

SOLUTION NOTE

Improving Agility by Automating IP Address Provisioning and Deprovisioning for Docker and Containers

SOLUTION SUMMARY

Organizations are increasingly deploying applications and microservices using container technologies such as Docker instead of virtual machines for three key reasons: it simplifies configurations, increases productivity and shortens deployment times. While the value of containers often focuses on speed, agility and automation, the underlying network aspects associated with common tasks such as IP address provisioning and deprovisioning often cannot handle the dynamic and rapidly changing container environment. Infoblox DDI for Docker and Containers extends our industry-leading DDI solution to microservices to increase control, security and automation.

Network Challenges When Deploying Microservices

The explosive adoption rate of organizations deploying microservices that leverage container technologies is causing new stress for existing infrastructure deployments and legacy processes. IT organizations are utilizing container standards, including the Container Network Model (CNM) with Docker and the Container Network Interface (CNI) for rkt and others, as ways to quickly deploy tens or hundreds of new applications that share the same operating system (OS) kernel.



The rapid and dynamic provisioning of new microservices adds communication challenges for network teams attempting to determine which services can talk with each other and which services should have external access. In addition, the open source container processes have no integration with existing management and infrastructure tools which causes inconsistency, limits automation and hampers auditing and compliance. In addition, the danger of overlapping IP addresses across multiple hosts increases exponentially in the dynamic container world.

Industry-leading IP Address Management for Docker, Containers, and Hybrid Cloud

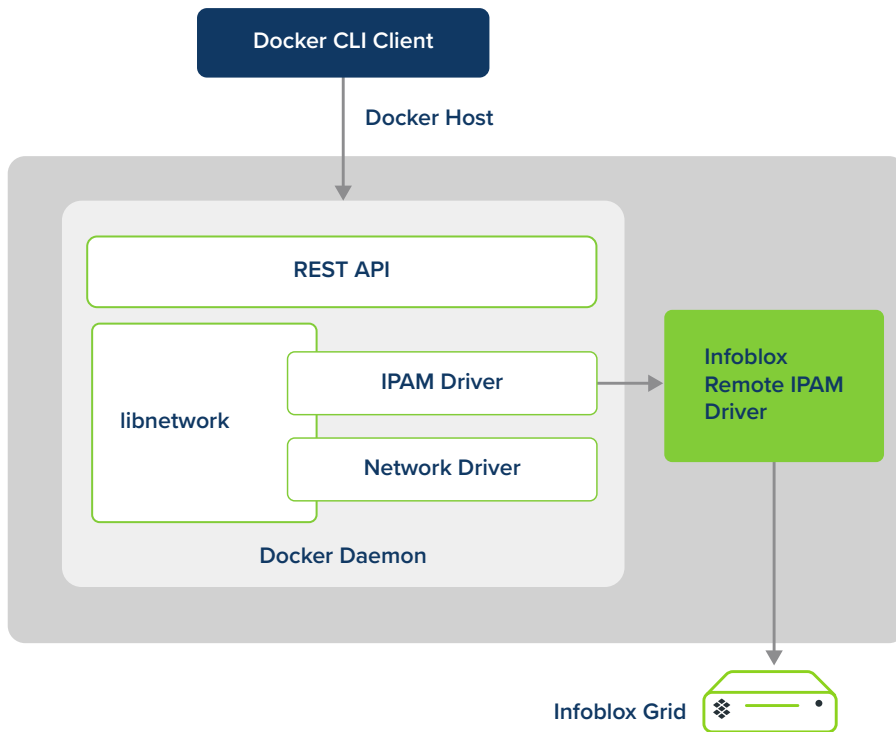
The Infoblox DNS, DHCP and IP address management (DDI) solution can now be extended to support Docker and other Linux and Unix-based containers using CNM and CNI, providing automation, consistency, and visibility. With Infoblox Actionable Network Intelligence, organizations using containers to successfully deploy dynamic microservices through enhanced control, visibility and security by leveraging the pre-built integration for IP address management (IPAM).

- Offload network responsibility and assignment from the application developer
- Avoid IP conflicts and container routing issues
- Enable more dynamic, fan-like IPAM strategies
- Empower network and operator visibility into the container cloud

Use Case: Automatic IP Address Assignment

As containers become more prevalent across an organization, the ability to assign IP addresses that are routable and that follow the organization’s policies becomes more critical. If an organization is using a spreadsheet and/or manual processes for IP address assignment across the organization, the dynamic and agile container world will quickly break the traditional manual IP address assignment processes. In addition, when containers are destroyed, the IP addresses should be documented and released—but most IT teams do not focus on reclamation and clean up.

The Infoblox IPAM Container Adapter provides the pre-built and tested interaction to support IP address automation in container environments. Instead of manually allocating IP addresses, Infoblox automatically assigns IP addresses with flexible configuration options with separate or combined address space per host or hub. This automation reduces deployment times and eliminates the risk of overlapping and conflicting IP addresses. Reporting views track current and historical data for improved visibility.



Consolidated Platform for On-premises, Virtualized, Cloud, and Container Technologies

Infoblox allows you to control DNS, DHCP and IPAM for complex, distributed physical, virtual, cloud and container environments centrally, flexibly and efficiently. Now you can support multi-platform workloads in Docker, VMware, AWS, Azure, OpenStack and others with confidence—and maximize the full potential of your deployment strategy.

Actionable Network Intelligence provides the control, security and automation by intelligently integrating with Docker and other automation and orchestration platforms to rapidly provision critical network components as part of your agile deployment strategy. Infoblox is the leading DDI platform and offers more API options than any other vendors.



Infoblox is the leader in modern, cloud-first networking and security services. Through extensive integrations, its solutions empower organizations to realize the full advantages of cloud networking today, while maximizing their existing infrastructure investments. Infoblox has over 12,000 customers, including 70 percent of the Fortune 500.

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

+1.408.986.4000 | info@infoblox.com | www.infoblox.com



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