-marking": 10
 }
 },
 "state": {
 }
 },
 "transport": {
 "config": {
 "source-port": "0",
 "destination-port": "0"
 },
 "state": {
 }
 },
 "input-interface": {
 "state": {},
 "interface-ref": {
 "state": {}
 }
 },
 "actions": {
 "config": {
 "forwarding-action": "openconfig-acl:ACCEPT"
 }
 }
 }
 ]
 }
 }
 ]
}
```

To GET all ACL binding interfaces

```
URL: https://<host>/restconf/data/acl/interfaces/interface/ethernet 1%2F1%2F5

Request Body: None
Response Body: {
 "openconfig-acl:interface": [
 {
 "id": "ethernet 1/1/5",
 "config": {
 "id": "ethernet 1/1/5"
 },
 "state": {},
 "interface-ref": {
 "config": {
 "interface": "ethernet 1/1/5"
 },
 "state": {}
 },
 "ingress-acl-sets": {
 "ingress-acl-set": [
 {
 "set-name": "ext3",
 "type": "openconfig-acl:ACL_IPV4",
 "config": {
 "set-name": "ext3",
 "type": "openconfig-acl:ACL_IPV4"
 },
 "state": {},
 "acl-entries": {}
 },
 {
 "set-name": "acl_ipv61",
 "type": "openconfig-acl:ACL_IPV6",
 "config": {
 "set-name": "acl_ipv61",
 "type": "openconfig-acl:ACL_IPV6"
 },
 "state": {},
 "acl-entries": {}
 }
 ]
 },
 "egress-acl-sets": {}
 }
 ]
}
```

To DELETE ACL filter using sequence ID

```
URL: https://<host>/restconf/data/acl/acl-sets/acl-set/device-ipv6/ACL_IPV6/acl-entries/acl-entry/10
```

PATCH method (Binding on VLAN)

```
URL: https://<host>/restconf/data/acl/interfaces

Request Body: {
    "interfaces": {
        "interface": [
            {
                "id": "vlan 55",
                "config": {
                    "id": "vlan 55"
                },
                "egress-acl-sets": {
                    "egress-acl-set": [
                        {
                            "set-name": "acl-name",
                            "type": "ACL_IPV6",
                            "config": {
                                "set-name": "acl-name",
```

```
                                "type": "ACL_IPV6"
                            }
                        }
                    ]
                }
            }
        ]
    }
}
Response Body: None
```

Enabling the RESTCONF Management Interface

Complete the following steps to enable the RESTCONF management interface on an ICX switch and specify the parameters for keeping the FastIron system configuration and RESTCONF configuration in sync.

Ensure the TPM/SSL certificates are already available on the device prior to enabling RESTCONF.

The RESTCONF protocol stack runs as a separate process, which is loaded with the YANG models and maintains its own configuration database with regards to the YANG data model. Therefore, the FastIron configuration must be synced to the RESTCONF protocol stack. The configuration synchronization is always on if RESTCONF is enabled.

1. Enter global configuration mode.

   ```
   device# configure terminal
   ```

2. Enable the RESTCONF management interface.

   ```
   device(config)# restconf enable
   ```

3. (Optional) Enter the **config-sync** command to force a configuration synchronization from FastIron to RESTCONF.

   ```
   device(config)# config-sync
   ```

4. (Optional) Enter the **enable-config-sync** command to enable configuration sync from FastIron to RESTCONF.

   ```
   device(config)# enable-config-sync
   ```

5. (Optional) Enter the **enable-config-sync-interval** command to set the periodic configuration sync timeout.

   ```
   device(config)# enable-config-sync-interval
   ```

6. (Optional) Enter the **show restconf config** command to display the RESTCONF configuration.

   ```
   device(config)# show restconf config
   ```

   The following commands can be run to see if the RESTCONF interface is running successfully:

   - show log
   - show hmon client status all

Displaying RESTCONF Configuration and Status Information

You can use the following show commands to display information about the RESTCONF configuration and status. All of the commands are optional and do not need to be entered in the specified order.

1. Enter the **show restconf config** command to show which RESTCONF parameters are configured.

   ```
   device> show restconf config
   RESTConf Feature Configuration
   restconf enable
   ```

```
protocol-debug-level error
platform-debug-level info
config-sync enabled
config-sync-timeout 5 mins
```

NOTE

RESTCONF maintains own database for fast processing. When database sync is happening from FastIron to RESTCONF, the show commands and configuration commands to RESTCONF module result in failure due to ITC timeout. The following message is displayed during the failure instances.

```
device# show restconf config
Restconf DB sync is in-progress, try after sometime
```

2. Enter the **show restconf event-counters**command to display information about RESTCONF event counters.

```
device> show restconf event-counters
SCP Event   |Processed    |YANG Map    |Queued    |Duplicate    |Unknown Oper    |
153         |1            |1           |1         |0            |0               |
154         |0            |2           |0         |0            |0               |
155         |0            |3           |0         |0            |0               |
131         |2            |4           |1         |1            |0               |
143         |1            |5           |1         |0            |0               |
144         |0            |6           |0         |0            |0               |
161         |0            |9           |0         |0            |0               |
            |             |10          |0         |0            |0               |
140         |0            |8           |0         |0            |0               |
            |             |7           |0         |0            |0               |
141         |0            |11          |0         |0            |0               |
145         |0            |12          |0         |0            |0               |
146         |0            |13          |0         |0            |0               |
147         |0            |14          |0         |0            |0               |
148         |0            |15          |0         |0            |0               |
149         |0            |16          |0         |0            |0               |
156         |0            |17          |0         |0            |0               |
157         |0            |18          |0         |0            |0               |
158         |0            |19          |0         |0            |0               |
150         |0            |20          |0         |0            |0               |
8           |0            |21          |0         |0            |0               |
81          |0            |22          |0         |0            |0               |
65535       |0            |0           |0         |0            |0               |
```

3. Enter the **show restconf event-map** command to display RESTCONF event-mapping information.

```
device> show restconf event-map
SCP Event             YANG ID             YANG Mapping
153                     1                 /system/aaa/authentication/users
154                     2                 /system/aaa/server-groups/server-group/tacacs-group/
servers/server/tacacs
155                     3                 /system/aaa/authentication/config/authentication-method
131                     4                 /system/dns
143                     5                 /lldp/config
144                     6                 /lldp/interfaces
161                     9                 /interfaces/interface/#wc/aggregation
                        10                /interfaces/interface/#wc/ethernet/config/aggregate-id
140                     8                 /interfaces/interface/#wc/ethernet/switched-vlan/config
                        7                 /network-instances/network-instance/#wc/vlans
141                     11                /openconfig-spanning-tree:stp
145                     12                /network-instances/network-instance/#wc/protocols/protocol/
OSPF/#wc
146                     13                /network-instances/network-instance/#wc/protocols/protocol/
OSPF/#wc/ospfv2/areas
147                     14                /network-instances/network-instance/#wc/protocols/protocol/
OSPF/#wc/ospfv2/areas/
area/#wc/interfaces
148                     15                /network-instances/network-instance/#wc/protocols/protocol/
OSPF/#wc/ospfv2/areas/
area/#wc/interfaces
149                     16                /network-instances/network-instance/#wc/protocols/protocol/
```

```
STATIC/#wc/staticroutes
156                     17              /system/aaa/server-groups/server-group/radius-group/
servers/server/radius
157                     18              /system/aaa/authentication/icx-openconfig-aaa-aug:dot1x
158                     19              /system/aaa/authorization/icx-openconfig-aaa-aug:coa/
openconfig
interfaces:interfaces
150                     20              /openconfig-acl:acl
8                       21              (null)
81                      22              (null)
```

4. Enter the **show restconf running-config** command to display RESTCONF running configuration information.

```
device> show restconf running-config

Get RC Req : File /var/log/restconf/ui_config.xml, XPath /, Def 0 State 0

RESTConf Running Configuration XML File : /var/log/restconf/ui_config.xml
<?xml version="1.0" encoding="UTF-8"?>
<config xmlns="http://yumaworks.com/ns/yumaworks-db-api">
  <interfaces xmlns="http://openconfig.net/yang/interfaces">
    <interface>
      <config>
        <description/>
        <enabled>true</enabled>
        <name>ethernet 1/1/1</name>
        <type>ianaift:ethernetCsmacd</type>
     </config>
     <ethernet xmlns="http://openconfig.net/yang/interfaces/ethernet">
       <config>
         <auto-negotiate>false</auto-negotiate>
         <duplex-mode>FULL</duplex-mode>
         <ethernet-clock xmlns="http://commscope.com/ns/yang/icx/icx-openconfig-if-ethernet
aug">none</ethernet-clock>
           <port-speed>oc-eth:SPEED_1GB</port-speed>
        </config>
      </ethernet>
      <name>ethernet 1/1/1</name>
    </interface>
…
  </interfaces>
  <lldp xmlns="http://openconfig.net/yang/lldp">
    <config>
     <enabled>true</enabled>
    </config>
    <interfaces>
      <interface>
        <config>
          <enabled>true</enabled>
          <name>ethernet 1/1/1</name>
        </config>
        <name>ethernet 1/1/1</name>
      </interface>
```

5. Enter the **show restconf status** command to display the RESTCONF status information.

```
device> show restconf status
RESTConf Status
YControl Interface Init      : 1
YControl Showdown            : 0
DB-API Service Down          : 0
YControl Init Fail           : 0
DB-API Service Init Fail     : 0
Netconfd Debug Edit Fail     : 0
RESTConf Config Edit Fail    : 513
RESTConf Config Delete Fail  : 10
RESTConf Get Config Fail     : 0
RESTConf Edit Debug Pass     : 1
RESTConf Edit Config Pass    : 315
RESTConf Delete Config Pass  : 2
```

```
RESTConf Get Config Pass     : 0
RESTConf Invalid Operation   : 0
Invalid File Request         : 0
Config Sync Pass             : 1
Config Sync Fail             : 0
Config Sync Timer Start      : 1
Config Sync Timer Cancel     : 0
Config Sync Timer Expire     : 1
Event Timer Start            : 0
Event Timer Cancel           : 0
Event Timer Expire           : 0
Config Sync Timer Status     : Disabled
Event Timer Status           : Disabled
.....................................
```

High Availability

The RESTCONF protocol stack runs on active devices. On switchover, the RESTCONF protocol stack comes up on a new active node and syncs The FastIron configuration to the RESTCONF stack configuration database.

Upon failover, switchover, or reload of the active unit of the stack member, the standby unit will begin to process the RESTCONF client request.

Security Considerations

When enabled, RESTCONF services list on port 443 and utilize TLS for security. TLS requires a CA signed certificate for both the ICX and RESTCONF clients for mutual authentication.

For ease of use, the enforcement of TLS certificates can be relaxed by the way of configuration to allow clients to present self-signed certificates.

For ICX devices that do not have a RUCKUS-signed manufacturing certificate, the RESTCONF server will present a self-signed certificate needed by TLS. Otherwise, the manufacturing device certificate will be present by default.

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