



## Kaviza Supported Platforms and System Sizing Recommendations

### Supported Platforms:

Platforms tested and certified by Kaviza are as follows:

Component	Supported Configuration
<b>Hypervisor (VMware ESX or vSphere)</b>	<p>VMware Essentials license or greater is required.</p> <p><b>Note:</b> For trials, if you have downloaded a free ESXi 4.1 version from the VMware web-site, do <b>not</b> install the license key that comes with the free ESXi download. If you install this license key, the APIs required for the Kaviza VDI-in-a-box™ kMGR virtual appliance to work with the hypervisor will be closed and you will <b>not</b> be able to proceed with the setup. Leave the license selection in 'Evaluation Mode (No License Key)'. This will allow kMGR to work with the hypervisor properly. During this trial period, make sure you convert to a paid hypervisor license (at least an Essentials license).</p> <ul style="list-style-type: none"> <li>For Windows XP virtual desktops: VMware ESX/ESXi 3.5 Update 3 or greater, or ESX/ESXi 4.0, or ESXi 4.1</li> <li>For Windows 7 virtual desktops: VMware ESX/ESXi 3.5 Update 5, or ESX/ESXi 4.0, or ESXi 4.1</li> </ul>
<b>Hypervisor (Citrix XenServer)</b>	<ul style="list-style-type: none"> <li>Version 5.6 of Citrix XenServer, including the FREE version.</li> </ul>
<b>Endpoints</b>	<p>Kaviza VDI-in-a-box provisioned desktops can be accessed from an internet browser or by launching a java-based zero-install Kaviza Client. Please refer to the <a href="#">Kaviza VDI-in-a-box User Access Device Configuration Guide</a> for details on how to configure and use the browser or Kaviza Client on the supported end-point devices.</p> <p>For best performance with multi-media and flash we strongly suggest using existing PCs or thin clients with XPe operating systems as the end point device.</p> <ul style="list-style-type: none"> <li>A desktop/laptop running 32-bit/64-bit Windows XP, Windows Vista, or Windows 7 (these can be locked down using solutions from companies such as <i>ThinLaunch</i>).</li> <li>A desktop/laptop running 32-bit RHEL 5.x, CentOS 5.x, Ubuntu 10x</li> <li>A desktop/laptop running Apple Mac OS X 10.5 or 10.6</li> <li>Apple iPad, iPhone, Android Phones (HDX only)</li> </ul>



	<ul style="list-style-type: none"> <li>Thin clients running XP Embedded or Linux</li> <li>Thin clients running recent versions of Citrix Receiver</li> <li>Some recommended certified thin-clients from 10zig and Wyse.                         <ul style="list-style-type: none"> <li>10zig 54xx Linux</li> <li>10zig 56xx Linux</li> <li>10zig 56xx Windows XP Embedded</li> <li>Wyse C50 LE Linux</li> <li>Wyse C10LE</li> <li>Wyse V10LE</li> <li>Wyse V90LE, XP Embedded</li> <li>Wyse R90LEW, XP Embedded</li> <li>Wyse Xenith</li> </ul> </li> </ul>
<b>Virtual Desktop Operating System</b>	<ul style="list-style-type: none"> <li>Windows XP Professional SP2 or higher – 32 bit</li> <li>Windows 7 Professional, Enterprise, Ultimate – 32 bit</li> <li>Windows 7 Professional, Enterprise, Ultimate - 64-bit</li> <li>Windows 7 N 64-bit not supported</li> <li>MS VDA Volume license is needed to access virtual desktops. Please refer to Microsoft for licensing details.</li> </ul>
<b>Protocols</b>	<ul style="list-style-type: none"> <li>Microsoft RDP and RDP7 (out of the box)</li> <li>Citrix HDX or ICA (requires the add-on: Kaviza Accelerator for Citrix HDX)</li> </ul>

### System Resource Requirements

This table provides recommended CPU, memory and disk allocations to use when sizing a Kaviza deployment. Please note that these recommendations are based on an average task-worker type of desktop and may vary based on your desktop needs. To obtain sizing and cost estimates for a specific deployment scenario, please email [sales@kaviza.com](mailto:sales@kaviza.com) with information on the desktops you wish to deploy.

Component	System Resource Requirements
<b>Kaviza VDI-in-a-box™ kMGR Appliance</b>	<ul style="list-style-type: none"> <li>0.5GB RAM</li> <li>70GB disk (this can be decreased or increased as required)</li> </ul>
<b>CPU Requirements</b>	Use the same rule of thumb provided by the hypervisor vendor. Typically the rule of thumb is a maximum of 6 to 10 desktops per core, 10 for task works, 8 for knowledge workers and 6 for heavy users. If the server has processors with Hyperthreading technology (e.g. Intel Xeon Nehalem processors such as the Xeon x570) the number of desktops per core is doubled to 12 to 20 desktops per core.
<b>Memory Requirements</b>	Memory requirements/server is the sum of the memory required to run the virtual desktops on that server and the memory required by the Kaviza kMGR virtual appliance.



- For Windows 7, a minimum of 1.5GB/desktop is recommended.
- For Windows XP, a minimum of 0.5GB/desktop is recommended.
- If configured for high availability, ensure that each server has sufficient RAM to handle the maximum virtual desktops in case of a single failure such as a host failure. For instance, if you plan to run 75 concurrent Windows 7 virtual desktops on a 3-server grid configured with HA, and each virtual desktop is allocated 1GB RAM, each host should be provisioned with at least 39GB RAM (25 desktops + 13 failed over desktops + kMGR) in case one server is down.
- kMGR reserves 0.5GB RAM to ensure its operations.
- Make sure you have adequate RAM in the system. Lack of sufficient RAM will result in extremely slow provisioning times for virtual desktops and poor response times for provisioned desktops.
- With the VMware ESX hypervisor, memory page sharing can allow you to be more lenient and operate with as much as 50% less memory. However, in such cases, response times can have a higher degree of variability.

On any hypervisor, this is computed as the sum of the disk required to store desktop images, the disk required to run the virtual desktops and the disk required by Kaviza kMGR virtual appliance.

**Disk size requirements (for VMware ESX & Citrix XenServer with Thin provisioning)**

- Desktop images: Kaviza utilizes up to 3 times the size of a desktop image to maintain multiple versions of an image.
- Due to Kaviza's linked clone technology, each virtual desktop typically requires 15% of the disk size of the desktop image from which it is generated. For example, if the desktop image is set up with 20GB disk space and the virtual desktop is configured with 1GB RAM, the total disk space utilized by the virtual desktop is 3GB (i.e. 15% of 20GB) + 1GB = 4GB.
- kMGR by default is configured to require 70GB of disk space allowing it to support desktop images of up to 60GB in size. This size can be altered.
- Example of the total disk required on a host: If you plan to have 25 virtual desktops with 3 images of 20GB disk space each on a host, you will require at least 350GB ( $3 \times 3 \times 20 + 25 \times 4 + 70$ ) of free disk space available after setting up the Kaviza grid. As a best practice, we recommend providing some additional buffer and generally suggest disk sizes of 450GB to 500GB per server.
- Note: Please refer to the installation guide on how to **setup XenServer to support thin provisioning**.
- kMGR by default has been configured to require 70GB of disk space allowing it to support images of up to 60GB in size.

**Disk size requirements**

On Citrix XenServer hypervisor:

- Each virtual desktop managed by Kaviza requires 100% of the disk space



<b>(For Citrix XenServer setup without Thin Provisioning)</b>	<p>reservation on Citrix XenServer host. For example, if the desktop image is set up with 20GB disk space and the virtual desktop is configured with 1GB RAM, the total disk space utilized by the virtual desktop is 21GB (100% of 20GB) + 1GB = 21GB.</p> <ul style="list-style-type: none"><li>• Total disk required on Citrix XenServer host: If you plan to have 25 virtual desktops with 3 images of 20GB disk space each on Citrix XenServer host, make sure that you have at least 775GB (3 x 3 x 20 + 25 x 21 + 70) of free disk space available after setting up the Kaviza grid. As a best practice, we recommend providing some additional buffer and generally suggest disk sizes of 1TB per server.</li></ul>
<b>Types of Disks</b>	<ul style="list-style-type: none"><li>• To support the I/O throughput of the desktops we recommend at least 4 disks for hosts running 25 desktops or more and at least 6 to 8 disks for hosts running 50 desktops or more.</li><li>• Due to the redundancy provided out-of-the-box by Kaviza we suggest a Raid 0 configuration or a Raid 1-0 configuration.</li><li>• Kaviza recommends SAS 10K or greater disks. SATA is generally much slower.</li><li>• SATA SSD provides superior performance when compared to SAS 15K drives. Inexpensive workstation-grade servers with SSD drives provide excellent performance and are ideal for pilots and proofs-of-concepts.</li></ul>