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VDI-in-a-Box 5.0.x

Citrix VDI-in-a-Box is a desktop virtualization solution that runs on off-the-shelf servers to deliver centrally-managed virtual desktops to any user, on any device.

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About Citrix VDI-in-a-Box 5.0.x

VDI-in-a-Box is a single virtual appliance that provides all of the functionality needed to create, provision, manage, and load balance virtual desktops. VDI-in-a-Box has a built-in connection broker, load balancer, user manager, and desktop provisioning server. It does not require separate shared storage, high-speed interconnects, or multiple management servers. The appliance runs on commodity servers running a hypervisor such as Citrix XenServer, Microsoft Hyper-V, or VMware ESXi.

Windows desktop administrators manage a grid of VDI-in-a-Box servers centrally, using an intuitive wizard-driven interface that abstracts virtualization details, eliminating the need for storage specialists, network administrators or virtualization experts.

Citrix Receiver provides VDI-in-a-Box desktop users with secure connections to a high-definition user experience. Powered by Citrix HDX technologies, VDI-in-a-Box provides a superior user experience with Flash multimedia and applications, 3D graphics, webcams, audio, and branch office delivery. Although the desktops run on remote servers, the user experience is equivalent to that of a local Windows desktop. From the user's perspective, logging on to a virtual desktop is the same as logging on to a local desktop.

What's New

- Support for Microsoft Hyper-V
- Console interface enhancements to improve usability
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What's New

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Key Features

**Easy startup** - To get started with virtual desktops, you need only an off-the-shelf server with a hypervisor and the VDI-in-a-Box software. Simply load the software, power it on, and you are ready to get started. The all-in-one design eliminates the need for separate connection brokers, provisioning servers, load balancers or shared storage for high-availability.

**Scales on-demand** - VDI-in-a-Box enables you to scale incrementally without having to over-provision to get key features such as high-availability. You can start small with one or two servers and grow as your needs evolve by adding more servers to the grid. No re-design is required. VDI-in-a-Box handles all the connection brokering and load management across the grid and automatically handles failover in case of server failures.

**Superior user experience** - Users are instantly provisioned with a pristine desktop that incorporates their personal settings and applications, regardless of the user device. Users get the business and productivity applications they need delivered to their virtual desktops. VDI-in-a-Box works seamlessly with your existing user personalization setups such as roaming profiles, folder re-directions, and third party profile management services, to handle the user personalization in virtual desktops.

**High definition performance and multimedia support** - With Citrix HDX, network and display optimizations and performance boosting technologies deliver the best performance over any network, including low-bandwidth and high-latency WAN connections. 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. HDX MediaStream technology ensures users receive a smooth, seamless experience with multimedia content as part of their virtual desktop. HDX MediaStream Flash Redirection enables Adobe Flash content to play locally on user devices, providing users with high definition playback. 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.

**Control over data** - 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.

**Open architecture** - VDI-in-a-Box integrates with Citrix XenServer, Microsoft Hyper-V, and VMware ESXi and works out-of-the-box with thin clients. This means that there is no vendor lock-in for virtualization or user devices. Users can access their virtual desktops from most common client devices, including Windows, Mac OS, and Linux.
Best desktop total cost of ownership - VDI-in-a-Box centralizes and simplifies desktop lifecycle management, dramatically reducing storage and user device costs. 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 reduces storage requirements, and using low power thin clients and consolidating virtual desktops on servers reduces overall energy consumption and cooling requirements.

Local peripheral support - VDI-in-a-Box 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. With HDX Plug-n-Play USB Support, isochronous devices, such as Webcams, microphones, speakers and headsets, are also supported. Devices are supported in typical low latency/high speed LAN environments. Support for Bloomberg keyboard devices is also included.

Multi-monitor support - Users' particular multiple monitor configurations are reflected in their virtual desktop. For example, users can configure their environment with L-shaped, T-shaped and U-shaped monitor configurations or with monitors of different sizes and resolutions. HDX Plug-n-Play Multi-Monitor Support ensures application compatibility with multi-monitor configurations. For more information on multi-monitor support, refer to the Citrix Receiver for Windows topics under Receivers and Plug-ins in Citrix eDocs.

International support - VDI-in-a-Box can publish desktops with operating systems localized for French, German, Japanese, Korean, Russian, Simplified Chinese, Spanish, or Traditional Chinese. The web browser that connects users to desktops is localized for French, German, Japanese, Simplified Chinese, and Spanish. VDI-in-a-Box requires an English version hypervisor.
Known Issues

Known Issues for VDI-in-a-Box 5.0.2

- Receiver for Mac does not connect to a VDI-in-a-Box desktop. To avoid this, connect with a Web browser or the Java Desktop Client. [3513]

- Importing vdiManager_ESX_v5_0_2.ova fails if it is imported directly through a host being managed by VMware vCenter 5.0. For hosts managed by vCenter 5.0, import vdiManager_ESX_v5_0_2.ova through vCenter. [3190]

- VDI-in-a-Box dialog boxes may close if VDI-in-a-Box is left inactive for 60 minutes. Any unsaved work entered into the dialog box is lost. Save your work before leaving your workstations. [3834]

- The desktop session launched through Citrix Receiver 3.0 does not reflect size parameters set in the VDI-In-a-Box Admin > Advanced Properties dialog box. [3401]

- Kiosk mode may fail when used with Citrix Access Gateway. In Kiosk mode, desktops are assigned based on the IP address of the user devices in the kiosk. Connection made to the VDI-in-a-Box Manager through Access Gateway, however, use an IP address specified for the gateway. If multiple users access kiosk stations through Access Gateway, the effect will be that of those users trying to connect to the same kiosk station, resulting in dropped sessions. [3848]

- The Desktops page appears empty and the User Sessions tab displays an error message after migration from Kaviza VDI-in-a-Box 4.1 to Citrix VDI-in-a-Box 5.0.2. Refresh the browser after migration to see the correct contents on these pages. [3573]

- Desktops will fail and appear in the Broken column of the Desktop > Summary page in the VDI-in-a-Box Manager console if, after a credential change, the server is not restarted. To do this, enter maintenance mode and on the Servers page, click Restart. [3800]

- The Test port button on the Test Connection page of the Generate a Base Desktop Image process may return a false failure result. This may happen if Test port is clicked too soon after installation of the Desktop Agent. Wait 30 to 60 seconds and click Test port again. [3482]

- Internet Information Services (IIS) settings are changed when VDI-in-a-Box Manager is installed on a Hyper-V server with IIS installed. The IIS Secure Sockets Layer (SSL) binding is changed to port 9875 from the default 443. Using IIS Manager, create a new binding for port 443, configuring the settings for Type (https), IP address (All Unassigned), Port (443), and SSL certificate. This does not resolve the issue, however, if Microsoft Exchange Server is also installed on the Hyper-V server. Citrix recommends running IIS, Exchange Server, and Microsoft SQL from a virtual machine and not the server running Hyper-V. [3963]
Known Issues

- A VDI-in-a-Box Manager (vdiManager) installed on a Windows server with Hyper-V role that is also a Domain Controller or Backup Domain Controller may not be able to distribute images to or from other servers in the same grid. When the vdiManager is installed on the Domain Controller, it creates a domain user account named kaviza. The other servers in the grid create local administrative accounts named kaviza. As a result, the vdiManager on the Domain Controller does not have the appropriate permission to copy files from the domain controller to other servers in the grid. Citrix recommends not installing a vdiManager on a Domain Controller, but if you must do so, add the kaviza domain user account to the “Domain Admins” group. This gives the vdiManager on the Domain Controller enough permission to copy images to the other servers in the grid. [3910]

Globalization Issues

- VDI-in-a-Box does not support non-ASCII characters in the following items: image name, network adaptor name, hypervisor host name, local storage name, Active Directory organizational unit name, and user name and password for hypervisor or domain controller. [2891, 2950, 2960, 3677-3679, 3681-3682]

- VDI-in-a-Box does not support Surrogate Pairs characters in hypervisor items such as VM name or Network Adopter name. [318681]

Issues Fixed in VDI-in-a-Box 5.0.2


Known Issues for VDI-in-a-Box 5.0.1

- Receiver for Mac does not connect to a VDI-in-a-Box desktop. To avoid this, connect with a Web browser or the Java Desktop Client. [3513]

- Importing vdiManager_ESX_v5_0_1.ova fails if it is imported directly through a host being managed by VMware vCenter 5.0. For hosts managed by vCenter 5.0, import vdiManager_ESX_v5_0_1.ova through vCenter. [3190]

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known issues

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- VDI-in-a-Box for Microsoft Hyper-V does not support the following features:
  - Dynamic memory
  - More than one vCPU per virtual machine
  - RemoteFX support
Any settings for these features are lost when the virtual machine is imported into the VDI-in-a-Box Manager. [3943]

- Internet Information Services (IIS) settings are changed when VDI-in-a-Box Manager is installed on a Hyper-V server with IIS installed. The IIS Secure Sockets Layer (SSL) binding is changed to port 9875 from the default 443. Using IIS Manager, create a new binding for port 443, configuring the settings for Type (https), IP address (All Unassigned), Port (443), and SSL certificate. This does not resolve the issue, however, if Microsoft Exchange Server is also installed on the Hyper-V server. Citrix recommends running IIS, Exchange Server, and Microsoft SQL from a virtual machine and not the server running Hyper-V. [3963]

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International Character Set Issues

- Non-ASCII characters in the Debug Log and Audit Log are corrupted. [2947, 2948]

- VDI-in-a-Box does not support non-ASCII characters in the following items: image name, network adaptor name, hypervisor host name, local storage name, Active Directory organizational unit name, user name and password for hypervisor or domain controller and file path for a grid upgrade. [2891, 2950, 2960, 3677-3679, 3681-3683]

Third-Party

- French-language Windows 7 SP1 Enterprise edition-based virtual machines with XenServer Tools for Citrix XenServer 6.0 do not appear in the Select VM list during the
Known Issues

image import process. Upgrade XenServer from 6.0 to 6.0.2 to fix this issue. [3919]

Issues Fixed in VDI-in-a-Box 5.0.1


Known Issues for VDI-in-a-Box 5.0

- The Logon screen does not appear if VDI-in-a-Box is configured with Citrix Access Gateway 5.0 and a Web browser is used to connect to a desktop. To avoid this, configure the Access Gateway with the Java Desktop Client URL (https://IPaddress/dt/vdclient.jnlp) or, for mobile devices, the PNAgent URL (https://IPaddress/dt/PNAgent/config.xml). [3081]
- Receiver for Mac does not connect to a VDI-in-a-Box desktop. To avoid this, connect with a Web browser or the Java Desktop Client. [3513]
- Importing vdiManager_ESX_v5_0_0.ova fails if it is imported directly through a host being managed by VMware vCenter 5.0. For hosts managed by vCenter 5.0, import vdiManager_ESX_v5_0_0.ova through vCenter. [3190]
- On devices running Linux, VDI-in-a-Box Manager does not open through Mozilla Firefox. To correct this, from Firefox’s Preferences dialog box, click Applications and Citrix ICA settings file. For Citrix ICA settings file, change the action to Use Other. For devices running Citrix Receiver for Linux 11.100, click File System, then User > lib > ICAClient > wfica.sh > Open. For devices running Citrix Receiver for Linux 12.0, click File System, then opt > Citrix > ICAClient > wfica.sh > Open. [3647]
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**Third-Party**

- French-language Windows 7 SP1 Enterprise edition-based virtual machines with XenServer Tools for Citrix XenServer 6.0 do not appear in the Select VM list during the image import process. Begin the installation process with XenServer Tools from XenServer 5.6 on the image. This allows the virtual machine to appear in the Select VM list. When the virtual machine has been imported into the VDI-in-a-Box Manager, replace XenServer Tools with the version from XenServer 6.0. [3919]
Known Issues

The following issue was fixed since Kaviza VDI-in-a-Box 4.1.

- Users accessing their desktops using their UPN account (logging in as user@domain.com) may experience issues reconnecting to their existing session.
The VDI-in-a-Box appliance, referred to as VDI-in-a-Box Manager or vdiManager, runs as a virtual machine on a hypervisor. vdiManager creates and manages virtual desktops on the local physical server by communicating with the local hypervisor.

Each vdiManager can be set up to run as a single physical server or it can be a part of a cohesive fabric of physical servers referred to as a VDI-in-a-Box grid. Each vdiManager in a grid performs the following functions:

- Creates virtual desktops from a template. A template consists of:
  - An image that includes a desktop operating system (such as Windows 7 or Windows XP), a set of applications, and the VDI-in-a-Box Desktop Agent, which communicates with the vdiManager about user connections and desktop health. Multiple templates
can use the same image.

- Policies that specify characteristics such as how many desktops to create, how much RAM to allocate to them, whether local USB peripherals can be accessed by the virtual desktop, and the desktop refresh policy.

- Balances the load across the grid. vdiManagers create desktops across servers running vdiManager based on how many desktops are currently running on each server and the availability of computing resources (memory and cores) on each server. When a user logs on, vdiManager provisions a desktop from a lightly loaded server.

- Provides high availability. vdiManager instances on physical servers communicate with each other to share key operational and configuration information. For instance, VDI-in-a-Box templates and images are stored on multiple servers so they are not lost if a physical server fails. When a physical server fails, the remaining servers in the grid have the needed information to create extra desktops to replace those on the failed server. When the failed server is repaired and rejoins the grid, the key operational and configuration information is sent to it and it then resumes desktop provisioning.

- Brokers connections so that a user can log on to any server in the grid.

- Provides a web-based interface, the VDI-in-a-Box console, used to configure and manage servers running vdiManager, desktops, templates, images, users, and the grid, all at the grid level. In the VDI-in-a-Box console, the grid appears as one logical server running vdiManager. It is also possible to view the status and activity of each server individually when required. When you update vdiManager on one server, vdiManager distributes the changes to all servers in the grid.

### User Authentication and User Data

VDI-in-a-Box uses Active Directory for authentication and a simple network file system to hold user data.

For Windows domain environments, Active Directory service is required to provide user authorization and authentication. VDI-in-a-Box includes a user database for sites using Microsoft Workgroups.

Active Directory can also be used to provide “roaming profiles,” keeping user application configurations and their My Documents folders in a central location outside of the desktop. With this approach users are presented with a personalized desktop each time they log on.
While the use of roaming profiles is optional, it provides personalization that makes the user experience for virtual desktops nearly identical to that for a physical desktop. Use of third-party profile management tools with VDI-in-a-Box requires only the deployment of their agents on each VDI-in-a-Box image.

Each server running vdiManager requires sufficient local storage to keep images, templates, and configuration information needed for a highly available system. VDI-in-a-Box does not back up user data stored on virtual desktops. Typical usage is to create desktops dynamically from a template and destroy them based on a refresh policy. A simple network file system is sufficient to keep user data outside the desktop.
System Requirements for VDI-in-a-Box
5.0.2

The following hypervisors, user devices, and system resources are required to work with Citrix VDI-in-a-Box.

**Supported Hypervisors**

**Citrix XenServer**

- Citrix XenServer 6.0. Platinum, Enterprise, Advanced, and Free editions
- Citrix XenServer 5.6 Feature Pack 1. Platinum, Enterprise, Advanced, and Free editions
- Citrix XenServer 5.6. Platinum, Enterprise, Advanced, and Free editions

*Note:* Servers in a XenServer pool are not supported by VDI-in-a-Box.

To optimize usage of space on your servers, consider using the XenServer Thin Provisioning feature.

**Microsoft Hyper-V**

- Microsoft Hyper-V Server 2008 R2 with Service Pack 1
- Windows Server 2008 R2 with Service Pack 1, Enterprise edition, with Hyper-V role enabled
  - Dynamic Host Configuration Protocol (DHCP) server - supported
  - Active Directory - supported
- Windows Server 2008 R2 with Service Pack 1 Server Core, with Hyper-V role enabled
  - Dynamic Host Configuration Protocol (DHCP) server - supported
  - Active Directory - supported

*Note:* Windows Server 2008 R2 with Service Pack 1, Standard edition is not supported by VDI-in-a-Box for use with Hyper-V.

*Note:* Citrix does not recommend using Internet Information Services (IIS) with Microsoft Hyper-V and VDI-in-a-Box. However, if you do use this combination, you must add an IIS SSL binding in the IIS Manager. Refer to your Microsoft documentation for details of how to do this. The VDI-in-a-Box SSL binding on port 9875 must remain, and you must restore your other bindings (including the one on 443) manually.

**VMware ESXi or VMware vSphere**

- VMware Essentials license or greater is required.
Note: If you are evaluating Citrix VDI-in-a-Box and have downloaded a free version of ESXi from the VMware web-site, do not install the license key that comes with that version. If you install this license key, the APIs required for Citrix VDI-in-a-Box to work with the hypervisor close and the setup process ends. Leave the license selection as Evaluation Mode (No License Key). Convert to a paid hypervisor license during the trial period.

- VMware ESXi 5.0
- VMware ESXi 4.1

User Devices

VDI-in-a-Box provisioned desktops can be accessed from a Web browser, Citrix Receiver (formerly Citrix online plug-in), or the VDI-in-a-Box Java Desktop Client (using Java Runtime Environment (JRE) 1.6 or higher).


The following devices are supported:

- A computer running 32-bit or 64-bit Windows XP, Windows Vista, or Windows 7.
- A computer running the following 32-bit Linux operating systems:
  - RHEL 5.x
  - CentOS 5.x
  - Ubuntu 10.x
- A computer running Mac OS X 10.5 or 10.6.
- A mobile device running any of the following operating systems:
  - iOS 4.2.3 (for iPhones and iPads)
  - Android 3.1
- Thin clients running Windows XP Embedded or Linux operating systems.
- Thin clients running the latest version of Citrix Receiver.

- Supported certified thin clients include:
  - Wyse C10LE
  - Wyse R10L
  - Wyse R90L7
  - Wyse R90LE
  - Wyse Xenith
Secure Remote Connectivity

Secure remote connections from user devices to virtual desktops are supported for the following products:

- Citrix Access Gateway VPX 5.0.4
- Citrix Access Gateway 9.3 Enterprise Edition

Virtual Desktop Operating Systems

- Windows XP Service Pack 3, Professional edition - 32-bit version
- Windows 7 Service Pack 1 Professional, Enterprise editions - 32-bit or 64-bit versions

Windows 7 N is not supported.

Windows Virtual Desktop Access Volume License is needed to access virtual desktops. Please refer to [https://www.microsoft.com](https://www.microsoft.com) for licensing details.

System Resource Requirements

The following provides recommended CPU, memory, and disk allocations to use when sizing a VDI-in-a-Box deployment. These recommendations are based on an average task worker desktop and may vary based on your desktop needs.

- VDI-in-a-Box Manager appliance
  - 1 GB RAM
System Requirements for VDI-in-a-Box 5.0.2

- 40 GB disk space (this can be decreased or increased as required)

**CPU Requirements**

- Use the guidelines provided by the hypervisor vendor. Typically the rule of thumb is a maximum of 6 to 10 desktops per core: 10 for task workers, 8 for knowledge workers, and 6 for heavy users. The number of desktops provisioned on a server can increase significantly if the server has processors with Hyper-Threading technology enabled provided the server has sufficient RAM, disk, and disk Input/Output Operations Per Second (IOPS) capacity to support the increase.

**Memory Requirements**

Memory requirements per server is the sum of the memory required to run the virtual desktops on that server and the memory required by the VDI-in-a-Box Manager (vdiManager).

- For the hypervisor, reserve 1 GB for operations.
- For Windows 7, a minimum of 1.5 GB per desktop is recommended.
- For Windows XP, a minimum of 0.5 GB per desktop is recommended.
- If you need to run 50 desktop on a server, allocating 1 GB of memory to each desktop, the breakdown of the memory requirement for the server would be as follows: 1 GB for the hypervisor, 1 GB for the vdiManager, 1 GB for each of the 50 virtual desktops, and an additional 10% to allow for server operations. This totals 59 GB of memory for the server. You can use a 64 GB server in this case.

**Note:** Ensure you have adequate RAM in the system. Lack of sufficient RAM results in extremely slow provisioning times for virtual desktops and poor response times for provisioned desktops.

**Disk size requirements (for Citrix XenServer with Thin Provisioning enabled and VMware ESXi)**

This is the sum of the disk space required to store desktop images, to run the virtual desktops, and to use vdiManager.

- VDI-in-a-Box uses up to two times the size of a desktop image to maintain multiple versions of an image.
- Due to the VDI-in-a-Box linked clone technology, each virtual desktop typically requires 15% of the disk size of the desktop image from which it is generated. Persistent desktops, however, can grow to the full size of the disk. Because of this, 100% is assumed in the following calculations.
- vdiManager is configured to require 74 GB of disk space by default, allowing it to support desktop images of up to 60 GB in size.

**Example 1:** Twenty-five non-persistent desktops with three images of 20 GB of disk space each on a host require at least 269 GB \((2\times3\times20) + 25\times(15\% \text{ of } 20 \text{ GB}) + 74\).

**Example 2:** A server with three 20 GB published images and 15 non-persistent desktops and 10 persistent desktops will require 439 GB \((2\times3\times20) + 15\times(15\% \text{ of } 20 \text{ GB}) + 10\times(100\% \text{ of } 20 \text{ GB}) + 74\).
As a best practice, provide some additional buffer. Citrix recommends using disk sizes of 450 GB to 500 GB per server.

Disk size requirements (for Citrix XenServer without Thin Provisioning or with Thin Provisioning disabled)

Each virtual desktop managed by vdiManager requires 100% of the disk space reservation on the Citrix XenServer host. For example, if the desktop image is set up with 20 GB of disk space and the virtual desktop is configured with 1 GB of RAM, the total disk space utilized by each virtual desktop is 20 GB (100% of 20 GB).

Example: Twenty-five virtual desktops with three images of 20 GB of disk space each on a Citrix XenServer host require at least 694 GB [(2*3*20) + 25*(100% of 20 GB) + 74] of free disk space available after setting up the VDI-in-a-Box grid. As a best practice, provide some additional buffer. Citrix recommends using disk sizes of 1 TB per server.

Disk size requirements for Microsoft Hyper-V

vdIManager requires a minimum of 60 GB of free disk space.

Types of Disks

To support the throughput of the desktops, Citrix recommends at least four disks for hosts running approximately 25 desktops or more and at least six to eight disks for hosts running approximately 50 desktops or more.

Due to the redundancy provided by VDI-in-a-Box, Citrix suggests a Raid 0 configuration or a Raid 1+0 configuration.

Citrix recommends 10K Serial Attached SCSI (SAS) or faster hard drives.
Before Getting Started with VDI-in-a-Box

Before proceeding with the installation, configuration, and use of Citrix VDI-in-a-Box, you must have the following available:

- One or more servers running one of the following hypervisor systems:
  - Citrix XenServer / XenCenter
  - Microsoft Hyper-V / Hyper-V Manager
  - VMware ESXi / vSphere Client
  - Windows Volume License
  - Dynamic Host Configuration Protocol (DHCP) server
Getting Started with VDI-in-a-Box

The Getting Started section takes you through the process of creating a Citrix VDI-in-a-Box grid on hypervisor using a Windows operating system image. The following scenarios are covered:

- Citrix XenServer using a Windows 7 image
- Citrix XenServer using a Windows XP image
- Microsoft Hyper-V using a Windows 7 image
- Microsoft Hyper-V using a Windows XP image
- VMware ESXi using a Windows 7 image
- VMware ESXi using a Windows XP image
Citrix XenServer Using a Windows 7 Image

Use the Getting Started topics to set up a Citrix VDI-in-a-Box deployment:

- To download and extract the VDI-in-a-Box Manager
- Creating and Configuring the Grid
- Creating the First Windows Image
- To create the first template from the published image
- Assigning Templates to Users, Groups, and IP Addresses
- Testing the Connection as a User
To download and extract the VDI-in-a-Box Manager

Download the VDI-in-a-Box virtual appliance, called VDI-in-a-Box Manager (vdiManager), for use with Citrix XenServer from the Citrix website.

The download package, VDI-in-a-Box_XenServer_v5_0_2.zip, contains the vdiManager file, vdiManager_Xen_v5_0_2.xva. About 1.9 GB of disk space is needed to extract vdiManager.

**Note:** Be sure to download and extract the file to a location accessible with Citrix XenCenter.

2. Click **Downloads**.
3. From the products list, select **VDI-in-a-Box**.
4. From the Appliances section, for the version that matches your hypervisor, click **Download**. The End-User License Agreement appears.
5. Complete the registration form and click **Get Trial**. The Download Manager window opens.
6. Verify your contact information, edit if necessary, and click **Submit**. A page containing links to download packages for each supported hypervisor appears.

   **Note:** An email containing these same links is also sent to the address you provided in the registration form.

7. Click VDI-in-a-Box 5.0.2 for Citrix XenServer. The **Download Manager** window opens.
8. Click **Download Now**.
9. Click **Install** and save VDI-in-a-Box_XenServer_v5_0_2.zip. The Download Manager downloads the zip file.
10. From the zip file, extract the vdiManager file, vdiManager_Xen_v5_0_2.xva.

To import vdiManager

When the vdiManager file, vdiManager_Xen_v5_0_2.xva, is extracted, import it into Citrix XenCenter. For details on importing with XenCenter, see your XenServer documentation. When the import process is finished, vdiManager appears in the XenCenter management console as a virtual machine.
To download and extract the VDI-in-a-Box Manager

**Important:** Do not import more than one vdiManager per hypervisor. Doing so may result in excessive CPU, RAM, disk, and network consumption, and cause system non-responsiveness.
Creating and Configuring the Grid

Configure the VDI-in-a-Box grid once VDI-in-a-Box Manager (vdimanager) has been imported into your hypervisor and is available in its management console.

The grid unites servers running vdiManager, allowing load balancing and ensuring high availability of virtual machines on the servers.

Citrix recommends using IP addresses for your hypervisor and vdiManager.

Enable JavaScript and cookies on your browser.

To open the vdiManager console for first time setup

These steps may vary slightly depending on your Web browser.

1. In your hypervisor, ensure vdiManager is started and in a powered on state.

   Note: If you have not already done so, make note of the vdiManager IP address.


3. Accept the certificate as trusted and continue. If additional warnings appear, accept those, too. The Citrix VDI-in-a-Box Administrator Login page appears.

4. On the Citrix VDI-in-a-Box Administrator Login page, in the Username box, type vdiadmin.
In the **Password** box, type *kaviza* and click **Log On**. The **Welcome** page, showing the four high-level steps necessary to complete to generate virtual desktops, appears.
To set up the hypervisor

1. In the Welcome page, click Get Started. The Set up Hypervisor and VDI-in-a-Box Grid page appears.

2. Click Continue. The Hypervisor page of the VDI-in-a-Box Initial Set up wizard appears.

3. In the IP Address box, type the IP address for the server running your hypervisor.

4. In the User Name and Password boxes, type your user name and password. The user account must have root privileges.

5. Click Next. The Datastore page of the VDI-in-a-Box Initial Set up wizard appears.

To set up the data store and network label

The data store contains your desktop images and virtual desktops.
On the **Datastore** page, select the data store and network label.

2. Click **Next**. The data store information is saved and the **Grid** page of the VDI-in-a-Box Initial Setup wizard appears, allowing you to create a new grid or join an existing grid.

## Selecting a New or Existing Grid

Create a new grid when setting up a new VDI-in-a-Box environment. When creating a new grid, you must associate it with a database containing the users and groups who will be accessing the VDI-in-a-Box virtual machines. The database can be your Active Directory server or a locally stored database called a workgroup.

Join an existing grid when expanding a VDI-in-a-Box environment.
To create a new grid and assign a database

1. On the Grid page, select Create a new VDI-in-a-Box grid and click Next. The Configuration page of the VDI-in-a-Box Initial Set up wizard appears.

2. On the Configuration page, in the New Grid Name box, type the name of the new grid.

3. [Image of VDI-in-a-Box Initial Set up configuration page]
In **User Database**, select **VDI-in-a-Box workgroup** or **Microsoft Active Directory**. If you selected **Microsoft Active Directory**, you must provide additional information. If you selected **VDI-in-a-Box workgroup**, you do not need to provide this information.

4. If you selected Active Directory, in the **IP Address** box, type the IP address hosting the database.

5. If you selected Active Directory, in the **Domain** box, type the DNS domain.

6. If you selected Active Directory, in the **User Name** and **Password** boxes, type your user name and password. The user must have Domain Administrator privileges.

7. Click **Next**. The question "Have you reserved your VDI-in-a-Box Manager’s IP address?," appears.

8. To the question "Have you reserved your VDI-in-a-Box Manager’s IP address?," select **Yes** or **No** and click **Done**. The **Generate Base Image** page appears.
To join an existing grid

1. In the VDI-in-a-Box Initial Set up wizard, on the Grid page, select Join a VDI-in-a-Box server on an existing grid and click Next. The Database page of the VDI-in-a-Box Initial Set up wizard appears.

2. On the Database page, in the IP Address box, type the IP address of the vdiManager in the existing grid.

3. On the Database page, in the User Name and Password boxes, type your vdiManager console user name and password.

4. Click Next. The grid configuration process is finished.
Creating the First Windows Image

After you have created your VDI-in-a-Box Manager (vdiManager) and associated it with a data store, database and grid, you can create your first Windows image.

Use your hypervisor to create a new virtual machine running Windows. Refer to your hypervisor documentation for details.

When creating the virtual machine, be sure that it meets the following conditions:

- The virtual machine is running Windows XP Professional edition (32-bit) or Windows 7 Professional or Enterprise editions (32-bit or 64-bit).
- The virtual machine has Microsoft .Net Framework 3.5 SP1 installed and enabled.
- Remote Desktop Connection (RDP) functionality must be enabled on the virtual machine.
- The virtual machine has only one network interface card (NIC) and it is assigned to Device 0.
- The virtual machine has only one disk image.
- The virtual machine must be started and in a powered on state prior to importing into VDI-In-a-Box.

To prepare for importing the image

You must complete the following steps outside VDI-in-a-Box. See the respective manufacturers’ documentation for details.

1. Activate the virtual machine using a valid Microsoft Volume Activation key.
2. Enable the Local Administrator account on the virtual machine.
3. Install your hypervisor’s management tools on the virtual machine. See the hypervisor manufacturer’s documentation for details.
4. If desired, join the virtual machine to a domain.
   
   **Note**: The virtual machine can be a member of a workgroup.
5. Log on to the virtual machine as the local administrator and enable remote connections for your users.
6. Enable firewall settings to allow remote desktop connections for all networks. See the firewall manufacturer’s documentation for details.
To import the Windows virtual machine

If the Generate a Base Desktop Image page is not currently displayed in your Web browser, navigate to your new vdiManager (https://<IPaddress>/admin/) and log on.

1. On the Generate a Base Desktop Image page, click Continue.

2. On the Import page, select the virtual machine you want to use as an image. In the New Image Name box, type a name for the imported virtual machine.

   Note: The name should be different from the name of the source image.

3. In the Description box, type a description of the virtual machine and click Import. The import process begins and a status page appears showing the progress. The Install Agent page of the Import new VM wizard appears when import process is complete.

To install the VDI-in-a-Box Desktop Agent

The VDI-in-a-Box Desktop Agent resides on each desktop created from the image. vdiManager communicates with the desktop through the agent.

These steps may vary slightly depending on your Web browser.
On the Install Agent page, select and copy the address of the Desktop Agent (https://<IPaddress>/dt/dtagent/).

2. Click Connect An RDP connection is made to the image.

3. Log on to the virtual machine as the local administrator and do the following:
   a. Ensure the image is a member of the desired domain or workgroup.
   b. Ensure remote desktop access is enabled for the desktop users by adding them to the Remote Desktop Users group on the image.

4. Install the VDI-in-a-Box Desktop Agent by pasting the address copied in Step 1 into the image's Web browser URL box and pressing Enter. A security warning about the Web site's certificate may appear.
5. Accept the certificate as trusted and continue. The Install the Desktop Agent page appears.

6. On the Install the Desktop Agent page, click Install.

   **Note:** If the installation fails, click here for an alternative installation.

   The File Download - Security Warning dialog box appears

7. Accept any security warnings that may appear. The Citrix VDI-in-a-Box Desktop Agent setup wizard, which installs the agent, appears.

8. Click Next. The Prerequisites Install page appears.

9. On the Prerequisites Install page, accept the selections by clicking Next.

10. Read and accept the license agreement and then click Install. Several windows open and close. A message appears that the installation wizard is complete.

11. Click Finish. The Citrix VDI-in-a-Box Desktop Agent Setup wizard appears.

12. Click Next. The Ready to Install page appears.

13. Click Install. A message appears stating the installation was successful.

14. On the dialog box displaying the message, click OK. The Completing the Citrix VDI-in-a-Box Desktop Agent Setup Wizard page appears.

15. On the Completing the Citrix VDI-in-a-Box Desktop Agent Setup Wizard page, click Finish. The image restarts and a status page appears showing the progress. The Install Agent page appears.

16. Click Next. The Test Connection page appears.
To test the connection

1. If Citrix Receiver (formerly Citrix online plug-in) is not installed on the user device you are using, install it from https://www.citrix.com

2. On the Test Connection page, test the connection by clicking Test ports. A message containing the test results appears. If corrective action is needed, that information is provided in the message.

3. Click Next. The Edit Image page appears.

To edit the draft image

Edit the draft image to add any necessary updates, settings, or patches as well as any applications to be included in the deployed image. A checklist is provided to help you ensure prerequisites allowing the image to produce desktops are met.
1. On the **Edit Image** page, click **Connect**.

2. In the **Log in to HDX** dialog box, provide your administrator credentials for the image and click **Log in** to log on to the image through an HDX connection.

3. Edit the image as necessary and log off.

4. On the **Edit Image** page, click **View**. A list of prerequisites, in question format, appears.

   **Note:** The prerequisites vary based on hypervisor and image operating system

5. Click **Yes** to indicate each prerequisite has been met.
6. When all prerequisites have been met, click **Done**. The prerequisites close and the **Edit Image** page appears.

7. Click **Next**. The **Prepare Image** page appears.

**To prepare the image**

![Edit draft image 'west-win'](image)

![Test Image](image)
id the information on the Prepare Image page in order to run the Microsoft System Preparation Utility (Sysprep).

1. On the Prepare Image page, in the Domain name box, type the domain name, for example, vdibox.com.

2. In the Domain administrator box, type an administrator account name.
   
   **Note:** Ensure the administrator account used has permission to add and remove computers in the domain.

3. In the Domain password box, type the administrator's password for the domain.

4. In the optional Organizational unit (OU) box, type the organization unit to which the image will apply.

5. From the Time zone list, select the appropriate time zone.

6. In the Computer name prefix box, type a prefix or click Default.

7. Leave the Copy profile check box, which is selected by default, selected to make the local administrator profile the default profile.

8. For Activation method choose the appropriate activation mechanism by selecting using MAK key or using KMS key. If you are not sure, use the MAK key.

9. Leave the Device drivers check box, which is selected by default, selected to reinstall device drivers when Sysprep runs.

10. Select the Fast desktop refresh check box to enable the fast refresh of desktops when users log out.

11. Click Prepare. The Confirm message appears.

12. In the Confirm message, click Confirm. The Confirm message and the Prepare Image page close. A status page appears showing the progress. The Test Image page appears.

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**To test the prepared desktop image**

Test this nearly generated candidate to verify that it is a suitable image from which to generate your desktops and users can connect to their desktops through HDX and RDP.

**Note:** The test image generated during this test is deleted when the candidate is saved.
1. On the Test Image page, click Connect. The Connect to the draft image dialog box appears.

![Connect to the draft image](image)

2. In the Connect to the draft image dialog box, select Use Citrix HDX and click Connect. The Citrix VDI-in-a-Box Log in dialog box appears.

![Connect to the draft image](image)

3. In the Citrix VDI-in-a-Box Log in dialog box, provide user credentials for the image and click Log in to log on to the image through an HDX connection. The test image opens through an HDX connection.

4. Verify that the installed applications are functioning properly and the required group policies are applied.

5. If your grid is configured with Active Directory, log off and log on as a domain user to test access.
6. Log off from the test image. The test image closes.

7. On the **Test Image** page, click **Connect**.

8. In the **Connect to the draft image** dialog box, select **Use Microsoft RDP** and click **Connect**. The test image opens through an RDP connection.

9. Log on to the test image to verify the RDP connection works properly and log off. The test image closes.

10. On the **Test Image** page, click **Save**. The Confirm message appears.

11. In the Confirm message, click **Confirm**. The Confirm message and **Test Image** page close. A status page appears showing the progress. The **Create Desktop Templates** page appears.
To create the first template from the published image

Use templates to create uniform virtual desktops that meet your specifications. Templates consist of an image and policies. The image contains the operating systems and applications that run on the desktop. For details on creating an image, see Creating the First Windows Image. One image can be used by multiple templates.

**Important:** You must have created and published at least one image before you can create a template.

Policies, which you set while creating the template, are characteristics such as how many desktops to create and how much RAM to allocate to the desktops.

The template gives you the option to pre-start desktops. Pre-started desktops are in a powered-on state and at the logon prompt, ready for use. Pre-starting desktops eliminates the need for users to wait for virtual desktops to start. When you specify a number of desktops for pre-start, VDI-in-a-Box maintains that number as users log on. For example, if you specify five pre-started desktops in the template, there will be five virtual desktops started and waiting for your users. When two users log on to their desktops, VDI-in-a-Box starts two more desktops to maintain the requested five pre-starts. This continues until your stated maximum number for the template is reached.

If the Create Desktop Templates from the Base Image page is not currently displayed in your Web browser, navigate to your new VDI-in-a-Box Manager (https://<IPaddress>/admin/) and log on.
1. In the Create Desktop Templates from the Base Image page, click Continue. The Template Info page of the New Desktop Template wizard appears.

2. In the Template Name box, type a name for the template.

3. From the list of available images, select the image you want to associate with this template.

4. In the VM Prefix box, provide a meaningful prefix for the template.

5. In the Description box, type a description of the template.

6. From the Memory (MB) list, allocate memory for the desktop.

   **Note:** Citrix recommends allocating at least 1536 MB of memory for Windows 7 desktops and 512 MB of memory for Windows XP desktops.

7. Select any local devices, such as disk drives or printers, you want to connect to the virtual desktops.

8. Adjust the color depth of the HDX connection as necessary.
To create the first template from the published image


10. In the Maximum desktops box, type the maximum number of desktops to deploy from this template.

11. In the Pre-started desktops box, type the number of desktops that should be started and available for users upon logon.

   Note: For testing purposes, Citrix recommends setting a maximum of two desktops with one pre-started desktop.

12. Select Make this the default template to provide this image to any user with access to whom a template has not been assigned.

13. Select Do not reassign desktops "On Hold" to new users to allow desktops to be held by users.

   Note: This option is selected by default.

14. From the Desktops refresh list, select a method of refresh. Refresh method determines when users' desktops are replaced with a fresh desktop matching the template.

   - On logout: Refreshes the desktop each time the user logs off.

   - Scheduled: Refreshes at a set day and time on a daily, weekly, or monthly basis. You can include desktops in use at the scheduled time. If you exclude in-use desktops, they are replaced when the user logs out following the scheduled refresh.

   - Scheduled or on logout: Refreshes at a set day and time and each time the user logs off. This is useful in environments where users stay logged on to desktops for extended periods.
To create the first template from the published image

- **Manual**: Refreshes only through your action. This setting results in a persistent desktop, one which remains with the user indefinitely. Users can add applications and other modifications with the expectation that they will be available with each log on.

15. Click **Save**.

16. Click **Close**. The amount of desktops designated for pre-start are started and the Assign Users to Desktops page appears.
To edit the template

You can change the maximum number of desktops, the number of pre-started desktops, and make other changes by editing your template.

If the VDI-in-a-Box console is not currently displayed in your Web browser, navigate to your VDI-in-a-Box Manager (https://<IPaddress>/admin/) and log on.

1. In the VDI-in-a-box console, click the Templates tab.
2. Click the name of the template you want to edit.
3. Make the desired changes and click Save.

**Important:** Save is on the Template Policies page.
Assigning Templates to Users, Groups, and IP Addresses

When you have created your templates, you can assign them to users, user groups, and IP addresses. Users and groups can have multiple templates assigned to them. When templates are assigned to an IP address, such as for a kiosk, all users logging on at that kiosk receive the same template.

If a user has not been assigned a template and logs on, that user receives the default template. If you have not specified a default template, that user's credentials are rejected.

If the Assign Users to Desktops page is not currently displayed in your Web browser, navigate to your VDI-in-a-Box Manager (https://<IPaddress>/admin/) and log on.

To assign templates to user groups

1. On the Assign Users to Desktops page, click Continue. The Users page, containing tables for user groups, users, and IP addresses appears.

2. At the User Groups table, click Add. A row for a new user group entry appears in the User Group table.

3. In the Group Name box, type the name of the group to which you want to assign a template.

   Note: Active Directory security groups, such as Domain Admins and Domain Users, are not valid group names in templates.

4. In the Description box, type a group description.

5. Under Templates, click None and, from the list of available templates, select the templates you want to assign to the group. If you selected Make this the default template on the Template Policies page, Default appears in place of None. After assigning a template(s), the template name replaces None. Click the template name to return to the list of available templates.

6. Click Save. The group is added to the table.

7. Repeat these steps to assign templates to additional groups.
To assign templates to users

1. At the Users table, click Add. A row for a new user entry appears in the Users table.

2. In the User ID box, type the user ID of a user to whom you want to assign a template.

   Note: First Name, Last Name, and Group are optional and automatically filled in when you click Save if the user and full information is in the database.

3. Under Templates, click None and, from the list of available templates, select the templates you want to assign to the user. After assigning a template(s), the template name replaces None. Click the template name to return to the list of available templates.

4. Click Save. The user is added to the table.

5. Repeat these steps to assign templates to additional users.

To assign templates to incoming IP addresses

1. At the IP Addresses table, click Add. A row for a new user entry appears in the IP Addresses table.

2. In the IP Address Ranges box, type the ranges of the user device IP addresses to which you want to assign a template. Addresses can be added as separate addresses (192.168.23.143), prefixes (192.168), or ranges (192.168.10.174-204). Separate entries with new lines or spaces.

3. From the Templates list, select the template you want to assign to the IP address.

4. Click Save. The IP address is added to the table.

5. Repeat these steps to assign additional templates to IP addresses.

   Note: Once a template is assigned, it cannot be assigned again until the existing assignment is terminated.
To edit template assignments

1. In the VDI-in-a-Box console, select the Users page.

2. Point to the user group, user, or IP address whose template you want to edit and click Edit.

3. Edit as necessary and click Save.
Testing the Connection as a User

After setting up a template, creating desktops from the template, and assigning them to users, log on to a desktop as a user to ensure the connection works correctly. To do this, you must first install the latest version of Citrix Receiver (formerly Citrix online plug-in), Java Runtime Environment (JRE), and VDI-in-a-Box Java Desktop Client, if you have not already done so.

To prepare your user device

Prepare your user device for testing by ensuring the latest version of JRE is installed and also installing Citrix Receiver to take advantage of the HDX connections.

- If it is not already installed, from https://www.citrix.com, download Citrix Receiver following the directions provided at that Web site.
- Ensure you have JRE 1.6 or higher installed on the user device. If necessary, obtain the latest version from https://www.java.com, following the directions provided at that Web site.

Note: JRE is required to run the VDI-in-a-Box Java client.

To connect to the desktop

These steps may vary slightly depending on your Web browser.

1. Start your Web browser.
2. In the Web browser address box, type https://<IpAddress>/ . A security warning about the Web site’s certificate may appear.
3. Accept the certificate as trusted and continue.
4. In the Citrix VDI-in-a-Box page, in the Username box, type your user name.
5. In the Password box, type your password and click Log On.
6. Click the desired desktop. You are connected to the virtual desktop.

To connect to the desktop through the VDI-in-a-Box Java Desktop Client from a Web browser

These steps may vary slightly based on the Web browser you are using.
1. Start your Web browser.

2. In the Web browser address box, type https://<IPaddress>/dt/vdiclient.jnlp. A security warning about the Web site's certificate may appear.

3. Accept the certificate as trusted and continue. Depending on which Web browser you are using, the Opening vdiclient.jnlp dialog box appears.

4. If the Opening vdiclient.jnlp dialog box appears, ensure Open with is selected and Java(TM) Web Start Launcher (default) appears from the list next to it, then click OK.

5. In the VDI-in-a-Box Java Desktop Client dialog box, type your user credentials and click Log On. If multiple templates are assigned to the user, the Select a Desktop dialog box appears.

6. Select the desktop you wish to test by clicking Connect. You are connected to the virtual desktop.

To connect to the desktop though the VDI-in-a-Box Java Desktop Client from a command prompt

These steps may vary slightly based on the user device you are using.

1. Open the Command Prompt window.

2. Type the command: javaws https://<IPaddress>/dt/vdiclient.jnlp.

3. Press Enter.

4. In the Log on dialog box, in the User name box, type your user name.

5. In the Password box, type your password and click Log On. If multiple templates are assigned to the user, the Select a Desktop dialog box appears.

6. Select the desktop you wish to test by clicking Connect. You are connected to the virtual desktop.
Citrix XenServer Using a Windows XP Image

Use the Getting Started topics to set up a Citrix VDI-in-a-Box deployment:

- To download and extract the VDI-in-a-Box Manager
- Creating and Configuring the Grid
- Creating the First Windows Image
- To create the first template from the published image
- Assigning Templates to Users, Groups, and IP Addresses
- Testing the Connection as a User
To download and extract the VDI-in-a-Box Manager

Download the VDI-in-a-Box virtual appliance, called VDI-in-a-Box Manager (vdiManager), for use with Citrix XenServer from the Citrix website.

The download package, VDI-in-a-Box_XenServer_v5_0_2.zip, contains the vdiManager file, vdiManager_Xen_v5_0_2.xva. About 1.9 GB of disk space is needed to extract vdiManager.

Note: Be sure to download and extract the file to a location accessible with Citrix XenCenter.

2. Click Downloads.
3. From the products list, select VDI-in-a-Box.
4. From the Appliances section, for the version that matches your hypervisor, click Download. The End-User License Agreement appears.
5. Complete the registration form and click Get Trial. The Download Manager window opens.
6. Verify your contact information, edit if necessary, and click Submit. A page containing links to download packages for each supported hypervisor appears.
   
   Note: An email containing these same links is also sent to the address you provided in the registration form.
7. Click VDI-in-a-Box 5.0.2 for Citrix XenServer. The Download Manager window opens.
8. Click Download Now.
9. Click Install and save VDI-in-a-Box_XenServer_v5_0_2.zip. The Download Manager downloads the zip file.
10. From the zip file, extract the vdiManager file, vdiManager_Xen_v5_0_2.xva.

To import vdiManager

When the vdiManager file, vdiManager_Xen_v5_0_2.xva, is extracted, import it into Citrix XenCenter. For details on importing with XenCenter, see your XenServer documentation. When the import process is finished, vdiManager appears in the XenCenter management console as a virtual machine.
Important: Do not import more than one vdiManager per hypervisor. Doing so may result in excessive CPU, RAM, disk, and network consumption, and cause system non-responsiveness.
Creating and Configuring the Grid

Configure the VDI-in-a-Box grid once VDI-in-a-Box Manager (vdiManager) has been imported into your hypervisor and is available in its management console.

The grid unites servers running vdiManager, allowing load balancing and ensuring high availability of virtual machines on the servers.

Citrix recommends using IP addresses for your hypervisor and vdiManager.

Enable JavaScript and cookies on your browser.

To open the vdiManager console for first time setup

These steps may vary slightly depending on your Web browser.

1. In your hypervisor, ensure vdiManager is started and in a powered on state.

   Note: If you have not already done so, make note of the vdiManager IP address.


3. Accept the certificate as trusted and continue. If additional warnings appear, accept those, too. The Citrix VDI-in-a-Box Administrator Login page appears.

4. On the Citrix VDI-in-a-Box Administrator Login page, in the Username box, type vdiadmin.
5. In the Password box, type **kaviza** and click Log On. The Welcome page, showing the four high-level steps necessary to complete to generate virtual desktops, appears.
To set up the hypervisor

1. In the Welcome page, click Get Started. The Set up Hypervisor and VDI-in-a-Box Grid page appears.

2.

Click Continue. The Hypervisor page of the VDI-in-a-Box Initial Set up wizard appears.

3. In the IP Address box, type the IP address for the server running your hypervisor.

4. In the User Name and Password boxes, type your user name and password. The user account must have root privileges.

5. Click Next. The Datastore page of the VDI-in-a-Box Initial Set up wizard appears.

To set up the data store and network label

The data store contains your desktop images and virtual desktops.
Creating and Configuring the Grid

1. On the **Datastore** page, select the data store and network label.
2. Click **Next**. The data store information is saved and the **Grid** page of the VDI-in-a-Box Initial Setup wizard appears, allowing you to create a new grid or join an existing grid.

**Selecting a New or Existing Grid**

Create a new grid when setting up a new VDI-in-a-Box environment. When creating a new grid, you must associate it with a database containing the users and groups who will be accessing the VDI-in-a-Box virtual machines. The database can be your Active Directory server or a locally stored database called a workgroup.

Join an existing grid when expanding a VDI-in-a-Box environment.
To create a new grid and assign a database

1. On the Grid page, select Create a new VDI-in-a-Box grid and click Next. The Configuration page of the VDI-in-a-Box Initial Set up wizard appears.

2. On the Configuration page, in the New Grid Name box, type the name of the new grid.

3. [Image of VDI-in-a-Box Initial Set up configuration interface]
In **User Database**, select **VDI-in-a-Box workgroup** or **Microsoft Active Directory**. If you selected **Microsoft Active Directory**, you must provide additional information. If you selected **VDI-in-a-Box workgroup**, you do not need to provide this information.

4. If you selected Active Directory, in the **IP Address** box, type the IP address hosting the database.

5. If you selected Active Directory, in the **Domain** box, type the DNS domain.

6. If you selected Active Directory, in the **User Name** and **Password** boxes, type your user name and password. The user must have Domain Administrator privileges.

7. Click **Next**. The question “Have you reserved your VDI-in-a-Box Manager’s IP address?,” appears.

8. To the question “Have you reserved your VDI-in-a-Box Manager’s IP address?,” select **Yes** or **No** and click **Done**. The **Generate Base Image** page appears.
To join an existing grid

1. In the VDI-in-a-Box Initial Set up wizard, on the Grid page, select Join a VDI-in-a-Box server on an existing grid and click Next. The Database page of the VDI-in-a-Box Initial Set up wizard appears.

2. On the Database page, in the IP Address box, type the IP address of the vdiManager in the existing grid.

3. On the Database page, in the User Name and Password boxes, type your vdiManager console user name and password.

4. Click Next. The grid configuration process is finished.
Creating the First Windows Image

After you have created your VDI-in-a-Box Manager (vdiManager) and associated it with a data store, database and grid, you can create your first Windows image.

Use your hypervisor to create a new virtual machine running Windows. Refer to your hypervisor documentation for details.

When creating the virtual machine, be sure that it meets the following conditions:

- The virtual machine is running Windows XP Professional edition (32-bit) or Windows 7 Professional or Enterprise editions (32-bit or 64-bit).
- The virtual machine has Microsoft .Net Framework 3.5 SP1 installed and enabled.
- Remote Desktop Connection (RDP) functionality must be enabled on the virtual machine.
- The virtual machine has only one network interface card (NIC) and it is assigned to Device 0.
- The virtual machine has only one disk image.
- The virtual machine must be started and in a powered on state prior to importing into VDI-In-a-Box.

To prepare for importing the image

You must complete the following steps outside VDI-in-a-Box. See the respective manufacturers’ documentation for details.

1. Install your hypervisor’s management tools on the virtual machine. See the hypervisor manufacturer’s documentation for details.

2. If desired, join the virtual machine to a domain.
   
   **Note:** The virtual machine can be a member of a workgroup.

3. Log on to the virtual machine as the local administrator and enable remote connections for your users.

4. Enable firewall settings to allow remote desktop connections for all networks. See the firewall manufacturer’s documentation for details.

To import the Windows virtual machine
If the Generate a Base Desktop Image page is not currently displayed in your Web browser, navigate to your new vdiManager (https://<IPaddress>/admin/) and log on.

1. On the Generate a Base Desktop Image page, click Continue.

2. On the Import page, select the virtual machine you want to use as an image.

3. In the New Image Name box, type a name for the imported virtual machine.

   **Note:** The name should be different from the name of the source image.

4. In the Description box, type a description of the virtual machine and click Import. The import process begins and a status page appears showing the progress. The Install Agent page of the Import new VM wizard appears when import process is complete.

**To install the VDI-in-a-Box Desktop Agent**

The VDI-in-a-Box Desktop Agent resides on each desktop created from the image. vdiManager communicates with the desktop through the agent.

These steps may vary slightly depending on your Web browser.
1. On the Install Agent page, select and copy the address of the Desktop Agent (https://<IPaddress>/dt/dtagent/).

2. Click Connect An RDP connection is made to the image.

3. Log on to the virtual machine as the local administrator and do the following:
   
   a. Ensure the image is a member of the desired domain or workgroup.

   b. Ensure remote desktop access is enabled for the desktop users by adding them to the Remote Desktop Users group on the image.

4. Install the VDI-in-a-Box Desktop Agent by pasting the address copied in Step 1 into the image's Web browser URL box and pressing Enter. A security warning about the Web site's certificate may appear.
Accept the certificate as trusted and continue. The **Install the Desktop Agent** page appears.

6. On the **Install the Desktop Agent** page, click **Install**.

   **Note:** If the installation fails, click **here** for an alternative installation.

   The **File Download - Security Warning** dialog box appears

7. Accept any security warnings that may appear. The Citrix VDI-in-a-Box Desktop Agent setup wizard, which installs the agent, appears.

8. Click **Next**. The **Prerequisites Install** page appears.

9. On the **Prerequisites Install** page, accept the selections by clicking **Next**.

10. Read and accept the license agreement and then click **Install**. Several windows open and close. A message appears that the installation wizard is complete.

11. Click **Finish**. The Citrix VDI-in-a-Box Desktop Agent Setup wizard appears.

12. Click **Next**. The **Ready to Install** page appears.

13. Click **Install**. A message appears stating the installation was successful.

14. On the dialog box displaying the message, click **OK**. The **Completing the Citrix VDI-in-a-Box Desktop Agent Setup Wizard** page appears.

15. On the **Completing the Citrix VDI-in-a-Box Desktop Agent Setup Wizard** page, click **Finish**. The image restarts and a status page appears showing the progress. The **Install Agent** page appears.

16. Click **Next**. The **Test Connection** page appears.
To test the connection

1. If Citrix Receiver (formerly Citrix online plug-in) is not installed on the user device you are using, install it from https://www.citrix.com

2. On the Test Connection page, test the connection by clicking Test ports. A message containing the test results appears. If corrective action is needed, that information is provided in the message.

3. Click Next. The Edit Image page appears.

To edit the draft image

Edit the draft image to add any necessary updates, settings, or patches as well as any applications to be included in the deployed image. A checklist is provided to help you ensure prerequisites allowing the image to produce desktops are met.
1. On the **Edit Image** page, click **Connect**.

2. In the **Log in to HDX** dialog box, provide your administrator credentials for the image and click **Log in** to log on to the image through an HDX connection.

3. Edit the image as necessary and log off.

4. On the **Edit Image** page, click **View**. A list of prerequisites, in question format, appears.

   **Note:** The prerequisites vary based on hypervisor and image operating system

5. Click **Yes** to indicate each prerequisite has been met.
6. When all prerequisites have been met, click **Done**. The prerequisites close and the **Edit Image** page appears.

7. Click **Next**. The **Prepare Image** page appears.

**To prepare the image**

![Prepare Image page](image1)

![Test Image page](image2)
1. On the **Prepare Image** page, in the **Domain name** box, type the domain name, for example, vdibox.com.

2. In the **Domain administrator** box, type an administrator account name.

   **Note:** Ensure the administrator account used has permission to add and remove computers in the domain.

3. In the **Domain password** box, type the administrator's password for the domain.

4. In the optional **Organizational unit (OU)** box, type the organization unit to which the image will apply.

5. In the **Product key** box, type the Windows product key.

6. From the **Time zone** list, select the appropriate time zone.

7. In the **Computer name prefix** box, type a prefix or click **Default**.

8. Leave the **Copy profile** check box, which is selected by default, selected to make the local administrator profile the default profile.

9. Select the **Fast desktop refresh** check box to enable the fast refresh of desktops when users log out.

10. Click **Prepare**. The Confirm message appears.

---

**To test the prepared desktop image**

Test this nearly generated candidate to verify that it is a suitable image from which to generate your desktops and users can connect to their desktops through HDX and RDP.

**Note:** The test image generated during this test is deleted when the candidate is saved.
1. On the Test Image page, click Connect. The Connect to the draft image dialog box appears.

2. In the Connect to the draft image dialog box, select Use Citrix HDX and click Connect. The Citrix VDI-in-a-Box Log in dialog box appears.

3. In the Citrix VDI-in-a-Box Log in dialog box, provide user credentials for the image and click Log in to log on to the image through an HDX connection. The test image opens through an HDX connection.

4. Verify that the installed applications are functioning properly and the required group policies are applied.

5. If your grid is configured with Active Directory, log off and log on as a domain user to test access.
6. Log off from the test image. The test image closes.

7. On the Test Image page, click Connect.

8. In the Connect to the draft image dialog box, select Use Microsoft RDP and click Connect. The test image opens through an RDP connection.

9. Log on to the test image to verify the RDP connection works properly and log off. The test image closes.


11. In the Confirm message, click Confirm. The Confirm message and Test Image page close. A status page appears showing the progress. The Create Desktop Templates page appears.
To create the first template from the published image

Use templates to create uniform virtual desktops that meet your specifications. Templates consist of an image and policies. The image contains the operating systems and applications that run on the desktop. For details on creating an image, see Creating the First Windows Image. One image can be used by multiple templates.

Important: You must have created and published at least one image before you can create a template.

Policies, which you set while creating the template, are characteristics such as how many desktops to create and how much RAM to allocate to the desktops.

The template gives you the option to pre-start desktops. Pre-started desktops are in a powered-on state and at the logon prompt, ready for use. Pre-starting desktops eliminates the need for users to wait for virtual desktops to start. When you specify a number of desktops for pre-start, VDI-in-a-Box maintains that number as users log on. For example, if you specify five pre-started desktops in the template, there will be five virtual desktops started and waiting for your users. When two users log on to their desktops, VDI-in-a-Box starts two more desktops to maintain the requested five pre-starts. This continues until your stated maximum number for the template is reached.

If the Create Desktop Templates from the Base Image page is not currently displayed in your Web browser, navigate to your new VDI-in-a-Box Manager (https://<IPAddress>/admin/) and log on.
To create the first template from the published image

1. In the Create Desktop Templates from the Base Image page, click Continue. The Template Info page of the New Desktop Template wizard appears.

2. In the Template Name box, type a name for the template.

3. From the list of available images, select the image you want to associate with this template.

4. In the VM Prefix box, provide a meaningful prefix for the template.

5. In the Description box, type a description of the template.

6. From the Memory (MB) list, allocate memory for the desktop.

   **Note:** Citrix recommends allocating at least 1536 MB of memory for Windows 7 desktops and 512 MB of memory for Windows XP desktops.

7. Select any local devices, such as disk drives or printers, you want to connect to the virtual desktops.

8. Adjust the color depth of the HDX connection as necessary.
To create the first template from the published image


10. In the Maximum desktops box, type the maximum number of desktops to deploy from this template.

11. In the Pre-started desktops box, type the number of desktops that should be started and available for users upon logon.

   **Note:** For testing purposes, Citrix recommends setting a maximum of two desktops with one pre-started desktop.

12. Select Make this the default template to provide this image to any user with access to whom a template has not been assigned.

13. Select Do not reassign desktops "On Hold" to new users to allow desktops to be held by users.

   **Note:** This option is selected by default.

14. From the Desktops refresh list, select a method of refresh. Refresh method determines when users' desktops are replaced with a fresh desktop matching the template.

   - **On logout:** Refreshes the desktop each time the user logs off.
   
   - **Scheduled:** Refreshes at a set day and time on a daily, weekly, or monthly basis. You can include desktops in use at the scheduled time. If you exclude in-use desktops, they are replaced when the user logs out following the scheduled refresh.
   
   - **Scheduled or on logout:** Refreshes at a set day and time and each time the user logs off. This is useful in environments where users stay logged on to desktops for extended periods.
To create the first template from the published image

- **Manual**: Refreshes only through your action. This setting results in a persistent desktop, one which remains with the user indefinitely. Users can add applications and other modifications with the expectation that they will be available with each log on.

15. Click **Save**.

16. Click **Close**. The amount of desktops designated for pre-start are started and the Assign Users to Desktops page appears.
To edit the template

You can change the maximum number of desktops, the number of pre-started desktops, and make other changes by editing your template.

If the VDI-in-a-Box console is not currently displayed in your Web browser, navigate to your VDI-in-a-Box Manager (https://<IPaddress>/admin/) and log on.

1. In the VDI-in-a-box console, click the Templates tab.
2. Click the name of the template you want to edit.
3. Make the desired changes and click Save.

*Important:* Save is on the Template Policies page.
Assigning Templates to Users, Groups, and IP Addresses

When you have created your templates, you can assign them to users, user groups, and IP addresses. Users and groups can have multiple templates assigned to them. When templates are assigned to an IP address, such as for a kiosk, all users logging on at that kiosk receive the same template.

If a user has not been assigned a template and logs on, that user receives the default template. If you have not specified a default template, that user's credentials are rejected.

If the Assign Users to Desktops page is not currently displayed in your Web browser, navigate to your VDI-in-a-Box Manager (https://<IPaddress>/admin/) and log on.

To assign templates to user groups

1. On the Assign Users to Desktops page, click Continue. The Users page, containing tables for user groups, users, and IP addresses appears.

2. At the User Groups table, click Add. A row for a new user group entry appears in the User Group table.

3. In the Group Name box, type the name of the group to which you want to assign a template.

   Note: Active Directory security groups, such as Domain Admins and Domain Users, are not valid group names in templates.

4. In the Description box, type a group description.

5. Under Templates, click None and, from the list of available templates, select the templates you want to assign to the group. If you selected Make this the default template on the Template Policies page, Default appears in place of None. After assigning a template(s), the template name replaces None. Click the template name to return to the list of available templates.

6. Click Save. The group is added to the table.

7. Repeat these steps to assign templates to additional groups.
To assign templates to users

1. At the Users table, click Add. A row for a new user entry appears in the Users table.

2. In the User ID box, type the user ID of a user to whom you want to assign a template.

   **Note:** First Name, Last Name, and Group are optional and automatically filled in when you click Save if the user and full information is in the database.

3. Under Templates, click None and, from the list of available templates, select the templates you want to assign to the user. After assigning a template(s), the template name replaces None. Click the template name to return to the list of available templates.

4. Click Save. The user is added to the table.

5. Repeat these steps to assign templates to additional users.

To assign templates to incoming IP addresses

1. At the IP Addresses table, click Add. A row for a new user entry appears in the IP Addresses table.

2. In the IP Address Ranges box, type the ranges of the user device IP addresses to which you want to assign a template. Addresses can be added as separate addresses (192.168.23.143), prefixes (192.168), or ranges (192.168.10.174-204). Separate entries with new lines or spaces.

3. From the Templates list, select the template you want to assign to the IP address.

4. Click Save. The IP address is added to the table.

5. Repeat these steps to assign additional templates to IP addresses.

   **Note:** Once a template is assigned, it cannot be assigned again until the existing assignment is terminated.
To edit template assignments

1. In the VDI-in-a-Box console, select the **Users** page.

2. Point to the user group, user, or IP address whose template you want to edit and click **Edit**.

3. Edit as necessary and click **Save**.
Testing the Connection as a User

After setting up a template, creating desktops from the template, and assigning them to users, log on to a desktop as a user to ensure the connection works correctly. To do this, you must first install the latest version of Citrix Receiver (formerly Citrix online plug-in), Java Runtime Environment (JRE), and VDI-in-a-Box Java Desktop Client, if you have not already done so.

To prepare your user device

Prepare your user device for testing by ensuring the latest version of JRE is installed and also installing Citrix Receiver to take advantage of the HDX connections.

- If it is not already installed, from https://www.citrix.com, download Citrix Receiver following the directions provided at that Web site.
- Ensure you have JRE 1.6 or higher installed on the user device. If necessary, obtain the latest version from https://www.java.com, following the directions provided at that Web site.

Note: JRE is required to run the VDI-in-a-Box Java client.

To connect to the desktop

These steps may vary slightly depending on your Web browser.

1. Start your Web browser.


3. Accept the certificate as trusted and continue.

4. In the Citrix VDI-in-a-Box page, in the Username box, type your user name.

5. In the Password box, type your password and click Log On.

6. Click the desired desktop. You are connected to the virtual desktop.

To connect to the desktop through the VDI-in-a-Box Java Desktop Client from a Web browser

These steps may vary slightly based on the Web browser you are using.
Testing the Connection as a User

1. Start your Web browser.

2. In the Web browser address box, type https://<IPaddress>/dt/vdiclient.jnlp. A security warning about the Web site's certificate may appear.

3. Accept the certificate as trusted and continue. Depending on which Web browser you are using, the Opening vdiclient.jnlp dialog box appears.

4. If the Opening vdiclient.jnlp dialog box appears, ensure Open with is selected and Java(TM) Web Start Launcher (default) appears from the list next to it, then click OK.

5. In the VDI-in-a-Box Java Desktop Client dialog box, type your user credentials and click Log On. If multiple templates are assigned to the user, the Select a Desktop dialog box appears.

6. Select the desktop you wish to test by clicking Connect. You are connected to the virtual desktop.

To connect to the desktop though the VDI-in-a-Box Java Desktop Client from a command prompt

These steps may vary slightly based on the user device you are using.

1. Open the Command Prompt window.

2. Type the command: javaws https://<IPaddress>/dt/vdiclient.jnlp.

3. Press Enter.

4. In the Log on dialog box, in the User name box, type your user name.

5. In the Password box, type your password and click Log On. If multiple templates are assigned to the user, the Select a Desktop dialog box appears.

6. Select the desktop you wish to test by clicking Connect. You are connected to the virtual desktop.
Microsoft Hyper-V Using a Windows 7 Image

Use the Getting Started topics to set up a Citrix VDI-in-a-Box deployment:

- To download and extract the VDI-in-a-Box Manager
- Creating and Configuring the Grid
- Creating the First Windows Image
- To create the first template from the published image
- Assigning Templates to Users, Groups, and IP Addresses
- Testing the Connection as a User
To download and extract the VDI-in-a-Box Manager

Download the VDI-in-a-Box virtual appliance, called VDI-in-a-Box Manager (vdiManager), for use with Microsoft Hyper-V from the Citrix website.

The download package, VDI-in-a-Box_Hyper-V_v5_0_2.zip, contains the vdiManager file, vdiManager_Hyper-V_v5_0_2.exe. About 2 GB of disk space is needed to extract vdiManager. In addition to installing vdiManager, vdiManager_Hyper-V_v5_0_2.exe configures Microsoft Hyper-V to work with VDI-in-a-Box, including enabling the Hyper-V Manager role, if it is not already set.

Note: Be sure to download and extract the file to a location accessible with Microsoft Hyper-V.

2. Click Downloads.
3. From the products list, select VDI-in-a-Box.
4. From the download type list, select Product Software.
5. Click Find. The VDI-in-a-Box product software page appears.
6. Click VDI-in-a-Box 5.0.2. The VDI-in-a-Box 5.0.2 page appears.
7. From the Appliances section, for the version that matches your hypervisor, click Download. The End-User License Agreement appears.
8. Accept the agreement. The Download Manager window appears.
9. Click Download Now.
10. Click Install and save VDI-in-a-Box_Hyper-V_v5_0_2.zip. The Download Manager downloads the zip file.
11. From the zip file, extract the vdiManager file, vdiManager file, vdiManager_Hyper-V_v5_0_2.exe.
Creating and Configuring the Grid

Configure the VDI-in-a-Box grid once VDI-in-a-Box Manager (vdiManager) has been installed on your hypervisor and is available in its management console.

The grid unites servers running vdiManager, allowing load balancing and ensuring high availability of virtual machines on the servers.

Citrix recommends using IP addresses for your hypervisor and vdiManager.

Enable JavaScript and cookies on your browser.

Importing the vdiManager into Hyper-V

The Citrix VDI-in-a-Box for Hyper-V Setup wizard installs:

- Citrix VDI-in-a-Box for Hyper-V connector
- Citrix VDI-in-a-Box Manager appliance

**Important:** Hyper-V automatically pauses virtual machines, including the VDI-in-a-Box Managers, when it detects the server on which it is running is low on disk space. The virtual machines are placed in the Paused-Critical state. To resolve this, make space available on the server.

1. Start vdiManager_Hyper-V_v5_0_2.exe by double-clicking the icon or at a command prompt. The Citrix VDI-in-a-Box for Hyper-V Setup wizard appears.

2. Click Next. The Select Destination Location page appears.

3. Accept the default location for the VDI-in-a-Box installation and click Next. The Select Additional Tasks page appears.

4. Leaving **Create Citrix VDI-in-a-Box manager virtual appliance** selected, click Install.

   **Note:** Selecting **Enable Hyper-V Remote Administration** enables you to manage the virtual desktops from a remote device.

   The installation process begins. At its conclusion, the Welcome to Citrix VDI-in-a-Box for Hyper-V page appears.

5. Click Close.

6. Click Finish. On the device running Hyper-V Manager, or an alternative management console, the vdiManager appears in the hypervisor list of virtual machines as vdiManager_timestamp.
Important: Do not import more than one vdiManager per hypervisor. Doing so may result in excessive CPU, RAM, disk, and network consumption, and cause system non-responsiveness.

To open the vdiManager console for first time setup

These steps may vary slightly depending on your Web browser.

1. In the hypervisor list of virtual machines, right-click the vdiManager and click **Start**. The vdiManager status changes from Off to Running.

2. Obtain the IP address for the vdiManager: In the hypervisor list of virtual machines, right-click the vdiManager and click **Connect**. A command window appears, displaying the IP address for the vdiManager.

3. Make note of the IP address for future use and close the command window.


5. Accept the certificate as trusted and continue. If additional warnings appear, accept those, too. The **VDI-in-a-Box Log On** page appears.

6. On the **VDI-in-a-Box Log On** page, in the **Username** box, type `vdiadmin`.

7. In the **Password** box, type `kaviza` and click **Log On**. The **Welcome** page, showing the four high-level steps necessary to complete to generate virtual desktops, appears.
To set up the hypervisor

1. In the Welcome page, click Get Started. The Set up Hypervisor and VDI-in-a-Box Grid page appears.

2. Click Continue. The Hypervisor page of the VDI-in-a-Box Initial Set up wizard appears.

3. In the IP Address box, type the IP address for the server running your hypervisor.

4. In the User Name and Password boxes, type your user name and password. The user account must have administrator privileges.

5. Click Next. The Datastore page of the VDI-in-a-Box Initial Set up wizard appears.

To set up the data store and network label

The data store contains your desktop images and virtual desktops.
1. On the **Datastore** page, select the data store and network label.

2. Click **Next**. The data store information is saved and the **Grid** page of the VDI-in-a-Box Initial Setup wizard appears, allowing you to create a new grid or join an existing grid.

## Selecting a New or Existing Grid

Create a new grid when setting up a new VDI-in-a-Box environment. When creating a new grid, you must associate it with a database containing the users and groups who will be accessing the VDI-in-a-Box virtual machines. The database can be your Active Directory server or a locally stored database called a workgroup.

Join an existing grid when expanding a VDI-in-a-Box environment.
Creating and Configuring the Grid

To create a new grid and assign a database

1. On the Grid page, select Create a new VDI-in-a-Box grid and click Next. The Configuration page of the VDI-in-a-Box Initial Set up wizard appears.

2. On the Configuration page, in the New Grid Name box, type the name of the new grid.

3. [Image of VDI-in-a-Box Initial Set up configuration page]
In **User Database**, select **VDI-in-a-Box workgroup** or **Microsoft Active Directory**. If you selected **Microsoft Active Directory**, you must provide additional information. If you selected **VDI-in-a-Box workgroup**, you do not need to provide this information.

4. If you selected Active Directory, in the **IP Address** box, type the IP address hosting the database.

5. If you selected Active Directory, in the **Domain** box, type the DNS domain.

6. If you selected Active Directory, in the **User Name** and **Password** boxes, type your user name and password. The user must have Domain Administrator privileges.

7. Click **Next**. The question "Have you reserved your VDI-in-a-Box Manager's IP address?," appears.

8. To the question "Have you reserved your VDI-in-a-Box Manager's IP address?", select **Yes** or **No** and click **Done**. The **Generate Base Image** page appears.
To join an existing grid

1. In the VDI-in-a-Box Initial Set up wizard, on the Grid page, select Join a VDI-in-a-Box server on an existing grid and click Next. The Database page of the VDI-in-a-Box Initial Set up wizard appears.

2. On the Database page, in the IP Address box, type the IP address of the vdiManager in the existing grid.

3. On the Database page, in the User Name and Password boxes, type your vdiManager console user name and password.

4. Click Next. The grid configuration process is finished.
Creating the First Windows Image

After you have created your VDI-in-a-Box Manager (vdiManager) and associated it with a data store, database and grid, you can create your first Windows image.

Use your hypervisor to create a new virtual machine running Windows. Refer to your hypervisor documentation for details.

When creating the virtual machine, be sure that it meets the following conditions:

- The virtual machine is running Windows XP Professional edition (32-bit) or Windows 7 Professional or Enterprise editions (32-bit or 64-bit).
- The virtual machine has Microsoft .Net Framework 3.5 SP1 installed and enabled.
- Remote Desktop Connection (RDP) functionality must be enabled on the virtual machine.
- The virtual machine has only one network interface card (NIC) and it is assigned to Device 0.
- The virtual machine has only one disk image.
- The virtual machine must be started and in a powered on state prior to importing into VDI-In-a-Box.

To prepare for importing the image

You must complete the following steps outside VDI-in-a-Box. See the respective manufacturers’ documentation for details.

1. Activate the virtual machine using a valid Microsoft Volume Activation key.
2. Enable the Local Administrator account on the virtual machine.
3. If desired, join the virtual machine to a domain.
   
   **Note:** The virtual machine can be a member of a workgroup.
4. Log on to the virtual machine as the local administrator and enable remote connections for your users.
5. Enable firewall settings to allow remote desktop connections for all networks. See the firewall manufacturer’s documentation for details.
To import the Windows virtual machine

If the Generate a Base Desktop Image page is not currently displayed in your Web browser, navigate to your new vdiManager (https://<IPaddress>/admin/) and log on.

1. On the Generate a Base Desktop Image page, click Continue.

2. On the Import page, select the virtual machine you want to use as an image.

3. In the New Image Name box, type a name for the imported virtual machine.

   Note: The name should be different from the name of the source image.

4. In the Description box, type a description of the virtual machine and click Import. The import process begins and a status page appears showing the progress. The Install Agent page of the Import new VM wizard appears when import process is complete.

To install the VDI-in-a-Box Desktop Agent

The VDI-in-a-Box Desktop Agent resides on each desktop created from the image. vdiManager communicates with the desktop through the agent.

These steps may vary slightly depending on your Web browser.
1.

On the **Install Agent** page, select and copy the address of the Desktop Agent (https://<IpAddress>/dt/dtagent/).

2. Click **Connect** An RDP connection is made to the image.

3. Log on to the virtual machine as the local administrator and do the following:

   a. Ensure the image is a member of the desired domain or workgroup.

   b. Ensure remote desktop access is enabled for the desktop users by adding them to the Remote Desktop Users group on the image.

4. Install the VDI-in-a-Box Desktop Agent by pasting the address copied in Step 1 into the image's Web browser URL box and pressing Enter. A security warning about the Web site's certificate may appear.
5. **Install the Desktop Agent**

1. Please verify the following information before proceeding:
   * You must verify all information before proceeding
   
   - Make sure that the image is member of the correct domain or workgroup.
     (If not, please add the image to the correct domain/workgroup, doing so will require you to reboot the image before proceeding. In which case, save the URL of this page)
   
   - Make sure that the remote desktop access is enabled for the desktop users by adding the desktop users to the `Remote Desktop Users` group.

2. Install the Desktop Agent (32-bit)
   
   ![Install Button](image)

   (If this desktop image is actually a 64-bit OS, please click here to install the 64-bit agent)

3. Once the Desktop Agent is installed, close this window and return to VDI-in-a-Box image setup.

Accept the certificate as trusted and continue. The **Install the Desktop Agent** page appears.

6. On the **Install the Desktop Agent** page, click **Install**.

   **Note:** If the installation fails, click [here](#) for an alternative installation.

   The **File Download - Security Warning** dialog box appears

7. Accept any security warnings that may appear. The Citrix VDI-in-a-Box Desktop Agent setup wizard, which installs the agent, appears.

8. Click **Next**. The **Prerequisites Install** page appears.

9. On the **Prerequisites Install** page, accept the selections by clicking **Next**.

10. Read and accept the license agreement and then click **Install**. Several windows open and close. A message appears that the installation wizard is complete.

11. Click **Finish**. The Citrix VDI-in-a-Box Desktop Agent Setup wizard appears.

12. Click **Next**. The **Ready to Install** page appears.

13. Click **Install**. A message appears stating the installation was successful.

14. On the dialog box displaying the message, click **OK**. The **Completing the Citrix VDI-in-a-Box Desktop Agent Setup Wizard** page appears.

15. On the **Completing the Citrix VDI-in-a-Box Desktop Agent Setup Wizard** page, click **Finish**. The image restarts and a status page appears showing the progress. The **Install Agent** page appears.

16. Click **Next**. The **Test Connection** page appears.
To test the connection

1. If Citrix Receiver (formerly Citrix online plug-in) is not installed on the user device you are using, install it from https://www.citrix.com

2. On the Test Connection page, test the connection by clicking Test ports. A message containing the test results appears. If corrective action is needed, that information is provided in the message.

3. Click Next. The Edit Image page appears.

To edit the draft image

Edit the draft image to add any necessary updates, settings, or patches as well as any applications to be included in the deployed image. A checklist is provided to help you ensure prerequisites allowing the image to produce desktops are met.
1. On the Edit Image page, click Connect.

2. In the Log in to HDX dialog box, provide your administrator credentials for the image and click Log in to log on to the image through an HDX connection.

3. Edit the image as necessary and log off.

4. On the Edit Image page, click View. A list of prerequisites, in question format, appears.

   Note: The prerequisites vary based on hypervisor and image operating system

5. Click Yes to indicate each prerequisite has been met.
6. When all prerequisites have been met, click **Done**. The prerequisites close and the **Edit Image** page appears.

7. Click **Next**. The **Prepare Image** page appears.

**To prepare the image**
To test the prepared desktop image

Test this nearly generated candidate to verify that it is a suitable image from which to generate your desktops and users can connect to their desktops through HDX and RDP.

Note: The test image generated during this test is deleted when the candidate is saved.
1. On the Test Image page, click Connect. The Connect to the draft image dialog box appears.

2. In the Connect to the draft image dialog box, select Use Citrix HDX and click Connect. The Log in to HDX dialog box appears.

3. In the Log in to HDX dialog box, provide user credentials for the image and click Log in to log on to the image through an HDX connection. The test image opens through an HDX connection.

4. Verify that the installed applications are functioning properly and the required group policies are applied.

5. If your grid is configured with Active Directory, log off and log on as a domain user to test access.
6. Log off from the test image. The test image closes.

7. On the Test Image page, click Connect.

8. In the Connect to the draft image dialog box, select Use Microsoft RDP and click Connect. The test image opens through an RDP connection.

9. Log on to the test image to verify the RDP connection works properly and log off. The test image closes.


11. In the Confirm message, click Confirm. The Confirm message and Test Image page close. A status page appears showing the progress. The Create Desktop Templates page appears.
To create the first template from the published image

Use templates to create uniform virtual desktops that meet your specifications. Templates consist of an image and policies. The image contains the operating systems and applications that run on the desktop. For details on creating an image, see Creating the First Windows Image. One image can be used by multiple templates.

**Important:** You must have created and published at least one image before you can create a template.

Policies, which you set while creating the template, are characteristics such as how many desktops to create and how much RAM to allocate to the desktops.

The template gives you the option to pre-start desktops. Pre-started desktops are in a powered-on state and at the logon prompt, ready for use. Pre-starting desktops eliminates the need for users to wait for virtual desktops to start. When you specify a number of desktops for pre-start, VDI-in-a-Box maintains that number as users log on. For example, if you specify five pre-started desktops in the template, there will be five virtual desktops started and waiting for your users. When two users log on to their desktops, VDI-in-a-Box starts two more desktops to maintain the requested five pre-starts. This continues until your stated maximum number for the template is reached.

If the Create Desktop Templates from the Base Image page is not currently displayed in your Web browser, navigate to your new VDI-in-a-Box Manager (https://<IPaddress>/admin/) and log on.
To create the first template from the published image

1. In the Create Desktop Templates from the Base Image page, click Continue. The Template Info page of the New Desktop Template wizard appears.

2. In the Template Name box, type a name for the template.

3. From the list of available images, select the image you want to associate with this template.

4. In the VM Prefix box, provide a meaningful prefix for the template.

5. In the Description box, type a description of the template.

6. From the Memory (MB) list, allocate memory for the desktop.

   Note: Citrix recommends allocating at least 1536 MB of memory for Windows 7 desktops and 512 MB of memory for Windows XP desktops.

7. Select any local devices, such as disk drives or printers, you want to connect to the virtual desktops.

8. Adjust the color depth of the HDX connection as necessary.
To create the first template from the published image


10. In the Maximum desktops box, type the maximum number of desktops to deploy from this template.

11. In the Pre-started desktops box, type the number of desktops that should be started and available for users upon logon.

   **Note:** For testing purposes, Citrix recommends setting a maximum of two desktops with one pre-started desktop.

12. Select Make this the default template to provide this image to any user with access to whom a template has not been assigned.

13. Select Do not reassign desktops "On Hold" to new users to allow desktops to be held by users.

   **Note:** This option is selected by default.

14. From the Desktops refresh list, select a method of refresh. Refresh method determines when users' desktops are replaced with a fresh desktop matching the template.

   - **On logout:** Refreshes the desktop each time the user logs off.
   
   - **Scheduled:** Refreshes at a set day and time on a daily, weekly, or monthly basis. You can include desktops in use at the scheduled time. If you exclude in-use desktops, they are replaced when the user logs out following the scheduled refresh.
   
   - **Scheduled or on logout:** Refreshes at a set day and time and each time the user logs off. This is useful in environments where users stay logged on to desktops for extended periods.
To create the first template from the published image

- **Manual**: Refreshes only through your action. This setting results in a persistent desktop, one which remains with the user indefinitely. Users can add applications and other modifications with the expectation that they will be available with each log on.

15. Click **Save**.

16. Click **Close**. The amount of desktops designated for pre-start are started and the **Assign Users to Desktops** page appears.
To edit the template

You can change the maximum number of desktops, the number of pre-started desktops, and make other changes by editing your template.

If the VDI-in-a-Box console is not currently displayed in your Web browser, navigate to your VDI-in-a-Box Manager (https://<IPAddress>/admin/) and log on.

1. In the VDI-in-a-box console, click the Templates tab.
2. Click the name of the template you want to edit.
3. Make the desired changes and click Save.

**Important:** Save is on the Template Policies page.
Assigning Templates to Users, Groups, and IP Addresses

When you have created your templates, you can assign them to users, user groups, and IP addresses. Users and groups can have multiple templates assigned to them. When templates are assigned to an IP address, such as for a kiosk, all users logging on at that kiosk receive the same template.

If a user has not been assigned a template and logs on, that user receives the default template. If you have not specified a default template, that user’s credentials are rejected.

If the Assign Users to Desktops page is not currently displayed in your Web browser, navigate to your VDI-in-a-Box Manager (https://<IpAddress>/admin/) and log on.

To assign templates to user groups

1. On the Assign Users to Desktops page, click Continue. The Users page, containing tables for user groups, users, and IP addresses appears.

2. At the User Groups table, click Add. A row for a new user group entry appears in the User Group table.

3. In the Group Name box, type the name of the group to which you want to assign a template.

   Note: Active Directory security groups, such as Domain Admins and Domain Users, are not valid group names in templates.

4. In the Description box, type a group description.

5. Under Templates, click None and, from the list of available templates, select the templates you want to assign to the group. If you selected Make this the default template on the Template Policies page, Default appears in place of None. After assigning a template(s), the template name replaces None. Click the template name to return to the list of available templates.

6. Click Save. The group is added to the table.

7. Repeat these steps to assign templates to additional groups.
To assign templates to users

1. At the Users table, click **Add**. A row for a new user entry appears in the Users table.

2. In the **User ID** box, type the user ID of a user to whom you want to assign a template.

   **Note:** First Name, Last Name, and Group are optional and automatically filled in when you click **Save** if the user and full information is in the database.

3. Under **Templates**, click **None** and, from the list of available templates, select the templates you want to assign to the user. After assigning a template(s), the template name replaces **None**. Click the template name to return to the list of available templates.

4. Click **Save**. The user is added to the table.

5. Repeat these steps to assign templates to additional users.

### To assign templates to incoming IP addresses

1. At the IP Addresses table, click **Add**. A row for a new user entry appears in the IP Addresses table.

2. In the **IP Address Ranges** box, type the ranges of the user device IP addresses to which you want to assign a template. Addresses can be added as separate addresses (192.168.23.143), prefixes (192.168), or ranges (192.168.10.174-204). Separate entries with new lines or spaces.

3. From the **Templates** list, select the template you want to assign to the IP address.

4. Click **Save**. The IP address is added to the table.

5. Repeat these steps to assign additional templates to IP addresses.

   **Note:** Once a template is assigned, it cannot be assigned again until the existing assignment is terminated.
To edit template assignments

1. In the VDI-in-a-Box console, select the Users page.

2. Point to the user group, user, or IP address whose template you want to edit and click Edit.

3. Edit as necessary and click Save.
Testing the Connection as a User

After setting up a template, creating desktops from the template, and assigning them to users, log on to a desktop as a user to ensure the connection works correctly. To do this, you must first install the latest version of Citrix Receiver (formerly Citrix online plug-in), Java Runtime Environment (JRE), and VDI-in-a-Box Java Desktop Client, if you have not already done so.

To prepare your user device

Prepare your user device for testing by ensuring the latest version of JRE is installed and also installing Citrix Receiver to take advantage of the HDX connections.

- If it is not already installed, from https://www.citrix.com, download Citrix Receiver following the directions provided at that Web site.
- Ensure you have JRE 1.6 or higher installed on the user device. If necessary, obtain the latest version from https://www.java.com, following the directions provided at that Web site.

  Note: JRE is required to run the VDI-in-a-Box Java client.

To connect to the desktop

These steps may vary slightly depending on your Web browser.

1. Start your Web browser.

2. In the Web browser address box, type https://<IAddress>/ . A security warning about the Web site's certificate may appear.

3. Accept the certificate as trusted and continue.

4. In the Citrix VDI-in-a-Box page, in the Username box, type your user name.

5. In the Password box, type your password and click Log On.

6. Click the desired desktop. You are connected to the virtual desktop.

To connect to the desktop through the VDI-in-a-Box Java Desktop Client from a Web browser

These steps may vary slightly based on the Web browser you are using.
Testing the Connection as a User

1. Start your Web browser.

2. In the Web browser address box, type https://<IPaddress>/dt/vdiclient.jnlp. A security warning about the Web site’s certificate may appear.

3. Accept the certificate as trusted and continue. Depending on which Web browser you are using, the Opening vdiclient.jnlp dialog box appears.

4. If the Opening vdiclient.jnlp dialog box appears, ensure Open with is selected and Java(TM) Web Start Launcher (default) appears from the list next to it, then click OK.

5. In the VDI-in-a-Box Java Desktop Client dialog box, type your user credentials and click Log On. If multiple templates are assigned to the user, the Select a Desktop dialog box appears.

6. Select the desktop you wish to test by clicking Connect. You are connected to the virtual desktop.

To connect to the desktop though the VDI-in-a-Box Java Desktop Client from a command prompt

These steps may vary slightly based on the user device you are using.

1. Open the Command Prompt window.

2. Type the command: javaws https://<IPaddress>/dt/vdiclient.jnlp.

3. Press Enter.

4. In the Log on dialog box, in the User name box, type your user name.

5. In the Password box, type your password and click Log On. If multiple templates are assigned to the user, the Select a Desktop dialog box appears.

6. Select the desktop you wish to test by clicking Connect. You are connected to the virtual desktop.
Microsoft Hyper-V Using a Windows XP Image

Use the Getting Started topics to set up a Citrix VDI-in-a-Box deployment:

- To download and extract the VDI-in-a-Box Manager
- Creating and Configuring the Grid
- Creating the First Windows Image
- To create the first template from the published image
- Assigning Templates to Users, Groups, and IP Addresses
- Testing the Connection as a User
To download and extract the VDI-in-a-Box Manager

Download the VDI-in-a-Box virtual appliance, called VDI-in-a-Box Manager (vdiManager), for use with Microsoft Hyper-V from the Citrix website.

The download package, VDI-in-a-Box_Hyper-V_v5_0_2.zip, contains the vdiManager file, vdiManager_Hyper-V_v5_0_2.exe. About 2 GB of disk space is needed to extract vdiManager. In addition to installing vdiManager, vdiManager_Hyper-V_v5_0_2.exe configures Microsoft Hyper-V to work with VDI-in-a-Box, including enabling the Hyper-V Manager role, if it is not already set.

**Note:** Be sure to download and extract the file to a location accessible with Microsoft Hyper-V.

1. With a Web browser, navigate to [https://www.citrix.com](https://www.citrix.com).
2. Click **Downloads**.
3. From the products list, select **VDI-in-a-Box**.
4. From the download type list, select **Product Software**.
5. Click **Find**. The VDI-in-a-Box product software page appears.
6. Click **VDI-in-a-Box 5.0.2**. The VDI-in-a-Box 5.0.2 page appears.
7. From the Appliances section, for the version that matches your hypervisor, click **Download**. The End-User License Agreement appears.
8. Accept the agreement. The Download Manager window appears.
9. Click **Download Now**.
10. Click **Install** and save VDI-in-a-Box_Hyper-V_v5_0_2.zip. The Download Manager downloads the zip file.
11. From the zip file, extract the vdiManager file, vdiManager_Hyper-V_v5_0_2.exe.
Creating and Configuring the Grid

Configure the VDI-in-a-Box grid once VDI-in-a-Box Manager (vdiManager) has been installed on your hypervisor and is available in its management console.

The grid unites servers running vdiManager, allowing load balancing and ensuring high availability of virtual machines on the servers.

Citrix recommends using IP addresses for your hypervisor and vdiManager.

Enable JavaScript and cookies on your browser.

Importing the vdiManager into Hyper-V

The Citrix VDI-in-a-Box for Hyper-V Setup wizard installs:

- Citrix VDI-in-a-Box for Hyper-V connector
- Citrix VDI-in-a-Box Manager appliance

**Important:** Hyper-V automatically pauses virtual machines, including the VDI-in-a-Box Managers, when it detects the server on which it is running is low on disk space. The virtual machines are placed in the Paused-Critical state. To resolve this, make space available on the server.

1. Start vdiManager_Hyper-V_v5_0_2.exe by double-clicking the icon or at a command prompt. The Citrix VDI-in-a-Box for Hyper-V Setup wizard appears.

2. Click Next. The Select Destination Location page appears.

3. Accept the default location for the VDI-in-a-Box installation and click Next. The Select Additional Tasks page appears.

4. Leaving Create Citrix VDI-in-a-Box manager virtual appliance selected, click Install.

   **Note:** Selecting Enable Hyper-V Remote Administration enables you to manage the virtual desktops from a remote device.

   The installation process begins. At its conclusion, the Welcome to Citrix VDI-in-a-Box for Hyper-V page appears.

5. Click Close.

6. Click Finish. On the device running Hyper-V Manager, or an alternative management console, the vdiManager appears in the hypervisor list of virtual machines as vdiManager_timestamp.
Important: Do not import more than one vdiManager per hypervisor. Doing so may result in excessive CPU, RAM, disk, and network consumption, and cause system non-responsiveness.

To open the vdiManager console for first time setup

These steps may vary slightly depending on your Web browser.

1. In the hypervisor list of virtual machines, right-click the vdiManager and click Start. The vdiManager status changes from Off to Running.

2. Obtain the IP address for the vdiManager: In the hypervisor list of virtual machines, right-click the vdiManager and click Connect. A command window appears, displaying the IP address for the vdiManager.

3. Make note of the IP address for future use and close the command window.


5. Accept the certificate as trusted and continue. If additional warnings appear, accept those, too. The VDI-in-a-Box Log On page appears.

6. On the VDI-in-a-Box Log On page, in the Username box, type vdiadmin.

7. In the Password box, type kaviza and click Log On. The Welcome page, showing the four high-level steps necessary to complete to generate virtual desktops, appears.
To set up the hypervisor

1. In the Welcome page, click Get Started. The Set up Hypervisor and VDI-in-a-Box Grid page appears.

2. In the IP Address box, type the IP address for the server running your hypervisor.

3. In the User Name and Password boxes, type your user name and password. The user account must have administrator privileges.

4. Click Next. The Datastore page of the VDI-in-a-Box Initial Set up wizard appears.

To set up the data store and network label

The data store contains your desktop images and virtual desktops.
1. On the **Datastore** page, select the data store and network label.

2. Click **Next**. The data store information is saved and the **Grid** page of the VDI-in-a-Box Initial Setup wizard appears, allowing you to create a new grid or join an existing grid.

### Selecting a New or Existing Grid

Create a new grid when setting up a new VDI-in-a-Box environment. When creating a new grid, you must associate it with a database containing the users and groups who will be accessing the VDI-in-a-Box virtual machines. The database can be your Active Directory server or a locally stored database called a workgroup.

Join an existing grid when expanding a VDI-in-a-Box environment.
1. On the Grid page, select Create a new VDI-in-a-Box grid and click Next. The Configuration page of the VDI-in-a-Box Initial Set up wizard appears.

2. On the Configuration page, in the New Grid Name box, type the name of the new grid.

3. 

![Image of VDI-in-a-Box Initial Set up wizard]
In User Database, select VDI-in-a-Box workgroup or Microsoft Active Directory. If you selected Microsoft Active Directory, you must provide additional information. If you selected VDI-in-a-Box workgroup, you do not need to provide this information.

4. If you selected Active Directory, in the IP Address box, type the IP address hosting the database.

5. If you selected Active Directory, in the Domain box, type the DNS domain.

6. If you selected Active Directory, in the User Name and Password boxes, type your user name and password. The user must have Domain Administrator privileges.

7. Click Next. The question “Have you reserved your VDI-in-a-Box Manager’s IP address?,” appears.

8. To the question “Have you reserved your VDI-in-a-Box Manager’s IP address?,” select Yes or No and click Done. The Generate Base Image page appears.
To join an existing grid

1. In the VDI-in-a-Box Initial Setup wizard, on the Grid page, select **Join a VDI-in-a-Box server on an existing grid** and click Next. The **Database** page of the VDI-in-a-Box Initial Setup wizard appears.

2. On the **Database** page, in the **IP Address** box, type the IP address of the vdiManager in the existing grid.

3. On the **Database** page, in the **User Name** and **Password** boxes, type your vdiManager console user name and password.

4. Click **Next**. The grid configuration process is finished.
Creating the First Windows Image

After you have created your VDI-in-a-Box Manager (vdiManager) and associated it with a data store, database and grid, you can create your first Windows image.

Use your hypervisor to create a new virtual machine running Windows. Refer to your hypervisor documentation for details.

When creating the virtual machine, be sure that it meets the following conditions:

- The virtual machine is running Windows XP Professional edition (32-bit) or Windows 7 Professional or Enterprise editions (32-bit or 64-bit).
- The virtual machine has Microsoft .Net Framework 3.5 SP1 installed and enabled.
- Remote Desktop Connection (RDP) functionality must be enabled on the virtual machine.
- The virtual machine has only one network interface card (NIC) and it is assigned to Device 0.
- The virtual machine has only one disk image.
- The virtual machine must be started and in a powered on state prior to importing into VDI-In-a-Box.

To prepare for importing the image

You must complete the following steps outside VDI-in-a-Box. See the respective manufacturers’ documentation for details.

1. If desired, join the virtual machine to a domain.

   **Note:** The virtual machine can be a member of a workgroup.

2. Log on to the virtual machine as the local administrator and enable remote connections for your users.

3. Enable firewall settings to allow remote desktop connections for all networks. See the firewall manufacturer’s documentation for details.

To import the Windows virtual machine
Creating the First Windows Image

If the Generate a Base Desktop Image page is not currently displayed in your Web browser, navigate to your new vdiManager (https://<IPaddress>/admin/) and log on.

1. On the Generate a Base Desktop Image page, click Continue.

2. On the Import page, select the virtual machine you want to use as an image.

3. In the New Image Name box, type a name for the imported virtual machine.

   Note: The name should be different from the name of the source image.

4. In the Description box, type a description of the virtual machine and click Import. The import process begins and a status page appears showing the progress. The Install Agent page of the Import new VM wizard appears when import process is complete.

To install the VDI-in-a-Box Desktop Agent

The VDI-in-a-Box Desktop Agent resides on each desktop created from the image. vdiManager communicates with the desktop through the agent.

These steps may vary slightly depending on your Web browser.
1. On the Install Agent page, select and copy the address of the Desktop Agent (https://<IPaddress>/dt/dtagent/).

2. Click Connect An RDP connection is made to the image.

3. Log on to the virtual machine as the local administrator and do the following:
   
   a. Ensure the image is a member of the desired domain or workgroup.
   
   b. Ensure remote desktop access is enabled for the desktop users by adding them to the Remote Desktop Users group on the image.

4. Install the VDI-in-a-Box Desktop Agent by pasting the address copied in Step 1 into the image's Web browser URL box and pressing Enter. A security warning about the Web site's certificate may appear.
5. Accept the certificate as trusted and continue. The **Install the Desktop Agent** page appears.

6. On the **Install the Desktop Agent** page, click **Install**.

   **Note:** If the installation fails, click [here](#) for an alternative installation.

   The **File Download - Security Warning** dialog box appears

7. Accept any security warnings that may appear. The Citrix VDI-in-a-Box Desktop Agent setup wizard, which installs the agent, appears.

8. Click Next. The **Prerequisites Install** page appears.

9. On the **Prerequisites Install** page, accept the selections by clicking **Next**.

10. Read and accept the license agreement and then click **Install**. Several windows open and close. A message appears that the installation wizard is complete.

11. Click **Finish**. The Citrix VDI-in-a-Box Desktop Agent Setup wizard appears.

12. Click Next. The **Ready to Install** page appears.

13. Click **Install**. A message appears stating the installation was successful.

14. On the dialog box displaying the message, click **OK**. The **Completing the Citrix VDI-in-a-Box Desktop Agent Setup Wizard** page appears.

15. On the **Completing the Citrix VDI-in-a-Box Desktop Agent Setup Wizard** page, click **Finish**. The image restarts and a status page appears showing the progress. The **Install Agent** page appears.

16. Click **Next**. The **Test Connection** page appears.
To test the connection

1. If Citrix Receiver (formerly Citrix online plug-in) is not installed on the user device you are using, install it from https://www.citrix.com

2. On the Test Connection page, test the connection by clicking Test ports. A message containing the test results appears. If corrective action is needed, that information is provided in the message.

3. Click Next. The Edit Image page appears.

To edit the draft image

Edit the draft image to add any necessary updates, settings, or patches as well as any applications to be included in the deployed image. A checklist is provided to help you ensure prerequisites allowing the image to produce desktops are met.
Creating the First Windows Image

1. On the Edit Image page, click Connect.

2. In the Log in to HDX dialog box, provide your administrator credentials for the image and click Log in to log on to the image through an HDX connection.

3. Edit the image as necessary and log off.

4. On the Edit Image page, click View. A list of prerequisites, in question format, appears.

   Note: The prerequisites vary based on hypervisor and image operating system

5. Click Yes to indicate each prerequisite has been met.
6. When all prerequisites have been met, click **Done**. The prerequisites close and the **Edit Image** page appears.

7. Click **Next**. The **Prepare Image** page appears.

**To prepare the image**

[Image of the Edit draft image 'west-win' page with fields for domain name, product key, time zone, and computer name profile]

[Image of the Prepare image page with fields for product key, time zone, and computer name profile]
1. On the Prepare Image page, in the **Domain name** box, type the domain name, for example, vdibox.com.

2. In the **Domain administrator** box, type an administrator account name.

   **Note:** Ensure the administrator account used has permission to add and remove computers in the domain.

3. In the **Domain password** box, type the administrator's password for the domain.

4. In the optional **Organizational unit (OU)** box, type the organization unit to which the image will apply.

5. In the **Product key** box, type the Windows product key.

6. From the **Time zone** list, select the appropriate time zone.

7. In the **Computer name prefix** box, type a prefix or click **Default**.

8. Leave the **Copy profile** check box, which is selected by default, selected to make the local administrator profile the default profile.

9. Select the **Fast desktop refresh** check box to enable the fast refresh of desktops when users log out.

10. Click **Prepare**. The Confirm message appears.

---

**To test the prepared desktop image**

Test this nearly generated candidate to verify that it is a suitable image from which to generate your desktops and users can connect to their desktops through HDX and RDP.

**Note:** The test image generated during this test is deleted when the candidate is saved.

1. On the **Test Image** page, click **Connect**. The **Connect to the draft image** dialog box appears.

2. In the **Connect to the draft image** dialog box, select **HDX** and click **Connect**. The **Log in to HDX** dialog box appears.

3. In the **Log in to HDX** dialog box, provide user credentials for the image and click **Log in** to log on to the image through an HDX connection. The test image opens through an HDX connection.

4. Verify that the installed applications are functioning properly and the required group policies are applied.
5. If your grid is configured with Active Directory, log off and log on as a domain user to test access.

6. Log off from the test image. The test image closes.

7. On the Test Image page, click Connect.

8. In the Connect to the draft image dialog box, select RDP and click Connect. The test image opens through an RDP connection.

9. Log on to the test image to verify the RDP connection works properly and log off. The test image closes.


11. In the Confirm message, click Confirm. The Confirm message and Test Image page close. A status page appears showing the progress. The Create Desktop Templates page appears.
To create the first template from the published image

Use templates to create uniform virtual desktops that meet your specifications. Templates consist of an image and policies. The image contains the operating systems and applications that run on the desktop. For details on creating an image, see Creating the First Windows Image. One image can be used by multiple templates.

**Important:** You must have created and published at least one image before you can create a template.

Policies, which you set while creating the template, are characteristics such as how many desktops to create and how much RAM to allocate to the desktops.

The template gives you the option to pre-start desktops. Pre-started desktops are in a powered-on state and at the logon prompt, ready for use. Pre-starting desktops eliminates the need for users to wait for virtual desktops to start. When you specify a number of desktops for pre-start, VDI-in-a-Box maintains that number as users log on. For example, if you specify five pre-started desktops in the template, there will be five virtual desktops started and waiting for your users. When two users log on to their desktops, VDI-in-a-Box starts two more desktops to maintain the requested five pre-starts. This continues until your stated maximum number for the template is reached.

If the Create Desktop Templates from the Base Image page is not currently displayed in your Web browser, navigate to your new VDI-in-a-Box Manager (https://<IPaddress>/admin/) and log on.
1. In the Create Desktop Templates from the Base Image page, click Continue. The Template Info page of the New Desktop Template wizard appears.

2. In the Template Name box, type a name for the template.

3. From the list of available images, select the image you want to associate with this template.

4. In the VM Prefix box, provide a meaningful prefix for the template.

5. In the Description box, type a description of the template.

6. From the Memory (MB) list, allocate memory for the desktop.

   **Note:** Citrix recommends allocating at least 1536 MB of memory for Windows 7 desktops and 512 MB of memory for Windows XP desktops.

7. Select any local devices, such as disk drives or printers, you want to connect to the virtual desktops.

8. Adjust the color depth of the HDX connection as necessary.
To create the first template from the published image

9. Click **Next**. The **Template Policies** page appears.

10. In the **Maximum desktops** box, type the maximum number of desktops to deploy from this template.

11. In the **Pre-started desktops** box, type the number of desktops that should be started and available for users upon logon.

   **Note:** For testing purposes, Citrix recommends setting a maximum of two desktops with one pre-started desktop.

12. Select **Make this the default template** to provide this image to any user with access to whom a template has not been assigned.

13. Select **Do not reassign desktops “On Hold” to new users** to allow desktops to be held by users.

   **Note:** This option is selected by default.

14. From the **Desktops refresh** list, select a method of refresh. Refresh method determines when users’ desktops are replaced with a fresh desktop matching the template.

   - **On logout:** Refreshes the desktop each time the user logs off.

   - **Scheduled:** Refreshes at a set day and time on a daily, weekly, or monthly basis. You can include desktops in use at the scheduled time. If you exclude in-use desktops, they are replaced when the user logs out following the scheduled refresh.

   - **Scheduled or on logout:** Refreshes at a set day and time and each time the user logs off. This is useful in environments where users stay logged on to desktops for extended periods.
To create the first template from the published image

- **Manual**: Refreshes only through your action. This setting results in a persistent desktop, one which remains with the user indefinitely. Users can add applications and other modifications with the expectation that they will be available with each log on.

15. Click **Save**.

16. Click **Close**. The amount of desktops designated for pre-start are started and the **Assign Users to Desktops** page appears.
To edit the template

You can change the maximum number of desktops, the number of pre-started desktops, and make other changes by editing your template.

If the VDI-in-a-Box console is not currently displayed in your Web browser, navigate to your VDI-in-a-Box Manager (https://<IPaddress>/admin/) and log on.

1. In the VDI-in-a-box console, click the Templates tab.

2. Click the name of the template you want to edit.

3. Make the desired changes and click Save.

   Important: Save is on the Template Policies page.
Assigning Templates to Users, Groups, and IP Addresses

When you have created your templates, you can assign them to users, user groups, and IP addresses. Users and groups can have multiple templates assigned to them. When templates are assigned to an IP address, such as for a kiosk, all users logging on at that kiosk receive the same template.

If a user has not been assigned a template and logs on, that user receives the default template. If you have not specified a default template, that user’s credentials are rejected.

If the Assign Users to Desktops page is not currently displayed in your Web browser, navigate to your VDI-in-a-Box Manager (https://<IPaddress>/admin/) and log on.

To assign templates to user groups

1. On the Assign Users to Desktops page, click Continue. The Users page, containing tables for user groups, users, and IP addresses appears.

2. At the User Groups table, click Add. A row for a new user group entry appears in the User Group table.

3. In the Group Name box, type the name of the group to which you want to assign a template.

   Note: Active Directory security groups, such as Domain Admins and Domain Users, are not valid group names in templates.

4. In the Description box, type a group description.

5. Under Templates, click None and, from the list of available templates, select the templates you want to assign to the group. If you selected Make this the default template on the Template Policies page, Default appears in place of None. After assigning a template(s), the template name replaces None. Click the template name to return to the list of available templates.

6. Click Save. The group is added to the table.

7. Repeat these steps to assign templates to additional groups.
To assign templates to users

1. At the Users table, click Add. A row for a new user entry appears in the Users table.

2. In the User ID box, type the user ID of a user to whom you want to assign a template.
   
   **Note:** First Name, Last Name, and Group are optional and automatically filled in when you click Save if the user and full information is in the database.

3. Under Templates, click None and, from the list of available templates, select the templates you want to assign to the user. After assigning a template(s), the template name replaces None. Click the template name to return to the list of available templates.

4. Click Save. The user is added to the table.

5. Repeat these steps to assign templates to additional users.

To assign templates to incoming IP addresses

1. At the IP Addresses table, click Add. A row for a new user entry appears in the IP Addresses table.

2. In the IP Address Ranges box, type the ranges of the user device IP addresses to which you want to assign a template. Addresses can be added as separate addresses (192.168.23.143), prefixes (192.168), or ranges (192.168.1.174-204). Separate entries with new lines or spaces.

3. From the Templates list, select the template you want to assign to the IP address.

4. Click Save. The IP address is added to the table.

5. Repeat these steps to assign additional templates to IP addresses.

   **Note:** Once a template is assigned, it cannot be assigned again until the existing assignment is terminated.
To edit template assignments

1. In the VDI-in-a-Box console, select the Users page.

2. Point to the user group, user, or IP address whose template you want to edit and click Edit.

3. Edit as necessary and click Save.
Testing the Connection as a User

After setting up a template, creating desktops from the template, and assigning them to users, log on to a desktop as a user to ensure the connection works correctly. To do this, you must first install the latest version of Citrix Receiver (formerly Citrix online plug-in), Java Runtime Environment (JRE), and VDI-in-a-Box Java Desktop Client, if you have not already done so.

To prepare your user device

Prepare your user device for testing by ensuring the latest version of JRE is installed and also installing Citrix Receiver to take advantage of the HDX connections.

- If it is not already installed, from https://www.citrix.com, download Citrix Receiver following the directions provided at that Web site.
- Ensure you have JRE 1.6 or higher installed on the user device. If necessary, obtain the latest version from https://www.java.com, following the directions provided at that Web site.

Note: JRE is required to run the VDI-in-a-Box Java client.

To connect to the desktop

These steps may vary slightly depending on your Web browser.

1. Start your Web browser.

2. In the Web browser address box, type https://<IPaddress>/ . A security warning about the Web site’s certificate may appear.

3. Accept the certificate as trusted and continue.

4. In the Citrix VDI-in-a-Box page, in the Username box, type your user name.

5. In the Password box, type your password and click Log On.

6. Click the desired desktop. You are connected to the virtual desktop.

To connect to the desktop through the VDI-in-a-Box Java Desktop Client from a Web browser

These steps may vary slightly based on the Web browser you are using.
1. Start your Web browser.

2. In the Web browser address box, type https://<IPaddress>/dt/vdiclient.jnlp. A security warning about the Web site's certificate may appear.

3. Accept the certificate as trusted and continue. Depending on which Web browser you are using, the Opening vdiclient.jnlp dialog box appears.

4. If the Opening vdiclient.jnlp dialog box appears, ensure Open with is selected and Java(TM) Web Start Launcher (default) appears from the list next to it, then click OK.

5. In the VDI-in-a-Box Java Desktop Client dialog box, type your user credentials and click Log On. If multiple templates are assigned to the user, the Select a Desktop dialog box appears.

6. Select the desktop you wish to test by clicking Connect. You are connected to the virtual desktop.

To connect to the desktop through the VDI-in-a-Box Java Desktop Client from a command prompt

These steps may vary slightly based on the user device you are using.

1. Open the Command Prompt window.

2. Type the command: javaws https://<IPaddress>/dt/vdiclient.jnlp.

3. Press Enter.

4. In the Log on dialog box, in the User name box, type your user name.

5. In the Password box, type your password and click Log On. If multiple templates are assigned to the user, the Select a Desktop dialog box appears.

6. Select the desktop you wish to test by clicking Connect. You are connected to the virtual desktop.
VMware ESXi Using a Windows 7 Image

Use the Getting Started topics to set up a Citrix VDI-in-a-Box deployment:

- To download and extract the VDI-in-a-Box Manager
- Creating and Configuring the Grid
- Creating the First Windows Image
- To create the first template from the published image
- Assigning Templates to Users, Groups, and IP Addresses
- Testing the Connection as a User
To download and extract the VDI-in-a-Box Manager

Download the VDI-in-a-Box virtual appliance, called VDI-in-a-Box Manager (vdiManager), for use with VMware ESXi from the Citrix website.

The download package, VDI-in-a-Box_Hyper-V_v5_0_2.zip, contains the vdiManager file, vdiManager_ESX_v5_0_2.ova. About 2 GB of disk space is needed to extract vdiManager.

Note: Be sure to download and extract the file to a location accessible with VMware vSphere Client.

2. Click Downloads.
3. From the products list, select VDI-in-a-Box.
4. From the download type list, select Product Software.
5. Click Find. The VDI-in-a-Box product software page appears.
6. Click VDI-in-a-Box 5.0.2. The VDI-in-a-Box 5.0.2 page appears.
7. From the Appliances section, for the version that matches your hypervisor, click Download. The End-User License Agreement appears.
8. Accept the agreement. The Download Manager window opens.
9. Click Download Now.
10. Click Install and save VDI-in-a-Box_ESX_v5_0_2.zip. The Download Manager downloads the zip file.
11. From the zip file, extract the vdiManager file, vdiManager_ESX_v5_0_2.ova.

To import vdiManager

When the vdiManager file, vdiManager_ESX_v5_0_2.ova, is extracted, import it into VMware vSphere Client. For details on importing with vSphere Client, see http://www.vmware.com/. When the import process is finished, vdiManager appears in the vSphere Client management console Inventory view as a virtual machine.

Important: Do not import more than one vdiManager per hypervisor. Doing so may result in excessive CPU, RAM, disk, and network consumption, and cause system non-responsiveness.
To download and extract the VDI-in-a-Box Manager
Creating and Configuring the Grid

Configure the VDI-in-a-Box grid once VDI-in-a-Box Manager (vdiManager) has been imported into your hypervisor and is available in its management console.

The grid unites servers running vdiManager, allowing load balancing and ensuring high availability of virtual machines on the servers.

Citrix recommends using IP addresses for your hypervisor and vdiManager.

Enable JavaScript and cookies on your browser.

**To open the vdiManager console for first time setup**

These steps may vary slightly depending on your Web browser.

1. In your hypervisor, ensure vdiManager is started and in a powered on state.
   
   **Note:** If you have not already done so, make note of the vdiManager IP address.


3. Accept the certificate as trusted and continue. If additional warnings appear, accept those, too. The Citrix VDI-in-a-Box Administrator Login page appears.

4. On the Citrix VDI-in-a-Box Administrator Login page, in the Username box, type `vdiadmin`. 
In the Password box, type kaviza and click Log On. The Welcome page, showing the four high-level steps necessary to complete to generate virtual desktops, appears.
To set up the hypervisor

1. In the Welcome page, click Get Started. The Set up Hypervisor and VDI-in-a-Box Grid page appears.

2. Click Continue. The Hypervisor page of the VDI-in-a-Box Initial Set up wizard appears.

   ![Hypervisor Screen]

   Click Continue. The Hypervisor page of the VDI-in-a-Box Initial Set up wizard appears.

3. In the IP Address box, type the IP address for the server running your hypervisor.

4. In the User Name and Password boxes, type your user name and password. The user account must have root privileges.

5. Click Next. The Datastore page of the VDI-in-a-Box Initial Set up wizard appears.

To set up the data store and network label

The data store contains your desktop images and virtual desktops.
1. On the Datastore page, select the data store and network label.
2. Click Next. The data store information is saved and the Grid page of the VDI-in-a-Box Initial Setup wizard appears, allowing you to create a new grid or join an existing grid.

Selecting a New or Existing Grid

Create a new grid when setting up a new VDI-in-a-Box environment. When creating a new grid, you must associate it with a database containing the users and groups who will be accessing the VDI-in-a-Box virtual machines. The database can be your Active Directory server or a locally stored database called a workgroup.

Join an existing grid when expanding a VDI-in-a-Box environment.
Creating and Configuring the Grid

To create a new grid and assign a database

1. On the Grid page, select Create a new VDI-in-a-Box grid and click Next. The Configuration page of the VDI-in-a-Box Initial Set up wizard appears.

2. On the Configuration page, in the New Grid Name box, type the name of the new grid.

3. 

![VDI-in-a-Box Initial Set up](image)

- Hypervisor selected: VMware vSphere
- New Grid Name: EasternGrid
- User Database: Microsoft Active Directory
- IP Address: 172.16.1.23
- Domain: example.com
- User Name: administrator
- Password: ********
- External Management: vCenter manages servers in this grid
In **User Database**, select **VDI-in-a-Box workgroup** or **Microsoft Active Directory**. If you selected **Microsoft Active Directory**, you must provide additional information. If you selected **VDI-in-a-Box workgroup**, you do not need to provide this information.

4. If you selected Active Directory, in the **IP Address** box, type the IP address hosting the database.

5. If you selected Active Directory, in the **Domain** box, type the DNS domain.

6. If you selected Active Directory, in the **User Name** and **Password** boxes, type your user name and password. The user must have Domain Administrator privileges.

7. **Create new grid:**

   - **User Name**: administrator
   - **Password**: ******
   - **External Management**: vCenter manages servers in this grid
   - **IP Address**: 172.16.1.200
   - **User Name**: administrator
   - **Password**: ******
VMware vCenter manages servers in the grid, select vCenter manages servers in this grid. If you selected vCenter manages servers in this grid, you must provide additional information.

8. If you selected vCenter manages servers in this grid, in the IP Address box, type the IP address of the server running vCenter.

9. If you selected vCenter manages servers in this grid, in the User Name and Password boxes, type your vCenter user name and password. The user must have Domain Administrator privileges.

10. Click Next. The question "Have you reserved your VDI-in-a-Box Manager's IP address?" appears.

11. To the question "Have you reserved your VDI-in-a-Box Manager's IP address?," select Yes or No and click Done. The Generate Base Image page appears.
To join an existing grid

1. On the VDI-in-a-Box Initial Set up wizard, on the Grid page, select Join a VDI-in-a-Box server on an existing grid and click Next. The Database page of the VDI-in-a-Box Initial Set up wizard appears.

2. On the Database page, in the IP Address box, type the IP address of the vdiManager in the existing grid.

3. On the Database page, in the User Name and Password boxes, type your vdiManager console user name and password.

4. If VMware vCenter manages servers in the grid, select vCenter manages servers in this grid. If you selected vCenter manages servers in this grid, you must provide additional information.

5. If you selected vCenter manages servers in this grid, in the IP Address box, type the IP address of the server running vCenter.

6. If you selected vCenter manages servers in this grid, in the User Name and Password boxes, type your vCenter user name and password. The user must have Domain Administrator privileges.

7. Click Next. The grid configuration process is finished.
Creating the First Windows Image

After you have created your VDI-in-a-Box Manager (vdiManager) and associated it with a data store, database and grid, you can create your first Windows image.

Use your hypervisor to create a new virtual machine running Windows. Refer to your hypervisor documentation for details.

When creating the virtual machine, be sure that it meets the following conditions:

- The virtual machine is running Windows XP Professional edition (32-bit) or Windows 7 Professional or Enterprise editions (32-bit or 64-bit).
- The virtual machine has Microsoft .Net Framework 3.5 SP1 installed and enabled.
- Remote Desktop Connection (RDP) functionality must be enabled on the virtual machine.
- The virtual machine has only one disk image.
- The virtual machine must be started and in a powered on state prior to importing into VDI-in-a-Box.

To prepare for importing the image

You must complete the following steps outside VDI-in-a-Box. See the respective manufacturers' documentation for details.

1. Activate the virtual machine using a valid Microsoft Volume Activation key.

2. Enable the Local Administrator account on the virtual machine.

3. Install your hypervisor's management tools on the virtual machine. See the hypervisor manufacturer's documentation for details.

4. If desired, join the virtual machine to a domain.

   Note: The virtual machine can be a member of a workgroup.

5. Log on to the virtual machine as the local administrator and enable remote connections for your users.

6. Enable firewall settings to allow remote desktop connections for all networks. See the firewall manufacturer's documentation for details.
To import the Windows virtual machine

If the **Generate a Base Desktop Image** page is not currently displayed in your Web browser, navigate to your new vdiManager (https://<IPaddress>/admin/) and log on.

1. On the **Generate a Base Desktop Image** page, click **Continue**.

2. On the **Import** page, select the virtual machine you want to use as an image.

3. In the **New Image Name** box, type a name for the imported virtual machine.

   **Note:** The name should be different from the name of the source image.

4. In the **Description** box, type a description of the virtual machine and click **Import**. The import process begins and a status page appears showing the progress. The **Install Agent** page of the Import new VM wizard appears when import process is complete.

To install the VDI-in-a-Box Desktop Agent

The VDI-in-a-Box Desktop Agent resides on each desktop created from the image. vdiManager communicates with the desktop through the agent.

These steps may vary slightly depending on your Web browser.
1. On the Install Agent page, select and copy the address of the Desktop Agent (https://<IPaddress>/dt/dtagent/).

2. Click Connect An RDP connection is made to the image.

3. Log on to the virtual machine as the local administrator and do the following:
   
   a. Ensure the image is a member of the desired domain or workgroup.
   
   b. Ensure remote desktop access is enabled for the desktop users by adding them to the Remote Desktop Users group on the image.

4. Install the VDI-in-a-Box Desktop Agent by pasting the address copied in Step 1 into the image's Web browser URL box and pressing Enter. A security warning about the Web site's certificate may appear.
5. **Install the Desktop Agent**

1. Please verify the following information before proceeding:
   * You must verify all information before proceeding
   
   - Make sure that the image is member of the correct domain or workgroup.
   (If not, please add the image to the correct domain/workgroup. Doing so will require you to reboot the image before proceeding. In which case, save the URL of this page.)
   
   - Make sure that the remote desktop access is enabled for the desktop users by adding the desktop users to the Remote Desktop Users' group.

2. Install the Desktop Agent (32-bit)

   ![Install Button](Install Button Image)

   (If this desktop image is actually a 64-bit OS, please click [here](#) to install the 64-bit agent)

3. Once the Desktop Agent is installed, close this window and return to VDI-in-a-Box image setup.

Accept the certificate as trusted and continue. The **Install the Desktop Agent** page appears.

6. On the **Install the Desktop Agent** page, click **Install**.

   **Note:** If the installation fails, click **here** for an alternative installation.

   The **File Download - Security Warning** dialog box appears

7. Accept any security warnings that may appear. The Citrix VDI-in-a-Box Desktop Agent setup wizard, which installs the agent, appears.

8. Click **Next**. The **Prerequisites Install** page appears.

9. On the **Prerequisites Install** page, accept the selections by clicking **Next**.

10. Read and accept the license agreement and then click **Install**. Several windows open and close. A message appears that the installation wizard is complete.

11. Click **Finish**. The Citrix VDI-in-a-Box Desktop Agent Setup wizard appears.

12. Click **Next**. The **Ready to Install** page appears.

13. Click **Install**. A message appears stating the installation was successful.

14. On the dialog box displaying the message, click **OK**. The **Completing the Citrix VDI-in-a-Box Desktop Agent Setup Wizard** page appears.

15. On the **Completing the Citrix VDI-in-a-Box Desktop Agent Setup Wizard** page, click **Finish**. The image restarts and a status page appears showing the progress. The **Install Agent** page appears.

16. Click **Next**. The **Test Connection** page appears.
To test the connection

1. If Citrix Receiver (formerly Citrix online plug-in) is not installed on the user device you are using, install it from https://www.citrix.com

2. On the Test Connection page, test the connection by clicking Test ports. A message containing the test results appears. If corrective action is needed, that information is provided in the message.

3. Click Next. The Edit Image page appears.

To edit the draft image

Edit the draft image to add any necessary updates, settings, or patches as well as any applications to be included in the deployed image. A checklist is provided to help you ensure prerequisites allowing the image to produce desktops are met.
1. On the Edit Image page, click Connect.

2. In the Log in to HDX dialog box, provide your administrator credentials for the image and click Log in to log on to the image through an HDX connection.

3. Edit the image as necessary and log off.

4. On the Edit Image page, click View. A list of prerequisites, in question format, appears.

   **Note:** The prerequisites vary based on hypervisor and image operating system

5. Click Yes to indicate each prerequisite has been met.
6. When all prerequisites have been met, click **Done**. The prerequisites close and the **Edit Image** page appears.

7. Click **Next**. The **Prepare Image** page appears.

**To prepare the image**

![Prepare Image page](image)

![Test Image page](image)
1. On the **Prepare Image** page, in the **Domain name** box, type the domain name, for example, vdibox.com.

2. In the **Domain administrator** box, type an administrator account name.

   **Note:** Ensure the administrator account used has permission to add and remove computers in the domain.

3. In the **Domain password** box, type the administrator's password for the domain.

4. In the optional **Organizational unit (OU)** box, type the organization unit to which the image will apply.

5. From the **Time zone** list, select the appropriate time zone.

6. In the **Computer name prefix** box, type a prefix or click **Default**.

7. Leave the **Copy profile** check box, which is selected by default, selected to make the local administrator profile the default profile.

8. For **Activation method** choose the appropriate activation mechanism by selecting **using MAK key** or **using KMS key**. If you are not sure, use the MAK key.

9. Leave the **Device drivers** check box, which is selected by default, selected to reinstall device drivers when Sysprep runs.

10. Select the **Fast desktop refresh** check box to enable the fast refresh of desktops when users log out.

11. Click **Prepare**. The Confirm message appears.

12. In the Confirm message, click **Confirm**. The Confirm message and the Prepare Image page close. A status page appears showing the progress. The **Test Image** page appears.

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**To test the prepared desktop image**

Test this nearly generated candidate to verify that it is a suitable image from which to generate your desktops and users can connect to their desktops through HDX and RDP.

**Note:** The test image generated during this test is deleted when the candidate is saved.
1. On the Test Image page, click Connect. The Connect to the draft image dialog box appears.

2. In the Connect to the draft image dialog box, select Use Citrix HDX and click Connect. The Citrix VDI-in-a-Box Log in dialog box appears.

3. In the Citrix VDI-in-a-Box Log in dialog box, provide user credentials for the image and click Log in to log on to the image through an HDX connection. The test image opens through an HDX connection.

4. Verify that the installed applications are functioning properly and the required group policies are applied.

5. If your grid is configured with Active Directory, log off and log on as a domain user to test access.
6. Log off from the test image. The test image closes.

7. On the Test Image page, click Connect.

8. In the Connect to the draft image dialog box, select Use Microsoft RDP and click Connect. The test image opens through an RDP connection.

9. Log on to the test image to verify the RDP connection works properly and log off. The test image closes.


11. In the Confirm message, click Confirm. The Confirm message and Test Image page close. A status page appears showing the progress. The Create Desktop Templates page appears.
To create the first template from the published image

Use templates to create uniform virtual desktops that meet your specifications. Templates consist of an image and policies. The image contains the operating systems and applications that run on the desktop. For details on creating an image, see Creating the First Windows Image. One image can be used by multiple templates.

**Important:** You must have created and published at least one image before you can create a template.

Policies, which you set while creating the template, are characteristics such as how many desktops to create and how much RAM to allocate to the desktops.

The template gives you the option to pre-start desktops. Pre-started desktops are in a powered-on state and at the logon prompt, ready for use. Pre-starting desktops eliminates the need for users to wait for virtual desktops to start. When you specify a number of desktops for pre-start, VDI-in-a-Box maintains that number as users log on. For example, if you specify five pre-started desktops in the template, there will be five virtual desktops started and waiting for your users. When two users log on to their desktops, VDI-in-a-Box starts two more desktops to maintain the requested five pre-starts. This continues until your stated maximum number for the template is reached.

If the Create Desktop Templates from the Base Image page is not currently displayed in your Web browser, navigate to your new VDI-in-a-Box Manager (https://<IPaddress>/admin/) and log on.
To create the first template from the published image

1. In the Create Desktop Templates from the Base Image page, click Continue. The Template Info page of the New Desktop Template wizard appears.

2. In the Template Name box, type a name for the template.

3. From the list of available images, select the image you want to associate with this template.

4. In the VM Prefix box, provide a meaningful prefix for the template.

5. In the Description box, type a description of the template.

6. From the Memory (MB) list, allocate memory for the desktop.

   **Note:** Citrix recommends allocating at least 1536 MB of memory for Windows 7 desktops and 512 MB of memory for Windows XP desktops.

7. Select any local devices, such as disk drives or printers, you want to connect to the virtual desktops.

8. Adjust the color depth of the HDX connection as necessary.

10. In the Maximum desktops box, type the maximum number of desktops to deploy from this template.

11. In the Pre-started desktops box, type the number of desktops that should be started and available for users upon logon.

   Note: For testing purposes, Citrix recommends setting a maximum of two desktops with one pre-started desktop.

12. Select Make this the default template to provide this image to any user with access to whom a template has not been assigned.

13. Select Do not reassign desktops "On Hold" to new users to allow desktops to be held by users.

   Note: This option is selected by default.

14. From the Desktops refresh list, select a method of refresh. Refresh method determines when users' desktops are replaced with a fresh desktop matching the template.

   - On logout: Refreshes the desktop each time the user logs off.

   - Scheduled: Refreshes at a set day and time on a daily, weekly, or monthly basis. You can include desktops in use at the scheduled time. If you exclude in-use desktops, they are replaced when the user logs out following the scheduled refresh.

   - Scheduled or on logout: Refreshes at a set day and time and each time the user logs off. This is useful in environments where users stay logged on to desktops for extended periods.
To create the first template from the published image

- **Manual**: Refreshes only through your action. This setting results in a persistent desktop, one which remains with the user indefinitely. Users can add applications and other modifications with the expectation that they will be available with each log on.

15. Click **Save**.

16. Click **Close**. The amount of desktops designated for pre-start are started and the **Assign Users to Desktops** page appears.
To edit the template

You can change the maximum number of desktops, the number of pre-started desktops, and make other changes by editing your template.

If the VDI-in-a-Box console is not currently displayed in your Web browser, navigate to your VDI-in-a-Box Manager (https://<IPaddress>/admin/) and log on.

1. In the VDI-in-a-box console, click the Templates tab.

2. Click the name of the template you want to edit.

3. Make the desired changes and click Save.

   **Important:** Save is on the Template Policies page.
Assigning Templates to Users, Groups, and IP Addresses

When you have created your templates, you can assign them to users, user groups, and IP addresses. Users and groups can have multiple templates assigned to them. When templates are assigned to an IP address, such as for a kiosk, all users logging on at that kiosk receive the same template.

If a user has not been assigned a template and logs on, that user receives the default template. If you have not specified a default template, that user's credentials are rejected.

If the Assign Users to Desktops page is not currently displayed in your Web browser, navigate to your VDI-in-a-Box Manager (https://<IPaddress>/admin/) and log on.

To assign templates to user groups

1. On the Assign Users to Desktops page, click Continue. The Users page, containing tables for user groups, users, and IP addresses appears.

2. At the User Groups table, click Add. A row for a new user group entry appears in the User Group table.

3. In the Group Name box, type the name of the group to which you want to assign a template.

   **Note:** Active Directory security groups, such as Domain Admins and Domain Users, are not valid group names in templates.

4. In the Description box, type a group description.

5. Under Templates, click None and, from the list of available templates, select the templates you want to assign to the group. If you selected **Make this the default template** on the Template Policies page, Default appears in place of None. After assigning a template(s), the template name replaces None. Click the template name to return to the list of available templates.

6. Click Save. The group is added to the table.

7. Repeat these steps to assign templates to additional groups.
Assigning Templates to Users, Groups, and IP Addresses

To assign templates to users

1. At the Users table, click Add. A row for a new user entry appears in the Users table.

2. In the User ID box, type the user ID of a user to whom you want to assign a template.

   **Note:** First Name, Last Name, and Group are optional and automatically filled in when you click Save if the user and full information is in the database.

3. Under Templates, click None and, from the list of available templates, select the templates you want to assign to the user. After assigning a template(s), the template name replaces None. Click the template name to return to the list of available templates.

4. Click Save. The user is added to the table.

5. Repeat these steps to assign templates to additional users.

To assign templates to incoming IP addresses

1. At the IP Addresses table, click Add. A row for a new user entry appears in the IP Addresses table.

2. In the IP Address Ranges box, type the ranges of the user device IP addresses to which you want to assign a template. Addresses can be added as separate addresses (192.168.23.143), prefixes (192.168), or ranges (192.168.10.174-204). Separate entries with new lines or spaces.

3. From the Templates list, select the template you want to assign to the IP address.

4. Click Save. The IP address is added to the table.

5. Repeat these steps to assign additional templates to IP addresses.

   **Note:** Once a template is assigned, it cannot be assigned again until the existing assignment is terminated.
To edit template assignments

1. In the VDI-in-a-Box console, select the Users page.

2. Point to the user group, user, or IP address whose template you want to edit and click Edit.

3. Edit as necessary and click Save.
Testing the Connection as a User

After setting up a template, creating desktops from the template, and assigning them to users, log on to a desktop as a user to ensure the connection works correctly. To do this, you must first install the latest version of Citrix Receiver (formerly Citrix online plug-in), Java Runtime Environment (JRE), and VDI-in-a-Box Java Desktop Client, if you have not already done so.

To prepare your user device

Prepare your user device for testing by ensuring the latest version of JRE is installed and also installing Citrix Receiver to take advantage of the HDX connections.

- If it is not already installed, from https://www.citrix.com, download Citrix Receiver following the directions provided at that Web site.

- Ensure you have JRE 1.6 or higher installed on the user device. If necessary, obtain the latest version from https://www.java.com, following the directions provided at that Web site.

Note: JRE is required to run the VDI-in-a-Box Java client.

To connect to the desktop

These steps may vary slightly depending on your Web browser.

1. Start your Web browser.

2. In the Web browser address box, type https://<IPaddress>/ . A security warning about the Web site’s certificate may appear.

3. Accept the certificate as trusted and continue.

4. In the Citrix VDI-in-a-Box page, in the Username box, type your user name.

5. In the Password box, type your password and click Log On.

6. Click the desired desktop. You are connected to the virtual desktop.

To connect to the desktop through the VDI-in-a-Box Java Desktop Client from a Web browser

These steps may vary slightly based on the Web browser you are using.
1. Start your Web browser.

2. In the Web browser address box, type https://<IPaddress>/dt/vdiclient.jnlp. A security warning about the Web site’s certificate may appear.

3. Accept the certificate as trusted and continue. Depending on which Web browser you are using, the Opening vdiclient.jnlp dialog box appears.

4. If the Opening vdiclient.jnlp dialog box appears, ensure Open with is selected and Java(TM) Web Start Launcher (default) appears from the list next to it, then click OK.

5. In the VDI-in-a-Box Java Desktop Client dialog box, type your user credentials and click Log On. If multiple templates are assigned to the user, the Select a Desktop dialog box appears.

6. Select the desktop you wish to test by clicking Connect. You are connected to the virtual desktop.

To connect to the desktop though the VDI-in-a-Box Java Desktop Client from a command prompt

These steps may vary slightly based on the user device you are using.

1. Open the Command Prompt window.

2. Type the command: javaws https://<IPaddress>/dt/vdiclient.jnlp.

3. Press Enter.

4. In the Log on dialog box, in the User name box, type your user name.

5. In the Password box, type your password and click Log On. If multiple templates are assigned to the user, the Select a Desktop dialog box appears.

6. Select the desktop you wish to test by clicking Connect. You are connected to the virtual desktop.
VMware ESXi Using a Windows XP Image

Use the Getting Started topics to set up a Citrix VDI-in-a-Box deployment:

- To download and extract the VDI-in-a-Box Manager
- Creating and Configuring the Grid
- Creating the First Windows Image
- To create the first template from the published image
- Assigning Templates to Users, Groups, and IP Addresses
- Testing the Connection as a User
To download and extract the VDI-in-a-Box Manager

Download the VDI-in-a-Box virtual appliance, called VDI-in-a-Box Manager (vdManager), for use with VMware ESXi from the Citrix website.

The download package, VDI-in-a-Box_Hyper-V_v5_0_2.zip, contains the vdiManager file, vdManager_ESX_v5_0_2.ova. About 2 GB of disk space is needed to extract vdiManager.

Note: Be sure to download and extract the file to a location accessible with VMware vSphere Client.

2. Click Downloads.
3. From the products list, select VDI-in-a-Box.
4. From the download type list, select Product Software.
5. Click Find. The VDI-in-a-Box product software page appears.
6. Click VDI-in-a-Box 5.0.2. The VDI-in-a-Box 5.0.2 page appears.
7. From the Appliances section, for the version that matches your hypervisor, click Download. The End-User License Agreement appears.
8. Accept the agreement. The Download Manager window opens.
9. Click Download Now.
10. Click Install and save VDI-in-a-Box_ESX_v5_0_2.zip. The Download Manager downloads the zip file.
11. From the zip file, extract the vdiManager file, vdiManager_ESX_v5_0_2.ova.

To import vdiManager

When the vdiManager file, vdiManager_ESX_v5_0_2.ova, is extracted, import it into VMware vSphere Client. For details on importing with vSphere Client, see http://www.vmware.com/. When the import process is finished, vdiManager appears in the vSphere Client management console Inventory view as a virtual machine.

Important: Do not import more than one vdiManager per hypervisor. Doing so may result in excessive CPU, RAM, disk, and network consumption, and cause system non-responsiveness.
To download and extract the VDI-in-a-Box Manager
Creating and Configuring the Grid

Configure the VDI-in-a-Box grid once VDI-in-a-Box Manager (vdiManager) has been imported into your hypervisor and is available in its management console.

The grid unites servers running vdiManager, allowing load balancing and ensuring high availability of virtual machines on the servers.

Citrix recommends using IP addresses for your hypervisor and vdiManager.

Enable JavaScript and cookies on your browser.

To open the vdiManager console for first time setup

These steps may vary slightly depending on your Web browser.

1. In your hypervisor, ensure vdiManager is started and in a powered on state.
   
   **Note:** If you have not already done so, make note of the vdiManager IP address.


3. Accept the certificate as trusted and continue. If additional warnings appear, accept those, too. The Citrix VDI-in-a-Box Administrator Login page appears.

4. On the Citrix VDI-in-a-Box Administrator Login page, in the Username box, type vdiadmin.
5. In the Password box, type kaviza and click Log On. The Welcome page, showing the four high-level steps necessary to complete to generate virtual desktops, appears.
To set up the hypervisor

1. In the Welcome page, click Get Started. The Set up Hypervisor and VDI-in-a-Box Grid page appears.

2. Click Continue. The Hypervisor page of the VDI-in-a-Box Initial Set up wizard appears.

   ![Hypervisor page image]

   Click Continue. The Hypervisor page of the VDI-in-a-Box Initial Set up wizard appears.

3. In the IP Address box, type the IP address for the server running your hypervisor.

4. In the User Name and Password boxes, type your user name and password. The user account must have root privileges.

5. Click Next. The Datastore page of the VDI-in-a-Box Initial Set up wizard appears.

To set up the data store and network label

The data store contains your desktop images and virtual desktops.
1. On the Datastore page, select the data store and network label.
2. Click Next. The data store information is saved and the Grid page of the VDI-in-a-Box Initial Setup wizard appears, allowing you to create a new grid or join an existing grid.

### Selecting a New or Existing Grid

Create a new grid when setting up a new VDI-in-a-Box environment. When creating a new grid, you must associate it with a database containing the users and groups who will be accessing the VDI-in-a-Box virtual machines. The database can be your Active Directory server or a locally stored database called a workgroup.

Join an existing grid when expanding a VDI-in-a-Box environment.

### To create a new grid and assign a database

1. On the Grid page, select Create a new VDI-in-a-Box grid and click Next. The Configuration page of the VDI-in-a-Box Initial Set up wizard appears.

2. On the Configuration page, in the New Grid Name box, type the name of the new grid.
3.

In User Database, select VDI-in-a-Box workgroup or Microsoft Active Directory. If you selected Microsoft Active Directory, you must provide additional information. If you selected VDI-in-a-Box workgroup, you do not need to provide this information.
Creating and Configuring the Grid

4. If you selected Active Directory, in the IP Address box, type the IP address hosting the database.

5. If you selected Active Directory, in the Domain box, type the DNS domain.

6. If you selected Active Directory, in the User Name and Password boxes, type your user name and password. The user must have Domain Administrator privileges.

7. If VMware vCenter manages servers in the grid, select vCenter manages servers in this grid. If you selected vCenter manages servers in this grid, you must provide additional information.

8. If you selected vCenter manages servers in this grid, in the IP Address box, type the IP address of the server running vCenter.

9. If you selected vCenter manages servers in this grid, in the User Name and Password boxes, type your vCenter user name and password. The user must have Domain Administrator privileges.

10. Click Next. The question "Have you reserved your VDI-in-a-Box Manager's IP address?" appears.

11. To the question "Have you reserved your VDI-in-a-Box Manager's IP address?" select Yes or No and click Done. The Generate Base Image page appears.
To join an existing grid

1. On the VDI-in-a-Box Initial Set up wizard, on the Grid page, select Join a VDI-in-a-Box server on an existing grid and click Next. The Database page of the VDI-in-a-Box Initial Set up wizard appears.

2. On the Database page, in the IP Address box, type the IP address of the vdiManager in the existing grid.

3. On the Database page, in the User Name and Password boxes, type your vdiManager console user name and password.

4. If VMware vCenter manages servers in the grid, select vCenter manages servers in this grid. If you selected vCenter manages servers in this grid, you must provide additional information.

5. If you selected vCenter manages servers in this grid, in the IP Address box, type the IP address of the server running vCenter.

6. If you selected vCenter manages servers in this grid, in the User Name and Password boxes, type your vCenter user name and password. The user must have Domain Administrator privileges.

7. Click Next. The grid configuration process is finished.
Creating the First Windows Image

After you have created your VDI-in-a-Box Manager (vdiManager) and associated it with a data store, database and grid, you can create your first Windows image.

Use your hypervisor to create a new virtual machine running Windows. Refer to your hypervisor documentation for details.

When creating the virtual machine, be sure that it meets the following conditions:

- The virtual machine is running Windows XP Professional edition (32-bit) or Windows 7 Professional or Enterprise editions (32-bit or 64-bit).
- The virtual machine has Microsoft .Net Framework 3.5 SP1 installed and enabled.
- Remote Desktop Connection (RDP) functionality must be enabled on the virtual machine.
- The virtual machine has only one disk image.
- The virtual machine must be started and in a powered on state prior to importing into VDI-in-a-Box.

To prepare for importing the image

You must complete the following steps outside VDI-in-a-Box. See the respective manufacturers' documentation for details.

1. Install your hypervisor's management tools on the virtual machine. See the hypervisor manufacturer's documentation for details.

2. Install your hypervisor's management tools on the virtual machine. See the hypervisor manufacturer's documentation for details.

3. Log on to the virtual machine as the local administrator and enable remote connections for your users.

4. Enable firewall settings to allow remote desktop connections for all networks. See the firewall manufacturer's documentation for details.

To import the Windows virtual machine

If the Generate a Base Desktop Image page is not currently displayed in your Web browser, navigate to your new vdiManager (https://<IPaddress>/admin/) and log on.
1. On the **Generate a Base Desktop Image** page, click **Continue**.

2. On the **Import** page, select the virtual machine you want to use as an image.

3. In the **New Image Name** box, type a name for the imported virtual machine.

   **Note:** The name should be different from the name of the source image.

4. In the **Description** box, type a description of the virtual machine and click **Import**. The import process begins and a status page appears showing the progress. The **Install Agent** page of the Import new VM wizard appears when import process is complete.

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**To install the VDI-in-a-Box Desktop Agent**

The VDI-in-a-Box Desktop Agent resides on each desktop created from the image. vdiManager communicates with the desktop through the agent.

These steps may vary slightly depending on your Web browser.
1. On the **Install Agent** page, select and copy the address of the Desktop Agent (https://<Ipaddress>/dt/dtagent/).

2. Click **Connect** An RDP connection is made to the image.

3. Log on to the virtual machine as the local administrator and do the following:
   a. Ensure the image is a member of the desired domain or workgroup.
   b. Ensure remote desktop access is enabled for the desktop users by adding them to the Remote Desktop Users group on the image.

4. Install the VDI-in-a-Box Desktop Agent by pasting the address copied in Step 1 into the image's Web browser URL box and pressing Enter. A security warning about the Web site's certificate may appear.
5. 

Accept the certificate as trusted and continue. The Install the Desktop Agent page appears.

6. On the Install the Desktop Agent page, click Install.
   
   Note: If the installation fails, click here for an alternative installation.

The File Download - Security Warning dialog box appears

7. Accept any security warnings that may appear. The Citrix VDI-in-a-Box Desktop Agent setup wizard, which installs the agent, appears.

8. Click Next. The Prerequisites Install page appears.

9. On the Prerequisites Install page, accept the selections by clicking Next.

10. Read and accept the license agreement and then click Install. Several windows open and close. A message appears that the installation wizard is complete.

11. Click Finish. The Citrix VDI-in-a-Box Desktop Agent Setup wizard appears.

12. Click Next. The Ready to Install page appears.

13. Click Install. A message appears stating the installation was successful.

14. On the dialog box displaying the message, click OK. The Completing the Citrix VDI-in-a-Box Desktop Agent Setup Wizard page appears.

15. On the Completing the Citrix VDI-in-a-Box Desktop Agent Setup Wizard page, click Finish. The image restarts and a status page appears showing the progress. The Install Agent page appears.

16. Click Next. The Test Connection page appears.
To test the connection

1. If Citrix Receiver (formerly Citrix online plug-in) is not installed on the user device you are using, install it from https://www.citrix.com

2. On the Test Connection page, test the connection by clicking Test ports. A message containing the test results appears. If corrective action is needed, that information is provided in the message.

3. Click Next. The Edit Image page appears.

To edit the draft image

Edit the draft image to add any necessary updates, settings, or patches as well as any applications to be included in the deployed image. A checklist is provided to help you ensure prerequisites allowing the image to produce desktops are met.
Creating the First Windows Image

1. On the Edit Image page, click Connect.

2. In the Log in to HDX dialog box, provide your administrator credentials for the image and click Log in to log on to the image through an HDX connection.

3. Edit the image as necessary and log off.

4. On the Edit Image page, click View. A list of prerequisites, in question format, appears.

   **Note:** The prerequisites vary based on hypervisor and image operating system

5. Click Yes to indicate each prerequisite has been met.
6. When all prerequisites have been met, click **Done**. The prerequisites close and the **Edit Image** page appears.

7. Click **Next**. The **Prepare Image** page appears.

## To prepare the image

Provide the information on the **Prepare Image** page in order to run the Microsoft System Preparation Utility (Sysprep).

1. On the **Prepare Image** page, in the **Domain name** box, type the domain name, for example, vdibox.com.

2. In the **Domain administrator** box, type an administrator account name.
   
   **Note:** Ensure the administrator account used has permission to add and remove computers in the domain.

3. In the **Domain password** box, type the administrator's password for the domain.

4. In the optional **Organizational unit (OU)** box, type the organization unit to which the image will apply.

5. In the **Product key** box, type the Windows product key.

6. From the **Time zone** list, select the appropriate time zone.

7. In the **Computer name prefix** box, type a prefix or click **Default**.

8. Leave the **Copy profile** check box, which is selected by default, selected to make the local administrator profile the default profile.

9. Select the **Fast desktop refresh** check box to enable the fast refresh of desktops when users log out.

10. Click **Prepare**. The Confirm message appears.

## To test the prepared desktop image

Test this nearly generated candidate to verify that it is a suitable image from which to generate your desktops and users can connect to their desktops through HDX and RDP.

**Note:** The test image generated during this test is deleted when the candidate is saved.
1. On the Test Image page, click Connect. The Connect to the draft image dialog box appears.

2. In the Connect to the draft image dialog box, select Use Citrix HDX and click Connect. The Citrix VDI-in-a-Box Log in dialog box appears.

3. In the Citrix VDI-in-a-Box Log in dialog box, provide user credentials for the image and click Log in to log on to the image through an HDX connection. The test image opens through an HDX connection.

4. Verify that the installed applications are functioning properly and the required group policies are applied.

5. If your grid is configured with Active Directory, log off and log on as a domain user to test access.
6. Log off from the test image. The test image closes.

7. On the **Test Image** page, click **Connect**.

8. In the **Connect to the draft image** dialog box, select **Use Microsoft RDP** and click **Connect**. The test image opens through an RDP connection.

9. Log on to the test image to verify the RDP connection works properly and log off. The test image closes.

10. On the **Test Image** page, click **Save**. The Confirm message appears.

11. In the Confirm message, click **Confirm**. The Confirm message and **Test Image** page close. A status page appears showing the progress. The **Create Desktop Templates** page appears.
To create the first template from the published image

Use templates to create uniform virtual desktops that meet your specifications. Templates consist of an image and policies. The image contains the operating systems and applications that run on the desktop. For details on creating an image, see Creating the First Windows Image. One image can be used by multiple templates.

**Important:** You must have created and published at least one image before you can create a template.

Policies, which you set while creating the template, are characteristics such as how many desktops to create and how much RAM to allocate to the desktops.

The template gives you the option to pre-start desktops. Pre-started desktops are in a powered-on state and at the logon prompt, ready for use. Pre-starting desktops eliminates the need for users to wait for virtual desktops to start. When you specify a number of desktops for pre-start, VDI-in-a-Box maintains that number as users log on. For example, if you specify five pre-started desktops in the template, there will be five virtual desktops started and waiting for your users. When two users log on to their desktops, VDI-in-a-Box starts two more desktops to maintain the requested five pre-starts. This continues until your stated maximum number for the template is reached.

If the Create Desktop Templates from the Base Image page is not currently displayed in your Web browser, navigate to your new VDI-in-a-Box Manager (https://<ipaddress>/admin/) and log on.
To create the first template from the published image

1. In the Create Desktop Templates from the Base Image page, click Continue. The Template Info page of the New Desktop Template wizard appears.

2. In the Template Name box, type a name for the template.

3. From the list of available images, select the image you want to associate with this template.

4. In the VM Prefix box, provide a meaningful prefix for the template.

5. In the Description box, type a description of the template.

6. From the Memory (MB) list, allocate memory for the desktop.

   Note: Citrix recommends allocating at least 1536 MB of memory for Windows 7 desktops and 512 MB of memory for Windows XP desktops.

7. Select any local devices, such as disk drives or printers, you want to connect to the virtual desktops.

8. Adjust the color depth of the HDX connection as necessary.

10. In the **Maximum desktops** box, type the maximum number of desktops to deploy from this template.

11. In the **Pre-started desktops** box, type the number of desktops that should be started and available for users upon logon.

   **Note:** For testing purposes, Citrix recommends setting a maximum of two desktops with one pre-started desktop.

12. Select **Make this the default template** to provide this image to any user with access to whom a template has not been assigned.

13. Select **Do not reassign desktops "On Hold" to new users** to allow desktops to be held by users.

   **Note:** This option is selected by default.

14. From the **Desktops refresh** list, select a method of refresh. Refresh method determines when users’ desktops are replaced with a fresh desktop matching the template.

   - **On logout:** Refreshes the desktop each time the user logs off.
   
   - **Scheduled:** Refreshes at a set day and time on a daily, weekly, or monthly basis. You can include desktops in use at the scheduled time. If you exclude in-use desktops, they are replaced when the user logs out following the scheduled refresh.
   
   - **Scheduled or on logout:** Refreshes at a set day and time and each time the user logs off. This is useful in environments where users stay logged on to desktops for extended periods.
To create the first template from the published image

- **Manual**: Refreshes only through your action. This setting results in a persistent desktop, one which remains with the user indefinitely. Users can add applications and other modifications with the expectation that they will be available with each log on.

15. Click **Save**.

16. Click **Close**. The amount of desktops designated for pre-start are started and the **Assign Users to Desktops** page appears.
To edit the template

You can change the maximum number of desktops, the number of pre-started desktops, and make other changes by editing your template.

If the VDI-in-a-Box console is not currently displayed in your Web browser, navigate to your VDI-in-a-Box Manager (https://<IPaddress>/admin/) and log on.

1. In the VDI-in-a-box console, click the Templates tab.
2. Click the name of the template you want to edit.
3. Make the desired changes and click Save.

**Important:** Save is on the Template Policies page.
Assigning Templates to Users, Groups, and IP Addresses

When you have created your templates, you can assign them to users, user groups, and IP addresses. Users and groups can have multiple templates assigned to them. When templates are assigned to an IP address, such as for a kiosk, all users logging on at that kiosk receive the same template.

If a user has not been assigned a template and logs on, that user receives the default template. If you have not specified a default template, that user’s credentials are rejected.

If the Assign Users to Desktops page is not currently displayed in your Web browser, navigate to your VDI-in-a-Box Manager (https://<IPaddress>/admin/) and log on.

To assign templates to user groups

1. On the Assign Users to Desktops page, click Continue. The Users page, containing tables for user groups, users, and IP addresses appears.

2. At the User Groups table, click Add. A row for a new user group entry appears in the User Group table.

3. In the Group Name box, type the name of the group to which you want to assign a template.
   
   **Note:** Active Directory security groups, such as Domain Admins and Domain Users, are not valid group names in templates.

4. In the Description box, type a group description.

5. Under Templates, click None and, from the list of available templates, select the templates you want to assign to the group. If you selected Make this the default template on the Template Policies page, Default appears in place of None. After assigning a template(s), the template name replaces None. Click the template name to return to the list of available templates.

6. Click Save. The group is added to the table.

7. Repeat these steps to assign templates to additional groups.
To assign templates to users

1. At the Users table, click Add. A row for a new user entry appears in the Users table.

2. In the User ID box, type the user ID of a user to whom you want to assign a template.

   **Note:** First Name, Last Name, and Group are optional and automatically filled in when you click Save if the user and full information is in the database.

3. Under Templates, click None and, from the list of available templates, select the templates you want to assign to the user. After assigning a template(s), the template name replaces None. Click the template name to return to the list of available templates.

4. Click Save. The user is added to the table.

5. Repeat these steps to assign templates to additional users.

To assign templates to incoming IP addresses

1. At the IP Addresses table, click Add. A row for a new user entry appears in the IP Addresses table.

2. In the IP Address Ranges box, type the ranges of the user device IP addresses to which you want to assign a template. Addresses can be added as separate addresses (192.168.23.143), prefixes (192.168), or ranges (192.168.10.174-204). Separate entries with new lines or spaces.

3. From the Templates list, select the template you want to assign to the IP address.

4. Click Save. The IP address is added to the table.

5. Repeat these steps to assign additional templates to IP addresses.

   **Note:** Once a template is assigned, it cannot be assigned again until the existing assignment is terminated.
To edit template assignments

1. In the VDI-in-a-Box console, select the Users page.

2. Point to the user group, user, or IP address whose template you want to edit and click Edit.

3. Edit as necessary and click Save.
Testing the Connection as a User

After setting up a template, creating desktops from the template, and assigning them to users, log on to a desktop as a user to ensure the connection works correctly. To do this, you must first install the latest version of Citrix Receiver (formerly Citrix online plug-in), Java Runtime Environment (JRE), and VDI-in-a-Box Java Desktop Client, if you have not already done so.

To prepare your user device

Prepare your user device for testing by ensuring the latest version of JRE is installed and also installing Citrix Receiver to take advantage of the HDX connections.

- If it is not already installed, from https://www.citrix.com, download Citrix Receiver following the directions provided at that Web site.

- Ensure you have JRE 1.6 or higher installed on the user device. If necessary, obtain the latest version from https://www.java.com, following the directions provided at that Web site.

  Note: JRE is required to run the VDI-in-a-Box Java client.

To connect to the desktop

These steps may vary slightly depending on your Web browser.

1. Start your Web browser.

2. In the Web browser address box, type https://<IpAddress>/ . A security warning about the Web site’s certificate may appear.

3. Accept the certificate as trusted and continue.

4. In the Citrix VDI-in-a-Box page, in the Username box, type your user name.

5. In the Password box, type your password and click Log On.

6. Click the desired desktop. You are connected to the virtual desktop.

To connect to the desktop through the VDI-in-a-Box Java Desktop Client from a Web browser

These steps may vary slightly based on the Web browser you are using.
1. Start your Web browser.

2. In the Web browser address box, type `https://<IPaddress>/dt/vdiclient.jnlp`. A security warning about the Web site's certificate may appear.

3. Accept the certificate as trusted and continue. Depending on which Web browser you are using, the Opening vdiclient.jnlp dialog box appears.

4. If the Opening vdiclient.jnlp dialog box appears, ensure Open with is selected and Java(TM) Web Start Launcher (default) appears from the list next to it, then click OK.

5. In the VDI-in-a-Box Java Desktop Client dialog box, type your user credentials and click Log On. If multiple templates are assigned to the user, the Select a Desktop dialog box appears.

6. Select the desktop you wish to test by clicking Connect. You are connected to the virtual desktop.

To connect to the desktop though the VDI-in-a-Box Java Desktop Client from a command prompt

These steps may vary slightly based on the user device you are using.

1. Open the Command Prompt window.

2. Type the command: `javaws https://<IPaddress>/dt/vdiclient.jnlp`.

3. Press Enter.

4. In the Log on dialog box, in the User name box, type your user name.

5. In the Password box, type your password and click Log On. If multiple templates are assigned to the user, the Select a Desktop dialog box appears.

6. Select the desktop you wish to test by clicking Connect. You are connected to the virtual desktop.
Migrating VDI-in-a-Box 4.1 to 5.0.2

Citrix VDI-in-a-Box 5.0.2 includes a migration wizard that converts a VDI-in-a-Box 4.1 deployment to version 5.0.2. To perform the migration, prepare VDI-in-a-Box Manager 4.1 for migration, set up a server with VDI-in-a-Box Manager (vdiManager) 5.0.2, and then use the migration wizard. The migration wizard moves the entire 4.1 configuration to the server prepared with vdiManager 5.0.2.

Limitations

- Only migration from Kaviza VDI-in-a-Box 4.1.x to Citrix VDI-in-a-Box 5.0.2 is supported.
- Migration from the technical preview version of VDI-in-a-Box 5.0 is not supported.
- Migration from versions earlier than VDI-in-a-Box 4.1.x are not supported.
- Upgrading from released or preview versions of VDI-in-a-Box 5.0 is not supported.

**Note:** To upgrade from the released version of VDI-in-a-Box 5.0 or 5.0.1 to VDI-in-a-Box 5.0.2, use Hotfix Rollup Package 2 for Citrix VDI-in-a-Box 5.0 at [http://support.citrix.com/article/CTX132754](http://support.citrix.com/article/CTX132754).

Migrating and Network Configuration

The following table shows the effect migration has on network configuration.

<table>
<thead>
<tr>
<th>Before Migration (vdiManager 4.1)</th>
<th>After Migration (vdiManager 5.0.2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dynamic Host Configuration Protocol (DHCP)</td>
<td>Static IP Configuration</td>
</tr>
<tr>
<td>Static IP Configuration</td>
<td>Static IP Configuration</td>
</tr>
<tr>
<td>Manual Network Configuration</td>
<td>Not migrated - Must be manually configured</td>
</tr>
</tbody>
</table>

Prerequisites

- Use the same physical server for both versions of vdiManager.
To migrate VDI-in-a-Box

1. Prepare vdiManager 4.1 for migration:
   a. Desktops are unavailable during a migration, so coordinate the downtime with the users.
   b. Log on to the vdiManager 4.1 console.
   c. In the templates, set pre-started desktops to zero: Click the Templates tab, click the template name, click Next, in Pre-started desktops, type 0, and then click Save.
   d. Power off any static desktops: Click the Desktops tab, click User Sessions, click Actions for each desktop you want to power off, and then click Shutdown.
      Note: Do not put the grid into maintenance mode until all the static desktops have completely shut down.
   e. Deactivate the servers: Click the Servers tab, click the desired server, click Deactivate, and then click Confirm.
   f. Put the grid in maintenance mode and log off from the 4.1 console: Click the Admin tab, click Grid Maintenance, and then click OK.
      For help with the procedures, refer to the VDI-in-a-Box 4.1 documentation.

2. Set up vdiManager 5.0.2 as a virtual machine on your hypervisor: For information, click the following link for your hypervisor and follow the instructions in To download and extract the VDI-in-a-Box Manager, To import vdiManager, and To open the vdiManager console for first time setup:
   - Citrix XenServer (Windows 7 image)
   - Citrix XenServer (Windows XP image)
   - VMware ESX (Windows 7 image)
   - VMware ESX (Windows XP image)
      When the Welcome screen appears go to the next step to start the migration.

3. On the Welcome page, click Yes, start migration.

4. Enter the Manager IP Address for the desired vdiManager 4.1.
Important: Be sure to enter the IP address for the correct vdiManager. The wizard does not check.

5. Leave the password field blank or, if you have changed the password, type your password, and click Migrate. The 4.1 appliance is powered off and vdiManager 4.1 is disabled so it cannot run during the migration.

The migration begins and runs for approximately five minutes. As part of the process, the IP address of the vdiManager 4.1 being retired is transferred to the new vdiManager 5.0.2, allowing users to connect using their same shortcuts, bookmarks, and links. After the migration finishes, the VDI-in-a-Box Log On page for the new vdiManager 5.0.2 appears.

Once the migration process has started, you can begin migrating the next server in the grid. Repeat these steps until all servers in the grid are migrated.

Important: Do not bring the grid out of maintenance mode until all servers have been migrated. Using a grid with both 4.1 and 5.0.2 vdiManagers results in the loss of desktops from the 4.1 vdiManagers.

Starting the Migrated vdiManager

After all servers in the grid have been migrated, log on to one, take the grid out of maintenance mode, reset pre-started desktops, and restart any static desktops shut down prior to migration.

1. Log on to the vdiManager 5.0.2 console. The console displays the message: Grid is in maintenance mode.
2. Activate the servers.

3. Update the VDI-in-a-Box Desktop Agent. (See the following section.)

4. Reset the pre-started desktops for each template.

5. Restart each static desktop.

6. Take the grid out of maintenance mode.

**Updating the VDI-in-a-Box Desktop Agent**

After completing the migration from VDI-in-a-Box 4.1 to VDI-in-a-Box 5.0.2, you must replace the earlier VDI-in-a-Box Desktop Agent on the published image and static desktops with the new Desktop Agent.
To update the Desktop Agent on the published image

1. In the vdiManager console, click the Images tab.

2. Click Copy for the desired image. The New Image dialog box appears.

3. Type a name and description for the new image and click OK. A copy of the desired image is generated.

4. Click Edit for the new image. The Install Agent page appears.

5. Click Connect. The virtual machine launches.

6. Log on to the virtual machine as an administrator.

   Note: Citrix recommends using a local administrator account.

7. From the Control Panel, uninstall the Kaviza Desktop Agent. The image restarts and a status page appears showing the progress. The Install Agent page appears.

8. Select and copy the address of the Desktop Agent (https://<IPaddress>/dt/dtagent/).

9. Click Connect. An RDP connection is made to the image.

10. Log on to the virtual machine as an administrator.

11. Install the VDI-in-a-Box Desktop Agent by pasting the address copied in Step 8 into the image's Web browser URL box, pressing Enter, and following the on-screen instructions.

12. The image restarts and a status page appears showing the progress. The Install Agent page appears.

13. Complete the Edit draft image wizard. For help with the wizard, refer to the eDocs topic VDI-in-a-Box > Getting Started with VDI-in-a-Box > Creating the First Windows Image for your hypervisor.

14. Click the Templates tab.

15. Click Copy for the desired template. The Copy from Desktop Template dialog box appears.

16. Type a new template name.

17. In the Image Name field, select the new image and click Next.

18. Click Save and Close.

19. Click the Users tab.

20. Assign the new template. For help, refer to the eDocs topic VDI-in-a-Box > Getting Started with VDI-in-a-Box > Assigning Templates to Users, Groups, and IP Addresses.

After testing the new images and confirming they are ready for deployment, delete the original versions.
To update the Desktop Agent on static desktops

1. From your hypervisor, log on to a static desktop as an administrator.

   **Note:** Citrix recommends using a local administrator account.

2. From the Control Panel, uninstall the currently installed Desktop Agent. The virtual machine restarts.

3. From the hypervisor, log on to the same desktop as an administrator.

4. In the virtual machine's Web browser, type the address of the Desktop Agent (https://<IPaddress>/dt/dtagent/) into the URL box.

5. Follow the on-screen instructions.

6. Repeat these steps for each static desktop in the grid.
Managing VDI-in-a-Box

This section contains information about configuring and managing VDI-in-a-Box.

- Creating, Updating, and Repairing Images
- Managing Desktops and User Sessions
- Configuring Generic User Accounts
- Managing a Grid
- Generating Desktops from a Pool of MAC Addresses
- Updating the Server Configuration for Credential Changes
- Configuring VDI-in-a-Box Kiosks
- Configuring Secure Remote Access
- Configuring User Profile Management
- Configuring Smart Card Authentication
- Logging on to the VDI-in-a-Box Appliance
Creating, Updating, and Repairing Images

To create a new draft image, you copy a published image. To update an image, you edit a published image. Whether you copy or edit an image, the result is a *draft image*, a working desktop that you prepare and save as a published image.

**To create a new draft image from a published one**

Use this procedure to copy an image to create a new image with different settings or applications.

1. In the vdiManager console, click the **Images** tab.
2. Click the **Copy** link for the image to copy it as a draft image.
3. Enter a name and description for the new image and then click **OK**.
4. When the **Images** page shows the status for the new image as “Running,” click **Edit** and then follow the instructions in the **Edit draft image** wizard. For help with the wizard, refer to the eDocs topic VDI-in-a-Box > Getting Started with VDI-in-a-Box > Creating the First Windows Image for your hypervisor.

**To update an image**

Use this procedure to apply changes such as software updates to a published image.

1. In the vdiManager console, click the **Images** tab.
2. To create a new draft image to update, click the **Edit** link for the image and then click **Confirm**.
3. Edit the draft image to add any necessary updates, settings, or patches as well as any applications to be included in the deployed image: When the **Edit draft image** wizard appears, follow the instructions in the wizard. For help with the wizard, refer to the eDocs topic VDI-in-a-Box > Getting Started with VDI-in-a-Box > Creating the First Windows Image for your hypervisor. After you save the new draft image, it becomes the new version of the published image and the previous version of the image is deactivated. The image changes are propagated to the desktops based on the associated template refresh policies.

**To repair an image**

Use this procedure if vdiManager reports that an image stored on one or more servers in a multi-server grid is not the same on all servers. In that case, the image status changes to “broken” and desktops are not generated from it until the image is repaired.
Creating, Updating, and Repairing Images

1. In the vdiManager console, click the Images tab.

2. In the Status column, click the Published link and then under the Fix column, click the icon.

3. Click Confirm.
Managing Desktops and User Sessions

To refresh desktops

Desktops refresh according to the refresh policy configured for the template. Force a refresh as follows.

1. Click the Desktops > Summary tabs.

2. In the Refresh column, click the link for the template entry.

   ![Confirm dialog box](image)

   In the Refresh column, click the link for the template entry.

   The Confirm dialog box describes the refresh policy. If the refresh policy is "Scheduled or on logout" you choose whether to refresh desktops that are in use immediately or after users log out.

3. Click Confirm.
To restart or shut down a desktop

1. Click the **Desktops > User Sessions** tabs.

2. In the **Ops** column, click the **Actions** link for the user entry.

3. Click **Restart** or **Shut Down** and then click **Confirm**. The menu omits **Restart** and **Shut Down** if the desktop refresh policy is set to “On log out.”

To destroy a broken desktop

A desktop in an unknown state has the status “Broken” and is not available to users. Causes for broken desktops:

- Typically, broken desktops are unable to start Windows due to a missing or incorrect startup configuration, such as an incorrect product key or domain credentials. Use a console client to see if the broken desktop is waiting on user input.

- The server is too heavily loaded to start new desktops.

- The disk space on the data store is full.

- There are no available MAC addresses.

- The template image no longer exists.

Before destroying a broken desktop, determine the problem, repair the desktop, and then test the desktop to ensure that working desktops replace the broken ones.

1. Click the **Desktops > Summary** tabs. Alternatively, click the **Servers** tab and then click the **Desktops** link.

2. Click the number link in the **Broken** column and then click **Destroy**.

3. Click **Confirm**.
To log off a user from a desktop

1. Click the Desktops > User Sessions tabs.
2. In the Ops column, click the Actions link for the user entry.
3. Click Log Off and then click Confirm.

To destroy the desktop for a user session

1. Click the Desktops > User Sessions tabs.
2. In the Ops column, click the Actions link for the user entry.
3. Click Destroy and then click Confirm.

To configure session parameters

The following parameters are advanced properties that apply to the grid. Before changing the default behavior be sure to understand the impacts of the changes.

Session parameters

Desktop Session parameters:

- Desktop session default width and Desktop session default height - The default dimensions of the desktop window. Use the default value (0) to open desktops in full-screen display. These parameters do not apply to connections made with Citrix Receiver.

- Require users to re-enter password on Windows logon screen - Whether users must enter a password to log on to a desktop. Select this setting to force users to reenter their password in the Windows log on dialog box. By default, this setting is not enabled.

Miscellaneous parameters related to user sessions:

- Enable generic user - Whether users can log on to desktops with a common user name. For more information, refer to Configuring Generic User Accounts. By default, this setting is not enabled.

- Retain user credentials - Whether to display the user name and password (masked) on the log on screen after logon. By default, this setting is not enabled.
1. Click the Admin tab, click Advanced Properties, and then scroll to the Desktop Session section.

2. Set the parameters you need to change and then click OK.
Configuring Generic User Accounts

VDI-in-a-Box supports generic user accounts, such as guest accounts, for Active Directory and Microsoft Workgroup authentication. You can use generic user accounts in settings such as classrooms where multiple users can share a common account to log on to desktops. While generic user accounts are similar in concept to kiosks, you can assign multiple templates to a generic user account.

Generic user accounts are enabled at the grid level. Enabling generic user accounts changes the following vdiManager operations:

- By default, vdiManager destroys a desktop when the logged on user does not match the user assignment for the desktop. With generic user accounts enabled, vdiManager overrides that security feature and does not destroy such desktops.

- By default, vdiManager enables users to reconnect to the same desktop session from a different user device after disconnecting from (but staying logged on to) the first device. With generic user accounts enabled, vdiManager disables this feature, preventing a generic user from logging on to another generic user’s desktop session from a different user device. When a generic user disconnects from a session and then logs on to a different user device, the generic user receives a new desktop and vdiManager logs out the disconnected session. If the refresh policy is “On logout” the desktop will be destroyed. If the refresh policy is “manual” the same desktop is issued to the next user who logs on.
To configure generic user accounts

1. Configure the grid: Click the Admin tab and then click Advanced Properties.

2. Select the Enable generic user check box.

3. Create the desktop images and templates for the generic accounts by following the VDI-in-a-Box image and template creation procedures. Be sure to install the necessary Windows authentication software components on the image.

4. Add the generic user accounts:
   a. Click the Users tab and then, at the User Groups table, click Add.
b. Type the User ID for the generic account.

c. In the Templates column, click None and then select one or more templates to use for the account.

d. Click Close and then click Save.

5. Test the configuration: Log on to vdiManager with a generic user account.
Managing a Grid

To add a server to a grid

1. Provision a server with a hypervisor and then import and power on the vdiManager appliance.

2. Note the IP address of the vdiManager and then use a web browser to log on to the vdiManager console (https://IPaddress/admin).

3. Follow the directions in the VDI-in-a-Box Initial Set up wizard to configure the hypervisor and join it to the grid. For help with the wizard, refer to the eDocs topic VDI-in-a-Box > Getting Started with VDI-in-a-Box > Creating and Configuring the Grid for your hypervisor. The server is provisioned by the existing servers in the grid. Desktops from other servers are not migrated to the new server. Desktops are created on the new server as needed to satisfy policy requirements.

To remove a server from a grid

When you remove a server from the grid, it becomes the only server in a new grid. It is no longer connected to the rest of the servers in the old grid and does not share its load.
1. Deactivate the server to remove all desktops running on it: Click the Servers tab, click the server, and then click Deactivate.

2. Click Confirm.

3. After the server status changes to deactivated, click the Servers tab, click the server, and then click Leave Grid.
To upgrade the grid software or license

1. Put the grid in maintenance mode: Click the Admin tab, click Grid Maintenance and then click OK.

2. On the Admin page, click Grid Upgrade. The Grid Upgrade dialog box appears.

3. Click Choose File, navigate to the upgrade or license file, and click OK.

4. Click Submit. When the upgrade completes, the server status changes to Success.

5. When prompted, log on to vdiManager.

6. Take the grid out of maintenance mode: Click the Admin tab, click Grid Maintenance, and then click OK.
Managing a Grid

To prepare servers for maintenance

1. Let your users know when maintenance is to occur and by when they must log out.

2. Best practice: Back up any persistent desktops. Persistent desktops are those with a manual refresh policy. You must back them up, as if they are physical desktops. Dynamic desktops (those with a non-manual refresh policy) do not require backups because they are regenerated from an image.

3. Put the grid in maintenance mode: Click the Admin tab, click Grid Maintenance and then click OK.

4. After all users log out and persistent desktop backups are complete, deactivate all servers in the grid: Click the Servers tab, click the server, click Deactivate, and then click Confirm. Deactivating a server deletes all desktops, including those in use, and immediately shuts down the server so that it no longer provisions desktops. Only the persistent desktops remain, with a status of “On Hold.”

5. Use the hypervisor console to power off the persistent desktop VMs. To identify those desktop sessions, go to Desktops > User Sessions and look for “On Hold” entries in the Status column.

6. Use the hypervisor management console to power off the vdiManager virtual machines. The servers are now ready for maintenance performed from the hypervisor.

To resume operations after maintenance

1. Use the hypervisor console to power on all vdiManager virtual machines.

2. When all vdiManagers are running, log on to the vdiManager console and take the grid out of maintenance mode: Click the Admin tab, click Grid Maintenance, and then click OK. On the Servers tab, the Tasks and Events section should display the message “Server checks out fine” for each server.

3. Activate each server: Click the Servers tab, click the server, and then click Activate. The status of each server should change to Activated, after which dynamic desktops are provisioned and persistent desktops are restarted.

To assign a static address to vdiManager

Prerequisite:
- A static IP address that is not already assigned.

1. Deactivate the server so that it is not running any desktops.

2. Shut down any draft or test desktops on the server.

3. Click the Servers tab, click the server name, and then click Modify.

4. In the VDI-in-a-Box Manager Network Settings dialog box, click Static IP configuration, enter the static IP address, and then click OK.
To reset vdiManager to factory settings

Resetting vdiManager to factory settings is irreversible. It deletes all the desktops, templates, images, and environment information from the grid and deletes the base image files physically stored on the data store of the hypervisor.

1. Verify that you are logged into the vdiManager console for the server you plan to reset.

2. Remove the server from the grid. Resetting a server to factory settings is not allowed on a server in a grid.

3. Click the Admin tab and then click Reset Server. After the reset is complete, you are logged out of the vdiManager console. The next time that you log on, the Welcome to VDI-in-a-Box page appears. For information about setting up vdiManager, refer to the eDocs topic VDI-in-a-Box > Getting Started with VDI-in-a-Box > Creating and Configuring the Grid for your hypervisor.

To remove vdiManager from a server

1. If the server is part of a grid, remove it from the grid.

2. Reset vdiManager to factory settings.

3. From the hypervisor console, shut down the vdiManager virtual machine and remove it from the host. See the hypervisor manufacturer’s documentation for details.
Generating Desktops from a Pool of MAC Addresses

Generate desktops with a specified range of Media Access Control (MAC) addresses if your Dynamic Host Configuration Protocol (DHCP) policies assign IP addresses to MAC addresses or assign free IP addresses only to MAC addresses from a known range. The MAC address pool applies to all desktops, draft image, and test images generated throughout the VDI-in-a-Box grid.

Pre-requisites:

- Verify there are enough MAC addresses in the pool to handle all the desktops and draft images that are planned in the grid.
- Verify that external systems, such as DHCP, that the MAC address pool is intended to serve can handle all of the MAC addresses in the pool. The pool assigns addresses to desktops randomly.

Note: VDI-in-a-Box does not verify that an assigned MAC address is unique in a network except within the desktops in the grid. If a server leaves a grid that has MAC addresses assigned to desktops, the original grid does not track that the MAC addresses are assigned to desktops and so can reassign them.

1. Click the Admin tab and then click Advanced Properties.

2. Under MAC Address Pool, enter the starting address and the range length. The MAC address range must start with 00:50:56:[0-3]x:xx:xx.
Generating Desktops from a Pool of MAC Addresses

Advanced Properties

Syslog
- Central syslog server: localhost
- Central syslog server port: 514
- Syslog format: $severity $message ($messageid) [$stackname]$p

Grid
- Enable server failover on lost heartbeat: [on]
- Seconds of lost heartbeat before failing server: 900

MAC Address Pool
- MAC address range start: 00:50:56:01:11:
## Updating the Server Configuration for Credential Changes

You must immediately update the VDI-in-a-Box server configuration parameters if any of the following credentials change: hypervisor, Active Directory, or domain controller. For environments in which account credentials change regularly, Citrix recommends using accounts that remain fixed.

<table>
<thead>
<tr>
<th>Component</th>
<th>To update in the vdiManager console</th>
<th>Impact if not changed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypervisor credentials</td>
<td>Click the Servers tab, click the server name, and then click Configure.</td>
<td>VDI-in-a-Box cannot communicate with the hypervisor.</td>
</tr>
<tr>
<td>Active Directory credentials</td>
<td>Click the Admin tab and then click Configure User Database.</td>
<td>VDI-in-a-Box cannot authenticate users.</td>
</tr>
<tr>
<td>Domain controller credentials</td>
<td>Click the Images tab, click edit, and use the wizard to prepare the image. Repeat those steps for all images that use the prior credentials.</td>
<td>Newly generated desktops cannot join the domain and will appear as broken.</td>
</tr>
</tbody>
</table>
Configuring VDI-in-a-Box Kiosks

The VDI-in-a-Box kiosk feature allows you to convert user devices into a kiosk system that you deploy wherever you need standard desktops, such as in conference rooms, school labs, or nurses' stations at hospitals. You deploy a VDI-in-a-Box kiosk to IP address ranges as a user device location rather than to a user or group name.

Like any VDI-in-a-Box virtual desktop, a kiosk is based on a template. To establish connectivity between a desktop and user device, assign a template to the IP address of the user device.

You can set up a user device so that a user connects to the desktop through Citrix Receiver (recommended), a web browser, or the VDI-in-a-Box Java Desktop Client.

**Note:** In a conflict between kiosk and user settings, the kiosk settings take priority.

Planning a Kiosk Deployment

Plan the number of templates needed for the kiosks, based on:

- Whether the kiosks can use the same desktop policy or need different ones.

- The IP addresses of the user devices. You assign a template to an IP address or a range of IP addresses.

Example: You are deploying VDI-in-a-Box kiosks for the existing computers in the Engineering and Art labs of a school district. Define a template for each lab, assigning the IP address range of the computers in the Engineering lab to the Engineering kiosk template and the IP address range of the computers in the Art lab to the Art kiosk template. This setup ensures that a student logging in from either lab will receive the appropriate desktop.
Best Practices and Policy Guidelines

- Maintain separate templates for use in kiosk deployments. By using kiosk-specific templates only for kiosk device assignments and not for individual user or group assignments, you can manage and monitor the kiosk sessions efficiently.

- Consider implementing daily refresh policies.

- For kiosks in public areas and conference rooms:
  - Set the refresh policy to On logout to ensure that each new user gets a fresh desktop.
  - Since it takes time to generate new desktops, prepare the image using the Fast desktop refresh option to allow quick provisioning of the desktops when users log out.
  - To keep a reasonable number of desktops in a pre-started or new state, adjust the Maximum desktops policy count to exceed the number of user devices.
  - If the load is heavy and desktop re-generation on each use is too resource intensive, use the Scheduled refresh method to ensure that the desktops are refreshed every night. In this case, the maximum number of desktops does not need to exceed the number of kiosks.
  - Determine how many desktops to pre-start. Pre-started desktops are in a powered-on state and at the logon prompt, ready for use. Pre-starting desktops eliminates the need for users to wait for virtual desktops to start. When you specify a number of desktops for pre-start, VDI-in-a-Box maintains that number as users log on. For example, if you specify five pre-started desktops in the template, five virtual desktops are started and available for your users. When two users log on to their desktops, VDI-in-a-Box starts two more desktops to maintain the requested five prestarts. This continues until your stated maximum number for the template is reached.
  - Observe caution if you change desktop template assignments for kiosks. The reassignment delivers new desktops to the user device while retaining the old desktops in VDI-in-a-Box. Identify these orphaned kiosk sessions and remove them through the VDI-in-a-Box console Desktops > User Sessions tab.
Configuring User Devices as Kiosks

To configure user devices as kiosks, follow these general steps:

1. Assign a template to each user device IP address or range of addresses.
2. Set up each user device to operate as a kiosk.
3. Verify the kiosk connection.

To assign a user device to a template

1. In the VDI-in-a-Box console, click the Users tab.
2. At the IP Addresses table, click Add.
3. In the IP Address Ranges box, type the user device IP addresses to assign to a template. You can specify individual addresses (192.168.23.143), prefixes (192.168), or ranges (192.168.10.174-204). Separate entries with new lines or spaces. You can also use an asterisk (*) to represent all IP addresses, such as 172.*.
4. Select a template to assign to an IP address or range. You can assign only one template to a user device.

The following table shows sample IP address assignments for the Engineering and Art labs, a break room, and a library at a school district.

<table>
<thead>
<tr>
<th>IP Address Ranges</th>
<th>Template Name</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>192.168.1.30-50</td>
<td>Engineering Lab</td>
<td>A separate template is required for the two labs, to accommodate the two IP address ranges.</td>
</tr>
<tr>
<td>192.168.1.1-20</td>
<td>Art Lab</td>
<td></td>
</tr>
<tr>
<td>192.168.2.11</td>
<td>Break Room</td>
<td>The user device in the Break Room requires its own template. If that device had an IP address starting with 192.168.3, the Library template could be used for it.</td>
</tr>
<tr>
<td>192.168.3</td>
<td>Library</td>
<td>All user devices with IP addresses starting with 192.168.3 and 192.168.4 use the Library template.</td>
</tr>
<tr>
<td>192.168.4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

To set up a user device for kiosk operation

The supported connection methods for kiosk operation are the same as for non-kiosk desktops: Citrix Receiver (recommended), a web browser, and the VDI-in-a-Box Java Desktop Client. For configuration details, refer to the eDocs topics for your user devices in Accessing VDI-in-a-Box from User Devices.
If you use the Java Desktop Client, consider including it in the end device start-up script so that the client launches when the user device restarts. Alternatively, create a shortcut to the client: Open a command window on the user device, enter `javaws -viewer`, right-click the Java Desktop Client entry, and choose **Install Shortcuts**. If you have multiple vdiManagers consider creating a shortcut to each one so that a user has options if a VDI-in-a-Box appliance is offline.

**Launching the Java Desktop Client with a common user name and password**

To pass a default user name (such as “guest”) and password so that the user can connect directly to the desktop without entering credentials, use the command:

`javaws https://IPaddress/dt/vdiclient.jnlp?username=kioskuser&password=kioskpassword`

**To verify the kiosk connection**

In VDI-in-a-Box console, go to the **Desktops > User Sessions** tab. The User ID and client IP address entries start with an asterisk (*) so you can easily search for and sort kiosk entries.

**Migrating From Kaviza VDI-in-a-Box 4.1 Kiosks**

The following options, available with Kaviza VDI-in-a-Box 4.1 kiosks, are no longer available:

- Default template assignment
- Interactive launching
- Repeat mode
Configuring Secure Remote Access

To provide remote users with secure connections to virtual desktops, use Citrix Access Gateway VPX with VDI-in-a-Box. Access Gateway VPX is a virtual appliance for Citrix XenServer or VMware ESXi that provides secure access to desktops while allowing users to work from anywhere. Using Access Gateway eliminates the need for remote users to configure a virtual private network (VPN) connection and log on to it before logging on to the desktop.
To install and configure Citrix Access Gateway VPX for VDI-in-a-Box

1. Perform the setup described in the following topics in eDocs under Access Gateway > Access Gateway VPX:
   - Downloading the Virtual Image for Access Gateway
   - Importing Access Gateway VPX to XenServer or Importing Access Gateway VPX to VMware
   - Configuring Access Gateway VPX 5.0.4 Basic Settings
2. Create a logon point for each vdiManager and the Java Desktop Client for each server in your grid. For help, refer to Access Gateway > Access Gateway 5.0 > Integrate > Configuring Access Gateway to Communicate with the Web Interface > To configure the Web Interface as the logon page.

   From the perspective of the Access Gateway, vdiManager and the Java Desktop Client are web interfaces.

   vdiManager and Java Desktop Client settings:
   - Select Authenticate with Web Interface to allow authentication with vdiManager.
   - For a vdiManager logon point, enter the vdiManager URL. For example, https://10.10.10.10.
   - For a Java Desktop Client logon point, enter its full URL. For example, https://10.10.10.10/dt/vdiclient.jnlp.
   - Set any one of the vdiManager logon points as the default.
3. Add each vdiManager in your grid as a Secure Ticket Authority. For help, refer to Access Gateway > Access Gateway 5.0 > Integrate > Integrating XenApp and XenDesktop with Access Controller > Adding the Secure Ticket Authority on Access Controller. Settings for vdiManager:
   - In Connection type, choose Unsecure.
   - In Port, enter 80 or your custom port.
   - In Path, enter /dt/sta.
4. Configure ICA access control to specify the IP scope that your virtual desktops will use. For help, refer to Access Gateway > Access Gateway 5.0 > Integrate > Integrating XenApp and XenDesktop with Access Controller > Adding the Secure Ticket Authority on Access Controller. Settings for vdiManager:
   - In the ICA Access Control Entry dialog box, type the range of IP addresses of the virtual desktops.
   - In Protocol, select ICA and CGP.
5. Configure SSL certificates. For help, refer to Access Gateway > Access Gateway 5.0 > Manage > Managing the Access Gateway Appliance > Installing and Managing Certificates. For a test environment of VDI-in-a-Box, Citrix recommends use of a temporary certificate from Geotrust. For a production environment, purchase an SSL
Certificate from a trusted Certificate Authority. Avoid using capital letters or "www" in the host name in the certificate request.

6. Verify the Access Gateway configuration: In the **Access Gateway Management Console**, click **Monitor**, review the **Warnings** section, and fix any configuration issues before proceeding.

**To configure the vdiManager connection to Access Gateway**

Configure vdiManager to work with one or more Access Gateway appliances. The number of configured gateways must not exceed the number allowed by the Citrix Access Gateway license. Access Gateway VPX licenses are sufficient. Avoid using capital letters or "www" in the host name in the license request.

1. In the vdiManager console, click the **Admin** tab and then click **Advanced Properties**.

2. Scroll to the **SSL Gateway** section.

3. In **External SSL gateway address(es)**, enter the list of external FQDNs of the Access Gateway(s), including the port and separated by semicolons. Example: www.gw1.com:443;www.gw2.com:443

4. In **Internal SSL gateway IP address(es)**, enter the list of internal IP addresses or DNS names of the Access Gateways, separated by semicolons. Specify the same number of Access Gateways in the same order as listed in the external gateways list. Example:
To configure Citrix Receiver

Use Citrix Receiver to connect to VDI-in-a-Box desktops through Access Gateway. See the Receiver section of eDocs for details on setting a server URL option with several user devices. Use the following URL:
https://<accessgatewayfqdn>/http/<vdiManagerIPaddress>/dt/PNAgent/config.xml. Use the user name you use for accessing desktops through the vdiManager console.

**Important:** PNA of PNAgent must be uppercase.
Configuring User Profile Management

To apply user personalization settings to virtual desktops, use Citrix Profile Management with VDI-in-a-Box. Profile management consolidates and optimizes user profiles to minimize management and storage requirements. Profile management applies to any user location or user device, providing users with fast logons and logoffs.

Prerequisites

- A VDI-in-a-Box grid with at least one server running vdiManager 4.1 or greater
- A Windows 7 or Windows XP image published through vdiManager
- A shared folder on a file server where users have read and write permissions

To install and configure Profile Management for VDI-in-a-Box

Plan the deployment and perform the setup described in the following Profile Management topics for your version in eDocs:

- Getting Started with Profile Management
- Planning Your Profile Management Deployment
- Installing and Setting Up Profile Management
- To enable Profile management
- To specify the path to the user store
- Profile Management and Microsoft Outlook

To configure VDI-in-a-Box images for profile management

For each image used to create desktops, set the Organizational Unit (OU) to the one configured with the GPO template.

1. To view the OU set for an image: Click the Images tab and then click the image name.

2. To set the OU for an image:
   a. Click the Images tab, click the edit link for the image, and then click Confirm.
b. In the Edit draft image wizard, enter the Organizational unit (OU).

For help with the wizard, refer to the eDocs topic VDI-in-a-Box > Getting Started with VDI-in-a-Box > Creating the First Windows Image for your hypervisor.

After you save the new draft image, it becomes the new version of the published image and the previous version of the image is deactivated. The image changes are propagated to the desktops based on the associated template refresh policies.
Configuring Smart Card Authentication

VDI-in-a-Box supports smart card authentication, enabling users to log on to virtual desktops by using a smart card reader. To log on, users swipe a smart card and enter their smart card Personal Identification Number (PIN). Citrix Receiver then displays the desktops available to the user.

Prerequisites

- Smart card support enabled on the server
  
  Consult your smart card vendor or integrator to determine detailed configuration requirements for your implementation.

- User device requirements:
  
  - Windows-based operating system (refer to System Requirements for VDI-in-a-Box 5.0.2 for supported systems)
  - Citrix Receiver
  - ActivIdentity-based Common Access Card (CAC) reader
  - ActivIdentity ActivClient 6.2 or 6.1, including ActivIdentity device drivers for keyboard functions
  - Same domain as the VDI-in-a-Box grid
  - Active Directory for Windows Server 2008 R2:
    - Integrated with the VDI-in-a-Box grid
    - Configured for smart card authentication
  - At least one published VDI-in-a-Box desktop image
  - For secure access, users must establish a VPN connection. Citrix Access Gateway 5.0 does not support smart card authentication.
To set up VDI-in-a-Box for smart cards

1. Plan the templates needed for smart card authentication. Desktops based on a template configured for smart cards require a smart card for access. Users who attempt to connect to such desktops without a smart card are denied access.

2. Create one or more templates configured for smart cards:
   a. Click the Templates tab and then click the Add link.
   b. In the Create a New Desktop Template wizard, specify the template information as usual.
   c. Select the Smart cards checkbox.
   d. Click Proceed and then click Next.
   e. Specify the template policies and then click Save.

3. Assign users or groups to the new templates. For help, refer to the eDocs topic VDI-in-a-Box > Getting Started with VDI-in-a-Box > Assigning Templates to Users, Groups, and IP Addresses for your hypervisor.

4. Test smart card authentication: Log on as an end user from a user device configured for smart card authentication.
Logging on to the VDI-in-a-Box Appliance

You can use the hypervisor console or a Secure Shell (SSH) client, such as PuTTY, to log on to the VDI-in-a-Box appliance. Credentials for the appliance are:

- User name: kvm
- Password: kaviza123
Accessing VDI-in-a-Box from User Devices

Users access Citrix VDI-in-a-Box virtual desktops through their user devices. Protocols, such as Remote Desktop Connection (RDP) or Citrix’s HDX, are used to communicate between the user device and virtual desktop. A client-side protocol agent and a server-side protocol agent are required to make the connection between the user device and the virtual desktop.

Protocols Supported by VDI-in-a-Box

VDI-in-a-Box supports the following protocols:

- HDX
  - This is the default protocol.
  - No separate license is required.
  - HDX provides a high-definition user experience.
  - HDX provides better multimedia support while using less bandwidth.
  - HDX is suitable for remote access over a WAN.
- Remote Desktop Connection (RDP) V6 and V7
  - RDP is suitable for LAN deployments.

Note: For best results when using Remote Desktop Connection V7, Citrix recommends running Windows 7 on both the virtual desktop and the user device.

Accessing VDI-in-a-Box Virtual Desktops

Users access VDI-in-a-Box virtual desktops in any of three ways:

- Web browser - Web browsers support both HDX and RDP, although some configuration is required to use each protocol.
- Citrix Receiver (formerly Citrix online plug-in)
  - Citrix Receiver allows direct access to VDI-in-a-Box desktops through an HDX connection without the use of a Web browser or Java client.
  - Receiver connects to VDI-in-a-Box desktops on Windows, Mac, Linux, iOS, and Android platforms.
- Zero-maintenance VDI-in-a-Box Java Client
The Java client automatically checks for updates and refreshes itself as needed.

- The client requires Java Runtime Environment (JRE) 1.6 or higher.
- The client switches to an RDP connection if an HDX connection is not available.

## Comparing Client Access

<table>
<thead>
<tr>
<th>Client</th>
<th>Accesses virtual desktop</th>
<th>Automatic RDP connection started if there is no HDX</th>
<th>Kiosk</th>
<th>Integrated error messages</th>
<th>Automatic failover to healthy vdiManager</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citrix Receiver</td>
<td>Y</td>
<td>Not applicable</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Web browser</td>
<td>Y</td>
<td></td>
<td>Y</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>VDI-in-a-Box Java Client</td>
<td>Y</td>
<td></td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>

The kiosk option is useful for libraries, nurses’ stations, and anywhere you want to place a public user device with the desktop assigned to the device and not to the user logging on. All users receive the same desktop, based on the purpose of the kiosk.
Logging on From a User Device

The following figure shows a basic logon sequence between a Web browser on a user device and a server with VDI-in-a-Box Manager. An HDX session between the user device and a specific virtual desktop on the server is being created using Citrix Receiver. Once the connection is created, the session traffic takes place between Receiver and the virtual desktop only. The same sequence applies when the Java client is used.

With Citrix Receiver, older and low-end thin clients that do not have browsers can be used to access VDI-in-a-Box virtual desktops. Mobile devices, such as the iPad, can also be used with Receiver to access VDI-in-a-Box virtual desktops without requiring a Web browser or Java client.
Configuring Windows Devices to Access VDI-in-a-Box Virtual Desktops

Prerequisites

Install the following on the Windows user device in order for it to access VDI-in-a-Box desktops:

- Java Runtime Environment (JRE) 1.6 or higher. You can download it from https://www.java.com/.

To configure Windows devices to access VDI-in-a-Box desktops with a Web browser

These steps may vary slightly depending on your Web browser.

1. Start your Web browser.
2. In the Web browser address box, type https://<vdiManagerIPaddress>. A security warning about the Web site's certificate may appear.
3. Accept the certificate as trusted and continue. The VDI-in-a-Box Log On page appears.
4. Create a desktop shortcut to the VDI-in-a-Box logon page through the Web browser.

To configure Windows devices to access VDI-in-a-Box desktops with Citrix Receiver

You can use Citrix Receiver on Windows devices to connect to VDI-in-a-Box desktops. See the Receiver for Windows section of eDocs for details on setting a server URL option. Use the following URL: http://<vdiManagerIPaddress>/dt/PNAgent/config.xml. Use the user name you use for accessing desktops through the vdiManager console.
To configure Windows devices to access VDI-in-a-Box desktops with the VDI-in-a-Box Desktop Client

1. Open a Command Prompt window on your Windows device.

2. At the command prompt, type the address of the VDI-in-a-Box Java Desktop Client:

3. Accept the certificate as trusted and continue.

4. If additional security warnings appear, accept them and continue. The VDI-in-a-Box Client dialog box appears.

5. Create a desktop shortcut to the VDI-in-a-Box Java Desktop Client.
   a. Open a command window on the device.
   b. At the command prompt, type javaws -viewer. The Java Cache Viewer window appears.
   c. Right-click the JavaClient entry and select Install Shortcuts.
Configuring Mac Devices to Access VDI-in-a-Box Virtual Desktops

Prerequisites

Install the following on the Mac user device in order for it to access VDI-in-a-Box desktops:

- Java Runtime Environment (JRE) 1.6 or higher. You can download it from https://www.java.com/.
- Citrix Receiver for Mac 11.4, formerly known as Citrix online plug-in. You can download it from https://www.citrix.com.

To configure Mac devices to access VDI-in-a-Box desktops with a Web browser

These steps may vary slightly depending on your Web browser.

1. Start your Web browser.

2. In the Web browser address box, type https://<vdiManagerIPaddress>. A security warning about the Web site's certificate may appear.

3. Accept the certificate as trusted and continue. The VDI-in-a-Box Log On page appears.

4. Create a launcher on the desktop to the VDI-in-a-Box logon page through the Web browser.
To configure Mac devices to access VDI-in-a-Box desktops with the VDI-in-a-Box Client

1. Open a Terminal window on your Mac device.

2. At the Terminal prompt, type the address to the VDI-in-a-Box Java Desktop Client: `javaws http://<vdiManagerIPaddress>/dt/vdiclient.jnlp`. A security warning about the Web site’s certificate may appear.

3. Accept the certificate as trusted and continue.

4. If additional security warnings appear, accept them and continue. The VDI-in-a-Box Client dialog box appears.

5. Create a desktop shortcut to the VDI-in-a-Box Java Desktop Client.
   a. Open a Terminal window on the Mac device.
   b. At the Terminal prompt, type `javaws --viewer`. The Java Cache Viewer window appears.
   c. Right-click the JavaClient entry and select Install Shortcuts.
Configuring Linux Devices to Access VDI-in-a-Box Virtual Desktops

Prerequisites

Install the following on the Linux device in order for it to access VDI-in-a-Box desktops:

- Java Runtime Environment (JRE) 1.6 or higher. You can download it from https://www.java.com/.
- rdesktop 1.7.0. You can download it from http://www.rdesktop.org/

To configure Linux devices to access VDI-in-a-Box desktops with a Web browser

These steps may vary slightly depending on your Web browser.

1. Start your Web browser.

2. In the Web browser address box, type https://<vdiManagerIPaddress>. A security warning about the Web site’s certificate may appear.

3. Accept the certificate as trusted and continue. The VDI-in-a-Box Log On page appears.

4. Create a launcher on the desktop to the VDI-in-a-Box logon page through the Web browser.

To configure Linux devices to access VDI-in-a-Box desktops with Citrix Receiver

You can use Citrix Receiver on Linux devices to connect to VDI-in-a-Box desktops. See the Receiver for Linux section of eDocs for details on setting a server URL option. Use the following URL: http://<vdiManagerIPaddress>/dt/PNAgent/config.xml. Use the user name you use for accessing desktops through the vdiManager console.
To configure Linux devices to access VDI-in-a-Box desktops with the VDI-in-a-Box Desktop Client

1. Open a Terminal window on your Linux device.

2. At the Terminal prompt, type the address to the VDI-in-a-Box Java Desktop Client: `javaws http://<vdiManager1IpAddress>/dt/vdiclient.jnlp`. A security warning about the Web site’s certificate may appear.

3. Accept the certificate as trusted and continue.

4. If additional security warnings appear, accept them and continue. The VDI-in-a-Box Client dialog box appears.

5. Create a desktop shortcut on the desktop to the VDI-in-a-Box Java Desktop Client.
   a. Open a Terminal window on the Mac device.
   b. At the Terminal prompt, type `javaws -viewer`. The Java Cache Viewer window appears.
   c. Right-click the JavaClient entry and select Install Shortcuts.
Configuring iOS Devices to Access VDI-in-a-Box Virtual Desktops

Prerequisites

- Integrate the Citrix VDI-in-a-Box grid with Active Directory for user authentication.
- Assign at least one template to users accessing desktops from iOS devices (iPads and iPhones).

To configure an iOS device to access VDI-in-a-Box virtual desktops

For details related to Citrix Receiver for iOS, see the Receiver for iOS section of eDocs (Receiver for iOS).

1. Download and install Receiver for iOS from the iTunes App Store.

2. Open the New Account screen. To configure accounts manually for Citrix Receiver for mobile devices) and in Address, type the address to the VDI-in-a-Box Manager (vdiManager) in the following format:
   `https://<vdiManagerIPAddress>/dt/PNAgent/config.xml`.

3. Tap Next. The Verified screen appears.

4. Complete the Verified screen and tap Save. A list of the desktops available to the configured user appears.

To access VDI-in-a-Box virtual desktops with an iOS device

1. On the Accounts screen, tap the VDI-in-a-Box account you want to open.

2. On the Enter Credentials screen, type your user credentials and tap OK.

   **Note:** Depending on the account settings, the user password may be saved, in which case this step is skipped.

   A list of the available desktops for the account appears.

3. Tap the desired desktop. You are connected to the virtual desktop.
Configuring Android Devices to Access VDI-in-a-Box Virtual Desktops

Prerequisites

- Enable HDX on the Citrix VDI-in-a-Box grid.
- Enable and license the VDI-in-a-Box HDX Gateway.
- Integrate the Citrix VDI-in-a-Box grid with Active Directory for user authentication.
- Assign at least one template to users accessing desktops from Android devices.

To configure an Android device to access VDI-in-a-Box virtual desktops

For details related to Citrix Receiver for Android, see the Receiver for Android section of eDocs.

1. Download and install Receiver for Android from the Android Market.

2. Open the Add Account screen and in Address, type the address of the VDI-in-a-Box Manager (vdiManager) in the following format: https://<vdiManagerIPAddress>/dt/PNAgent/config.xml. A security warning about the Web site's certificate may appear.

3. If the security warning message appears, tap Accept An error message appears.


5. On the Add Account page, type the Username and Domain, and tap Add.

Caution: If desired, the user’s password can also be typed here. This saves the password and allows the user to connect to the VDI-in-a-Box desktop with no identity verification.

The new account is added to the Accounts list.
To access VDI-in-a-Box virtual desktops with an Android device

1. On the Citrix Receiver Accounts list, tap the VDI-in-a-Box account you want to open.

2. Type your password.

   **Note:** If the user password was saved during the configuration process, this step is skipped.

3. Type your user credentials and tap Log On. You are connected to the virtual desktop.