VMware Spring Professional

Course outline

Module 1: Introduction to VMware vSphere

Module 1: Introduction to VMware vSphere is an introductory course designed to provide students with a comprehensive overview of the VMware vSphere platform. This module covers the basics of virtualization, the components of vSphere, and how to configure and manage a vSphere environment. Students will learn how to deploy and manage virtual machines, configure networking and storage, and use vSphere features such as High Availability and vMotion.

Lessons

- Overview of VMware vSphere
- Understanding the vSphere Architecture
- Installing and Configuring vSphere
- Managing vSphere Resources
- Working with vSphere Storage
- Working with vSphere Networking
- Working with vSphere Virtual Machines
- Using vSphere High Availability and Fault Tolerance
- Using vSphere Update Manager
- Using vSphere Distributed Resource Scheduler (DRS)
- Using vSphere Distributed Power Management (DPM)
- Using vSphere vMotion and Storage vMotion
- Using vSphere Replication
- Using vSphere Data Protection
- Using vSphere Security
- Using vSphere Command-Line Interface (CLI)
- Using vSphere Web Client
- Troubleshooting vSphere Issues

After completing this module, students will be able to:

- Understand the architecture and components of VMware vSphere
- Configure and manage virtual networks and storage
- Deploy and manage virtual machines
- Monitor and troubleshoot vSphere environments

Module 2: Configuring and Managing vSphere Networking

Module 2 of the VMware Spring Professional course covers the fundamentals of configuring and managing vSphere Networking. It provides an overview of the vSphere Networking architecture, explains how to configure and manage vSphere Networking components, and explores advanced topics such as network security, load balancing, and troubleshooting. This module is designed to give students the skills and knowledge needed to successfully configure and manage vSphere Networking in their own environment.

Lessons

- Overview of vSphere Networking
- Configuring vSphere Standard Switches
- Configuring vSphere Distributed Switches
- Configuring Network I/O Control
- Configuring Network Resource Pools
- Configuring Network Security Policies
- Configuring Network Traffic Shaping
- Configuring Network Teaming and Failover
- Configuring Network Load Balancing
- Troubleshooting vSphere Networking Issues

After completing this module, students will be able to:

- Understand the different types of virtual switches available in vSphere and how to configure them.
- Configure and manage vSphere distributed switches and distributed port groups.
- Understand the different types of network traffic shaping policies and how to configure them.
- Troubleshoot common networking issues in a vSphere environment.

Module 3: Configuring and Managing vSphere Storage

Module 3 of the VMware Spring Professional course covers the fundamentals of configuring and managing vSphere Storage. It covers topics such as storage architecture, storage protocols, storage policies, storage profiles, and storage I/O control. It also covers the use of vSphere Storage APIs for Array Integration (VAAI) and vSphere Storage vMotion.

Lessons

- Introduction to vSphere Storage
- Configuring vSphere Storage
- Managing vSphere Storage
- Storage Policies and Profiles
- Storage I/O Control
- Storage DRS
- Storage vMotion
- vSphere Replication
- vSphere Flash Read Cache
- vSAN
- Troubleshooting vSphere Storage Issues

After completing this module, students will be able to:

- Understand the different types of storage available in vSphere and how to configure them.
- Configure and manage vSphere Storage I/O Control and Storage DRS.
- Utilize vSphere Storage APIs for Array Integration (VAAI) and Storage Awareness (VASA).
- Monitor and troubleshoot storage performance issues in vSphere.

Module 4: Configuring and Managing vSphere Virtual Machines

Module 4 of the VMware Spring Professional course covers the configuration and management of vSphere virtual machines. It provides an overview of the vSphere virtual machine architecture, and teaches students how to create, configure, and manage virtual machines. It also covers topics such as virtual machine templates, cloning, and migration.

Lessons

- Understanding Virtual Machine Components
- Configuring Virtual Machine Settings
- Managing Virtual Machine Resources
- Creating and Cloning Virtual Machines
- Migrating Virtual Machines
- Configuring Virtual Machine Security
- Troubleshooting Virtual Machine Issues
- Using Templates and Clones for Virtual Machine Deployment
- Using vSphere Update Manager for Virtual Machine Updates
- Using vSphere Distributed Resource Scheduler for Virtual Machine Load Balancing

After completing this module, students will be able to:

- Understand the concepts of virtual machine configuration and management in vSphere
- Configure and manage virtual machines in vSphere
- Utilize vSphere features such as snapshots, cloning, and templates
- Troubleshoot and resolve virtual machine issues in vSphere

Module 5: Managing vSphere Security

Module 5 of the VMware Spring Professional course focuses on managing vSphere security. It covers topics such as configuring vSphere roles and permissions, using vSphere Security Hardening Guides, and using vSphere Security Configuration Management. It also covers how to use vSphere Security Compliance Manager to ensure that your environment is secure and compliant with industry standards.

Lessons

- Overview of vSphere Security
- Configuring vSphere Security Policies
- Understanding vSphere Authentication and Authorization
- Implementing Role-Based Access Control

- Securing vCenter Server and ESXi Hosts
- Securing Virtual Machines
- Securing Network Traffic
- Securing Storage
- Implementing vSphere Security Hardening
- Troubleshooting vSphere Security Issues

After completing this module, students will be able to:

- Understand the security features of vSphere and how to configure them.
- Implement authentication and authorization for vSphere users.
- Configure role-based access control (RBAC) for vSphere objects.
- Utilize vSphere Security Hardening Guides to secure vSphere environments.

Module 6: Automating vSphere with PowerCLI

Module 6 of the VMware Spring Professional course focuses on automating vSphere with PowerCLI. This module covers topics such as creating and managing virtual machines, configuring networking, and managing storage with PowerCLI. Students will learn how to use PowerCLI to automate common vSphere tasks and gain an understanding of the PowerCLI scripting language.

Lessons

- Introduction to PowerCLI
- Automating vSphere with PowerCLI
- Working with PowerCLI Cmdlets
- Managing vSphere with PowerCLI
- Automating vCenter Server with PowerCLI
- Automating vSphere Hosts with PowerCLI
- Automating vSphere Storage with PowerCLI
- Automating vSphere Networking with PowerCLI
- Automating vSphere Security with PowerCLI
- Automating vSphere Performance with PowerCLI
- Automating vSphere Availability with PowerCLI
- Automating vSphere Troubleshooting with PowerCLI
- Automating vSphere Reporting with PowerCLI
- Automating vSphere with PowerShell Workflows
- Automating vSphere with PowerCLI Best Practices

After completing this module, students will be able to:

- Understand the basics of PowerCLI and how to use it to automate vSphere tasks.
- Create and manage virtual machines, networks, and storage using PowerCLI.
- Utilize PowerCLI to automate vSphere tasks such as creating snapshots, cloning virtual machines, and managing resource pools.
- Monitor and troubleshoot vSphere environments using PowerCLI scripts.

Module 7: Troubleshooting vSphere

Module 7 of the VMware Spring Professional course focuses on troubleshooting vSphere. It covers topics such as troubleshooting vCenter Server, ESXi hosts, virtual machines, storage, networking, and security. It also covers best practices for troubleshooting and provides hands-on exercises to help students gain experience in troubleshooting vSphere.

Lessons

- Identifying and Resolving Common vSphere Issues
- Troubleshooting vSphere Networking Issues
- Troubleshooting vSphere Storage Issues
- Troubleshooting vSphere Security Issues
- Troubleshooting vSphere Performance Issues
- Troubleshooting vSphere High Availability Issues
- Troubleshooting vSphere Fault Tolerance Issues
- Troubleshooting vSphere Update Manager Issues
- Troubleshooting vSphere Host Profiles Issues
- Troubleshooting vSphere Distributed Resource Scheduler Issues

After completing this module, students will be able to:

- Identify and resolve common vSphere issues.
- Utilize vSphere troubleshooting tools and techniques.
- Analyze and interpret vSphere log files.
- Implement best practices for vSphere troubleshooting.

Module 8: Optimizing vSphere Performance

Module 8 of the VMware Spring Professional course focuses on optimizing vSphere performance. It covers topics such as performance monitoring, troubleshooting, and tuning, as well as best practices for configuring vSphere for optimal performance. The module also covers advanced topics such as vSphere Distributed Resource Scheduler (DRS) and vSphere High Availability (HA).

Lessons

- Understanding vSphere Performance Metrics
- Analyzing Performance with vRealize Operations
- Optimizing CPU Performance
- Optimizing Memory Performance
- Optimizing Storage Performance
- Optimizing Network Performance
- Troubleshooting Performance Issues
- Utilizing vSphere Performance Charts
- Leveraging vSphere Performance Tools
- Optimizing vSphere Clusters for Performance

After completing this module, students will be able to:

- Understand the performance metrics and tools used to monitor and analyze vSphere performance.
- Identify and troubleshoot performance issues in vSphere environments.
- Implement best practices for optimizing vSphere performance.
- Utilize vSphere features to improve performance and scalability.

Module 9: Managing vSphere High Availability and Fault Tolerance

Module 9 of the VMware Spring Professional course covers the fundamentals of managing vSphere High Availability and Fault Tolerance. It provides an overview of the features and benefits of vSphere High Availability and Fault Tolerance, and how to configure and manage them. It also covers best practices for ensuring high availability and fault tolerance in a vSphere environment.

Lessons

- Overview of vSphere High Availability
- Configuring vSphere High Availability
- Understanding Fault Tolerance
- Configuring Fault Tolerance
- Troubleshooting vSphere High Availability and Fault Tolerance
- Best Practices for vSphere High Availability and Fault Tolerance
- Automating vSphere High Availability and Fault Tolerance
- Monitoring vSphere High Availability and Fault Tolerance
- Optimizing vSphere High Availability and Fault Tolerance
- Security Considerations for vSphere High Availability and Fault Tolerance

After completing this module, students will be able to:

- Understand the concepts of vSphere High Availability (HA) and Fault Tolerance (FT)
- Configure and manage vSphere HA and FT clusters
- Monitor and troubleshoot vSphere HA and FT clusters
- Implement best practices for vSphere HA and FT clusters

Module 10: Managing vSphere Data Protection

Module 10 of the VMware Spring Professional course covers the fundamentals of managing vSphere Data Protection. It provides an overview of the architecture and components of vSphere Data Protection, as well as how to configure and manage the product. It also covers how to use vSphere Data Protection to back up and restore virtual machines, as well as how to troubleshoot and monitor the product.

Lessons

- Overview of vSphere Data Protection
- Configuring vSphere Data Protection
- Managing vSphere Data Protection Jobs
- Troubleshooting vSphere Data Protection

- Best Practices for vSphere Data Protection
- Integrating vSphere Data Protection with vCenter Server
- Using vSphere Data Protection for Disaster Recovery
- Automating vSphere Data Protection with vRealize Orchestrator
- Monitoring vSphere Data Protection with vRealize Operations
- Securing vSphere Data Protection with vRealize Log Insight

After completing this module, students will be able to:

- Understand the architecture and components of VMware vSphere Data Protection
- Configure and manage vSphere Data Protection
- Monitor and troubleshoot vSphere Data Protection
- Utilize vSphere Data Protection to back up and restore virtual machines

Module 11: Managing vSphere Replication

Module 11 of the VMware Spring Professional course covers the fundamentals of managing vSphere Replication, a powerful tool for replicating virtual machines and their associated data across multiple sites. It covers topics such as configuring replication, monitoring replication, and troubleshooting replication issues. It also covers best practices for using vSphere Replication in a production environment.

Lessons

- Overview of vSphere Replication
- Configuring vSphere Replication
- Managing Replication Jobs
- Troubleshooting vSphere Replication
- Best Practices for vSphere Replication
- Using vSphere Replication with vSphere Data Protection
- Using vSphere Replication with Site Recovery Manager
- Using vSphere Replication with vCloud Air Disaster Recovery
- Using vSphere Replication with vRealize Automation
- Using vSphere Replication with vRealize Operations Manager

After completing this module, students will be able to:

- Understand the architecture and components of vSphere Replication.
- Configure and manage vSphere Replication for virtual machines.
- Monitor and troubleshoot vSphere Replication.
- Utilize vSphere Replication for disaster recovery scenarios.

Module 12: Managing vSphere Update Manager

Module 12: Managing vSphere Update Manager is a module in the VMware Spring Professional course that covers the use of vSphere Update Manager to manage and patch ESXi hosts, virtual machines, and

other components in a vSphere environment. It covers topics such as creating baselines, scanning and remediating hosts, and creating and managing patch repositories.

Lessons

- Overview of vSphere Update Manager
- Installing and Configuring vSphere Update Manager
- Creating Baselines and Baseline Groups
- Scanning and Remediating Hosts
- Managing Host Patches and Extensions
- Managing vSphere Update Manager Settings
- Troubleshooting vSphere Update Manager
- Best Practices for vSphere Update Manager

After completing this module, students will be able to:

- Understand the purpose and components of vSphere Update Manager.
- Configure vSphere Update Manager to scan and remediate ESXi hosts.
- Create and manage baselines and baseline groups.
- Utilize vSphere Update Manager to patch and upgrade ESXi hosts.

Module 13: Managing vSphere Distributed Resource Scheduler

Module 13 of the VMware Spring Professional course covers the fundamentals of managing vSphere Distributed Resource Scheduler (DRS). It provides an overview of DRS architecture, configuration, and management, as well as best practices for using DRS to optimize resource utilization and performance. The module also covers how to use DRS to automate the placement of virtual machines and how to use DRS to manage resource contention.

Lessons

- Overview of vSphere DRS
- Configuring vSphere DRS
- Understanding DRS Affinity Rules
- Utilizing DRS Automation Levels
- Analyzing DRS Performance
- Troubleshooting DRS Issues
- Best Practices for DRS
- Integrating DRS with vSphere HA
- Utilizing DRS with vSphere Storage DRS
- Managing DRS with PowerCLI

After completing this module, students will be able to:

- Understand the concepts and components of vSphere Distributed Resource Scheduler (DRS).
- Configure and manage DRS clusters and resource pools.
- Monitor and optimize DRS performance.

- Troubleshoot and resolve DRS-related issues.

Module 14: Managing vSphere Distributed Switch

Module 14 of the VMware Spring Professional course covers the fundamentals of managing a vSphere Distributed Switch (VDS). It covers topics such as configuring VDS settings, creating and managing port groups, configuring VLANs, and troubleshooting VDS issues. Additionally, the module provides an overview of the various features and benefits of using a VDS.

Lessons

- Overview of vSphere Distributed Switch
- Configuring vSphere Distributed Switch
- Managing Network I/O Control
- Configuring Network I/O Control
- Configuring Network Resource Pools
- Configuring Network Health Check
- Configuring Network Security Policies
- Configuring Network Traffic Shaping
- Configuring Network Teaming and Failover
- Troubleshooting vSphere Distributed Switch Issues

After completing this module, students will be able to:

- Understand the architecture and components of a vSphere Distributed Switch.
- Configure and manage vSphere Distributed Switch settings.
- Monitor and troubleshoot vSphere Distributed Switch performance.
- Utilize advanced features of the vSphere Distributed Switch such as port mirroring, private VLANs, and traffic shaping.

Module 15: Managing vSphere vMotion and Storage vMotion

Module 15 of the VMware Spring Professional course covers the management of vSphere vMotion and Storage vMotion. It provides an overview of the features and benefits of vMotion and Storage vMotion, as well as how to configure and manage them. It also covers troubleshooting and best practices for using vMotion and Storage vMotion.

Lessons

- Overview of vSphere vMotion and Storage vMotion
- Configuring vSphere vMotion and Storage vMotion
- Troubleshooting vSphere vMotion and Storage vMotion
- Best Practices for vSphere vMotion and Storage vMotion
- Performance Tuning for vSphere vMotion and Storage vMotion
- Security Considerations for vSphere vMotion and Storage vMotion
- Automating vSphere vMotion and Storage vMotion
- Advanced Features of vSphere vMotion and Storage vMotion

- Monitoring vSphere vMotion and Storage vMotion
- Disaster Recovery with vSphere vMotion and Storage vMotion

After completing this module, students will be able to:

- Understand the concepts and requirements of vMotion and Storage vMotion.
- Configure and manage vMotion and Storage vMotion in a vSphere environment.
- Troubleshoot and resolve vMotion and Storage vMotion related issues.
- Monitor and optimize vMotion and Storage vMotion performance.

Module 16: Managing vSphere vApps

Module 16 of the VMware Spring Professional course covers the fundamentals of managing vSphere vApps. It provides an overview of the vApp architecture, how to create and configure vApps, and how to manage vApp resources. It also covers how to deploy and manage vApps in a vSphere environment.

Lessons

- Overview of vApps
- Creating and Configuring vApps
- Managing vApp Resources
- Deploying vApps
- Troubleshooting vApps
- Best Practices for vApp Management
- Automating vApp Deployment
- Integrating vApps with vCenter Orchestrator
- Using vApps with vCloud Director
- Using vApps with vRealize Automation

After completing this module, students will be able to:

- Understand the concept of vApps and how they are used in vSphere
- Configure and deploy vApps in vSphere
- Monitor and manage vApps in vSphere
- Troubleshoot and resolve vApp related issues in vSphere

Module 17: Managing vSphere Host Profiles

Module 17 of the VMware Spring Professional course covers the use of vSphere Host Profiles to manage and configure ESXi hosts. It covers topics such as creating and applying host profiles, using host profiles to automate host configuration, and troubleshooting host profile issues. It also covers the use of host profiles to manage compliance and security settings.

Lessons

- Overview of Host Profiles
- Configuring Host Profiles
- Creating and Applying Host Profiles
- Managing Host Profiles
- Troubleshooting Host Profiles
- Best Practices for Host Profiles
- Automating Host Profile Compliance
- Using Host Profiles to Manage vSphere Clusters
- Using Host Profiles to Manage vSphere Hosts
- Using Host Profiles to Manage vSphere Storage
- Using Host Profiles to Manage vSphere Networking
- Using Host Profiles to Manage vSphere Security
- Using Host Profiles to Manage vSphere Services
- Using Host Profiles to Manage vSphere Resources
- Using Host Profiles to Manage vSphere Licensing
- Using Host Profiles to Manage vSphere Updates
- Using Host Profiles to Manage vSphere Performance
- Using Host Profiles to Manage vSphere Availability
- Using Host Profiles to Manage vSphere Scalability
- Using Host Profiles to Manage vSphere Automation

After completing this module, students will be able to:

- Understand the purpose and benefits of Host Profiles
- Configure and manage Host Profiles
- Create and apply Host Profiles
- Troubleshoot Host Profile issues and errors

Module 18: Managing vSphere Distributed Power Management

Module 18 of the VMware Spring Professional course covers the fundamentals of managing vSphere Distributed Power Management (DPM). It provides an overview of the DPM architecture, how to configure and manage DPM, and how to troubleshoot and optimize DPM performance. The module also covers best practices for using DPM in a virtualized environment.

Lessons

- Overview of vSphere Distributed Power Management
- Configuring vSphere Distributed Power Management
- Understanding vSphere Distributed Power Management Policies
- Troubleshooting vSphere Distributed Power Management
- Best Practices for vSphere Distributed Power Management
- Optimizing vSphere Distributed Power Management
- Automating vSphere Distributed Power Management
- Integrating vSphere Distributed Power Management with vCenter Server
- Monitoring vSphere Distributed Power Management
- Security Considerations for vSphere Distributed Power Management

After completing this module, students will be able to:

- Understand the concept of vSphere Distributed Power Management (DPM) and its benefits.
- Configure and manage DPM settings in a vSphere environment.
- Monitor and troubleshoot DPM related issues.
- Utilize DPM to optimize power consumption and reduce costs.

Module 19: Managing vSphere Content Library

Module 19: Managing vSphere Content Library is a module in the VMware Spring Professional course that covers the fundamentals of managing a vSphere Content Library. It covers topics such as creating and managing content libraries, adding and managing content, and using content libraries to deploy virtual machines. It also covers how to use the Content Library API to automate content library tasks.

Lessons

- Overview of vSphere Content Library
- Creating and Managing Content Libraries
- Working with Content Library Items
- Synchronizing Content Libraries
- Using Content Library Templates
- Troubleshooting Content Library Issues
- Best Practices for Managing Content Libraries

After completing this module, students will be able to:

- Understand the purpose and benefits of the vSphere Content Library.
- Create and manage Content Libraries and Library Items.
- Configure Content Library synchronization settings.
- Utilize the Content Library to deploy virtual machines and templates.

Module 20: Managing vSphere vRealize Operations Manager

Module 20 of the VMware Spring Professional course covers the fundamentals of managing vSphere vRealize Operations Manager. This module will teach students how to configure and manage vRealize Operations Manager, including setting up dashboards, alerts, and reports. Additionally, students will learn how to use vRealize Operations Manager to monitor and troubleshoot vSphere environments.

Lessons

- Overview of vRealize Operations Manager
- Configuring vRealize Operations Manager
- Monitoring and Troubleshooting with vRealize Operations Manager
- Analyzing Performance with vRealize Operations Manager
- Automating vRealize Operations Manager
- Integrating vRealize Operations Manager with vSphere
- Best Practices for Managing vRealize Operations Manager

- Security and Compliance with vRealize Operations Manager
- Advanced Troubleshooting with vRealize Operations Manager
- Optimizing vRealize Operations Manager for Performance

After completing this module, students will be able to:

- Understand the architecture and components of vRealize Operations Manager
- Configure and manage vRealize Operations Manager
- Monitor and troubleshoot vSphere environments using vRealize Operations Manager
- Utilize vRealize Operations Manager to optimize performance and capacity planning of vSphere environments