Ensuring Business Continuity with Multi-master DNS
Today's enterprise networks are growing and expanding geographically. Organizations need ways to ensure business continuity, much of which relies on distributing DNS information so Microsoft Active Directory (AD) controllers can continue to provide access to important resources in and across AD zones. Delays in distributing DNS information can result in unavailable resources. This negatively impacts organizations by causing poor user experiences and decreasing productivity. The more dispersed an enterprise is, the greater the chances are of experiencing the pitfalls of delayed distribution of DNS data.

Infoblox DDI now includes Multi-master DNS capabilities.¹ Leveraging patented Infoblox Grid™ and distributed database technology, Infoblox Multi-master DNS makes updating DNS records across a globally dispersed enterprise simple, quick, and effective—ensuring critical DNS data is where it needs to be immediately, even in a worldwide deployment.

One-to-many Updates Improve Multi-master DNS
Historically, Microsoft DNS has supported multi-master DNS functionality. DHCP clients, through the process of dynamic DNS (DDNS), or network administrators manually updating local DNS servers, automatically distribute the updates to other DNS servers in the enterprise. This allows smooth access to Microsoft networked resources such as printers, scanners, file storage, authentication, and more. However, the process of updating DNS on Microsoft AD servers is somewhat serial in nature. Microsoft achieves this with a chain of DNS servers, each looking for updates from another server upstream.

In smaller networks, the process works well. However, as AD domains have grown larger and become globally distributed, Microsoft DNS has experienced the performance challenges of scaling to meet the demands. And the pressure to scale is going to increase. Gartner Group predicts in its paper The Internet of Things that the number of network devices will increase to 26 billion by 2020.² Many of these devices will be in enterprises, adding even more stress to existing Microsoft DNS infrastructure and administration.

Speed is a critical element of the Infoblox solution. The implementation of Infoblox Multi-master DNS utilizes the unique functionality of the Infoblox Grid and distributed database technology for fast, accurate distribution of critical DNS information. Instead of a long chain of servers each updating the next, Infoblox employs a one-to-many update process (see Figure 1). As a record is updated, either by a DDNS update or manual entry, the Grid member accepting the update will pass the update, via secure Grid communications, to the Grid Master. The Grid Master will then verify it for format and confirm there is no duplication of records. Then, via secure Grid communications database update, all designated members of the multi-master domain are updated. By using the Grid database, the Infoblox solution ensures that no corrupted or invalid records are published, resulting in accurate DNS records. This entire process takes fractions of a second, eliminating the delays engineered into standard Microsoft DNS. (DNS updates to other Microsoft DNS servers are, by design, a minimum of fifteen minutes apart.³)

Figure 1: The Infoblox solution takes advantage of distributed database technology.
Easily Deployed and Managed

In addition to fast, accurate updates, the Infoblox solution provides a single user interface (UI) to view and manage all DNS records and domains. It is quite common to see multiple AD forests in an enterprise, each needing manual management of the DNS records essential for AD services. This siloed management can lead to incorrect or missing DNS records, causing AD delays and failures.

The deployment of the Infoblox Grid™ with multi-master DNS is simple and quick. After determining which DNS appliances need to accept DDNS updates, the administrator adds them as primary DNS servers to new or existing AD Zones. This is accomplished through the Infoblox UI with wizards that simplify the process of adding DNS appliances for the zone (see Figure 2). No other DNS configuration needs to be done. Because of the built-in automation and the exclusive Infoblox Grid™ technology, all detailed configuration is completed automatically.

Infoblox Delivers Reliability and Performance

Infoblox Grid™ technology with multi-master DNS delivers the performance necessary for the rapid distribution of critical DNS records across a globally deployed network, ensuring access to important resources. Reliability is part of the design. Infoblox appliances are purpose built, providing high availability with low operational costs. DNS data is inspected and verified for proper structure before being accepted, preventing improper DNS records from being distributed that could negatively impact AD and resource delivery. Reliability and availability go hand in hand. The Infoblox solution supports robust disaster recovery so enterprises deploying multi-master DNS can rest assured that all of the DNS data is replicated live to Grid members, even those maintained in a DR center, for quick disaster recovery.

To learn more about Infoblox products and solutions visit our website at http://www.Infoblox.com and learn to control your network!

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1 Introduced in NIOS version 6.11

2 http://www.gartner.com/newsroom/id/2636073 December 12, 2013


The SOA RR has a stated refresh interval in seconds (by default, 900 seconds or 15 minutes) to indicate when the destination server should again request to renew the zone with the source server.