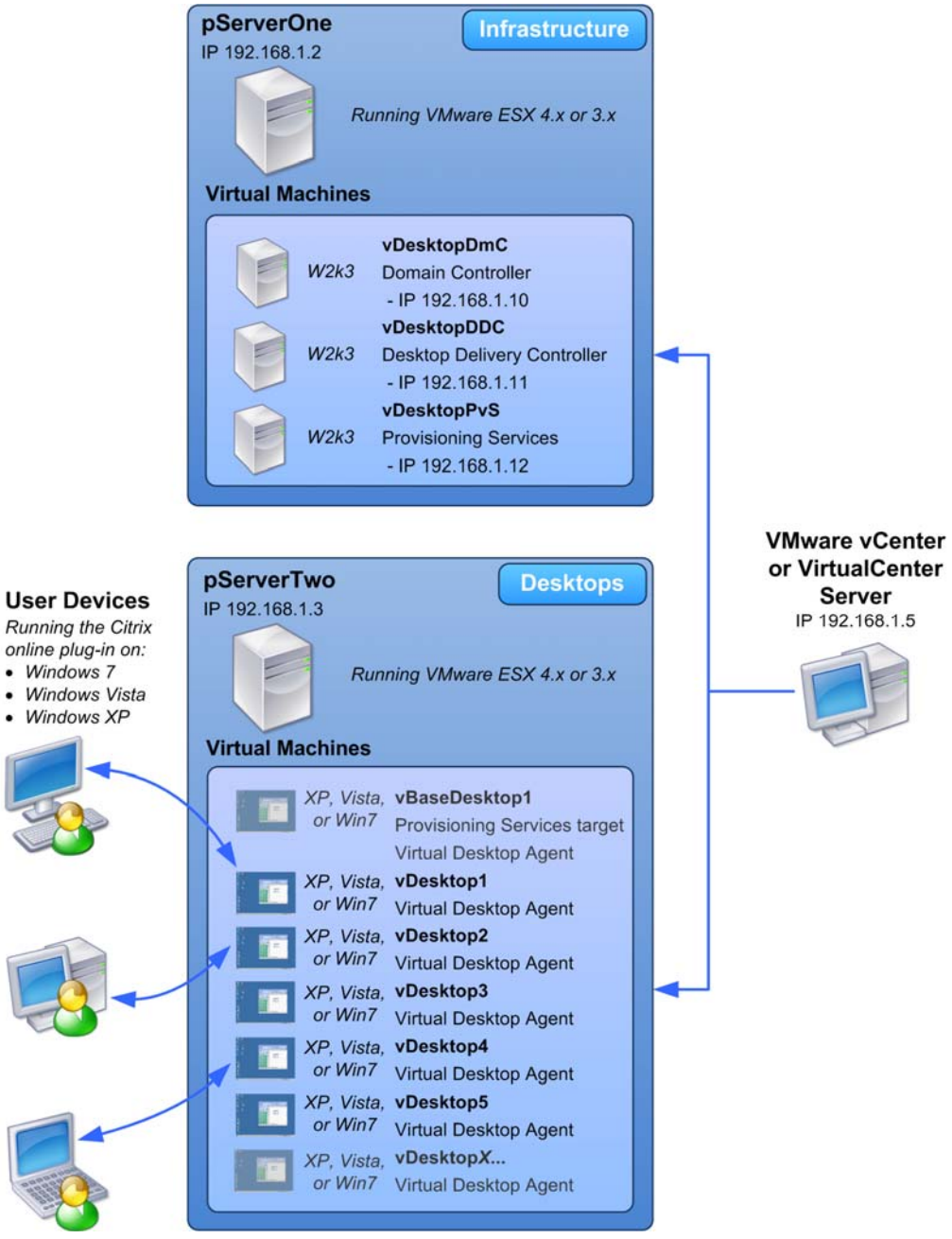
Citrix XenDesktop 4 – Proof of Concept

XenDesktop environment with VMware Infrastructure



Overview

The XenDesktop evaluation deployment process comprises a set of sequential tasks that are numbered in the order in which you perform them.

- **XenDesktop Administration**
  - Task 1. Installing the Virtual Machine Infrastructure.
  - Task 2. Installing and Configuring XenCenter.
  - Task 3. Creating the Virtual Machines.
  - Task 4. Configuring Active Directory for XenDesktop.
  - Task 5. Installing Desktop Delivery Controller.
  - Task 6. Installing and Configuring Provisioning Services.
  - Task 7. Preparing the Virtual Desktop Image.
  - Task 8. Preparing and Provisioning Virtual Desktops.
  - Task 9. Creating Multiple Virtual Desktops.
- **XenDesktop User Devices**
  - Task 1. Converting a User Device to Full-Screen-Only Mode.
  - Task 2. Connecting to a Virtual Desktop in Window View Mode.
  - Task 3. Connecting to a Virtual Desktop from a Desktop Appliance.
  - Task 4. Observing Virtual Desktop Usage.

Installation Time

You need to allocate sufficient time to install all the components of XenDesktop and your virtualized server environment. Allow approximately three to five day´s to perform a complete installation and configuration. We are going through all needed requirements in a startup meeting for preparing your environment before we continue to deal out different roles as in a typical Proof of Concept and/or Pilot project. We suggest that a team of your own personel should evaluate the solution up to 30 days where we will assist you down the road as needed in your own pace.

More information

We provide our services in Sweden at your premises or if you prefer on our own lab environment in Kisa and Täby. Contact us on phone # 08-55 67 17 44 or send us an e-mail to info@ea-data.com if you need further information about our services.

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Key Features

Citrix XenDesktop provides the following key features:

- **Superior user experience**. XenDesktop offers users an experience that is better than a traditional PC or laptop. Users are instantly provisioned with a pristine desktop that incorporates their personal settings and applications, regardless of the user device. Provisioning new users is simply a matter of creating an Active Directory user account and associating the account with a standard desktop image. Users get the specific line-of-business and productivity applications they need delivered to their virtual desktops. Profile management ensures that the user's personal settings are applied to their virtual desktop and applications, regardless of user device or location. Users can easily request support and the help desk can view the user's screen and take control of the desktop to resolve issues quickly.
- **High definition performance**. XenDesktop delivers personalized desktops that include the latest updates and applications without any application conflicts. Through HDX functionality, network and display optimizations and performance boosting technologies deliver the best performance over any network, including low bandwidth and high latency WAN connections. With SmoothRoaming, users can pause desktop sessions and resume working from different locations at exactly the point where they left off.
- **Single image desktop management**. Maintaining a single master desktop image in the data center provides users with an up-to-date, pristine desktop at each logon, drastically reduces patch and upgrade maintenance efforts, and cuts storage costs by up to 90 percent.
- **Built-in virtual applications**. Virtual applications enable fewer, simpler desktop images and reduce system conflicts. This can reduce application regression testing and increase virtual desktop density. Streamed and hosted applications enable separation of applications from the desktop image, providing greater flexibility and simpler management.
- **Control over data**. Centralized control policies ensure that authorized users connect to their desktops and that only screen updates, mouse clicks, and keystrokes (not data) transit the network. High performance, standards-based encrypted transmissions are used to deliver desktops using SSL technology to both internal and remote users. Multifactor authentication enables and enforces secure tokens and smart card authentication to virtual desktops.
- **Reliable desktop access management**. XenDesktop allows administrators to assign users to assigned or pooled virtual desktops, and to manage the connections to the virtual desktops. Users are provided with a reliable connection to their virtual desktops with no single point of failure.
- **Desktop optimization and support**. XenDesktop proactively ensures that users always benefit from optimized performance when using their virtual desktops. This provides a LAN-like experience, even for branch office workers. Proactive monitoring identifies performance issues at the user level and enables reallocation of resources in real time to ensure optimal performance, high availability, and failover. This ensures high user satisfaction and enables IT departments to meet service level targets. XenDesktop also provides fast, easy, and secure remote support services for an enhanced user support experience.

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- **Open architecture**. XenDesktop integrates with Citrix XenServer, Windows Server 2008 Hyper-V, and VMware vSphere, and works out-of-the-box with desktop appliances. This means that there is no vendor lock-in for virtualization or user devices. For additional, dedicated computing resources for power users, you can host desktops on blade PCs or on standard PCs relocated to the data center. Users can access their virtual desktops from most common client devices, including Windows, Mac OS, and Linux.
- **Best desktop total cost of ownership**. XenDesktop centralizes and simplifies desktop lifecycle management, dramatically reducing storage and user device costs by up to 40 percent. The entire desktop lifecycle is managed in one location, simplifying desktop provisioning, patching, security, and updates. Appliance costs are reduced through minimal user device maintenance, lower power consumption, longer hardware lifecycles, and the ability to repurpose aging devices. Storing one desktop image for thousands of users reduces storage requirements, and using low power desktop appliances and consolidating virtual desktops on servers reduces overall energy consumption and cooling requirements. XenDesktop can automatically power down or suspend desktops that are not in active use (at the administrator's discretion), further reducing power consumption and increasing resource utilization.
- **Smart card support**. Smart card support provides user authentication to XenDesktop sessions and locally installed or virtualized applications, and allows users to digitally sign or encrypt documents. Common Access Card (CAC) and USB smart card tokens are supported. Authentication using smart cards is available for virtual desktops running Windows XP, Vista and 7.
- **Profile management**. Profile management provides an easy, reliable, and high performance method to manage user personalization settings in virtualized or physical Windows environments. It requires minimal infrastructure and administration but provides users with fast logons and logoffs. Profile Management can be downloaded from the MyCitrix Web site.
- **Local peripheral support**. XenDesktop users can insert a USB device locally and use it with their virtual desktops and applications as they would on a local machine. Supported USB devices include: flash drives, smartphones, PDAs, printers, scanners, MP3 players, and tablets. Isochronous devices, such as Webcams, microphones, speakers and headsets, are also supported.
- **Enhanced multimedia support**. Citrix HDX MediaStream technology ensures that users receive a smooth, seamless experience with multimedia content as part of their virtual desktop. Whenever possible, HDX MediaStream leverages the processing power of the user device to render the multimedia content. In the datacenter, the compressed multimedia information is sent directly to the user device in its native format. The multimedia stream is rendered and played back locally, providing excellent performance while reducing the workload on the servers and the network. HDX MediaStream for Flash enables Adobe Flash content to play locally on user devices, providing users with a high definition playback.
- **Multi-monitor support**. Users' particular multiple monitor configurations are reflected in their virtual desktop. For example, users can configure their XenDesktop environment with L-shaped, T-shaped and U-shaped monitor configurations or with monitors of different sizes and resolutions.
- **User-driven desktop restart.** If the desktop fails to start or is taking a long time to connect, users can use the desktop restart option to shut down and restart the desktop.

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XenDesktop Components

Citrix XenDesktop provides a complete virtual desktop delivery system by integrating several distributed components with advanced configuration tools that simplify the creation and real-time management of the virtual desktop infrastructure.

The core components of XenDesktop are:

- **Desktop Delivery Controller**. Installed on servers in the data center, the controller authenticates users, manages the assembly of users' virtual desktop environments, and brokers connections between users and their virtual desktops. It controls the state of the desktops, starting and stopping them based on demand and administrative configuration. Desktop Delivery Controller also includes Profile management, in some editions, to manage user personalization settings in virtualized or physical Windows environments.
- **Virtual Desktop Provisioning powered by Citrix Provisioning Services**. Provisioning Services creates and provisions virtual desktops from a single desktop image on demand, optimizing storage utilization and providing a pristine virtual desktop to each user every time they log on. Desktop provisioning also simplifies desktop images, provides the best flexibility, and offers fewer points of desktop management for both applications and desktops.
- **Virtual Desktop Agent**. Installed on virtual desktops, the agent enables direct ICA (Independent Computing Architecture) connections between the virtual desktop and user devices.
- **Citrix online plug-in**. Installed on user devices, the Citrix online plug-in (formerly "Citrix Desktop Receiver") enables direct ICA connections from user devices to virtual desktops.
- **Citrix XenApp for Virtual Desktops**. You can use XenApp in a XenDesktop deployment to benefit from the efficiencies associated with application streaming and virtualization. XenApp provides a better-than-installed application experience for both users and administrators. Applications start up faster, the user experience is dramatically improved, and application management costs are significantly lowered.
- **Citrix XenServer**. XenServer is an enterprise-class virtual machine infrastructure solution that creates the foundation for delivering virtual desktops and offers advanced management features. Multiple VMs can run on XenServer, which takes advantage of the advanced virtualization features of the latest virtualization-enabled processors from Intel and AMD. For more information about XenServer, see the *Citrix XenServer Administrator's Guide*.

Additional XenDesktop components provide the following features:

- **Secure delivery**. When users connect from outside the corporate firewall, XenDesktop can use Citrix Access Gateway technology to secure these connections with SSL. Access Gateway is a SSL VPN appliance that is deployed in the demilitarized zone (DMZ) to provide a single secure point of access through the corporate firewall.
- **WAN optimization**. In XenDesktop deployments where virtual desktops are delivered to users at remote locations such as branch offices, Citrix Branch Repeater (formerly WANScaler) technology can be employed to optimize performance through Quality of Service management. Branch Repeater can prioritize different parts of the user experience so that, for example, the user experience does not degrade in the branch location when a large file or print job is sent over the network. HDX IntelliCache with Branch Repeater provides tokenized compression and data de-duplication, dramatically reducing bandwidth requirements and improving performance.
- **Monitoring**. Citrix EdgeSight for Endpoints allows you to monitor individual virtual desktops. EdgeSight can be used not only to analyze and troubleshoot issues, but also to warn administrators in advance of problems that may arise in the future.
- **Support**. Because users may be located in offices that do not have local support staff, XenDesktop incorporates Citrix GoToAssist, allowing XenDesktop users to be supported remotely.

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- **EasyCall**. EasyCall allows users to initiate a call from their virtual desktop and have the call connected between the corporate branch exchange and any nearby phone.
- **Password Manager**. Password Manager provides single sign-on access regardless of how or where users connect, and it enables users to reset their own Windows password or unlock their account. Note that Password Manager is not fully supported on Windows 7 and the Hot Desktop feature, which allows users to share workstations securely and efficiently, is not supported in XenDesktop.

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What's New in XenDesktop

XenDesktop 4 includes the following new features and enhancements:

HDX User Experience

Citrix HDX includes a broad set of technologies designed to enable a high-definition user experience for virtual desktops in today's media-rich user environments. These technologies reside across the entire end-to-end delivery system. HDX in the datacenter leverages the processing power and scalability of servers to deliver advanced graphical and multimedia performance, regardless of the capabilities of the user device. HDX on the network incorporates advanced optimization and acceleration capabilities to deliver a great user experience over any network, including remote desktop access over high-latency, low-bandwidth environments. HDX at the device leverages the computing capacity of user devices to enhance and optimize the user experience. Some of these HDX technologies are discussed in more detail below.

HDX Plug-n-Play USB Support

The range of USB devices that users can interact with during a XenDesktop session has been extended. Supported devices now include those requiring isochronous data transfer, such as Webcams. Devices are supported in typical low latency/high speed LAN environments. Support for Bloomberg keyboard devices is also included. To take advantage of this feature, user devices must be running the Citrix online plug-in (formerly known as "Citrix Desktop Receiver") 11.2, or later, on Windows operating systems.

HDX Plug-n-Play Multi-Monitor Support

Application compatibility with multi-monitor configurations has been improved and users now have greater control using the Desktop Viewer toolbar. For more information on multi-monitor support, see the administrator documentation for the Citrix online plug-in.

Site Failover

Should a primary site become unavailable, XenDesktop automatically detects this and seamlessly redirects users to an alternate site, ensuring business continuity. NetScaler can be used with XenDesktop to ensure high availability; for more information on configuring XenDesktop for high availability, see the relevant white paper available from the Citrix Web site at http://support.citrix.com/.

Site Roaming

You can ensure users always access their own virtual desktops and data, regardless of where they connect from. For example, if you have users who travel between Europe and the US, or connect from home using laptops, you can ensure they connect to their own virtual desktops and user data from different sites. To enable site roaming support, you configure the Web Interface to direct users to the appropriate data center for their virtual desktops. You can also use NetScaler for seamless failover. For more information, see the administrator documentation for Web Interface and your NetScaler documentation.

Citrix Password Manager

Password Manager provides single sign-on access regardless of how or where users connect, and it enables users to reset their own Windows password or unlock their account. Note that Password Manager is not fully supported on Windows 7, and the Hot Desktop feature, which allows users to share workstations securely and efficiently, is not supported in XenDesktop.

Citrix Branch Repeater Integration

You can use Citrix Branch Repeater (formerly known as WANScaler) to optimize the delivery of virtual desktops to branch office users. Repeaters accelerate performance across wide area networks (WAN), so with Repeaters in the network, users in the branch office will experience LAN-like performance over the WAN. **HDX IntelliCache** with Citrix Branch Repeater provides tokenized compression and data de-duplication, dramatically reducing bandwidth requirements and improving performance for users at branch office locations. For more information, see your Citrix Branch Repeater documentation.

Smart Card Enhancements

Smart card support is now available on user devices running Microsoft Vista with Service Pack 1 or later. Smart card support is also available on Windows 7 desktops.

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Active Directory Multi-forest Support

XenDesktop now supports deployment across a range of Active Directory topologies, including multiple domains and multiple forests. This enables virtual desktops to be delivered to users in different Active Directory forests from those in which the XenDesktop infrastructure servers are registered.

Increased Virtual Desktop Support

Support for virtual desktops running Windows 7 (non-Aero) 32-bit or 64-bit is now included. Support for 64-bit on Windows XP Professional and Windows Vista is also included.

Enhanced EdgeSight Support

More comprehensive monitoring and reporting facilities are provided by Citrix EdgeSight for Endpoints. This allows administrators to monitor virtual desktops, analyze and troubleshoot issues, and obtain warnings in advance of problems that may arise in a production environment. For more information, see your EdgeSight documentation.

Enhanced Profile Management Support

Profile management provides an easy, reliable, and high-performance way to manage user personalization settings in virtualized or physical Windows environments. Profile management 3.0 offers a number of new features and enhancements; for more information, see your Profile management documentation.

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Features in XenDesktop Standard Edition

The Standard Edition provides the following features:

- **Smart card support**. Smart card support provides user authentication to XenDesktop sessions and locally installed or virtualized applications, and allows users to digitally sign or encrypt documents.
- **Local peripheral support**. Users can insert a USB device locally and use it with their virtual desktops and applications as they would on a local machine.
- **User-driven desktop restart**. If the desktop fails to start or is taking a long time to connect, users can use the desktop restart option to shut down and restart the desktop.
- **SmoothRoaming**. With SmoothRoaming, users can pause desktop sessions and resume working from different locations at exactly the point where they left off.
- **Multimedia support**. Citrix HDX includes a broad set of technologies designed to provide users of virtual desktops with a high definition audio-visual experience, comparable to a local PC. For example, HDX MediaStream ensures a smooth, seamless experience with multimedia content, and provides support for Media Foundation used by Windows Media Player. HDX MediaStream for Flash enables Adobe Flash content to play locally on user devices, providing users with a high definition playback. HDX Plug-n-Play enables simple connectivity for USB, multi-monitor, printers and other peripheral devices, as well as local machine resources. Other HDX technologies ensure that the delivery of virtual desktops is optimized for any network, whether local or remote.
- **Instant on**. XenDesktop virtual machines are kept running in idle pools so that new virtual desktops are ready for users when they log on, eliminating the lengthy startup times of physical computers and increasing productivity.
- **Universal printer driver**. XenDesktop delivers a consistent and fast printing experience for users without requiring specific local print drivers. Users can simply plug in USB-compatible printers to their user devices.
- **Virtual machine infrastructure**. XenDesktop uses XenServer, an integrated 64-bit paravirtualization-based hypervisor, for scalable, cost-effective hosting of virtual desktops. XenServer delivers live migration and centralized multi-server management, radically reducing datacenter costs by transforming static and complex datacenter environments into dynamic, easy to manage IT service delivery centers. In addition, XenDesktop also supports Microsoft Windows Server 2008 Hyper-V and VMware vSphere, plus a wide range of hardware, applications, and user devices.
- **Desktop assignment**. XenDesktop allows administrators to assign different types of virtual desktops to different users, including blade PC-based desktops, dedicated virtual machine-based desktops, and pooled desktops for groups of users.
- **Session management**. XenDesktop allows administrators to manage active and inactive virtual desktop connections. Administrators can view the servers to which users are connected and log them off if necessary.
- **Session reliability**. This feature maintains users' virtual desktops during network outages. When the network connection is re-established, users can resume their work without any interruption.
- **High availability/failover**. XenDesktop eliminates single points of failure by providing failover capability. Users can continue to access and use their virtual desktops even when individual servers fail.
- **Workflow Studio**. This provides an easy-to-use, graphical interface for workflow composition that virtually eliminates scripting. Workflow Studio acts as the glue across the IT infrastructure allowing administrators to easily tie technology components together via workflows.

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Features in XenDesktop Enterprise Edition

The Enterprise Edition includes all the features in the Standard Edition, plus the following:

- **Profile Management**. XenDesktop provides an easy, reliable, and high performance method to manage user personalization settings in virtualized or physical Windows environments.
- **On-demand desktops**. XenDesktop allows administrators to configure resources into pools so that common configuration settings can be applied on a pool-wide basis, greatly simplifying reconfiguration tasks.
- **Desktop image management**. XenDesktop allows administrators to manage multiple virtual desktops from a single desktop image. Administrators can easily create a new virtual desktop image, update an existing image, or roll back changes without any downtime.
- **Citrix Essentials for XenServer**. Essentials for XenServer adds valuable management features, including high availability, StorageLink, provisioning services and alerting.
- **XenApp for Virtual Desktops**. Citrix XenApp is an application delivery system that offers client-side and server-side application virtualization for optimal application performance and flexible delivery options. This allows the delivery of secure applications as a service, while providing the flexibility to use future application architectures.

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Additional Features in XenDesktop Platinum Edition

The Platinum Edition includes all the features in the Enterprise Edition, plus the following:

- **Citrix Access Gateway Enterprise Edition**. Access Gateway provides secure remote access to XenDesktop.
- **EasyCall**. This component makes a connection between any application on the virtual desktop to selected Voice over Internet Protocol private branch exchange systems. Citrix EasyCall provides simple, cost-effective voice communications to complement the virtual desktop experience. This feature requires the separate purchase of a Citrix Communication Gateway appliance.
- **Desktop performance monitoring**. This feature monitors and tracks the performance of virtual desktops, allowing administrators to proactively manage the virtual desktop experience by measuring key performance elements. This data can then be used to enhance the infrastructure before users are adversely affected.
- **WAN optimization**. XenDesktop maximizes the quality of the remote user experience by using Citrix Branch Repeater (formerly known as "WANScaler") to accelerate virtual desktop and application performance across wide area networks. This feature requires the separate purchase of a Branch Repeater appliance.
- **Desktop support**. XenDesktop allows support staff to provide fast, easy, and secure support services to widely dispersed users through the Citrix GoToAssist remote support package. Support staff can see what users see, chat with them in real time, guide them through a procedure, transfer a file, or take permission-based control of a user's computer to resolve a problem.
- **Citrix Password Manager**. Password Manager provides single sign-on access regardless of how or where users connect, and it enables users to reset their own Windows password or unlock their account. Note that Password Manager is not fully supported on Windows 7 and the Hot Desktop feature, which allows users to share workstations securely and efficiently, is not supported in XenDesktop.

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