

SOLUTION NOTE

Automating IPAM and DNS through Infrastructure as Code

SUMMARY

As more organizations adopt DevOps processes, innovative IT approaches such as Infrastructure as Code (IaC) have become prevalent. IT Infrastructure is becoming increasingly fluid; networks and servers in hybrid cloud environments are provisioned and de-provisioned rapidly. This presents challenges in providing core network services such as IPAM and DNS using traditional, manual processes. The Infoblox Plugin for Terraform integrates our industry-leading DDI solution with Terraform IaC for maximum agility, control, and visibility of network services across hybrid cloud environments.



Challenges of Hybrid Cloud Infrastructure

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 Infrastructure as Code software such as Terraform can help ensure speed, simplicity, and consistency in these deployments. Legacy approaches toward manual allocation of IP address space, endpoint addresses, and DNS records for these resources can no longer suffice.

Many of the major cloud platforms do not provide any native process for IP Address Management (IPAM), a

critical core networking service. Manual management of IP space and addresses is a time-consuming process with frequent errors caused by overlapping address space and IP conflicts. In addition, maintaining accurate, up to date DNS records for resources that may change frequently is an increasingly challenging task.

Industry-Leading IP Address Management and DNS for Hybrid Cloud

The Infoblox Plugin for Terraform extends IPAM and DNS services into IaC for cloud platforms such as VMware and Azure. As a Terraform approved provider, the Infoblox plugin integrates seamlessly into provisioning and de-provisioning of infrastructures such as Virtual Private Clouds (VPC) and Virtual Machines (VM) across cloud platforms. Infoblox Cloud Network Automation solutions allow for enhanced visibility, automation, and control through built-in IPAM and DNS integrations.

- Make cloud networks visible across IT teams
- Avoid IP conflicts and associated issues
- Automate DNS provisioning for cloud endpoints

Featured Use Cases:

Automate IP Address Allocation

Many cloud platforms do not provide any method for tracking IP address usage and availability. IP allocation is hidden from users, making it difficult to identify available address space and available addresses for static assignment. Using manual processes such as spreadsheets to track this data is both time consuming and error-prone and does not fit into a DevOps IaC process. In addition, when resources are de-provisioned, IP addresses should be documented and released, but IT teams are rarely focused on this clean-up aspect.

The Infoblox Provider for Terraform delivers the built-in capability to allocate IP addresses as part of IaC deployments. An allocated IP can be assigned to new endpoints created during the deployment and documented in the Infoblox Grid™ for enhanced visibility. Resource options allow IP addresses to be stored as Reservations, Fixed addresses, or Hosts in the Infoblox Grid. When an endpoint is no longer needed and de-provisioned from the cloud platform, the Infoblox provider will automatically remove records from the Infoblox Grid and release the IP address for later reuse.

Add DNS Records in Real Time

DNS is a critical service on your network. Without it, users and endpoints cannot find the services and resources they need. Manually provisioning DNS Records for services can be a long and complex process. In a rapidly changing hybrid cloud environment, this process can lag behind the creation and destruction of resources, leaving stale records or no records for the services your users need now.

The Infoblox Provider for Terraform allows you to create and assign DNS records for your new services as they are deployed. CNAME records, A records and PTR records are added to the Infoblox Grid and configured on new virtual machines during the IaC provisioning process. These records make new services immediately visible to those who need them. Once these resources are no longer needed, DNS records are removed as the resources are destroyed, ensuring accurate, up to date DNS resolution.

Conclusion

The Infoblox Provider for Terraform extends the Infoblox industry-leading IPAM and DNS services as Infrastructure as Code throughout your on-premise, private, and public cloud environments. The Infoblox provider enables automation, control, and visibility of your hybrid cloud resources deployed via Terraform.

Find out more about the Infoblox Plugin for Terraform at:

[Infoblox IPAM Driver for Terraform 1.0](#)

[Infoblox Provider](#)



Infoblox enables next-level network experiences with its Secure Cloud-Managed Network Services. As the pioneer in providing the world's most reliable, secure and automated networks, we are relentless in our pursuit of network simplicity. A recognized industry leader, Infoblox has 50 percent market share comprised of 8,000 customers, including 350 of the Fortune 500.

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