

F5 Friday: Devops for DNS



Lori MacVittie, 2012-21-09

#devops #cloud Managing a global presence – especially in the cloud – can introduce additional complexity.



Back in the day when virtualization and cloud were just making waves, one of the first challenges made obvious was managing IP addresses. As VM density increased, there were more IP network management tasks that had to be handled – from distributing and assigning IP addresses to VLAN configuration to DNS entries.

All this had to be done manually. It was recognized there was a growing gap between the ability of operations to handle the volatility in the IP network due to virtualization and cloud, but very little was done to address it. One of the forerunners of automation in the IP management space was Infoblox. Only we didn't call it "automation" then, we called it "Infrastructure 2.0".

After initially focusing on managing the internal volatility in the IP network, the increase in architectures adopting a hyper-hybrid cloud model are turning that focus outward, toward the need to more efficiently manage the global IP network space.

The global IP network space, too, has volatility and may in fact require more flexibility as organizations seek to leverage cloud bursting and balancing architectures to assure availability and performance to its end-users.

One of the requisites of a highly available global-spanning architecture is the deployment of multiple global server [load balancing](#) (GSLB) solutions such as BIG-IP Global Traffic Manager (GTM). To assure availability a la disaster recovery/business continuity initiatives, it is imperative to deploy what are essentially redundant yet independently operating global load balancing devices.

This distribution means multiple, remote devices that must be managed and, just as importantly, that must tie into global IP address management frameworks.

Most of this today is not automated; organizations advancing their devops initiatives may have already begun to embrace this demesne and automate using available tooling such as scripting and device APIs, but for the most part organizations have not yet focused on this problem (having quite a bit of work to do internal in the first place). This is integration work, it's management work, it's a job for devops – and it's an important one.



The ability to integrate and seamlessly manage hyper-hybrid architectures is paramount to enabling federated cloud ecosystems in which organizations can move about as demand and costs require without requiring labor-intensive activity on the part of operations.

Automating and centralizing a federated ecosystem at the global IP network layer is a transformational shift on par with the impact of the steam train in the US's old west. The impact of faster and further was profound and enabled expansion of population and business alike. Federation enabled by the appropriate toolsets and processes will provide similar benefits, enabling business and IT to expand and improve its services to its end-users by leaps and bounds, without incurring the costs or risks of a disconnected set of remotely deployed resources.

F5 and Infoblox have enabled exactly this type of solution comprising integration of F5 GTM via our iControl API with [Infoblox Load Balancer Manager \(LBM\)](#). The solution merges appliance-based DNS, DHCP, and IP address management with a network of standalone BIG-IP GTM devices to create a single management grid. With lots of devops goodness like changing and synchronizing configuration in a hyper-hybrid (or just highly distributed) environment, the integrated solution is an enabler of broader more dynamic and distributed architectures. It enables the automation of tasks without scripting, assures a consistent workflow with pre-configured "best practices" for DNS management, as well as automating daily operational tasks such as synchronizing updates and checking on status.

You can read more in the solution profile [Automate DNS Network and Global Traffic Management](#) or in one of Don's excellent blogs on the topic:

- [F5 Friday: Infoblox and F5 Do DNS and Global Load Balancing Right.](#)
- [DNS Architecture in the 21st Century](#)

Related blogs & articles:

- [Creating a DNS Blackhole. On Purpose](#)
- [DNS Is Like Your Mom](#)
- [No DNS? No... Anything](#)
- [DNS Gets an Upgrade](#)
- [BIG-IP v11: Operational Efficiency for Federal Government Agencies](#)
- [DNSSEC: Is Your Infrastructure Ready?](#)

Global Server Load Balancing Resources:

- [Global Server Load Balancing Overview](#)
- [High-Performance DNS Services in BIG-IP Version 11 \[PDF\]](#)
- [The DDoS Threat Spectrum \[PDF\]](#)
- [Availability and the Cloud \[PDF\]](#)
- [Technology Alliance Partnership Update Week of September 14th 2012](#)



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