

# INFOBLOX IPAM PLUG-IN FOR RED HAT OPENSTACK PLATFORM

## AUTOMATING CORE NETWORK SERVICES FOR OPENSTACK

As enterprises launch more virtualization and cloud initiatives, they rely on private clouds for new business agility and flexibility to supplement the cost savings they already enjoy. Private cloud technology allows uniquely rapid responses to changing business needs, but one key issue is vendor lock-in. A solution is the OpenStack cloud management platform.

## CUSTOMER CHALLENGE: FRICTION IN THE CLOUD

OpenStack is a leading open-source cloud orchestration platform that enables organizations to avoid vendor lock-in and leverage the efforts of the open-source community—with significant momentum providing key functionality and rapid adoption. But while the flexibility and agility that private clouds deliver are in sight, implementation challenges remain:

- Server consolidation savings achieved from virtualization efforts and private-cloud pilot programs may not be realized when moving to production.
- Organizational and process issues become sources of friction, inhibiting the deployment of cloud programs.
- For private cloud projects to succeed, the network fabric needs to capitalize on new levels of automation.
- Traditionally, network teams have relied on manual scripting and configuration, which need to be automated before private clouds can succeed and businesses can achieve their commercial goals.

OpenStack enabled significant progress toward establishing a solid technology for a flexible and agile cloud, but critical gaps remain. The unprecedented growth in physical and virtualized devices is placing tremendous strain on traditional IP address management (IPAM) and Dynamic Host Configuration Protocol (DHCP) systems. Manual processes and multiple handoffs involving IP address provisioning and other common network functions undermine the speed and agility enterprises hope to gain from the cloud—making it impossible to provision cloud services quickly. While orchestration platforms can spin up multiple virtualized instances in minutes, it often takes hours, days or even weeks to provision their IP addresses and DNS records.

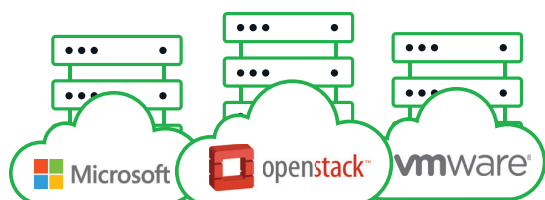
## KEY CAPABILITIES

**Decrease implementation challenges:** Enhance native OpenStack platform functionality by making it more robust and production ready.

**Reduce costs:** Increase productivity, lessen operational overhead and reduce overall human resource requirements.

**Eliminate errors:** Improve network deployment times, eliminate manual processing and ensure consistency across environments.

**Gain a comprehensive view:** Simplify management, compliance and reporting by automatically discovering and tracking virtual machines across platforms such as OpenStack, VMware and Microsoft cloud environments.



Besides the delays, a lack of automation for these core network services causes inconsistency, outages, and security risks when provisioning and destroying VMs. Once a project is deployed, tracking virtual resources and corresponding network components creates significant overhead and results in compliance, serviceability and scalability issues. When virtualized instances are destroyed, many organizations fail to clean up the DNS records and IP addresses leading to stale data. This failure puts an unnecessary burden on network admins who must manually reclaim IP addresses and update DNS records to avoid service disruptions due to IP address conflicts or DNS misconfiguration.

## SOLUTION OVERVIEW

The Infoblox IPAM Plug-In for the Red Hat OpenStack Platform brings new levels of automation for core IP networking services, such as DNS, DHCP and IP address management. The Infoblox centralized management approach handles multiple cloud platforms, including VMware, Microsoft and OpenStack—from a single control plane for delivery of IP address provisioning, DNS records and DHCP control while avoiding the proliferation of management systems.

With the Infoblox IPAM Plug-In for Red Hat OpenStack Platform, enterprises can realize the full promise of cloud networking and improve efficiency and agility across virtualization and orchestration platforms (see Figure 1.) The plug-in provides a single-point comprehensive view of the entire OpenStack network, offering complete network security and control to manage multiple networks seamlessly. This plug-in automates the processes of providing an IP address to a newly created virtual machine, updating DNS and configuring network devices quickly and efficiently. By automating key provisioning processes that are currently manual, the adapter helps OpenStack projects reach the finish line much sooner and deliver the business value and agility they promise.

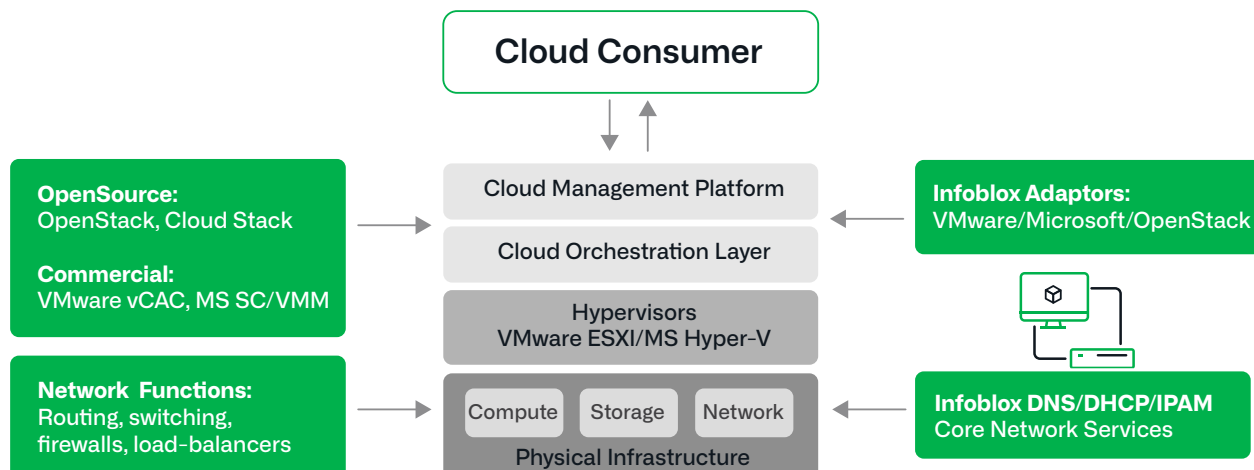


Figure 1: Infoblox cloud integration

## IPAM PLUG-IN FOR RED HAT OPENSTACK CENTRALIZES VISIBILITY AND AUTOMATION

plane and granular visibility into the entire OpenStack network. It automates IP address provisioning and deprovisioning and DHCP server management with integrated DNS. It also simplifies troubleshooting to reduce downtime and synchronizes DDI in data center and hybrid cloud environments for seamless, secure multi-network and resource management within the RedHat OpenStack Platform.

## PRODUCT BENEFITS

The Infoblox IPAM Plug-In for Red Hat OpenStack provides a single-point comprehensive view of the entire OpenStack network and offers complete network security and control. With Infoblox, organizations can:

- Automatically create DNS and DHCP fixed address records when new host instances are created.
- Automatically reclaim IP addresses and DNS names from decommissioned instances.
- Gain a centralized view of all IPAM, DNS and DHCP data for the Red Hat OpenStack Platform environment, along with VMware, Microsoft and other cloud and physical environments.
- Enjoy complete visibility into IP addresses, DNS and DHCP record creation/deletion and DHCP lease history for auditing, compliance tracking and reporting.
- Use Infoblox Grid Members to efficiently deliver DNS and DHCP services to virtual machines in individual Red Hat OpenStack Platform tenants.
- Support non-overlapping and overlapping IP address spaces, including fixed IP addresses in private and shared networks and floating IP addresses in external/public networks.

## USE CASES

With the Infoblox IPAM Plug-In for Red Hat OpenStack Platform, organizations can seamlessly automate and centralize all aspects of IP address provisioning and reliable DHCP server management with DNS through an integrated platform. This capability enables organizations to confidently handle the most challenging IPAM and DHCP requirements in every type of network environment, data center and hybrid cloud environment.

- Provision systems in minutes, instead of days, with automated IP address provisioning for cloud infrastructure and services by enabling automatic IP allocation and de-allocation as VMs are spun up and shut down.
- Simplify troubleshooting and reduce downtime with real-time visibility into physical and virtualized network infrastructure.
- Manage movement between VM clusters easily with synchronization of critical DNS, DHCP and IP address services.

## ACCELERATE AND SIMPLIFY YOUR CLOUD STRATEGY

Infoblox integrations with Red Hat, including the Infoblox IPAM Plugin for Red Hat OpenStack Platform and the Infoblox NIOS Collection for Ansible, deliver validated and supported solutions that enable organizations to digitally transform their businesses and achieve their desired business outcomes.

By seamlessly automating the provisioning/de-provisioning lifecycle of IP addresses and DNS records for virtual machines and containers, the Infoblox IPAM Plugin for Red Hat OpenStack Platform delivers these benefits:

- Enhances the native OpenStack functionality, making it much more robust and ready for production
- Improves network deployment time by eliminating manual configuration errors and automating provisioning processes
- Enables DevOps use cases by supporting multiple overlapping network blueprints
- Reduces friction in cloud deployments by adding network automation and visibility

- Provides the tools necessary to configure, view, change, track and report on network conditions across multiple network environments simultaneously
- Brings visibility for individual VM components in dynamic, virtualized network environments
- Delivers comprehensive tracking, logging and reporting for audit and compliance purposes

For more information or to get answers on the Infoblox and Red Hat OpenStack solution for increasing visibility, automation and control in your core network services, connect with your Infoblox account team, see our [core network integrations](#) or [contact us](#) at Infoblox.com.



Infoblox unites networking and security to deliver unmatched performance and protection. Trusted by Fortune 100 companies and emerging innovators, we provide real-time visibility and control over who and what connects to your network, so your organization runs faster and stops threats earlier.

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