First step – virtualized servers

You’ve read the reports. You’ve scrutinized the findings. And you’ve taken the first step along the well-marked path to a more flexible, agile and productive business environment: you’ve virtualized your servers. By consolidating your application and database servers, all resources are now shared across your organization. Server utilization is significantly improved. Costs for power, cooling, management, floor space and licensing are lower. IT systems provide faster access to consistent, accurate, up-to-date information, so your workers are more productive than ever before.

But that’s only the beginning. The virtualization path continues...to your desktop environment.

Next step – on-demand desktops

To reduce desktop management costs while increasing flexibility, security and resiliency, you can virtualize your desktop environment using HP Virtual Desktop Infrastructure (VDI) with Citrix XenDesktop. Built on a foundation of best-managed and virtualization-ready servers, storage and client devices from HP—combined with HP services and ground-breaking XenDesktop 4 software—this comprehensive desktop replacement solution delivers a complete desktop experience as an on-demand service to any user, anywhere. Whether users are basic task workers or on-the-go mobile workers, desktops and applications are made available as simple, on-demand services with unified management of both physical and virtual infrastructures from the same centralized console.

When teamed with Citrix, only HP can provide the complete, end-to-end solution that will allow you to realize the promise of client virtualization. To illuminate your path to a virtualized client environment, HP and Citrix have worked together to develop a reference configuration for XenDesktop. Based on HP ProLiant BL460c G6 server blades and HP LeftHand P4500 iSCSI SAN storage, the HP reference configuration for Citrix XenDesktop is intended to help you build a VDI client virtualization solution capable of supporting typical office productivity users. This reference configuration can be modified to meet your unique business needs. To help determine the best solution for your environment, you can work with your HP representative to complete a proof-of-concept. The HP VDI with Citrix XenDesktop reference architecture:

- Offers a proven starting point for reduced risk
- Simplifies ordering and implementation
- Provides predictable performance through a tuned configuration
- Leverages best practices for increased user productivity
- Reduces acquisition costs through optimized price/performance
- Integrates infrastructure and client management for higher number of servers/clients per administrator
- Reduces power consumption with energy-efficient servers and thin clients and power management software
- Ensures the proper level of availability and allow for scalability as your environment grows
Citrix license doesn't mean that users can access the Citrix installation from an unlimited number of devices with the user-based license, but if the user is using a device-based license, powered by XenDesktop, can be streamed directly to the endpoint and run in an isolated environment as delivers complex Microsoft applications on-demand and includes:

- Citrix XenDesktop 4
- Citrix XenApp

New features in XenDesktop 4:

- HP BladeSystem c-Class
- HP FlexCast
- HP HDX 3D
- HP HDX 240

Foundation for virtualization:

According to a recent Citrix survey, over 50% of all Citrix installations worldwide run on HP platforms. These organizations have leveraged the value of a highly adaptive infrastructure, powered by flexible HP servers and storage solutions. You can choose from many models, all of which are ideal for HP VDI with XenDesktop:

- HP Thin Client access devices
- HP ThinPro x300
- HP Proliant c-Class blades
- HP Proliant BL460c
- HP Proliant DL380 G6

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HP VDI with HP Xenserver

The Citrix XenDesktop solution from HP includes the HP integrated Citrix XenServer, which enables the time to start up a virtualized platform in minutes, saving your time and effort.

HP integrated Citrix XenServer gives single-server console access to every virtual machine (or up to nine at once!) and a powerful configuration and setup wizard to start up a virtualized platform in minutes, saving your time and effort.

Enterprise Services (formerly EDS, an HP company) offers integrated Citrix XenServer that enables customers to build vital business infrastructure on HP ProLiant servers. HP can help virtualize your storage system, HP can help virtualize your storage system, which reduces blade cabling by 94% without adding cost. HP StorageWorks storage systems provide the performance and scalability required by virtual desktop deployments, as well as safe and secure backup options. HP StorageWorks storage systems provide the performance and scalability required by virtual desktop deployments, as well as safe and secure backup options.
Certified with XenDesktop and Citrix StorageLink, HP LeftHand P4000 SAN solutions integrate cleanly and easily within your HP VDI with Citrix environment—providing high availability and advanced data recovery capabilities at an affordable price. With a pay-as-you-grow, all-inclusive pricing model and intuitive storage management software, the HP LeftHand SAN is perfect for the budget-minded organization. Every HP LeftHand SAN includes network RAID, which means the storage system is protected from component and even site-wide failures—ensuring that your desktop community stays up, no matter what.

The HP LeftHand P4000 SAN can easily grow as you add users, and can scale performance as user demands increase. HP SmartClone and Thin Provisioning technologies enable a high degree of storage efficiency, automatically sharing common storage between users and never reserving more capacity than necessary. And most importantly, the system is highly automated and can be easily managed by administrators with no specialized storage area network (SAN) training or experience, allowing your administrators to focus on managing the virtual desktop environment. HP LeftHand P4000 SAN:

- Provides optimized storage for virtualized servers
- Reduces costs with simplified management
- Increases business agility with non-disruptive scalability
- Eliminates single points of failure with an innovative approach to data availability, to reduce risk without driving up costs
- Substantially increases storage efficiency through thin provisioning

**HP Client Automation management software**

One of the most significant challenges to a successful VDI implementation is manageability. In many cases, existing, traditional client management solutions are unable to manage thin clients or the virtualized VDI infrastructure in the data center. This forces many organizations to create a separate virtual client administration team. Trained on virtualization tools, this team must coordinate complex new processes with existing client and data center management teams.

You can overcome these challenges by using HP Client Automation management software, which significantly reduces complexity and improves quality of service by automating many routine tasks, as well as identifying and remediating security, compliance and vulnerability issues in your client environment. This comprehensive suite of management tools manages the complete VDI environment—including thin clients, the virtual client infrastructure and traditional PCs—so you can avoid the additional complexity and cost that other solutions may require. Offering full support for Windows 7, HP Client Automation enables you to easily migrate to a VDI environment and to the latest operating system at the same time.

In addition, HP Client Automation can help size your initial VDI deployment by taking inventory of your workers’ traditional PCs and measuring software usage so that you can develop profiles of resource utilization. As your end-user needs change over time, this inventory and usage information can help you re-optimize your infrastructure for improved utilization and lower cost.

**HP services**

The service professionals at HP provide a comprehensive suite of desktop virtualization planning, design, implementation and support services that enable you to assess your business needs and develop a strategic desktop technology roadmap. Beside you every step of the way, HP services can help you design, migrate and implement a robust and productive virtual infrastructure solution. We begin by developing a solid strategy:

- **Client Virtualization Transformation Experience Workshop** – During this intensive one-day session, you will build a strategy for your virtualized solution, identify a high-level roadmap and achieve executive consensus.

- **Client Virtualization Business Benefit Workshop** – Before you enter the planning stage, you can attend this one-day session to identify, quantify and analyze the business benefits of client virtualization, as well as set return-on-investment targets.

- **Roadmap and Architecture** – During this multi-week engagement, we create a clear roadmap, architectural blueprint and phased implementation strategy to ensure the successful integration of your new VDI solution into your existing IT infrastructure. Significant components are:
  - **End User Discovery** – Discover, identify and classify the user population by workload. This enables us to design the right client virtualization solution for each workload, for each user population.
  - **Application Discovery** – Similar to user discovery, we identify the server and client applications used by the user population, and then build a design and test plan for each, ensuring compatibility and user acceptance.
**What makes XenDesktop 4 so effective for desktop virtualization?**

Open architecture – XenDesktop works with existing hypervisor, storage and Microsoft infrastructures, enabling you to leverage your current investments while providing the flexibility to add or change to alternatives in the future. Whether you use XenServer, Microsoft Hyper-V or VMware ESX or vSphere, XenDesktop supports them all. In addition, XenDesktop uses the advanced Storagelink technology to simplify management of networked storage including HP StorageWorks EVA, MSA and LeftHand solutions. XenDesktop will also closely integrate with Microsoft App-V and System Center for comprehensive application and desktop management.

Data security and access control – With XenDesktop, users can access desktops and applications from any location or device, while IT sets policies that control whether data ever leaves the data center. XenDesktop can dramatically improve endpoint security by eliminating the need for data to reside on the users’ devices. Centralized data, encrypted delivery, a hardened SSL VPN appliance and multi-factor authentication further ensure that only authorized users connect to their desktops, intellectual property is protected and regulatory compliance requirements are met.

Enterprise-class scalability – XenDesktop includes application, desktop and server virtualization infrastructure that scales to meet the demanding requirements of global enterprises. Proactive monitoring and reporting enables rapid problem resolution, while intelligent load and capacity management helps ensure that problems never arise in the first place. Built-in virtualization management features such as live migration, high availability and bare-metal server provisioning make the infrastructure robust and resilient.

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**Technology for better business outcomes**

For more information, call your HP representative today or visit www.hp.com/go/vdi/citrix and www.citrix.com/hp.

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These services provide entry points for large organizations to begin their journey toward a robust, virtualized client infrastructure. HP implementation, support and education services complement these VDI services—offering world-class support for the entire infrastructure based on your specific requirements.

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Component</th>
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<tbody>
<tr>
<td>1</td>
<td>HP BladeSystem c7000 Enclosure</td>
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<tr>
<td>2</td>
<td>HP ProLiant BL460c G6 Server Blades (management servers)</td>
</tr>
<tr>
<td>14</td>
<td>HP ProLiant BL460c G6 Server Blades (hosting Citrix XenDesktop and Citrix XenServer)</td>
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<tr>
<td>4</td>
<td>HP LeftHand P4500 SAN Solutions</td>
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<td>2</td>
<td>HP ProCurve 6600 Switches</td>
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<tr>
<td>2</td>
<td>HP Virtual Connect Flex-10 10Gb Ethernet Modules for c-Class BladeSystem</td>
</tr>
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Your partners in virtualization

Strategic partners since 1996, HP and Citrix collaborate to deliver innovative solutions for your toughest business challenges. HP and Citrix have integrated Citrix XenDesktop with HP platforms to create a highly unique virtualization solution, available in two packages: HP VDI Enterprise Edition and the newly released Platinum Edition. You can choose the package that best meets your needs today, and then easily upgrade as your business requirements evolve.

Are you ready to virtualize?

You’re already walking the virtualization path. Complete the journey by choosing HP VDI with Citrix XenDesktop so that your organization can:

- Reduce desktop management costs
- Consolidate computing resources into pools that are shared company-wide
- Ensure business continuity with robust security and resiliency
- Accelerate flexible work models, including telecommuting, working from home, day extenders and flex-offices
- Foster environmental initiatives by reducing your data center carbon footprint
- Deploy a single manageability solution across both your traditional and virtual clients

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For more information, call your HP representative today or visit www.hp.com/go/vdi/citrix and www.citrix.com/hp.

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Call your HP sales representative today and arrange for an assessment of your business environment. Discover how virtualizing your desktop infrastructure with HP VDI and Citrix XenDesktop can satisfy your organizations requirements for future growth and expanded productivity.

There’s no better time to consider alternatives to your legacy business environment. And there’s no better time to benefit from the advanced virtualization capabilities of HP and Citrix.