Infoblox Installation Guide for Infoblox-4030 Appliances - Rev2

Infoblox-4030 Appliance

Infoblox-4030-10GE Appliance
1. Introduction .................................................................................................................. 3
   1.1 Product Overview ................................................................................................. 3
   1.2 Hardware Components ....................................................................................... 3
   1.3 System, Environmental, and Power Specifications ............................................... 8
   1.4 DC Power Cable Color Codes ............................................................................ 9
2. Installing the Infoblox-4030 and Infoblox-4030-10GE ............................................. 9
   2.1 SFP/SFP+ Transceiver Installation and Removal Guidelines ............................. 10
   2.2 Rack Mounting Safety Requirements ................................................................. 10
   2.3 Powering On the Appliance ............................................................................... 12
   2.4 Network Connectivity ....................................................................................... 12
   2.5 Cabling the Appliance to the Network .............................................................. 13
3. Accessing the Infoblox Appliance ......................................................................... 13
   3.1 Connecting to the Appliance ............................................................................ 14
   3.2 Auto Provisioning NIOS Appliances .................................................................. 15
   3.3 Specifying Appliance Settings ......................................................................... 15
   3.4 Infoblox CLI ..................................................................................................... 16
4. Field Replaceable Units ......................................................................................... 17
   4.1 Managing the Disk Subsystem ......................................................................... 17
   4.2 Hard Disk Replacement .................................................................................... 19
   4.3 Changing AC Power Supplies ........................................................................ 19
   4.4 Internal System Fan Replacement .................................................................... 21
   4.5 Infoblox-4030/Infoblox-4030-10GE Field Replaceable Unit Part Numbers ....... 23
Introduction

This guide provides an overview of the Infoblox-4030 and Infoblox-4030-10GE caching accelerator appliances and explains how to install and configure them. For information about which NIOS releases the Infoblox-4030 and Infoblox-4030-10GE appliances support, refer to the Read Me First document and release notes for your product.

Product Overview

The Infoblox-4030 and Infoblox-4030-10GE are high performance network appliances for core network services, including DNS (Domain Name System) caching. You can configure and manage the Infoblox-4030 or Infoblox-4030-10GE through an Infoblox GUI that works seamlessly in Windows, Linux, and Mac environments using standard web browsers.

The Infoblox-4030 and Infoblox-4030-10GE appliances contain power supplies, fan modules, hard disk drives and network interfaces. They are Class A and Class B (with limits) digital appliances per FCC regulations. For the appliances to be NEBS Level 3 compliant, ensure that you do not install the optional front cover that ship with the appliance. For information about the front cover, see Hardware Components.

Basic features of the Infoblox-4030 and Infoblox-4030-10GE include the following:

- Support for all DNS caching, DNSSEC, Grid Management, and all administrative features for Infoblox DNS
- Four (4) SFP or SFP+ Gigabit Ethernet interfaces
- 10-Gigabit Ethernet (Infoblox-4030-10GE only)
- High Availability support
- Field replaceable hard disk drives
- Hot-swappable AC power supplies
- Field replaceable fan modules
- Optional DC power supplies

Note: There are two versions of the Infoblox-4030 appliance: Rev-1 and Rev-2. Both versions support the same NIOS features. They are different in physical appearance and CPU speeds. This guide only contains information about the Infoblox-4030 Rev-2 appliance, referred to generically in this Guide as the Infoblox-4030. For information about the Infoblox-4030 Rev-1 appliance, refer to the Infoblox Installation Guide for the Infoblox-4030 Rev-1 Appliance.

Identify your Infoblox-4030 version by looking at its physical appearance and the serial number; Rev-2 appliance serial numbers begin with a 4835 prefix and Rev-1 appliance serial numbers begin with a 40 prefix.

Infoblox supports the previous Infoblox-4030 platform version, Rev-1, only with field-replaceable units (FRUs) and warranty replacements. Current Rev-2 platform FRUs, such as power supplies and fan units, are not compatible with Infoblox-4030 Rev-1 hardware and FRUs, and vice versa. Ensure that you use the correct FRUs for your Infoblox-4030 appliance. For information about FRUs, see Field Replaceable Units.

Hardware Components

The Infoblox-4030 and Infoblox-4030-10GE are 2-U platforms that you install in a seismic equipment rack using mounting rails and materials that ship with each appliance. For information about rack mounting, see Installing the Infoblox-4030 and Infoblox-4030-10GE.

The Infoblox-4030 front panel comes with an optional front cover that you can install when you first set up the appliance. For information about how to install the front cover, refer to the installation instructions that ship with it.

Note: (DC Systems only) If you want your appliance to be NEBS Level 3 compliant, DO NOT install the front cover.

Figure 1 Infoblox-4030/Infoblox-4030-10GE, Front View with Cover

Front Panel

After you remove the front panel cover, front panel components include the hard disk drives and indicator lights. Front panel components are illustrated in Figure 2.
The front panel components are described in Table 1.

**Table 1 Front Panel Components**

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>UID Button and LED</td>
<td>The unit identification button and LED. Pressing the UID button illuminates the blue UID LEDs on the front and rear panels. In a rack environment, the UID feature enables easier location of a server when moving between the front and rear of the rack. Blue = UID is activated Dark = UID is deactivated</td>
</tr>
<tr>
<td>System Health LEDs</td>
<td>These LEDs identify the overall health of the system. Green = Normal Amber = System is degraded Red = System is in critical condition</td>
</tr>
<tr>
<td>Power On/ Standby Button and Power LED</td>
<td>This LED indicates whether the power is on. Green = System is on Amber = System is in standby mode Dark = System has no power supply</td>
</tr>
<tr>
<td>Disk Drives</td>
<td>Four (4) hot-swappable hard disk drives configured in a RAID (Redundant Array of Independent Disks) 10 array. For information about RAID 10 array, see Managing the Disk Subsystem.</td>
</tr>
<tr>
<td>Drive LEDs</td>
<td>Each disk drive has one Fault/UID LED (green/amber) that indicates the connection of the disk drive, and a circular Online/Activity LED (green) that goes around the Fault/UID LED to indicate read/write activity status of the disk drive.</td>
</tr>
<tr>
<td>VGA Port</td>
<td>This port is not supported. Use the console port or LAN1 port for initial setup.</td>
</tr>
</tbody>
</table>

**Disk Drive LEDs**

The disk drives are located on the appliance front panel. Table 2 lists the disk drive LED combinations and the states they represent.

**Table 2 Disk Drive LED Combinations**

<table>
<thead>
<tr>
<th>Online/Activity LED (Green)</th>
<th>Fault/UID LED (Green/Amber)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Off or circulating green</td>
<td>Steady green</td>
<td>The drive is operating normally.</td>
</tr>
<tr>
<td>Off or circulating green</td>
<td>Steady amber</td>
<td>The drive has failed, or it has received a predictive failure alert.</td>
</tr>
</tbody>
</table>

**Rear Panel**

The Infoblox-4030 and Infoblox-4030-10GE appliances offer a choice of dual AC power supplies or dual DC power supplies. Power supplies are hot swappable; any single power supply can be replaced without disrupting appliance operations. The Infoblox-4030 and Infoblox-4030-10GE provide four (4) active SFP Gigabit Ethernet interfaces that operate as Infoblox MGMT, LAN1, HA, and LAN2 ports in the Infoblox system. Port assignments are from left to right and reflect standard Infoblox port assignments as shown in Figure 3 and listed in Table 3.
Note: The SFP/SFP+ MGMT, LAN1, HA, and LAN2 ports operate as described in Table 3. The RJ-45 ports on the rear of the Infoblox-4030 and Infoblox-4030-10GE chassis are deactivated. You can only use the SFP/SFP+ ports. Also see 10-Gigabit Ethernet Connectivity for specific guidelines on setting up Infoblox-4030-10GE 10-Gigabit interfaces and network connections.

Table 5 summarizes SFP/SFP+ connectivity for the Infoblox-4030 and Infoblox-4030-10GE appliances.

### Table 3 Rear Panel Components

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGMT Port</td>
<td>A port for use with appliance management or DNS service. You can enable the MGMT port and define its use through the Infoblox GUI.</td>
</tr>
<tr>
<td>LAN1 Port</td>
<td>A port that connects a NIOS appliance to the network. You must use the LAN1 port to set up the appliance initially. It handles all traffic if you do not enable the MGMT and LAN2 ports. The appliance uses its LAN1 port for DNS service traffic. The LAN1 and HA ports must be set to run at the same line speed.</td>
</tr>
<tr>
<td>HA Port</td>
<td>A port through which the active node in an HA (high availability) pair connects to the network using a VIP (virtual IP) address. HA pair nodes use their HA ports for VRRP (Virtual Router Redundancy Protocol) advertisements. HA is supported in the Infoblox-4030 and Infoblox-4030-10GE appliances. If the appliance operates as a standalone appliance, the HA port may not be used for DNS service traffic and remains inactive.</td>
</tr>
<tr>
<td>LAN2 Port</td>
<td>A port that connects a NIOS appliance to the network. The LAN2 port is not enabled by default. You can enable the LAN2 port and define its use through the Infoblox GUI after the initial setup. The appliance may use its LAN2 port for DNS service traffic.</td>
</tr>
<tr>
<td>Console Port</td>
<td>A male DB-9 serial port for a console connection to change basic configuration settings and view basic system functions through the CLI (command line interface). Only a properly grounded USB-to-Serial dongle is allowed to connect to the serial console port. If the dongle is connected to a laptop, this laptop must also be properly grounded. Failure to do so may result in damage to the serial console port of the Infoblox appliance. Infoblox is not responsible for such damage. For DB-9 pin assignments, see Figure 6.</td>
</tr>
<tr>
<td>IPMI Port</td>
<td>Dedicated Ethernet port used for LOM (integrated Lights Out Management) with specific releases of NIOS. Ensure that the iLO/IPMI port is properly connected to its dedicated IPMI network before you configure LOM through the Grid Manager for remote management. The IPMI/LOM port supports up to Gigabit Ethernet speeds. Follow best practices for IPMI usage in the network by not allowing the LOM port to connect to the general-use data center network.</td>
</tr>
<tr>
<td>VGA Port</td>
<td>This port is not supported. Use the console port or LAN1 port for initial setup.</td>
</tr>
</tbody>
</table>
USB Ports | Reserved for future use.
--- | ---
Power Supplies | Each of the two redundant power supplies has a power outlet for connecting the appliance to a standard DC (Direct Current) or AC power source.
Power Supply LEDs | Green = Normal
Off = System is off or power supply has failed.
UID LED | Turns blue to indicate that the appliance is currently being identified. This LED illuminates when you press the UID button on the front panel. For information about the UID button, see Table 1.

### Ethernet Port LEDs

View the Activity and Link LEDs to see link activity and connection speeds on Ethernet ports. Figure 4 describes the status conveyed by Ethernet port LEDs through their color and illumination (steady glow or blinking).

**Figure 4 Ethernet Port LEDs**

![Ethernet Port LEDs](image)

<table>
<thead>
<tr>
<th>Label</th>
<th>Color</th>
<th>Port Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activity</td>
<td>Blinking Green</td>
<td>Link is Up and Active (SFP+ only)</td>
</tr>
<tr>
<td>Steady Yellow</td>
<td></td>
<td>Link is up but inactive</td>
</tr>
<tr>
<td>Blinking Yellow</td>
<td></td>
<td>Link is up and active</td>
</tr>
<tr>
<td>Dark</td>
<td></td>
<td>Link is down</td>
</tr>
<tr>
<td>Link</td>
<td>Steady Blue</td>
<td>10000 Mbps (SFP+ only)</td>
</tr>
<tr>
<td></td>
<td>Steady Green</td>
<td>1000 Mbps</td>
</tr>
</tbody>
</table>

### 10-Gigabit Ethernet Connectivity

**Note:** Table 5 summarizes SFP/SFP+ usage for the Infoblox-4030 and Infoblox-4030-10GE appliances.

When you install the Infoblox-4030-10GE, some installation guidelines must be followed:

- Install all transceivers into the ports for your appliance before turning the system on for the first time.
- The LAN1 and HA ports must be set to the same line speed by using the same transceivers. In the expected 10-Gigabit deployment, LAN1 will be set to run to 10GbE line speed. If you are running HA with a second appliance, the HA interface must be set to the same line speed as the LAN1 port by inserting a second transceiver of the same type. This requirement applies to both RJ-45 and optical interfaces. Otherwise, for a standalone appliance, you can leave the HA port without an installed transceiver, as the port will be inactive.

**Note:** If the LAN1 and HA ports have different-speed SFPs installed (LAN1=10GbE, HA=1GbE), both ports will be set to 10GbE and the port containing a 1GbE transceiver will not pass traffic.

- The MGMT, LAN1 and LAN2 interface line speeds may be set independently.
- The 10-Gigabit Ethernet option also supports mixed mode configurations, in which RJ-45 and optical transceivers may be used in the same appliance.

**Figure 5** summarizes the requirements and port order for the Infoblox-4030-10GE 10-Gigabit Ethernet configuration.

**Figure 5 10GbE Port Setting Requirements**
LAN1 and HA Ports must be set to the same speed by using the same SFP or SFP+ transceivers. The appliance auto-senses and activates the port speed based on the installed transceivers. You must install all transceivers before turning on the appliance. If you are not using HA, you can leave the HA port without a transceiver.

Note: Table 5 summarizes SFP and SFP+ support for Infoblox appliance models.

Connector Pin Assignments

As noted, the Infoblox-4030 and Infoblox-4030-10GE appliances provide the following ports on the rear panel:

- USB ports (reserved for future use)
- Male DB-9 console port
- Four (4) active RJ-45/SFP/SFP+ 1000Base-T/10000Base-T auto-sensing Ethernet ports, depending on ordered appliance configuration
- Active 10/100/1000 iLO/IPMI port

Figure 6 describes standard DB-9 connector pin assignments. DB-9 pin assignments follow the EIA232 standard.

Figure 6 DB-9 Pin Assignments

<table>
<thead>
<tr>
<th>Pin</th>
<th>Signal</th>
<th>Direction</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>(not used)</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Receive</td>
<td>Input</td>
</tr>
<tr>
<td>3</td>
<td>Transmit</td>
<td>Output</td>
</tr>
<tr>
<td>4</td>
<td>DTE Ready</td>
<td>Output</td>
</tr>
<tr>
<td>5</td>
<td>Ground</td>
<td>—</td>
</tr>
<tr>
<td>6</td>
<td>DCE Ready</td>
<td>Input</td>
</tr>
<tr>
<td>7</td>
<td>RTS (Request to Send)</td>
<td>Output</td>
</tr>
<tr>
<td>8</td>
<td>CTS (Clear to Send)</td>
<td>Output</td>
</tr>
<tr>
<td>9</td>
<td>(not used)</td>
<td></td>
</tr>
</tbody>
</table>

SFP/SFP+ Interfaces

Note: In Infoblox-4030-10GE appliances, always install your transceivers in the ports before turning your system on for the first time. Install the same transceiver type in both the LAN1 and HA ports. If you are not using HA, the HA port can be left without a transceiver.

The Infoblox-4030 and Infoblox-4030-10GE appliances ship with four (4) SFP or SFP+ Gigabit Ethernet interfaces and matching transceivers, depending on the appliance model and the ordered configuration. Depending on chosen options, SFP and SFP+ interfaces support the following Infoblox-sold transceivers (other supported third-party transceivers are listed in Infoblox Appliance SFP/SFP+ Transceivers).

Table 4 SFP/SFP+ Transceiver Specifications
### SFP/SFP+ Interface Specifications

<table>
<thead>
<tr>
<th>SFP/SFP+ Interface</th>
<th>Specifications</th>
</tr>
</thead>
</table>
| RoHS 6 Compliant 1000 BASE-T Copper SFP Transceiver | - Up to 1.25Gb/s bi-directional data links  
- Hot-pluggable SFP footprint  
- Extended case temperature range (0°C to +85°C)  
- Fully metallic enclosure for low EMI  
- Low power dissipation (1.05 W typical)  
- Compact RJ-45 connector assembly  
- RoHS 6 compliant and Lead Free  
- Access to physical layer IC via 2-wire serial bus  
- 1000 BASE-T operation in host systems with SGMII interface |
| Infoblox part number: IB-SFP-CO | |
| RoHS 6 Compliant 2Gb/s 850nm SFP Transceiver | - Up to 2.125 Gb/s bi-directional data links  
- Hot-pluggable DFP footprint  
- Commercial operating temperature range: 0°C to 70°C  
- 850nm Oxide VCSEL laser transmitter  
- Duplex LC connect  
- RoHS 6 Compliant and Lead-Free  
- Up to 500m on 50/125m MMF, 300m on 62.5/125m MMF  
- Metal enclosure, for lower EMI  
- Single 3.3V power supply  
- Low power dissipation |
| Infoblox part number: IB-SFP-SX | |
| Infoblox SFP+ Long Range 10GbE LR fiber Transceiver | - Hot-pluggable SFP+ footprint  
- Supports 9.95 to 10.5Gb/s bit rates  
- Power dissipation < 1W  
- RoHS-6 compliant (lead-free)  
- Commercial temperature range -5°C to 70°C  
- Single 3.3V power supply  
- Maximum link length of 10km  
- Uncooled 1310nm DFB laser  
- Receiver limiting electrical interface  
- Duplex LC connector |
| Infoblox part number: IB-SFPPLUS-LR | |
| Infoblox SFP+ Short Range 10GbE SR fiber Transceiver | - Hot-pluggable SFP+ footprint  
- Supports 9.95 to 10.5 Gb/s bit rates  
- Power dissipation < 1W  
- RoHS-6 compliant (lead-free)  
- Commercial temperature range 0°C to 70°C  
- Single 3.3V power supply  
- Maximum link length of 300m on 2000 MHz-km MMF  
- Uncooled 850nm VCSEL laser  
- Receiver limiting electrical interface  
- Duplex LC connector |
| Infoblox part number: IB-SFPPLUS-SR | |

#### Table 5 SFP/SFP+ Appliance Support Summary

<table>
<thead>
<tr>
<th>Infoblox appliance Model</th>
<th>SFP/SFP+ Support</th>
<th># of active SFP/SFP+ ports</th>
<th>10GbE Support</th>
<th>Accelerated 10 GbE Support</th>
<th>HA</th>
<th>Disabled internal RJ-45 ports</th>
</tr>
</thead>
<tbody>
<tr>
<td>IB-4030</td>
<td>γ¹</td>
<td>4²</td>
<td>N</td>
<td>N/A</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>IB-4030-10GE</td>
<td>γ³</td>
<td>4²</td>
<td>γ³</td>
<td>γ³</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>

1 – 1GbE SFP support only. Uses 1GbE hardware acceleration for DNS query caching applications.

2 – In both models, MGMT and HA ports do not carry DNS query traffic. The LAN1 and LAN2 interfaces are used for DNS query traffic only.

3 – Uses 10GbE hardware acceleration for DNS query caching applications.

### System, Environmental, and Power Specifications

System specifications describe the physical characteristics of the appliance. Environmental specifications describe the temperature and moisture limits it can withstand. Power specifications describe the electrical range within which the appliance circuitry can operate.

### System Specifications, IB-4030 and IB-4030-10GE Appliances

- **Form Factor:** 2-U rack-mountable appliance

Copyright ©2018, Infoblox, Inc. All right reserved.
• **Dimensions:** 3.44" H x 17.54" W x 27.5" D (8.75 cm H x 44.55 cm W x 69.85 cm D)
• **Weight:** Approximately 61.00 pounds (27.66 kg)
• **Ethernet Ports:**
  - MGMT, HA, LAN1, LAN2 – auto-sensing 1000Base-TX (IB-4030)
  - MGMT, HA, LAN1, LAN2 – auto-sensing 10000Base-TX (IB-4030-10GE)

### Environmental Specifications

- Operating Temperature: 41 F – 104 F (5 – 40°C)
- Storage Temperature: -22 to 140 degrees F (-30 to 60 degrees C)
- Operating Relative Humidity: 10% to 90% (non-condensing)

### Electrical Power Specifications

*Caution:* Infoblox recommends provisioning power according to the AC or DC rated input current and maximum peak power values listed in the specifications below.

- **AC Power Supply:** 100 to 240VAC 750W (Maximum)
  - Rated Input Frequency: 50 Hz to 60 Hz
  - Rated Input Current: 8.9A at 100V AC, 4.3A at 200VAC
  - Rated Input Power: 857W at 100VAC, 824W at 200VAC
  - Maximum Heat Output (BTU/hour): 2925 BTU at 100VAC, 2812 BTU at 200VAC
  - Maximum Peak Power: 750 W at 100V to 240V AC input
- **DC Power Supply:** 48v 750W GRND TERM, RING, VIN 12-10 AWG #10
  - Rated Input Voltage: 48VDC
  - Rated Input Current: 9.6A
  - Nominal Input Current: 17A
  - Maximum Inrush Current: 24A peak
  - Maximum Inrush Current Duration: 15ms
  - Maximum Power Draw: 820W at 48V DC input
  - Maximum Heat Output (BTU/hour): 2796 BTU
  - Maximum Peak Power: 750 W at 48V DC input

### DC Power Cable Color Codes

DC power cables ship with a label describing each lead. The label is located near the pigtail leads. Table 6 lists -48V DC power specifications.

*Table 6 -48V DC Power Connector*

<table>
<thead>
<tr>
<th>Cable Pin</th>
<th>Cable Color</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Black</td>
<td>Positive Return</td>
</tr>
<tr>
<td>2</td>
<td>Red</td>
<td>Negative Input Voltage</td>
</tr>
<tr>
<td>3</td>
<td>Green/Yellow</td>
<td>Safety Ground</td>
</tr>
</tbody>
</table>

### Installing the Infoblox-4030 and Infoblox-4030-10GE

*Note:* The Infoblox-4030 and Infoblox-4030-10GE appliances must be installed in a four-post seismic rack.

Infoblox-4030 and Infoblox-4030-10GE appliances ship with mounting rails, side rails, and an accessory kit that contains mounting hardware. To
mount the appliance to a seismic rack, you also need the following:

- M5 rack screws that fit the seismic rack
- Round-hole M5 cage nuts for use with the seismic rack
- A screwdriver

SFP/SFP+ Transceiver Installation and Removal Guidelines

After receiving a shipped Infoblox appliance with SFP or SFP+ support, Infoblox recommends installing the transceivers into your appliance before turning power on to the system for the first time. (This procedure is required for the Infoblox-4030-10GE appliance.) Pay heed to the interface configuration required for your application (for related information, see 10-Gigabit Ethernet Connectivity).

Should circumstances require you to ship an appliance to Infoblox for repair or replacement, remove all SFP or SFP+ transceivers from your appliance before shipping it back to Infoblox. Keep your transceivers in your facility until the appliance is replaced or repaired and subsequently returned to you.

Rack Mounting Safety Requirements

The following space and airflow requirements are required for Infoblox-4030 and Infoblox-4030-10GE system operation:

- Minimum clearance of 63.5 cm (25 in) in front of the rack
- Minimum clearance of 76.2 cm (30 in) in the rear of the rack
- Minimum clearance of 121.9 cm (48 in) from the rack rear to the rear of another rack or row of racks

The appliance draws air in through the front of the chassis and expels air through the rear. Adequate ventilation is required to allow ambient room air to enter the system chassis and to be expelled from the rear of the chassis.

To mount the appliance to a seismic rack, do the following:

1. Unscrew the snap-in screws from the mounting rails and discard.
2. Install the round-hole M5 cage nuts in the appropriate rack hole positions where you want to install the appliance. Ensure that you install two cage nuts on the front and two on the back of each rail, as shown in Figure 7. Note that the square-hole cage nuts that ship with the accessory kit do not fit in the seismic rack.

Figure 7 Installing the Round-Hole M5 Cage Nuts

3. Line up a mounting rail with cage nuts, and attach the mounting rail to the rack with M5 screws. Ensure that the front end of each mounting rail connects to the front of the rack.

Note: Ensure that both rail assemblies are correctly leveled.

4. Repeat steps 1 to 3 for the other mounting rail.
5. Slide out the side rails from each mounting rail and press the flange that holds each side rail in place. Then pull out each of the side rails from the assembly.

Note: Make sure that you keep track of the front end of each rail.

6. Align each side rail to the appliance and snap them in place, as shown in Figure 8.
7. With one person on each side, lift the appliance and position it in front of the rack.

8. Align the side rails on each side of the appliance with the mounting rails on the seismic rack.

9. Slide the appliance onto the mounting rails and into the rack. As you slide it into place, the catch mechanisms will click, indicating that you can safely withdraw the system from the rack without accidentally pulling it free.

10. Snap the appliance into place, and fasten it to the rack using the retainer screws provided in the accessory kit. (For further information, refer to the instructions shipped with the accessory kit.)

11. Pull down the retention levers on both sides of the appliance, and insert the retainer screws on both sides, as shown in Figure 9.

**Ground Lug Installation (DC Systems Only)**

*Figure 10 Ground Lug Installation Sequence*
To meet grounding and bonding requirements for system safety, and to meet NEBS requirements, install a ground lug on the rear of the chassis. A ground lug screw is located on the chassis rear as labeled in Figure 15 of this Guide. A ground lug, with two star washers, is provided in the accessory kit bundled with the appliance. The star washers are used with the ground lug to ensure a snug fit. To install the ground lug, do the following:

1. Remove the ground lug screw from the rear of the chassis as shown in Figure 15 of this Guide.
2. Place one star washer on the ground lug screw, which is part of the chassis.
3. Place the ground lug on the ground lug screw, followed by the second star washer.
4. Replace the ground lug screw. Ensure that it is snug. Torque screw to 4-6 lb-inch (0.45–0.48 N m).
5. Plug the (properly grounded) ground cable into the ground lug.

Grounding Note on DC Power Supply Connections

DC-equipped Infoblox appliances provide 2.5 meter DC power cords with three 10AWG wiring connections, labeled 48V/GND/RTN. DC power operation requires properly grounded DC connections. Each power supply provides a standard grounding nut, labeled with a standard “Ground” symbol on the power supply. Ensure that your DC connections are properly installed and grounded before operation.

Powering On the Appliance

The Infoblox-4030 and Infoblox-4030-10GE ship with two (2) hot-swappable redundant AC power supply modules or two hot-swappable redundant DC power supply modules. Infoblox recommends using the power cables shipped with the appliance to connect each power supply to separate power circuits. In the event of a power failure on one circuit, the appliance can then operate on the other. To power the appliance:

- For each power supply, connect a power cable between the power connector on the back of the appliance and a properly grounded and rated power circuit that meets the provisions of the current edition of the National Electrical Code, or other wiring rules that apply to your location. Make sure that the outlet is near the appliance and is easily accessible.

DC Power Supply Guidelines

Note: The information in this section is for advisory purposes only. No color coding standards exist for DC power cables. The color coding used by the external DC power source at your site determines the color coding for the leads on the power cables that attach to the terminal studs on each DC power supply. Ensure that DC power connections maintain the correct polarity. The cables of your DC power source also may be labeled with (+) and (-) to indicate polarity.

Most DC power supply deployments use -48V input. Table 7 lists -48V pinouts for DC connections between power transformers and Infoblox DC power supplies.

<table>
<thead>
<tr>
<th>Pin/Wire</th>
<th>Color</th>
<th>Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Black</td>
<td>RTN (Positive Return)</td>
</tr>
<tr>
<td>2</td>
<td>Red</td>
<td>-48v (Negative Input Voltage)</td>
</tr>
<tr>
<td>3</td>
<td>Green/Yellow</td>
<td>GND (Safety Ground)</td>
</tr>
</tbody>
</table>

The DC power supplies for your Infoblox appliance label the terminal studs as -48V and RETURN, respectively. Always connect ground connections before connecting power leads.

Network Connectivity
By default, an Infoblox appliance automatically negotiates the optimal connection speed and transmission type (full or half duplex) on the physical links between its LAN1, LAN2, HA, and MGMT ports and the Ethernet ports on a connecting switch or load balancer. Occasionally, the appliances may fail to auto-negotiate that speed and type, and instead connect at lower speeds of either 100 or 10 Mbps using potentially mismatched full- and half-duplex transmissions. If this occurs, begin by determining whether there is a firmware upgrade available for the switch. If so, apply the firmware upgrade to the switch and test the connection. If that does not resolve the issue, manually set the ports on the Infoblox appliance and on the switch to make 1000-Mbps full-duplex connections. See the section "Modifying Ethernet Port Settings" in the Infoblox NIOS Administrator Guide for the steps to resolve the problem. You can use the LAN1 and LAN2 Ethernet interfaces on the system for DNS query traffic.

1. To ensure correct operation, configure the following settings at the port level for all the connecting switch ports (to LAN1, LAN2, and HA where applicable):
   - Spanning Tree Protocol: Disable.
   - Trunking: Disable.
   - EtherChannel: Disable.
   - IGMP Snooping: Disable.
   - Port Channeling: Disable.
   - Speed and Duplex settings: Match settings on both the Infoblox appliance and switch or load balancer.
   - Disable other dynamic and proprietary protocols that might interrupt the forwarding of packets.
2. Use the Infoblox GUI to access the Infoblox appliance from a management system. Through the Infoblox GUI, you can set up and administer the appliance. For management system requirements and access instructions, see Accessing the Infoblox Appliance.

Cabling the Appliance to the Network

Use one or more optical fiber Ethernet cables to connect the appliance to the network, depending on the deployment.

1. Connect an Ethernet cable from the LAN1 port on the to the network switch or router, as indicated in Figure 11.
2. (Supported with Infoblox-4030 and Infoblox-4030-10GE appliances in HA mode) To connect the Infoblox appliance for HA (high availability), connect the HA ports on both appliances to a switch on your network. The VIP (Virtual IP), LAN1, and HA port addresses must be on the same subnet and be unique for that subnet.

Figure 11 Cabling the Infoblox Appliance to the Network

Note: By default, the appliance automatically negotiates an optimal connection speed and transmission type (full or half duplex) on physical links between its LAN1, LAN2, HA, and MGMT ports and the Ethernet ports on the connecting switch or load balancer. If the appliance fails to auto-negotiate the optimal settings, refer to the Infoblox NIOS Administrator Guide for steps to resolve the problem.

Accessing the Infoblox Appliance

The management system is a computer from which you configure and monitor Infoblox-4030 and Infoblox-4030-10GE appliances. You can access the appliance from the management system remotely across an Ethernet network or directly through a serial cable. After completing the steps in Cabling the Appliance to the Network, start an HTTPS connection to the appliance and access the Infoblox GUI using one of the supported browsers.

Alternatively, start an SSHv2 connection and access the CLI through an SSHv2 client. You can also access the CLI by connecting a serial cable directly from the console port of a management system to the console port on the appliance, and then using a terminal emulation program. The management system must meet the following requirements to operate an Infoblox appliance.

Table 8 Software and Hardware Requirements for the Management System

<table>
<thead>
<tr>
<th>Management System Software Requirements</th>
<th>Management System Hardware Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Infoblox GUI Access

- Microsoft Windows 8.0 and 8.1®: Microsoft Internet Explorer® 11.x*, 10.x*, Mozilla Firefox 32.x, 31.x, 25.x, 21.x, 16.x, and 10.x, Google Chrome 37.x, 36.x, 30.x, 27.x, 22.x, and 16.x
- Microsoft Windows 7®: Microsoft Internet Explorer® 11.x*, 10.x*, 9.x, and 8.x, Mozilla Firefox 32.x, 31.x, 25.x, 21.x, 16.x, and 10.x, Google Chrome 37.x, 36.x, 30.x, 27.x, 22.x, and 16.x
- Microsoft Windows XP® (SP2+): Microsoft Internet Explorer 7.x and 8.x, Mozilla Firefox 32.x, 31.x, 25.x, 21.x, 16.x, and 10.x, Google Chrome 37.x, 36.x, 30.x, 27.x, 22.x, and 16.x
- Red Hat® Enterprise Linux® 7.x: Mozilla Firefox 32.x, 31.x, 25.x, 21.x, 16.x, and 10.x, Google Chrome 37.x, 36.x, 30.x, 27.x, 22.x, and 16.x
- Red Hat® Enterprise Linux® 6.x: Mozilla Firefox 32.x, 31.x, 25.x, 21.x, 16.x, and 10.x, Google Chrome 37.x, 36.x, 30.x, 27.x, 22.x, and 16.x
- Red Hat® Enterprise Linux® 5.x: Mozilla Firefox 32.x, 31.x, 25.x, 21.x, 16.x, and 10.x, Google Chrome 37.x, 36.x, 30.x, 27.x, 22.x, and 16.x
- Apple Mac OS® X 10.9.x: Safari 7.x, Mozilla Firefox 32.x, 31.x, 25.x, 21.x, 16.x, and 10.x, Google Chrome 37.x, 36.x, 30.x, 27.x, 22.x, and 16.x
- Apple Mac OS® X 10.8.x: Safari 6.x, Mozilla Firefox 32.x, 31.x, 25.x, 21.x, 16.x, and 10.x, Google Chrome 37.x, 36.x, 30.x, 27.x, 22.x, and 16.x
- Apple Mac OS® X 10.7.x: Safari 5.x, Mozilla Firefox 32.x, 31.x, 25.x, 21.x, 16.x, and 10.x, Google Chrome 37.x, 36.x, 30.x, 27.x, 22.x, and 16.x
- Apple Mac OS® X 10.6.x: Safari 5.x, Mozilla Firefox 32.x, 31.x, 25.x, 21.x, 16.x, and 10.x, Google Chrome 37.x, 36.x, 30.x, 27.x, 22.x, and 16.x

*Grid Manager fully supports Microsoft Internet Explorer® 11.x and 10.x when you enable compatibility view in the browser. Features in the Reporting tab may not function properly if you disable compatibility view. In the browser, go to Tools -> Compatibility View to enable the feature.

Minimum System:

- 500 MHz CPU with 256 MB RAM available to the Infoblox GUI, and 256 Kbps connectivity to an Infoblox appliance

Recommended System:

- 1 GHz (or higher) CPU with 512 MB RAM available for the Infoblox GUI, and network connectivity to an Infoblox appliance

Monitor Resolution:

- Minimum: 1024 x 768
- Recommended: 1280 x 800 or better

CLI Access

- Secure Socket Shell (SSH) client that supports SSHv2
- Terminal emulation program, such as minicom or Hilgraeve Hyperterminal®

Connecting to the Appliance

Infoblox appliance configuration requires a network connection. Use the LAN1 port to connect to the appliance (see Figure 3). For all Infoblox-4030 systems, the default network settings of the LAN1 port are 192.168.1.2/24 with a gateway at 192.168.1.1 (the MGMT and LAN2 ports do not have default network settings). To change these settings to suit your network, use the console port.

Console Port

The Infoblox appliance has a male DB-9 console port on the rear panel. You can log in to the appliance through this port and specify initial network settings using the Infoblox CLI.

**Note:** Only a properly grounded USB-to-Serial dongle is allowed to connect to the serial console port. If the dongle is connected to a laptop, this laptop must be grounded properly as well. Failure to do so may result in damage to the serial console port of the Infoblox appliance. Infoblox is not responsible for such damage.

1. Connect a console cable from the console port of the management system to the console port of the Infoblox appliance.
2. Using a serial terminal emulation program such as Hilgraeve Hyperterminal® (provided with Windows® operating systems), launch a session. The connection settings are:
   - Bits per second: 9600
   - Stop bits: 1
   - Data bits: 8
   - Flow control: Xon/Xoff
   - Parity: None
3. Log in using the default user name and password admin and infoblox (case-sensitive).
4. To change the network settings from the default, enter the set network command. Then enter information as prompted to change the IP address, netmask, and gateway for the LAN1 port.

   Infoblox > set network

   NOTICE: All network configuration is performed from the GUI. This interface is used only to configure a standalone node or to join a grid.

   Enter IP address: LAN1 port IP address
   Enter netmask: [Default: 255.255.255.0]: netmask
   Enter gateway address [Default: n.n.n.1]: gateway IP address
Auto Provisioning NIOS Appliances

In addition to using the Grid Setup Wizard or access the Join Grid dialog box to join appliances to a Grid, you can set up a NIOS appliance using the auto-provision feature, which allows a DHCP server to automatically assign an IP address to the appliance. You can then join the auto-provisioned appliance to a Grid.

Auto-provisioning is enabled by default for physical appliances, but it is not supported for vNIOS appliances. When you connect the appliance to the network, a lease request is automatically sent to the DHCP server. The DHCP server fingerprints the client as "Infoblox Appliance", as the DHCP client provides the unique option sequence (1,28,2,3,3,15,6,12) and vendor ID (INFOBLOX). The DHCP server assigns a DHCP lease and a dynamic IP address to the appliance. If the DHCP lease request fails, the default IP address is assigned to the appliance. The DHCP client tries to send the lease request for a duration of one minute when the appliance is either in the factory default state or in the auto-configured default IP address state after a reboot. If you do not use auto-provisioning to set up the appliance, then you can wait one minute before connecting the appliance to the network. Otherwise, the DHCP server will assign a dynamic IP address to the appliance. Note that if you have already set the IP address for the appliance through the Infoblox CLI, GUI, or API, then auto-provisioning is disabled for the appliance and the lease address is not requested. When auto-provisioning is enabled for an appliance, the DNS, DHCP, FTP, TFTP, HTTP, NTP, bloxTools, Captive Portal, Reporting services, as well as backup and restore are disabled for the member until a static IP address is set for the appliance. You can join a single appliance or HA pair to the Grid. After the appliance joins the Grid, the static IP address is set for the appliance.

Complete the following to set up an appliance using auto-provisioning and to join the auto-provisioned appliance to the Grid Master:

1. Connect the appliance to a network by using an Ethernet cable. For information about cabling the appliance to a network, refer to Cabling the Appliance to the Network.
2. Connect the appliance to a power source and turn on the power. For information about powering the appliance, refer to Powering On the Appliance.
   A lease request is automatically sent to the DHCP server, and it assigns a DHCP lease and a dynamic IP address to the appliance. The DHCP client tries to send the lease request for a duration of one minute and if the request fails, the default IP address (192.168.1.2) is assigned to the appliance.
3. Join the appliance to the Grid Master. For information about joining an appliance to the Grid Master, refer to the NIOS Administrator Guide.
   A static IP address is set and auto-provisioning is automatically disabled for the appliance after it joins the Grid. If the Grid member fails to join the Grid, then the remote console is enabled for the appliance and you can join the appliance to the Grid through the remote console. You can login to the remote console using the user name, admin and the Grid shared secret as the password.

**Note:** When auto-provisioning is disabled for an appliance and the network address is not preserved, auto-provisioning will be re-enabled and a DHCP lease request is sent to the DHCP server if you reset the appliance using the CLI command reset all or reset the database using the CLI command reset database. However, if the static IP address for an appliance is set and network settings are preserved, auto-provisioning will be re-enabled for the appliance but the lease address will not be requested if you reset the database using the CLI command reset database.

Specifying Appliance Settings

After the initial HTTPS connection to the Infoblox appliance, you see the Setup Wizard, which guides you through the basic deployment of the appliance on the network. Infoblox-4030 appliances are deployed in one of two possible ways:

- As a single appliance as part of an Infoblox Grid, with a Grid license;
- Without a Grid license and running independently.

A Grid is a group of two or more Infoblox 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. To set up a Grid, you must configure a Grid Master and at least one Grid member. For information about how to set up a Grid, refer to the Infoblox NIOS Administrator Guide.

The following instructions guide you through the wizard and include worksheets where you can note your appliance and network settings. After you complete the wizard, you can set additional operational parameters and configure the appliance to provide services, such as DNS. For detailed instructions on configuring the appliance, refer to the Infoblox NIOS Administrator Guide.

1. Open an Internet browser window and enter **https://<IP address or hostname of the NIOS appliance>**.
2. Accept the certificate when prompted.
   A certificate warning appears during the login process. This is normal because the NIOS appliance generates a self-signed certificate when it first starts, and your browser does not have a trusted CA certificate or a cached NIOS appliance server certificate (saved from an earlier connection) to authenticate the Trinzic appliance certificate. Also, the hostname in the default certificate is www.infoblox.com, which is unlikely to match the hostname of your NIOS appliance. Consequently, messages appear warning that the certificate is not from a trusted certifying authority and that the hostname on the certificate is either invalid or does not match the name of the site that sent the certificate. Either accept the certificate just for this session or reset it to the certificate store of your browser.

To eliminate the certificate warning, generate a new self-signed certificate or import a third-party certificate with a common name that matches the FQDN (fully-qualified domain name) of the appliance. This is a very simple process. For more information about certificates, refer to the NIOS Administrator Guide.

Copyright ©2018, Infoblox, Inc. All right reserved.
3. Log in using the default user name and password admin and infoblox.

Note: User names and passwords are case-sensitive.

4. Read the Infoblox End-User License Agreement and click I Accept to proceed if you agree with the terms and conditions.

5. The Setup Wizard opens, and you can enter basic network and deployment settings.

   Determine how you want to deploy the appliance, and then use the following worksheets to note the network settings that you want to enter on the wizard screens.

Use the following worksheet when configuring a single independent appliance or Grid member:

<table>
<thead>
<tr>
<th>Settings</th>
<th>Enter your information here</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grid Name</td>
<td></td>
</tr>
<tr>
<td>Shared Secret Host Name</td>
<td></td>
</tr>
<tr>
<td>LAN1 Port IP Address and Netmask</td>
<td></td>
</tr>
<tr>
<td>Gateway IP Address</td>
<td></td>
</tr>
</tbody>
</table>

On the last screen of the wizard, click Finish. The Infoblox GUI application restarts.

Infoblox CLI

The Infoblox CLI allows you to configure and monitor the appliance using a small set of Infoblox commands. Some tasks, such as resetting the appliance, can only be done through the CLI. You can access the Infoblox CLI through a direct console connection from your management system to the Infoblox appliance. (For more information, see Console Port.) You can also enable remote console access — that is, SSHv2 (Secure Shell version 2) access — through the Infoblox GUI or CLI, and then access the CLI from a remote location using an SSHv2 client. (For more information, refer to the Infoblox NIOS Administrator Guide.)

Using CLI Help

You can display a list of available CLI commands by typing help at the command prompt.

Infoblox > help

CommandSummary
ddns_add        Send DDNS update to add a record
ddns_delete     Send DDNS update to delete a record
rotate          Rotate files

For more detailed help about a given command, type 'help <command>'

For an in-depth explanation of a CLI command and its syntax, type help command after the command prompt.

For example:

Infoblox > help rotate

Synopsis:
rotate log [ syslog | debug | audit | ifmapserver ]
           rotate file groupname filename [ filename2, filename3, ...]

Description:
Rotates the specified log file, up to 10 previous.
logfiles will be preserved

The two main groups of Infoblox CLI commands are set and show. To see the complete list of the set commands, enter help set after the
command prompt. Likewise, to see a complete list of the show commands, enter help show. For information about the CLI commands, refer to
the Infoblox CLI Guide.

Field Replaceable Units

The Infoblox-4030 and Infoblox-4030-10GE provide several replaceable units in the system:

- Hard disk drives in the RAID-10 array
- AC power supplies
- DC power supplies (if applicable)
- System cooling fans

All replaceable units must be replaced with parts of the same specifications as described in this section. For parts and replacements, contact your
Infoblox field representative or Infoblox Technical Support.

Note: Hardware and FRUs (field replaceable units) for Infoblox-4030 Rev-1 and Rev-2 are not compatible with each other. Ensure that you order
the correct FRUs for your Infoblox-4030 or Infoblox-4030-10GE. (Infoblox-4030 Rev-2 and Infoblox-4030-10GE FRUs are interchangeable.) For
information about Infoblox-4030 and Infoblox-4030-10GE FRU part numbers, see Table 9.

Managing the Disk Subsystem

The Infoblox-4030 and Infoblox-4030-10GE appliances use a RAID (Redundant Array of Independent Disks) 10 array to provide the optimum mix
of high database performance and redundant data storage with recovery features in the event of disk failures. The disk array is completely self
managed. No maintenance or special procedures are required to service the disk subsystem.

RAID 10 uses a total of four disk drives to create a RAID 0 array from two RAID 1 arrays, as shown in Figure 12. It uses mirroring and striping to
form a stripe of mirrored subsets. This means that the array combines — or stripes — four disk drives, creating a single logical volume (RAID 0).
RAID 10 combines the performance of RAID 0 and the high fault tolerance of RAID 1. Striping disk drives improves database write performance
over a single disk drive for large databases. The disks are also mirrored (RAID 1), so that each disk in the logical volume is fully redundant.

Figure 12 RAID 10 Array Configuration
Evaluating the Status of the Disk Subsystem

You can monitor the disk subsystem by using the CLI command `show hardware_status`. To see a detailed status report, log in to the Infoblox GUI and from the Grid tab, select the Grid Manager tab -> Members tab -> member, and then click the Detailed Status icon. (For more information, refer to the Infoblox NIOS Administrator Guide.)

The color of the RAID icon indicates the status of the RAID array on the appliance.

<table>
<thead>
<tr>
<th>Color</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green</td>
<td>The RAID array is in an optimal state.</td>
</tr>
<tr>
<td>Yellow</td>
<td>A new disk was inserted and the RAID array is rebuilding.</td>
</tr>
<tr>
<td>Red</td>
<td>The RAID array is degraded. At least one disk is not functioning properly. The GUI lists the disks that are online. Replace only the disks that are offline.</td>
</tr>
</tbody>
</table>

The Infoblox GUI also displays detailed status of the RAID array. In the event of a disk failure, you must replace the failed disk with one that is qualified and shipped from Infoblox and has the same disk type as the rest of the disks in the array. The Infoblox-4030 and Infoblox-4030-10GE appliances display information about mismatched disks in the Description column in the Detailed Status panel. The appliance uses only the IB-Type 3 disk type. All disk drives in the array must have the same disk type for the array to function properly. When you have a mismatched disk in the array, you must promptly replace the disk with a replacement disk from Infoblox to avoid operational issues.

**Note:** The replacement IB-Type 3 disk assembly part number is IB-4000-R2-DISK-HDD300.

**Disk Array Guidelines**

Infoblox designs the disk array to be completely self managed. No maintenance procedures are required for a normally functioning disk array. Mishandling the disk array may cause an unrecoverable error and result in a failed appliance. Infoblox highly recommends that you observe the following guidelines:

- Remove only one disk at a time. Do not remove two or more disks from the appliance at the same time. Removing two or more disks at the same time may result in an appliance failure and require an RMA of the appliance. This rule applies to both powered and powered-down appliances.
- If you inadvertently remove the wrong disk drive, do not then immediately remove the disk drive that you originally intended to remove. Verify the status of the array and replace the disk drive that you initially removed before removing another drive.
- If the status of the array is degraded, remove the failed or failing disk drive only. Do not remove an optimally functioning drive.
- If your acceptance procedure requires a test of the RAID hot-swap feature, remove only one disk drive at a time. You can remove a second disk only after you replace the first disk and the array completes its rebuilding process.
- Do not remove a disk drive while the array is rebuilding. This may result in an appliance failure. Verify the status of the array before removing a disk drive.
- You can hot-swap a drive while the appliance remains in production.
- Some conditions may require powering down the appliance to replace a failed unit. This normally happens if the RAID controller detects an error that could damage the array. If you insert a replacement drive into a live array and the controller doesn't recognize the drive, power down the appliance.
- All disks in the RAID array must have the same disk type for the array to function properly.
- In the unlikely event that two disk drives fail simultaneously and the appliance is still operational, remove and replace the failed disk drives one at a time.
- Rebuild time can vary. The rebuild process takes approximately two hours on an idle appliance. On very busy appliances (over 90% utilization), the disk rebuild process can take as long as 40 hours. On a Grid Master serving a very large Grid, expect the rebuild process to take at least 24 hours.
- Replace a failed or mismatched disk only with a replacement disk shipped from Infoblox. When you request a replacement disk, report the disk type displayed in the Detailed Status panel of the Infoblox GUI or the Infoblox part number on the disk.
Hard Disk Replacement

Use the following procedure to remove a spinning disk:

1. Press the red button on the disk drive, unlatch and pull the disk about two cm (one inch) to disengage contact, as indicated in Figure 13.

```
Figure 13 Pull disk latch to remove hard drive for Infoblox-4030/Infoblox-4030-10GE
```

2. Wait about 30 seconds for the disk to completely stop spinning.

3. Remove the disk, extract it from its carrier and handle it with care. Do not drop the disk or ship it loosely in a carton.

4. Securely mount the replacement disk in the drive carrier and replace the carrier in the system.

Changing AC Power Supplies

**Note:** Before changing power supplies, make sure that they are securely cabled. An apparently failed power supply may simply be improperly connected to its power source.

The Infoblox-4030 and Infoblox-4030-10GE appliances ship with two redundant, auto-switching AC power supplies or optional DC power supplies, in a 1+1 configuration. The power supplies are “hot-swappable”, so you can remove or replace one power supply without interrupting appliance operation and network services.

When a power supply fails for any reason, NIOS displays a power supply alarm. The Infoblox NIOS Dashboard will also display an Error under Grid Status. An email notification will be sent and an SNMP Trap will be reported.

When the appliance contains two functioning power supplies, they share the power load. If one power supply fails, the other assumes the full load automatically and the appliance sends the system alarm to NIOS. Although the appliance can run with only one power supply, Infoblox recommends installing both power supplies that are shipped with the appliance. This configuration minimizes the chance of system failure due to failure of an individual power supply.

Each power supply weighs about three pounds (1.36 kg). The faceplate of the power supply contains a power LED and a power switch. Each AC power supply provides a dedicated male power outlet. Figure 14 illustrates the process of replacing an AC power supply.

```
Figure 14 Removing an Infoblox-4030/Infoblox-4030-10GE AC Power Supply
```
To replace an Infoblox-4030/Infoblox-4030-10GE AC power supply, do the following:

1. Turn off the power supply.
2. Disconnect the AC power cable from the power outlet.
3. Gently push back the red catch-release lever, grip the power supply handle, and pull the power supply unit out of the chassis as illustrated in Figure 14.
4. Place the replacement power supply into the bay and push it forward until it is fully seated in the chassis. The catch-release lever will gently click into place.
5. Reconnect the power cable.
6. Turn on the power supply. If it is fully seated, powered on, and operating properly, the LED glows steady green.

Changing DC Power Supplies

**WARNING:** When installing a DC power supply, connect the ground wire to the PSU before connecting the positive or negative leads. Ensure that you use the correct polarity when connecting power leads to the PSU. Always remove power from the power supply before performing any installation or replacement steps or maintenance of the power supply.

In DC power configuration, the Infoblox-4030 and Infoblox-4030-10GE appliances ship with two redundant, auto-switching DC power supplies. The power supplies are “hot-swappable”, so you can remove or replace one power supply without interrupting appliance operation and network services.

To replace an Infoblox-4030/Infoblox-4030-10GE DC power supply, do the following:

1. Disconnect the DC power cable from the power outlet on the external transformer.
2. Disconnect the power cable from the power supply.
3. Disconnect the ground cable from the power supply.
4. Gently push back the red quick-release lever, grip the power supply handle, and pull the power supply unit out of the chassis, as shown in Figure 15.
5. Place the replacement power supply into the bay and push it forward until it is fully seated in the chassis. The red catch-release lever will gently click into place.
6. Connect the ground cable to the new power supply.
7. Connect the power cable, ensuring that you use the correct polarity. If the power supply is fully seated and operating, the LED glows steady green.

*Figure 15 Removing an Infoblox-4030/Infoblox-4030-10GE DC Power Supply*
Notes on Changing AC Power to DC Power

**Note:** For additional DC power guidelines, see [DC Power Supply Guidelines](#).

Infoblox offers the ability to change an AC-equipped Infoblox appliance to use DC power supply units by ordering field-replaceable unit DC PSUs (listed in Table 9). Should you choose to swap out an appliance’s AC PSUs to use DC PSUs, follow these key points:

- You cannot convert an AC-equipped Infoblox-4030 or Infoblox-4030-10GE appliance to NEBS compliance by swapping out AC PSUs for DC PSUs. You are simply changing the power factor of the appliance.
- Ensure that you have proper ground connections that connect to the ground lug screws on each DC PSU. These lug screws will be marked with a standard electrical ground symbol on each DC PSU, as labeled in Figure 15.
- Your Infoblox appliance provides a ground lug, with two star washers and a ground lug screw, in the accessory kit bundled with your appliance. (This accessory is not used for AC power.) Ensure that this ground lug is properly installed with a grounding cable to chassis ground. For information, see [Ground Lug Installation (DC Systems Only)](#).

**Important—Retain your original AC power supplies for possible future RMAs**

- When you remove the AC power supplies for new DC power supplies, **ensure that you keep the original AC power supplies in a safe place for use in RMA situations**.
- For appliance RMAs, you must replace the DC power supplies in the appliance with its original AC power supplies before RMA shipment back to Infoblox.
- Keep your DC power supplies in your facility until you receive your replacement appliance.

### Internal System Fan Replacement

System fans are field replaceable units. Should a CPU fan assembly fail, an alarm that includes the number of the failed fan will be raised by the system. No tools are necessary for fan replacement.

System fans are hot-swappable; they can be replaced while the system is on. Infoblox recommends that the system be switched off before replacing a fan unit. To replace a processor fan assembly, do the following:

1. Perform a full system shutdown.
2. Unplug all power cables from the system.

**Note:** Steps #1 and #2 are optional but are recommended.

3. Extend or remove the system from the rack.
4. Use the bundled star screwdriver to unscrew the latch (on the top rear of the unit) and gently pull the latch to remove the top panel, as shown in Figure 16.

*Figure 16 Gently pull latch to remove top panel for Infoblox-4030/Infoblox-4030-10GE*
5. Slide the top panel off and visually inspect the fans to determine which unit has stopped spinning and must be replaced.

6. Figure 17 shows a four-fan-module configuration. The system fans can be removed from their installation base and replaced. A pair of small handles reside on the top of each fan module, which you grasp with fingertips when pulling the unit out of the system. Pay attention to unit alignment and placement before removing from the system.

*Figure 17 System fan assembly for Infoblox-4030/Infoblox-4030-10GE; pull gently on top of the failed fan unit. Each unit is numbered.*

7. Place the new fan in the system. Note that the fans can be installed correctly in only one direction, as shown in Figure 18.

*Figure 18 Fan blades point towards rear of chassis for Infoblox-4030/Infoblox-4030-10GE*
8. Replace the top lid of the system and replace it in the rack before restoring power.

Infoblox-4030/Infoblox-4030-10GE Field Replaceable Unit Part Numbers

Table 9 Field-Replaceable Unit Part Numbers for Infoblox-4030 and Infoblox-4030-10GE

<table>
<thead>
<tr>
<th>Field-Replaceable Unit</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infoblox IB-Type 3 Disk Assembly (Rev-2)</td>
<td>IB-4000-R2-DISK-HDD300</td>
</tr>
<tr>
<td>Infoblox IB-4000 Series AC PSU (Rev-2)</td>
<td>IB-4000-R2-PSU-AC</td>
</tr>
<tr>
<td>Infoblox IB-4000 Series DC PSU (Rev-2)</td>
<td>IB-4000-R2-PSU-DC</td>
</tr>
<tr>
<td>Infoblox IB-4000 Series fan set (Rev-2)</td>
<td>IB-4000-R2-FAN</td>
</tr>
<tr>
<td>Infoblox IB-4000 Series 14AWG AC Power Cord</td>
<td>IB-POWER-CORD-4K</td>
</tr>
</tbody>
</table>

Also see the following section, *Infoblox Appliance SFP/SFP+ Transceivers*.

Infoblox Appliance SFP/SFP+ Transceivers

Infoblox offers SFP/SFP+ transceivers of various types for 1GbE and 10GbE networking applications. *Table 10* lists the Ethernet SFP transceivers that are compatible with Infoblox Ethernet SFP/SFP+ interfaces and basic guidelines for compatibility.

Table 10 Transceivers for 1GbE SFP and 10GbE SFP+ Support

<table>
<thead>
<tr>
<th>Field-Replaceable Unit</th>
<th>Part Number</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infoblox SFP+ Long Range 10GbE LR fiber Transceiver</td>
<td>IB-SFPPLUS-LR</td>
<td>FRU only</td>
</tr>
<tr>
<td>Infoblox SFP+ Short Range 10GbE SR fiber Transceiver</td>
<td>IB-SFPPLUS-SR</td>
<td>FRU only</td>
</tr>
<tr>
<td>Infoblox SFP 1GbE SX Fiber</td>
<td>IB-SFP-SX</td>
<td>FRU only</td>
</tr>
<tr>
<td>Infoblox SFP 1GbE Copper InterFace Transceiver</td>
<td>IB-SFP-CO</td>
<td>FRU only</td>
</tr>
<tr>
<td>Finisar SFP 1GbE LR Fiber Single-Mode Transceiver</td>
<td>Finisar FTLF1318P3BTL</td>
<td>Not sold by Infoblox. Contact your distributor for availability</td>
</tr>
<tr>
<td>Cisco SFP+ 10GbE Copper Direct Attach (10GSFP+Cu) Cable</td>
<td>Cisco SFP-H10GB-CU5M</td>
<td>Not sold by Infoblox. Contact your distributor for availability</td>
</tr>
<tr>
<td>HP SFP+ 10GbE Copper Direct Attach (10GSFP+Cu) Cable</td>
<td>HPJ9283B</td>
<td>Not sold by Infoblox. Contact your distributor for availability</td>
</tr>
</tbody>
</table>

All transceivers are supported by the Infoblox-4030 and Infoblox-4030-10GE for 1-Gigabit and 10-Gigabit applications.