

SOLUTION NOTE

OPTIMIZE YOUR HYBRID, MULTI-CLOUD INFRASTRUCTURE WITH INFOBLOX PLUG-IN FOR TERRAFORM

SUMMARY

As more organizations adopt DevOps processes, innovative IT approaches such as infrastructure as code (IaC) have become prevalent.

Rapid provisioning and de-provisioning of networks and servers in hybrid and multi-cloud environments are essential for meeting evolving business needs. Manual methods for assigning DNS records and IP addresses are slow and require multiple requests across siloed teams. Infoblox Provider Plug-In for Terraform by HashiCorp integrates with the Infoblox DDI platform and automates the DNS and IP address provisioning across hybrid, multi-cloud environments. The integration improves operational efficiency, reduces errors and ensures consistency across hybrid, multi-cloud deployments.

CHALLENGES

Public and private cloud platforms have changed the way organizations manage IT infrastructure across the entire lifecycle. Cloud platforms allow for rapid deployment of resources and IaC software, such as Terraform, helps ensure speed, simplicity and consistency in these deployments. The limitation of manual management of critical network services across hybrid, multi-cloud environments leads to the following challenges, which are unsuitable for agile IaC processes:

- **Manual IP Address Allocation Causes Conflicts:** Finding available IP addresses becomes challenging without clear IP visibility. Using spreadsheets for tracking is slow and error-prone, making it difficult to manage dynamic network infrastructure effectively.
- **Delays in DNS Provisioning Hinder Efficiency:** Manually provisioning DNS records for services is time-consuming and cannot keep up with the pace of resource creation and decommissioning. This often leads to outdated records or missing records for currently required services.
- **Vendor-Specific Plug-Ins Add Complexity:** Lacking a centralized automation layer across multiple public cloud providers, including Amazon Web Services, Microsoft Azure and Google Cloud, necessitates multiple deployment configurations. Relying on vendor-specific plug-ins for each cloud provider adds to the complexity and administrative burden.

KEY BENEFITS

Improve Efficiency: Automate provisioning of DNS and IP addresses, reducing the time and effort required for manual processes.

Reduce Errors: Eliminate the risk of IP conflicts and other errors associated with manual IPAM and DNS management.

Enable Scalability: Rapid deployment of resources in hybrid, multi-cloud environments, ensuring that scalability.

Ensure Consistency: Up-to-date IPAM and DNS records across all cloud platforms, improving the reliability and accuracy of network services.

Enhance Visibility: Real-time visibility into network resources, allowing IT teams to quickly locate and manage tagged network and IP data.

THE INFOBLOX SOLUTION

Terraform by HashiCorp is a leading open-source IaC data center automation tool for building, changing and versioning infrastructure across multiple clouds and platforms. As a Terraform-approved provider, Infoblox extends IP address management (IPAM) and DNS services across various cloud and virtualization platforms and integrates with the existing continuous integration/continuous delivery (CI/CD) pipeline.

The Infoblox Plug-In integrates seamlessly into the provisioning and de-provisioning of infrastructures such as virtual private clouds (VPCs) and virtual machines (VMs) across cloud platforms. The Infoblox Provider Plug-In enables object import functionality, extended data source support, the next available network container service and .txt resources to simplify access, administration and user experience, and improve efficiency and control through enhanced orchestration and automation.

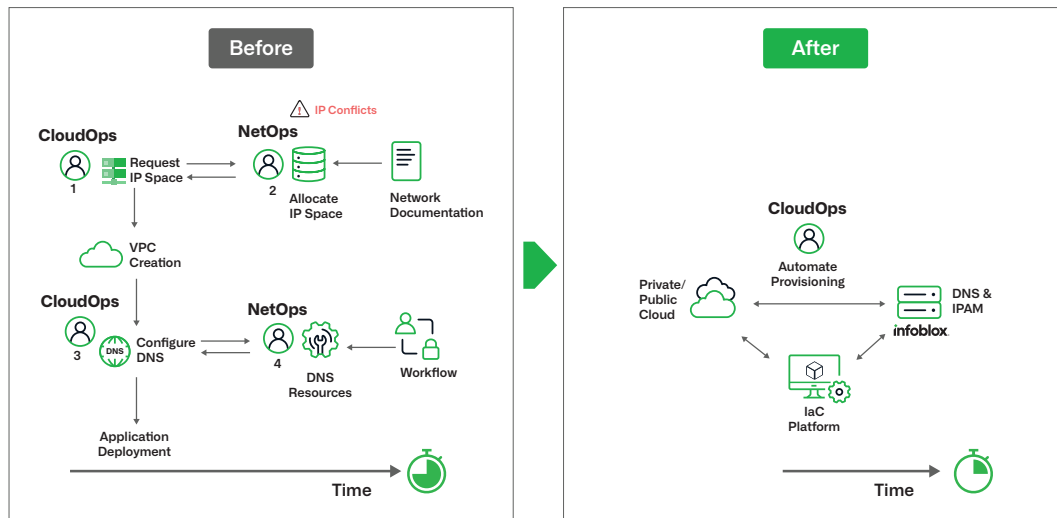


Figure 1. Example before-and-after scenario of DNS and IP address provisioning without and with Infoblox and Terraform integration

Figure 1 explains an example before-and-after scenario of DNS and IP address provisioning without and with Infoblox and Terraform integration. Before integration, when the CloudOps team needs to deploy a new application, they request IP addresses from the NetOps team, who manually review network documentation and allocate IPs using spreadsheets. This back-and-forth causes delays, and overlapping IPs often lead to conflicts. Similarly, DNS records are created manually, which frequently results in outdated or missing entries after deployments. After integrating Infoblox with Terraform, the entire process becomes automated. During deployment, Terraform uses the Infoblox Provider to automatically allocate IP addresses and create DNS records, and when resources are removed, those records are deleted, and IPs are released. This automation eliminates manual steps, reduces errors, ensures real-time accuracy and accelerates application provisioning across clouds.

USE CASE: AUTOMATE IP ADDRESS ALLOCATION

Hybrid cloud platforms lack centralized visibility into IP address usage, forcing teams to manually track allocations across disconnected systems. This leads to IP conflicts, inefficient resource utilization and potential service disruptions.

Infoblox automates IP address allocation as part of IaC workflows, ensuring each address is provisioned, tracked and released automatically within the Infoblox DDI platform. This prevents IP conflicts, improves network reliability and streamlines lifecycle management across hybrid, multi-cloud environments.

USE CASE: ADD AND UPDATE DNS RECORDS IN REAL TIME

Manually creating and deleting DNS records cannot keep pace with rapid cloud provisioning. Delays or inaccuracies in DNS updates lead to inaccessible services and operational inefficiencies.

With Infoblox integration with Terraform, DNS records are automatically created, updated and removed as resources are provisioned or decommissioned. This ensures real-time DNS accuracy, eliminates manual intervention and maintains consistent service availability across all environments.

USE CASE: UTILIZE A SINGLE PLUG-IN FOR HYBRID, MULTI-CLOUD ENVIRONMENTS

Managing DNS and IPAM across multiple public and private clouds often requires separate tools or plug-ins for each provider, increasing complexity and administrative overhead.

Infoblox offers a single Terraform provider plug-in that unifies IPAM and DNS management across on-premises, hybrid and multi-cloud environments. This centralized approach eliminates the need for multiple cloud-specific integrations, simplifies workflows and enhances scalability with consistent, automated network provisioning.

GETTING STARTED

Organizations can use out-of-the-box Infoblox Terraform provider plug-ins to enable automation, streamline operations and improve efficiency. This solution not only automates the allocation of IP addresses and the provisioning of DNS records but also reduces the potential for errors and ensures consistent updates across hybrid, multi-cloud environments.

Terraform provider plug-ins are available with the [Infoblox Universal DDI™ Product Suite](#) and [Infoblox NIOS DDI platform](#). Explore Infoblox automation plug-ins to achieve agility, drive operational excellence and support the demands of modern hybrid, multi-cloud environments:

- [Infoblox Universal DDI Plug-In for HashiCorp Terraform](#)
- [Infoblox NIOS DDI Plug-In for HashiCorp Terraform](#)



Infoblox unites networking, security and cloud with a protective DDI platform that delivers enterprise resilience and agility. We integrate across hybrid and multi-cloud environments, automate critical network services and preemptively secure the business—providing the visibility and context needed to move fast without compromise.

Corporate Headquarters
2390 Mission College Blvd, Ste. 501
Santa Clara, CA 95054

+1.408.986.4000
www.infoblox.com