

# Hybrid cloud provisioning with Citrix XenDesktop and XenApp

The emergence of cloud computing has changed every aspect of enterprise IT service delivery. IT organizations around the world have already started to embark on the journey to take their services ‘to the cloud’, allowing IT to leverage virtualized datacenter resources gaining automated, flexible, self-service clouds that ensure the best security, performance and reliability whether they are running in the enterprise datacenter, an external cloud or a hybrid of both.

The virtualization movement and subsequent cloud-era have dramatically changed the way IT protects and delivers applications, desktops, and data to an ever-increasing mobile workforce. Increased adoption of virtualization technologies and cloud-based solution architectures bring about a myriad of benefits, but also introduce additional layers of complexity for each new variation in the provisioning and delivery process. Advancements in virtualization have added more layers as both physical servers, virtual servers and associated storage now need to be configured, managed and monitored independently across private, public or hybrid clouds. To reap the larger benefits, the once simple service delivery workflow has been expanded to account for the additional layers, including physical or virtual, and locations, including private, public or hybrid cloud, that are now integrated within solution architecture.

Citrix is changing the role of IT as enterprises transition into the cloud-era through solutions and products that transform any Windows application or desktop into a cloud service delivered across any network, to any device. Citrix XenDesktop 7.5 and XenApp 7.5 provide cloud-ready application and desktop service delivery from any type of private, public and hybrid cloud enabling enterprises to couple cloud computing with application and desktop virtualization to realize the combined resource optimization, infrastructure agility and economic benefits from a single platform.

Citrix XenDesktop and XenApp are the only cloud-ready software platforms to deliver mobile, secure access to a complete collection of app and desktop virtualization solutions. This paper explores hybrid cloud provisioning using XenDesktop and XenApp to simplify cloud orchestration and cloud management for enterprise and service providers worldwide.

### **What is hybrid cloud provisioning?**

Today many enterprises are increasingly turning to hybrid clouds, allowing them to combine the benefits of building private and public clouds as well as leveraging existing IT infrastructure to cut costs, maximize value and modernize the way IT services are delivered. Hybrid clouds are formed when private and public clouds are closely integrated, delivering IT services with the security, control and agility users demand.

Citrix XenDesktop and XenApp have been redesigned as cloud ready solutions for delivering both applications and desktops on any type of cloud infrastructure by integrating with any virtual infrastructure technology, storage infrastructure and complex network topologies to deliver a single, unified platform. XenDesktop and XenApp now enable enterprise IT to build a common service delivery architecture for all Windows apps and desktops leveraging common policies and tools that simplify deployment and management.

By delivering Windows apps and desktops as a cloud-like service, XenDesktop and XenApp can handle multiple versions and instances of both Windows Server and desktop operating systems from a single platform. XenDesktop and XenApp are built to leverage any virtual infrastructure or cloud management platform. Whether using the included XenServer, leveraging the performance and rising popularity of Microsoft Hyper-V, or building on an existing VMware vSphere infrastructure, XenDesktop is built to be hypervisor, storage and network agnostic. Citrix XenDesktop and XenApp are the first solutions to be fully integrated for cloud solutions. Virtual apps and desktops can be deployed on popular cloud platforms including Apache CloudStack based Citrix CloudPlatform or Amazon Web Services (AWS) making it easier than ever to dynamically expand the infrastructure footprint.

### **Benefits of hybrid cloud provisioning**

Through cloud integration XenDesktop and XenApp simplify the hardware and storage sizing and planning process by allowing IT admins to deliver both applications and desktops from a single instance to:

- Simplify smaller deployments or span deployments across a variety of private, public, and hybrid clouds
- Quickly expand the infrastructure footprint and put less restrictions on upfront planning and sizing
- Easily scale down oversized environments/scale up undersized environments to reduce costs
- Enable admins to have the infrastructure they need to deliver a high performance user experience

### **FlexCast Management Architecture (FMA) models**

Employees across the enterprise have varying performance, personalization and mobility requirements. Some require offline mobility, others need simplicity and standardization, power users need a high-performance, fully personalized desktop and almost every employee needs simple, secure access to a Windows app from their tablet, smartphone or laptop. Together XenDesktop and XenApp meet all these requirements with FlexCast Management Architecture designed for increased scalability and flexibility. With XenDesktop and XenApp, IT can deliver every type of virtual desktop or app, hosted or local, optimized to meet the performance, security and mobility requirements of each individual user while optimizing ongoing management and deployment costs.

## XenApp

- Secure, mobile access to Windows apps. XenApp takes enterprise Windows apps mobile by centralizing mission-critical business apps in the datacenter and delivering secure remote access on any device, anywhere. Taking Windows app mobile has never been easier, XenApp can dynamically recognize a mobile device and automatically transform the application display for native mobile device features including touch-friendly menus, finger swipe scrolling and pop-up controls. Even highly complex 3D graphical apps from the manufacturing, design, engineering, and construction industries can be accessed on tablets and smartphones with HDX 3D Pro technology. XenApp with HDX 3D Pro technology is the first software virtualization solution to support hardware-based GPU sharing of OpenGL based 3D professional graphics apps for smooth graphics performance and breakthrough deep compression technologies that maximize performance over low-bandwidth, high-latency networks.
- XenApp published desktops (shared, server-based desktop). Based on Remote Desktop Shared Hosted (RDSH) technology, XenApp enables multiple user sessions to connect to a single server with access to an isolated instance of a Windows server desktop for the most cost efficient, high performance virtual desktop solution designed to meet the needs of the mainstream workforce.

## XenDesktop

- Pooled VDI. Through XenDesktop central image management technology, admins can develop and manage a single desktop OS instance and seamlessly, on-demand provision that one instance out to thousands of users dramatically simplifying desktop patching and management while allowing employees to access their virtual desktop from a variety of devices and locations.
- Personalized VDI. Unlike a Pooled VDI deployment where user changes and customizations are prohibited or discarded between sessions, Personal vDisk technology enables user personalization and customizations to persist between desktop sessions. It provides users with the customized and personalized desktop experience they demand combined with the storage efficiency, centralization and management benefits of Pooled VDI.
- Offline VDI (XenClient). Desktop virtualization to-go with XenClient. While the goal of leveraging virtualization is to centrally manage and host desktops and apps in the datacenter. There are cases where employees must be able to view and modify documents or data when disconnected from the network and offline. In these cases, XenClient permits administrators to stream and synchronize an entire managed desktop OS down to a local computer so that it can be taken offline as a complete encrypted file system with powerful policy enforcement.
- Mobile access to physical desktops with Remote PC Access. Citrix delivers the most flexible desktop virtualization solution in the marketplace by supporting remote access to the physical PCs in the workplace, as well as virtual desktops in the datacenter using the same broker, gateway appliance and universal, client components.

## Private cloud versus public cloud

The integrated platform for provisioning hybrid clouds using XenDesktop and XenApp enables IT admins to deliver a complete range of apps and desktops, whether in the private cloud or in the public cloud, while consolidating management, monitoring and maintenance tasks.

- The private cloud is the collection of on-premise infrastructure, desktops, applications and data delivered on demand by enterprise IT. Private clouds can also be hosted off-premise. In this case, a service provider offers a portion of its public infrastructure for exclusive use by a single customer, also known as a tenant.
- The public cloud is the collection of off-premise, multi-tenant infrastructure, storage and computing resources, as well as SaaS applications and data, which are delivered on demand by external cloud service providers. Public clouds allow multiple customers, or tenants, to share the underlying resources with each paying only for the resources it consumes.

Users demand a seamless, reliable, high performance experience from the desktop to the data center to the cloud. Citrix meets these demands by powering mobile workstyles through solutions that address people, data and apps while powering cloud services through solutions for unifying, bridging and building cloud environments.

## Key use cases

Enterprise IT organizations that follow a hybrid cloud strategy get the best of both worlds by selecting which applications and which usage scenarios fit best in their private cloud and which fit best in a public cloud enabling them to flex, grow and transform to meet the demands of the modern workplace.

On-premise private clouds rely on capital investments in data centers and infrastructure. Once these investments have been made, the incremental costs of running an application in a private cloud is often substantially less than running an equivalent workload on a public cloud. From an ROI perspective, this makes it important to achieve and maintain a high level of resource utilization in private clouds before moving applications to a public cloud.

Private clouds are also commonly used when direct control is needed. While private clouds don't necessarily have greater reliability or security than public clouds, governance requirements sometimes mandate that sensitive data, as well as applications that access that data, remain on-premise. Some applications may also have dependencies on shared IT services or shared data that must remain on-premise.

Public clouds are well suited for a number of other scenarios, particularly when the private cloud is operating at capacity. The underlying concept is based on owning just enough infrastructure so that it can be kept busy consistently. Then, rather than owning more infrastructure that would often sit idle, additional demands can be met through a public cloud. In this scenario, applications that only run periodically are great candidates to run in a public cloud. Test, demo and training environments aren't used continuously, so they also fit well within public clouds.

Public clouds provide seemingly unlimited scale, making them appropriate for situations with unpredictable demand. For example, product launches and promotional events can generate surprisingly high website traffic. These can be some of the most important times for business success and IT must be ready to serve all prospective customers. Similarly, seasonal demands—from holiday shopping to tax season—may be best met by taking advantage of public cloud resources.

## Conclusion

XenDesktop 7.5 and XenApp 7.5 have been redesigned as cloud ready solutions for delivering any Windows application or desktop into a cloud service delivered across any network, to any device. By deploying this expanded app and desktop delivery platform today, you will be positioned to leverage any virtual infrastructure or cloud management platform giving you the ability to take advantage of the automation and orchestration capabilities of cloud computing.



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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](http://www.citrix.com).

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