Cisco vWAAS on VMware ESXi

This chapter describes how to use Cisco vWAAS on VMware vSphere ESXi, and contains the following sections:

About Cisco vWAAS on VMware ESXi

Cisco vWAAS for VMware ESXi provides cloud-based application delivery service over the WAN in ESX/ESXi-based environments. Cisco vWAAS on VMware vSphere ESXi is delivered an OVA file. The vSphere client takes the OVA file for a specified vWAAS model, and deploys an instance of that vWAAS model.

Supported Host Platforms, Software Versions, and Disk Type

Table 4-1 shows the platforms and software versions supported for vWAAS on VMware ESXi.

Table 4-1 Platforms and Software Versions Supported for vWAAS on VMware ESXi

PID and Device Type	Minimum WAAS Version	Host Platforms	Minimum Host Version	Disk Type
• PID: OE-VWAAS-ESX • Device Type: OE-VWAAS-ESX	• 5.0.3g	• Cisco UCS (Unified Computing System) • Cisco UCS-E Series	• ESXi 5.0	• VMDK

VMware ESXi for Cisco vWAAS and Cisco WAAS

This section contains the following topics:

VMware ESXi Versions Supported for Cisco WAAS

Table 4-2 VMware ESXi Versions Supported for Cisco WAAS

ESX version	WAAS v5.1	WAAS v5.2	WAAS v5.3	WAAS v5.4	WAAS v5.5	WAAS v6.x
ESXi 6.5 vWAAS fresh installation	x	x	x	x	x	x
ESXi 6.5 vWAAS upgrade	x	x	x	x	x	x
ESXi 6.0 vWAAS fresh installation	x	x	x	x	x	Supported OVA
ESXi 6.0 vWAAS upgrade	x	x	x	x	x	Upgrade with .bin file
ESXi 5.5 vWAAS fresh installation	x	x	Supported OVA	Supported OVA	Supported OVA	Supported OVA
ESXi 5.5 vWAAS upgrade	x	x	Upgrade with .bin file	Upgrade with .bin file	Upgrade with .bin file	Upgrade with .bin file
ESXi 5.0/5.1 vWAAS fresh installation	Supported OVA	Supported OVA	Supported OVA	Supported OVA	Supported OVA	Supported OVA
ESXi 4.1/5.0 vWAAS upgrade	Upgrade with .bin file	Upgrade with .bin file	Upgrade with .bin file	Upgrade with .bin file	Upgrade with .bin file	x
ESXi 4.1 vWAAS fresh installation	Supported OVA	Install vWAAS 5.1 OVA, then upgrade using .bin file, or Migrate from ESXi 4.1 to 5.0/5.1	x	x	x	x

Note For vWAAS with ESXi Version 5.5 on a Cisco UCS host: if the DRE latency threshold or an AO timeout alarm occurs, check for the I/O command abort in the vWAAS. To do this, use the **copy sysreport** EXEC command.

If the I/O abort is observed:
Upgrade the RAID controller's driver to Version 6.610.19.00 or later.

If the I/O abort is still observed after the RAID controller driver upgrade:
Capture and share the following logs for further analysis:
—Guest-VM sysreport
—VMware's host diagnostic report
—RAID controller's firmware log

ESXi Server Datastore Memory and Disk Space for vWAAS and vCM Models

This section contains the following topics:

- Table 4-3 shows ESXi server datastore memory and disk space per vWAAS model, for WAAS v4.3.1 through v5.3.5, and for WAAS v5.4.x through v6.x.
- Table 4-4 shows ESXi server datastore memory and disk space per vCM model, for WAAS v4.3.1 through v5.3.5, and for WAAS v5.4.x through v6.x.

Table 4-3 vCPUs, ESXi Server Datastore Memory, and Disk Space by vWAAS Model

	For WAAS v4.3.1 through v5.3.5			For WAAS v5.4.x through v6.x		
vWAAS Model	**vCPUs**	**Datastore Memory**	**Disk**	**vCPUs**	**Datastore Memory**	**Disk**
vWAAS-150 (for WAAS Version 6.x)	---	---	---	1	3 GB	160 GB
vWAAS-200	1	2 GB	160 GB	1	3 GB	260 GB
vWAAS-750	2	4 GB	250 GB	2	4 GB	500 GB
vWAAS-1300	2	6 GB	300 GB	2	6 GB	600 GB
vWAAS-2500	4	8 GB	400 GB	4	8 GB	750 GB
vWAAS-6000	4	8 GB	500 GB	4	11 GB	900 GB
vWAAS-12000	4	12 GB	750 GB	4	12 GB	750 GB
vWAAS-50000	8	48 GB	1500 GB	8	48 GB	1500 GB

Table 4-4 vCPUs, ESXi Server Datastore Memory, and Disk Space by vCM Model

	For WAAS v4.3.1 through v5.3.5			For WAAS v5.4.x through v6.x		
vCM Model	**vCPUs**	**Datastore Memory**	**Disk**	**vCPUs**	**Datastore Memory**	**Disk**
vCM-100N	2	2 GB	250 GB	2	2 GB	250 GB
vCM-500N	---	---	---	2	2 GB	300 GB
vCM-1000N	---	---	---	2	4 GB	400 GB
vCM-2000N	4	8 GB	600 GB	4	8 GB	600 GB

OVA Package Formats for vWAAS on VMware ESXI

This section contains the following topics:

Note For a listing of hypervisor OVA, zip, and tar.gz files for vWAAS, see the Cisco Wide Area Application Services (WAAS) Download Software Page and select the WAAS software version used with your vWAAS instance.

OVA Package for vWAAS on VMware ESXi for WAAS Version 5.x to 6.2.x

For vWAAS on VMware ESXi, for WAAS Version 5.x through 6.2.x, Cisco provides an OVA or NPE OVA package for each vWAAS connection profile (examples shown in Table 4-5) and for each vCM connection profile (examples shown in Table 4-6).

Table 4-5 Cisco OVA Package Format Examples for vWAAS on VMware ESXi

Package Format	File Format Example
Cisco vWAAS 150 package file	• Cisco-vWAAS-150-6.2.3d-b-68.ova
Cisco vWAAS 150 package file for NPE	• Cisco-vWAAS-150-6.2.3d-npe-b-68.ova
Cisco vWAAS 200 package file	• Cisco-vWAAS-200-6.2.3d-b-68.ova
Cisco vWAAS 200 package file for NPE	• Cisco-vWAAS-200-6.2.3d-npe-b-68.ova
Cisco vWAAS 750 package file	• Cisco-vWAAS-750-6.2.3d-b-68.ova
Cisco vWAAS 750 package file for NPE	• Cisco-vWAAS-750-6.2.3d-npe-b-68.ova
Cisco vWAAS 1300 package file	• Cisco-vWAAS-1300-6.2.3d-b-68.ova
Cisco vWAAS 1300 package file for NPE	• Cisco-vWAAS-1300-6.2.3d-npe-b-68.ova
Cisco vWAAS 2500 package file	• Cisco-vWAAS-2500-6.2.3d-b-68.ova
Cisco vWAAS 2500 package file for NPE	• Cisco-vWAAS-2500-6.2.3d-npe-b-68.ova
Cisco vWAAS 6000 package file	• Cisco-vWAAS-6000-6.2.3d-b-68.ova
Cisco vWAAS 6000 package file for NPE	• Cisco-vWAAS-6000-6.2.3d-npe-b-68.ova
Cisco vWAAS 12k package file	• Cisco-vWAAS-12k-6.2.3d-b-68.ova
Cisco vWAAS 12k package file for NPE	• Cisco-vWAAS-12k-6.2.3d-npe-b-68.ova
Cisco vWAAS 50k package file	• Cisco-vWAAS-50k-6.2.3d-b-68.ova
Cisco vWAAS 50k package file for NPE	• Cisco-vWAAS-50k-6.2.3d-npe-b-68.ova

Table 4-6 Cisco OVA Package Formats for vCM for WAAS Versions earlier than Version 6.4.1

Package Format	File Format Example
Cisco vCM 100N package file	• Cisco-vCM-100N-6.2.3d-b-68.ova
Cisco vCM 100N package file for NPE	• Cisco-vCM-100N-6.2.3d-npe-b-68.ova

OVA Package for vWAAS on VMware ESXi for WAAS Version 6.4.1 and Later

For vWAAS on VMware ESXi, for WAAS Version 6.4.1 and later, Cisco provides a single, unified OVA for NPE and non-NPE version of the WAAS image for all the vWAAS models for that hypervisor.

Each unified OVA package is a pre-configured virtual machine image that is ready to run on a particular hypervisor. The launch script for each unified OVA package file provides the model and other required parameters to launch vWAAS with WAAS in the required configuration.

Here are examples of the unified OVA and NPE OVA package filenames for vWAAS in VMware ESXi:

- OVA—Cisco-ESXi-vWAAS-Unified-6.4.1-b-33.ova
- NPE OVA—Cisco-ESXi-vWAAS-Unified-6.4.1-b-33-npe.ova

The unified OVA package for VMware ESXi contains the following files.

- OVF file—Contains all resource information.
- Flash disk image
- Data system disk
- Akamai disk

Use the VMware ESXi OVF template wizard to deploy these files, described in Installing VMware ESXi for vWAAS for WAAS Version 6.4.1 and Later.

Installing vWAAS on VMware ESXi

This section has the following topics:

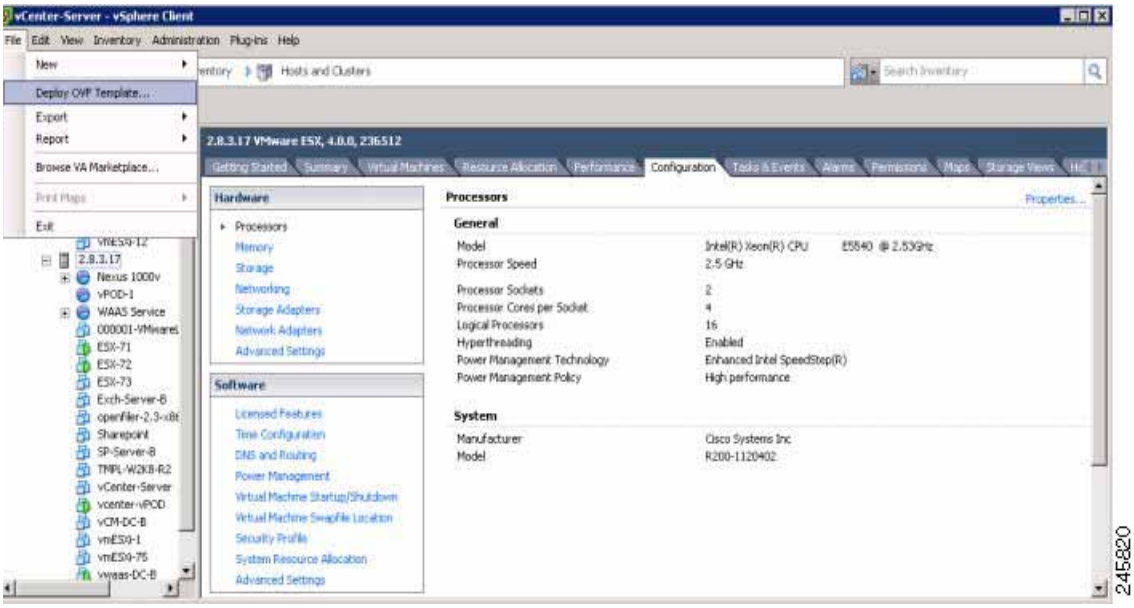
Installing VMware ESXi for vWAAS for WAAS Versions 5.x to 6.2.x

To install the vWAAS Virtual Machine (VM) with VMware vSphere ESXi, follow these steps:

Step 1 From the vSphere Client, choose **File > Deploy OVF Template**.

The Source window appears.

Figure 4-1 vWAAS—Deploy OVF Template



Step 2 Click **Browse**.

The Open window appears.

Step 3 Navigate to the location of the vWAAS OVA file and click **Open**.

- If the virtual host was created using an OVA of vWAAS for WAAS Version 5.1.x or later, proceed to Step 4.
- If the virtual host was created using an OVA file of vWAAS for WAAS Version 5.0 or earlier, and you have upgraded vWAAS from inside WAAS, you must verify that the SCSI Controller Type is set to **VMware Paravirtual**. Otherwise, vWAAS will boot with no disk available, and will fail to load the specified configuration.

  If needed, change the SCSI controller type to **VMware Paravirtual** by following these steps:

  a. Power down the vWAAS.

  b. From the VMware vCenter, navigate to **vSphere Client** > **Edit Settings** > **Hardware**.

  c. Choose **SCSI controller 0**.

  d. From the Change Type drop-down list, verify that the SCSI Controller Type is set to **VMware Paravirtual**. If this is not the case, choose **VMware Paravirtual**.

  e. Click **OK**.

  f. Power up the vWAAS, with WAAS Version 6.1.x or later.

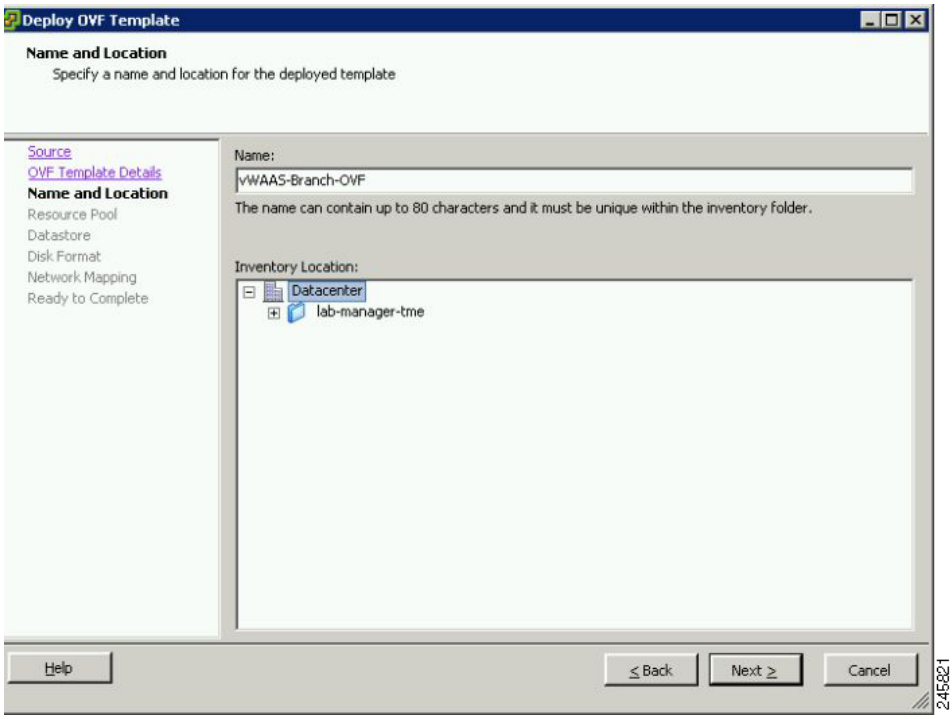
Step 4 Click **Next** to accept the selected OVA file.

The Name and Location window appears.

Step 5 Enter a name for the vWAAS VM, choose the appropriate data center, and then click **Next**.

The Cluster window appears (if a cluster is configured), or the Resource Pool window appears (if a resource pool is configured). Otherwise, the Datastore window appears (in this case, skip to Step 7).

Figure 4-2 vWAAS—Name and Data Center Location

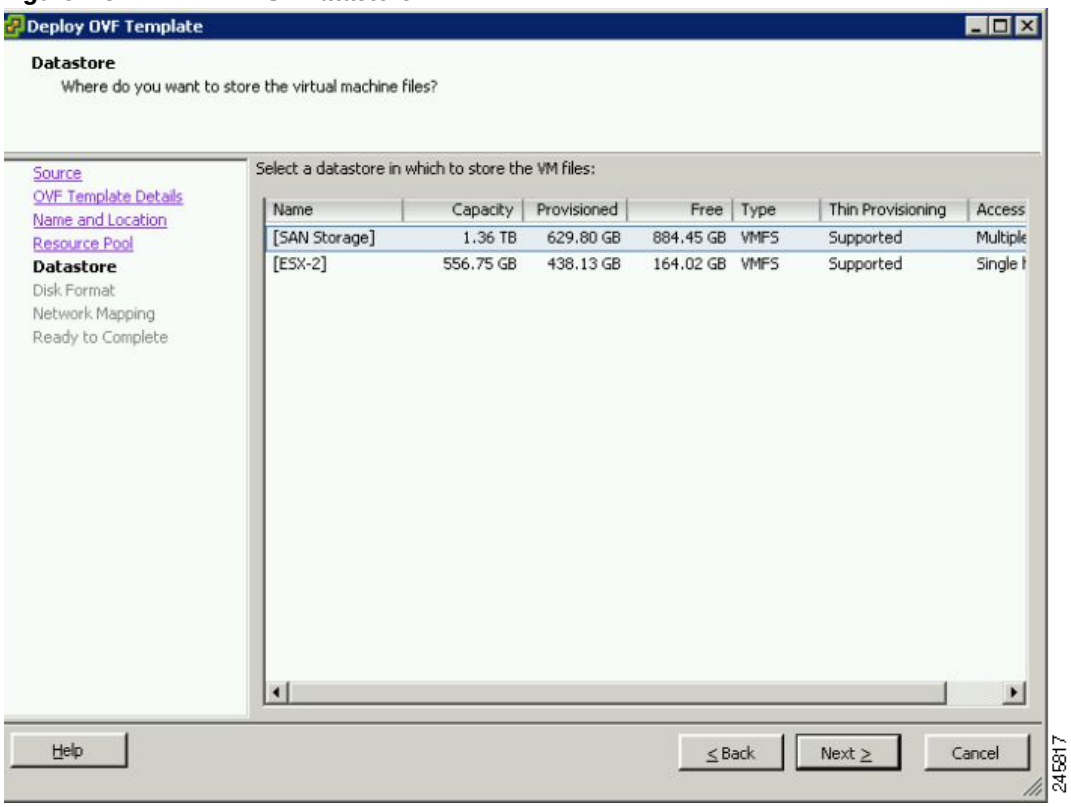


Step 6 If configured, choose a cluster for the vWAAS VM or, if configured, choose the resource pool and then click **Next**.

The Datastore window appears.

Step 7 Choose a datastore to host the virtual machine and click **Next**.

Figure 4-3 vWAAS - Datastore



Note The datastore must be formatted with a block size greater than 1 MB to support file sizes larger than 256 GB.

The Create a Disk window appears.

Step 8 The Disk Provisioning section has three disk format options: Thick Provision Lazy Zeroed, Thick Provision Eager Zeroed, and Thin Provision. Select **Thick Provision Eager Zeroed**.

Note You must choose the **Thick Provision Eager Zeroed** disk format for vWAAS deployment; this is the format recommended with vWAAS deployment for a clean installation.

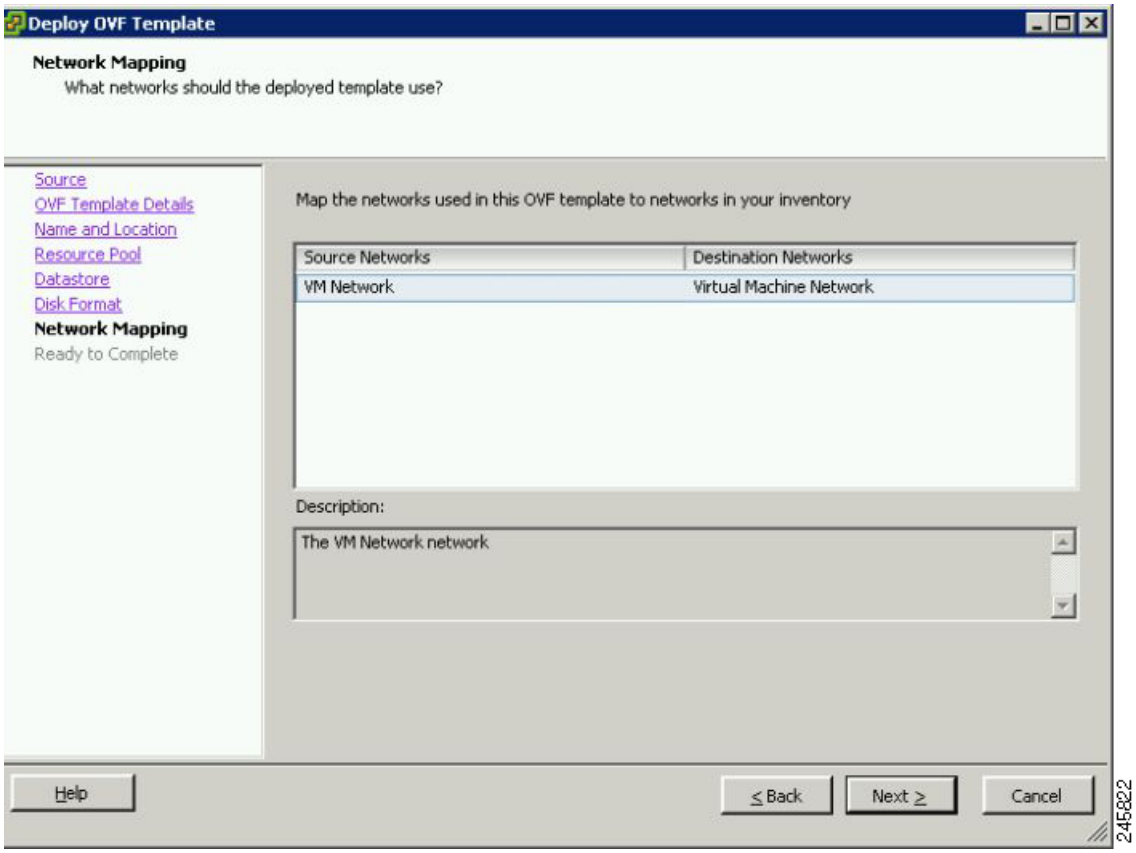
Step 9 Click **Next**.

The Network Mapping window appears.

Step 10 Choose the network mapping provided by ESXi and click **Next**. You have the option to change this later if necessary.

The Ready to Complete window appears.

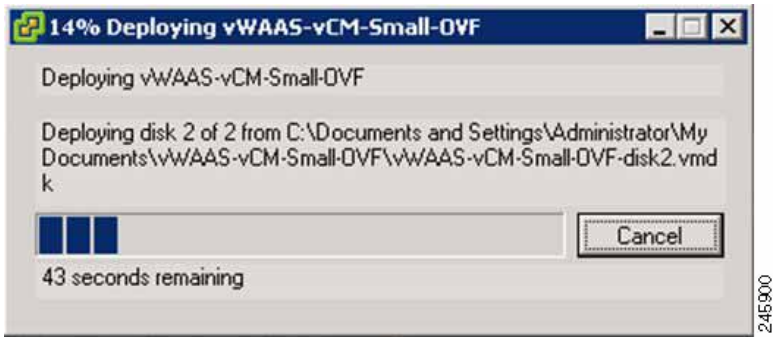
Figure 4-4 vWAAS—Network Mapping



Step 11 Click **Finish** to complete the installation.

The status window appears while the OVA file is being deployed.

Figure 4-5 vWAAS—Status Window



Step 12 When the deployment is finished, the Deployment Completed Successfully window appears.

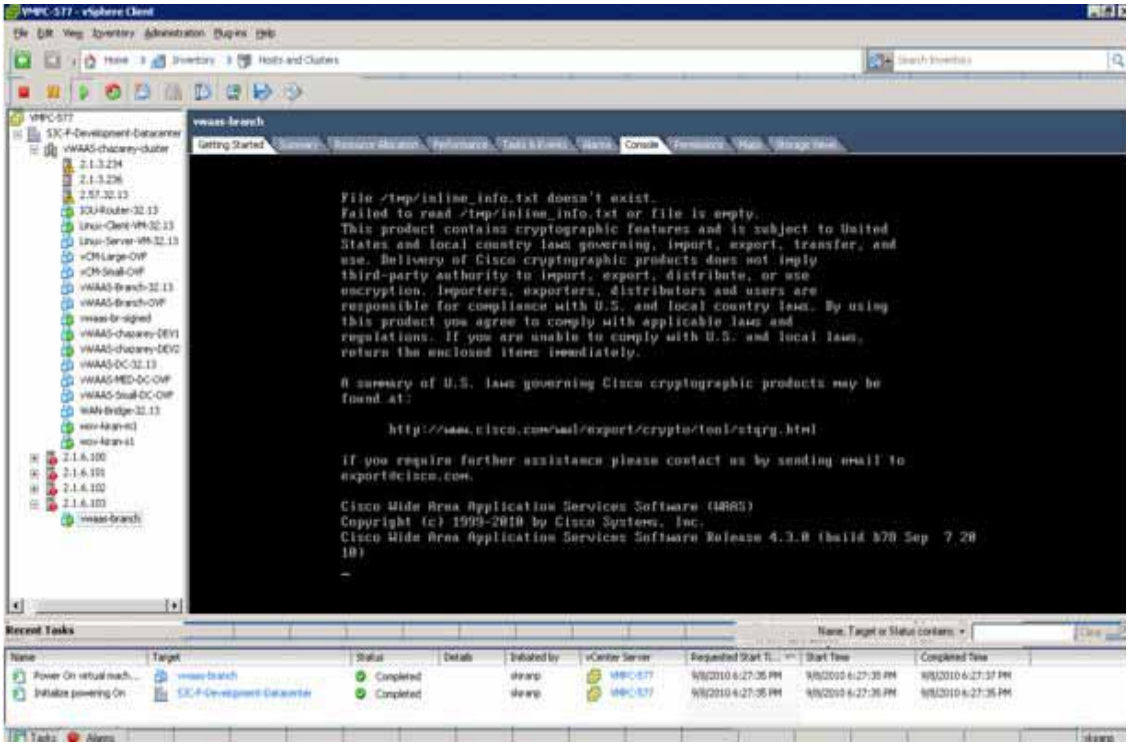
Figure 4-6 vWAAS—Completed

Step 13 Click **Close**.

Step 14 You are ready to start the VM. Highlight the vWAAS VM and click **Power on Virtual Machine**.

Step 15 After vWAAS finishes booting, click the **Console** tab to view boot up messages.

Figure 4-7 vWAAS—Console



Note Under rare conditions, the vWAAS VM may boot into diskless mode if other VMs on the host VM server do not release control of system resources or the physical disks become unresponsive. For information on how to resolve this situation, see Resolving Diskless Startup and Disk Failure in Chapter 12, "Troubleshooting Cisco vWAAS."

For vWAAS configuration information, see Chapter 2, "Configuring Cisco vWAAS and Viewing vWAAS Components".

Installing VMware ESXi for vWAAS for WAAS Version 6.4.1 and Later

Note On VMware ESXi, the OVA deployment for WAAS Version 6.4.1 and later must be done only through VMware vCenter.

To deploy the VMware ESXi hypervisor for vWAAS, follow these steps:

Step 1 From the vSphere Client, choose **Deploy OVF Template** > **Deployment Configuration**.

Step 2 At the **Configuration** drop-down list, choose the vWAAS model for this hypervisor.

Note When you choose a vWAAS model, that model's profile is displayed. For example, if you choose vWAAS-150, the vSphere Client would display a configuration such as 1 vCPU, 3 GB RAM.

Step 3 Click **Next**.

Step 4 At the **Deploy OVF Template** screen, choose **Source** to select the source location for the deployed template.

Step 5 At the **Deploy from a file or URL** drop-down list, click **Browse...** .

The **Name and Location** screen is displayed.

Step 6 Enter a unique name for the deployed template, and select a location for the deployed template.

a. In the **Name** field, enter a unique name for the deployed template. The template name can contain up to 80 alphanumeric characters.

b. In the **Inventory Location** listing, select a folder location.

Step 7 Click **Next**.

Step 8 At the **Deploy OVF Template** screen, choose **Deployment Configuration**.

Step 9 At the Configuration drop-down list, choose the vWAAS model for your system.

Note When you select a vWAAS model, the screen displays configuration information. For example, if you select vWAAs-200, the screen would display a description such as "Deploy a vWAAS-200 connection profile with 1 vCPU, 3 GB RAM.

Step 10 Click **Next**.

Step 11 At the **Deploy OVF Template** screen, choose **Disk Format**.

Step 12 In the **Datastore:** field, enter the Datastore name

Step 13 For provisioning, choose one of the following virtual disk format types:

- **Thick Provision Lazy Zerod**—The entire space specified for virtual disk files is allocated when the virtual disk is created. Old data on the physical device is not erased when the disk is created, but zeroed out on demand, as needed, from the VM.

- **Thick Provision Eager Zerod**—The entire space specified for virtual disk files is allocated when the virtual disk is created. Old data is erased when the disk is created. Thick provision eager zero also supports VMware fault tolerance for high availability.

Note The **Thin Provision** option is not available for vWAAS with VMware ESXi.

Step 14 Click **Next**.

The VMware ESXi hypervisor is created for the specified vWAAS model.

Upgrade/Downgrade Guidelines for vWAAS on VMware ESXi

Consider the following guidelines when upgrading or downgrading your WAAS system with vWAAS on VMware ESXi:

- When upgrading vWAAS, do not upgrade more than five vWAAS nodes at the same time on a single UCS box. Upgrading more than five vWAAS nodes at the same time may cause the vWAAS devices to go offline and into diskless mode.
- If the virtual host was created using an OVA file of vWAAS for WAAS Version 5.0 or earlier, and you have upgraded vWAAS within WAAS, you must verify that the SCSI Controller Type is set to **VMware Paravirtual**. Otherwise, vWAAS will boot with no disk available and will fail to load the specified configuration.

  If needed, change the SCSI controller type to **VMware Paravirtual** by following these steps:

  a. Power down the vWAAS.
  b. From the VMware vCenter, navigate to **vSphere Client** > **Edit Settings** > **Hardware**.
  c. Choose **SCSI controller 0**.
  d. From the Change Type drop-down list, verify that the SCSI Controller Type is set to **VMware Paravirtual**. If this is not the case, choose **VMware Paravirtual**.
  e. Click **OK**.
  f. Power up the vWAAS, with WAAS Version 6.1.x or later.