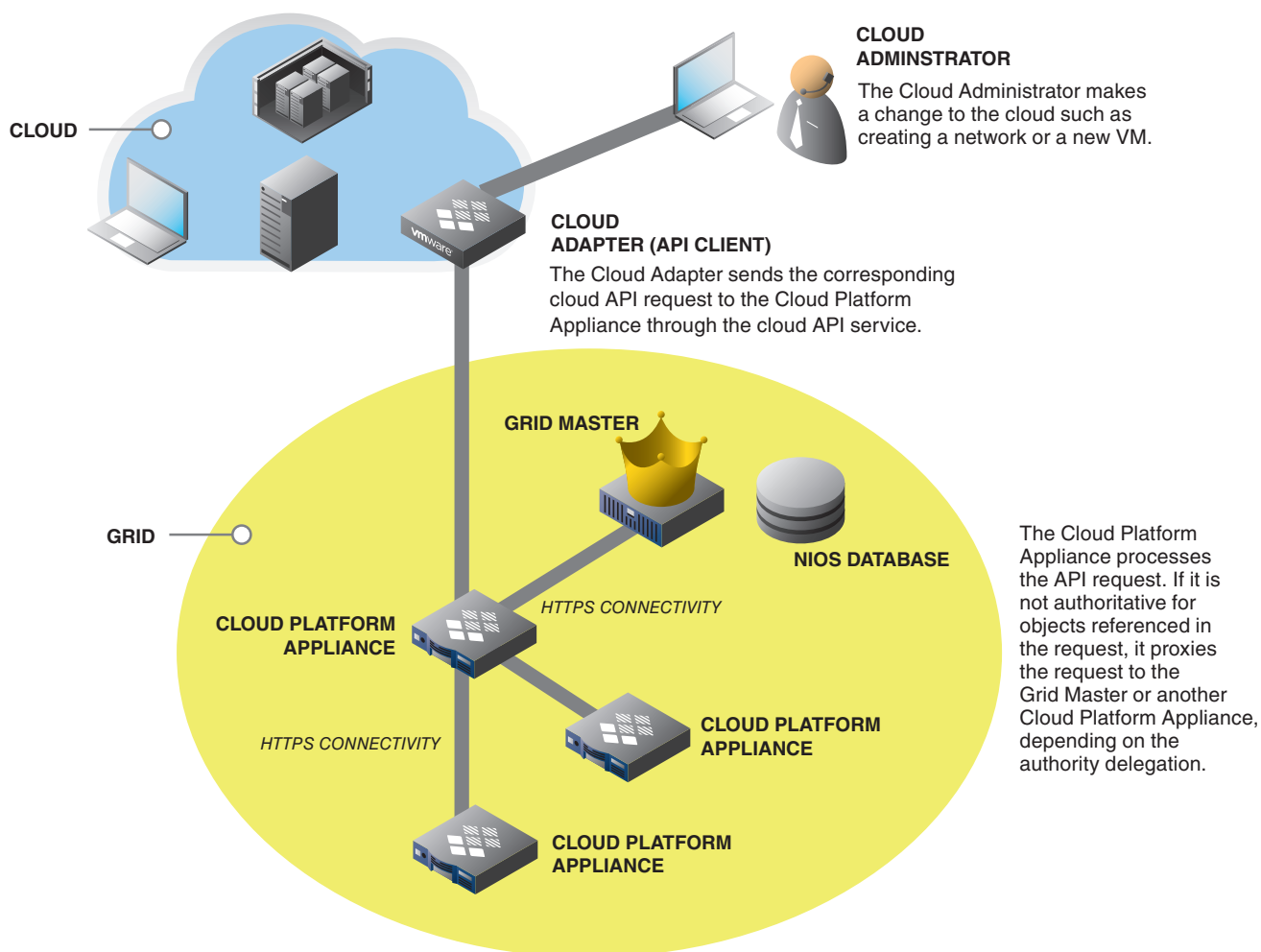


Cloud Network Deployment Overview

The Infoblox Cloud Network Automation solution automates IP address management (IPAM) for physical and virtual network devices on your cloud management platform (CMP). Instead of manually provisioning IP addresses and DNS name spaces for network devices and interfaces, you can use Cloud Network Automation to leverage DNS and DHCP features of the Infoblox Grid™ to manage your cloud networks. With valid licenses installed, an Infoblox Grid™ can contain Cloud Platform Appliances that provide DNS and DHCP services for virtual machines and network devices deployed through a CMP.



Note: To ensure that the cloud API service is functioning properly, open up port 443 for HTTPS connectivity and configure your firewalls accordingly.

Infoblox Cloud Network Automation functions as a part of the Infoblox Virtual Network Identity Operating System (VNIOS). To implement it, you must first have Infoblox VNIOS deployed with the appropriate Infoblox DDI license enabled. Your grid must also include a DNS appliance configured for IPAM, a discovery appliance with Network Insight, and an appliance configured for Infoblox Reporting.

The following overview briefly covers what the components are, how to configure Grid members, and which cloud API objects are supported. Refer to the Infoblox NIOS Administrator Guide for detailed guidelines for actual deployment.

WHAT YOU NEED TO DEPLOY CLOUD NETWORK AUTOMATION

In order to utilize Infoblox Cloud Network Automation, you need the correct infrastructure, the appropriate licenses, and the right Infoblox appliances.

Infoblox Grid and DDI

Infoblox Cloud Network Automation is designed to be deployed on an Infoblox Grid™ infrastructure running Infoblox DNS, DHCP, and IP address management (DDI) core network software. It does not function with hardware and network services solutions from other vendors. It is, however, compatible with cloud management and orchestration platforms from VMware, OpenStack, and Microsoft.

Licenses

The licenses required to operate Infoblox Cloud Network Automation are:

- A valid Cloud Network Automation license installed on your Infoblox Grid Master and Grid Master candidate
- A valid Infoblox Cloud Platform license installed on your Infoblox Cloud Platform Appliances

You can obtain a temporary license to use while you wait for your permanent licenses to arrive by logging into your NIOS appliance via a remote console and entering `set temp_license` at the command prompt. Additional details are available in Chapter 7 of the Infoblox NIOS Administrator Guide.

Appliance Models

The following table lists the Infoblox vNIOS virtual appliances that you can use as Cloud Platform Appliances. A Cloud Platform Appliance can only be configured as a Grid member, not a standalone appliance. To configure an HA pair, you must use the same vNIOS models for both the active and passive nodes, and the license must be installed on both nodes.

vNIOS Appliance	Storage (GB)	# of CPU Cores	Virtual CPU Core Frequency	Memory Allocation
CP-V800	160	2	2000 MHz	2GB
CP-V1400	160	4	6000 MHz	8GB
CP-V2200	160	2	12000 MHz	12GB

WHAT YOU NEED TO KNOW BEFORE YOU START

Depending on your Grid configuration and how you want to deploy Cloud Network Automation, Infoblox supports the following deployment scenarios.

	Cloud Network Automation License on Grid Master	Cloud Platform License on Cloud Platform Appliance	Supports Regular RESTful API Calls on Grid Master	Supports Cloud API Calls on Grid Master and/or Cloud Platform Appliance(s)	Cloud User Interface Function in Grid Manager
Infoblox Grid with Cloud Platform Appliance(s)	✓	✓	✓	✓	✓
Infoblox Grid with Cloud Platform Appliance(s)	✗	✓	✓	✓	✗
Infoblox Grid with other Grid members but without Cloud Platform Appliance(s)	✓	N/A	✓	✓	✓
Standalone Grid Master	✓	N/A	✓	✓	✓
Standalone Grid Master	✗	N/A	✓	✗	✗

Administrative Permissions

You must define admin users and their permissions in the cloud-api-only admin group before you can use any admin users to send cloud API requests. Depending on where a cloud API request is sent and whether the scope of delegation for an object is explicit or implicit, permissions configured for the admin user and object may or may not apply. In addition, depending on the objects referenced in cloud API requests, specific restrictions may apply.

It is important to note that once you delegate authority of an object to the Cloud Platform Appliance, specific admin and object permissions are not enforced. Therefore, if you do not want certain objects to be created or modified through a cloud API request, do not delegate the authority of these objects and their parent objects to a Cloud Platform Appliance. For more details and for an example configuration, see Chapter 7 of the Infoblox NIOS Administrator Guide.

THE PROCESS

There are five main functions you need to understand during the deployment process: the cloud API, authority delegation, configuration of appliance API properties, Extensible Attributes, and the viewing of cloud objects.

The Cloud API

The cloud API service provides the ability to automate management of IP addresses and DNS records so your cloud environment can take full advantage of IPAM, DNS, and DHCP capabilities in NIOS without the need for manual intervention. It supports communication between the cloud adapter and the Grid Master and between the cloud adapter and the Cloud Platform Appliance. Detailed information about starting and monitoring Cloud APIs, supported Cloud API objects, Cloud API requests, and proxying Cloud API requests—with samples—is available in Chapter 7 of the Infoblox NIOS Administrator Guide.

Authority Delegation

Authority delegation in Cloud Network Automation is the ability to assign full and exclusive control of IP addresses and DNS name spaces to a Cloud Platform Appliance. You can perform authority delegation only through the Grid Master. When you delegate the authority of IP addresses and DNS name spaces to a Cloud Platform Appliance, the Grid Master loses its authority over the scope of delegation for these IP addresses and name spaces as well as any objects within them. This function is used for delegating authority to Cloud Platform Appliances only, not to other Grid members.

Detailed guidelines for delegating authority—including network views, IPv4 and IPv6 networks and network containers, DHCP ranges, and more—can be found in Chapter 7 of the Infoblox NIOS Administrator Guide.

Configuring Your Grid and Member Cloud API Properties

Only admin users in the cloud-api-only admin group can be used to send cloud API queries by default. Superusers can add users to this group by specifying the user name, password, and admin group using the Administrators tab in the Grid Manager interface. To control which admin users can perform cloud API tasks, you can further define ACLs at the Grid and member levels. The process is described on pages 182 – 185 of the Infoblox NIOS Administrator Guide.

Extensible Attributes

When you first enable Cloud Network Automation, NIOS installs a set of extensible attributes that are specific for cloud usage. Use these cloud extensible attributes to tag objects that belong to the CMP. To identify a cloud object, you must reference some of these cloud attributes when you create, modify, or delete a specific object. The process is described on pages 340 – 342 of the Infoblox NIOS Administrator Guide.

Viewing Cloud Objects

When you enable the Cloud Network Automation license on the Grid Master, NIOS adds the ability to view new cloud objects such as tenants and virtual machines (VMs). You can view cloud objects and their related information in the Cloud tab of Grid Manager. The Cloud tab provides Tenants, Networks, VMs, and Members subtabs. For detailed information on how to use these tabs and for additional information about object-viewing capabilities, refer to pages 355 – 358 of the Infoblox NIOS Administrator Guide.