Infoblox Installation Guide 800 Series Appliances

Trinzic TE-810 and TE-820

Trinzic Reporting TR-800

Network Insight ND-800
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Introduction to the Infoblox 800 Series

This Guide provides an overview of the Infoblox 800 Series of network service appliances, including the Trinzic TE-810 and Trinzic TE-820, the Trinzic Reporting TR-800, and the Network Insight ND-800. This Guide describes the unique features for each appliance model, and the hardware elements, installation and deployment information common to all models in the Infoblox 800 Series. Consult the respective sections below for brief descriptions of the unique features for your specific appliance:

- Trinzic TE-810 and TE-820 Product Overview
- Network Insight ND-800 Product Overview
- Trinzic Reporting TR-800 Product Overview

You configure and manage the Infoblox 800 Series appliances through the Infoblox Grid Manager, a GUI that works seamlessly in Windows, Linux, and Mac environments using standard web browsers. For more information about the Grid Manager, refer to the Infoblox NIOS Administrator Guide.

All appliances in the Infoblox 800 Series are Class A digital appliances per FCC regulations, and are RoHS and WEEE compliant.

Trinzic TE-810 and TE-820 Product Overview

The Trinzic TE-810 and TE-820 network services appliances provide core network services, including DNS (Domain Name System), DHCP (Dynamic Host Configuration Protocol), IPAM (IP Address Management), and NTP (Network Time Protocol). You configure and manage the Trinzic appliances through the Infoblox Grid Manager. The Trinzic TE-810 and TE-820 appliances are recommended to operate as Grid members, and can operate with a second Trinzic appliance of the same model in high availability (HA) mode.

Key features of the Trinzic TE-810 and TE-820 appliances include the following:

- Support for Grid management and all administrative features for Infoblox IPAM, DNS, DDNS, and DHCP
- High availability support
- LOM (Lights Out Management) support

Note: The Trinzic TE-810 and TE-820 appliances support HA operation and are recommended to act only as a grid member.

Network Insight ND-800 Product Overview

The Network Insight ND-800 is a high performance network appliance that provides an expanded device discovery and network discovery feature set, using SNMP and other protocols to discover, query, and catalogue network devices such as enterprise Ethernet switches, routers, firewalls and other security devices, VoIP softswitches, load balancers, and end host devices. You configure and manage the Network Insight ND-800 through the Grid Manager. For more information about Discovery features and licensing, refer to the Infoblox NIOS Administrator Guide.

Key features of the Network Insight ND-800 appliance include the following:

- Three (3) active 1GbE Ethernet interfaces: two (2) active interfaces to support Device Discovery features, and one interface (MGMT) designated for device management (the HA port is inactive and reserved for future use)
- Management through the Infoblox Grid
- LOM (Lights Out Management) support

Note: The Network Insight ND-800 does not support HA operation and acts only as a grid member.

Trinzic Reporting TR-800 Product Overview

The Trinzic Reporting TR-800 is a 1U network appliance that collects data from Infoblox Grid members, stores the data in the reporting database, and generates reports that provide statistical information about IPAM, DNS, DHCP, and system activities and performance. You configure and manage the Trinzic Reporting TR-800 and view reports through the Grid Manager. For more information about Reporting features and licensing, refer to the Infoblox NIOS Administrator Guide.

Key features of the Trinzic Reporting TR-800 appliance include the following:

- Three (3) active 1GbE Ethernet interfaces: two (2) active interfaces to collect data for event reporting, and one interface (MGMT) designated for device management (the HA port is inactive and reserved for future use)
- Management through the Infoblox Grid
- LOM (Lights Out Management) support

Note: The Trinzic Reporting TR-800 does not support HA operation and acts only as a grid member.
Infoblox 800 Series Hardware Components

The Infoblox 800 Series are 1-U platforms that are installed in a standard equipment rack. For information, see Infoblox 800 Series Rack Mounting Procedures. Front panel components include communication ports and indicator lights. Back panel components include the air vent, power connector, on/off switch, and fans.

Appliance Front Panel

The Infoblox 800 Series front panel components are shown in Figure 1 and described in Table 1. For explanations of the Ethernet port LEDs, and console and Ethernet port connector pin assignments, see Ethernet Port LEDs and Interface Connector Pin Assignments.

Figure 1 Infoblox 800 Series Appliance, Front View

Table 1 Infoblox 800 Series Front Panel

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IPMI Port</td>
<td>Dedicated Ethernet port used for LOM (Lights Out Management) with specific releases of NIOS. The IPMI/LOM Port supports 10/100/1000 Mbps operation only. Ensure that the IPMI port is properly connected to the network before you configure LOM through the Infoblox Grid Manager for remote management. The IPMI/LOM port auto-negotiates up to Fast Ethernet 100BASE-TX speeds; ensure that the switch port to which the IPMI port connects will auto-negotiate to 100Mbps operation. Follow best practices for IPMI usage in the network by not allowing the LOM port to connect to the general-use data center network or to 1 Gbps/10 Gbps switch interfaces.</td>
</tr>
<tr>
<td>USB Port</td>
<td>Reserved for future use.</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). Should you need to use a USB-to-Serial adapter to carry a serial connection over a USB port in a computer that lacks a 9-pin serial interface, use a properly grounded USB-to-Serial dongle to connect to the serial console port. If the dongle connects to a laptop, the laptop also must 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 3.</td>
</tr>
<tr>
<td>MGMT Port</td>
<td>A 10/100/1000-Mbps gigabit Ethernet port that you can use for appliance management, or for appliance services on the network. You can enable the MGMT port and define its use through the Grid Manager after the initial setup.</td>
</tr>
<tr>
<td>LAN1 Port</td>
<td>A 10/100/1000-Mbps gigabit Ethernet 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 passive node in an HA pair uses this port to synchronize the database with the active node.</td>
</tr>
<tr>
<td>HA Port (inactive and reserved for future use in the ND-800 and TR-800)</td>
<td>A 10/100/1000-Mbps gigabit Ethernet 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 also use their HA ports for VRRP (Virtual Router Redundancy Protocol) advertisements. Network Insight ND-800 and TR-800 Reporting only: HA Port inactive and reserved for future use.</td>
</tr>
<tr>
<td>LAN2 Port</td>
<td>A 10/100/1000-Mbps gigabit Ethernet port that connects a NIOS appliance to the network. The LAN2 port is disabled by default. You can enable the LAN2 port and define its use through the Grid Manager after the initial setup.</td>
</tr>
<tr>
<td>UID Button</td>
<td>The unit identification button. Pressing the UID button illuminates the blue UID LED on the rear panel. In a rack environment, the UID feature enables easier location of a server when moving between the front and rear of the rack. You can also identify the appliance through the Infoblox Grid Manager and CLI command.</td>
</tr>
</tbody>
</table>
**Ethernet Port LEDs**

View the Activity and Link LEDs to see link activity and connection speeds on Ethernet ports. *Figure 2* describes the status conveyed by Ethernet port LEDs through their color and illumination (steady glow or blinking).

*Figure 2 Ethernet Port LEDs*

<table>
<thead>
<tr>
<th>Label</th>
<th>Color</th>
<th>Port Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activity</td>
<td>Steady Yellow</td>
<td>Link is up but inactive</td>
</tr>
<tr>
<td></td>
<td>Blinking Yellow</td>
<td>Link is up and active</td>
</tr>
<tr>
<td></td>
<td>Dark</td>
<td>Link is down</td>
</tr>
<tr>
<td>Link</td>
<td>Steady Amber</td>
<td>1000 Mbps</td>
</tr>
<tr>
<td></td>
<td>Steady Green</td>
<td>100 Mbps</td>
</tr>
<tr>
<td></td>
<td>Dark</td>
<td>10 Mbps</td>
</tr>
</tbody>
</table>

**Interface Connector Pin Assignments**

An Infoblox 800 Series appliance has three types of ports on its front panel:

- USB port (reserved for future use)
- Male DB-9 console port
- RJ-45 10Base-T/100Base-T/1000Base-T auto-sensing gigabit Ethernet ports

*Figure 3* describes DB-9 and RJ-45 connector pin assignments. DB-9 pin assignments follow the EIA232 standard. To make a serial connection from your management system to the console port, you can use an RJ-45 rollover cable and two female RJ-45-to-female DB-9 adapters, or a female DB-9-to-female DB-9 null modem cable. RJ-45 pin assignments follow IEEE 802.3 specifications. All Infoblox Ethernet ports are auto-sensing and automatically adjust to standard straight-through and cross-over Ethernet cables.

*Figure 3 DB-9 Console Port and RJ-45 Port Pinouts*
### 10Base-T Ethernet and 100Base-T Fast Ethernet

10Base-T Ethernet and 100Base-T fast Ethernet use the same two pairs of wires. The twisted pair of wires connecting to pins 1 and 2 transmit data, and the twisted pair connecting to pins 3 and 6 receive data. 1000Base-T connections use all four twisted-pair wires for bidirectional traffic.

### DB-9 Connector 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>

### RJ-45 Connector Pin Assignments

<table>
<thead>
<tr>
<th>Pin</th>
<th>10Base-T Signal</th>
<th>1000Base-T Signal</th>
<th>T568A Straight-Through Wire Color</th>
<th>T568B Straight-Through Wire Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Transmit +</td>
<td>BL_DA+</td>
<td>White/Orange</td>
<td>White/Orange</td>
</tr>
<tr>
<td>2</td>
<td>Transmit -</td>
<td>BL_DA-</td>
<td>Green</td>
<td>Orange</td>
</tr>
<tr>
<td>3</td>
<td>Receive +</td>
<td>BL_DB+</td>
<td>White/Orange</td>
<td>White/Orange</td>
</tr>
<tr>
<td>4</td>
<td>(not used)</td>
<td>BL_DC+</td>
<td>Blue</td>
<td>Blue</td>
</tr>
<tr>
<td>5</td>
<td>(not used)</td>
<td>BL_DC-</td>
<td>White/Blue</td>
<td>White/Blue</td>
</tr>
<tr>
<td>6</td>
<td>Receive -</td>
<td>BL_DB-</td>
<td>Orange</td>
<td>Green</td>
</tr>
<tr>
<td>7</td>
<td>(not used)</td>
<td>BL_DD+</td>
<td>White/Brown</td>
<td>White/Brown</td>
</tr>
<tr>
<td>8</td>
<td>(not used)</td>
<td>BL_DD-</td>
<td>Brown</td>
<td>Brown</td>
</tr>
</tbody>
</table>

Legend: BL_D = bidirectional; A, B, C, D = wire pairings

### Infoblox 800 Series Appliance Rear Panel

Figure 4 shows the rear panel components on the Infoblox 800 Series appliances.

Figure 4 Infoblox 800 Series, Rear View
### Table 2 Infoblox 800 Series Rear Panel Components

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air Vent</td>
<td>An air vent that allows warm air to flow out of the appliance. Do not obstruct.</td>
</tr>
<tr>
<td>Fan</td>
<td>A fan to help maintain optimum operating temperature. Do not obstruct.</td>
</tr>
<tr>
<td>UID LED</td>
<td>Blue = UID is activated through pressing the UID button on the appliance. Blinking Blue = UID is activated through the Infoblox Grid Manager or CLI command Dark = UID is deactivated</td>
</tr>
<tr>
<td>On/Off Switch</td>
<td>A power switch to turn the power supply on and off.</td>
</tr>
<tr>
<td>Power Outlet</td>
<td>An IEC C-14 chassis plug for connecting the appliance to a standard AC power source.</td>
</tr>
</tbody>
</table>

### System, Environmental, and Power Specifications

System specifications describe the physical characteristics of the Infoblox 800 Series appliances. Environmental specifications describe Infoblox 800 Series temperature and moisture limits. Power specifications describe the electrical range within which the appliance circuitry can operate.

#### System Specifications

- **Form Factor**: 1-U rack-mountable appliance
- **Dimensions**: (44mm H X 441 W X 437 D)
- **Weight**: Approximately 25 pounds (11.33 kg)
- **Ethernet Ports**: MGMT, HA, LAN1, LAN2 – auto-sensing 10Base-T/100Base-T/1000Base-T
- **Serial Port**: DB-9 (9600/8n1, Xon/Xoff)

#### Environmental Specifications

- Operating Temperature: 41 F – 95 F (5 – 35 C)
- Storage temperature: -13 F – 158 F (-25C to 70C)
- Relative Humidity: 10% - 90% (non-condensing)
- Airflow CFM (Cubic Feet/Minute): 27 CFM
- Airflow Direction: Front-to-Back

#### Electrical Power Specifications

- **Input Voltage**
  - U.S.: 100 – 240 VAC switchable, 47 – 63 HZ
  - Europe: 208 – 265 VAC switchable, 47 – 63 HZ
- **AC Output Power**: 400 watts
  - Input Voltage.: 100 – 240VAC
  - Input Frequency: 50 – 60 HZ
  - Input Current: 4A max at 230V
  - Inrush Current: 20A max at 230V
  - Power Factor: > 0.94/230V 50 Hz
  - Maximum Power Consumption: 400W
  - Heat Output (BTU/hour): 330 Maximum
- **DC Power Supply**: -48v 450W GRND TERM, RING, VI1N 12-10 AWG #10
  - Rated Input Voltage: -48VDC
  - Rated Input Current: 20A max at -36VDC, 10A max at -72VDC
  - Maximum Inrush Current: 100A 2u sec max
  - Maximum Heat Output (BTU/hour): 386 Maximum
  - Maximum Peak Power: 450W at -48V DC input

### Installing the Infoblox 800 Series Appliance

Refer to the sections below to rack mount Infoblox 800 Series appliances, connect them to a power source, and cable it to a network. Before proceeding, review the *Infoblox Safety Guide* and follow the necessary precautions.
Note: Ensure that you install the appliance in an environment that allows open air to the front and back of the appliance. Do not obstruct the appliance or block air flow going from the front to the back of the appliance.

Infoblox 800 Series Rack Mounting Procedures

The Infoblox 800 Series appliances mount into a standard 19” (48 cm) equipment rack. The appliances ship with accessory kits that contain the following: a pair of rack slide brackets and chassis slide rails, a pair of rack ears, eight (8) 10-32 screws, and eight (8) 8-32 screws. To mount the appliances to an equipment rack, you also need a #2 screwdriver with a cross-headed tip. Infoblox also offers a four-post and an adjustable rail four-post rack mounting kits that you can order separately. There are three ways to rack mount Infoblox 800 Series appliances:

- Two-post rack mount, as described in Two-Post Rack Mounting.
- Four-post rack mount, as described in Four-Post Rack Mounting.
- Adjustable rail four-post rack mount, as described in Adjustable Rail Four-Post Rack Mount.

Rack Mounting Safety Requirements

The following space and airflow requirements are required for Infoblox 800 Series system operation:

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

The Infoblox 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.

Two-Post Rack Mounting

To mount the appliance to an equipment rack and secure it at the rear rack posts:

1. Align the mounting holes on the rack ears with the rear-most mounting holes on each side of the chassis.
2. Attach a rack ear on each side of the chassis with two (2) 8-32 screws, as shown in Figure 5. For two-post rack mounting, the ears are placed to fix the center of the appliance at the point where the rack ears fasten to the two-post rack, preventing strain on the chassis and maintaining a center of gravity.

   Figure 5 Rack Ears for Two-Post Rack Mounting

3. With one person on each side, lift the appliance and position it in the equipment rack.
4. Attach each rack ear to the equipment rack with two (2) 10-32 screws on each side.

Four-Post Rack Mounting

Caution: The 600mm chassis rack rails kit provided with the Infoblox 800 Series appliance provides only a limited range of travel. It does not extend across the entire depth of the equipment rack. Exercise caution when withdrawing the appliance from its position in the equipment rack.

For a four-post rack mount, you combine the bundled pair of rack ears with a pair of chassis rack rails providing up to 600mm depth in a four-post rack. The chassis rack rail assembly is bundled with the appliance at time of purchase. This kit also is provided as a field-replaceable unit; see Re
Align the mounting holes on the rack ears with the front-most mounting holes on each side of the chassis.
2. Attach the rack ears to each side of the chassis with two (2) 8-32 screws, as shown in Figure 6.

**Figure 6 Rack Ears and Chassis Slide Rails in Four-Post Rack Mount**

3. Slide the inner chassis slide rails out of the rack slide brackets, as shown in Figure 7.

**Figure 7 Chassis Slide Rail and Rack Slide Bracket**

4. Align the mounting holes on the chassis slide rails with the rear-most mounting holes on each side of the chassis, as shown in Figure 6. Ensure that you place the chassis slide rails in the correct orientation. Otherwise, the mounting holes do not align correctly.

5. Attach the chassis slide rails to each side of the chassis with two (2) 8-32 screws, as shown in Figure 6.

6. Select a desired location and secure the rack slide brackets to the rear posts of the equipment rack with two (2) 10-32 screws on each side of the rack, as shown in Figure 8.

**Figure 8 Rack Slide Bracket Attached to the Rear Post of the Rack**

7. With one person on each side, lift the appliance and position it in front of the equipment rack.

8. Align the chassis slide rails on the appliance with the rack slide brackets on the posts of the equipment rack.

9. Slide the appliance into the rack slide brackets.

10. Secure the rack ears to the front rack posts with two (2) 10-32 screws on each side of the rack.

**Adjustable Rail Four-Post Rack Mount**

Infoblox provides an adjustable four-post rail kit with 600mm to 900mm depth adjustment, designed to allow one person to perform physical installation of the rack kit and the appliance. This kit is provided as a field-replaceable unit; for information, see the section **Field Replaceable Units** at the end of this chapter. The adjustable rail kit is designed to allow one person to perform the physical installation of the rail kit and the
The adjustable rail kit is designed for tight vertical spaces on the interior of a four-post rack, allowing for appliance installation in restricted rack spaces, including 1U of available rack space.

The adjustable rail kit includes the following items for installation:

- Eight (8) Flat-head beveled 8/32" screws that attach rail pieces to the appliance chassis
- Eight (8) Phillips-head 10/32" screws for affixing the rack rails to the four-post rack

The technician must provide four attachable cage nuts for adapting the square mounting holes on the rear posts of the four-post rack to accept the 10/32" screws.

To install the adjustable rail kit, do the following:

1. Install the cage nuts in the rear rack posts in the desired location, as indicated in Figure 9:

   Figure 9 Install cage nuts on the rear posts of the designated rack space

2. Fasten the catch tab of the rack rail on the front of the rack space designated for the appliance. Each rack rail (2) in the adjustable rail kit provides a metal catch tab on the front end of the rack rail. This catch tab fastens to a square mounting hole as shown in Figure 10.

   Figure 10 Catch tab fastens on front posts of designated space

3. Extend the rack rail assembly backwards, align the mounting holes on the chassis slide rails with the required cage nuts, and fasten the back end of the rack rail to the two cage nuts on the rear post of the designated space. As noted, the rack rail assembly has an extension range from the minimum of 600mm to a maximum of 900mm.
4. Perform Steps 2 and 3 for the second rack rail assembly.

5. Attach the chassis slide rails to each side of the chassis with three (3) flathead 8-32 screws, as shown in Figure 11.

*Figure 11 Chassis slide rails Installation*

6. Lift the appliance and position it in front of the equipment rack.

7. Align the chassis slide rails on the appliance with the rack slide brackets on the posts of the equipment rack.

8. Slide the appliance into the rack slide brackets.

9. Secure the rack ears to the rack with two (2) 10-32 screws on each side of the rack.

**Powering the Appliance**

To power the appliance:

1. Make sure that the power switch is off.

2. 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.

3. Turn on the power switch.

**Cabling the Appliance to a Network**

Use one or more Category 5/6 Ethernet cables to connect the Infoblox 800 Series appliance to the network.

1. Connect an Ethernet cable from the LAN1 port on the appliance to your network switch or router.

2. *(Trinzic TE-810/820 appliances only)* If you want to connect your appliance for HA (high availability), connect the LAN1 and 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 must be unique for that subnet.

*Figure 12 Cabling a Single Appliance and an HA Pair to a Network*

**Appliance–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. 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.

1. *(Trinzic TE-810 and TE-820 appliances only)* To ensure that VRRP (Virtual Router Redundancy Protocol) works properly, configure the following settings at the port level for all the connecting switch ports (HA, LAN1, and LAN2):
   - Spanning Tree Protocol: Disable. For vendor specific information, search for “HA” in the Infoblox Knowledge Base system at [http://support.infoblox.com/](http://support.infoblox.com/)
- Trunking: Disable
- EtherChannel: Disable
- IGMP Snooping: Disable
- Port Channeling: Disable
- Speed and Duplex settings: Match these settings on both the Infoblox appliance and switch
- Disable other dynamic and proprietary protocols that might interrupt the forwarding of packets

Use the Infoblox Grid Manager to access the Infoblox appliance from a management system. Through the Grid Manager, you can set up and administer the appliance. For management system requirements and access instructions, see Accessing the Infoblox 800 Series Appliance.

Field Replaceable Units

The Infoblox 800 Series supports a limited set of field-replaceable units, consisting of the rack mounting slider kits that are originally supplied with the appliance. Table 3 provides part numbers and model compatibility.

<table>
<thead>
<tr>
<th>FRU Slider Kit</th>
<th>Part Number</th>
<th>Type</th>
<th>TE-810</th>
<th>TE-820</th>
<th>ND-800</th>
<th>TR-800</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trinzic 800, 1400 Series rack kit for 2-post or 4-post racks up to 600mm deep</td>
<td>T-800-1400-RAIL-2-4-600 MM</td>
<td>FRU only</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Trinzic 800, 1400 and 2200 Series rack rail kit for 4-post racks 600-900 mm deep, adjustable</td>
<td>T-800-1400-2200-RAIL-4-600-900</td>
<td>FRU only</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Infoblox 800 Series 18AWG AC Power Cord</td>
<td>IB-POWER-CORD-US</td>
<td>Contact Infoblox Support</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>

Accessing the Infoblox 800 Series Appliance

The management system is the computer from which you configure and monitor the Infoblox appliance. You can access the appliance from the management system remotely across an Ethernet network or through a serial console cable. After completing the steps in Cabling the Appliance to a Network, you can open an HTTPS connection to the appliance and access the Infoblox Grid Manager using a supported Web browser. You must install and enable Javascript for the Grid Manager to function properly. 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. Infoblox recommends that the management system meet the following requirements to operate an Infoblox appliance.

<table>
<thead>
<tr>
<th>OS</th>
<th>Browser</th>
</tr>
</thead>
<tbody>
<tr>
<td>Microsoft Windows 8®</td>
<td>Microsoft Internet Explorer® 11.x*, 10.x*, Mozilla Firefox 25.x, 21.x, 16.x, and 10.x Google Chrome 30.x, 27.x, 22.x, and 16.x</td>
</tr>
<tr>
<td>Microsoft Windows 7®</td>
<td>Microsoft Internet Explorer® 11.x*, 10.x*, 9.x, and 8.x Mozilla Firefox 25.x, 21.x, 16.x, and 10.x Google Chrome 30.x, 27.x, 22.x, and 16.x</td>
</tr>
<tr>
<td>Microsoft Windows XP® (SP2+)</td>
<td>Microsoft Internet Explorer 7.x and 8.x Mozilla Firefox 25.x, 21.x, 16.x, and 10.x Google Chrome 30.x, 27.x, 22.x, and 16.x</td>
</tr>
<tr>
<td>Red Hat® Enterprise Linux® 6.x</td>
<td>Mozilla Firefox 25.x, 21.x, 16.x, and 10.x Google Chrome 30.x, 27.x, 22.x, and 16.x</td>
</tr>
<tr>
<td>Red Hat® Enterprise Linux 5.x</td>
<td>Mozilla Firefox 25.x, 21.x, 16.x, and 10.x Google Chrome 30.x, 27.x, 22.x, and 16.x</td>
</tr>
<tr>
<td>Apple® Mac OS X 10.8.x</td>
<td>Safari 6.x Mozilla Firefox 25.x, 21.x, 16.x, and 10.x Google Chrome 30.x, 27.x, 22.x, and 16.x</td>
</tr>
<tr>
<td>Apple® Mac OS X 10.7.x</td>
<td>Safari 5.x Mozilla Firefox 25.x, 21.x, 16.x, and 10.x Google Chrome 30.x, 27.x, 22.x, and 16.x</td>
</tr>
<tr>
<td>Apple® Mac OS X 10.6.x</td>
<td>Safari 5.x Mozilla Firefox 25.x, 21.x, 16.x, and 10.x Google Chrome 30.x, 27.x, 22.x, and 16.x</td>
</tr>
</tbody>
</table>

*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. Infoblox recommends using the latest release of the supported versions of Internet Explorer, Mozilla Firefox or Google Chrome for best performance.

Management computer system requirements include the following:
**Recommended System:**

Infoblox recommends that you use a computer with a 2 GHz CPU and at least 1 GB of RAM, and network connectivity to the Infoblox appliance.

When viewing Grid Manager, set your monitor resolution as follows: Minimum resolution: 1280 x 768

Recommended resolution: 1280 x 1024 or better

**Connecting to the Appliance**

Configuration of the Infoblox 800 Series appliance, through the Grid Manager, requires a network connection. Use the LAN1 port to connect to the appliance. For all Infoblox 800 Series appliances, the default network settings of the LAN1 port are 192.168.1.2/24 with a gateway at 192.168.1.1 (the HA, 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 front panel. You can log in to the appliance through this port and specify initial network settings using the NIOS CLI.

**Note:** For serial port connections, use only a properly grounded USB-to-Serial dongle. If the dongle is connected to a laptop, the laptop also must 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.

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`. User names and passwords are 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 HA configuration is performed from the Grid Manager. 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
   Become grid member? (y or n): n
   ```

   After you confirm your network settings, the appliance automatically restarts.

**Auto Provisioning NIOS Appliances**

In addition to using the Grid Setup Wizard or accessing the Join Grid dialog box to join appliances to a Grid, you can set up an Infoblox 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.

**Note:** The Infoblox 800 Series appliances support auto-provisioning, and enable it by default. vNIOS appliances do not support auto-configuration.

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 (1,28,2,2,3,3,15,6,12) 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 NIOS CLI, Grid Manager, 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 a Network.
2. Connect the appliance to a power source and turn on the power. For information about powering the appliance, refer to Powering the Appliance.

The appliance automatically sends a lease request to the DHCP server, which 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 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, the Setup Wizard guides you through the basic deployment of the appliance on the network.

You can deploy an appliance individually or in an HA (high availability) pair, for hardware redundancy. A single appliance or an HA pair without a Grid license runs independently from a Grid. 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 single or HA Grid master and at least one Grid member, which can also be a single appliance or an HA pair.

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 and DHCP. For detailed instructions on configuring the appliance, refer to the NIOS Administrator Guide.

1. Open an Internet browser window and enter `https://<IP address or hostname of your 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 NIOS appliance certificate. Also, the hostname in the default certificate is `www.infoblox.com`, which is unlikely to match the hostname of your NIOS appliance. 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 save 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 information about certificates, refer to the NIOS Administrator Guide.

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

Determine how you want to deploy the appliance, and use the following worksheets to note the network settings that you want to enter on the wizard screens. If you are configuring an HA pair, you must configure each node individually.

<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>Grid Master's IP Address</td>
<td></td>
</tr>
</tbody>
</table>
LAN1 Port IP Address and Netmask
Gateway IP Address
*Port Settings
**Admin Password
**Local Date, Time, and Time Zone
or
NTP Server IP Address

*For grid master and member
**For an independent appliance or grid master

Use the following worksheet when configuring an independent HA pair or an HA grid master:

<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>Virtual Router ID</td>
<td></td>
</tr>
<tr>
<td>VIP (Virtual IP) Address and Netmask</td>
<td></td>
</tr>
<tr>
<td>Node 1: HA Port IP Address</td>
<td></td>
</tr>
<tr>
<td>Node 2: HA Port IP Address</td>
<td></td>
</tr>
<tr>
<td>Node 1: LAN1 IP Address</td>
<td></td>
</tr>
<tr>
<td>Node 2: LAN1 IP Address</td>
<td></td>
</tr>
<tr>
<td>Gateway IP Address</td>
<td></td>
</tr>
<tr>
<td>Admin Password</td>
<td></td>
</tr>
<tr>
<td>Local Date, Time and Time Zone</td>
<td></td>
</tr>
<tr>
<td>or</td>
<td></td>
</tr>
<tr>
<td>NTP Server IP Address</td>
<td></td>
</tr>
</tbody>
</table>

*For grid master and member

On the last screen of the wizard, click **Finish**. The Infoblox Grid Manager application restarts. If you configured an HA pair, use the VIP address when you make an HTTPS connection to the HA pair.

Infoblox NIOS CLI

The NIOS CLI allows you to configure and monitor the appliance using a small set of Infoblox commands. Some tasks, such as resetting the appliance, can be done only through the CLI. You can access the NIOS 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 SSHv2 (Secure Shell version 2) access through the Grid Manager 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. For example:

```
Infoblox > help
   ? Display help
```
delete Delete files
dig Perform a DNS lookup and print the results
exit Exit command interpreter
help Display help
ping Send ICMP ECHO
quit Exit command interpreter
reboot Reboot device
reset Reset system settings
set Set current system settings
show Show current system settings
shutdown Shutdown device
trace route Route path diagnostic
ddns_add Send DDNS update to add a record
ddns_delete Send DDNS update to delete a record
rotate Rotate files

To view 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 NIOS 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.