Citrix XenDesktop: Desktop Virtualization For All
Today’s organizations encompass a diverse range of users, from road warriors using laptops and mobile devices, to power users working with demanding high-end applications, to task workers performing standard, relatively predictable processes. No one-size-fits-all approach to desktop virtualization can meet all the different requirements of these users. The challenge for IT is to deliver the right kind of desktop and applications in the right way for each user type, while addressing IT priorities such as cost, security and ease of management. In the past, this would have required the implementation of multiple solutions from multiple vendors—a prohibitively complex and unmanageable strategy. Today, while other solution vendors each continue to support only one or two types of virtual desktop and application, Citrix supports every desktop and application virtualization architecture and every type of user through a single, integrated solution: Citrix® XenDesktop™ with its unique Citrix FlexCast™ technology.

Understanding your options

Organizations usually need to use a combination of approaches to meet the requirements of users and IT. To create your own desktop virtualization strategy, start by evaluating the types of workers you have and defining your priorities for flexibility, agility, mobility, ease of management, cost, user experience and security. Your ideal strategy may incorporate several different desktop and application delivery models to meet the needs of all of the workers in your environment.

At a high level, your strategy will depend on one or more of these service types:

- **Server-based virtual desktops** are unmatched for their ease of endpoint device management. With this approach, you keep the operating system, applications and data within the datacenter, where you execute them primarily using server resources. Though this approach typically requires additional server infrastructure, it also enables you to use low-cost, low-maintenance, and easy-to-manage client devices, such as zero clients or even re-purposed PCs.

- **Client-side virtual desktops** enable full PC-like performance while reducing the need for additional server investments. IT creates, manages, and updates these in the datacenter, then either streams them for local execution or delivers them as client-side virtual machines (VMs) to the device. The desktop OS and applications execute on the local device, enabling the high performance that characterizes this type of virtual desktop.

- **On-demand applications** can reduce application management costs by up to 50 percent, improve application and data security, accelerate application delivery and can help you optimize delivery for any user, anywhere, on any device. This centralized single-instance management approach enables you to create a single application image in the datacenter, then deliver it in multiple ways to any number of devices, eliminating the need to install and maintain a separate instance of the application for each device.
The full spectrum of virtualization scenarios

To help you meet the computing requirements of every type of user in the organization, FlexCast enables a variety of desktop and application delivery approaches:

- Hosted shared desktops
- Hosted VDI desktops
- Streamed VHD desktops
- Local virtual machine (VM) desktops
- On-demand applications

In the following sections, we will take a closer look at these delivery scenarios and discuss which FlexCast variants are best suited for which types of user and application.

Hosted shared desktop

The least expensive option with the highest ROI of any server-based virtual desktop scenario, the hosted shared desktop model supports up to 500 users per server while providing a high-definition user experience. This FlexCast technology, just like traditional server-based computing, consists of multiple user sessions sharing a single, locked-down Windows Server environment running in the datacenter and accessing a core set of applications on-demand.

![Hosted shared desktop diagram]

Highly efficient and tightly controlled, but strictly limited in user flexibility, this option is appropriate for task workers who perform a set of well-defined tasks and do not require personalization for optimal productivity.

Benefits:

- Secure, centralized desktop, application and data management
- Wide selection of client hardware (PCs, thin clients, mobile clients, handhelds)
- Low total cost of ownership (TCO)
**Hosted VDI desktop**
This server-based virtual desktop model combines the benefits of centralized management and security with a personalized user experience. Multiple users who share the same device can each log into their own individual environment and get the look and feel of their own virtual desktop. The classic architecture for virtualized desktop infrastructure (VDI), this FlexCast technology moves the traditional desktop environment to the datacenter, where a virtual machine on a server runs it. Applications and data never leave the datacenter, helping you maintain high security while allowing users to access the same consistent desktops, applications, data and customizations through any device.

Hosted VDI desktops enable you to provide secure, easily controllable access for external contractors, third-party collaborators and other provisional team members in addition to internal users. This model can generally support up to 150 desktops per server.

Benefits:
- Secure, centralized desktop, application and data management
- Individual desktop environments available for each user
- Customizable or locked-down desktops depending on corporate requirements

**Streamed VHD desktop**
This FlexCast technology is an easy, low-cost entry point for desktop virtualization and an excellent choice for shared workstation environments. Because it leverages the local processing power of rich clients with minimal server resources, a single server can support thousands of users, minimizing datacenter overhead. You create, update and maintain desktops in the datacenter, then stream them to local PCs for execution. Centralized single-image management means that a single, standard desktop image can support many users, simplifying management and further reducing costs. Users access a fresh, up-to-date desktop each time they log on. If you wish, you can manage user personalization separately from this image and apply it on demand.
Streamed VHD desktops are best for computer labs and other shared workstation environments where management requirements around OS and application re-provisioning are a daunting task. This technology delivers a new desktop image every time a user logs in and is best suited for LAN workstations and PCs.

Benefits:

- Simplified management for frequently changing workstation configurations
- Centralized desktop, application and data management with local execution
- Dedicated compute resources

**Local VM desktop**

Local VM-based desktops extend the benefits of desktop virtualization to mobile users while increasing flexibility. With this client-side virtual desktop model, you can create, manage, and update desktops in the datacenter, then deliver them as a client-side VM to the endpoint device. This enables full offline use of a desktop while maintaining the advantages of centralized, single-image management. When the offline desktop reconnects to the network, it synchronizes any updates with the datacenter. At the same time, users can run multiple personal and business desktops on the same laptop with high performance, complete isolation between personal and business applications and strict security. IT can also create multiple predefined VMs and make them available for download to appropriate users.

Local VM desktops are best for mobile workers who cannot be guaranteed an internet connection, but still want the benefits of a centrally managed and backed-up desktop. Workers who need to run multiple desktops on a single device—either through the consolidation of multiple business desktops or because of the desire to run a business and personal machine on one device—will also get value from this technology.

Benefits:

- Operation of multiple virtual machines on the same endpoint hardware
- Local operation in a secure, centrally managed environment
- Support for disconnected use
On-demand applications

The on-demand application technology in FlexCast is both an ideal starting point for organizations new to desktop virtualization and a great addition to any desktop delivery solution as it can deliver any type of application to any user, regardless of the type of desktop they are using. You can centralize and manage Windows applications in the datacenter, hosting them either on multi-user terminal servers or virtual machines and instantly delivering them as a service to physical and virtual desktops in the way that best meets the user’s needs and IT’s administrative requirements. You can integrate Web and SaaS applications seamlessly into a single interface, so users only need to log on once to have secure access to all their applications.

This technology offers many of the ROI and management benefits of virtualization with minimal setup costs. Users can access applications and data optimized for each user device, network and location. They can get applications via high-speed protocol for online use, and support for offline use by streaming applications via Citrix application virtualization or Microsoft App-V directly to the endpoint. Users can self-provision new applications and apply individual preferences to maximize productivity. Efficient, centralized single-image management reduces TCO, since a single copy of each application can support thousands of users.

Benefits:

- Dynamic delivery of applications—hosted or streamed—to each user and device
- Secure, centralized data management with granular access control
- Self-service enterprise app store
With desktop virtualization, one size does not fit all

Different types of workers across the enterprise need different types of desktops. Some require simplicity and standardization, while others require high performance and personalization. With FlexCast, your IT group can deliver virtual desktops and applications tailored to meet the performance, security and flexibility requirements of each individual user. For example, a knowledge worker using a Windows 7 hosted VDI desktop may struggle to access an application previously compatible with Windows XP. In this case, she can access these incompatible applications as hosted applications, delivered on demand as a service. In this way, IT can ensure that each user can access the right desktops and applications to meet their needs without being limited by the constraints of a single delivery technology. At the same time, this approach enables IT to meet its own requirements for cost-effectiveness, manageability and security.

Summary

Different types of workers across the enterprise need different types of desktops. Some require simplicity and standardization, while others require high performance and personalization. XenDesktop can meet these requirements in a single solution with our unique FlexCast™ delivery technology. With FlexCast™, IT can deliver every type of virtual desktop—each specifically tailored to meet the performance, security and flexibility requirements of each individual user.

Compared to traditional distributed PCs with locally installed applications, desktop virtualization improves manageability, flexibility, security, compliance, and costs associated with providing and maintaining the desktop infrastructure. With its FlexCast technology, Citrix XenDesktop is the only solution that offers all of the desktop and application delivery technologies to meet the wide ranging needs of all IT managers, business leaders, financial controllers and users equally well. To learn more about the desktop virtualization using XenDesktop with FlexCast technology, please visit www.flexcast.citrix.com.
About Citrix
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