



Cisco vPath Ecosystem, Release 2.5

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Overview

Information About Cisco vPath Ecosystem

The Cisco vPath Ecosystem, Release 2.5, is the Cisco vPath infrastructure solution that supports service chaining of multiple service nodes.

The Cisco Nexus 1000V for VMware vSphere with Cisco Prime Network Services Controller (Cisco Prime NSC) support service nodes such as Cisco Virtual Security Gateway (VSG), the Citrix NetScaler 1000V load balancer, the Cisco ASA 1000V, and Cisco vWAAS. Users can define service nodes first and then create a chain of defined service nodes and attach them to port profiles. In this way, Cisco vPath can direct traffic to the service nodes in the order in which the chain was defined. Additionally, from the Cisco Nexus 1000V control plane, you can use the command-line interface to enable Citrix NetScaler 1000V as a virtual service node and to provide licensing support.

Virtual Services (vServices)

Virtual Services include the various Layer 4 through Layer 7 network services such as firewalls, edge firewalls, load balancers, WAN optimization and others which are virtualized and delivered as virtual machines.

The following virtual services are supported by Cisco Nexus 1000V Series switch using the vPath:

- **Cisco Virtual Security Gateway (VSG):** provides trusted multitenant access with granular zone-based security policies for VMs. Cisco VSG delivers security policies across multiple servers. It supports VM mobility across physical servers for workload balancing, availability, or scale.
- **Cisco Virtual Wide Area Network Application Services (vWAAS):** a WAN optimization solution, helps deliver assured application performance acceleration to IT users connected to enterprise data centers and enterprise private clouds.
- **Cisco ASA for 1000V:** provides trusted security to multi-tenant virtual and cloud infrastructures at the edge. When implemented with the Cisco Nexus 1000V Switch, it provides consistent security across physical, virtual, and cloud infrastructures.
- **Citrix NetScaler 1000V:** performs application-specific traffic analysis to intelligently distribute, optimize, and secure Layer 4 to Layer 7 network traffic for web applications.

vPath

Cisco Virtual Service Data Path (vPath) is the service intelligence embedded in the Cisco Nexus 1000V Series switch.

vPath provides the forwarding plane abstraction and programmability required to implement the Layer 2 to Layer 7 network services such as segmentation firewalls, edge firewalls, load balancers, WAN optimization, and others. It is embedded in the Cisco Nexus 1000V Series switch Virtual Ethernet

Module (VEM). It intercepts the traffic whether external to the virtual machine or between virtual machines and then redirects the traffic to the appropriate virtual service node (VSN) such as Cisco Virtual Security Gateway (VSG), Cisco ASA 1000V, Citrix NetScaler 1000V, or Cisco Virtual Wide Area Application Services (vWAAS) for processing. vPath uses overlay tunnels to steer the traffic to the virtual service node and the virtual service node can be either Layer 2 or Layer 3 adjacent.

The basic functions of vPath include traffic redirection to a virtual service node (VSN) and service chaining. Apart from the basic functions, vPath also includes advanced functions such as traffic off load, acceleration and others.

vPath steers traffic, whether external to the virtual machine or from a virtual machine to a virtual machine, to the virtual service node. Initial packet processing occurs in the VSN for policy evaluation and enforcement. Once the policy decision is made, the virtual service node may off-load the policy enforcement of remaining packets to vPath.

Use-Case Example

Figure 1-1 is a use-case example of a Cisco vPath Ecosystem, Release 2.5 solution that includes the following products that you install and configure in the following sequence:

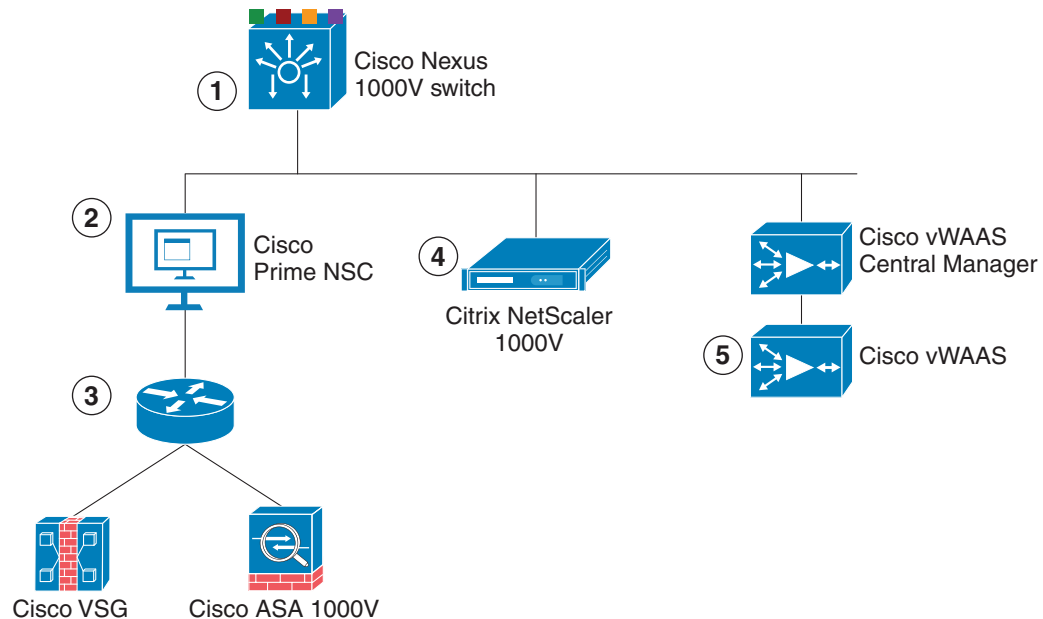
1. Cisco Nexus 1000V switch
2. Cisco Prime NSC
3. Cisco VSG and Cisco ASA 1000V
4. Citrix NetScaler 1000V
5. Cisco vWAAS



Note

Alternate use-case solutions are also available. The Cisco Nexus Cloud Services Platform (CSP) can be a part of other use-case solutions.

Figure 1-1 Cisco vPath Ecosystem 2.5 Solution Example



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Overview of the Cisco Nexus 1000V Switch

The Cisco Nexus 1000V provides a distributed virtual switch that extends across many virtualized hosts. The Cisco Nexus 1000V manages a data center defined by the vCenter Server. Each server in the data center is represented as a line card in the Cisco Nexus 1000V and can be managed as if it were a line card in a physical Cisco switch.

For an overview of the Cisco Nexus 1000V switch, see the *Cisco Nexus 1000V Installation and Upgrade Guide* at the following location:

[Cisco Nexus 1000V Overview](#)

Overview of Cisco Prime NSC

Cisco Prime Network Services Controller (Cisco Prime NSC) is a virtual appliance, based on Red Hat Enterprise Linux, that provides centralized device and security policy management of Cisco virtual services. Designed for multiple-tenant operation, Cisco Prime NSC provides seamless, scalable, and automation-centric management for virtualized data center and cloud environments.

For an overview of the Cisco Prime NSC product and deployment, see the *Cisco Prime Network Services Controller Release Notes* at the following location:

[Cisco Prime Network Services Controller 3.0.2 Release Notes](#)

For information about installing, configuring, and using Cisco Prime NSC, see the following documents:

- *Cisco Prime Network Services Controller 3.0.2 Quick Start Guide* at [Cisco Prime Network Services Controller 3.0.2 Quick Start Guide](#)
- *Cisco Prime Network Services Controller 3.0.2 User Guide* at [Cisco Prime Network Services Controller 3.0.2 User Guide](#)

[Cisco Prime Network Services Controller 3.0.2 User Guide](#)

**Note**

Beginning with release 3.0, the product name for Cisco Virtual Network Management Center has changed to Cisco Prime Network Services Controller. For information about Cisco Prime Network Services Controller documentation, go to the following location:

[Cisco Prime Network Services Controller](#)

Overview of Cisco VSG

The Cisco VSG is a virtual firewall appliance that provides trusted access to virtual data center and cloud environments with dynamic policy-driven operation, mobility-transparent enforcement, and scale-out deployment for dense multitenancy.

For an overview of Cisco VSG, see the guide at the following location:

[Cisco VSG Overview](#)

Overview of Cisco ASA 1000V

The Cisco ASA 1000V Cloud Firewall is a virtual appliance that was developed using the ASA infrastructure to secure the tenant edge in multitenant environments with Nexus 1000V deployments.

For an overview of Cisco ASA 1000V, see the *Cisco ASA 1000V Getting Started Guide* at the following location:

[Cisco ASA 1000V Getting Started Guide](#)

Overview of Citrix NetScaler 1000V

The Citrix NetScaler 1000V is an application switch that performs application-specific traffic analysis to intelligently distribute, optimize, and secure Layer 4 to Layer 7 network traffic for web applications.

For an overview of Citrix NetScaler 1000V, see the *Getting Started with Citrix NetScaler* at the following location:

[Citrix NetScaler 1000V Overview](#)

See also, the *Citrix NetScaler Release Notes* at the following location:

[Citrix NetScaler 1000V Release Notes](#)

Overview of Cisco vWAAS

The vWAAS software supports WAN optimization in a cloud environment where physical WAE devices cannot usually be deployed. For an overview of vWAAS, see the *Cisco Wide Area Application Services vWAAS Installation and Configuration Guide* at the following location:

[vWAAS Overview](#)

Overview of Cisco Nexus Cloud Services Platform

**Note**

Cisco Nexus Cloud Services Platform (CSP) is not part of the solution example provided in the diagram, but CSP is a part of the Cisco vPath Ecosystem solution and is available in other use cases of the Cisco vPath Ecosystem solution.

The Cisco Nexus CSP product family includes the Cisco Nexus 1010, Cisco Nexus 1010-X, Cisco Nexus 1110-S, and Cisco Nexus 1110-X. The Cisco Nexus CSP provides the dedicated hardware for Cisco Nexus 1000V Virtual Supervisor Modules (VSMs) and host VSMs that were hosted on virtual machines (VMs). You can now install and manage a Cisco Nexus 1000V VSM like a standard Cisco switch.

The services managed by the Cisco Nexus CSP product family are called virtual service blades (VSBs). The Cisco Nexus CSP product family supports the following VSBs:

- Cisco Nexus 1000V VSM for VMware vSphere
- Cisco Network Analysis Module (NAM)
- Cisco Virtual Security Gateway (VSG)
- Cisco Data Center Network Manager (DCNM) Module
- Cisco Nexus 1000V VXLAN Gateway
- Citrix NetScaler 1000V

For more information about VSBs, see the *Cisco Nexus Cloud Services Platform Configuration Guide* at the following location:

[Cisco Nexus Cloud Services Platform Configuration Guide](#)

For more information about the number of VSBs that are supported and hosted on the Cisco Nexus CSP product family, see the *Cisco Nexus Cloud Services Platform Compatibility Information*.



Compatibility Matrix

Compatibility Matrix for Products in Cisco vPath Ecosystem

A compatibility matrix lists which Cisco software versions can be used with a particular Cisco hardware or software product or module.

The compatibility matrix for the products that are included in Cisco vPath Ecosystem, Release 2.5 is as follows:

Table 2-1 *Compatibility Matrix for Products in the Cisco vPath Ecosystem*

Cisco Nexus 1000V for VMware vSphere Release 4.2(1)SV2(2.1a)	Cisco VSG Release 4.2(1)VSG2(1.1)	Cisco Prime NSC Release 3.0.2	Citrix NetScaler 1000V Release NS10.1	Cisco ASA 1000V Version 8.7(1)	Cisco vWAAS Version 5.3.3	Cisco Cloud Services Platform Release 4.2(1)SP1(6.2)
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Compatibility Matrix for the Cisco Nexus 1000V Switch

The compatibility matrix for the Cisco Nexus 1000V switch is at the following location:

[Cisco Nexus 1000V Compatibility Matrix](#)



Note

VMware ESX 5.5 is not supported on the vPath Ecosystem Release 2.5.

Compatibility Matrix for Cisco VSG

The compatibility matrix information for Cisco VSG is at the following location:

[Cisco VSG Compatibility Information](#)

Compatibility Matrix for Cisco ASA 1000V

The compatibility matrix for Cisco ASA 1000V is at the following location:

[Cisco ASA Compatibility Matrix](#)

Compatibility Matrix for Cisco Nexus Cloud Services Platform

The compatibility matrix for Cisco Nexus CSP is at the following location:

[Cisco Nexus Cloud Services Platform Compatibility Matrix](#)



Licensing

Information About Licensing

This section provides information about licensing.

Cisco Nexus 1000V and Cisco VSG Licensing

For general information related to obtaining a product license registration, see the following URL:

<http://www.cisco.com/web/fw/tools/swift/ui/html/help.html>

When you purchase a license, you are provided a PAK ID that is required to request a license. For information about product license registrations, see the following URL:

<http://tools.cisco.com/SWIFT/LicensingUI/Quickstart>

Cisco ASA 1000V Licensing

The Cisco Nexus 1000V Virtual Service Module (VSM) requires a license that controls the number of CPU sockets on each Virtual Ethernet Module (VEM) that is used for the Cisco ASA 1000V. If the VSM does not have enough licenses, and you deploy a Cisco ASA 1000V without license support, the traffic is not allowed to pass through the Cisco ASA 1000V which means the following:

- For the traffic that passes from the inside to the outside interface, traffic never reaches the Cisco ASA 1000V. See syslog 4450002 for more information in the [Cisco ASA Series Syslog Messages](#).
- For the traffic that passes from the outside to the inside of the interface, the Cisco ASA 1000V allows the initial packet to pass through, but the vPath module on the Cisco Nexus 1000V rejects the packet, and Cisco ASA 1000V rejects the flow. See syslog 4450002 for more information in the [Cisco ASA Series Syslog Messages](#).

Citrix NetScaler 1000V Licensing

For general information related to obtaining a product license registration, see the following URL:

<http://www.cisco.com/web/fw/tools/swift/ui/html/help.html>

When you purchase a license for Citrix NetScaler 1000V, you are provided a PAK ID number. After you obtain the PAK ID number, you can request a license as follows:

-
- Step 1** Go to the following URL: <http://tools.cisco.com/SWIFT/LicensingUI/Quickstart>.
 - Step 2** In the **Quickstart** area, in the **Enter a Single PAK or Token to fulfill** field, add the PAK ID number.
 - Step 3** Click **Fulfill Single PAK/Token**.
 - Step 4** In the **Get New** area, in the **Ethernet** field, enter the FLEXnet host ID number of the specific management interface of Citrix NetScaler 1000V.



Note Obtain the FLEXnet host ID number from the Citrix NetScaler 1000V console by entering the **lmutil lmhostid** command.

- Step 5** Click **Next**.
You see the following message: “Your License Key will be emailed within the hour to these email addresses and connected with the specified end user.”
 - Step 6** In the **Send To** field, enter the email addresses where you want the license key emailed.
 - Step 7** In the End User field, enter the end username.
 - Step 8** Check the checkbox to agree with the terms of the license.
 - Step 9** Click **Get License**.
The license request is processed, and the license is emailed to the email addresses that were provided in [Step 6](#). The email contains license key installation instructions.
-

For more information about installing Citrix NetScaler 1000V and licensing, see the licensing information at this location:

[Citrix NetScaler 1000V Licensing](#)



Prerequisites

Information About Prerequisites

This section provides information about product prerequisites in the Cisco vPath Ecosystem.

Prerequisites for Installing the Cisco Nexus 1000V

Before you install the Cisco Nexus 1000V, see the prerequisites at the following location:

[Prerequisites for Installing Cisco Nexus 1000V](#)

Prerequisites for Installing and Configuring Cisco Prime NSC

Before you install and configure Cisco Prime NSC:

- See the prerequisites at the following location:
[Cisco Prime NSC Installation Requirements](#)
- Complete the fields in the following table:

Table 1 Information Required for Installation and Configuration

Required Information	Your Information
For deploying the Cisco Prime NSC OVA	
Name	
Location of files	
Data store location	
Storage location, if more than one location is available	
Management port profile name for VM management	
Note The management port profile is the same port profile that is used for the VSM. The port profile is configured in the VSM and is used for the Cisco Prime NSC management interface.	
IP address	

Table 1 Information Required for Installation and Configuration (continued)

Required Information	Your Information
Subnet mask	
Gateway IP address	
Domain name	
DNS server	
Note Access to a DNS server is required for Cisco Prime NSC to communicate with the Amazon Cloud Provider.	
Admin password	
Shared secret password for communications between Cisco Prime NSC, Cisco VSG, Cisco ASA 1000V, and VSM.	
For configuring VMware vCenter in Cisco Prime NSC	
vCenter name	
Description	
Hostname or IP address	

Prerequisites for Installing Cisco VSG

Before you install Cisco VSG, see the prerequisites at the following location;

[Prerequisites for Installing Cisco VSG](#)

Planning for the Cisco ASA 1000V Deployment

Before you deploy Cisco ASA 1000V, make sure that you complete the following tasks:

- Review the process for deployment in the *Cisco ASA 1000V Getting Started Guide* at the following location:
[Cisco ASA 1000V Getting Started Guide](#)
- Review answers to the most frequently asked questions (FAQs) listed in the *Cisco ASA 1000V Getting Started Guide* at the following location:
[Cisco ASA 1000V Getting Started Guide](#)

Prerequisites for Deploying Cisco ASA 1000V

Before you deploy Cisco ASA 1000V, you must perform the following tasks in the order specified:

[Predeployment Task Flow for Cisco ASA 1000V](#)

Prerequisites for Installing Citrix NetScaler 1000V

Before you install Citrix NetScaler 1000V, see the prerequisites at the following location:

[Prerequisites for Installing the Citrix NetScaler 1000V](#)

Prerequisites for Installing Cisco vWAAS

Before you install Cisco vWAAS, see the prerequisites at the following location:

[Prerequisites for Installing vWAAS](#)

Prerequisites for Installing the Cisco Nexus Cloud Services Platform

Before you install the Cisco Nexus CSP, see the prerequisites at the following location:

[Prerequisites for Installing the Cisco Nexus Cloud Services Platform](#)



Install and Configure

Information About Installing and Configuring

This section provides information about installing and configuring products that are part of the Cisco vPath Ecosystem.

Installing and Configuring the Cisco Nexus 1000V Switch

To install the Cisco Nexus 1000V switch, see the instructions at the following location:

[Cisco Nexus 1000V Installation and Upgrade Guide](#)

Installing and Configuring Cisco Prime NSC

To install Cisco Prime NSC and to configure initial settings for Cisco Prime NSC, see the instructions at the following location:

[Cisco Prime NSC Quick Start Guide](#)

Installing and Configuring Initial Settings on Cisco VSG

To install and complete a basic configuration of Cisco VSG, see the instructions at the following location:

[Cisco VSG for VMware vSphere and Cisco Prime NSC Installation and Upgrade Guide](#)

Installing and Configuring Cisco ASA 1000V

If you deployed the Cisco ASA 1000V to use the Cisco Prime NSC management mode, see installation and configuration instructions in the *Cisco ASA 1000V Getting Started Guide* at the following location:

[Cisco ASA 1000V Getting Started Guide](#)

If you deployed Cisco ASA 1000V to use the ASDM management mode, see the installation and configuration instructions in the *Cisco ASA 1000V Getting Started Guide* at the following location:

[Cisco ASA 1000V Getting Started Guide](#)

Installing and Configuring Citrix NetScaler 1000V

For information related to installing and configuring Citrix NetScaler 1000V, see the relevant information at this location:

[Installing and Configuring the Citrix NetScaler 1000V](#)

**Note**

If the Citrix NetScaler 1000V and the Cisco ASA 1000V are in the same service chain, the Citrix NetScaler 1000V must be a VM.

Installing and Configuring Cisco vWAAS

You must first install the vWAAS VM on the VMware server using vSphere before you configure vWAAS.

To install the Cisco vWAAS VM, see the installation instructions in the *Cisco Wide Area Application Services vWAAS Installation and Configuration Guide* at the following location:

[Installing vWAAS](#)

After you install the Cisco vWAAS VM, you must configure the following vWAAS settings:

- IP address and netmask
- Default gateway and primary interface
- Enterprise license
- Central Manager address
- Centralized Management System (CMS)
- Interception (Web Cache Communication Protocol (WCCP) or other)

To configure these settings, see the configuration instructions in the *Cisco Wide Area Application Services vWAAS Installation and Configuration Guide* at the following location:

[Configuring vWAAS](#)

Installing and Configuring Cisco Cloud Services Platform

To install and configure Cisco Nexus CSP, see the workflow at the following location:

[Cisco Nexus CSP Installation Workflow](#)

To install Cisco Nexus CSP hardware, see the instructions at the following location:

[Installing the Cisco Nexus Cloud Services Platform \(CSP\) hardware](#)

To install Cisco Nexus CSP software, see the instructions at the following location:

[Installing the Cisco Nexus Cloud Services Platform \(CSP\) software](#)



Enable Cisco vPath

Enabling Cisco vPath

To enable vPath, see the *Cisco vPath and vServices Reference Guide for VMware vSphere* at the following location:

[Cisco vPath and vServices Reference Guide for VMware vSphere](#)

The following example displays how to configure Cisco VSG and Citrix NetScaler 1000V by defining services nodes, creating a service path, adding service nodes in the path, and enabling this service path in a port-profile. Similarly, you can add other service nodes in the service chain.

Step 1 Login to your Cisco Nexus 1000V VSM console.

Step 2 Define the vService node in the Cisco Nexus 1000V VSM.

```
switch# configuration terminal
switch(config)# vservice node <VSG-node-name> type vsg
switch# (config-vservice-node)# ip address <VSG Data IP>
switch# (config-vservice-node)# adjacency 13
switch# (config-vservice-node)# fail-mode close
switch# (config-vservice-node)# end
switch#

switch# configuration terminal
switch(config)# vservice node <VPX-node-name> type adc
switch# (config-vservice-node)# ip address <Data IP>
switch# (config-vservice-node)# adjacency 13
switch# (config-vservice-node)# fail-mode close
switch# (config-vservice-node)# end
switch#
```

Step 3 Add the nodes under the service path in a chain.



Note On the Cisco vPath Ecosystem service chain, Cisco VSG and Citrix NetScaler 1000V must be on one service path, and Cisco ASA 1000V and Cisco vWAAS must be on another service path.

```
switch# configuration terminal
switch(config)# vservice path <Chain name>
switch(config-vservice-path)# node <VSG-node-name> profile <VSG-SP-profile-name> order
<number>
switch(config-vservice-path)# node <VPX-node-name> order <number>
```

Step 4 Add the service chain to a VM port-profile that is protected by the service chain.

Configure the service nodes in the service chain and associate the port-profile to traffic VM.

```
switch# configuration terminal
switch(config)# port-profile type vethernet <name>
switch(config-port-prof)# vmware port-group
switch(config-port-prof)# switchport mode access
switch(config-port-prof)# org root/<tenant name>
switch(config-port-prof)# switchport access vlan <VM vlan>
switch(config-port-prof)# vservice path <Chain name>
switch(config-port-prof)# no shutdown
switch(config-port-prof)# state enabled
switch# (config-vservice-node)# end
switch#
```

Step 5 Verify the nodes status.

```
switch# sh vservice node brief
```

```
-----
Node Information
-----
ID Name                Type  IP-Address  Mode  State  Module
 2 VSG                  vsg   5.5.5.30    13   Alive  3,
 9 ASA                  asa   60.1.1.16   v-555 Alive  3,128,
13 WAAS                 vwaas 173.1.1.112 v-557 Alive  3,
20 VPX                  adc   5.5.5.225   13   Alive  3,
```

```
switch# sh vservice detail
```

```
-----
License Information
-----
Mod  VSG-Lic-Count  ASA-Lic-Count
 3      2              2
128    0              2
-----
Node Information
-----
Node ID:2      Name:VSG
Type:vsg      IPAddr:5.5.5.30      Fail:close L3
Mod  State      MAC-Addr      VVer
 3   Alive     --            2

Node ID:9      Name:ASA
Type:asa      IPAddr:60.1.1.16     Fail:close Vlan:555
Mod  State      MAC-Addr      VVer
 3   Alive     00:50:56:9d:4b:44  2
128  Alive     00:50:56:9d:4b:44  2

Node ID:13     Name:WAAS
Type:vwaas    IPAddr:173.1.1.112   Fail:close Vlan:557
Mod  State      MAC-Addr      VVer
 3   Alive     00:50:56:9d:7f:3c   2

Node ID:20     Name:VPX
Type:adc      IPAddr:5.5.5.225     Fail:close L3
Mod  State      MAC-Addr      VVer
 3   Alive     --            2
```


Enabling Cisco vPath on Cisco ASA 1000V

Before you can enable Cisco vPath on Cisco ASA 1000V, make sure that you have launched ASDM and completed the procedure listed in the *Cisco ASA 1000V Getting Started Guide* at the following location:

[Cisco ASA 1000V Getting Started Guide](#)

To enable Cisco vPath on Cisco ASA 1000V, complete the steps listed in the *Cisco ASA 1000V Getting Started Guide* at the following location:

[Cisco ASA 1000V Getting Started Guide](#)

**Note**

If the Citrix NetScaler 1000V and the Cisco ASA 1000V are in the same service chain, the Citrix NetScaler 1000V must be a VM.

Enabling Cisco vPath on Cisco vWAAS

vPath interception is used in the Cisco Nexus 1000V switch for Cisco vWAAS deployment in the data center. To enable vPath for Cisco vWAAS, complete the steps in the *Cisco Wide Area Application Services vWAAS Installation and Configuration Guide* at the following location:

[Enabling vPath on vWAAS](#)



Troubleshoot

Information About Troubleshooting

This section provides troubleshooting information related products in the vPath Ecosystem.

Troubleshooting Cisco Nexus 1000V

For information about troubleshooting the Cisco Nexus 1000V, see the *Cisco Nexus 1000V Troubleshooting Guide* at the following location:

[Cisco Nexus 1000V Troubleshooting Guide](#)

Troubleshooting Cisco Prime NSC

For information about troubleshooting Cisco Prime NSC, see the *Troubleshooting Installation and Configuration* at the following location:

[Cisco Prime Network Services Controller 3.0.2 Quick Start Guide](#)

Troubleshooting Cisco VSG

For information about troubleshooting Cisco VSG, see the *Cisco Virtual Security Gateway for VMware vSphere Troubleshooting Guide* at the following location:

[Cisco VSG Troubleshooting Guide](#)

Troubleshooting Cisco ASA 1000V

For information about troubleshooting the Cisco ASA 1000V deployment, see the *Cisco ASA 1000V Troubleshooting Guide* at the following location:

[Cisco ASA 1000V Getting Started Guide](#)

To view sample configurations that might help you to troubleshoot your Cisco ASA 1000V deployment, see the *Cisco ASA 1000V Getting Started Guide* at the following location:

[Cisco ASA 1000V Getting Started Guide](#)

Troubleshooting the Cisco Cloud Services Platform

For information about troubleshooting Cisco Nexus CSP, see the *Cisco Nexus Cloud Services Platform Troubleshooting Guide* at the following location:

[Cisco Cloud Services Platform Troubleshooting](#)



Support

About Support

For support issues related to the products in the vPath Ecosystem, contact Cisco by phone (through the standard Cisco access numbers on the Web). These Cisco Technical Assistance Center (TAC) phone numbers are available at the following location:

http://www.cisco.com/en/US/support/tsd_cisco_worldwide_contacts.html#numbers

Citrix NetScaler 1000V Support

For information about support issues for the Citrix NetScaler 1000V, contact Cisco by phone (through the standard Cisco access numbers on the Web). These Cisco Technical Assistance Center (TAC) phone numbers, are available at the following location:

http://www.cisco.com/en/US/support/tsd_cisco_worldwide_contacts.html#numbers

Describe your issue as a Citrix Netscaler 1000V issue and work with TAC.

