



# CHAPTER 1

## Overview

---

This chapter provides basic information about Virtual Network Management Center (VNMC) and the VNMC CLI.

This chapter includes the following sections:

- [Information About VNMC, page 1-1](#)
- [Information About the VNMC CLI, page 1-3](#)

## Information About VNMC

This section contains information about the VNMC.

- [VNMC, page 1-1](#)
- [System Requirement, page 1-2](#)

## VNMC

VNMC is a virtual appliance, based on Red Hat Enterprise Linux (RHEL), that provides centralized device and security policy management of the Cisco Virtual Security Gateway (VSG) and Cisco ASA 1000V Cloud Firewall.

VSG is a virtual firewall appliance for the Cisco Nexus 1000V Series switch. VSG provides trusted access to virtual data center and cloud environments. VSG enables a broad set of multi tenant workloads that have varied security profiles to share a common compute infrastructure in a virtual data center private cloud or in a public cloud. By associating one or more virtual machines (VMs) into distinct trust zones, VSG ensures that access to trust zones is controlled and monitored through established security policies.

ASA 1000V is a virtual appliance that was developed using the ASA infrastructure to secure the tenant edge in multi tenant environments with Nexus 1000V deployments. It provides edge features and functionality (including site-to-site VPN, NAT, and DHCP), acts as a default gateway, and secures the VMs within the tenant against any network-based attacks.

Designed for multi tenant operation, VNMC provides seamless, scalable, and automation-centric management for virtualized data center and cloud environments. With a web-based GUI, CLI, and XML APIs, VNMC allows you to manage VSGs and ASA 1000Vs that are deployed throughout the data center from a centralized location.

Multi tenancy refers to the architectural principle, where a single instance of the software runs on a Software-as-a-Service (SaaS) server, serving multiple client organizations or tenants. Multi tenancy is contrasted with a multi-instance architecture, where separate software instances are set up for different client organizations. With a multi tenant architecture, a software application is designed to virtually partition data and configurations, so that each tenant works with a customized virtual application instance.

VNMC is built on an information model-driven architecture, where each managed device is represented by its subcomponents. This architecture enables VNMC to provide greater agility and simplification for securing multi tenant infrastructure.

VNMC communicates with vCenter, VSM, ASA 1000V, and VSG over a management VLAN.

## System Requirement

Table 1 provides the list of requirements for Cisco VNMC.

**Table 1 Cisco VNMC Requirements**

Requirement	Description
<b>Virtual Appliance</b>	
One virtual CPU	1.5 GHz
Memory	3 GB RAM
Disk space	25 GB on a shared network file storage (NFS) or a storage area network (SAN) if VNMC is deployed in a high availability (HA) cluster
Management interface	One management network interface
Processor	x86 Intel or AMD server with 64-bit processor listed in the VMware compatibility matrix
<b>VMware</b>	
VMware vSphere	Release 4.1 or 5.0 with VMware ESX or ESXi (English only)
VMware vCenter	Release 4.1 or 5.0 (English only)
<b>Interfaces and Protocols</b>	
HTTP/HTTPS	—
Lightweight Directory Access Protocol (LDAP)	—
<b>Intel VT</b>	
Intel Virtualization Technology (VT)	Enabled in the BIOS
<b>Web-Based GUI Client Requirements</b>	
Browser	Any of the following: <ul style="list-style-type: none"> <li>Internet Explorer 9.0</li> <li>Mozilla Firefox 11.0<sup>1</sup></li> <li>Chrome 18.0<sup>2</sup></li> </ul>
Flash Player	Adobe Flash Player plugin (version 11.2)
<b>Firewall Ports Requiring Access</b>	

**Table 1** Cisco VNMC Requirements (continued)

Requirement	Description
80	HTTP
443	HTTPS
843	Adobe Flash

1. We recommend Mozilla Firefox 11.0 with Adobe Flash Player 11.2.
2. Before you can use Chrome with VNMC 2.0, you must first disable the Adobe Flash Players that are installed by default with Chrome. For more information, see [Configuring Chrome for Use with VNMC](#), page 1-3.

## Configuring Chrome for Use with VNMC

To use Chrome with VNMC 2.0, you must disable the Adobe Flash Players that are installed by default with Chrome.



### Note

You must perform this procedure each time your client machine reboots. Chrome automatically enables the Adobe Flash Players when the system on which it is running reboots.

To disable default Adobe Flash Players in Chrome:

- 
- Step 1** In the Chrome URL field, enter **chrome://plugins**.
  - Step 2** Click **Details**.
  - Step 3** Locate the Flash player plugins, and disable each one.
  - Step 4** Download and install Adobe Flash player version 11.3.300.265.
  - Step 5** Close and reopen Chrome before logging into VNMC 2.0.
- 

## Information About the VNMC CLI

This section contains information about the VNMC CLIs.

This section includes the following topics:

- [Accessing the VNMC CLI, page 1-3](#)
- [Overview of the VNMC CLIs, page 1-5](#)
- [VNMC CLIs Basic Commands, page 1-8](#)

## Accessing the VNMC CLI

You can access the CLI, using one of the following ways:

- [Using the VSphere Client to Access the VNMC CLI](#)
- [Using SSH to Access the VNMC CLI](#)

## Using the vSphere Client to Access the VNMC CLI

To access the VNMC CLI from within the vSphere Client:

- 
- Step 1** Choose **Home > Inventory > Hosts and Clusters**.
  - Step 2** From the pane on the left side, choose VNMC VM.
  - Step 3** Click the Console tab to access the VNMC CLI.
  - Step 4** Login as admin with the VNMC Password specified at VNMC installation time.

### Example

```
hostname login: admin
Password: MyPassword
```

---

## Using SSH to Access the VNMC CLI

You can use SSH to access the VNMC CLI.

To access the VNMC CLI from SSH:

- 
- Step 1** Enter the command  

```
ssh admin@VNMC-IP
```

where VNMC-IP is your VNMC IP address.
  - Step 2** When the following prompt appears, enter your VNMC administrator password.  
admin@VNMC-IP's password:
  - Step 3** (Optional) If you are asked for confirmation to save your VNMC IP to ssh known\_hosts, enter *yes*.
- 

### EXAMPLE

This example shows how to access the VNMC CLI using SSH:

```
$ ssh admin@172.25.97.246
admin@172.25.97.246's password:
Last login: Fri Aug 10 20:49:15 2012 from 171.69.222.221
Logged in from 171.69.154.246
Cisco Virtual Network Management Center
TAC support: http://www.cisco.com/tac
Copyright (c) 2002-2012, Cisco Systems, Inc. All rights reserved.
The copyrights to certain works contained in this software are
owned by other third parties and used and distributed under
license. Certain components of this software are licensed under
the GNU General Public License (GPL) version 2.0 or the GNU
Lesser General Public License (LGPL) Version 2.1. A copy of each
such license is available at
http://www.opensource.org/licenses/gpl-2.0.php and
http://www.opensource.org/licenses/lgpl-2.1.php

host-name#
```

## Overview of the VNMC CLIs

An important component of the VNMC is the CLI. With it, you can perform the following tasks:

- Restore VNMC to full state of the VNMC without having to reinstall.
- Collect the technical support data and copy it to a file.
- Change the hostname.
- Change the management interface IP settings.
- Configure VNMC device profiles.
- Create VNMC system policies.
- Create backups and import/export services.

VNMC contains six sub-CLIs. You use all six sub-CLIs to manage VNMC. The CLIs are as follows:

- **Management controller**—This is the default CLI. The command prompt is `host-name#`. Use this CLI to perform the following tasks:

```
host-name#
  commit-buffer  Commit transaction buffer
  connect        Connect to another CLI
  discard-buffer Discard transaction buffer
  exit           Exit from command interpreter
  scope          Changes the current mode
  show           Show system information
  terminal       Terminal
  top            Go to the top mode
  where         Show information about the current mode
```

```
host-name# show
  cli            CLI Information
  clock          Clock
  configuration  Configuration
  network-interface VM IP interface
  system        Systems
  version        Version of installed applications
```

- **Local management**—This is the local management CLI. The command prompt is `host-name(local-mgmt)#`. Use this CLI to perform the following tasks:

```
host-name(local-mgmt)#
  connect        Connect to another CLI
  copy           Copy a file
  delete         Delete a file
  dir            Show content of dir
  exit           Exit from command interpreter
  modify         Modify the shared secret on service registry
  ping           Ping
  reboot         Perform system reboot
  restore        Restore the VM
  service        Control services
  show           Show system information
  terminal       Terminal
  top            Go to the top mode
  Update         Update the system using the specified image
```

```
host-name(local-mgmt)# connect
  local-mgmt    Local-mgmt
  policy-mgr    Policy-mgr
  resource-mgr  Resource-mgr
  service-reg   Service-reg
```

```

vm-mgr          Vm-mgr

host-name(local-mgmt)# show
cli             CLI Information
clock          Clock
tech-support    Show tech support
update-history  show update system image history
version        Version of installed applications

```

- Policy manager—This is the policy manager CLI. The command prompt is host-name(policy-mgr)#. Use this CLI to perform the following tasks:

```

host-name(policy-mgr)#
commit-buffer   Commit transaction buffer
connect        Connect to Another CLI
discard-buffer  Discard transaction buffer
exit           Exit from command interpreter
scope          Changes the current mode
show           Show system information
terminal       Terminal
top            Go to the top mode
where          Show information about the current mode

```

```

host-name(policy-mgr)# connect
policy-mgr     Policy-mgr
resource-mgr   Resource-mgr
service-reg    Service-reg
vm-mgr         Vm-mgr

```

```

host-name(policy-mgr)# scope
monitoring     Monitor the system
org            Organizations

```

```

host-name(policy-mgr)# show
cli             CLI Information
configuration   Configuration
org            Organizations
timezone       Set timezone
version        Version of installed applications

```

- Resource manager—This is the resource manager CLI. The command prompt is host-name(resource-mgr)#. Use this CLI to perform the following tasks:

```

host-name(resource-mgr)#
commit-buffer   Commit transaction buffer
connect        Connect to Another CLI
discard-buffer  Discard transaction buffer
exit           Exit from command interpreter
scope          Changes the current mode
show           Show system information
terminal       Terminal
top            Go to the top mode
where          Show information about the current mode

```

```

host-name(resource-mgr)# connect
policy-mgr     Policy-mgr
resource-mgr   Resource-mgr
service-reg    Service-reg
vm-mgr         Vm-mgr

```

```

host-name(resource-mgr)# scope
monitoring     Monitor the system

```

```

host-name(resource-mgr)# show

```

```
cli          CLI Information
configuration Configuration
version     Version of installed applications
```

- Service registry—This is the service registry CLI. The command prompt is `host-name(service-reg)#`. Use this CLI to perform the following tasks:

```
host-name(service-reg) #
  acknowledge      Acknowledge
  commit-buffer    Commit transaction buffer
  connect          Connect to Another CLI
  discard-buffer   Discard transaction buffer
  exit            Exit from command interpreter
  scope           Changes the current mode
  show            Show system information
  terminal        Terminal
  top            Go to the top mode
  where          Show information about the current mode
```

```
host-name(service-reg) # connect
  policy-mgr      Policy-mgr
  resource-mgr    Resource-mgr
  service-reg     Service-reg
  vm-mgr         Vm-mgr
```

```
host-name(service-reg) # scope
  monitoring      Monitor the system
```

```
host-name(service-reg) # show
  cli            CLI Information
  clients       Show registered clients
  configuration  Configuration
  controllers    Show registered controllers
  fault         Fault
  providers     Show registered providers
  version       Version of installed applications
```

- Virtual machine manager—This is the virtual machine manager CLI. The command prompt is `host-name(vm-mgr)#`. Use this CLI to perform the following tasks:

```
host-name(vm-mgr) #
  commit-buffer    Commit transaction buffer
  connect          Connect to Another CLI
  discard-buffer   Discard transaction buffer
  exit            Exit from command interpreter
  scope           Changes the current mode
  show            Show system information
  terminal        Terminal
  top            Go to the top mode
  where          Show information about the current mode
```

```
host-name(vm-mgr) # connect
  policy-mgr      Policy-mgr
  resource-mgr    Resource-mgr
  service-reg     Service-reg
  vm-mgr         Vm-mgr
```

```
host-name(vm-mgr) # scope
  monitoring      Monitor the system
```

```
host-name(vm-mgr) # show
  cli            CLI Information
  configuration  Configuration
  version       Version of installed applications
```

## VNMC CLIs Basic Commands

The basic commands for the VNMC CLIs are as follows:

- **commit-buffer**—Saves the configuration.  
**commit-buffer** can be used with the optional keyword **verify-only**. When you execute **commit-buffer verify-only** the configuration is not saved, just verified.
- **connect**—Connects to other CLIs.
- **discard-buffer**—Deletes the configuration.
- **enter**—Creates an object and places you in a mode.
- **exit**—Exits modes, CLIs, and the default CLI.
- **scope**—Places you in a mode.
- **show**—Displays information.
- **top**—Places you in management controller mode.
- **where**—Shows you where you are at in the VNMC CLI.
- **?**—Displays the commands available in the mode.
- **>**—Redirects show commands to a file.
- **>>**—Redirect show commands to a file in append mode.
- **|**—Pipes show command output to a filter.