

### SUMMARY

Infoblox vNIOS™ for Cisco consolidates core network services such as DNS, DHCP and IPAM and others onto the Cisco Integrated Services Router (ISR) running the Application Extension Platform (AXP) module. The integrated solution delivers core network services locally at branch offices and provides centralized management that automates repetitive tasks resulting in following benefits:

- Performance benefits of local core network service delivery, including DNS, DHCP and IP address management (IPAM)
- Local survivability for branch office networks
- Centralized management of core network services with automated deployment of Infoblox vNIOS software, including scheduled upgrades, software revert, backup and restore, disaster recovery, and more
- Reduction in administrative effort, errors and downtime with powerful, built-in IP address management (IPAM) using a graphical user interface, template-based configuration, automated error prevention, and comprehensive, real-time visibility and reporting
- Savings in branch office space and power with Infoblox vNIOS software deployed on a Cisco NME blade installed in a Cisco ISR router.
- No additional rack space at the branch required

### CORE NETWORK SERVICES CHALLENGES AT THE BRANCH

Reliable core network services at branch offices are required to ensure application availability for business processes. For instance, even minor interruptions in DNS services may lead to lost transactions at a retail store or at a bank branch office resulting in lost revenues and affecting employee productivity. Current solutions for providing core network services force trade-offs in performance and availability in order to gain easier management.

#### Centralized Core Network Services Result In Compromised Performance And Availability

Several enterprises have consolidated DNS, DHCP services into their data centers and branch offices use their WAN links to access these services. While this model eliminates the need to manage remote servers for DNS and DHCP, the availability and performance are affected. Even small interruptions in WAN services may affect business in a major way. Local survivability of the branch office network and applications cannot be guaranteed.

#### Major disadvantages –

- No local survivability may interrupt core network services impacting business
- Reduced application performance due to WAN latencies and delays in delivering DNS data

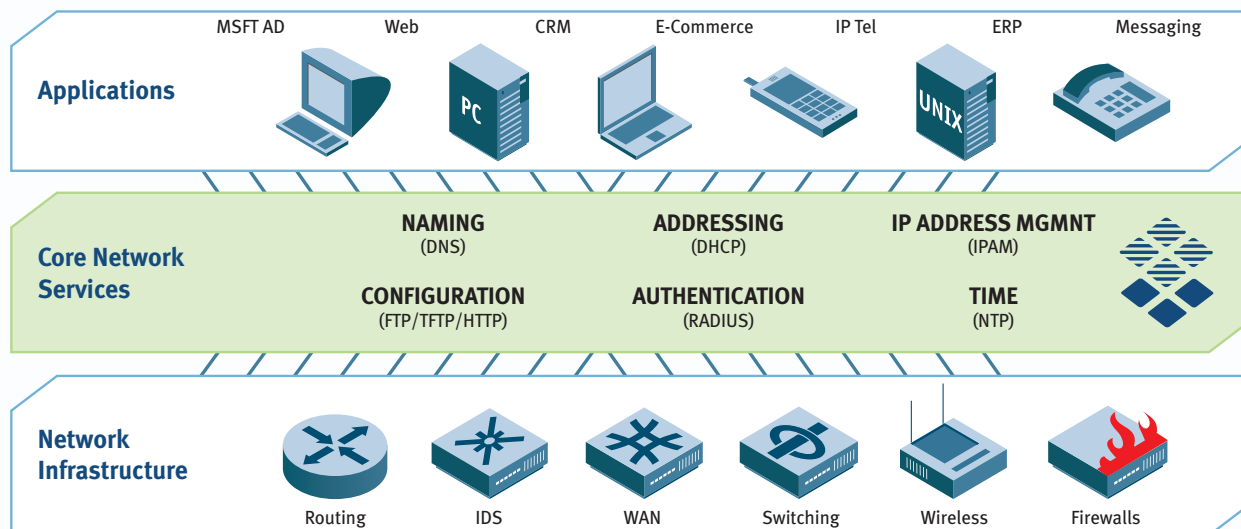


Figure 1. Core network services  
The glue between applications and networks

### Distributed Core Network Services Increase Management Requirements

In this model, branch offices are equipped with servers providing DNS and DHCP services locally. This option requires local management and upkeep of these services thus increasing management costs and complexity.

#### Major disadvantages –

- Increased management costs due to local administrative effort at branch office
- Each branch office may require local expertise in core network services
- Non standard implementation at each branch may give rise to network complexities

## INFOBLOX SOLUTION

Infoblox vNIOS software on Cisco routers running AXP combines the best of both models by providing local delivery of core network services with benefits of centralized management.

Infoblox vNIOS for leverages the extensibility of Cisco ISR to run core network services and eliminates the need to add additional servers and appliances at the branch offices.

### Infoblox Core Network Services

Infoblox vNIOS software, running on Cisco AXP, delivers nonstop core network services, including:

- Naming services via Domain Name System (DNS);
- Addressing services via Dynamic Host Configuration Protocol (DHCP);
- Network visibility and control via IP address management (IPAM);
- File delivery services via Trivial File Transfer Protocol (TFTP), FTP and HTTP;
- Logging services via Syslog proxy.

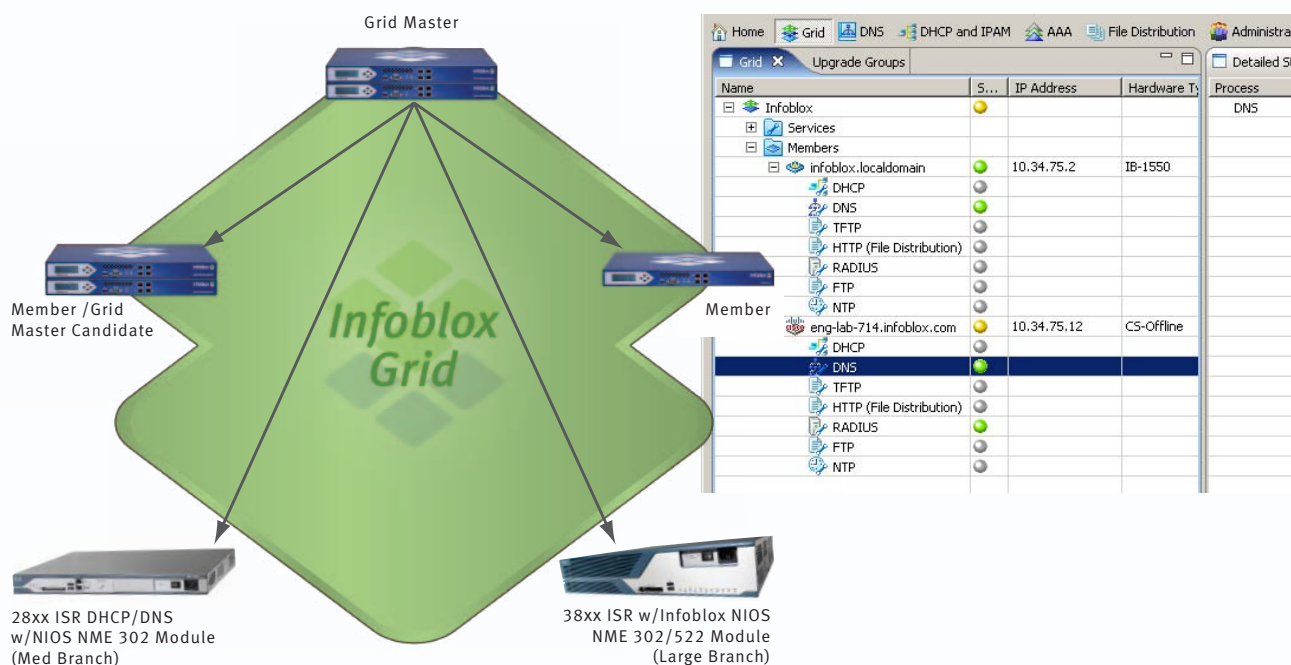


Figure 2. Infoblox vNIOS for Cisco in a Grid centrally managed by Infoblox Grid Manager.

## Infoblox Grid Enables Centralized Management

Infoblox vNIOS software running on Cisco AXP blades can be combined with Infoblox hardware appliances into Infoblox grids. The Infoblox grid links a collection of appliances into a unified, centrally-managed, core network services platform. This essential infrastructure allows organizations to distribute, automate and consolidate critical information and services with assured data integrity.

- Resilient operation with increased availability and disaster recovery
- Unified Management with system-wide one-click upgrades
- Easy Monitoring and Troubleshooting of Services

## Grid Manager User Interface for Administration and Reporting

The flexible Infoblox Grid Manager user interface provides the visibility and control needed to manage all core network services in dynamic IP networks. The Grid Manager consolidates the management of all appliances, services, and data—and provides summary and drill-down views with a simple click. The status of devices and services within the Grid Manager always reflects the actual, real-time state of the network.

## Integrated IP Address Management (IPAM) reduces costs and eliminates errors and downtime

Infoblox vNIOS software comes with industry leading IPAM functionality built-in and does not require a separate dedicated IPAM system. Infoblox IPAM allows network administrators to get control of their networks and reduce operational costs while increasing efficiency, availability and visibility into the networks. Following are the key benefits of Infoblox IPAM

- **Automation of repetitive tasks** saves administration effort, reduces errors and builds consistency in network designs. Administrators can quickly provision new branch office networks, assign new static IP addresses, combine new networks into one larger network, etc.
- **Network discovery** function allows administrators to easily find information about devices present on their networks and add them to the IP management system. Additionally, it can also alert administrators about presence of unauthorized devices on the network.
- **Role based workflow and delegation** aligns corporate roles with real world responsibilities, establishes accountability and ensures division of labor e.g. allows helpdesk staff to service simple requests, allows DHCP administrator for a geographical location to only updated relevant records etc. Additionally, audit reports keep track of all the administrative changes
- **Extensive reporting capability** eases troubleshooting, reduces monitoring effort and ensures security and compliance. With IPAM history reports, it is easy to find who had a specific IP address at a given time. SNMP based network alerts ensure that IP space usage is within acceptable range.

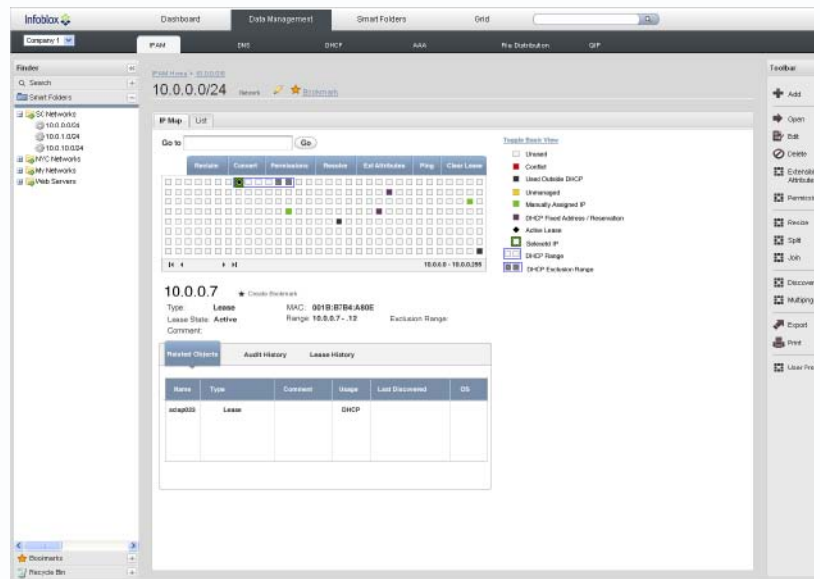


Figure 3. Infoblox IPAM IP Map screenshot showing various networks and associated IP addresses and their status

## APPLICATION EXTENSION PLATFORM (AXP) PRODUCT OVERVIEW

The Cisco AXP provides a standards-based Linux hosting environment within the Cisco Integrated Services Router, allowing third parties to integrate applications with the router. Tightly integrated, the Cisco AXP environment is configured and managed through the router. Using this integration, a Cisco AXP application can appear to the end user as an extension of the router.

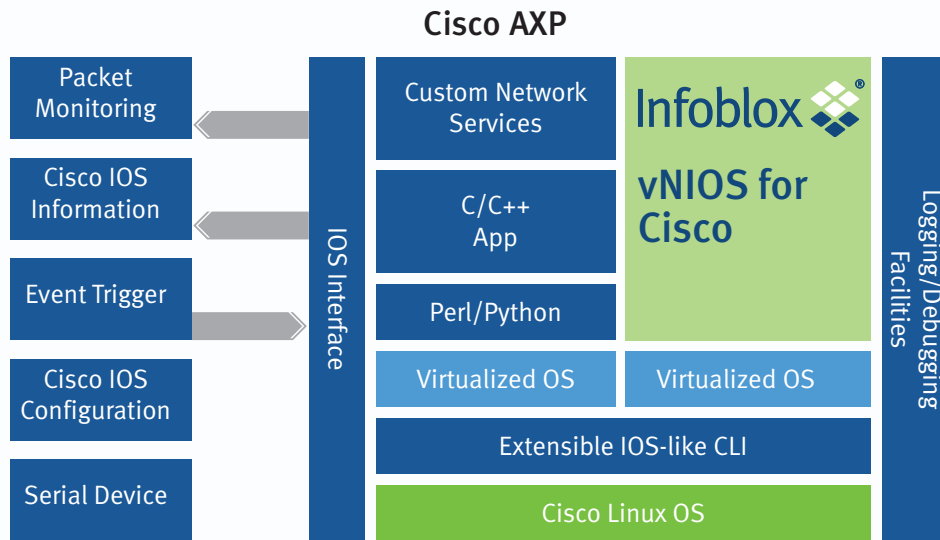


Figure 4. Cisco Application Extension Platform Overview

The AXP solution consists of:

- Application runtime network module, providing dedicated resources to host applications.
- Cisco AXP hosting environment, providing the infrastructure to securely host, install, upgrade, and manage third-party applications and services
- Cisco IOS® Software integration APIs, allowing the application to integrate and use the features of the router
- Software Developer Kit (SDK), allowing certified customers and partners to develop applications and services
- Cisco AXP Partner Program, providing the collateral, extended technical support, and online resources to help partners develop, deploy, and market their Cisco AXP-based solutions

### Business Benefits of the Infoblox and Cisco Integrated Solution

#### Empower the Branch Office with Infoblox vNIOS Software on Cisco's ISR

- Get the performance benefits of local core network service delivery, including DNS, DHCP and IP address management (IPAM)
- Enable local survivability for branch office networks
- Gain centralized management of core network services with automated deployment of Infoblox vNIOS software, including scheduled upgrades, software revert, backup and restore, disaster recovery, and more
- Reduce administrative effort and eliminate errors and downtime with powerful, built-in IP address management (IPAM) using a graphical user interface, template-based configuration, automated error prevention, and comprehensive, real-time visibility and reporting

#### Save Capex and Opex by Eliminating the Need for Servers to Provide Core Network Services at Branch Offices

- Save branch office space and power with Infoblox vNIOS software deployed on a Cisco NME blade installed in a Cisco ISR router
- No additional rack space at the branch required

### About Infoblox

Infoblox delivers the only platform designed to provide utility-grade core network services. Core network services - including domain name resolution (DNS), IP address assignment (DHCP) and management (IPAM), authentication (RADIUS) and others - are essential for all networks and applications.

Infoblox solutions provide a simple, secure, and reliable appliance-based approach that includes unique database and grid technology to deliver these services nonstop.

Infoblox solutions are used by hundreds of organizations worldwide, including many of the Fortune 500. Company headquarters are in Santa Clara, California, and it has operation in more than 30 countries. For more information, call +1-408-625-4200, email [info@infoblox.com](mailto:info@infoblox.com) or visit [www.infoblox.com](http://www.infoblox.com).

Infoblox  
4750 Patrick Henry Drive  
Santa Clara, CA 95054  
+1-408-625-4200 - Phone  
+1-408-625-4201 - Fax  
[info@infoblox.com](mailto:info@infoblox.com) - E-mail