



Configuring Network Segmentation Manager

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Network Segments

A network segment is an isolated Layer 2 network with a unique broadcast domain (similar to a VLAN). A network segment also facilitates the availability of the network resources to a virtual machine. In OpenStack, a network segment is a VLAN or VXLAN type of network, which provides isolation on virtual networks.

You create a virtual network on the OpenStack Controller using the OpenStack dashboard or the OpenStack CLI commands. When you create a virtual network of type VLAN or VXLAN on the OpenStack controller, OpenStack triggers the auto-creation of a network segment with VLANs or VXLANs on the VSM.

For information about how to create a virtual network, see one the following chapters:

- [Creating a Virtual Network Using the OpenStack Dashboard](#)
- [Creating a Virtual Network Using the OpenStack CLI](#)

Prerequisites

Network Segmentation Manager has the following prerequisites:

- You have installed the Cisco Nexus 1000V software and configured the VSM using the *Cisco Nexus 1000V for KVM Software Installation Guide*.

Guidelines and Limitations

The network segmentation manager feature has the following configuration guidelines and limitations:

- The **network-segmentation-manager** feature is enabled on the VSM by default. Verify the output of the **show feature** command on the VSM to make sure that the **network-segmentation-manager** feature is enabled by default.
- The OpenStack controller should be able to communicate with the Cisco Nexus 1000V using HTTP.
- The **http-server** feature is enabled by default on the Cisco Nexus 1000V to allow web service communication.

Enabling and Disabling the Network Segmentation Manager Feature

The Network Segmentation Manager feature is enabled by default on the VSM. However, if you need to, you can enable or disable it.

Before You Begin

You must be logged in to the CLI in EXEC mode.

Procedure

	Command or Action	Purpose
Step 1	switch# configure terminal	Enters global configuration mode.
Step 2	switch(config)# feature network-segmentation-manager	Enables the Network Segmentation Manager feature. To disable this feature, use the no feature network-segmentation-manager command.
Step 3	switch(config)# show feature	(Optional) Displays the status for Cisco Nexus 1000V features.

This example shows how to enable the NSM feature and verify that it is enabled:

```
switch# configure terminal
switch(config)# feature network-segmentation-manager
switch# show feature
Feature Name           Instance  State
-----
http-server            1        enabled
lACP                   1        disabled
netflow                1        enabled
network-segmentation  1        enabled
port-profile-roles    1        disabled
privilege              1        disabled
scpServer              1        disabled
segmentation           1        enabled
sftpServer             1        disabled
```

```

sshServer          1          enabled
tacacs             1          disabled
telnetServer       1          enabled
vxlan-gateway      1          disabled
switch(config)#

```

Verifying the NSM Configuration

Use one of the following commands to verify the configuration:

- **show nsm ip pool template**
- **show nsm ip pool template filter description** *description*
- **show nsm ip pool template usage network segment**
- **show nsm logical network name** *<name>*
- **show nsm network segment brief**
- **show nsm network segment filter description** *description*
- **show nsm network segment filter network segment pool name** *<name>*
- **show nsm network segment filter vlan** *<vlan_ID>*
- **show nsm network segment filter network segment pool** *<name>*
- **show nsm network segment name** *<name>*
- **show nsm network segment pool filter description** *description*
- **show nsm network segment pool name** *<name>*
- **show dynamic-port-profile**
- **show dynamic-port-profile** *<name>*
- **show dynamic-port-profile inherit** *<name>*
- **show dynamic-port-profile network segment** *<name>*

show nsm ip pool template

This show command displays an IP pool template of a given name.

```

switch# show nsm ip pool template
Name: 00683778-cbd4-4e76-b181-bd562b6a1b3d
Description: subnet-vlan-39
IP-address-range: 39.1.1.2-39.1.1.254
Network: 39.1.1.0
Subnet mask: 255.255.255.0
Default router: 39.1.1.1
Netbios: Disabled
DHCP: Enabled
Reserved-ip-list:
Netbios-name-server-list:
DNS-server-list:
DNS-suffix-list:
switch#

```

show nsm ip pool template filter description

This show command displays a specific IP pool template based on its description. (The description in the VSM is the name in OpenStack.)

```
switch# show nsm ip pool template filter description sub-10-1
Name: d259d433-3e5c-491b-afda-787ddc260dea
Description: sub-10-1
IP-address-range: 10.10.1.2-10.10.1.254
Network: 10.10.1.0
Subnet mask: 255.255.255.0
```

show nsm ip pool template usage network segment

The following show command displays the network using an IP pool template.

```
switch# show nsm ip pool template usage network segment
Ip-pool: 00683778-cbd4-4e76-b181-bd562b6a1b3d
51c652ca-b118-41ea-b3ff-f02bb2ac934b
switch#
```

show nsm logical network name <name>

This command displays the Logical Network of a given name.

```
switch# show nsm logical network name 9a8d49b6-4590-47a5-8ecd-8616276694d2_log_net
Name: 9a8d49b6-4590-47a5-8ecd-8616276694d2_log_net
Description: seg-pool-11-310
```

show nsm network segment brief

This command displays information about mode, VLAN, publish status, and the system segment status for all the network segments.

```
switch# show nsm network segment brief
```

```
-----
Network segment          Mode          VLAN          Pub          Sys
-----
0200362d-0d69-44bc-8f2d-40685f474ddf
                        access          63            1            0
027f02fa-2854-40d2-a0ad-04cd37025cab
                        access          20            1            0
03625912-ce1b-4e53-ae14-88255f2f1de7
                        access          17            1            0
-----
Total          Total Pub          Total Sys
-----
3              3              0
-----
```

show nsm network segment filter description

This command displays a specific network segment based on its description. (The description in the VSM is the name in OpenStack.)

```
switch# show nsm network segment filter description net-10-1
Name: 3a43c169-bbf9-404d-abf0-3580b9a7113e
Description: net-10-1
UUID: 3a43c169-bbf9-404d-abf0-3580b9a7113e
Network segment pool: 39e45a8d-8ecd-4bb0-9666-6ddcec2cfefc
Mode: switchport mode access
Vlan: 1090
System Network Segment: FALSE
ip pool template: d259d433-3e5c-491b-afda-787ddc260dea
ip pool template UUID: d259d433-3e5c-491b-afda-787ddc260dea
Publish-name: 3a43c169-bbf9-404d-abf0-3580b9a7113e
```

show nsm network segment filter network segment pool <name>

This command displays all network segments that are part of a given network segment pool.

```
switch# show nsm network segment filter network segment pool
9a8d49b6-4590-47a5-8ecd-8616276694d2
Name: 0200362d-0d69-44bc-8f2d-40685f474ddf
  Description: vlan-seg-63
  UUID: 0200362d-0d69-44bc-8f2d-40685f474ddf
  Network segment pool: 9a8d49b6-4590-47a5-8ecd-8616276694d2
  Mode: switchport mode access
  Vlan: 63
  System Network Segment: FALSE
  ip pool template: c3a3f619-1a80-402c-b05d-829ce4eaed8f
  ip pool template UUID: c3a3f619-1a80-402c-b05d-829ce4eaed8f
  Publish-name: 0200362d-0d69-44bc-8f2d-40685f474ddf
```

show nsm network segment filter vlan <vlan_ID>

This command displays the network segment that is using a given VLAN ID.

```
switch# show nsm network segment filter vlan 70
Name: 34e94f30-4ed5-48dc-8e60-820e125692d8
  Description: vlan-seg-70
  UUID: 34e94f30-4ed5-48dc-8e60-820e125692d8
  Network segment pool: 9a8d49b6-4590-47a5-8ecd-8616276694d2
  Mode: switchport mode access
  Vlan: 70
  System Network Segment: FALSE
  ip pool template: b5a716d4-b2d6-45fa-b685-806947ed48b0
  ip pool template UUID: b5a716d4-b2d6-45fa-b685-806947ed48b0
  Publish-name: 34e94f30-4ed5-48dc-8e60-820e125692d8
switch#
```

show nsm network segment name <name>

The following show command displays the details of the network segment.

```
switch# show nsm network segment name 1c3046fb-d33c-4156-9b7d-ac0fb74f5891
Name: 1c3046fb-d33c-4156-9b7d-ac0fb74f5891
  Description: vlan-seg-62
  UUID: 1c3046fb-d33c-4156-9b7d-ac0fb74f5891
  Network segment pool: 9a8d49b6-4590-47a5-8ecd-8616276694d2
  Mode: switchport mode access
  Vlan: 62
  System Network Segment: FALSE
  ip pool template: 2e88cb6c-5a7a-4916-a17e-126d1dc370d2
  ip pool template UUID: 2e88cb6c-5a7a-4916-a17e-126d1dc370d2
  Publish-name: 1c3046fb-d33c-4156-9b7d-ac0fb74f5891
switch#
```

show nsm network segment pool filter description

The following show command displays a specific network segment pool based on its description. (The description in the VSM is the name in OpenStack.)

```
switch# show nsm network segment pool filter description vm-pool1
Name: 39e45a8d-8ecd-4bb0-9666-6ddcec2cfefc
  Description: vm-pool1
  UUID: 39e45a8d-8ecd-4bb0-9666-6ddcec2cfefc
  Logical network Name: 39e45a8d-8ecd-4bb0-9666-6ddcec2cfefc_log_net
  Intra Port Communication: Disabled
  Publish-name: 39e45a8d-8ecd-4bb0-9666-6ddcec2cfefc
```

show nsm network segment pool name <name>

The following show command displays which network segments are used by a given network segment pool.

```
switch# show nsm network segment pool name 9a8d49b6-4590-47a5-8ecd-8616276694d2
Name: 9a8d49b6-4590-47a5-8ecd-8616276694d2
Description: seg-pool-11-310
UUID: 9a8d49b6-4590-47a5-8ecd-8616276694d2
Logical network Name: 9a8d49b6-4590-47a5-8ecd-8616276694d2_log_net
Intra Port Communication: Disabled
Publish-name: 9a8d49b6-4590-47a5-8ecd-8616276694d2
switch#
```

show dynamic-port-profile

The following show command displays a list of all the dynamically created profiles.

```
switch# show dynamic-port-profile
dynamic-port-profile:
vmn_f58d3545-a0a1-4441-8b7e-1a7c8339524b_0200362d-0d69-44bc-8f2d-40685f474ddf
  inherit port-profile: dhcp_pp
  network segment: 0200362d-0d69-44bc-8f2d-40685f474ddf
dynamic-port-profile:
vmn_f58d3545-a0a1-4441-8b7e-1a7c8339524b_027f02fa-2854-40d2-a0ad-04cd37025cab
  inherit port-profile: dhcp_pp
  network segment: 027f02fa-2854-40d2-a0ad-04cd37025cab
switch#
```

show dynamic-port-profile name <name>

The following show command displays a specific dynamic port profile.

```
switch# show dynamic-port-profile name
vmn_f58d3545-a0a1-4441-8b7e-1a7c8339524b_3ff2d845-e587-4bdd-8737-75044e99a7c7
dynamic-port-profile:
vmn_f58d3545-a0a1-4441-8b7e-1a7c8339524b_3ff2d845-e587-4bdd-8737-75044e99a7c7
  inherit port-profile: dhcp_pp
  network segment: 3ff2d845-e587-4bdd-8737-75044e99a7c7
switch#
```

show dynamic-port-profile inherit <name>

The following show command displays the list of dynamic port profile inheriting a specific vEthernet policy profile.

```
switch# show dynamic-port-profile inherit dhcp_pp
dynamic-port-profile:
vmn_f58d3545-a0a1-4441-8b7e-1a7c8339524b_0200362d-0d69-44bc-8f2d-40685f474ddf
  inherit port-profile: dhcp_pp
  network segment: 0200362d-0d69-44bc-8f2d-40685f474ddf
dynamic-port-profile:
vmn_f58d3545-a0a1-4441-8b7e-1a7c8339524b_027f02fa-2854-40d2-a0ad-04cd37025cab
  inherit port-profile: dhcp_pp
  network segment: 027f02fa-2854-40d2-a0ad-04cd37025cab
switch#
```

show dynamic-port-profile network-segment <name>

The following show command displays the list of dynamic port profile using a given network segment.

```
switch# show dynamic-port-profile network segment 03625912-ce1b-4e53-ae14-88255f2f1de7
dynamic-port-profile:
vmn_f58d3545-a0a1-4441-8b7e-1a7c8339524b_03625912-ce1b-4e53-ae14-88255f2f1de7
  inherit port-profile: dhcp_pp
  network segment: 03625912-ce1b-4e53-ae14-88255f2f1de7
switch#
```

Feature History for Network Segmentation Manager

This table includes only the updates for those releases that have resulted in additions or changes to the feature.

Feature Name	Release	Feature Information
Network Segmentation Manager	5.2(1)SK1(2.1)	Introduced the Network Segmentation Manager (NSM) feature.

