Citrix networking from the customer perspective

Ensure maximum performance, security, availability and visibility for your virtual applications and desktops
Businesses today are challenged with optimizing and securing the delivery of virtual applications and desktops for all types of end users anywhere: whether mobile, at the headquarters office or in a remote branch office. Employees need to be able to access their work from any device in any location to ensure high productivity. To ensure a seamless experience, IT must easily be able to deliver secure, virtual applications and desktops to all users over any network from anywhere. Visibility into virtualized application and desktop traffic is essential to quickly identify and resolve problems on the network. There are many vendors offering products that address one or some of these needs, but this approach can cause complexity and increase costs while sacrificing visibility.

Citrix networking solutions, comprised of NetScaler and NetScaler SD-WAN, help all types of businesses optimize and secure their XenApp and XenDesktop environments. These solutions enable IT to deliver the most optimized, reliable and seamless end-user experience for accessing virtual applications and desktops. In addition, get end-to-end visibility of virtual application and desktop traffic for remote and branch end users with the HDX Insight technology.

Thousands of organizations around the world such as Ryanair, Westpac Group, Cornerstone Home Lending, Cerner, Dallara and Royal Caribbean have found success with Citrix networking solutions especially when pairing them with Citrix virtualization solutions. This is due to the interoperability of the technologies giving customers the powerful tools needed to seamlessly deliver virtual applications and desktops.

NetScaler, the most advanced application delivery controller, ensures high-performance, scalability and security of your virtual applications and desktops. NetScaler is available in different appliance options to match the broadest range of business, performance and deployment requirements for your network, including virtual network architectures. NetScaler with Unified Gateway provides a single access point for all enterprise, web, mobile, cloud, SaaS and Citrix apps. Consolidate remote access solutions from multiple vendors into a single solution to reduce operating costs and simplify management.

NetScaler SD-WAN provides WAN optimization to accelerate application delivery across public and private cloud networks and offers WAN virtualization to lower connectivity costs while maintaining reliability. Deployed together, WAN virtualization and WAN optimization make congestion, latency, and jitter problems for branch users a thing of the past.

Read what our customers are saying about Citrix networking solutions.
LeasePlan looks to embrace the cloud for a more mobile future

“We now have an IT team of six supporting thousands of employees all over Europe. We’ve seen significant efficiencies through transitioning to this model and the deployment and management of applications is far easier. Our users see a benefit because they get the applications they want faster and more quickly.”

Ronan Murray
Infrastructure Manager
LeasePlan Information Services

LeasePlan is the world’s largest automotive fleet management company with 1.5 million vehicles on lease, over 7,100 employees worldwide and operates in over 32 countries. LeasePlan Information Services is a subsidiary of LeasePlan and has 150 employees, the majority of which are based in Dublin, Ireland. It operates as an internal shared service provider to all LeasePlan Group companies globally – offering project management, consulting services and technology.

The challenge: Creating a centralized IT infrastructure to harness data and increase productivity

As LeasePlan grew and increased its footprint of offices globally, it became apparent that it needed to consolidate its IT infrastructure into one central location to reduce costs and complexity, increase efficiency and ultimately offer a more flexible and streamlined IT service. Ronan Murray, Infrastructure Manager at LeasePlan Information Services explains: “With a growing network of offices across Europe, each operating its own IT services, it became apparent that there was significant productivity, mobility, efficiency and cost advantages to creating a private cloud that would effectively centralize all IT systems, delivering a virtual desktop service out to users in each LeasePlan office.”

The solution: A cloud service to enable mobility across the business

Following a proof of concept, LeasePlan began working with Zinopy, a Platinum Citrix Solutions Advisor, to design and deploy a private cloud service, based on XenApp, NetScaler, NetScaler Gateway and Citrix Receiver. The intent was to create a centralized, virtual desktop that could be delivered to a variety of workers in LeasePlan offices across Europe, accessible via any device. For the first stage of the project, LeasePlan consolidated all back-end servers, based locally in LeasePlan offices around the world, into centralized datacenters in Dublin.

Key benefits
Secure enterprise mobility – ensuring effective business continuity

The combination of XenApp, NetScaler and Citrix Receiver has created a true enterprise mobility solution for LeasePlan, offering some significant advantages. Employees have the opportunity to work from anywhere on any device, ultimately increasing productivity. The solution has also helped LeasePlan mitigate potential disruptions to service delivery, as Murray explains: “our data is now centralized, and users can access that data with a number of devices, but ultimately from an auditing and security perspective the data never leaves our datacenters. This reduces the complexity of data and compliance auditing across the business. Most importantly, if for any reason we do encounter a disaster recovery scenario, employees can continue to work seamlessly wherever they may be.”
Quick, cost-effective deployment
“Migrating our users away from physical desktops to a centralized, virtualized service has proven to be a seamless process — for example, as we opened new offices in Turkey and Russia it was simply a case of deploying the service rather than needing to build a new infrastructure from scratch,” explains Murray. Deploying a hosted-shared desktop based on Citrix technology has proven to be a simple and effective way of delivering a consistent service to variety of LeasePlan locations across Europe, while ensuring a seamless user experience.

Centralized data and applications
Ronan Murray and his team have a multitude of different customers across the business — requiring over 2,000 different types of applications to do their job effectively — such as financial applications, Salesforce and so on. Citrix technology has allowed LeasePlan to standardize and streamline the applications it offers to employees, while ensuring that each job role still has the right tools to be productive.

Significant cost savings
Of the 19 LeasePlan sites currently using the Citrix cloud service, the LeasePlan team has identified approximate annual savings of €40,000 per group office making use of the virtual desktop.

Citrix solutions facilitate seamless care for young patients at Southern California hospital

“If the environment is unavailable, people can't access the EMR system. When that happens, patient care suffers. That is why we built two standalone server farms with redundant NetScaler controllers and global load balancing.”

Greg Bush
Director of Technology
Children's Hospital of Los Angeles (CHLA)

Consistently ranked one of the top pediatric facilities in the United States, Children's Hospital of Los Angeles (CHLA) provides care to more than 100,000 children each year through its 300-plus-bed hospital and its 14 outpatient centers in the greater Los Angeles area. The more than 100-year-old institution is also one of the country's top teaching facilities, serving as training ground for aspiring pediatricians from University of Southern California's Keck School of Medicine.

The Challenge: Ensuring high performance and stability through an updated IT infrastructure

In 2011, CHLA implemented a Citrix-based desktop and application virtualization environment with single sign-on providing clinicians with quick, easy access to their desktops and applications on any device without having to wait for lengthy boot, login, and logoff processes. However, the time savings provided by this virtualized environment began to erode as the load increased on the system with the addition of 41 ambulatory clinics, resulting in nearly 400 additional remote users over the course of two years. Without adequate capacity to support the additional workers or a fully redundant architecture to support failover and maintenance processes, the environment slowed to a crawl and maintenance became a nightmare.
The Solution: Delivering applications and desktops on demand in a fully redundant environment

Choosing to build out a new platform based on a recommendation from IT consultancy, T2 Technology Group, they were able to implement fixes to stabilize the current environment. To solve CHLA’s long-term challenges, T2 worked closely with Citrix Professional Services to design a more robust, fully redundant architecture with upgrades to the hospital’s IT infrastructure and the implementation of XenDesktop and XenApp.

After extensive testing of multiple solutions, CHLA selected Cisco UCS blade chassis, high-speed Pure Store flash arrays and a high-availability pair of NetScaler app delivery controller (ADC) load balancers to support the new environment. The focus of the new design was redundancy, performance and scalability.

In addition to improving performance through improved design and high-speed infrastructure, T2 worked with CHLA to improve performance by delivering applications through XenApp rather than embedding them in the desktop image. This allows CHLA to make better use of its infrastructure and improve response times by 60 percent. CHLA relies on Citrix to deliver everything from medical billing applications to email and other key hospital services. “The goal,” says Bush, “was to virtualize as many applications as possible and move them over to XenApp to leverage its inherent performance benefits.”

Key benefits

Providing a fully redundant environment

Today, Bush and his team rest a great deal easier knowing that the problems associated with maintaining the old environment—and the outages brought on by those problems—are a thing of the past, thanks to redundant, high-speed infrastructure and improved load balancing.

“Due to limitations in the design, capacity and capabilities of our previous environment, maintenance and outages were a painful process,” says Bush. “With a fully redundant architecture, the addition of NetScaler load balancing and enough capacity to support up to 2,000 users in both server farms, we know that at least one farm will always be up and running with plenty of capacity to handle our current and future load.”

Improving patient care with faster access to applications and desktops

For CHLA, the new capabilities offered by Citrix products, combined with the benefits of T2’s architectural improvements and new high-speed infrastructure, have translated to huge improvements in login and roaming times. “When you can reduce wait times by a minute and a half at the beginning of the day and by 30 seconds every time a clinician moves to a new workstation, you are facilitating huge time savings.”

Resolving issues faster with better insight

CHLA is also discovering that NetScaler App Delivery Controller provides benefits beyond redundancy. By deploying the Insight Center feature within NetScaler, the hospital has been able to analyze latency issues to gain an in-depth picture of performance. The results have been illuminating. “Our users used to say VDI is slow,” says Bush. “But slow is such a subjective term. Without the right data, it was difficult to pinpoint and diagnose the issue, and we used to run into a lot of finger pointing. NetScaler Insight Center eliminates that, allowing us to identify and resolve issues much more quickly.”
Cruise line quickly consolidates global infrastructure with Citrix

“With Citrix, we can make more information readily available to our call centers. That streamlines the whole process, helping each agent get the latest data so they can answer more questions with greater accuracy and efficiency. The end result is a happier customer.”

Jack McElwayne
Middleware Enterprise Application Integration Manager
Royal Caribbean Cruises Ltd

Based in Miami, Royal Caribbean Cruises Ltd. is the second-largest cruise line operator in the world. The company owns six brands—including Royal Caribbean International, Celebrity Cruises and Azamara Cruises—with a combined total of 42 ships globally.

The challenge: Fixing an outdated infrastructure

At Royal Caribbean, call centers generate more revenue than any other department. Since the late 1990s, Royal Caribbean has depended on Citrix technology to deliver business-critical applications to workers in call centers around the globe. In recent years, however, the company began encountering connectivity issues when adding new call centers because of outdated infrastructure. “It became clear that we needed a whole new approach,” says Jeanine Graham-Bellamy, director of technology at Royal Caribbean Cruises Ltd. “Every call center had its own datacenter, and that was the wrong way to go. We needed to consolidate our infrastructure so that our Citrix environment could perform up to its potential.”

The solution: Consolidating datacenters to enable simple, centralized management of global resources

The Royal Caribbean IT team partnered with integrator Synergy Development Consulting and Citrix to conduct an assessment. “There was a 350-page assessment doc that really justified us creating a centralized model,” says Jack McElwayne, middleware enterprise application integration (EAI) manager at Royal Caribbean Cruises Ltd.

Synergy and Citrix consultants created a more consolidated infrastructure for simpler management and higher performance on a global scale.

• Today, XenDesktop transforms Microsoft Windows desktops and applications into an on-demand service available to hundreds of concurrent users.
• XenApp enables 175 applications to be virtualized, centralized and managed from the cruise operator’s newly consolidated datacenters.
• NetScaler SD-WAN technology delivers wide-area-network (WAN) optimization and seamless cloud connectivity across the enterprise, and NetScaler App Delivery Controller provides global load balancing for improved availability and heightened security.

“We’ve placed NetScaler SD-WAN in each call center, and the rest of the work is done from our datacenters here in Florida. Centralizing the datacenters has enabled us to expand to new call centers without making a significant footprint in those geographic areas. It’s also enabled us to add the same look and feel throughout the globe.”

“With the centralization, we can get an international site up and running in a fraction of the time, and at a fraction of the cost. That’s a huge win for us.”

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Key benefits
Launching new call centers at a significantly lower cost
The new Citrix environment enables Royal Caribbean to expand its global footprint at a far lower cost—a massive savings in both capital and operational expenditures. Rather than budgeting for on-site datacenters at every call center, the company can redirect those funds to further optimize its centrally managed infrastructure.

Accelerating performance and improving reliability
With a more consolidated infrastructure, Royal Caribbean can provide faster performance and higher availability to its workforce around the world, while minimizing the administrative burden for members of the IT team. “We’ve seen a 30 percent reduction in what we’re sending over the pipes because we’re using Citrix technology to cache more of our data,” says McElwayne. “With that kind of compression and acceleration, it’s no surprise that we’re seeing much more reliable performance across the system.”

Enhancing the customer service experience
Citrix technology enables call center employees to achieve greater productivity, which translates into superior customer service. “With Citrix, we can make more information readily available to our call centers,” says Scott Hartman, reservation supervisor at Royal Caribbean.

Global restaurateur boosts application performance with NetScaler SD-WAN

“With the NetScaler SD-WAN solution, we can put one size device in a location and satisfy all our needs as the business at that location grows,” Garcia says. “And with the Citrix cost model, all of our locations can now enjoy the benefits of WAN optimization and application performance acceleration.”

Paul Garcia
Senior Director of IT Infrastructure
HMSHost Corporation

Headquartered in Bethesda, Maryland, HMSHost Corporation is a leading provider of innovative dining locations in more than 100 airports worldwide and along 99 motorways across North America. HMSHost helped introduce leading restaurant brands such as Beaudevin Wine Bar and Wicker Park Seafood & Sushi into airport and travel plaza environments. Its portfolio now includes more than 300 international, regional, local and proprietary brands.

The Challenge: Optimizing application delivery at more than 200 business locations

All backend processing for the business applications used in HMSHost restaurants is performed in one of the firm’s three datacenters. Front-end application performance is a critical factor in delivering a pleasing and responsive customer experience. To accelerate performance, the company had partially deployed a WAN optimization solution, but high costs and limited scalability had stalled the rollout and restricted service to only about 40 of HMSHost’s larger locations.
The Solution: Scalable WAN optimization designed for performance—and growth

In search of a more scalable solution that could serve and benefit all of its locations, HMSHost worked with Citrix to design and test a NetScaler SD-WAN deployment. The product immediately impressed HMSHost’s IT group with its ease of use and ability to coexist in a production environment without disturbing the legacy optimization solution. More importantly, it reduced data transmission rates for HMSHost’s critical point-of-sale (POS) application by more than 90 percent, and its pay-as-you-grow licensing model made it possible to provision all of HMSHost’s business locations.

Based on these results, HMSHost ordered NetScaler SD-WAN WAN optimization appliances for more than 220 business locations and datacenters. The new appliances were deployed by a team of five in a tightly choreographed 90-day process that covered 14 countries. The team installed new NetScaler SD-WAN devices while also performing local-area-network (LAN) upgrades, new WAN links, service provider changes and new firewall deployment. CDW Corporation preconfigured and drop-shipped all appliances to HMSHost locations in advance of the deployment team visits.

Key benefits

90 percent data reduction with the NetScaler SD-WAN platform

The NetScaler SD-WAN appliances dramatically reduce the volume of data moving across HMSHost’s WAN, and that directly benefits application performance. “If you think about hundreds of millions of transactions over the course of a year, those time savings aren’t just about greater efficiency for us; they’re about giving our customers the best possible service, as quickly as possible,” says Garcia.

Extending optimization benefits to the entire organization

With its legacy solution, HMSHost had to buy and deploy a larger WAN appliance every time it wanted to optimize a larger number of sessions. With NetScaler SD-WAN, the same capacity increase requires only a simple, affordable license upgrade. The difference in scalability and licensing has made it possible to extend application acceleration to more than 180 additional locations.

Enabling video broadcast with zero packet loss

The NetScaler SD-WAN deployment hasn’t just improved the performance of HMSHost’s existing applications; it has also enabled entirely new ones. “Another benefit we’ve realized with NetScaler SD-WAN is the ability to do a video broadcast,” Garcia explains. “As soon as the broadcast started, the NetScaler SD-WAN devices started doing what they do with block caching, with flow control, with the optimizations—the video stream just flowed. We had no packet loss, and it was a positive experience for everyone who participated.”

Conclusion and next steps

Thousands of customers around the world are using Citrix virtualization and networking solutions together. Citrix networking solutions including NetScaler, the most advanced application delivery controller, and NetScaler SD-WAN, for WAN optimization and virtualization help customers address challenges such as virtual application and desktop availability and performance, end-to-end virtual application and desktop visibility and network reliability for users in any location including mobile users and branch users.

Please visit www.citrix.com/customers to see all of the Citrix networking solutions case studies by product.

Please visit NetScaler for a free trial.

Please visit NetScaler SD-WAN for a free trial.
About Citrix

Citrix (NASDAQ:CTXS) is leading the transition to software-defining the workplace, uniting virtualization, mobility management, networking and SaaS solutions to enable new ways for businesses and people to work better. Citrix solutions power business mobility through secure, mobile workspaces that provide people with instant access to apps, desktops, data and communications on any device, over any network and cloud. With annual revenue in 2014 of $3.14 billion, Citrix solutions are in use at more than 330,000 organizations and by over 100 million users globally. Learn more at www.citrix.com.

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