Cisco UCS Solution Accelerator Pak Configurations for Citrix Desktop Virtualization Workloads

The Cisco Unified Computing System™ (Cisco UCS™) is optimized for desktop virtualization workloads. Cisco UCS Solution Accelerator Pak configurations help you easily and quickly deploy desktop virtualization by providing predefined configurations for every type of deployment scenario.

Desktop and application virtualization are increasingly popular ways for enterprises to reduce capital and operating expenses, improve efficiency, increase control, and expand connectivity. With virtual desktops, users can access their desktop images for laptops, thin clients, smartphones, or other devices from hosted, centralized infrastructure in a data center.

Although many enterprises are increasingly turning to desktop virtualization to address the need for increased business agility, risk mitigation, security, and support for bring-your-own-device (BYOD) initiatives, the appropriate infrastructure is critical to make these initiatives successful.

Cisco UCS provides the most optimized foundation for desktop and application virtualization infrastructure. The industry’s first unified data center platform, Cisco UCS delivers a converged, programmable infrastructure that simplifies and accelerates enterprise-class application and service deployment in bare-metal, virtualized and cloud-computing environments. Unified, model-based management, end-to-end provisioning, and migration support come together in this next-generation data center platform to accelerate and simplify application deployment, with greater reliability and security.

Cisco UCS provides these important features:

- Integration of Cisco servers and network and I/O resources into one system
- Improvement of enterprise application availability and performance
- Scalability of service delivery to increase business agility
- Streamlining of data center resources to reduce total cost of ownership (TCO)
- Radical reduction in the number of devices requiring setup, management, power, cooling, and cabling
Cisco UCS is changing the economics and performance of server-hosted client computing, delivering a robust, high-performance computing fabric on which desktop virtualization can be deployed.

These are the primary elements of Citrix desktop virtualization architecture:

- Citrix XenDesktop transforms Microsoft Windows desktops into virtual desktops for on-demand services to users on any device.
- Citrix Provisioning Services is commonly used to provision Citrix XenDesktop and XenApp environments.
- Citrix XenApp is an application delivery solution that enables any Microsoft Windows application to be virtualized, centralized, and managed and instantly delivered as a service to users anywhere and on any device.

The Cisco UCS controller node is the management server that hosts the hypervisor management software (such as VMware vCenter, Microsoft System Center Virtual Machine Manager [SCVMM], and Citrix XenCenter), Citrix Provisioning Services, and Citrix XenDesktop and XenApp brokers (Citrix Dynamic Desktop Controllers). It can also house other management tools to support the environment.

The Cisco UCS desktop workload node hosts Microsoft Windows virtual desktops as virtual machines for Citrix XenDesktop deployments or as Microsoft Windows server virtual machines for Citrix XenApp deployments.

Figures 1 and 2 show the Cisco® desktop virtualization architecture.

**Figure 1.** Cisco Desktop Virtualization Architecture (Building Blocks)
The configurations listed in Table 1 provide some guidance on the target workloads based on assumptions about density, workload, and resiliency characteristics.

Table 1. Cisco UCS Solution Accelerator Pak Configurations for Citrix XenDesktop and XenApp Workloads

<table>
<thead>
<tr>
<th>Configuration</th>
<th>Configuration Description</th>
<th>Target Workload Description</th>
</tr>
</thead>
</table>
| Starter System Bundle    | 2 Cisco UCS 6296UP 96-Port Fabric Interconnects  
1 Cisco UCS chassis with 2 Cisco 2208 IOM Modules  
2 Cisco UCS B200 controller blade server  
• CPU: 2 x 2.20-GHz Intel Xeon processors E5-2660 v2  
• Memory: 8 x 16 GB (128 GB total)  
• Cisco UCS Virtual Interface Card VIC 1240  
4 Cisco B200 desktop workload blade servers  
• CPU: 2 x 2.80-GHz Intel Xeon processors E5-2680 v2  
• Memory: 16 x 16 GB (256 GB total)  
• Cisco UCS VIC 1240                                                                                   | Networking Infrastructure to support up to 20,000 virtual desktops  
Management blade servers to support up to 2000 virtual desktops  
Citrix XenDesktop virtual desktop workload blade to support 400 users, or Citrix XenApp hosted shared desktop workload blades to support 450 users  
**Assumptions:**  
Need to upgrade HDD for OS boot drives or use external storage  
Need external storage to host VDI and user data storage                                                                                                           |
<table>
<thead>
<tr>
<th>Configuration</th>
<th>Configuration Description</th>
<th>Target Workload Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expansion Bundle 2 (with FIO)</td>
<td>1 Cisco UCS B200 hosting blade servers</td>
<td>Citrix XenDesktop or XenApp virtual desktop workload blade to support 100 users</td>
</tr>
<tr>
<td>(100 users)</td>
<td>• CPU: 2 x 2.80-GHz Intel Xeon processors E5-2680 v2</td>
<td>On-board server storage for nonpersistent Citrix XenDesktop or XenApp virtual desktop workload to support 100 users (includes VDI storage)</td>
</tr>
<tr>
<td>UCS-SL-VDI-B200-F</td>
<td>• Memory: 16 x 16 GB (256 GB total)</td>
<td><strong>Assumptions:</strong></td>
</tr>
<tr>
<td></td>
<td>• Cisco UCS VIC 1240</td>
<td>Need to upgrade HDD for OS boot drives or use external storage</td>
</tr>
<tr>
<td></td>
<td>• Cisco UCS Fusion-io 785 GB module</td>
<td>External storage to host user data storage only</td>
</tr>
<tr>
<td></td>
<td><strong>Target Workload Description</strong></td>
<td></td>
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<tr>
<td></td>
<td><strong>Citrix XenDesktop or XenApp virtual desktop workload blade</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>On-board server storage for nonpersistent Citrix XenDesktop</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>or XenApp virtual desktop workload to support 100 users</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>(includes VDI storage)</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Assumptions:</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Need to upgrade HDD for OS boot drives or use external storage</td>
<td></td>
</tr>
<tr>
<td></td>
<td>External storage to host user data storage only</td>
<td></td>
</tr>
<tr>
<td>Expansion Bundle 3 (with LSI)</td>
<td>1 Cisco UCS B200 hosting blade servers</td>
<td>Citrix XenDesktop or XenApp virtual desktop workload blade to support 100 users</td>
</tr>
<tr>
<td>(100 users)</td>
<td>• CPU: 2 x 2.80-GHz Intel Xeon processors E5-2680 v2</td>
<td>On-board server storage for nonpersistent Citrix XenDesktop or XenApp virtual desktop workload to support 100 users (includes VDI storage)</td>
</tr>
<tr>
<td>UCS-SL-VDI-B200-L</td>
<td>• Memory: 16 x 16 GB (256 GB total)</td>
<td><strong>Assumptions:</strong></td>
</tr>
<tr>
<td></td>
<td>• Cisco UCS VIC 1240</td>
<td>Need to upgrade HDD for OS boot drives or use external storage</td>
</tr>
<tr>
<td></td>
<td>• Cisco UCS LSI 400GB SLC WarpDrive Adapter</td>
<td>External storage to host user data storage only</td>
</tr>
<tr>
<td></td>
<td><strong>Target Workload Description</strong></td>
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<tr>
<td></td>
<td><strong>Citrix XenDesktop or XenApp virtual desktop workload</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>On-board server storage for nonpersistent Citrix XenDesktop</strong></td>
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<tr>
<td></td>
<td><strong>virtual desktop workload to support 100 users</strong></td>
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<tr>
<td></td>
<td>External storage to host user data storage only</td>
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<tr>
<td>Graphics Intensive Applications</td>
<td>1 Cisco UCS C240 hosting rack server</td>
<td>Citrix XenDesktop or XenApp virtual desktop workload to support up to 100 single display (sizing based on application)</td>
</tr>
<tr>
<td>Bundle 1 (UCS-SL-VDI-C240-K1)</td>
<td>• CPU: 2 x 2.80 GHz Intel Xeon processors E5-2680 v2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Memory: 16 x 16 GB (256 GB)</td>
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</tr>
<tr>
<td></td>
<td>• Cisco UCS VIC 1225</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• NVIDIA GPU K1</td>
<td></td>
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<tr>
<td></td>
<td>• 2 x 300GB SAS</td>
<td></td>
</tr>
<tr>
<td>Graphics Intensive Applications</td>
<td>1 Cisco UCS C240 hosting rack server</td>
<td>Citrix XenDesktop or XenApp virtual desktop workload to support up to 64 single display (sizing based on application)</td>
</tr>
<tr>
<td>Bundle 2 (UCS-SL-VDI-C240-K2)</td>
<td>• CPU: 2 x 2.80 GHz Intel Xeon processors E5-2680 v2</td>
<td>Targeted for more intense application</td>
</tr>
<tr>
<td></td>
<td>• Memory: 16 x 16 GB (256 GB)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Cisco UCS VIC 1225</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• NVIDIA GPU K2</td>
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<td></td>
<td>• 2 x 300GB SAS</td>
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</table>

For More Information