Using the REST API Plug-in

This chapter contains the following sections:

Supported Response Formats

JSON Format

The REST API plug-in supports the JavaScript Object Notation (JSON) format for a response. For JSON response, specify `Accept: application/json` in the HTTP header as shown in the following example:

```
GET /api/n1k/summary HTTP/1.1
Host: 10.10.10.2
Accept: application/json
Authorization: Basic YWRtaW46U2Zpc2gxMjM=
```

To specify the JSON response format through cURL, use the following:

```
curl -u <user>:<password> <vsm-ip>/api/n1k/port-profile -H "Accept: application/json"
```

The following example shows the response received in the JSON format:


```
{
   "":{"url":"/api/n1k/summary",
   "properties":{"vcStatus":"Connected",
         "vcIpaddress":"10.197.132.200",
   "switchMode":"ADVANCED (3.0)",
   "ip":"10.197.132.213","vcUuid":"e7 4f 03 50 3f ab 39 42-67 c9 dc 40 9f 74 45 91",
   "name":"switch",
   "datacenterName":"Test-DC",
```

```
   "haStatus":true,
   "mode":"L2",
   "version":"version 5.2(1)SV3(1.3) [build 5.2(1)SV3(1.2.100)]",
   "connectionName":"vc"
          }
   }
}
```

XML Format

The REST API plug-in supports the XML format for a response. For XML response, specify `Accept: application/xml` in the HTTP header as shown in the following example:

```
GET /api/n1k/summary HTTP/1.1
Host: 10.10.10.2
Accept: application/xml
Authorization: Basic YWRtaW46U2Zpc2gxMjM=
```

To specify the XML response format through cURL, use the following:

```
curl -u <user>:<password> <vsm-ip>/api/n1k/port-profile -H "Accept: application/xml"
```

The following example shows the response received in the XML format:

```
<?xml version="1.0" encoding="utf-8"?>
<instance url="/api/n1k/summary">
    <properties>
        <vcStatus>Connected</vcStatus>
        <vcIpaddress>10.10.10.4</vcIpaddress>
        <switchMode>Advanced</switchMode>
        <ip>10.10.10.2</ip>
        <vcUuid>12 57 2f 50 07 e8 b4 ea-1c 0e ba 78 23 52 96 3e</vcUuid>
        <name>n1kv-cy</name>
        <datacenterName>Sample-DC</datacenterName>
        <haStatus>true</haStatus>
        <mode>L3</mode>
        <version>version 4.2(1u)SV2(2.1au) [build 4.2(1)SV2(2.1a)]</version>
        <connectionName>vcenter</connectionName>
    </properties>
</instance>
```

Supported HTTP Methods

GET Method

The GET method lists the entities in a specific resource. The format of the GET method is as follows:

```
/api/n1k/<resource>
```

The following is an example of the GET method in cURL:

```
curl -u admin:password 10.10.10.2/api/n1k/port-profile/profile1 -H "Accept: application/json"

{
  "profile1": {
    "url": "\/api\/n1k\/port-profile\/profile1",
    "properties": {
      "minPorts": 1,
      "description": "",
      "switchportMode": "trunk",
      "state": false,
      "name": "profile1",
      "portBinding": "static",
```

```
      "portGroupName": "",
      "capability": "",
      "maxPorts": 32,
      "type": "Vethernet"
    }
  }
}
```

POST Method

The POST method creates a new instance of a resource or updates the identified instance. To create a new resource, the format of the POST method is as follows:

```
/api/n1k/<resource>
```

The following is an example of the POST method to create an instance of a resource in cURL:

```
curl -X POST -u admin:password 10.10.10.2/api/n1k/port-profile -d '{ "name" : "profile1",
"switchportMode" : "access", "shutdown" : false}'

Successfully created "port-profile profile1"
```

To modify a specific instance, the format of the POST method is as follows:

```
/api/n1k/<endpoint>/<instance>
```

The following is an example of the POST method to modify a specific instance in cURL:

```
curl -X POST -u admin:password 10.10.10.2/api/n1k/port-profile/profile1 -d '{ "switchportMode"
 : "trunk", "shutdown" : false}'

Successfully modified "port-profile profile1"
```

DELETE Method

The DELETE method deletes the specified instance. The format of the DELETE method is as follows:

```
/api/n1k/<resource>/<instance>
```

The following is an example of the DELETE method in cURL:

```
curl -u admin:password -X DELETE 10.10.10.2/api/n1k/port-profile/profile1

Successfully deleted "port-profile profile1"
```

Cisco Nexus 1000V REST API Resources

/api/n1k

The APIs under /api/n1k are common for all platform.

Note To support backward compatibility, all the APIs under /api/n1k also exist in /api/vc.

/api/n1k/license

Use this resource to get the licensing status of the Cisco Nexus 1000V switch. This resource is read-only.

Property	Example
expires	14 Sep 2013
type	NEXUS_VSG_SERVICES_PKG
available	512
status	Unused
used	0

/api/n1k/limits

Use this resource to get information about the resources available on the Cisco Nexus 1000V switch. This resource is read-only.

Property	Example
vemMax	256
vethUsed	90
vxlansUsed	529
vlansUsed	529
vemUsed	4
vxlansMax	6144
vethMax	12288
vethPerHostMax	990
vethPerHostUsed	90
vlansMax	4093
portprofilesUsed	69
portprofileMax	6144

/api/n1k/port-profile

Use this resource to create, update, and delete port-profile and view a list of configured port-profiles.

Property	Example
profileConfig	pinning id 3
description	Uplink port-profile
mtu	1500
capability	vxlan
systemVLANs	100
vserviceProfile	Vservice1
portBinding	dynamic
publishPortProfile	false
maxPorts	1024
org	cisco
vservicePath	Vservicepath1
minPorts	1
state	True
addSwitchportTrunkVLANs	100
switchportMode	Trunk
vserviceNodeName	VserviceNode1
switchportAccessBridgeDomain	Bridgedomain1
switchportTrunkNativeVLAN	101
removeSwitchportTrunkVLANs	200
inherit	Port-profile1
name	Uplink-portprofile
shutdown	False

Property	Example
portGroupName	Uplink-portgroup
switchportAccessVLAN	103
type	Vethernet
switchportTrunkVLANs	100

Note Inherit will give the data for Inherited port-profile, but will not be able to push/configure inheritance.

/api/n1k/summary

Use this resource to get a summary of the Cisco Nexus 1000V switch. This resource is read-only.

Property	Example
vcStatus	Connected
vcIpaddress	10.10.10.4
switchMode	ADVANCED (3.0)
ip	10.10.10.2
vcUuid	12 57 2f 50 07 e8 b4 ea-1c 0e ba 78 23 52 96 3e
name	n1kv
datacenterName	Sample-DC
haStatus	true
mode	L3
version	version 5.2(1)SV3(1.1)
connectionName	vCenter

/api/n1k/uplink

Use this resource to get detailed information about the uplinks configured on the VSM. This resource is read-only.

Property	Example
module	4
portChannelType	Eth
packetsTx	1421
mtu	1550
packetsRx	4248
vlans	1544-1545,1590-1600,1609
portChannel	1
portChannelMembers	Ethernet4/1,Ethernet4/3
name	Ethernet4/3
ethernet	Ethernet
speed	auto-speed
mode	trunk
portProfile	vxgw-uplink
status	up
cdpPort	Ethernet100/1/32
cdpNativeVlan	1
cdpSwitch	N5k-1-14

/api/n1k/vem

Use this resource to get details of the Virtual Ethernet Modules (VEMs) attached on the VSM. This resource is read-only.

Property	Example
module	3
licenseUsage	1
esxVersion	VMware ESXi 5.0.0 Releasebuild-914586 (3.0)
ip	10.10.10.2
vethMax	990
status	ok
license	licensed
mac	Not applicable
type	Virtual Ethernet Module
numVM	71
nSockets	1
vethUsed	74
datacenterName	Sample-DC
macMax	32000
macUsed	176
version	5.2(1)SV3(1.1)
model	NA
lic_version	1.0
ports	332
name	10.10.10.2
srvuuid	0bd195e1-80cd-11df-ab4e-d0d0fd094538

/api/n1k/vnic

Use this resource to get details of the virtual Ethernet ports connected to the Cisco Nexus 1000V switch. This resource is read-only.

Property	Example
mac	0050 .56a3.0b0c
vlans	2100
vnic	Vethernet2
portGroup	vmnet-2100
status	down
adapter	Network Adapter 1
vm	Ostinato1
dvport	DVPort64

/api/n1k/span

Use this resource to create, update, and delete a session and view a list of configured sessions.

Properties	Example
id	2
type	local
sources	[{ "type": "Vethernet", "source": ["1"], "direction": "rx" }]
shutdown	true

/api/n1k/user

Use this resource to create, update, and delete a user and view a list of configured users.

Property	Example
expire	14 Sep 2013

Property	Example
name	admin
role	network-admin

/api/n1k/vlan

Use this resource to create, update, and delete a VLAN and view a list of configured VLANS.

Property	Example
id	3603
state	active
name	vlan3603
shutdown	false

/api/n1k/vff

Use this resource to set the Anycast Gateway MAC Address and the Forwarding Mode for a Segment ID.

Property	Example
Gateway Mac	0000.dead.beef
SegId	5001
FwdMode	proxy-gateway
FwdMode	anycast-gateway

/api/n1k/vrf

Use this resource to configure VRF parameters.

Property	Example
name	management
ipRoute	10.10.10.10/24

Property	Example
routerInterfaceIP	10.10.10.100
shutdown	false
id	1

Note The ipRoute and routerInterfaceIP are only writable property.

/api/n1k/vnode

Use this resource to create, update, and delete a vService node and view a list of configured vService nodes.

Property	Example
type	vsg
name	vnode-test
failmode	close

/api/n1k/vpath

Use this resource to create, update, and delete a vService path and view a list of configured vService paths.

Property	Example
name	vpath-test
nodes	[{ "order": 1, "node": "vnode-test", "profileName": "prof-test" }]

/api/n1k/vxlan

Use this resource to create, update, and delete a VXLAN and view a list of configured VXLANS.

Property	Example
state	UP
macLearn	enabled
group	NULL
ports	0
mode	Unicast-only
name	TestVxlan
id	16000000
macDist	Enable

/api/n1k/vc

The APIs under /api/n1k/vc are ESX platform specific APIs.

Note Old APIs which were under /api/vc still exist under /api/vc name space for backward compatibility.

Executing CLI via REST

To execute Nexus 1000v CLI via REST use the POST method to send an HTTP request to the following link:

```
http://vsm-ip/api/cli
```

Include the following in the request body:

```
{"cmd": "config t; no logging console"}
```

To do the same using cURL, use the following command:

```
curl -u username:password 10.10.10.2/api/cli -d '{"cmd": "config t; no logging console "}'
 -i
```

Saving Resource Changes

To save the running config on the bootflash in some file persistently, use the POST method to send an HTTP request to the following link:

```
http://vsm-ip/api/save_config
```

Include the following in the request body:

```
{" filename": "config_backup.cfg"}
```

To do the same using cURL, use the following command:

```
curl -u username:password 10.10.10.2/api/save_config -d '{" filename": " config_backup.cfg"}'
 –i
```

Increase max-port via REST

To execute Nexus 1000v CLI “vmware vem upgrade set maxports” which will increase max-ports via REST use the POST method to send an HTTP request to the following link:

```
http://vsm-ip/api/upgrade_maxport
```

Include the following in the request body:

```
{"upgrade": true}
```

To do the same using cURL, use the following command:

```
curl -u username:password 10.10.10.2/api/upgrade_maxport -d '{"upgrade": true}' –i
```

Feature History for Using the REST API Plug-in

Feature	Releases	Feature Information
Support for JSON Response Format	4.2(1)SV2(2.1a)	This feature was introduced.
Support for HTTP Methods	4.2(1)SV2(2.1a)	This feature was introduced.
Support for /api/port-profile resource	4.2(1)SV2(2.1a)	This feature was introduced.
Support for /api/span resource	4.2(1)SV2(2.1a)	This feature was introduced.
Support for /api/user resource	4.2(1)SV2(2.1a)	This feature was introduced.
Support for /api/vlan resource	4.2(1)SV2(2.1a)	This feature was introduced.
Support for /api/vnode resource	4.2(1)SV2(2.1a)	This feature was introduced.
Support for /api/vpath resource	4.2(1)SV2(2.1a)	This feature was introduced.
Support for /api/vxlan resource	4.2(1)SV2(2.1a)	This feature was introduced.
Support for /api/vff resource	4.2(1)SV2(2.2)	This feature was introduced.
Support for /api/n1k/vrf resource	5.2(1)SV3(1.1)	This feature was introduced.