

VMLogix LabManager User Guide

Version: 3.2.0

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Preface

This preface provides summary information about the VMLogix LabManager Installation Guide and provides details on other technical support, troubleshooting and training resources available to end users of this product.

About This Book

The VMLogix LabManager Installation Guide describes installation, configuration, and upgrade tasks for a LabManager deployment.

Intended Audience

The guide is intended for LabManager administrators, experienced developers and testers of software applications. This document assumes the reader is familiar with the following topics:

- Virtualization technology
- Essential concepts of networking & multi-tiered systems
- Good understanding of QA & software engineering best practices and processes
- Administrative knowledge within both Linux and Windows operating systems

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Self-Service Technical Support

The following sections describe the technical support resources available to you.

Use the following VMLogix links for self-help resources and technical support information:

- Product Information <http://www.vmlogix.com/labmanager/>
- Product Documentation <http://docs.vmlogix.com/lm-3.0.0/>
- Product Knowledge Base <http://kb.vmlogix.com/kb/>

Use the following links for assistance with VMware virtualization platforms:

- VMware VI3/ESX Products <http://www.vmware.com/products/vi/esx/>
- VMware Server <http://www.vmware.com/products/server/>

Use the following links for assistance with Microsoft virtualization platforms:

- Microsoft Virtual Server 2005 <http://www.microsoft.com/windowsserversystem/virtualserver/>

Standard Product Support

The VMLogix customer support team is here to assist you with configuration, implementation and the ongoing use of your LabManager environment. Our customer's success is our top priority and we are prepared to assist with any problems and issues that may arise. The Standard Support policy is our primary mode of support and is available via email:

E-mail: support@vmlogix.com

Please place the words "LabManager" in the subject line. Each email received by our support team is automatically tracked internally to successful closure and you can expect a direct response within 24 hours on business days.

Introduction



Introduction

VMLogix LabManager automates the set up of virtual and physical machines in your test lab. Using LabManager to manage your test lab provides many features and benefits, including:

- Create, use and release test machines with just a few clicks - LabManager tracks resource usage, assigns suitable free resources and automatically creates and destroys virtual machines as required.
- Access test machines using VNC, VMRC or Remote Desktop, with just a click - LabManager supports multiple remote access techniques, and automatically generates the correct configuration details.
- Automatic prevention of MAC address conflicts - LabManager tracks MAC address usage, assigns suitable free virtual MACs, and automatically prevents launching of a virtual machine if it would cause a MAC address conflict.
- Launch machines in a custom subnet using 'IP Zones' - LabManager automatically configures a private virtual network and a network router with the correct network parameters.

The User Manual explains the various features and concepts of LabManager to help you use and understand LabManager better. It is recommended that you read the LabManager Installation guide first.

Overview

A LabManager installation consists of multiple hosts running different components. The following diagram illustrates a sample LabManager setup:

<!-- LM setup diagram -->

The LabManager components shown in this diagram are:

- The 'LabManager Server' is the central component of a LabManager installation. It provides the web interface to LabManager, and controls and coordinates the hosts in the test lab.
- The 'host machines' are where users' virtual machines are run. These machines have LabManager's 'VMAgent' component installed which controls virtualization software (such as VMware Server) to run the virtual machines.

Users and Teams

LabManager Server requires users to have user accounts to use the product. Users with administrator privileges are allowed access to all users resources and server administration features. Teams allow users to share control of their Jobs, Configurations, Machine Images and all other types of resources with other users.

A new installation of LabManager Server has the two following user accounts:

- *admin*: an administrator account; you will be asked to set the password when the server is first run.
- *guest*: a regular account with blank password; you may delete this account if you wish.

There is also a team *All Users* to which all users automatically belong.

Deleting Users

When a user is deleted:

- The user is removed from all the teams where he is a member.
- The *admin* user becomes the owner of all the user's resources.
- Deleting a user will result in loss of user-history.

Note that the *admin* user and *All Users* team cannot be deleted.

Labels

In LabManager, there are cases when a resource is not compatible with some other resources. For example, a physical disk image may not be compatible with all the physical machines in the server. Labels let you mark which resources are compatible with which others.

When LabManager compares the Labels of two resources, they are compatible only if they share at least one Label.

Hardware Compatibility Labels

These define the compatibility between Disk Images and Machines.

Note: LabManager automatically checks that the Disk Image type is the same as the Machine type; i.e. a VMware image will only play on VMware machines, etc.

Example: You have two physical machines in your LabManager setup: a Dell PC, and a HP PC. You install Windows 2000 Server on the Dell PC and capture it as a disk image. The image does not work on the HP PC because of hardware and driver differences. To handle this, create a hardware compatibility label *Dell*, and add the label to both the Dell machine and the disk image. You should also remove the *Default Hardware Compatibility* in the disk image.

Note: LabManager ships with a label *Default Hardware Compatibility* that is added to all new machines and disk images. You can disable this by changing the Server Settings.

Software Compatibility Labels

These define the compatibility between Software Packages and Disk Images.

Example: You create a software package that is compatible with Windows 2000 but not Windows XP. To handle this, create a software compatibility label *Windows 2000*, and add the label to the software package and to all Windows 2000 disk images. You should also remove the *Default Software Compatibility* in the software package.

Note: LabManager ships with a label Default Software Compatibility that is added to all new software packages and disk images. You can disable this by changing the Server Settings.

Machine Selection Labels

Machine Selection Labels allow you to group machines for user selection. These labels can be chosen in the *Deploy on Machine* section of a Configuration.

Other Help Manuals

For other help topics, please refer:

- Release Notes
- Installation Guide
- API Reference

Deployments



Jobs

A LabManager Job allows the user to deploy one or more machines, access the machines and perform some operations.

A Job involves downloading machine images to hosts, launching of machines, optionally some GuestAgent operations, and eventually stopping and releasing the machines.

A Job can be started on machine by any of following means:

- Creating a *New Configuration* and *Deploy*-ing it
- *Deploying* an existing Configuration
- *Redeploying* a previous Job
- *Launching* a Machine Image
- Using the *New Virtual Machine* action.

Every Job is complete and independent from any other Job or Configuration on which it is based: when you deploy a configuration or redeploy a previous job, all the values from original configuration are copied to the new job.

Job States

A LabManager Job goes through one or more of the following states:

- Pending
- In Process (Running/Terminating)
- Successful
- Failed (Terminated)
- Cancelled

A Job created by deploying a Configuration starts in the Pending state. The Job Launcher service monitors the queue of pending jobs, and starts them running when suitable machines and other resources for that job become available.

Interactive jobs and other Machine Operations started from a machine page start directly in the In Process state. In this case, resources such as licenses are assigned just-in-time for an operation - this can result in running jobs being stuck in the middle when they have to wait for resources.

Resource Assignment

LabManager Server automatically manages and assigns resources to Jobs as needed. The various resources that may be assigned and their corresponding criteria are:

- Machines (type of machine, available RAM, machine selection labels, h/w compatibility)

labels)

- Disk Images (type of image, h/w compatibility labels)
- Software Packages (s/w compatibility labels)
- Licenses (availability count)

IP Zones

LabManager's IP Zone feature lets you run machines in private IP subnets.

Deploying a job in an IP Zone lets you do the following:

- Run machines in a separate IP subnet from your regular network.
- Simulate custom IP subnets and NAT environments.
- Run multiple copies of static IP machines and suspended machines.

If you choose to deploy a Job in an IP Zone, LabManager runs your machines in a separate virtual network, and adds a router machine which provides DHCP and NAT on the private network.

Custom IP Zones

When deciding the IP settings for an IP Zone, LabManager looks at both the default IP Zone settings, and the network settings of the Machine Images being used in the Job.

Machine Images have *Network Settings* properties which let you specify the IP details for static IP and suspended machines. If the Machine Images in a job are marked with a specific subnet, LabManager will use that subnet for the IP Zone.

Otherwise, the *IP Zone Settings* in the Server's Settings page lets you control the default subnet chosen.

Configurations

A Configuration is a template for a Job to be run on test machines. It defines the environment setup and operations to be run: how many machines are involved, what operating systems are to be installed, what software to install, and what commands to execute on the machine.

Example:

A senior tester defines a configuration for his test environment: he needs a machine with 2GB RAM and Windows 2003 Server to act as a server machine; he needs 3 machines with at least 512MB RAM and Windows XP to act as clients. Then he goes on to actually define what needs to be installed on each machine. He then shares the configuration with his team, and anyone in the team can submit this configuration when they need.

While defining the configuration, he does not need to choose particular machines, but can let LabManager find a suitable machine for test machine environment setup.

Job Snapshots

A Job Snapshot is a saved copy of the running machines in a job.

When you choose the 'Snapshot Job' option in a running job, LabManager suspends the running virtual machines, and saves a copy of the machines to the server's file storage.

A Job Snapshot can be replayed at any time by you or another user to recreate a certain situation and perform diagnostics.

Operations

Operations are actions that LabManager can perform on machines. Follow the links for details on any of the operations:

- Capture Disk Image
- Capture Guest OS Movie
- Change Machine Name
- Copy Network Folder
- Hold
- Install Software
- Reboot Machine
- Reset Guest Environment Variables
- Run Command
- Run User Script
- Set Environment Variables
- Sleep
- Synchronize Machines
- Upload Log Files

Hold/Continue

LabManager lets you hold machine's operation queue and edit the operations for a machine at any point in a Job.

Hold only applies to the pending operations - it does not affect the current operation in progress. For example, if an *Install Software* operation has already started, it will continue to

execute even if you hold the machine.

Note: A Job will not finish, if any of the machines in the job are on hold.

Apart from the user manually holding a machine, LabManager will hold a machine in two other cases:

- If an error occurs and the job setting *Action On Error* is set to *Hold Machine*. (Default behaviour on error for interactive jobs is to 'Hold Machine')
- The *Hold Machine* operation is run.

Lab



Hosts

There are two components of LabManager: Server and Machine Agents. Each agent talks to the server, and does the work assigned to it. The server assigns work to agents based on the jobs submitted. As a part of a normal job, a 'Host' Agent downloads a disk image from the server, and brings it up as a machines on which users are supposed to do their work.

We can divide the Agents into two types:

- Host Agents which downloads, captures or brings up machines.
- GuestAgent which performs all the operations in the machines.

In LabManager, there are two types of Host Agents: VMAgent and BootAgent. These agents are the ones which contact and register themselves with LabManager Server, download Disk Images, and bring them up as machines. These agents also some specific operations: VMAgents can control the RAM and MAC of machines it brings up, and manages a cache of images; BootAgent partitions and formats the disk.

GuestAgent is an optional agent to be installed in the disk images, which helps in automating tasks like installing software, running commands, and shutting down the machine.

Machine Operations

Apart from the operations available for normal jobs, there are some special purpose operations that are available on the machines page. These are as follows:

Capture Disk Image

This captures a disk image of machine's current state. In the case of VMAgents, the last Install OS operation must have been in the persistent mode.

Note: Currently, captured images don't inherit the licenses and compatibility labels of last disk image replayed. You must edit the image after capture if you wish to set these.

In case of BootAgent, you must specify the active partition and which partitions to capture.

Replay Disk image

This replays a disk image to the machine. This is different from the Install OS operation in following ways:

- You can pick a specific disk image rather than just choosing the name.
- You can ignore the compatibility labels
- On virtual machines, you can choose a ISO to be mounted in the machine.

Note: While you can ignore compatibility, LabManager will still reserve the RAM and licenses for that image, and the job will not proceed if these are not

available.

This machine operation is useful for the following:

- You wish to install a new OS from an ISO or modify an existing image.
- You wish to check the image on a machine to decide if it is compatible.

Manage Cache

This operation allows you to change the cache settings of VMAgents or clear the cache if desired.

Partition & Format

This operation allows you to partition and/or format the disk on BootAgent machines (i.e. physical machines).

Virtual MACs

A MAC is the address of an ethernet network adapter. In virtual machines, the virtual network adapter has to be assigned a unique MAC Address. This address should be the valid range for the virtualization technology being used.

The valid MAC address ranges are:

Virtual Server: 00:03:FF:00:00:00 to 00:03:FF:FF:FF:FF

VMware: 00:50:56:00:00:00 to 00:50:56:FF:FF:FF

00:0C:29:00:00:00 to 00:0C:29:FF:FF:FF

For virtual machines controlled by VMAgent, the LabManager Server has a pool of MAC addresses from which it assigns MACs for the virtual machines.

When LabManager Server runs for the first time, a random block of 16 VMware and 16 VirtualServer MAC addresses are chosen. If you plan to run more than 16 virtual machines, or if you wish to control the MACs used, you can add or modify this list as you need. If there is more than one LabManager Servers installed on the same network, you should make sure that their MAC address pools don't conflict.

Resources

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Machine Images

A Disk Image is an image of a physical or virtual machine. When you setup a machine in LabManager, you must choose which disk image to replay from the ones you have created.

VM Images

Creating a Disk Image for a virtual machine is just a matter of importing the corresponding VMware or Virtual Server machine files in the LabManager Server. Currently, there are two ways to this:

You can upload a virtual machine file and matching virtual disk file through the server web interface.

You can import a virtual machine folder via the server's import folder.

Physical Images

To create physical disk images, you can install a new operating system, or replay an existing image and modify it. Follow these steps:

- Select a registered host with BootAgent installed.
- If you want a new operating system install, use any CDs to install the OS. We recommend that you use LabManager to partition and format the disk before installation.

Note: BootAgent requires that the disk has exactly 4 primary partitions, and that BootAgent is installed on the 4th partition. Some OS partitioning tools may modify the partitions such that BootAgent cannot read the partitions.
- If you are modifying an existing disk image, replay that image to the machine.
- Install GuestAgent in the OS if you need. (See 'GuestAgent Installation' under 'LabManager Installation' Guide)
- When installation and customization is complete, reboot to the BootAgent partition using the GuestAgent menu. If you are not installing GuestAgent in the OS, use the OS disk management tools to make the 4th partition the active boot partition, and then reboot the machine.
- Capture the disk image from the machine, using the Capture Disk Image job or machine operation.
- Modify the disk image Labels as needed for compatibility.

Software Packages

The Software Package in LabManager allows you to save and run software packages for both manual and automated installation in Jobs. A Software Package can have its own operations, licenses and compatibility labels.

Creating or editing a Software Package in LabManager consists of defining a file and a sequence of machine operations to be performed on installation.

The following operations are allowed in a software package:

- Copy Folder
- Pause
- Command
- Reboot
- Environment
- Sleep

These operations will behave exactly the same as if added separately into the job.

Software Groups

Software Groups allow you to specify a collection of software packages in a desired order. You can then choose the group in the Install Software operation.

Example: You have software packages *Apache, MySQL and PHP*. You can define a group *LAMP/WAMP Stack* composed of the 3 software.

User Scripts

User Scripts allows users to define a group of files and operations that can be used in a job. The file a zip of multiple files such as data files, shell scripts, batch files, etc.

ISOs

VMware and Virtual Server both support ISO images that be mounted as CD-ROMs in virtual machines. These ISOs can be from operating system installation CD/DVDs or software installation disks.

LabManager lets you mount these ISOs in the virtual machines launched by user. However LabManager does not store these ISOs in its own storage. Only mounting of an ISO from a windows shared folder is supported.

Currently, ISOs cannot be used as part of a job. You can only mount ISOs as part of the Replay Disk Image Machine Operation.

The ISO is useful when you wish to install new operating systems on empty virtual hard disks or modify an existing images by installing new software.

Note: If your installation ISO is a bootable disk, you may have to fix the boot order of the virtual machine on the VMagent host machine.

Licenses

LabManager allows you to track and restrict the number of copies of licensed software that can be used at a time.

Licenses can be used for both Disk Images and Software Packages, and you can mix the two if needed. For example, if you have a disk image Windows XP with Silk, you can mark the disk image as using both a Windows XP license and a Silk license. When a user runs a job using this disk image, LabManager will show the usage of both licenses.

If you wish to restrict the maximum number of copies of a software that are being used at a time, you must set the license *Type* as *Hard*, and specify the *Number of Licenses* available. LabManager will not start jobs or install software if there are not enough licenses available. Note that LabManager will not stop running jobs if you reduce the number of licenses available to less than the number in use.

Host Operations



Capture Disk Image

Capture the machine as a new Disk Image with the specified name.

Install Operating System

Host Agent (i.e BootAgent or VMAgent) replays a disk image with the specified name, and launches the machine. LabManager will choose a disk image that is compatible with the chosen machine. (See Labels)

Guest Operations



Change Machine Name

Changes the host name of the machine. Currently, this is implemented only on Windows platforms.

This operation is useful when multiple machines are running copies of the same disk image, and you wish to access the machine by hostname.

Note: If the machine is in a windows domain this operation will not work, and may result in an unstable system.

Note: this may also be useful when the machine needs to access a windows network share on another machine, because windows will not allow two clients with the same hostname if they access the server by name. Alternatively, you should be able to access the server by IP address.

Clean Guest Environment

GuestAgent cleans all the previously set environment variables.

Note: GuestAgent does NOT directly change the environment of the machine. It stores environment values internally, and it only cleans all the environment variables set by the user in that os image so far.

Copy Network Folder

GuestAgent will copy a folder from a Windows network share to the machine.

The default directory is the *Imwork* directory of the GuestAgent. (Usually *C:\GuestAgent\Imwork* on Windows).

Note: You may need to use the Change Machine Name operation before using this one if you are accessing a server by name.

Hold Machine

Machine's operation queue is put on hold till user clicks on 'Continue'.(See Hold/Continue)

Note: If you are going to leave a machine on hold for a while, remember to increase the job timeout for that job.

Install Software

GuestAgent will install a Software Package or Group with the specified name. LabManager will choose a software package that is compatible with the disk image installed on the machine. (See Labels)

Reboot Machine

GuestAgent will reboot the machine.

Run Command

GuestAgent will execute a command on the machine.

The environment variables previously set using the Set Environment Variable operation will be added to the environment of the command being executed.

The default working directory for the command will be the `Imwork` directory of the GuestAgent. (Usually `C:\GuestAgent\Imwork` on Windows).

Note: if the command returns a non-zero exit code when it completes, LabManager will consider this an error. You can use the Ignore Process Exit Code option to override this behaviour.

Run User Script

GuestAgent will download files and execute operations of the chosen User Script to the machine.

The default directory is the `Imwork` directory of the GuestAgent. (Usually `C:\GuestAgent\Imwork` on Windows).

Save Movie

Capture UI session of guest OS for the last 30 minutes as flash movie

Note: For `vmware/gsx/esx` server and Microsoft virtual server host agents, by default master agent will capture and upload flash movie, where as for all other type of hosts guest agent does the work.

Note: For Microsoft virtual server host agents, by default flash movie resolution is 144x96. which is not very good. To capture movies of bigger resolution if guest agent is installed on guest OS, you can force guest agent to capture movie, which will be of better quality.

Set Environment Variables

GuestAgent sets an environment variable.

Note: GuestAgent does NOT directly change the environment of the machine. It stores these values internally, and they only come into effect for processes launched by the Run Command operation.

Note that prepending values may affect the system behaviour, especially for critical environment variables like `PATH`.

Sleep

GuestAgent will sleep for the specified amount of time.

Synchronize Machines

GuestAgent will synchronize with other machines in the job that have the same synchronization point selected.

This operation has the following features:

- You can specify a timeout for the synchronization point.
- When the synchronization finishes, the IP addresses of all the other machines will be saved as environment variables of the form LM_ROLE_NAME.

You should make sure that different roles use sync points in the same order to avoid deadlocks.

Example: You have an application with a server and a client machine, and you want to make sure that the client does not start before the server machine is setup. To do this, you can have a sync operation on the server after its setup is complete, and add a matching sync operation to the client before it starts its work.

Upload Log Files

GuestAgent will upload the specified files from the machine to the LabManager Server. This lets you save a job's output files such as test results logs or build output.

Admin Guide



Discovery Settings

LabManager Agents attempt to automatically discover all the servers installed in a network, using UDP. All the agents allow you to configure the discovery settings. The methods available are:

- **UDP Broadcast:** Agents will discover all the servers installed in the same subnet. This is the most convenient method, and is recommended unless your network does not allow it.
- **Hostname/IP:** Agents will look for servers on a specific host. This is recommended if your agents are on a different subnet than the server.
- **Server URL:** Agents will look for servers on a specific host with the specified port. This is recommended if your agents are on a different subnet than the server or udp is not supported in the network.

Registration

Registration is the process of associating a host machine with the LabManager Server. A host machine must be registered to a LabManager Server before you can run jobs on that machine.

When you set up BootAgent or VMAgent, the agent will discover servers on the network and check if it is *Registered* with any of them. If the agent is not registered, it will appear as *Unregistered* on all of the servers. The administrator can register the machine at any LabManager Server, making it available for users on that server.

You should make sure that a host machine is registered with only one LabManager Server at a time. If you wish to move control of a LabManager host machine from one server to another, unregister it at one server and then register it at another.

Host Machines

A Host machine is a machine where VMAgent is installed. The host is identified by the host's network card MAC address. The host machine page allows you to manage the RAM usage and VNC ports of the virtual machines managed by VMAgent.

RAM

When a host machine is first added, LabManager assigns 75% of the RAM as available for virtual machines. The administrator can modify this as needed.

LabManager Jobs reserve RAM from the host when they run - if there is not enough RAM available, the job will not start.

VNC Ports

This setting is used to control the VNC port for a virtual machine running in VMware Server.

Wake On LAN

Use this feature to wake up a host which is shutdown.

Wake on LAN feature is currently supported for Windows Hosts only.

Checklist for enabling Wake On LAN

Motherboard must support *Wake On LAN*.

Network Interface Card (NIC) must support *Wake On LAN*.

There must be a wire connecting the motherboard's Wake On LAN port to the Network Interface Card's *Wake On LAN* port.

Wake On LAN feature must be enabled in the motherboard's BIOS.

The "Good Connection" light on the back of the Network Interface Card must be lit when the machine is off.

Port 12287 (0x2FFF) must be open.

For more details search internet for *Wake On LAN* .

Create VMware Image

Creating VMware Image is a process used to create a virtual test machine with an Operating System using VMware virtualization technology. This process creates a set of files that represent a new computer with a blank unformatted hard disk – virtual disk. An Operating System is installed onto the virtual disk.

You can create virtual disks using any of the following software available from VMware:

- VMware Workstation
- VMware GSX Server
- VMware Server

This section focuses on the default settings that we recommend while creating virtual test machines using VMware Server, to be used with LabManager Server. For more information on creating virtual test machines using VMware Server, refer to the manuals provided with VMware Server.

Default settings when creating a virtual disk:

- Select the Local Host option in the VMWare Server Console screen.
- Select the Typical option from the Virtual machine configuration box.
- Select Microsoft Windows from the Guest operating System box.
- Select an appropriate version of the Windows Operating system from the Version drop-

down box

- Accept the default name and the path for the Virtual machine.

Note: Default Virtual machine name will be the name of the Operating System selected.

- Accept the default network connection selected - Use bridged networking.
- Uncheck Allocate all disk space now from the Disk capacity box.

Default settings when installing an Operating System on the virtual disk:

- Double-click CD-ROM in the Devices column.
- Select Use physical drive from the connection box when installing an Operating System using a CD.

Or

Select USE ISO image from the connection box, if ISO image for the Operating System is available.

- Click OK.
- Click Start this virtual machine in the Commands column.

Note: After the installation of the Operating System on the virtual machine double-click CD-ROM in the Devices column and select Use physical drive in the Connection box, if the Operating System is installed using an ISO image.

Create VirtualServer Image

Creating Virtual Server Image is a process used to create a virtual test machine with an Operating System using Virtual Server virtualization technology. This process creates a set of files that represent a new computer with a blank unformatted hard disk – virtual disk. An Operating System is installed onto the virtual disk.

- From the Virtual server administration site select 'Create' from Virtual machines.
- Enter the name of the Virtual machine.
- Accept/Modify the default values for memory, virtual hardk disk type and size.
- Select 'External Network' for Virtual network adapter.
- Click 'Create' to create the Virtual machine.
- After you have created the virtual machine, edit the CD/DVD properties of the VM to point to the correct operating system image location (CD, network drive etc).
- Start the VM and install the operating system.
- It is highly recommended that you install Virtual machine additions to the virtual machine.

Note: After the installation of the Operating System on the virtual machine, set the 'CD/DVD' drive properties to point back to a physical CD/DVD drive if the Operating System is

installed using an ISO image.

Server Directories

The LabManager Server has two data directories that you need to be aware of: the userdata directory where the server database file is stored, and the filestorage directory where file resources are stored.

File Storage

The file storage directory is used to store the following resources:

- Disk Images
- Software Packages
- User Files
- Job Upload Logs

When you install the Server, the filestorage directory is created under the server install directory. However, you can change this directory in Manage -> Server Info.

Import Folder

To import your existing virtual machines, drop the virtual machine folder in the import subdirectory in the file storage, and import it as described in "Import a Disk Image"

Configuring VMRC

For Virtual Server machines, you can enable the VMRC ActiveX Control by following these steps:

- On a host machine that has Virtual Server installed, go to the following directory: **C:**
\Program Files\Microsoft Virtual Server\WebSite\VirtualServer\activex
- Copy the file *VMRCActiveXClient.cab* from this directory to the *activex/vmrc/msie* directory in LabManager Server.
- Enable Microsoft Virtual Server VMRC settings in Server Remote Settings.
- Add host username and password in each Virtual Server Host by editing host information.

The ActiveX control will now be used for remote access to Virtual Server machines from Internet Explorer.

Configuring MKS

For VMware ESX and VMware Server machines, you can enable the MKS Browser Control by following these steps:

- Download the MKS Control from an VMware ESX machine from this url: Internet Explorer ActiveX - <https://esx-ip-address/ui/plugin/msie/vmware-mks.cab>
Windows Firefox Plugin - <https://esx-ip-address/ui/plugin/mozilla/win32/vmware-mks.xpi>
Linux Firefox Plugin - <https://esx-ip-address/ui/plugin/mozilla/linux/vmware-mks.xpi>
- Copy the file vmware-mks.cab (Internet Explorer ActiveX) to activex/mks/msie/ directory in LabManager Server.
- Copy the file vmware-mks.xpi (Windows Firefox Plugin) to activex/mks/mozilla/win32/ directory in LabManager Server.
- Copy the file vmware-mks.xpi (Linux Firefox Plugin) to activex/mks/mozilla/linux/ directory in LabManager Server.
- Enable VMware MKS settings in Server Remote Settings for both VMware Server and VMware ESX.
- Add host username and password in each VMware ESX and VMware Server by editing its host information.

The ActiveX control will now be used for remote access to Virtual Server machines from Internet Explorer.

Configuring SSL/LDAP

To enable ssl on windows, additional packages are required.

- SSL - You can use OpenSSL . Get it from www.openssl.org.
- PyOpenSSL - Contact LabManager support team to get the package and install instruction.

LabManager Server dependencies

Once the above specified packages are installed. Do the following steps.

- openssl genrsa -out ssl.key 1024
- openssl req -new -nodes -key ssl.key -out ssl.csr
- openssl x509 -req -days 365 -in ssl.csr -signkey ssl.key -out ssl.crt
- Copy ssl.key and ssl.crt files to [Server installation directory]/userdata

Server will require a restart for the changes to take place.

Enable LDAP

Copy the ldap certificate file to server/userdata as ldap.pem

Adding Xen Router VM

Instructions On Setting up Xen Environment before Using IP Zone feature.

- Create a pool of Xen hosts of same type
- In the pool networks, rename default created public network "Network 0" to "vmnet0"
- Create a private network "vmnet1" for the pool.
- Import RouterVM, into Xen pool. Make sure that it shows up in the pool shared storage VM list.
- After import into XenPool check:

In the pool there should be only one "vmnet0" and "vmnet1", i.e. there should not be two copies of "vmnet0" and "vmnet1".

If it gets created somehow due to router import, remove duplicate copies of vmnet0 and vmnet1.

If Router VM has two network interfaces, first one connected to vmnet0 and second one to vmnet1

Finally there should exist vmnet0(public) and vmnet1(private) in pool, and in RouterVM

- Now import Router VM into LabManager using external storage import.

Eventually one should make sure that for one pool, there is at least one Router VM of right version, imported into LM. If there are more than one Router VM available for a pool, LabManager will always use first available router for IP Zone jobs.

Note: You can download Router VM from vmlogix website.