Infoblox Installation Guide vNIOS™ for Xen
Copyright Statements

© 2019, Infoblox Inc.— All rights reserved.
The contents of this document may not be copied or duplicated in any form, in whole or in part, without the prior written permission of Infoblox, Inc.

The information in this document is subject to change without notice. Infoblox, Inc. shall not be liable for any damages resulting from technical errors or omissions which may be present in this document, or from use of this document.

This document is an unpublished work protected by the United States copyright laws and is proprietary to Infoblox, Inc. Disclosure, copying, reproduction, merger, translation, modification, enhancement, or use of this document by anyone other than authorized employees, authorized users, or licensees of Infoblox, Inc. without the prior written consent of Infoblox, Inc. is prohibited.
For Open Source Copyright information, refer to the Infoblox NIOS Administrator Guide.

Trademark Statements

Infoblox, the Infoblox logo, Grid, NIOS, bloxTools, NetMRI, Network Automation, and PortIQ are trademarks or registered trademarks of Infoblox Inc.

All other trademarked names used herein are the properties of their respective owners and are used for identification purposes only.

Company Information

http://www.infoblox.com/contact

Warranty Information

Your purchase includes a 90-day software warranty and a one year limited warranty on the Infoblox appliance, plus an Infoblox Warranty Support Plan and Technical Support. For more information about Infoblox Warranty information, refer to Infoblox Web site, or contact Infoblox Technical Support.
Document Overview

This guide introduces the Infoblox vNIOS virtual appliance for Citrix XenServer 6.1 and 6.2 running the Xen hypervisor and Linux systems running Xenproject.org 4.3 hypervisor. It describes how to install the Infoblox vNIOS virtual appliance 6.11.0-LD and later releases. It also describes how to configure the vNIOS virtual appliance as a Grid Master and Grid member. For complete information about administering Infoblox appliances, refer to the Infoblox NIOS Administrator Guide. For the latest Infoblox documentation, visit the Infoblox Support web site at https://support.infoblox.com.

Documentation Organization

This guide covers the following topics:

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>About vNIOS Virtual Appliance for XenServer</td>
<td>Provides information about the Infoblox vNIOS virtual appliance and requirements to install on the XenServer.</td>
</tr>
<tr>
<td>Deploying vNIOS Appliances using XenCenter</td>
<td>Describes how to install the Infoblox vNIOS virtual appliance on the XenServer.</td>
</tr>
<tr>
<td>Setting Up a Grid</td>
<td>Describes how to install the Infoblox vNIOS virtual appliance and how to deploy a vNIOS virtual appliance as a Grid Master and a Grid member.</td>
</tr>
<tr>
<td>Installing vNIOS for Xen using Xenproject.org 4.3 Hypervisor</td>
<td>Describes how to install the Infoblox vNIOS virtual appliance on Linux systems using a Xenproject.org 4.3 hypervisor.</td>
</tr>
</tbody>
</table>

Conventions

This guide follows the Infoblox documentation style conventions, as listed in the following table.

<table>
<thead>
<tr>
<th>Style</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>bold</td>
<td>Indicates anything that you input by clicking, choosing, selecting, typing or by pressing on the keyboard.</td>
</tr>
<tr>
<td>input</td>
<td>Signifies command line entries that you type.</td>
</tr>
<tr>
<td>variable</td>
<td>Signifies variables typed into the GUI that you need to modify specifically for your configuration, such as command line variables, file names, and keyboard characters.</td>
</tr>
</tbody>
</table>

Navigation

Infoblox technical documentation uses an arrow "->" to represent navigation through the GUI. For example, to access member information, the description is as follows:

From the Grid tab, select the GridManager tab -> Members tab.
Related Documentation

Other NIOS appliance documentation:

- Infoblox CLI Guide
- Infoblox API Documentation
- Infoblox CSV Import Reference
- Infoblox Installation Guide for the Trinzic 100 Appliance
- Infoblox Installation Guide for the Trinzic 800 Series and Network Insight ND-800 Platforms
- Infoblox Installation Guide for the Trinzic 1400 Series and Network Insight ND-1400 Platforms
- Infoblox Installation Guide for the Trinzic 2200 Series and Network Insight ND-2200 Platforms
- Infoblox Installation Guide for the Infoblox-4000 and Network Insight ND-4000 Platforms
- Infoblox Installation Guide for Infoblox Advanced Appliance PT-1400
- Infoblox Installation Guide for Infoblox Advanced Appliance PT-2200
- Infoblox Installation Guide for Infoblox Advanced Appliance PT-4000
- Infoblox Installation Guide for the Infoblox-4030 Appliance
- Infoblox Installation Guide for the Infoblox-4030 Appliance
- Infoblox DNS Caching Acceleration Application Guide
- Infoblox Installation Guide for the Trinzic Reporting 1400 Appliance
- Infoblox Installation Guide for the Trinzic Reporting 2000 Appliance
- Infoblox Installation Guide for the Trinzic Reporting 2200 Appliance
- Infoblox Installation Guide for the Trinzic Reporting 4000 Appliance
- Infoblox Installation Guide for the Infoblox-250-A Appliance
- Infoblox Installation Guide for the Infoblox-1852-A Appliance
- Infoblox Installation Guide for the Infoblox-2000-A Appliance
- Infoblox Installation Guide for vNIOS Software on Riverbed Services Platforms
- Infoblox Installation Guide for Installing vNIOS Software on Cisco Platforms
- Infoblox Installation Guide for vNIOS Software on VMware
- Infoblox Installation Guide for vNIOS on Microsoft 2008 R2 for Hyper-V
- Quick Start Guide for Installing vIBOS Software on VMware Platforms
- Infoblox IBOS Administrator Guide
- Infoblox Safety Guide

To provide feedback on any of the Infoblox technical documents, please e-mail techpubs@infoblox.com.
Customer Care

This section addresses user accounts, software upgrades, licenses and warranties, and technical support.

User Accounts

The Infoblox appliance ships with a default user name and password. Change the default admin account password immediately after the system is installed to safeguard its use. Make sure that the NIOS appliance has at least one administrator account with superuser privileges at all times, and keep a record of your account information in a safe place. If you lose the admin account password, and did not already create another superuser account, the system will need to be reset to factory defaults, causing you to lose all existing data on the NIOS appliance. You can create new administrator accounts, with or without superuser privileges.

Software Upgrades

Software upgrades are available according to the Terms of Sale for your system. Infoblox notifies you when an upgrade is available. Register immediately with Infoblox Technical Support at http://www.infoblox.com/support/customer/evaluation-and-registration to maximize your Technical Support.

Technical Support

Infoblox Technical Support provides assistance via the Web, e-mail, and telephone. The Infoblox Support web site at https://support.infoblox.com provides access to product documentation and release notes, but requires the user ID and password you receive when you register your product online at:
About vNIOS Virtual Appliance for XenServer

Infoblox vNIOS for Xen is a virtual appliance designed for Citrix XenServer 6.1 and 6.2 running Xen hypervisor. It enables customers to deploy large, robust, manageable and cost effective Infoblox Grids. For information about Infoblox Grids, refer to the Infoblox NIOS Administrator Guide. Note that the vNIOS for Xen virtual appliance functions as a HVM (hardware virtual machine) guest on the XenServer platform.

The Infoblox NIOS provides core network services and a framework for integrating all the components of the modular Infoblox solution. Infoblox NIOS provides integrated, secure, and easy-to-manage DNS (Domain Name System), DHCP (Dynamic Host Configuration Protocol) and IPAM (IP address management) services. In addition to DNS, DHCP and IPAM, NIOS also provides TFTP, HTTP, and FTP file transfer services.

Infoblox vNIOS for Xen virtual appliance provides most of the features supported by the NIOS, with some limitations as described in Known Limitations.

You can also install the vNIOS for Xen virtual appliance on Linux systems running Xenproject.org 4.3 hypervisor. For more information, see Install vNIOS for Xen using Xenproject.org 4.3 Hypervisor.

You can configure most of the vNIOS appliances as independent or HA (high availability) Grid Masters, Grid Master candidates, and Grid members. Table 1.1 lists the vNIOS appliance models and their specifications.

Note
Each vNIOS virtual appliance requires a unique hardware ID.
Table 1.1 vNIOS for Xen Virtual Appliance Models

<table>
<thead>
<tr>
<th>Trinzic Series Virtual Appliances</th>
<th>Disk (GB)</th>
<th># of CPU Cores</th>
<th>Memory Allocation</th>
<th>Supported as Grid Master and Grid Master Candidate (Yes/No)</th>
</tr>
</thead>
<tbody>
<tr>
<td>IB-VM-800 (for reporting only; 1 GB daily limit)</td>
<td>50</td>
<td>2</td>
<td>Range: 2-8 GB Default: 8 GB</td>
<td>No</td>
</tr>
<tr>
<td>IB-VM-800 (for reporting only; 2 GB daily limit)</td>
<td>50</td>
<td>2</td>
<td>Range: 4-8 GB Default: 8 GB</td>
<td>No</td>
</tr>
<tr>
<td>IB-VM-810</td>
<td>55</td>
<td>2</td>
<td>2 GB</td>
<td>No</td>
</tr>
<tr>
<td>IB-VM-810</td>
<td>160</td>
<td>2</td>
<td>2 GB</td>
<td>Yes</td>
</tr>
<tr>
<td>IB-VM-820</td>
<td>55</td>
<td>2</td>
<td>2 GB</td>
<td>No</td>
</tr>
<tr>
<td>IB-VM-820</td>
<td>160</td>
<td>2</td>
<td>2 GB</td>
<td>Yes</td>
</tr>
<tr>
<td>IB-VM-1410</td>
<td>55</td>
<td>4</td>
<td>8 GB</td>
<td>No</td>
</tr>
<tr>
<td>IB-VM-1410</td>
<td>160</td>
<td>4</td>
<td>8 GB</td>
<td>Yes</td>
</tr>
<tr>
<td>IB-VM-1420</td>
<td>160</td>
<td>4</td>
<td>8 GB</td>
<td>Yes</td>
</tr>
<tr>
<td>IB-VM-2210</td>
<td>160</td>
<td>4</td>
<td>12 GB</td>
<td>Yes</td>
</tr>
<tr>
<td>IB-VM-2220</td>
<td>160</td>
<td>4</td>
<td>12 GB</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Requirements

This release of vNIOS for Xen supports Citrix XenServer 6.1 and 6.2 running Xen hypervisor. For information about supported vNIOS for Xen model specifications, see Table 1.1.

The following are required to install the vNIOS virtual appliance on a XenCenter:

- The vNIOS software package. You can download the vNIOS software from the Infoblox Technical Support site. To download the software, you must have a valid login account on the Infoblox Support site. Register your product at https://support.infoblox.com if you do not already have an account. The vNIOS software package consists of a template file with .ova extension for all the supported vNIOS appliance models. Make sure that you download the file with an extension that corresponds to the appliance model number. For example, to install IB-VM-550 with a 50 GB disk on Citrix Xen 6.1 and 6.2 servers, download nios-6.11.0-241423-2014-05-26-08-02-40-50G-550-xen.ova. For IB-VM-810 with a 160 GB disk, download the file that has the extension xxxx-160G-810-xen.ova. For information about the vNIOS appliance models on Citrix Xen, see Table 1.1.

**Note**

After you download the .ova file, you can run the tar -xvf nios-xxx.ova command to untar the .ova and separate .ovf and .vmdk files.

You can deploy the vNIOS virtual appliance from a remote web server or a local file system accessible from your management system.

- A management system that has a XenCenter client installed. To manage multiple hosts, the XenCenter client must be connected to the XenServer system.
Deploying vNIOS Appliances using XenCenter

Before setting up a vNIOS appliance as a Grid Master or Grid member, you must install the virtual appliance on the XenServer using the XenCenter client. Instructions in this section assume that you have configured the server on your network, and you are able to connect to it from your management station. For information about configuring the XenServer, refer to the Citrix documentation. Infoblox recommends that you back up your existing configuration before deploying vNIOS configuration.

To deploy a vNIOS appliance, log in to the XenCenter client, connect to the XenServer and then complete the following:

- Install the vNIOS virtual appliance on the server, as described in Installing the vNIOS for Xen Virtual Appliance.
- Configure the NIC (Virtual Network Adapter) of the vNIOS appliance, as described in Configuring the Virtual NIC.
- Start the vNIOS virtual appliance, as described in Starting vNIOS Appliance using XenCenter Client.
Installing the vNIOS for Xen Virtual Appliance

To install vNIOS on a XenServer as an HVM guest:

1. Log in to the XenServer.
2. Download the vNIOS virtual appliance from the Infoblox Technical Support web site.
3. From the XenCenter client, select the virtual appliance and click import to start the Import wizard, as shown in Figure 1.1.

![Figure 1.1 XenCenter Client](image)

4. Depending on the download location of the vNIOS virtual appliance, select Browse to select the .ova file. Locate the .ova file or enter the URL of the file, and then click Next.

![Figure 1.2 Import .ova file](image)

5. Infoblox recommends that you go through the license agreement and select the I accept the End User License Agreements check box to proceed, as shown in Figure 1.3. Click Next.

![Figure 1.3 Review End User License Agreement](image)
6. Specify the location on the server that you want to place the imported .ova file. Enter the IP address of the server, specify the user name and password, and then click Next.

*Figure 1.4 Specify the location to save the imported .ova file*

7. Select the location where you want to save the virtual disks and click Next.

*Figure 1.5 Select the target storage*
8. As shown in Figure 1.6, map the virtual network interfaces in the virtual machines you are importing to networks in the destination pool or standalone server, and then click Next.

Figure 1.6 Select network to connect vNIOS

9. As shown in Figure 1.7, select whether you want to use the operating system fixup, and then click Next.

Figure 1.7 Operating system fixup
10. As shown in **Figure 1.8**, select the network for the vNIOS instance, and then click **Next**.

*Figure 1.8 Configure networking options*

11. Verify the information in the summary screen and click **Finish**.

*Figure 1.9 Review import settings*
11. The vNIOS installation begins. The Deployment Completed Successfully dialog box appears after the installation is complete.
12. Click Close to close the dialog box.
13. To verify the installation of the virtual appliance, check the list of virtual machines in the XenCenter client.

Configuring the Virtual NIC

1. From the XenCenter client, select the newly deployed vNIOS instance.
2. Click VM -> Properties.
3. In the Virtual Machine Properties dialog box, modify details for the vNIOS appliance if desired, as shown in Figure 1.10.
4. Click OK.

Figure 1.10 Virtual NIC Configuration
Starting vNIOS Appliance using XenCenter Client

1. From the XenCenter client, select the vNIOS instance.
2. Click VM -> Start/Shut down -> Start.

Note
After you power on the virtual appliance, it takes a few minutes for the CLI prompt to appear while the appliance initializes.
Setting Up a Grid

Configuring vNIOS Appliances as Grid Masters

An Infoblox Grid is a group of two or more NIOS and vNIOS virtual appliances that share sections of a common, distributed, built-in database and which you configure and monitor through a single, secure point of access: the Grid Master. A Grid consists of a master and at least one member. A Grid member can be a single appliance or an HA pair. For information about the Infoblox Grid and HA pairs, refer to the Infoblox NIOS Administrator Guide.

To create a Grid, you must first set up a Grid Master and then add members. In a Grid, you can configure vNIOS virtual appliances as Grid Masters, Grid Master candidates, and Grid members, depending on the vNIOS appliance specifications. Note that some of the vNIOS for Xen virtual appliances are supported as Grid members only. See Table 1.1 for information about supported appliance models and their specifications.

To set up a Grid:

1. Configure the Grid Master. You can configure a single Grid Master or two vNIOS appliances as an HA Grid Master. To configure a vNIOS appliance as a Grid Master, you must first deploy the vNIOS appliance, and then configure it. For information, see Configuring the vNIOS Virtual Appliance as Grid Master.
2. Provision Grid members on the Grid Master. Define Grid member settings on the Grid Master before you join the members to the Grid. For information, see Provisioning vNIOS Members on the Grid Master.
3. Join members to the Grid. For information, see Configuring and Joining vNIOS Grid Members.
Configuring vNIOS Appliances as Grid Masters

After you deploy a vNIOS appliance on the XenServer platform, you can configure it as a single or an HA Grid Master. To configure a vNIOS HA Grid Master, deploy two vNIOS appliances and define the network settings for each node. The procedure is the same as joining two physical appliances as an HA pair. You must configure a Grid Master and set up the Grid before you join Grid members. For more information about configuring HA pairs, refer to the Infoblox NIOS Administrator Guide.

To configure a vNIOS appliance as a Grid Master:

1. Specify initial settings on the vNIOS appliance, as described in Specifying Initial Settings on vNIOS Grid Masters.
2. Configure the vNIOS appliance as a Grid Master, as described in Configuring the vNIOS Virtual Appliance as Grid Master. For an HA Grid Master, ensure that you follow the procedures to configure node 2 of the HA pair.

Specifying Initial Settings on vNIOS Grid Masters

After you successfully install the vNIOS virtual appliance and start the vNIOS appliance, connect to the NIOS CLI and specify the initial settings. For an HA Grid Master, ensure that you specify the initial settings on both nodes.

1. From the XenCenter client, select the vNIOS instance.
2. Select the Console tab.
3. Click anywhere in the console screen to activate the console.
4. When the Infoblox login prompt appears, log in with the default user name and password.
   login: admin
   password: infoblox
   The Infoblox prompt appears: Infoblox >
5. You must have valid licenses before you can configure the vNIOS appliance. To obtain permanent licenses, first use the show version command to obtain the serial number of the vNIOS appliance, and then visit the Infoblox Support web site at https://support.infoblox.com. Log in with the user ID and password you receive when you register your product online at http://www.infoblox.com/support/customer/evaluation-and-registration.
   If the vNIOS virtual appliance does not have the Infoblox licenses required to run NIOS services and to join a Grid, you can use the set temp_license command to generate and install a temporary 60-day license. The appliance lists the available licenses.
6. From the list of licenses, select the Grid, vNIOS, and other relevant licenses for your vNIOS virtual appliance.

   Note
   You must have both the Grid and vNIOS licenses for the vNIOS virtual appliance to join a Grid.

7. Use the CLI command set network to configure the network settings.
   Infoblox > set network
   NOTICE: All HA configurations are performed from the GUI. This interface is used only to configure a standalone node or to join a Grid.
   Enter IP address: 10.1.1.22
   Enter netmask: [Default: 255.255.255.0]: 255.255.255.0
   Enter gateway address [Default: 10.1.1.1]: 10.1.1.1
   Become Grid member? (y or n): n

Configuring the vNIOS Virtual Appliance as Grid Master

You can configure the vNIOS appliance as a Grid Master using the Grid Setup wizard. If you are configuring a vNIOS HA Grid Master, you must complete the configuration for each virtual node in the HA pair as described in this section.

To configure the single Grid Master or node 1 of the HA Grid Master:

1. On your management system, open a new browser window, and then connect to https://ip_addr, where ip_addr is the address of the single appliance or LAN1 port on node 1.
2. Log in using the default user name admin and password infoblox.
3. Review the End-User License Agreement and click I Accept.
4. In the Grid Setup wizard, select Configure a Grid Master and click Next.
5. Complete the following to specify the Grid properties, and then click Next:
   • Grid Name: Enter a text string, such as DaveyJones, that the Grid Master and appliances joining the Grid use to authenticate each other when establishing a VPN tunnel between them. The default Grid name is Infoblox.
   • Shared Secret: Enter a text string, such as Lock37, that the Grid Master and appliances joining the Grid use as a shared secret to authenticate each other when establishing a VPN tunnel between them. The default shared secret is test.
   • Show Password: Select this to display the password. Clear the check box to conceal the password.
   • Hostname: Enter a valid domain name for the appliance. You can use the name that you entered for the vNIOS appliance when you deployed it.
   • Is the Grid Master an HA pair?: Select No for the single Grid Master. Select Yes for an HA pair.
6. Complete the following to configure the network settings, and then click Next:
   • Host Name: Enter a valid domain name for the appliance.
   • IP Address: Displays the IP address of the LAN port.
• **Subnet Mask:** Displays the subnet mask of the LAN port.
• **Gateway:** Displays the IP address of the gateway of the subnet on which the LAN port is set.
• **Port Settings:** The default is **Automatic.** You cannot change port settings for vNIOS appliances.

7. For an HA pair, complete the following to specify the network properties and click **Next**:
   • **Virtual Router ID:** Enter the VRID (virtual router ID). This must be a unique VRID number—from 1 to 255—for this subnet.
   • **Required Ports and Addresses:** Enter information about the following virtual interfaces: VIP, Node 1 HA and LAN ports, Node 2 HA and LAN ports. The VIP address and the IP addresses for all the ports must be in the same subnet. Enter the IP address of the gateway for the subnet on which the interfaces are set. This is the same for all interfaces. All fields are required. Note that you cannot change the port settings.

8. Optionally, enter a new password and click **Next.** The password must be a single hexadecimal string (no spaces) that is at least four characters long.

9. Select the time zone of the Grid Master and indicate whether the Grid Master synchronizes its time with an NTP (Network Time Protocol) server, and then click **Next.**
   • If you choose to enable NTP, click the Add icon and enter the IP address of an NTP server. You can enter IP addresses for multiple NTP servers.
   • If you choose to disable NTP, set the date and time for the appliance.

10. The last screen displays the settings you specified in the previous panels of the wizard. Verify that the information is correct and click **Finish.**

The last screen of the setup wizard states that the changed settings require the appliance to restart. When you click **Finish,** the appliance restarts.

For an HA pair, complete the following to configure node 2 using the **Grid Setup** wizard:

1. On your management system, open a new browser window, and connect to https://ip_addr, where **ip_addr** is the address of the LAN1 port on node 2.
2. Log in using the default user name and password **admin** and **infoblox.**
3. Review the End-User License Agreement and click **I Accept.**
4. In the **Grid Setup** wizard, select **Join Existing Grid** and click **Next.**
5. Complete the following to specify the Grid properties and click **Next.**
   • **Grid Name:** Enter the Grid name you entered for node 1.
   • **Grid Master's IP Address:** Enter the VIP you entered for node 1.
   • **Shared Secret:** Enter the shared secret you entered for node 1.
6. Verify the IP address settings of the member and click **Next.**
7. The last screen displays the settings you specified in the previous panels of the wizard. Verify that the information is correct and click **Finish.**

The setup of the HA Grid Master is complete. If the two nodes cannot join (it should not take more than a few seconds), check the IP addresses of Node 1 LAN and Node 1 HA (the Grid Master) and for Node 2 LAN and Node 2 HA (the node attempting to join the Grid Master to form the HA Pair). Ensure that the network IP address of node 2 is set to the same value as Node 2 LAN on the Grid Master.

As a method of verifying successful communication, open the console window for node 2. You should see a pair of messages as follows:

**Contacting the Grid Master at 10.36.0.200....
Synchronizing database with the Grid Master....**

For more information about HA pair configurations, refer to the **Infoblox NIOS Documentation.**
Configuring vNIOS Appliances as Grid Members

You can configure a vNIOS appliance as a single Grid member, or two vNIOS appliances as a vNIOS HA Grid member. To configure a vNIOS HA Grid member, deploy two vNIOS appliances and define the network settings for each node. Connect to the Grid Master and specify the two vNIOS appliances as nodes in the HA pair. The procedure is the same as joining two physical appliances as an HA pair. You must configure a Grid Master and set up the Grid before you join Grid members. For information, see Setting Up a Grid.

To configure a vNIOS appliance as a Grid member:

1. Define the vNIOS appliance on the Grid Master, as described in Provisioning vNIOS Members on the Grid Master.
2. Specify the initial settings and join the vNIOS appliance to the Grid, as described in Configuring and Joining vNIOS Grid Members.

Provisioning vNIOS Members on the Grid Master

Before you configure the individual appliances that you want to add to the Grid, you must first define them on the Grid Master, as follows:

1. Log in to the Grid Master.
2. From the Grid tab, select the Grid Manager tab -> Members tab, and then click Add -> Add Grid Member from the Toolbar.
3. In the Add Grid Member wizard, enter the following and click Next:
   - Member Type: Select Virtual NIOS.
   - Host Name: Type the FQDN (fully qualified domain name) of the vNIOS single or HA appliance that you want to add to the Grid.
   - Time Zone: If the vNIOS Grid member is in a different time zone from the Grid, click Override and select a time zone.
   - Comment: Enter useful information about the vNIOS appliance.
4. Enter the following information about the member that you want to add to the Grid and click Next: For a single Grid Member:
   - Standalone Member: Select this option.
   - Address: Type the IP address of the vNIOS Grid member.
   - Subnet Mask: Choose the netmask.
   - Gateway: Type the IP address of the default gateway of the vNIOS Grid member.
   - Port Settings: The default value is Automatic. You cannot change port settings for vNIOS appliances. For an HA Grid member:
     - High Availability Pair: Select this option.
     - Virtual Router ID: Enter a unique VRRID number—from 1 to 255—for the local subnet.
   - Required Ports and Addresses: Enter information about the following virtual interfaces: VIP, Node 1 HA and LAN ports, Node 2 HA and LAN ports. The VIP address and the IP addresses for all the ports must be in the same subnet. Enter the IP address of the gateway for the subnet on which the interfaces are set. This is the same for all interfaces. All fields are required. Note that you cannot change the port settings.
5. Optionally, define extensible attributes. For information, refer to the Infoblox NIOS Administrator Guide.
6. Save the configuration and click Restart if it appears at the top of the screen.

Configuring and Joining vNIOS Grid Members

After you successfully install the vNIOS virtual appliance and start the vNIOS appliance, connect to the NIOS CLI and specify the initial settings. If you are configuring a vNIOS HA Grid member, you must complete the following steps for each virtual node in the HA pair.

1. Connect to the Grid Master where you can add the vNIOS appliance to the Grid.
2. From the XenCenter client, select the vNIOS instance.
3. Select the Console tab.
4. Click anywhere in the console screen to activate the console.
5. When the Infoblox login prompt appears, log in with the default user name and password.
   
   ```
   login: admin
   password: infoblox
   ```
   
   The Infoblox prompt appears: Infoblox >
6. You must have valid licenses before you can configure the vNIOS appliance. To obtain permanent licenses, first use the show version command to obtain the serial number of the vNIOS appliance, and then visit the Infoblox Support web site at https://support.infoblox.com. Log in with the user ID and password you receive when you register your product online at: http://www.infoblox.com/support/customer/evaluation-and-registration.
   
   If the vNIOS appliance does not have the Infoblox licenses required to run NIOS services and to join a Grid, you can use the set temp_license command to generate and install a temporary 60-day license. The appliance lists the available licenses.
7. From the list of licenses, select the Grid, vNIOS, and other relevant licenses for your vNIOS virtual appliance.

   **Note**
   
   You must have both the Grid and vNIOS licenses for the vNIOS appliance to join a Grid.

8. Set the network settings and join the vNIOS appliance to the Grid. Use the CLI command set network to configure the network settings and specify the Grid.
   
   ```
   Infoblox > set network
   NOTICE: All HA configurations are performed from the GUI. This interface is used only to configure a standalone node or to join a Grid.
   Enter IP address: 10.1.1.11
   ```
Enter netmask: [Default: 255.255.255.0]: 255.255.255.0
Enter gateway address [Default: 10.1.1.1]: 10.1.1.1
Become Grid member? (y or n): y
Enter Grid Master VIP: 10.1.1.22
Enter Grid Shared Secret: L0ck37
Join Grid as member with attributes:
Join Grid Master VIP: 10.1.1.22
Grid Name: DaveyJones
Grid Shared Secret: L0ck37
WARNING: Joining a Grid will replace all the data on this node!
Is this correct? (y or n): y
Are you sure? (y or n): y
The network settings have been updated.
Verifying and Monitoring

After you configure the vNIOS appliance, you can check its status on the Dashboard and in the Grid -> Grid Manager -> Members tab through Grid Manager, as shown in Figure 1.11 and Figure 1.12. For information about Grid Manager, refer to the Infoblox NIOS Administrator Guide.

Figure 1.11 vNIOS Appliance Status on the Dashboard

![Grid Status](image)

Figure 1.12 vNIOS Appliance Status in the Members Tab

![Members Tab](image)
Installing vNIOS for Xen using Xenproject.org 4.3 Hypervisor

Besides installing on Citrix XenServers, you can also install Infoblox vNIOS for Xen on Linux systems running Xenproject.org hypervisor. This release of vNIOS for Xen supports the Xenproject.org 4.3 hypervisor. Note that the vNIOS for Xen virtual appliance functions as a HVM (hardware virtual machine) guest on the Xen platform. For information about supported vNIOS for Xen model specifications, see Table 1.1.
Requirements

The following are required to install the vNIOS virtual appliance using XenProject.org hypervisor:

- The vNIOS software package. You can download the vNIOS software from the Infoblox Technical Support site. To download the software, you must have a valid login account on the Infoblox Support site. Register your product at https://support.infoblox.com if you do not already have an account. The vNIOS software package consists of the following:
  - An installer file (.bundle) that store the contents of the hard disk drive of the vNIOS appliance. Ensure that you download the correct file. For virtual appliances with a 55 GB disk, download the file that has the extension 55G-100.bundle. For all other models, download the file with an extension that corresponds to the appliance model number. For example, for IB-VM-1050 with a 120 GB disk, download the file that has the extension 120G-1050.bundle. For information about the vNIOS appliance models on Citrix Xen, see Table 1.1.
  - You can deploy the vNIOS virtual appliance from a remote web server or a local file system accessible from your management system.
Deploying vNIOS Appliances using Xen

Before setting up a vNIOS appliance as a Grid Master or Grid member, you must install the virtual appliance on Xen. Instructions in this section assume that you have configured the server on your network, and you are able to connect to it from your management station. For information about configuring Xen, refer to the Xen documentation. Infoblox recommends that you back up your existing configuration before deploying vNIOS configuration.

To deploy a vNIOS appliance, connect to the Xen console, and then execute the commands, as described in Installing the vNIOS for Xen Virtual Appliance.
Installing the vNIOS for Xen Virtual Appliance

You must log in to the Xen console and execute the following commands to install the vNIOS for Xen virtual appliance.

To install vNIOS on Xen as an HVM guest:

1. Download the vNIOS virtual appliance from the Infoblox Technical Support web site and login to the Xen console.

   ![Figure 1.13 Log in to the Xen Console](image)

2. Execute the `sh nios.*.bundle` command in the Xen console. Example:
   ```bash
   ```

   ![Figure 1.14 Deploying the Installer](image)

3. When you execute the previous command, it displays the Infoblox End-User License Agreement. Type `yes` to accept the Infoblox license agreement.

   Accept the Infoblox End-User License Agreement? (yes/no): yes

   It may take a while to install the vNIOS virtual appliance.

   ![Figure 1.15 Accepting Infoblox End-User License Agreement](image)
3. Specify a name for the image. Example:

   Please enter name for the image being deployed (default: NIOS): NIOS-1420-new

5. Enter the path where you want to deploy the image. Example:

   Please enter deploy path for the image: /tmp/infoblox123

Unpacking and converting the image...

![Figure 1.16 Specifying a name for the image and the location to save the image](image-url)

6. Enter a name for the network bridge and specify the HVM loader path. Example:

   Please enter network bridge name (default: virbr0):

   WARNING: HVM loader /usr/lib/xen/boot/hvmloader does not exist or is not executable.

   Please either fix /usr/lib/xen/boot/hvmloader or edit /tmp/infoblox123/nios.cfg to set a proper HVM loader.

   NIOS image successfully deployed! Next:
   - please update /tmp/infoblox123/nios.cfg as per previous warning(s);
   - run as root in Dom0:

   # xm create /tmp/infoblox123

![Figure 1.17 Specifying network bridge name and HVM loader path](image-url)
6. Create an HVM vNIOS VM using the `xm create` command. Example:

```
xm create /tmp/infoblox123/nios.cfg
```
Using config file "/tmp/infoblox123/nios.cfg".

Figure 1.18 Creating nios.cfg file
7. Execute the `xm list` command to list the active vNIOS virtual appliances. Example:

```
xm list
Name          ID  Mem  VCPUs State   Time(s)
Domain-0      0  23743  32 r----- 1492.1
NIOS-1410-new 2  8208  4 -b---- 2694.8
NIOS-1420-new 6  8208  1 r----- 10.4
NIOS-6-11-1420 1  8048  4 -b---- 2226.3
```

Figure 1.19 Listing active vNIOS virtual appliances
9. Attach the NIOS console using the `xm console` name command. Example:

```
xm console NIOS-1420-new.
```

```
/etc/rc.d/rc.runonce: Creating Apache Certificate
/etc/rc.d/rc.runonce: Finished Manufacturing Initialization
/etc/rc.d/rc3: remounting / read-only
/etc/rc.d/rc3: mounting root Read only
Starting Xen support
OK
Starting VMWare tools
```

Figure 1.20 Attaching NIOS console
The vNIOS installation is complete.
Known Limitations

vNIOS virtual appliance for Xen supports most of the features of the Infoblox NIOS appliances, with the following limitations:

- vNIOS appliances do not support the following features:
  - Configuration of port settings for MGMT, LAN, LAN2, and HA ports
  - The bloxTools environment
- When you configure an HA pair, both nodes in the HA pair must be vNIOS instances. You cannot configure a physical NIOS appliance and a vNIOS instance in an HA pair.
- vNIOS appliances run on virtual hardware. They do not have sensors to monitor the physical CPU temperature, fan speed, and system temperature.
- Changing the vNIOS appliance settings through the vNIOS for Xen virtual appliance console may violate the terms of the vNIOS licensing and support models. The vNIOS appliance may not join the Grid or function properly.