Build a self-service private cloud with BlueCat solutions on Citrix NetScaler SDX platform

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Citrix and BlueCat enable you to quickly and easily build a self-service private cloud. The integration of BlueCat solutions with Citrix NetScaler ensures that your private cloud can meet enterprise needs for always-on application access, performance and hyper-scalability without requiring additional management costs or data center space.

A smarter way to build and manage private clouds

The growing adoption of private clouds is placing a heavy demand on the network services that are critical to business connectivity, availability and application access. Together with compute, network or storage, private clouds depend upon your ability to on-board devices so cloud resources can be consumed. With more and more users demanding access to cloud-based applications, Domain Name System (DNS) usage has increased exponentially. To avoid cloud service disruptions, you need a rock-solid, automated network infrastructure.

Inadequate automation hampers cloud agility and erodes ROI, while a failure to integrate core network services like DNS with self-service portals causes bottlenecks and delays in the provisioning of new cloud services. Citrix and BlueCat have joined forces to provide a simple and elegant solution that brings automation, high performance, security and hyperscale to cloud services.

Citrix customers benefit from the ability to:

- Consolidate best-in-class DNS on NetScaler SDX appliances for a zero-footprint solution

- Deliver resilient and scalable services, while retaining access to advanced capabilities like global server load balancing (GSLB)

- Build a flexible private cloud infrastructure that is secure, scalable and easy to manage

- Reduce costs with automation, self-service and multi-tenant management

- Maintain cloud service continuity and protect servers from exploits and attacks
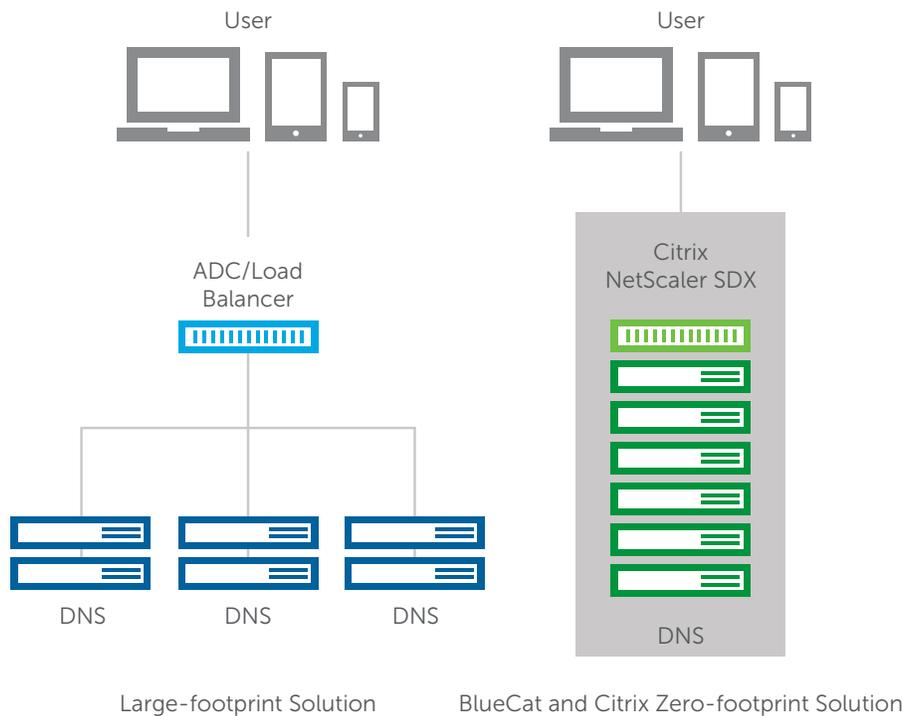
Figure 1. BlueCat on Netscaler SDX: A zero-footprint DNS solution

Whether you need to provision 10, 100 or 1000 servers, Citrix and BlueCat provide a flexible, simple and scalable solution for building private clouds and delivering reliable cloud services. NetScaler SDX appliances consolidate best-in-class application delivery services and network services, including BlueCat's fully automated DNS, DHCP and IP Address Management (IPAM) solutions, onto an open, unified platform designed to enable rapid and efficient private cloud build-outs.

DNS and Cloud—making the connection

DNS is a critical and often overlooked component of private cloud initiatives. DNS links the users of cloud-based applications to the load-balanced application servers that host them. An effective, cloud-capable DNS infrastructure must be fault tolerant, reliable and secure to avoid outages, failures and attacks. Intelligent Global Server Load Balancing (GSLB) is essential to prevent catastrophic failures and ensure optimum application performance. Your DNS infrastructure also needs to be elastic, scalable and easy to manage to reduce the everyday administration burden on IT and free up your valuable resources to innovate.

The server load balancing of Citrix NetScaler, combined with the simplicity of BlueCat's automated DNS and IPAM solutions, provides a zero-footprint, cloud-capable DNS infrastructure that is fault tolerant, reliable, scalable and secure. This highly resilient solution safeguards businesses against DNS exploits and attacks that can cripple the network and make cloud applications inaccessible. With Citrix

and BlueCat, critical DNS services can be load balanced across multiple DNS nodes within a single system or across multiple SDX appliances without the need for additional DNS servers to be racked in your datacenters or deployed inside your cloud. The combined Citrix and BlueCat solution dramatically reduces the management complexity and costs of maintaining reliable application access.

Reliable and hyper-scale services

One of the most common reasons private clouds fail is that the underlying network infrastructure is unable to accommodate an unforeseen spike in demand. Citrix NetScaler delivers best-in-class server load balancing to ensure that your DNS infrastructure has the performance and scalability needed to meet current and future demands. When deployed with integrated BlueCat DNS servers, NetScaler solutions deliver high-speed load balancing for DNS in the same zero-footprint form-factor. BlueCat enables on-demand scalability by providing actionable intelligence and visibility into cloud network usage. You can establish a low and high watermark for IP address utilization and the BlueCat solution will automatically notify you and adapt when it is crossed. BlueCat allows you to quickly find the next available network, apply a template representative to its application and deploy it to a DHCP server in a matter of seconds. The solution provides the ability for one network to easily overflow onto another in order to avoid cloud service outages caused by a lack of IP addresses.

Private cloud architectures—flexible options

Whatever your business and scalability needs, Citrix and BlueCat provide a flexible and elegant solution for delivering secure access to applications and data in the cloud. Easy to deploy and simple to manage, the Citrix and BlueCat solution supports dedicated DNS services, shared DNS services or DNS as a service.

Dedicated DNS with optional GSLB per private cloud tenant

Within your private cloud, various departments, business units and subsidiaries may have very different IT needs, business models, SLAs and regulatory requirements. Citrix and BlueCat provide the flexibility for tenants within your cloud to run autonomously as distinct entities by providing a dedicated DNS service with server load balancing per tenant. Multi-tenant management provides secure, delegated access and control of everyday DNS, DHCP and IP Address Management (DDI) provisioning functions to minimize tenants' reliance on central IT or helpdesk. This scenario is also beneficial for mergers and acquisitions in which you may wish to avoid business disruption by allowing the merged or acquired company to run as a separate entity for a period of time, while still leveraging the benefits of your centrally managed private cloud.
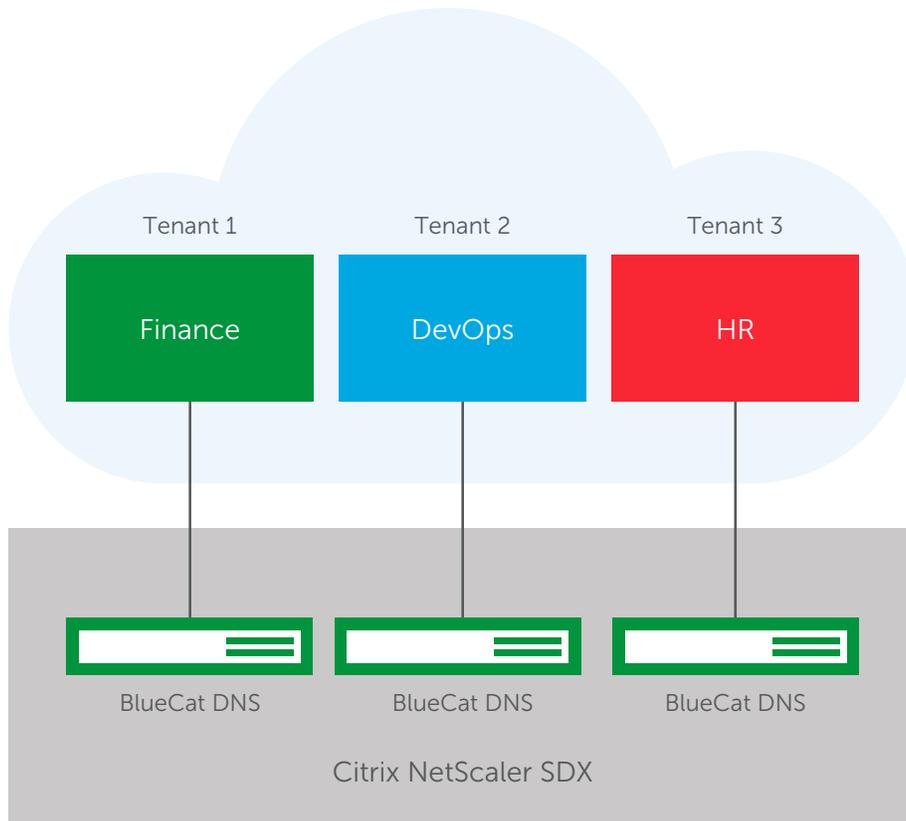

Figure 2. Dedicated DNS per private cloud tenant

Shared DNS for all private cloud tenants

Shared DNS services for all tenants in your private cloud bring simple access to central services, cost-effectiveness and economy of scale to your cloud network. Multi-tenant management and delegated access to DDI functions via a self-service portal allow the tenants in your cloud to directly control of everyday DDI provisioning functions without having to involve central IT or the helpdesk. The combination of shared DNS services and multi-tenant management provides the best of both worlds: a secure, centralized DDI repository with delegated access that empowers tenants to self-administer DNS in order to satisfy their unique requirements, whether geographical, language/localization, time zones, SLA or regulatory.
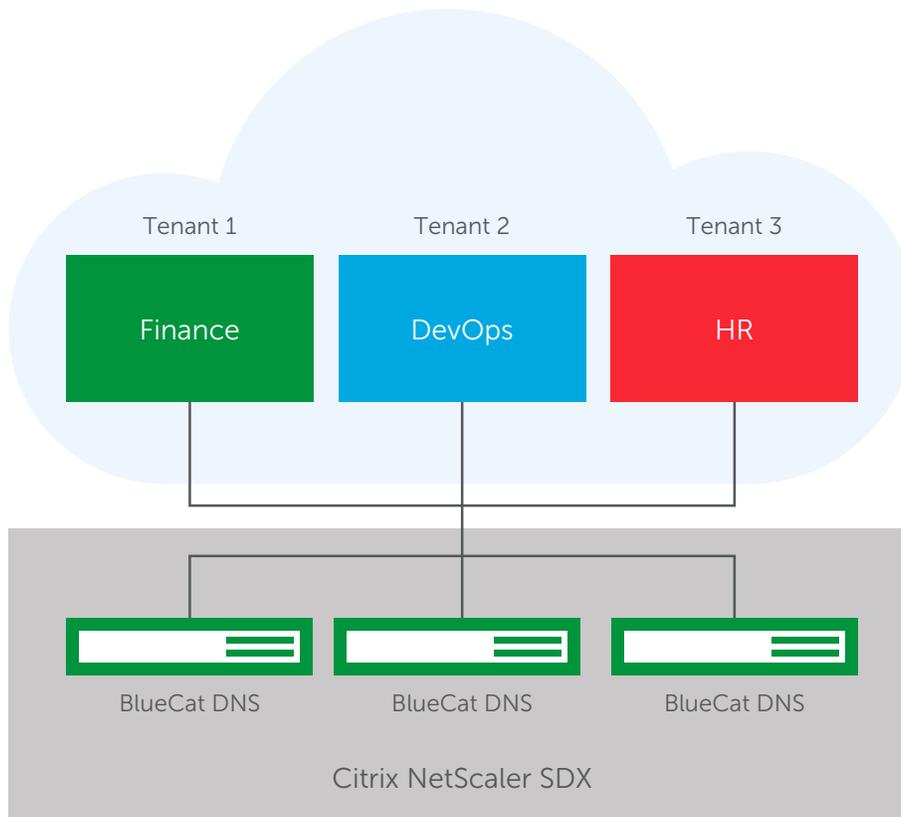
Figure 3. Shared DNS for all private cloud tenants

DNS as a Service

Your organization may opt for DNS to be supplied as a shared service across the infrastructure of your cloud and managed by central IT. The option of simply subscribing to a monthly service that includes DNS eliminates the need for tenants to worry about managing DNS and frees up resources to focus on strategic initiatives. Citrix and BlueCat support this DNS as a Service model by providing a simple self-service Web portal through which tenants can request new applications or environments and ensure all core service changes, including DNS, are queued, validated and complete.
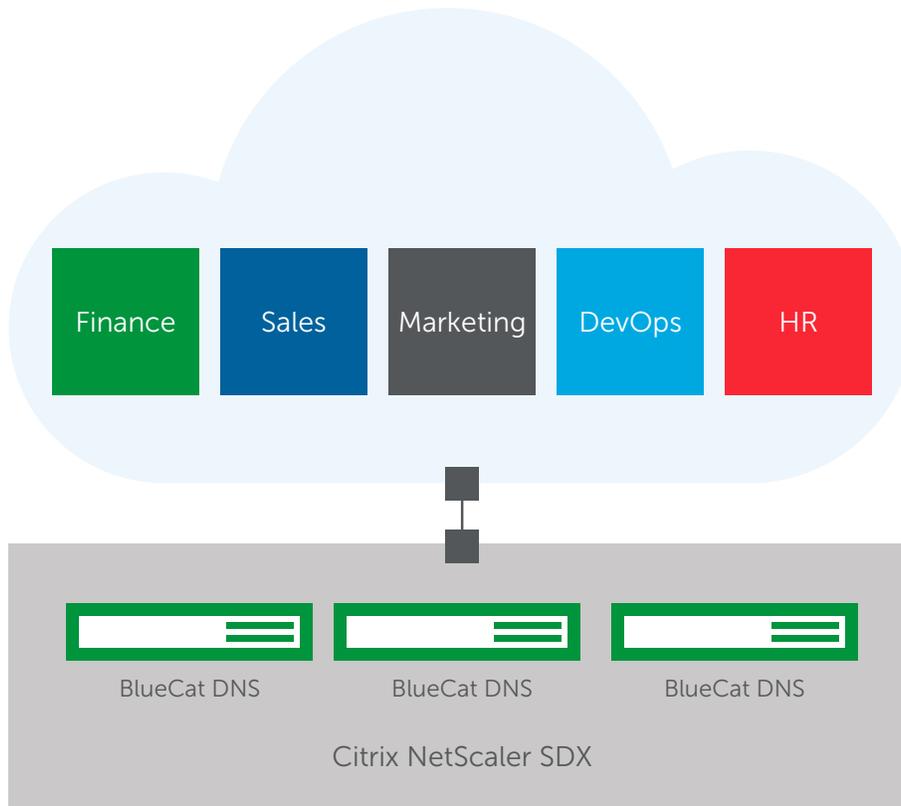

Figure 4. DNS as a Service for all private cloud tenants

IPAM automation and self-service for cloud

Private clouds are heavily dependent on the availability of IP addresses and core network services. From the initial PXE booting to the assignment of a VM personality through to application access, DNS and DHCP services remain critical for any virtual application hosted in a cloud. To improve the user experience and scalability of your private cloud, Citrix and BlueCat extend network configuration and automated provisioning capabilities directly to users via self-service. DNS and DHCP servers can be rapidly instantiated directly from the Netscaler SDX management console, allowing core network services to adjust to peaks in demand. IPAM automation can be further extended via a simple and secure self-service Web portal that empowers uses to rapidly self-provision a new cloud service, allowing your business needs to drive the automation of your private cloud. The self-service portal can be fully customized and easily branded to your organization's look and feel. You can also provide region-specific workflows and language in line with local regulations and regional business needs. This increases agility by eliminating the need for users to submit change requests to central IT or the helpdesk for routine network changes.

Securing the cloud with network intelligence

As a central control point, the BlueCat IPAM platform provides an authoritative source for information about the cloud network. This rich source of network intelligence is essential for policy enforcement and to monitor which cloud applications are being accessed and by whom. BlueCat allows you capture the network intelligence you need to answer the "who, what, where and when" questions and quickly make informed management and security decisions. This intelligence extends across wired and wireless networks, virtual environments and mobile end points, and encompasses DHCP scopes, IP address utilization, application access, DNS host records, zones, subzones and devices, to provide a comprehensive span of control.

Deep application visibility

Citrix NetScaler provides further visibility into the application traffic flowing across the network. NetScaler Insight Center provides a 360-degree view for virtual desktop traffic and web applications. Based on the popular industry standard AppFlow, Insight Center leverages existing NetScaler appliances already in place in the application fabric. Strategically situated at key focal points in the application path, NetScaler appliances are uniquely positioned to capture the native intelligence from the network and application traffic passing through them. IT administrators can thus monitor all web applications being served by NetScaler.

Key features include:

- Integrated, real-time monitoring of application and client traffic for troubleshooting

- Historical reporting for capacity planning

- User and server response time reports, so IT administrators can monitor and improve application performance and availability SLAs

NetScaler solution overview

Citrix NetScaler service and application delivery, solutions are deployed in thousands of networks around the globe to optimize, secure and control the delivery of all enterprise and cloud services. NetScaler helps organizations:

- **Build** enterprise cloud networks that ensure the best performance and availability for all applications

- **Scale** performance and capacity with revolutionary Citrix TriScale technology

- **Empower** control and confidence with full application security and visibility

- **Achieve** infinite flexibility with built-in cloud connectivity

- **Grow** with the industry's most versatile and extensible platform

Citrix NetScaler SDX

Citrix NetScaler SDX is a true service delivery networking platform for enterprise and cloud datacenters. NetScaler SDX provides a platform to run multiple independent instances of key services to meet the distinct needs of individual business units, critical applications and service provider clients. Enterprise and service provider clients gain dedicated control over their delivery infrastructure, including services such as load balancing, security and application acceleration. Complete isolation of per-client traffic helps satisfy security and compliance mandates and eases operational administration through version control and lifecycle management.

BlueCat solutions overview

BlueCat DNS, DHCP and IP Address Management (IPAM) software solutions on the NetScaler SDX platform provide organizations with a smarter way to manage "everything IP." BlueCat Citrix Ready for NetScaler solutions include:

BlueCat DNS/DHCP Server—core network services

BlueCat DNS/DHCP Server delivers secure, scalable and load-balanced DNS, a critical network service that links users of cloud-based applications to the servers that host those applications, as well as DHCP to simplify the on-boarding of devices and virtual machines. Purpose-built to provide the highest levels of performance, scalability and availability, BlueCat DNS/DHCP Server is a powerful DNS and DHCP solution that is easy to deploy and fully managed by the BlueCat Address Manager IPAM solution. Citrix NetScaler can be used to load balance BlueCat DNS/DHCP Servers to ensure that your DNS infrastructure can hyperscale as your cloud capacity requirements evolve, providing the right balance of high performance and high availability.

BlueCat Address Manager—IP Address Management

BlueCat Address Manager is a powerful IP Address Management (IPAM) solution that lets organizations take control of their dynamic cloud networks. With integrated core network services, automation and cloud-ready multi-tenant management, BlueCat Address Manager enables you to manage every connected device on the cloud network. BlueCat Address Manager provides network intelligence and insight into the relationship between devices, users and IP addresses that can be put into action to improve security and ensure reliable, always-on access to cloud-based applications.

BlueCat Automation Manager—automation and self-service

BlueCat Automation Manager allows you to instantaneously complete critical network requests such as provisioning new virtual machine or cloud service by automating end-to-end IPAM processes and workflow. With BlueCat Automation Manager, you can empower non-technical users to request IT changes via a simple self-service portal and dramatically reduce turnaround times for completing those requests. In addition to eliminating repetitive tasks that can bog down IT staff, automation and self-service makes your cloud network more reliable by connecting your existing IT tools to the centralized DNS, DHCP and IPAM data needed to validate network changes. This dramatically reduces the risk of manual network configuration errors that can disrupt cloud services.

With BlueCat solutions on NetScaler SDX, critical network configuration tasks required by private cloud initiatives can be fully automated. Combined with Citrix NetScaler, BlueCat DNS, DHCP and IPAM capabilities offer an adaptive, cost-effective solution for building and managing private cloud networks and enabling scalable and secure access to cloud applications.

Summing up

Cloud is all about immediacy. Business users expect to be able to rapidly self-provision a new cloud service or virtual machine. BlueCat's fully automated DNS, DHCP and IPAM solutions running on Citrix Netscaler SDX allow you to automate network provisioning and achieve the speed and agility users expect from the private cloud with zero-footprint DNS. The combined solution delivers multi-tenant management, rapid deployment and the ability to continuously scale your DNS infrastructure to match elastic cloud demands without any reconfiguration. By providing an all-in-one solution for securely connecting and activating cloud services from within the Citrix Netscaler SDX platform, BlueCat and Citrix make it faster and easier for organizations to move to a self-service private cloud.

About BlueCat
BlueCat IP Address Management (IPAM) solutions provide a smarter way to connect mobile devices, applications, virtual environments and clouds. With unified mobile security, address management, automation and self-service, BlueCat delivers reliable, secure, always-on application access and business connectivity. Organizations trust BlueCat to enable risk-free BYOD, virtual agility and cloud automation. To learn more, visit: http://www.bluecatnetworks.com

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About Citrix
Citrix (NASDAQ:CTXS) is the cloud company that enables mobile workstyles—empowering people to work and collaborate from anywhere, easily and securely. With market-leading solutions for mobility, desktop virtualization, cloud networking, cloud platforms, collaboration and data sharing, Citrix helps organizations achieve the speed and agility necessary to succeed in a mobile and dynamic world. Citrix products are in use at more than 260,000 organizations and by over 100 million users globally. Annual revenue in 2012 was $2.59 billion. Learn more at www.citrix.com.