

Cloud Network Automation with Infoblox

Infoblox Integration with Cisco Intelligent Automation for Cloud



The Challenge of IP Address Management in Cloud Deployments

The very foundation of cloud computing lies with the ability to easily and automatically provision compute, storage and network resources. From a virtual server perspective, the ease and speed with which enterprises can deploy virtual machines has outpaced their ability to provide network services to them in a timely fashion. Even such simple tasks as assigning IP addresses to a virtual server, releasing or reclaiming IP addresses after a virtual server is taken down and managing those assignments are growing exponentially more difficult. Manual processes become obstacles to achieving true dynamic and real-time environments.



Virtualization for Cloud Continues to Grow in Enterprise IT

Enterprises are continuing to scale their virtualized environments beyond simple virtual server deployment, and are reaping the rewards and benefits of virtualization. They are now deploying virtual disaster recovery and virtual support for dynamic workloads, as well as incorporating private cloud infrastructure. In doing so, they are encountering unprecedented rates of change and growing complexity in the physical and logical network.



The transition from a physical to a virtual environment is occurring in all sectors, and the movement toward virtualization is growing at a breathtaking pace. According to Gartner Research, today there are more virtual machines than physical hosts. Gartner projects that in 2018 fully 86% of x86 workloads will be run on virtual machines.

Along the path towards virtualization, one key challenge facing IT professionals is the amount of time needed to obtain an IP address for a virtual machine. To deploy a virtual machine today, a system administrator must request an IP address from the network operations team, wait to receive it and then manually type it in — a tedious, delaying, time-consuming process that must be repeated for each newly created virtual machine. A recent Infoblox study revealed that 43% of system administrators must wait hours, days and sometimes weeks to receive an IP address from the networking team. Such IP configuration methods are error prone, lack speed, and are simply not scalable. Even automated provisioning systems struggle with IP address management because, while provisioning systems can assign addresses from a pre-provisioned block of addresses, there is no visibility for the network team into the virtual environment. This virtual world blindness affects the network team's ability to troubleshoot and manage the network effectively.

Inability to assign and release IP addresses in a workable time frame and attempting to manage DNS records and other settings manually in virtual environments can lead to substantial losses in productivity. Also, lack of collaboration between the server and the networking groups can further hinder business operations. Most importantly, these inefficiencies undermine the very nature of the dynamic infrastructure that virtualization is intended to deliver.

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Solving IP Address Management Challenges Cloud / Virtualized Environments

To ease the burden of automated provisioning of virtual servers in Cloud use cases, Cisco offers a management and automation solution called Cisco Intelligent Automation for Cloud. CIAC can enable highly secure, on-demand, and automated IT operations for cloud computing, with policy-based controls for provisioning virtual and physical resources. This software solution includes a self-service portal, orchestration engine, and advanced cloud management capabilities to improve IT agility, flexibility, and speed. Infoblox integrates with this solution to automate the provisioning of critical network resources such as IP Addresses and DNS records.



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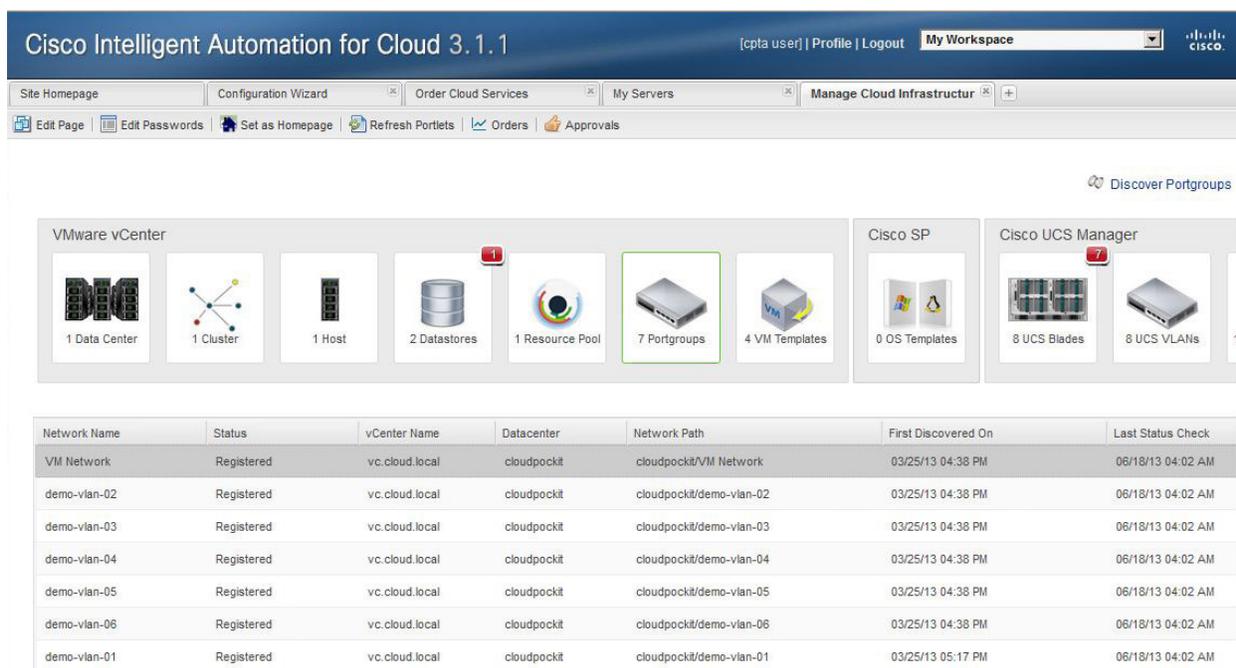


Figure 1. Cisco Intelligent Automation for Cloud – Easing the Burden of Cloud Provisioning

To simplify and streamline the processes of obtaining an IP address and assigning a DNS host record to virtual machine in a virtualized environment, CIAC has a built-in capability to interoperate with Infoblox DDI solutions enabling provisioning and de-provisioning of virtual machines in a matter of seconds instead of hours or days.

Using the Infoblox & CIAC solution, an IT professional managing a virtualized environment can now:

- 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
- Eliminate errors introduced by manual processes

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How It Works

Figure 2 illustrates the ease by which IP Addresses and DNS records can be provisioned and reclaimed with this integrated solution:

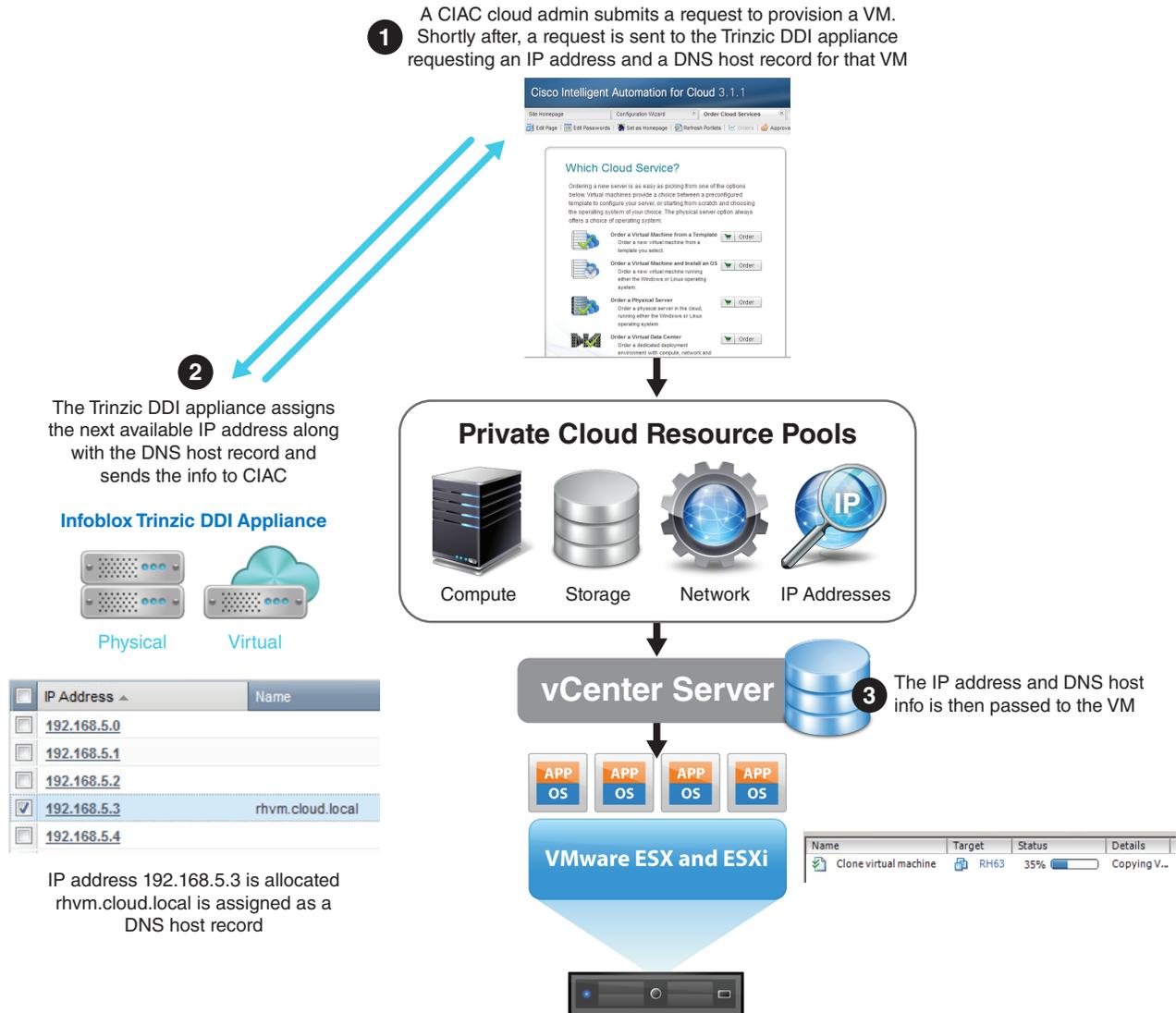


Figure 2. Automated IP provisioning using Infoblox solution for CIAC

Summary

Virtualization is at the very foundation of cloud computing, yet when it comes to cloud provisioning, many network related processes still remain manual and time consuming. With the Infoblox integration with CIAC, organizations can automate key critical components of network IP Address provisioning and DNS record updates.

About Infoblox

Infoblox (NYSE:BLOX) helps customers control their networks. Infoblox solutions help businesses automate complex network control functions to reduce costs and increase security and uptime. Our technology enables automatic discovery, real-time configuration and change management and compliance for network infrastructure, as well as critical network control functions such as DNS, DHCP and IP Address Management (IPAM) for applications and endpoint devices. Infoblox solutions help over 6,100 enterprises and service providers in 25 countries control their networks.