

INTRODUCTION

Infoblox NIOS™ 5.1r1 software, coupled with Infoblox appliance platforms, enables customers to deploy large, robust, manageable and cost-effective Infoblox grids. This next-generation solution enables distributed delivery of core network services - including DNS, DHCP, IPAM, TFTP, and FTP - with the nonstop availability and real-time service management required for today's 24x7 advanced IP networks and applications.

Infoblox NIOS 5.x is not supported on the Infoblox-500, -1000, and -1200 appliances.

Please see the section [GUIDELINES FOR UPGRADING TO NIOS 5.0 SOFTWARE RELEASES](#) on page 3 if you are upgrading a grid that contains these appliances and for additional upgrade information.

NIOS 5.1r1 FEATURES

MS® Management for Windows Servers

You can configure grid members to manage Microsoft® Windows DNS servers. Grid members can synchronize DNS data with Windows servers, enabling administrators to use Grid Manager to view and manage the DNS zones and resource records served by Windows DNS servers.

Infoblox Orchestration Server (IBOS)

A new licensing option with 5.1r1 allows you to configure an appliance (or an HA pair) as a dedicated IF-MAP server. The IF-MAP protocol, an open standard published by the Trusted Computing Group (TCG), supports real-time data exchange between systems that implement the IF-MAP client protocol. Several products from different vendors (including the Infoblox NIOS DHCP server as of 4.3r5) support the IF-MAP standard, and there are implementations today that provide multi-vendor network access control (NAC) with pre and post-admission detection and enforcement for both managed and unmanaged endpoints. The Infoblox Orchestration Server provides an IF-MAP server that fully supports the latest version of the standard, and also includes unique capabilities such as HA and granular client access controls. More information is available at <http://www.infoblox.com/solutions/overview-if-map.cfm>.

vNIOS on VMware® Platforms

You can install the vNIOS software package on a host with VMware ESX or ESXi 4.x installed and configure it as either a VM-5 or VM-25 virtual NIOS appliance. NIOS virtual appliances are virtual grid members that include a full suite of core network services—DNS, DHCP, IPAM, FTP, TFTP, HTTP, and NTP. Distributed organizations obtain the cost benefits of consolidation and the simplicity of centrally managed Infoblox NIOS virtual appliances.

The joint Infoblox-VMware solution supports hybrid environments that include a mix of physical Infoblox appliances and NIOS virtual appliances depending on branch office requirements. Each NIOS virtual appliance appears to the grid as a grid member, with all of the benefits of distributed services and centralized management. This includes centralized backup and restoration of user data, DHCP failover capabilities, one-touch software upgrades, local RADIUS authentication, DNS without latency, and many other benefits of the Infoblox solution.

For information on supported features and how to install vNIOS software on VMware platforms, refer to the *Quick Start Guide for Installing vNIOS Software on VMware Platforms*.

GUI Enhancements

This release includes the following enhancements to Grid Manager and System Manager:

- In the Dashboard, you can turn on the auto refresh feature to periodically refresh the contents of all widgets. This feature is turned off by default.
- Global Search results now include the IP addresses of matching objects, if applicable. You can click the address links to view detailed information about the IP addresses.
- In all selectors, you can now locate an object quickly by using the autocomplete feature. Enter the first few characters of an object name in the **Go to** field and select the object from a list of possible matches.
- You can now ping individual IP addresses from the **IP List** tab. In earlier releases, you could ping IP addresses only from the **IP Map** tab.
- When you perform a network discovery, the discovered data now includes information about DHCP leases that do not associate with any objects, such as host records or fixed addresses. You can also configure the appliance to append newly discovered data to existing data before starting a discovery.
- You can now use discovered data, such as conflicts, unmanaged data, and last discovered timestamps as filter criteria for creating smart folders.
- You can now use the Active Directory wizard to configure zones to accept dynamic DNS updates from domain controllers.
- You can now select a lease from the DHCP Range list, IP Map, or IP List and view detailed information.

SNMP Enhancements

Some objects in the Infoblox MIBs were updated to comply with RFC 2578. To obtain the latest Infoblox MIB files, log in to Grid Manager and navigate to the **Data Management** tab, select the **Grid** tab, and then select the **Grid Manager** tab. Expand the Toolbar and select **Download -> SNMP MIBs**.

CHANGE TO DEFAULT BEHAVIOR

The Infoblox GUI and API display text in a TXT record exactly as it was entered, except in the following cases:

- If you enter a text string with multiple spaces between each word and the string is not enclosed in double quotes, the GUI and API display the text string with a single space between each word.
- If you enter one word enclosed in double quotes, the GUI and API display the word without the quotes.

ACCESSING GRID MANAGER

Before you log in to Grid Manager, ensure that you have installed your NIOS appliance, as described in the installation guide or user guide that shipped with your product, and configured it accordingly.

To log in to Grid Manager:

1. Open an internet browser window and enter **<https://<IP address or hostname of your NIOS appliance>>**. The Grid Manager login page appears.
2. Enter your user name and password, and then click **Login** or press Enter. The default user name is **admin** and password is **infoblox**.
3. Read the Infoblox End-User License Agreement and click **I Accept** to proceed. Grid Manager displays the Dashboard, your home page in Grid Manager.

GUIDELINES FOR UPGRADING TO NIOS 5.x SOFTWARE RELEASES

If you are upgrading from a NIOS 4.x release, Infoblox recommends that you review these guidelines before upgrading appliances from a NIOS 4.x release to a NIOS 5.x release.

- You can run an upgrade test before performing the actual upgrade. Infoblox recommends that you run the upgrade test, so you can resolve any potential data migration issues before the upgrade.
- NIOS 5.x is not supported on the Infoblox-500, -1000, and -1200 appliances. Though a grid member that is running an earlier release (4.x) on unsupported hardware will be able to join a grid running NIOS 5.x, Grid Manager will display a warning every time a user logs in after the grid member joins the grid.

Following are guidelines for upgrading a grid that contains Infoblox-500, -1000, and -1200 appliances:

- The upgrade will fail if the grid master is running on one of the unsupported appliances. An upgrade test will report this when you run the test prior to the actual upgrade.
 - The upgrade will succeed if the grid master or a grid member has an expired license. After the upgrade, Grid Manager will display a warning every time a user logs in.
- NIOS 5.x does not support the following features:
 - RADIUS
 - VitalQIP
 - NAC Foundation
 - IPAM WinConnect

These features will not be supported when you upgrade to NIOS 5.x. Note that these features will continue to be supported in 4.x. For more information, please see your Infoblox representative.

- During the upgrade, if the admin Group "ALL USERS" contains some administrators, it will be converted to a group called "Default Group" with the same administrators.
- "Default Group" will also be created if "ALL USERS" is used in the Remote Authentication policy.
- The permissions that are attached to "ALL USERS" will be moved to a role called "Default Role" that applies to all groups in the system. If "ALL USERS" has no permission, "Default Role" will not be created during the upgrade.
- In this release, the maximum length of the following fields is 256 bytes:
 - Failover association name
 - MAC filter name
 - Option filter name
 - Relay agent filter name
 - Range, fixed address, and network template names
 - Option definition name
 - Option space name

The upgrade and upgrade test will fail if any of these values exceed 256 bytes.

- The maximum length of the relay agent filter circuit ID and remote ID values is 255 bytes. The upgrade will fail if any of these values exceed 255 bytes.
- The minimum expiration time for MAC filters is 60 seconds. During an upgrade, NIOS sets expiration times to 60 seconds if they are less.

- If you configured the NIOS appliance to authenticate administrators using RADIUS or Active Directory servers, and configured static routes from the MGMT port of the appliance to any of those servers, the appliance will ignore those static routes after the upgrade to NIOS 5.x. To enable remote authentication using the MGMT port to connect to a RADIUS or AD server after the upgrade, navigate to the **Administration** tab, select the **Administrators** tab, and then select **Remote Authentication**. In the **RADIUS Service** or **Active Directory Services** tab, click the **Add** icon to add a server and select the **Connect through MGMT Interface** option.

API Upgrade Guidelines

- All the deprecated IPAM device type and custom fields were removed from the API.
- The API does not support RADIUS and the NAC Foundation. For example, the `uca_group()` method was removed from the `DHCP::Range` object as it was only used with the NAC Foundation feature.
- The behavior of `bootfile()`, `bootserver()` and `nextserver()` has changed. Each of these methods has its own override. Setting the override for one enables the override for that method to True. Object types affected by this change are:
 - `Grid::Member::DHCP`
 - `DHCP::Range`
 - `DHCP::SharedNetwork`
 - `DHCP::Network`
 - `DHCP::FixedAddress`
 - `DHCP::NetworkTemplate`
 - `DHCP::FixedAddressTemplate`
 - `DHCP::RangeTemplate`
 - `DHCP::Host`
- Changes to the "range_templates" and "fixed_address_templates" methods of the `NetworkTemplate` object.

You can no longer specify just the name of the child template when assigning a range and fixed address template to a network template. Instead, you must specify a `DHCP::Template` object that contains optional "offset" and "count". Following is an example:

```
my $rtemp = Infoblox::DHCP::Template->new(
    name => "range template",
    offset => 10, # OPTIONAL, if not provided use from template
    count => 10, # OPTIONAL, if not provided use from template
);

my $fatemp = Infoblox::DHCP::Template->new(
    name => "fa template",
    offset => 10, # OPTIONAL, if not provided use from template
    count => 10, # OPTIONAL, if not provided use from template
);

$network_template->range_templates([ $rtemp ]);
$network_template->fixed_address_templates([ $fatemp ]);
```

- In the `Infoblox::DNS::View` object, the `match_clients` and `match_tsig_clients` fields were replaced by the mixed-type `match_clients` field.

- In the Infoblox::Grid::DNS and Infoblox::Grid::Member::DNS objects, the allow_query and allow_recursive_query fields were replaced by mixed-type allow_query and allow_recursive_query fields respectively. The allow_transfer and transfer_keys fields, and allow_update and update_keys fields were replaced by mixed-type allow_transfer and allow_update fields.
- In the Infoblox::DNS::Zone object, the allow_query and allow_transfer fields were replaced by mixed-type allow_query and allow_transfer fields. The allow_update, transfer_keys and update_keys fields were replaced by the mixed-type allow_update field.
- There is a new object Infoblox::Grid::NTPAccess for specifying the access list for the NTP service.
- The Session method restart() no longer supports the following parameters: when, time_zone, and cancel. Instead, use the parameter scheduled_at.
- In the Infoblox::Grid::ScheduledTask::ChangedObject, the expected values for action() are now:
 - INSERT -> Add
 - UPDATE -> Modify
 - DELETE -> Delete
- The FixedAddress and RoamingHost objects are now two separate objects.

CHANGES TO DEFAULT BEHAVIOR

- The Workflow Scheduling feature was changed as follows:
 - Grid Manager does not display a warning when tasks are scheduled for the same date/time.
 - There is no restriction on entering seconds for the scheduled time.
 - There is no restriction on the number of tasks that can be scheduled. In previous releases, a maximum of 500 tasks could be scheduled.
 - Scheduled tasks survive a master promotion and revert.
 - Changed default value for CLI-accessible scheduled task restarts from 4 to 60
 - Removed the ability to enable/disable the scheduling feature at the global level (in GUI and PAPI). This feature is enabled by default.
- An Infoblox DHCP server that was also a DHCP IF-MAP client sent packets to the IF-MAP server from its LAN port, even when the client was an HA member. The DHCP server now sends the packets from the VIP of the HA pair. Therefore, you must configure the IF-MAP server to accept packets from the VIP.
- In previous releases, a DHCP custom option list defined at the member level overrode all options defined at the grid level. In this release, it will override individual custom options, instead of the complete list.
- In this release, a GSS-TSIG key is required when you override the grid setting and enable GSS-TSIG in the DDNS tab of the DHCP Members editor.

BEFORE YOU INSTALL

Infoblox recommends that administrators planning to perform an upgrade from a previous release create and archive a backup of the Infoblox appliance configuration and data before upgrading.

You can run an upgrade test before performing the actual upgrade. Infoblox recommends that you run the upgrade test, so you can resolve any potential data migration issues before the upgrade.

Following is a list of upgrade and revert paths that are supported and believed to be working:

5.0r1-7, 5.0r1-6, 5.0r1-5, 5.0r1-4, 5.0r1-3, 5.0r1-2, 5.0r1-1, 5.0r1-0
 4.3r7-1, 4.3r7-0
 4.3r6-6, 4.3r6-5, 4.3r6-4, 4.3r6-3, 4.3r6-2, 4.3r6-1, 4.3r6-0
 4.3r5-6, 4.3r5-5, 4.3r5-4, 4.3r5-3, 4.3r5-2, 4.3r5-1, 4.3r5-0
 4.3r4-6, 4.3r4-5, 4.3r4-4, 4.3r4-3, 4.3r4-2, 4.3r4-1, 4.3r4-0
 4.3r3-2, 4.3r3-1, 4.3r3-0
 4.3r2-9, 4.3r2-8, 4.3r2-7, 4.3r2-6, 4.3r2-5, 4.3r2-4, 4.3r2-3, 4.3r2-2, 4.3r2-1, 4.3r2-0, 4.3r2-200, 4.3r2-TTL-0
 4.3r1-3, 4.3r1-2, 4.3r1-1, 4.3r1-0
 4.2r5-7, 4.2r5-6, 4.2r5-5, 4.2r5-4, 4.2r5-3, 4.2r5-2, 4.2r5-1, 4.2r5-0
 4.2r4-3, 4.2r4-2, 4.2r4-1-sp1, 4.2r4-1, 4.2r4-0

Technical Support

Infoblox technical support contact information:

Telephone: 1-888-463-6259 (toll-free, U.S. and Canada); +1-408-625-4200, ext. 1

E-mail: support@infoblox.com

Web: <http://www.infoblox.com/support>

GUI Requirements

Grid Manager supports the following operating systems and browsers. You must install and enable Javascript for Grid Manager to function properly. Grid Manager supports only SSL version 3 and TLS version 1 connections. Infoblox recommends that you use a management system that has a 2 GHz CPU and at least 1 GB of RAM.

Infoblox supports the following browsers for Grid Manager:

| OS | Browser |
|---|---|
| Microsoft Windows 7® | Microsoft Internet Explorer® 8.0+ Mozilla Firefox 3.5+ |
| Microsoft Windows Vista® | Microsoft Internet Explorer 7.0+ and 8.0+ Mozilla Firefox 3.5+ |
| Microsoft Windows XP® (SP2+) | Microsoft Internet Explorer 7.0+ and 8.0+ Mozilla Firefox 3.5+ |
| Red Hat® Enterprise Linux® 5.0 and higher | Mozilla Firefox 3.5+ |
| Fedora Core 8 and higher | Mozilla Firefox 3.5+ |
| Apple® OSX® 10.5 and higher | Safari 3.2+ and 4.x+ |

When viewing Grid Manager, set the screen resolution of your monitor as follows:

Minimum resolution: 1024x768

Recommended resolution: 1280x800 or better

Documentation

You can download the *Infoblox Administrator Guide* from the appliance. From Grid Manager, expand the Help panel, and then click **Documentation** -> **Admin Guide**.

Training

Training webinars are also available on: <http://www.infoblox.com/support/webinars.cfm>. Access to this site requires the user ID and password you receive when you register your product at http://www.infoblox.com/support/product_registration.cfm

RESOLVED ISSUES

| ID | Summary |
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| 42988 | The Dashboard was not accessible after an upgrade. |
| 42758 | Grid Manager did not allow IP addresses that started with zero in A and host records, and an IP address with all zeros in host records. |
| 42713 | Grid Manager did not allow users to add a delegation under a root zone. |
| 42522 | It took longer than expected to import zone data using DIW due to conflicts in CNAME records. |
| 42514 | API: The search for network objects took longer than expected when the "return_method" function was used. |
| 42074 | API: It took longer than expected to retrieve the results for an Infoblox::Session->search() operation for network objects. |
| 42021 | API: It took longer than expected to retrieve the results for an Infoblox::Session->get() operation for A record objects. |
| 41906 | On some occasions, the dhcpd process used a lot of memory when a DHCP failover occurred. |
| 41789 | Grid Manager did not display an RFC2317 zone when it had an external primary name server and grid secondary server. |
| 41767 | A zone transfer failed when the host name of the primary grid member contained uppercase letters. |
| 41646 | The upgrade from 4.2r5-1 to 5.0 failed due to a data translation issue when IPAM fields were converted to extensible attributes. |
| 41595 | The Authoritative Zone editor did not display the netmask value of IPv4 reverse-mapping zones. |
| 41513 | The System Properties editor did not have the option to copy audit log messages to syslog. |
| 41430 | The documentation for the User Profile editor now states the correct maximum table size, which is 256. |
| 41389 | Updated the Administrator Guide to indicate that Infoblox DNS and DHCP servers can be integrated into an Active Directory environment with Microsoft servers running Windows Server 2008 R2. |
| 41363 | When creating an extensible attribute with the Integer data type, the Min and Max fields in the Extensible Attributes wizard did not allow zero or negative numbers. |

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| 41356 | On rare occasions, the transition states for some DHCP leases were out of synchronization between the primary and secondary servers in a failover association. |
| 41335 | After upgrading to 5.0, customers could not delete DHCP ranges that had been associated with the NAC Foundation feature in a 4.x release. |
| 41240 | Users could not modify underscore zones that were not automatically created. |
| 41143 | Updated the Administrator Guide to indicate that the DHCP option is not selected by default when creating host records. |
| 41048 | The Audit History did not report the creation of DHCP reservations. |
| 40919 | A scheduled SCP backup failed if the SCP server was replaced with another server and it retained the same IP address. |
| 40733 | The Shared Network editor displayed an incorrect warning message when users added networks that were assigned to the same member. |
| 40592 | Re-signing zones caused an increase in memory usage. |
| 40526 | The DHCP range IP address list included "used" addresses only, such as hosts, fixed addresses, and reservations. The list now includes all addresses, including free leases. |
| 40450 | When a user logged in to Grid Manager and the option to automatically detect the local time zone was enabled, Grid Manager displayed the time in UTC if it could not detect the local time zone. Now, it displays a message instructing users to set the time zone in the user profile. |
| 40439 | The <code>show snmp</code> CLI command timed out when the community string contained a dollar sign (\$). |
| 40323 | The audit log did not log the deletion of host aliases. |
| 40199 | When you converted a fixed address to a host, DHCP for that host was disabled and the DHCP options from the fixed address were not preserved. |
| 40173 | When you tried to edit a bulk host from the Related Objects tab of IP Map, the appliance displayed an error message. |
| 40021 | The Global Search panel and the Object Selector dialog box erroneously listed "TFTP File" as a value for object type. Selecting this value in the Global Search panel actually returned both TFTP directories and files in this version. Selecting this value in the Object Selector dialog box allowed users to set permissions for both TFTP files and directories, though setting permissions for TFTP files is not supported on the NIOS appliance. |
| 39920 | When a user moused over the list of Global Smart Folders, some rows doubled in size. |
| 39895 | In the Create Object Permissions dialog box, the 'Resources in Selected Objects' table was grayed out and appeared disabled, although users were allowed to edit the entries in the table. |
| 39866 | A system error occurred when you clicked various options one after the other. |
| 39836 | The TTL values of the DNSSEC resource records were displayed in both the Data column and the TTL column of the Records panel in the Zones tab. |
| 39798 | In a table, when you added a column that was hidden by default, you could not sort the column immediately after you added it. |
| 39788 | When you navigated to a network in the IPAM tab and deleted the network in the DHCP tab, Grid Manager displayed an error message every time you clicked the IPAM tab. |

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| 39532 | In certain scenarios, Grid Manager displayed an error message when you clicked the back button to return to the Smart Folders tab. |
| 38893 | If a grid member was powered off when its upgrade group upgraded, it did not upgrade when it came back online. |
| 38330 | When the appliance imported a zone through DIW, AFSDB records were imported with incorrect rdata. |
| 37466 | A full zone transfer (AXFR) was very slow on a zone with a lot of TXT records that required conversions. |
| 37404 | When the appliance imported a zone through DIW and created PTR records in reverse zones for hosts, it did not increment the SOA of the reverse zone. |
| 37195 | Implemented additional safeguards to prevent denial of service attacks against the internal TCP state tables, such as those identified by CVE-2008-4609. |
| 36697 | Grid Manager did not provide a link to view the subzones of forward zones. |
| 33917 | The DHCP Utilization column sometimes displayed incorrect values. |
| 22985 | When you cleared the check box to override the SOA email of a zone, Grid Manager continued to display the email address from the zone definition, and not the email address inherited from the grid. |

KNOWN GENERAL ISSUES

| ID | Summary |
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| 43141 | Running the ibgraph snapin of bloxTools prolongs the upgrade distribution process significantly. Infoblox recommends that you disable bloxTools during the upgrade distribution process. |
| 42520 | When you select a Smart Folder in the Microsoft Server Selector, Grid Manager does not filter the Microsoft servers list accordingly. |
| 40448 | The GUI is not optimized for use on an Infoblox-250 appliance. |
| 39917 | When you stop the DNS service of an independent appliance with temporary DNS and DHCP licenses, Grid Manager displays the Restart Services panel regardless of which function you select. |
| 39580 | The DHCP Utilization percentage displayed for a DHCP range is incorrect when the range contains an exclusion range. |
| 39530 | In the Smart Folders tab, the Group By drop-down menu becomes blank after you open an object, such as a network, in the Results table and click the back button to navigate back to the Smart Folder. Workaround: You can do one of the following to refresh the Group By menu: 1) Click another smart folder and return to the original smart folder 2) Go to another tab, such as the Data Management tab, and return to the Smart Folders tab. 3) Log out and log back in. |
| 38968 | An admin cannot display DNS views created by other admins during the same browser session. To display the DNS views created by other admins, you must log out and log in again. |
| 31668 | Grid Manager does not display an error when you move a DNS view to a network view that contains a host record that has the same MAC address as a host record in the DNS view that is being moved. |

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| 30208 | Grid Manager does not sort columns correctly in the IPAM and Network list panels when the columns contain UTF-8 data. |
| 27831 | The appliance allows users with read-only permission to A records to view DNSSEC resource records as well. |
| 27385 | A NIOS virtual appliance running vNIOS for Cisco cannot join a grid After the grid reverts to an earlier version of NIOS. Workaround: Use the CLI command set nogrid to remove the NIOS virtual appliance from the grid, and then use the set membership command to join the NIOS virtual appliance to the grid. |
| 26233 | Syslog messages generated during a TFTP file transfer display the incorrect time zone. |
| 26080 | Adding, updating, or deleting reverse zones could fail due to unsupported PTR records in the root zone. |