

CXS-203-1 Citrix XenServer 6.0 Administration

In the Citrix XenServer 6.0 classroom training course, students are provided with the foundation necessary to effectively install, configure, administer, and troubleshoot XenServer 6.0. Students will also learn how to configure a Provisioning Services 6.0 host, and create and manage vDisks in a XenServer environment. Through the use of hands-on labs, students will acquire the skills needed to configure the Distributed Virtual Switch (DVS) as well as Workload Balancing (WLB). Students will also create and manage Windows virtual machines and the resource pools in which they will be placed.

Audience

This course is designed for IT professionals, Administrators, Architects, and Systems Engineers.

Preparatory Recommendations

Prior to taking this course, Citrix recommends that learners possess the following:

- A basic overall knowledge of virtualization technology
- An understanding of computing architecture, including network and storage devices, device drivers and operating systems
- Basic experience installing and administering Microsoft Windows Server 2003 or Windows Server 2008
- Basic experience installing and administering Linux variants
- Intermediate knowledge of network devices and site architecture, including configuring VLANs
- Basic knowledge of storage terminology and technologies, including partitions, SANs, LUNs, iSCSI, NFS, and CIFS file shares

Key Skills

In this course, students will learn the skills necessary to configure and administer XenServer 6.0, XenCenter, and Provisioning Services 6.0. Through hands-on labs, students will gain experience with:

- Installing and Implementing XenServer
- Creating and Managing Networks
- Configuring Storage
- Managing and Maintaining Virtual Machines
- Installing and Configuring Provisioning Services
- Managing vDisks and Target Devices
- Implementing Resource Pools
- Implementing the Distributed Virtual Switch (DVS)
- Implementing Workload Balancing (WLB)
- Configuring High Availability
- Managing and Troubleshooting XenServer

Instructional Method

This course is available in a classroom format and includes access to a live lab environment.

Course Length

5 days

Certification Preparation

This course prepares learners for [Exam A26 Citrix XenServer 6.0 Administration](#), a requirement for the

[CCA for Citrix XenServer 6](#) (This exam and certification are currently in development and are expected to release in Q1 2012).

Registration

For more information and to register for this course, please go to www.citrixeducation.com.

Topic Outline

Provided is the outline for CXS-203-1:

Module 1: Introduction to XenServer

- XenServer Product Line
- Product Simplification
- Product Simplification
- Architectural Changes
- Virtual Appliances and Broader Vendor Support
- Microsoft System Center Integration
- XenDesktop Integration
- Enhanced Operating System Support
- Other Enhancements and Improvements
- XenServer Architecture Overview
- XenCenter Overview
- Resource Pools
- XenServer Storage Overview
- XenServer Networking Overview
- Provisioning Services Overview

Module 2: Installing and Configuring XenServer

- XenServer Installation
- Virtual Machine Storage
- Installing Single and Multiple Disk Systems
- Installing XenServer
- Pre-Installation Checklist
- XenServer Installation Process
- IntelliCache
- Configuring NTP
- XenCenter Installation and Management Consoles
- XenCenter Consoles
- XenServer Licensing Components
- License File Management
- Citrix License Server Virtual Appliance
- Obtaining License Files
- License Management Console
- Managing XenServer Users
- Key Benefits of Active Directory Integration
- Configuring Active Directory Integration
- End-User Authentication Using Active Directory
- Active Directory Integration
- External Authentication Process
- Role-Based Access Control
- Roles
- Security Logs

Module 3: XenServer Networking

- XenServer Networking Overview
- Network Stacks Supported by XenServer
- Network Components and Architecture
- Network Architecture Diagram
- Network Adapter Drivers
- Private-Server and External Networks
- VLAN Support and Components

Initial Network Setup
NIC Bond
NIC Bonding Architecture
Load Balancing
NIC Bond Configuration for Resource Pools
Module 4: XenServer Storage Repositories
Storage Technologies
Virtual Disk Image Formats
Storage Technology Comparison
XenServer Storage Architecture
Storage Repository Architecture
Multiple Storage Repositories
Local Storage Repositories
Virtual Disk Size
Storage Capability Comparison
NFS Storage Overview
NFS Architecture
NFS Virtual Disks
NFS Remote Storage Configuration and Recommendations
iSCSI Storage Overview
iSCSI Architecture
iSCSI Adapters
iSCSI Setup Configuration and Recommendations
Resizing a Storage Repository
Resizing a Storage Repository - iSCSI
Resizing a Storage Repository - HBA
Fibre Channel SANs Overview
Fibre Channel Architecture
LUN Device Path
Dedicated NIC Bonds for Remote Storage
Dedicated Remote Storage Interface Configuration
Storage Multipathing
Citrix StorageLink Overview
Citrix StorageLink Storage Repository
StorageLink Supported Array Types
Upgrading to StorageLink with XenServer
Module 5: Creating and Managing Virtual Machines
Windows Virtual Machine Architecture
Virtual Memory and Disk Size Limits for Windows Virtual Machines
Virtual Device Support for Windows Virtual Machines
Installation from an ISO
ISO Libraries
To Create a Windows Virtual Machine
Linux Distributions
Creating Linux Virtual Machines
XenServer Tools
XenServer Tools for Windows Virtual Machines
XenServer Tools for Linux Virtual Machines
To Install XenServer Tools
Life Cycle Operations
Suspend and Resume
Deleting a Virtual Machine
Virtual Machine Templates
Virtual Machine Snapshots
To Create a Template from a Windows Virtual Machine
Creating a Template from a Linux Virtual Machine
Exporting a Virtual Machine
Copying a Virtual Machine
Assigning Resources to a Virtual Machine
Importing a Virtual Machine

Modifying Virtual Machine or Template Resources

Virtual Disks

Virtual Disk Sizes

Virtual NICs

Virtual CPUs

Memory

Virtual Appliance Packages

To Create Virtual Appliances

Exporting an Appliance Package

To Export an Appliance Package

Importing an Appliance Package

To Import an Appliance Package

XenConvert Overview

Physical Machine Conversion

Converting from Physical to Virtual Machine .

Performing a PV Conversion

Dynamic Memory Control

Dynamic Memory Control Optimization

Static Memory Range

DMC Behavior when Launching New Virtual Machines

Module 6: Installing and Configuring Provisioning Services

Provisioning Services Technology

Provisioning Services for XenServer

Citrix Provisioning Services Components

Citrix Provisioning Services Infrastructure

Provisioning Services Administration

Administrative Roles

Key Services

DHCP Deployment Options

DHCP Configuration

Installation Planning

Provisioning Services Farm Design

Farms

SQL Database Server

SQL Database Authentication and Configuration

Configuration Wizard User Permissions

Service Account Permissions

Sites

Stores

Storage Requirements

Sample vDisk Storage Requirements

Provisioning Services Installation

Provisioning Services Configuration

Store Configuration

Provisioning Services Hosts in the Console

Target Device Connections

Server Properties

Target Device Collection

Target Device Template

Target Device Properties

Target Device Additions to the Database

Auto-Add Wizard

Active Directory Integration

Domain Password Validation Process

Automatic Password Renegotiation

To Integrate Active Directory

To Reset Computer Accounts for Target Devices

Module 7: Managing vDisks and Target Devices .

vDisk Image Modes

Standard Image Mode

- Private Image Mode
- Write Caches
- Write-Cache Types
- Cache on Server Disk
- Cache on Server Disk: Local Storage
- Cache on Server Disk: Shared Storage
- Cache on Target Device Hard Drive
- Cache on Target Device Hard Drive: Local Storage
- Cache on Target Device Hard Drive: Shared Storage
- Target Device-based RAM Cache
- Target Device RAM
- Cache Persistent on Server
- Microsoft Licensing for Provisioning Services
- Master Target Device
- Preparing a Master Target Device
- Preparing the Hard Disk of the Master Target Device
- Configuring the BIOS of a Master Target Device
- To Configure the BIOS of a Master Target Device
- Installing Master Target Device Software
- Imaging a Windows Target Device with XenConvert
- vDisk File Creation
- vDisk Lifecycle Operations
- VHD Formats
- Create vDisks Automatically Using Imaging Wizard
- To Create a New vDisk Automatically Using the Imaging Wizard
- Creating a vDisk Manually
- vDisk Management
- Assigning vDisks to Target Devices
- To Assign a vDisk to a Single Target Device
- vDisk Versions
- vDisk Backup
- vDisk Updates
- Autoupdate Tool
- vDisk Update Management Requirements
- To Install Updates Automatically
- Incremental Update Rollback
- vDisk Replication
- vDisk Inventory Service
- High Availability Overview
- Provisioning Services Failover
- Configuring the Boot File for High Availability
- Adding Provisioning Services Hosts to the Boot File
- Enabling High Availability on vDisks
- To Provide Provisioning Services Hosts with Access to Stores
- Considerations for Offline Database Support
- To Enable Offline Database Support
- Stream Logging
- To Enable Logging
- Troubleshoot vDisk Images
- Module 8: Implementing Resource Pools**
- Resource Pools
- Pool Member Types .
- Resource Pool Communication
- Homogeneous Pools
- Heterogeneous Pools
- Shared Configurations
- Adding a Host to a Resource Pool .
- To Add a Member to a Resource Pool
- To Remove a Secondary Member from a Resource Pool
- XenMotion

Migrating a Virtual Machine or Template .

Pool Member Failure Overview .

Failure Detection Process

To Promote a Secondary Member to a Master

Module 9: Distributed Virtual Switching

Distributed Virtual Switching Features

Distributed Virtual Switching Components

vSwitch Controller Virtual Appliance Deployment

Accessing the vSwitch Controller

vSwitch Controller Configuration .

High Availability

Monitoring Network Activity

Viewing Flow Statistics

Exporting NetFlow Statistics

Managing Address Groups and Virtual Machine Groups

Distributed Virtual Switching Policy Configuration Hierarchy

Access Control List Policies

Access Control Policies Hierarchy

Defining Access Control List Rules

Access Control List Rule Enforcement Order

Configuring Fail Modes

Setting Up Port Configuration Policies

Configuring QoS

Configuring RSPAN

To Configure RSPAN

Configuring Mac Address Spoof Checking

Cross-Server Private Networks

Cross-Server Private Network Requirements

XenMotion with Cross-Server Private Networks

Recovering from a Failed vSwitch Controller

Module 10: Workload Balancing

Workload Balancing Overview

Workload Balancing Key Concepts

Workload Balancing Components

To Download the Workload Balancing Virtual Appliance

Import Considerations for the Workload Balancing Virtual Appliance

Workload Balancing Configuration

To Update Workload Balancing Credentials

Connecting to the Workload Balancing Virtual Appliance

Workload Balancing Access Control Permissions

Workload Balancing Settings

Critical Thresholds

Critical Threshold Evaluation and Edit

Metric Weighting

Fixed and Scheduled Optimization Modes

Optimization Recommendations

Workload Balancing Power Management

Power Management Behavior

Power Management and Virtual Machine Consolidation

To Apply Optimization Recommendations Automatically

Optimal Server Selection

Host Exclusion from Recommendations

Module 11: Configuring High Availability

High Availability Requirements

High Availability Considerations

Restart Priorities

Server Failure Tolerance

Overcommitting

Host Fencing

Disaster Recovery

Disaster Preparedness and Response
Backup and Recovery of XenServer Hosts and Virtual Machines
Metadata
Backing Up a Pool Installation
To Restore a Pool Installation
Backing Up Virtual Machines as Snapshots
To Take a Snapshot of a Virtual Machine
To Restore a Running XenServer Host
Listing Snapshots Using the Command-line Interface .
Deleting a Snapshot .

Restoring a Virtual Machine from a Snapshot .

Module 12: Managing and Troubleshooting XenServer .

Command-line Interface Overview
Command-line Interface Operations Targets
Command-line Interface Basics
Command-line Interface Shortcuts
XenServer Menu-Driven Text Console
Monitoring XenServer
Using the XenTop Utility to Monitor Host and Virtual Machine Performance
Logging to a Remote Syslog Server
To Log Using a Remote Syslog Server
Events and Alerts
Alert Customization
Persistent XenServer Performance Statistics
Performance Statistics in XenCenter
XenServer Logs and Reports
XenCenter Event Logs
Server Status Reports
Xen-Bugtool Utility
XenServer Crashdump Overview
Generating the Crashdump File in the Command-Line Interface
Running a Network Trace and Triggering a Memory Dump
XenServer Updates and Hotfixes
Update or Hotfix Considerations
To Update XenServer Hosts Using XenCenter
To Update Hosts or Pool Using the Command-line Interface
Rolling Pool Upgrade
Planning a Rolling Upgrade
Workload Balancing Reports Overview
Workload Balancing Reports

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