Summary: Infoblox solutions for service providers enable mobile, cable, broadband, and managed service providers to offer a safe, reliable, and fast first-connection impression to subscribers and enterprise customers. Security is one of the top criteria for subscribers and enterprises when they are choosing service providers. Unsecured devices put network assets at risk, and dissatisfied subscribers can damage a trusted, valuable brand and reputation. Infoblox solutions provide highly cost-efficient control, improved subscriber experience, and deep protection from a wide range of DNS attacks and malicious website access.

The Infoblox Service Provider Solution Portfolio

Infoblox delivers the intelligence, performance, and proactive protection service providers need to safeguard their networks, subscribers, and brand. All Infoblox solutions include patented Infoblox Grid™ technology, which provides optimal operator visibility and control across the entire Infoblox DNS infrastructure, enabling quick detection of service-threatening attacks while easing operational costs and increasing manageability.

The Infoblox portfolio is shown below, followed by details of key solution elements.

Secure DNS Caching
- Advanced DNS Protection for Service Providers
- Infoblox DNS Firewall
- High-performance Caching
- NXDR

Authoritative DNS
- Mobile Service Selection
- DNS Traffic Control

IP Address Management (IPAM)
- IPAM
- Cloud Network Automation
- OpenStack, VMware Cloud Adapters

Managed DDI & DHCP
- DDI as Customer-premises Equipment
- DDI as XaaS
- DHCP (IOT, Wi-Fi Offload)

Infoblox Advanced Reporting

Infoblox Grid™
Real-time Network Database

Physical & Virtual Appliances

Secure DNS Caching

Secure DNS Caching protects subscribers from growing malware threats, service disruption, and slow response through the use of global threat intelligence and automated protection packages. The solution maintains critical DNS service availability in rapidly evolving networks, growing traffic, and even during a malicious DDoS attack. Advanced caching functions ensure that the best and most-used responses are always available for subscribers. Features such as NXDR further enhance the subscriber experience by providing options for redirecting common request errors, such as mistyped domain names.

Advanced DNS Protection for Service Providers

Attacks targeting operator DNS infrastructure can cause service degradation and slow DNS response, or impede subscriber ability to access domains over the network. Advanced DNS Protection for Service Providers maintains service availability and critical DNS functionality and performance during volumetric DDoS attacks or non-malicious traffic spikes generated by misconfigured devices, emergency situations, or network outages.
Infoblox DNS Firewall
DNS Firewall keeps subscribers safe and reinforces brand integrity. DNS Firewall protects against advanced persistent threats and malware by identifying infected devices and preventing them from accessing known malicious domains. If subscribers, applications, or devices attempt to access a malicious domain, Infoblox prevents the DNS queries from resolving, so they are blocked and presented with an operator-designed notification screen or redirected to an alternate site. Operators retain maximum flexibility and can include local, operator-specific threat feeds and customized whitelists or blacklists as desired to prevent erroneous blocking.

High-performance Caching
Excessive network delay or latency can have a profound effect on subscriber experience, in which both enterprise and subscribers expect network response to be close to instantaneous. Response delays have been shown to negatively impact revenue for service provider's important enterprise customers such as web-services companies and financial institutions. Infoblox high-performance caching provides sub-millisecond performance and fast response.

Authoritative DNS
In dynamic networks, network elements are being added or changed continuously in response to traffic growth, new service areas, re-allocation of capacity, new network services, and many other factors. Every element requires an accurate IP address and every change requires an update of the database or zone map of the authoritative DNS servers.

Infoblox Authoritative DNS, with automated management and control and DNS Traffic Control, reduces the administrative burden, supports effective traffic distribution, improves network visibility, and helps service providers meet subscriber expectations for high speed and responsiveness.

Infoblox Authoritative DNS utilizes a four-step automated process to reduce administrative burden and safeguard against manual data entry or configuration errors, which can disrupt service for subscribers and increase costs for operators:

1. The process starts with a single bulk import.
2. The change is automatically pre-tested to eliminate possible syntax errors.
3. A simultaneous update of all server zone changes, upgrades, and patches is performed.
4. In the event of any other type of emergency or error, saved prior configurations can be quickly re-imported to revert back.

Mobile Service Selection
Authoritative DNS infrastructure provides the crucial service-selection information that enables fast, accurate connection between packet gateways (PGW), serving gateways (SGW), mobility management entities (MME), and other elements within the mobile network Evolved Packet Core (EPC).

The Infoblox mobile service selection solution supports 3GPP-defined use cases and delivers carrier-grade performance and availability to provide a superior subscriber experience. Additionally, the solution dynamically monitors element status, supporting efficient assignments only to truly available nodes and reducing administrative operating costs.

Infoblox DNS Traffic Control
Infoblox DNS Traffic Control monitors the status of network nodes, considering the originating region of the connection request, and provides the MME an accurate selection list of truly available nodes in the appropriate geographic area. If a node is out of service, it will be dropped from the list. This dynamic monitoring and allocation of node assignments prevents over-provisioning of network nodes, maintains consistent availability, and prevents traffic from being directed to nodes that are actually out of service. DNS Traffic Control runs on the unique Infoblox Grid technology—so administrators can manage all DNS, DHCP, and IPAM functionality from one centralized management GUI, saving significant time and effort.

IP Address Management
While virtual servers can be spun up in seconds, with manual network support and management processes, it may still take days, or even weeks, to assign IP addresses to those servers. Infoblox advanced IP address management (IPAM) automates the high-volume provisioning and reclamation of bulk IP addresses to and from server stacks via VMware and OpenStack Cloud Adapters.
Cloud Network Automation
Infoblox provides advanced operational tools to help hosting providers and cloud-service providers manage their infrastructure. Infoblox DNS, DHCP, and IP address management (DDI) solutions provide greater visibility into virtual machines and tenants, empowering administrators to get a real-time view into cloud resources as they are provisioned and enabling their enterprise customers to roll out applications faster and to deliver more reliable business services.

Dynamic Host Configuration Protocol
The Infoblox DHCP solution uses high-capacity DHCP servers in a hardened appliance, with single-pane-of-glass management to provide low operating cost, simple administration, and automated high availability and disaster recovery. DHCP is also fully integrated with DNS and IPAM. Infoblox offers high-availability options to ensure seamless DHCP service. Mobile operators have for instance deployed DHCP for Wi-Fi as part of their network architectures for offloading smartphone and laptop traffic.

Managed DDI
Service providers can create new revenue opportunities with security solutions from Infoblox. With Infoblox DDI solutions, managed service providers can offer their enterprise customers a high-value security solution that protects against DNS security threats. Options include reselling Infoblox enterprise-grade DDI as customer-premises equipment (CPE); Secure DNS as a service, a cloud-delivered network security service; or a fully managed DDI, which reduces operational costs and automates key infrastructure services.

Infoblox Grid
Patented Infoblox Grid technology provides highly efficient management and control. The automated network control solution frees key technical and network operations staff from labor-intensive, costly, and error-prone administrative tasks; automates routine tasks such as updates, patches, and configuration changes; and provides a single centralized view of the entire network, with advanced reporting visibility for planners and operations teams.

- **Simultaneous updates**: A single point of configuration for all DNS name servers enables a single binary upload, making any update immediately available on all name servers.
- **Single restoration point**: A single back-up file encompasses all name servers deployed, with no need for individual server back-ups.
- **Auto-configuration**: The Infoblox Grid upgrades and configures remote appliances with no manual intervention once the appliance is connected to the Grid.
- **Staged upgrades**: In a staged upgrade, a group of appliances is isolated, allowing a limited “burn in” for new code, before the remaining appliances are upgraded.

Advanced Reporting
Infoblox Reporting integrates with Infoblox Grid technology and enhances real-time management with an extensive and customizable historical reporting engine. Infoblox Reporting delivers robust reporting capabilities within a single platform and interface. Operators can slice and dice the data in many different formats quickly and easily to find the exact information they are looking for by dates, locations, subscribers, and other definable parameters. With Infoblox, operators have the power and capability to manage deployments with the most reliable and secure services, the best real-time management views, and robust, customizable reporting—all within a single platform.
Physical and Virtual Appliances

Infoblox solutions for service providers are available in multiple form factors, including carrier-grade, purpose-built appliances, virtualized (software-only) options, and enterprise-grade appliances for managed service providers.

**Infoblox Carrier-grade DNS Appliances**

Infoblox builds hardware-based DNS attack detection and protection into the Infoblox 4030 and PT-series appliances. This specialized hardware drops attack traffic and passes legitimate traffic, offloading the DNS server engine from DDoS protection and from processing malicious DNS traffic, preserving a low-latency web experience for subscribers. The IB-4030 is one of several classes of appliances for service providers. For a full listing of Infoblox appliances, see the *Infoblox Appliance Guide.*

Infoblox Protects Subscribers, Brand, and Reputation

Infoblox carrier-grade solutions for service providers protect subscribers through use of global threat intelligence and automated protection packages. The solutions maintain critical DNS service availability in rapidly evolving networks, growing traffic, and even during a malicious DDoS attack. When combined with the Infoblox Grid, Infoblox solutions further provide optimal operator visibility and control across all DNS infrastructure, enabling quick detection of any service-threatening attacks while easing operational costs and increasing manageability.

Infoblox solutions for service providers deliver the reliability, manageability, performance, and proactive protection service providers need to safeguard their networks, subscribers, and brand—enabling them to create the best first-connection impression for their subscribers.

Contact us today to find out more about Infoblox solutions for service providers.

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**About Infoblox**

Infoblox delivers critical network services that protect Domain Name System (DNS) infrastructure, automate cloud deployments, and increase the reliability of enterprise and service provider networks around the world. As the industry leader in DNS, DHCP, and IP address management, the category known as DDI, Infoblox (www.infoblox.com) reduces the risk and complexity of networking.