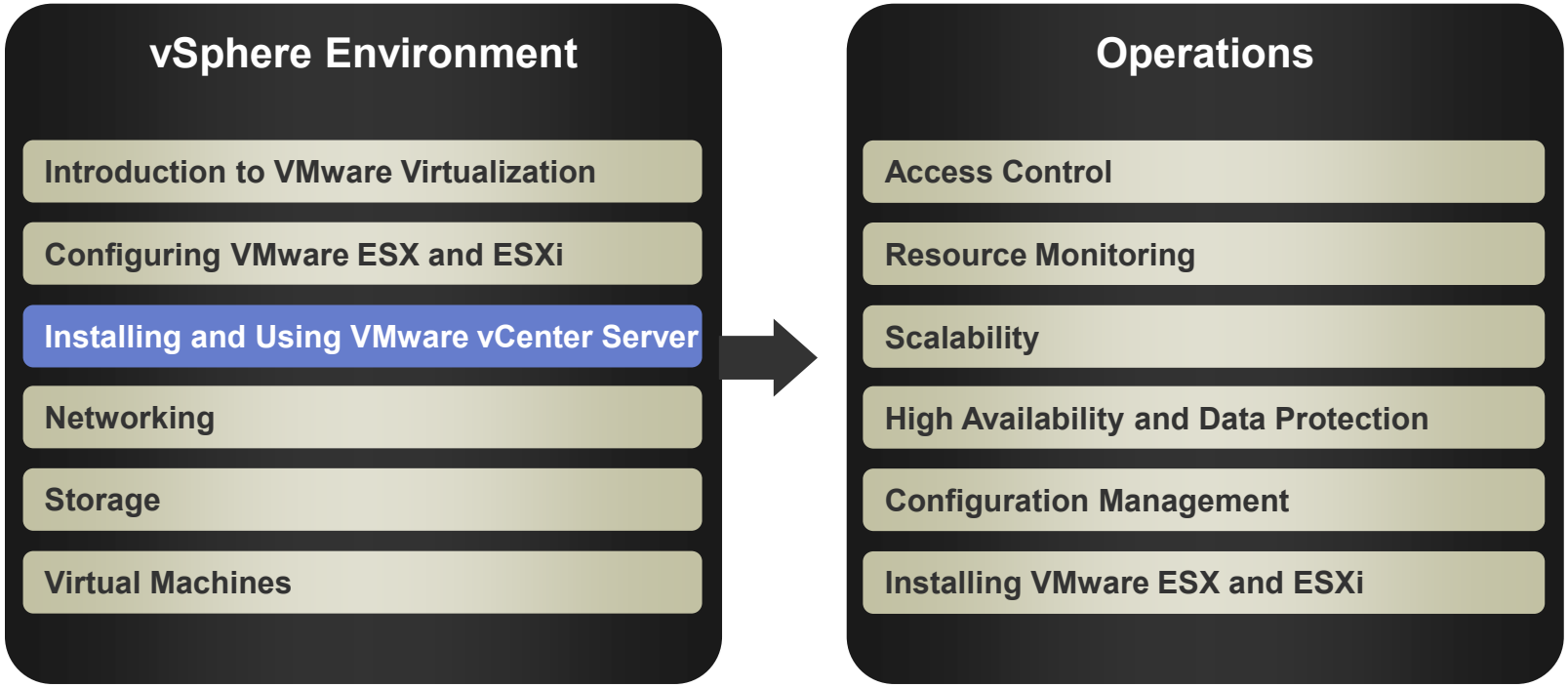
VMware vCenter Server

Module 4

You Are Here



Importance

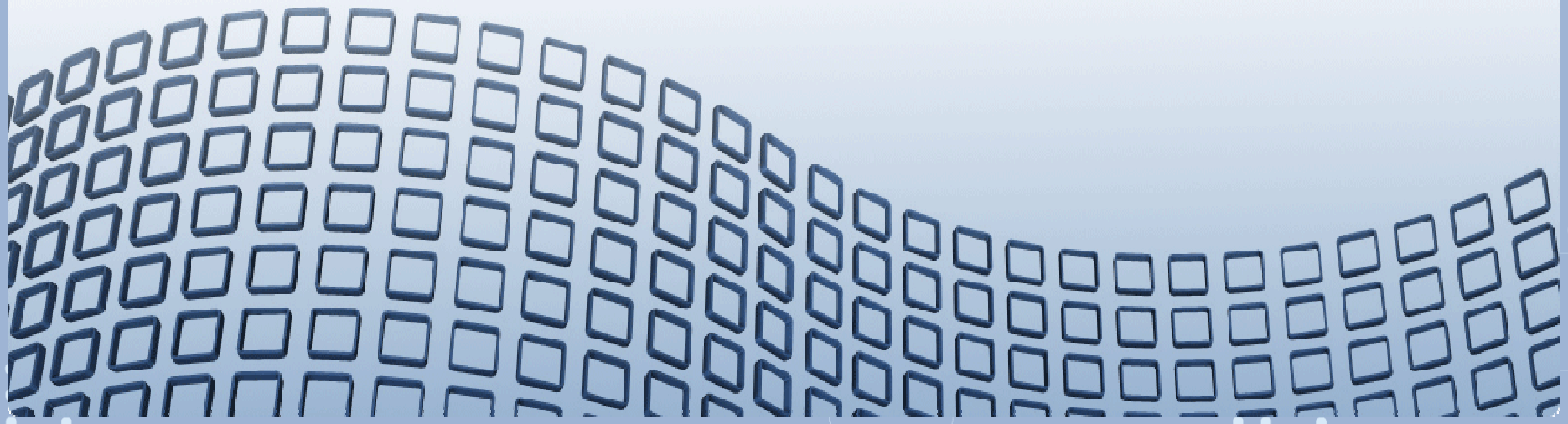
- VMware® vCenter™ Server allows you to centrally manage multiple VMware ESX™/ESXi servers and their virtual machines. Failure to properly install, configure, and manage vCenter Server could result in reduced administrative efficiency or possible ESX/ESXi and virtual machine downtime.

Module Lessons

Lesson 1: Installing vCenter Server

Lesson 2: Using vCenter Server

Lesson 1:
Installing vCenter Server

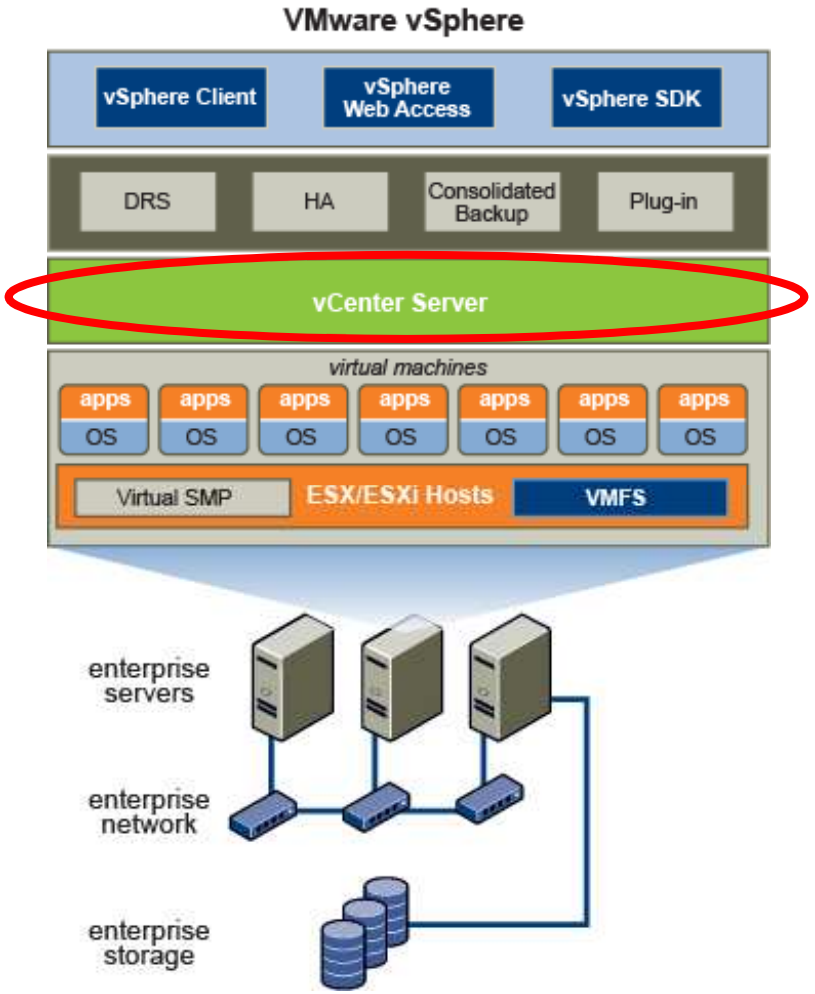


Lesson Objectives

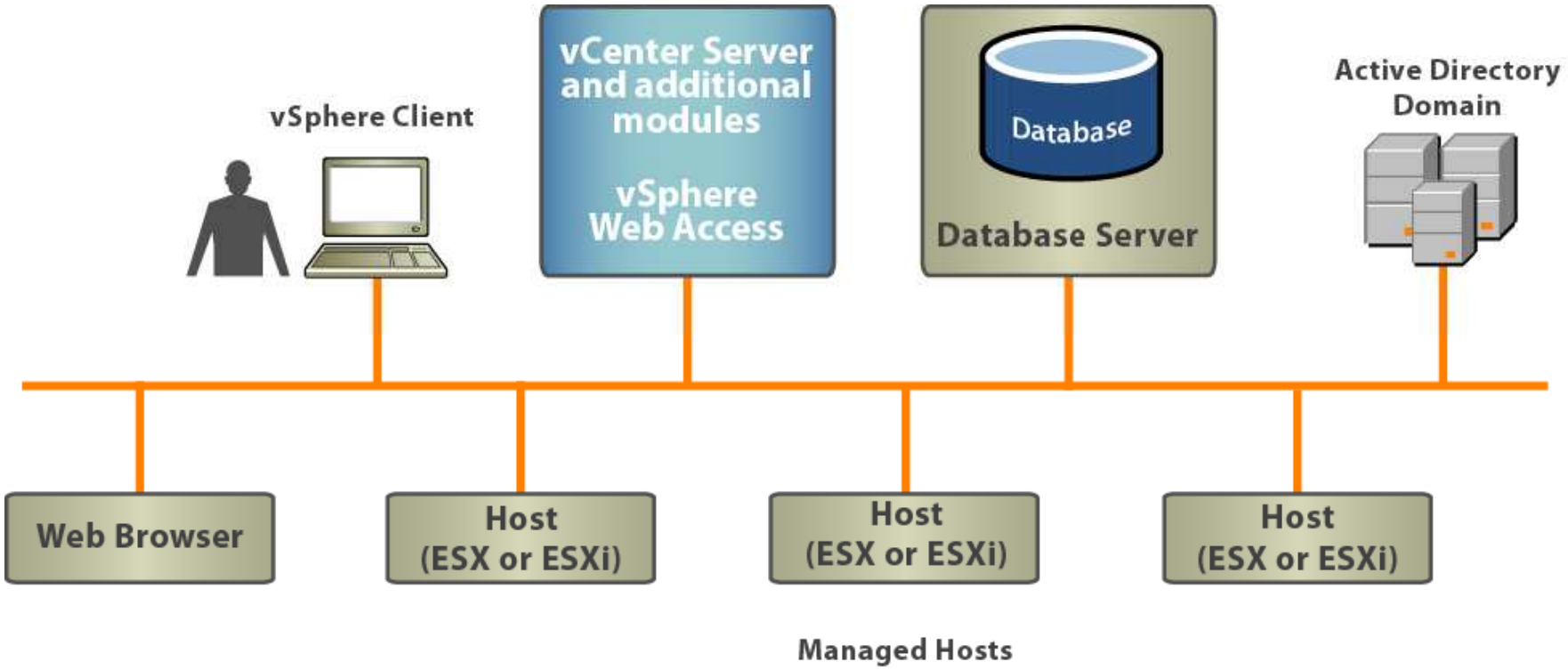
- Describe the vCenter Server architecture
- Describe the vCenter Server components
- Install vCenter Server
- Install the VMware vSphere™ Client
- Install a vCenter Server additional module

vCenter Server: Management Platform

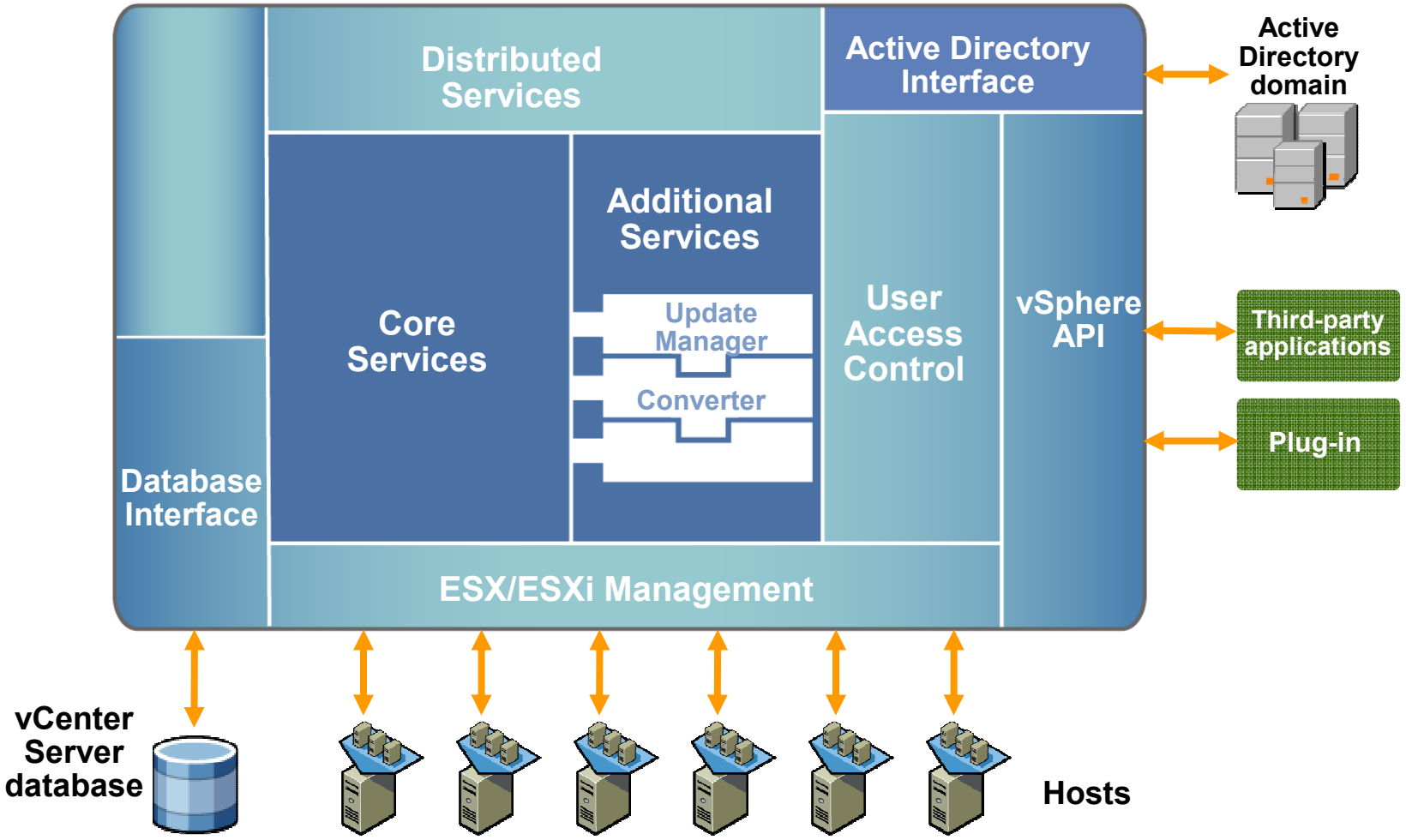
VMware vCenter Server is the central point for configuring, provisioning, and managing virtualized IT environments.



vCenter Architecture



vCenter Server Components



vCenter Server Modules

These modules provide additional features and functionality to vCenter Server.

Examples:

- VMware vCenter Update Manager
- VMware vCenter Converter

These modules include a server component and a client component:

- The client component is a plug-in available for download and installation to vSphere Clients after the server component is installed in vCenter Server.
- The client component alters the interface by adding items related to the enhanced functionality.

vCenter Server: Physical or Virtual Machine

When using a physical machine:

- A dedicated server is required.
- vCenter Server is not susceptible to potential VMware vSphere outage.
- vCenter Server performance is limited only by the system hardware.

When using a virtual machine:

- A dedicated server is not required.
- vCenter Server is susceptible to potential vSphere outage.
- The vCenter Server instance can be migrated from one system to another during maintenance activities.
- vCenter Server must contend for resources with the other virtual machines on the host.

vCenter Server Hardware/Software Requirements

Hardware requirements (physical or virtual machine)

- Processor – 2.0GHz or higher Intel or AMD x86 processor*
- Memory – 2GB RAM minimum*
- Disk storage – 1GB minimum, 2GB recommended*
- Networking – Gigabit recommended
  - *Requirements higher if vCenter Server database running on same system

Software requirements

- Guest operating systems supported:
  - Windows XP Pro, Windows 2003 Server, Windows Server 2008
- For a complete, detailed list of supported guest operating systems, see the vSphere installation guide.

vCenter Database Requirements

Each vCenter Server instance must have a connection to a database to organize all the configuration data.

Supported databases:

- Microsoft SQL Server 2005
- Microsoft SQL Server 2008
- Oracle 10g and 11g
- For a complete list of supported databases, see the vSphere installation guide.

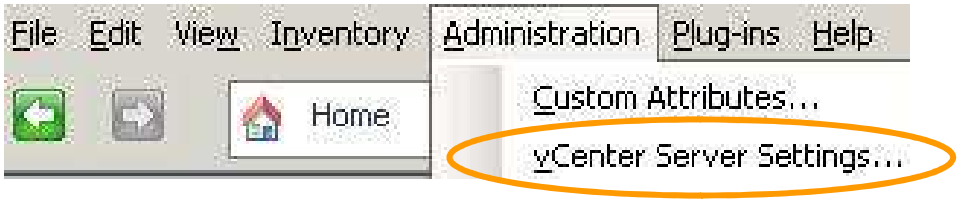
Default database: Microsoft SQL Server 2005 Express

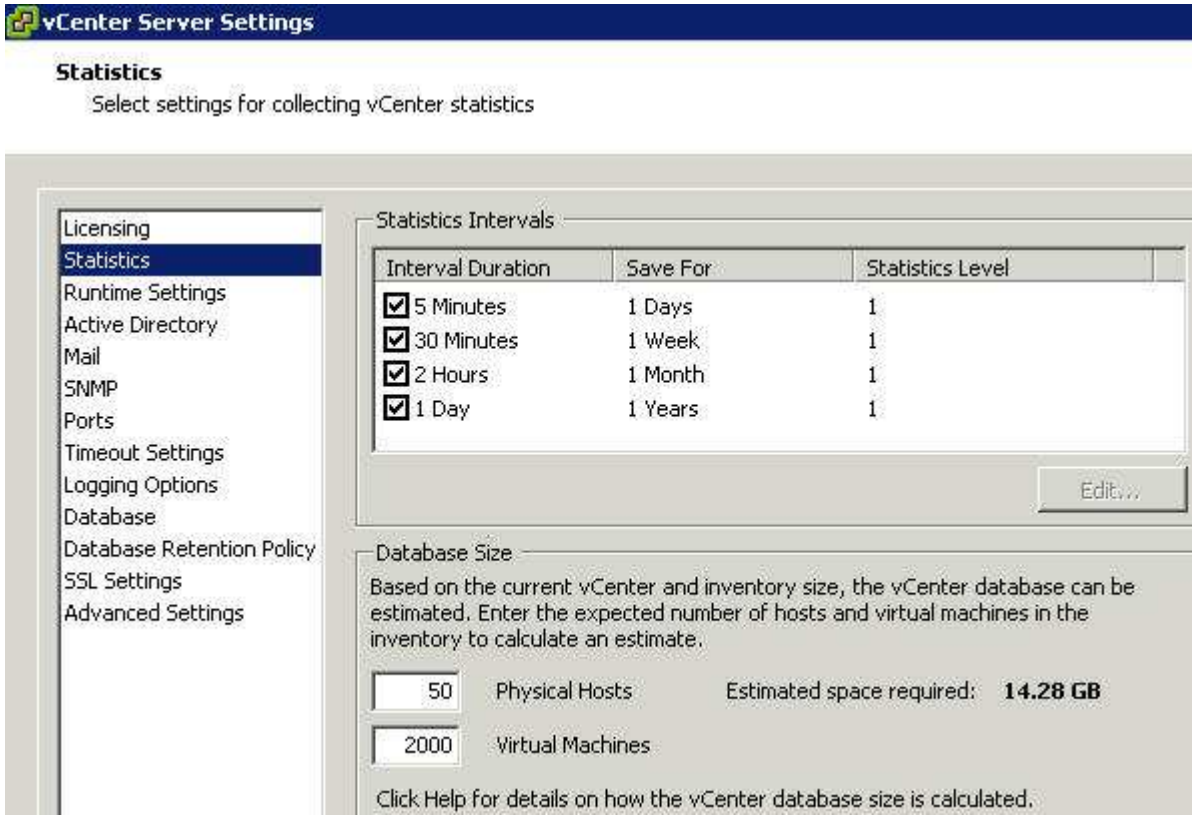
- Bundled with vCenter Server
- Used for product evaluations and demos
- Also used for small deployments (up to 5 hosts and 50 virtual machines)

Calculating the Database Size

vCenter Server has a built-in database calculator.

This is a "what if" calculator. No database changes are made.





Steps Before Installing vCenter Server

Before beginning the vCenter Server installation, perform the following steps:

- Ensure that vCenter Server hardware and software requirements are met.
- Ensure that the vCenter Server system belongs to a domain rather than a workgroup.
- Create a vCenter Server database, unless using the default database.
- Obtain and assign static IP address and host name to the vCenter Server system.

vCenter Server Installation Procedure

Launch the VMware vCenter Installer wizard.

Other vSphere components can also be installed with this wizard.

vCenter Server Installation Information

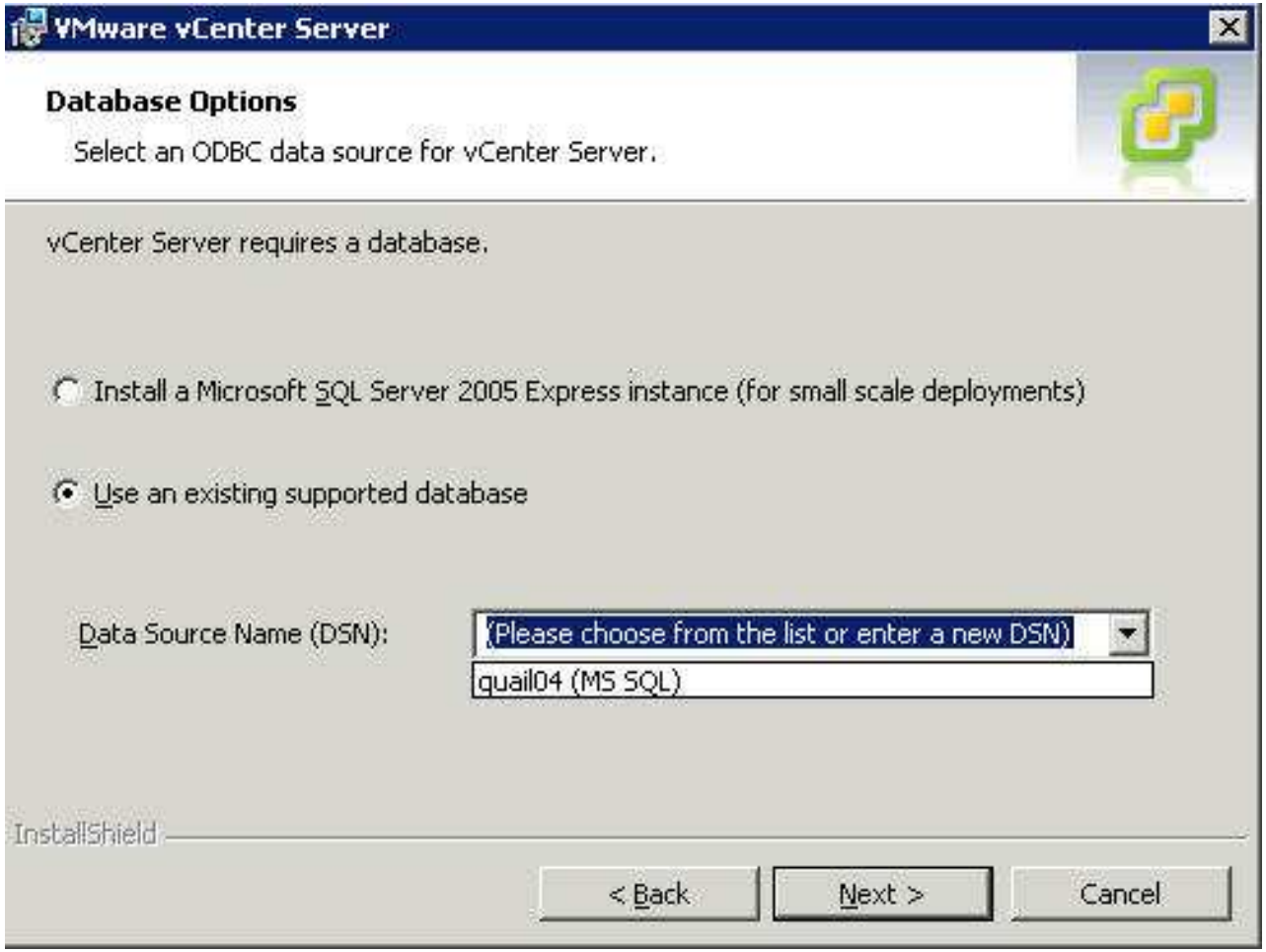
The vCenter Server installer asks for the following information:

- User name and organization
- License key
- Destination folder for software
- Other information (covered in the next few slides)
  - Database information
  - SYSTEM account information
  - vCenter Server linked mode options
  - Ports

Configuring Access to the Database

Database information:

- Use the default database or an existing supported database.

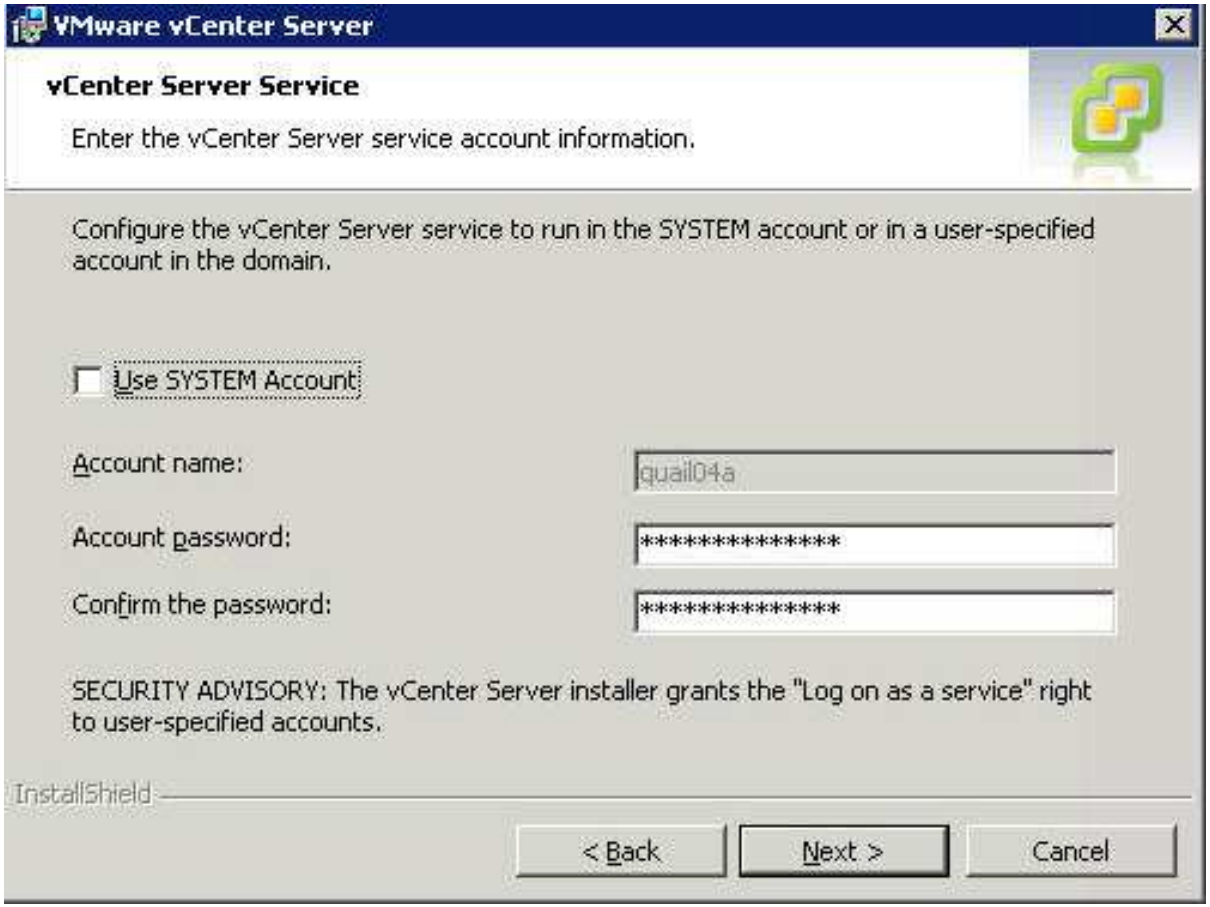


vCenter Server Account Considerations

Use the Windows SYSTEM account or a user-specified account for running vCenter Server.

A user-specified account

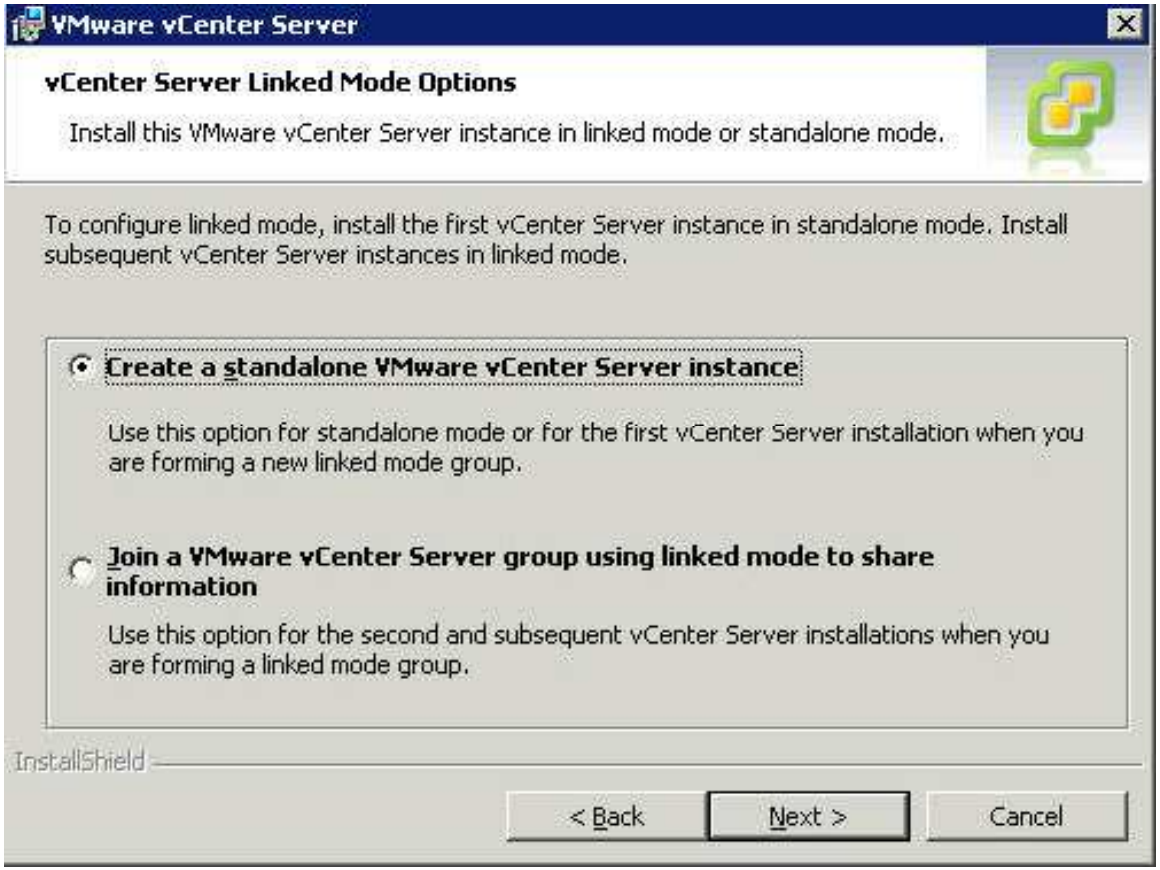
- Enables the use of Windows authentication for SQL Server
- Can be used for security purposes
- Must be an Administrator on local machine



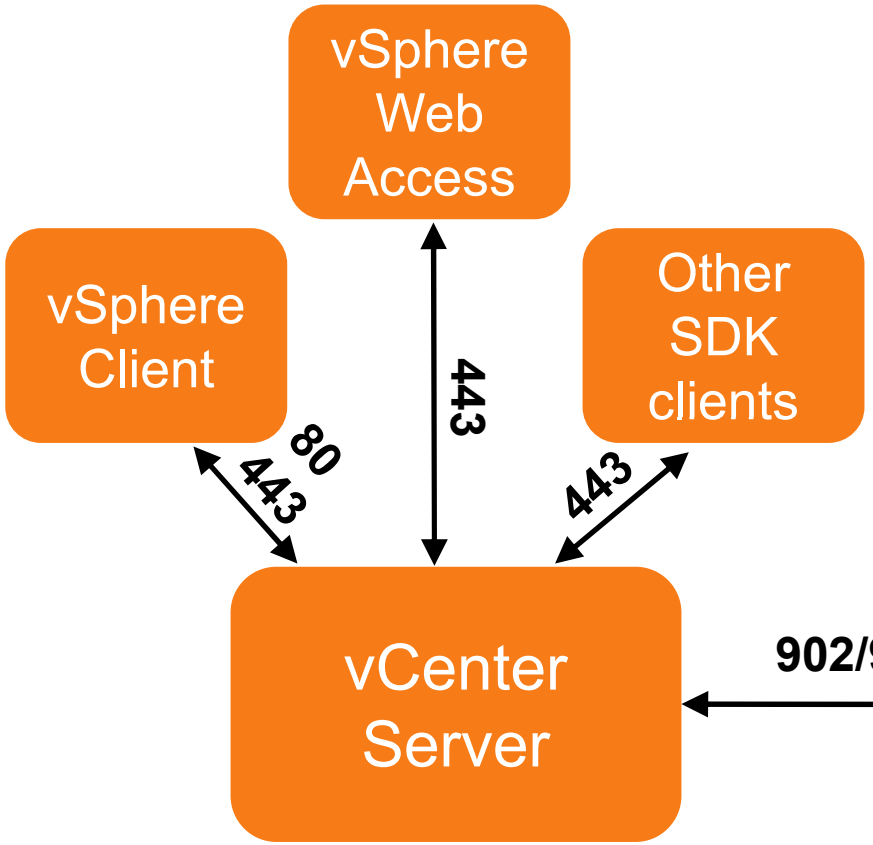
Standalone Instance or Linked Mode Group

Install vCenter Server as a standalone instance or as part of a vCenter Linked Mode group.

- vCenter Linked Mode allows you to view and manage the inventories of multiple vCenter Server instances.
- Use vCenter Linked Mode primarily for large-scale managing and monitoring of virtual environments.



Ports Used by vCenter Server



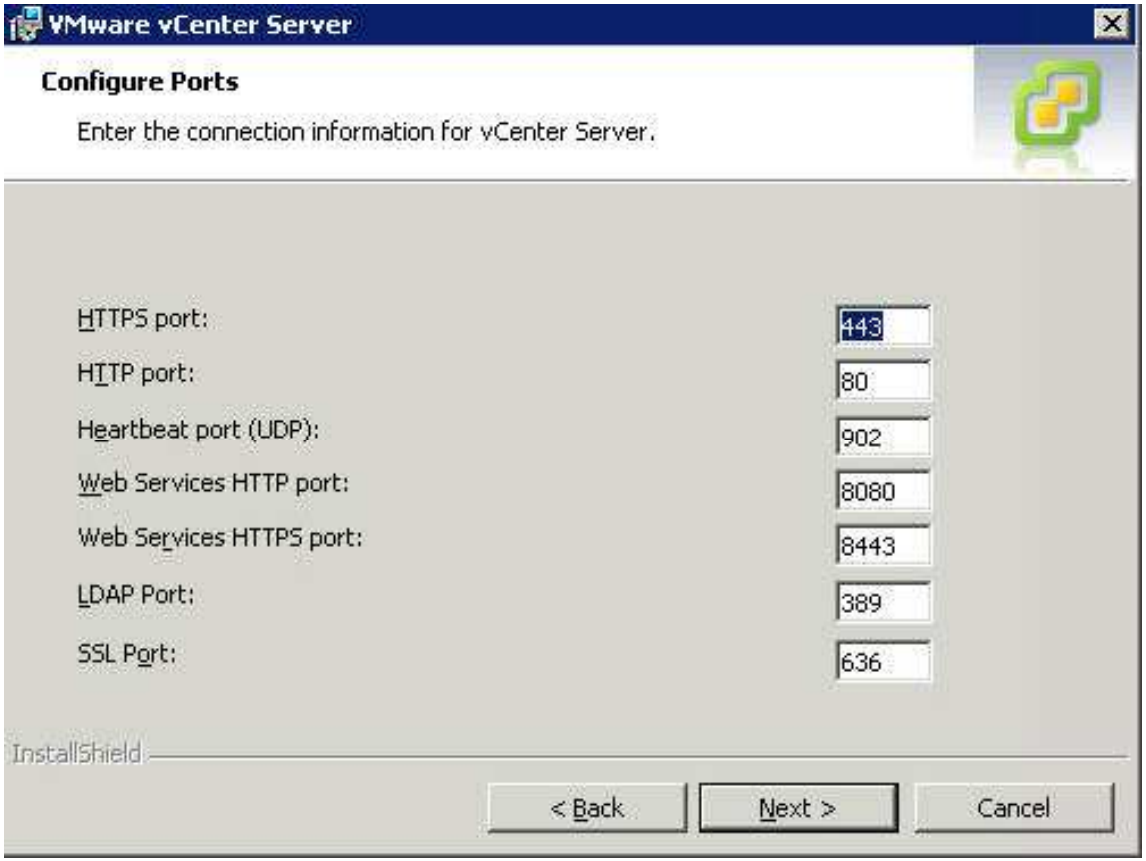
- These ports are used by vCenter Server to communicate with its client interfaces and managed hosts.

Configuring Ports Used by vCenter Server

Customize these ports or use the defaults.

In addition to ports 80, 443, and 902, other ports used are:

- 8080 and 8443: For Web Services HTTP and HTTPS ports
- 389 and 636: LDAP and SSL ports used by Directory Services



vCenter Server Services

vCenter Server is installed on a Windows system.

Once installed, vCenter Server services can be managed from the Windows Control Panel (Administrative Tools > Services).

vSphere Client Installation Procedure

1. Start the VMware vCenter Installer wizard.
2. Select vSphere Client.
3. In the vSphere Client installer:
   a. Accept the EULA.
   b. Enter user name and company name.
   c. Select Install VMware vSphere Host Update Utility if you plan to manage host patches, updates, and upgrades from this machine.
   d. Accept the default installation location.

Logging In to the vSphere Client

At the vSphere Client login screen, enter:

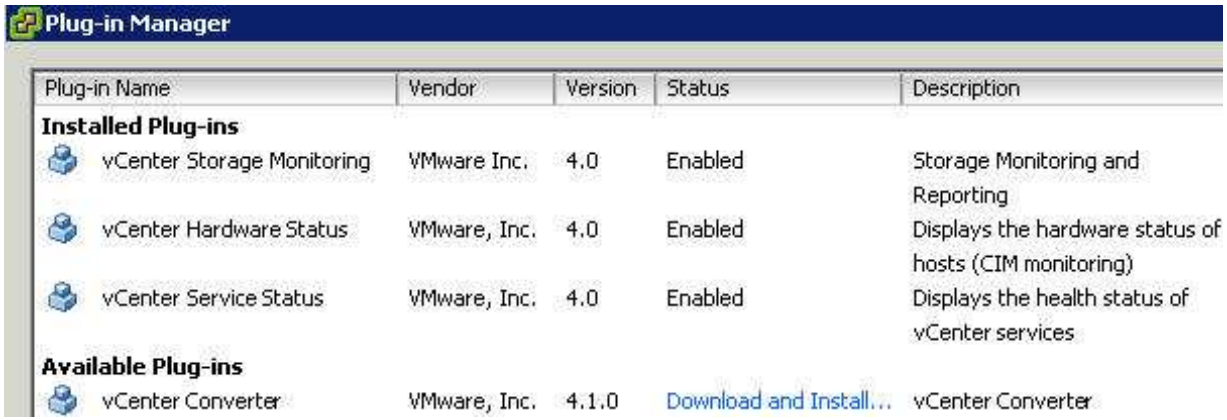
- Host name or IP address of the vCenter Server system
- Windows user and password

(Optional) Use your Windows session credentials.

Installing vCenter Additional Modules and Plug-Ins

To install an additional vCenter Server module, use the VMware vCenter Installer wizard.

To install the corresponding plug-in, use the Plug-in Manager.



Plug-in Name	Vendor	Version	Status	Description
Installed Plug-ins				
vCenter Storage Monitoring	VMware Inc.	4.0	Enabled	Storage Monitoring and Reporting
vCenter Hardware Status	VMware, Inc.	4.0	Enabled	Displays the hardware status of hosts (CIM monitoring)
vCenter Service Status	VMware, Inc.	4.0	Enabled	Displays the health status of vCenter services
Available Plug-ins				
vCenter Converter	VMware, Inc.	4.1.0	Download and Install...	vCenter Converter

Lab 2

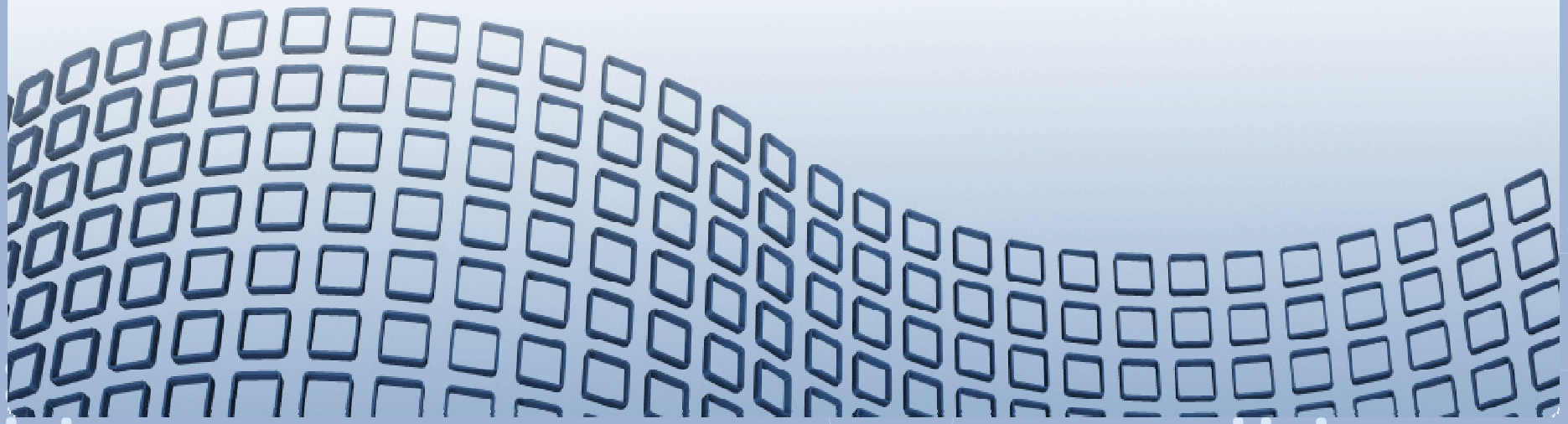
In this lab, you will install vCenter Server components.

1. Access your vCenter Server system.
2. Configure a SQL Server ODBC connection to a preconfigured database.
3. Install vCenter Server.
4. Install the vSphere Client.
5. Check the vCenter Server installation.
6. Install an additional vCenter Server module: vCenter Converter.
7. Install and enable a plug-in: Converter plug-in.

Lesson Summary

- The vCenter architecture consists of the vCenter Server, the vCenter Server database, vSphere Web Access, vSphere Client, Active Directory, and managed ESX/ESXi hosts.
- Install vCenter Server and its components using the VMware vCenter Installer wizard.
- Install the server component of vCenter Server additional modules using the VMware vCenter Installer wizard.
- Install the client component of vCenter Server additional modules as plug-ins in the vSphere Client.

Lesson 2:
Using vCenter Server

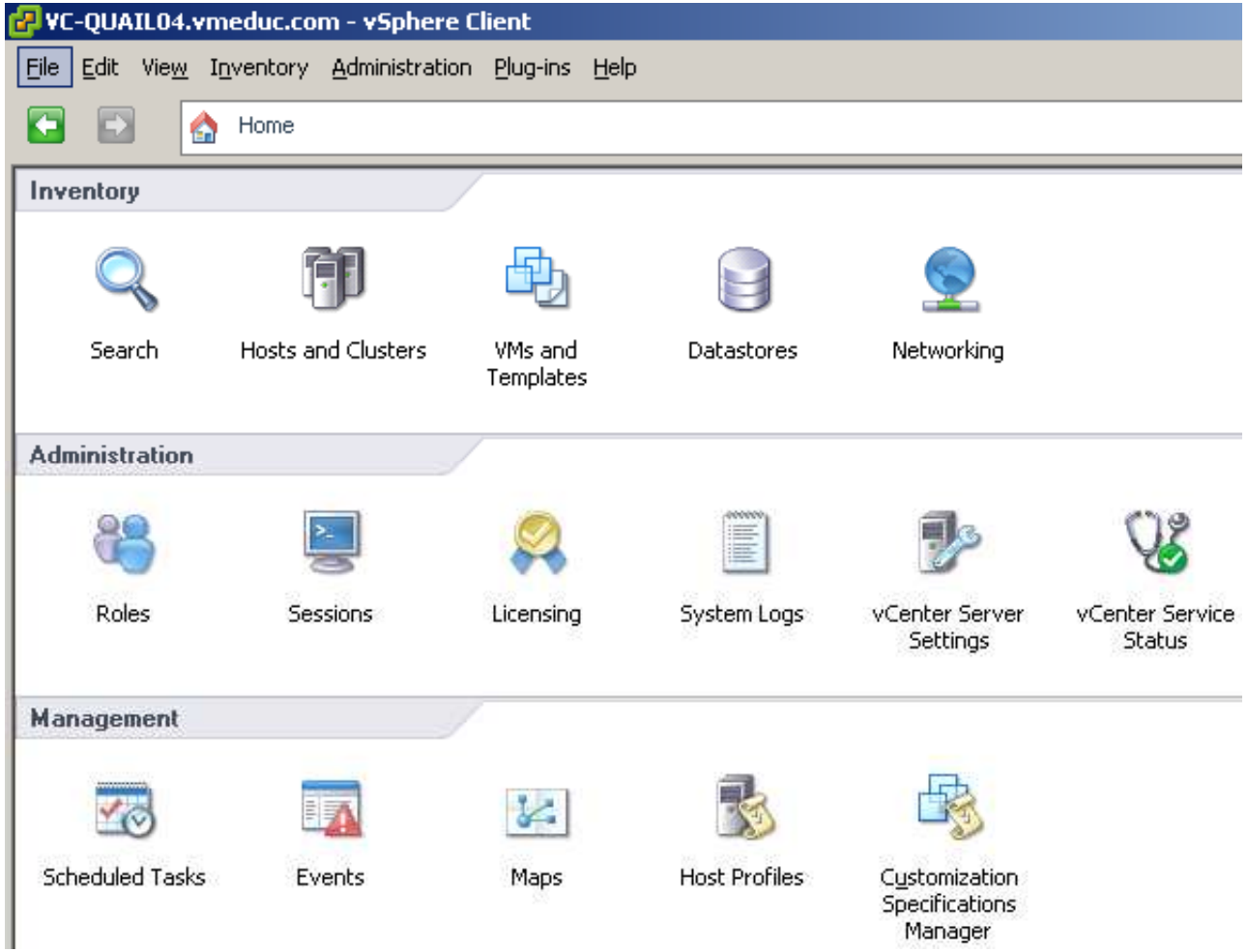


Lesson Objectives

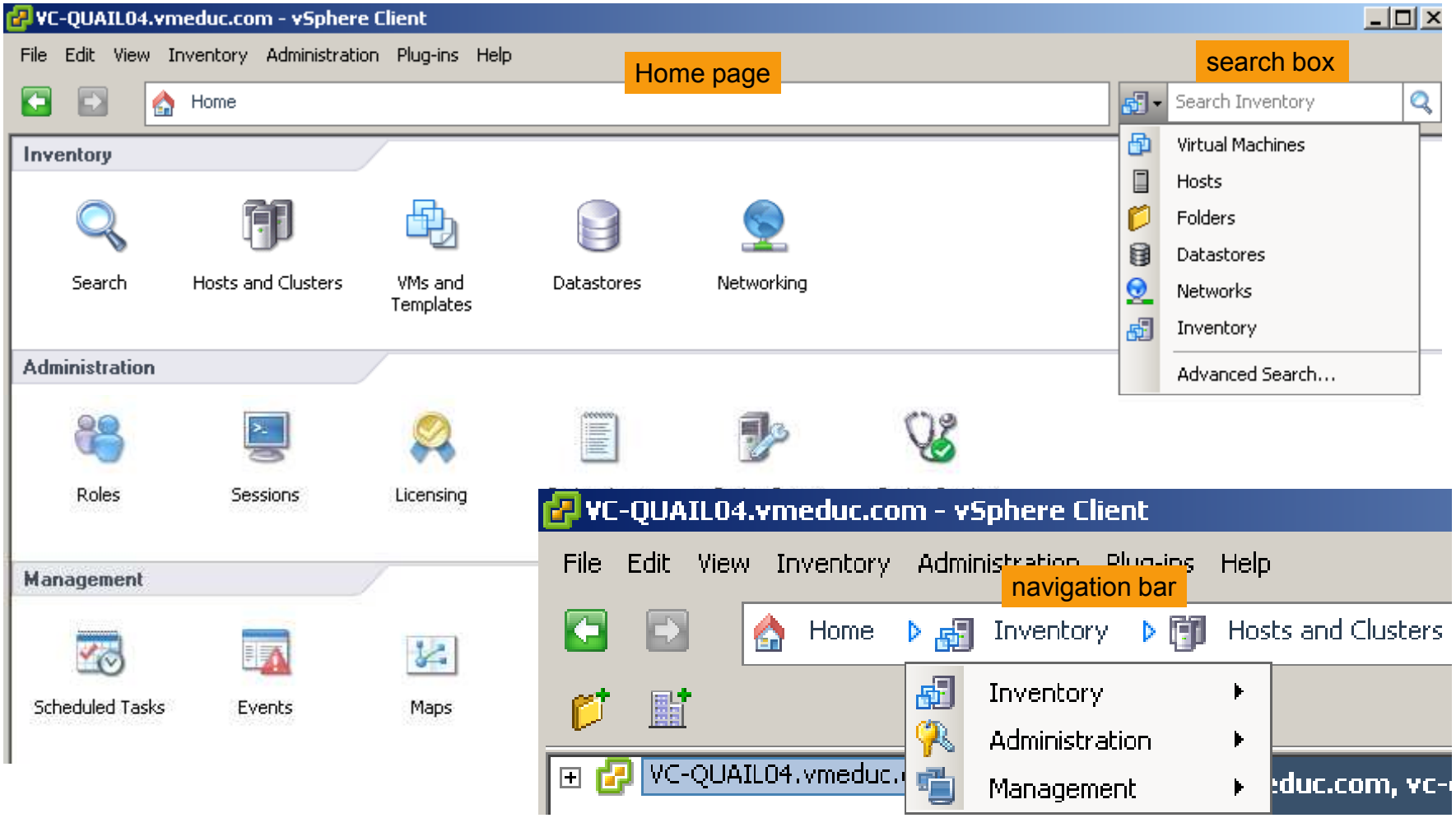
- Navigate using the vSphere Client
- Create and organize vCenter Server inventory objects
- Add license keys to vCenter Server
- View vCenter Server logs and events
- Create a vCenter Server administrator

vSphere Client Home Page

This lesson focuses on the inventory and some administration tasks.



Navigating the vSphere Client



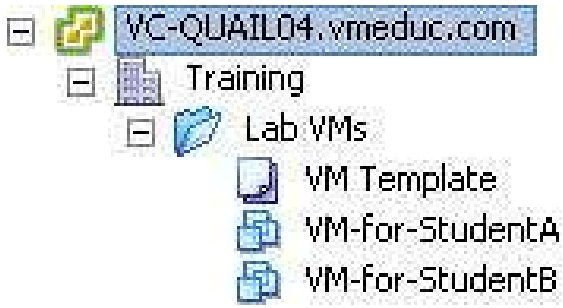
vCenter Inventory Objects

The vCenter Server inventory panels organize objects into a hierarchy.

Hosts and Clusters

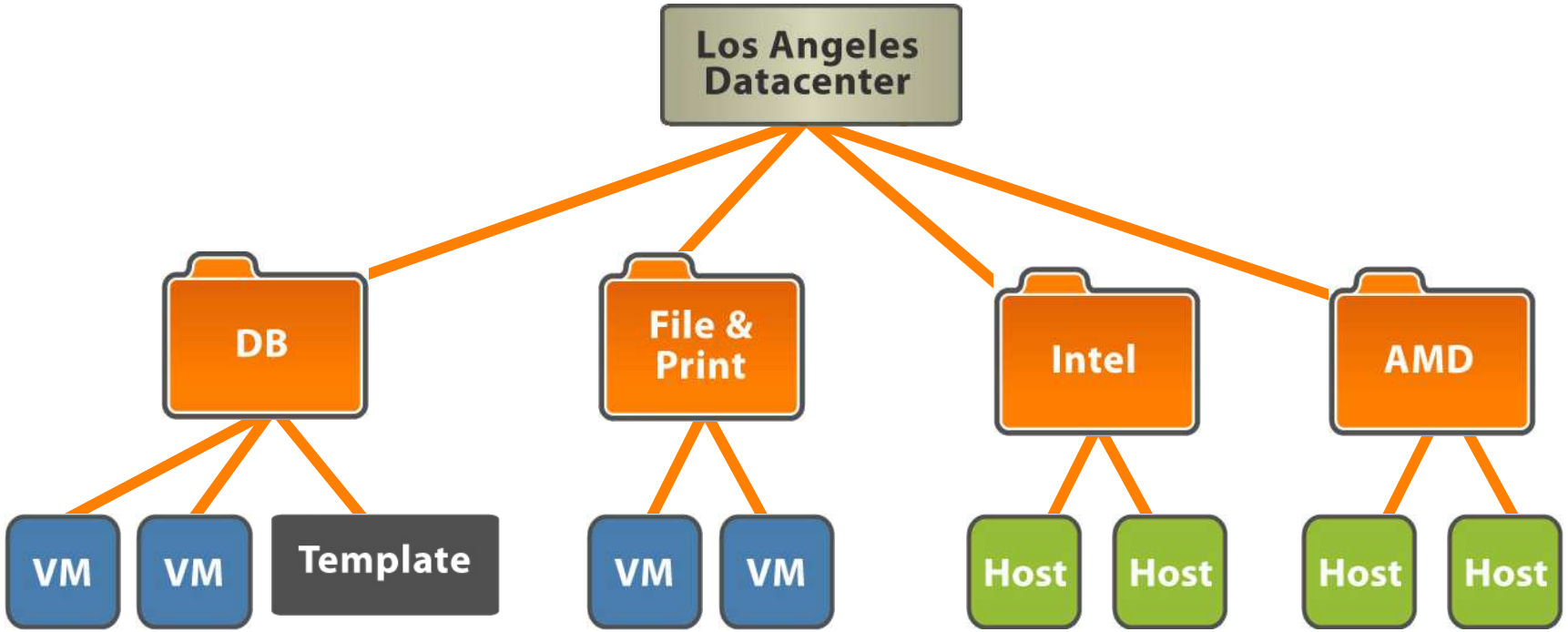
Datastores

VMs and Templates

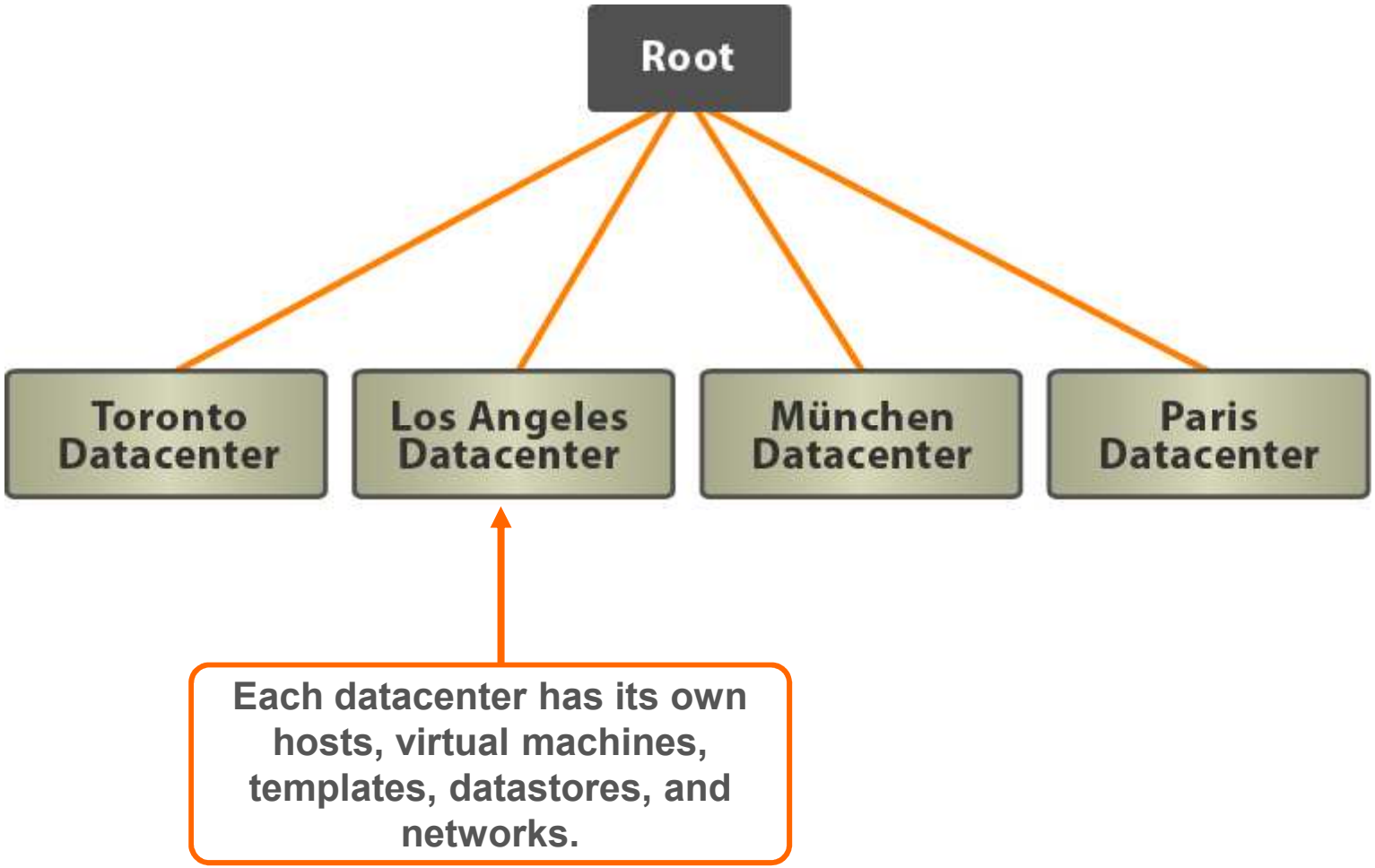


Networks

Organizing Inventory Objects into Folders

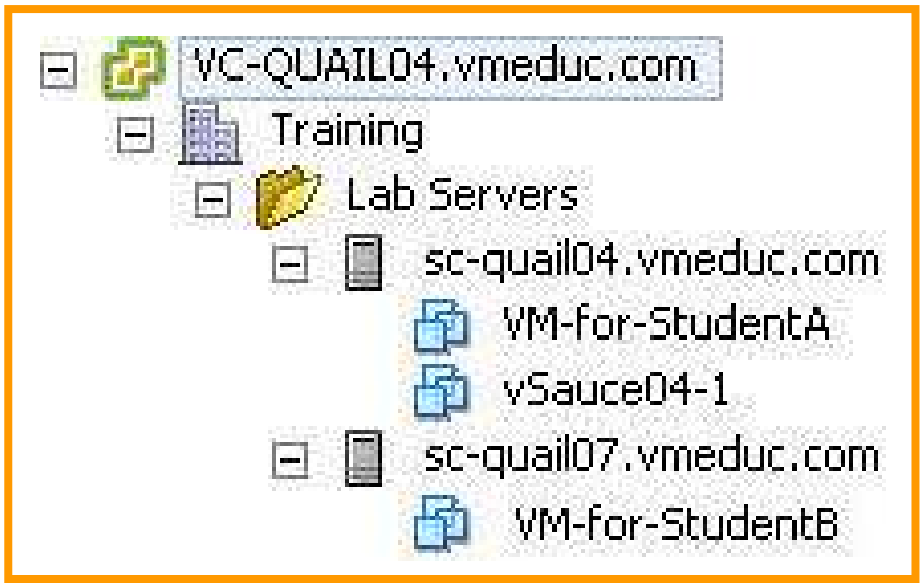


Managing Multiple Datacenters

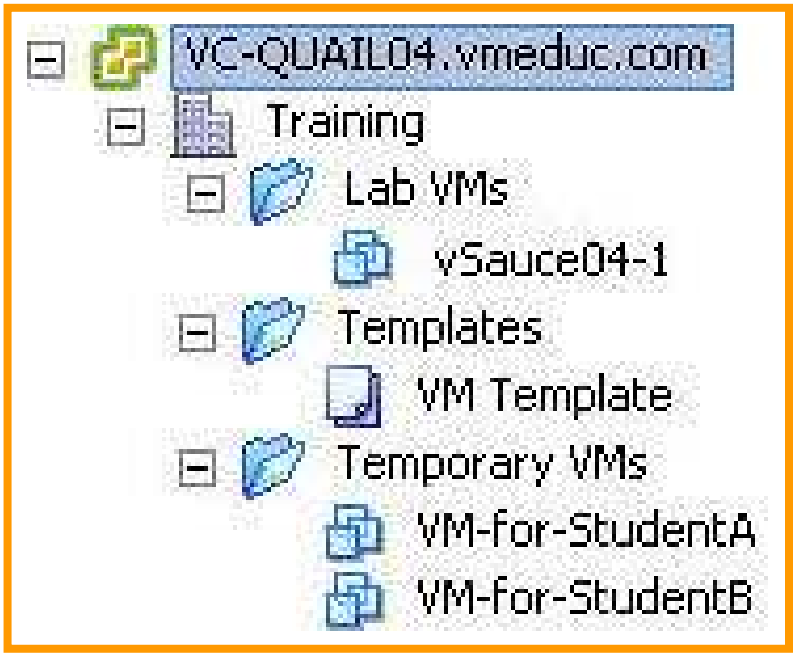


vCenter Views: Hosts, Clusters, VMs, Templates

Hosts and Clusters View

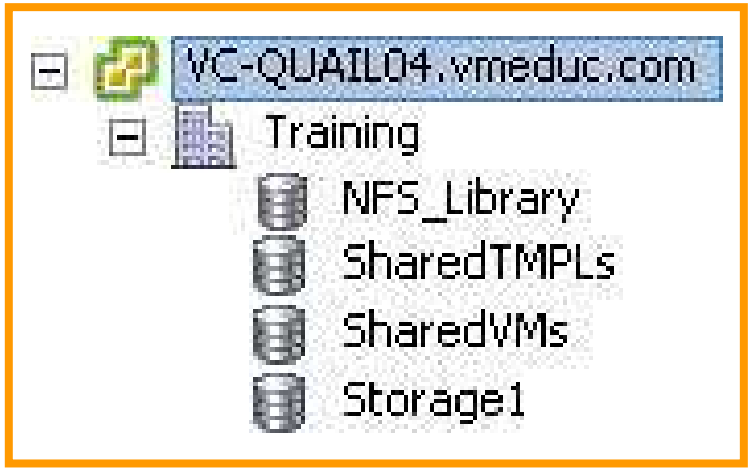


VMs and Templates View



vCenter Views: Datastores and Networks

Datastores View



Networking View

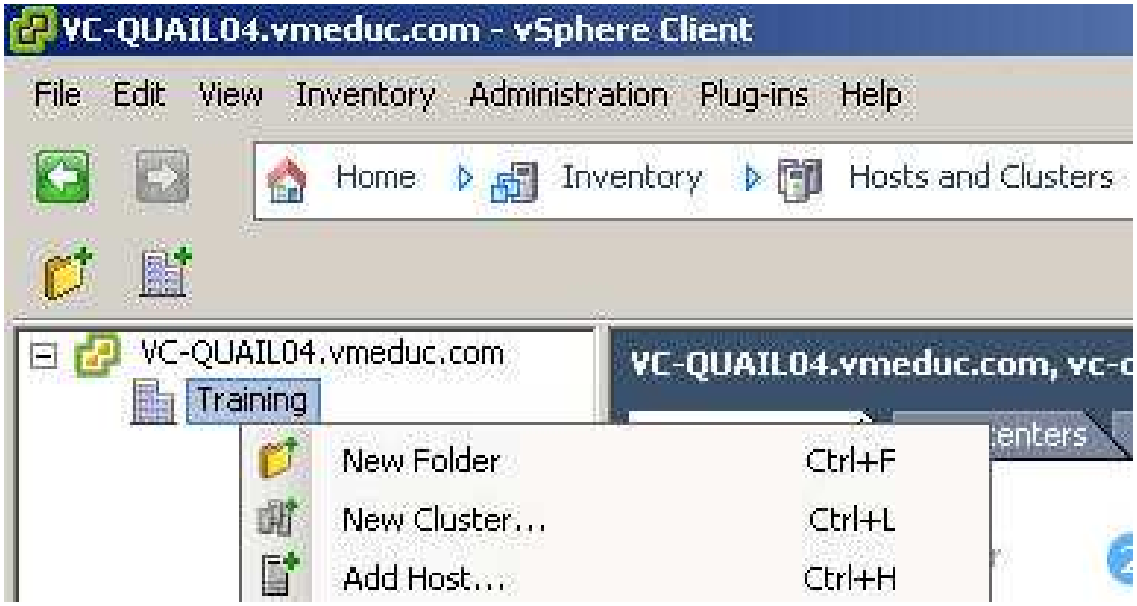
Adding Host to vCenter Server Inventory

To add an ESX/ESXi host to the vCenter Server inventory, use the Add Host wizard. Specify:

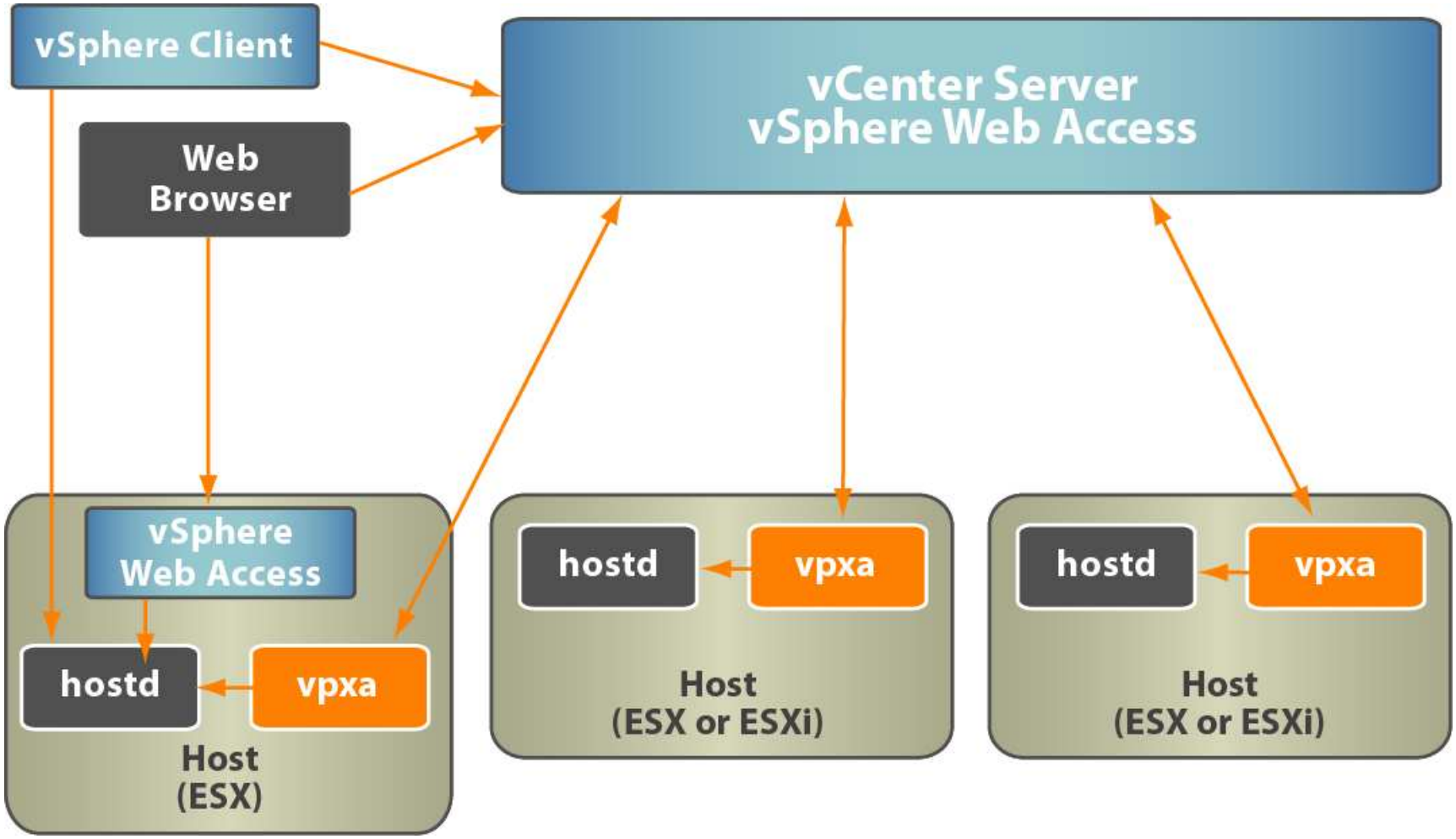
- Fully qualified domain name
- User name and password
- (ESXi hosts only) Lockdown mode enabled

You can also add legacy hosts:

- ESX 2.5.x or later
- ESXi 3.5 and later



ESX/ESXi and vCenter Communication



vCenter License Overview

Licenses are managed and monitored from vCenter Server.

Licensing consists of the following components:

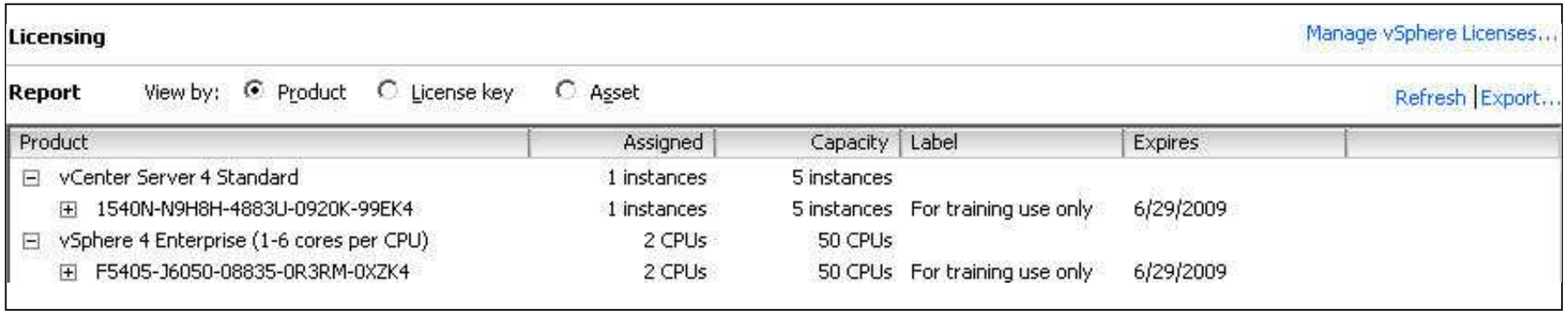
- Product – A license to use a vSphere software component or feature
- License key – A 25-character serial number that corresponds to a product
- Asset – A machine on which a product is installed

vCenter Server can also manage licenses for legacy hosts.

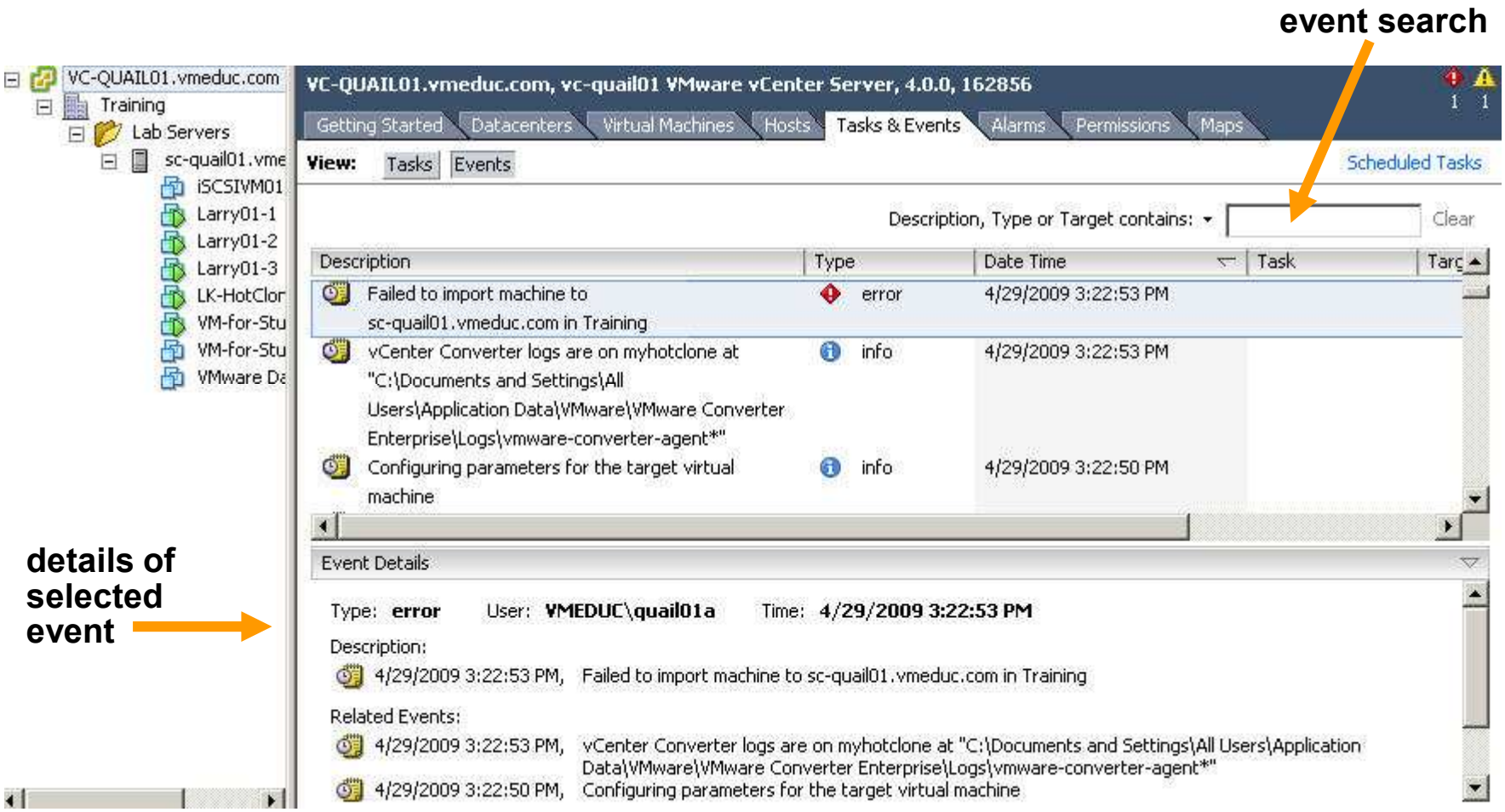
- vCenter Server must have a VMware License Server connection.
- When adding a legacy host to the vCenter Server inventory, vCenter Server checks out vCenter Server agent licenses from the License Server.

Adding License Keys

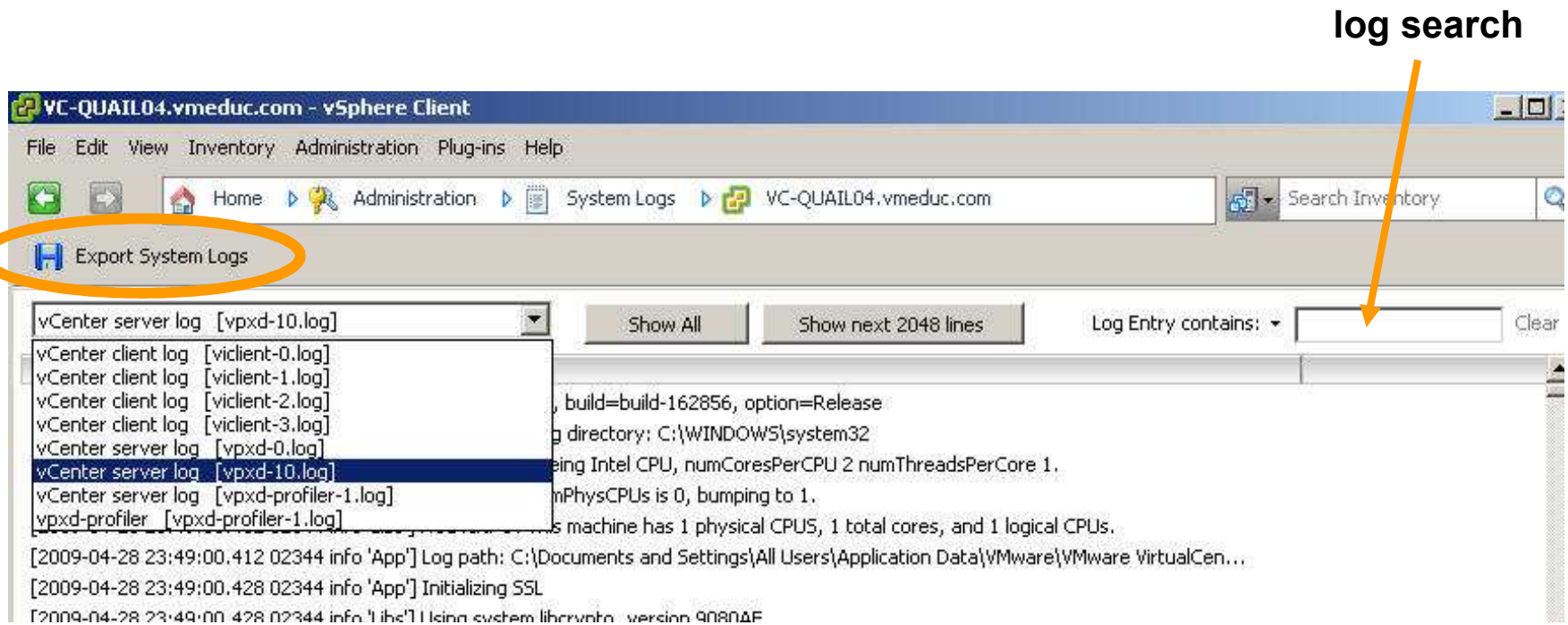
1. **In the navigation bar, go to** Home > Administration > Licensing.
2. **Enter license keys for each product.**
   - (Optional) Enter a label for each license key.
3. **Assign the license key to an asset.**



vCenter Server Events



vCenter Server System Logs



Creating a vCenter Server Administrator

Avoid using the Windows Administrator user to run vCenter Server after it has been installed.

- By default, the Windows local Administrators group is given the vCenter Server role named Administrator.

Instead, use a nonadministrative Windows account to run vCenter Server.

Rawlinson (user) and vSphereGurus (group) are assigned vCenter Server Administrator role.

Remove the Administrators group from the list.

Lab 3

In this lab, you will use the vCenter Server inventory, add a license key, and view system logs.

1. Add container objects to the Hosts and Clusters inventory view.
2. Add your ESX host to the Hosts and Clusters inventory view and display general host information.
3. Add folder objects to the VMs and Templates inventory view.
4. Add vCenter Server and ESX host license keys.

Lesson Summary

- The vSphere Client Home page allows you to view the inventory, as well as perform various management and administrative tasks.
- The vCenter Server Inventory panel organizes vCenter Server objects – such as hosts, virtual machines, datastores, and networks – into a hierarchy.
- vCenter system logs and events are viewed using the vSphere Client.

Key Points

- Use vCenter Server to centrally manage your hosts and virtual machines instead of logging directly in to each host.
- Use the inventory views to organize inventory objects in a meaningful way.
- Assign the vCenter Server Administrator role to a normal Windows user account and remove this role from the Windows Administrator group.