

Sun Cluster 3.2 Advanced Administration (ES-445)

Course Description

The Sun Cluster 3.2 Advanced Administration course provides instruction on advanced configuration, maintenance, and troubleshooting skills and procedures for Sun Cluster 3.2. The course is intended for students who already have experience installing and configuring basic applications in Sun Cluster 3.2. The course begins with advanced coverage of upgrades in the Sun Cluster environment. It then covers advanced data service configuration and advanced procedures such as adding and deleting nodes. Students will get the opportunity to configure advanced file systems in the cluster, such as Sun StorEdge QFS and ZFS, and to run applications in Solaris 10 zones. The last part of the course is devoted to discussion and implementation of cluster best practices as well as troubleshooting examples.

Who Can Benefit

Students who can benefit from this course are system administrators, database administrators, and support personnel with previous experience installing and configuring Sun Cluster 3.2.

Prerequisites

To succeed fully in this course, students should be able to:

- Install and configure Sun Cluster 3.2 software
- Configure supported failover and scalable applications in the Sun Cluster 3.2 Environment
- Demonstrate knowledge and experience in Solaris Operating System (Solaris OS) server administration and maintenance
- Perform basic network administration
- Administer virtual volume structures using either VERITAS Volume Manager (VxVM) or Solaris Volume Manager software (formerly known as Solstice DiskSuite software)

Skills Gained

Upon completion of this course, students should be able to:

- Upgrade the Solaris OS, Volume Manager, and Sun Cluster Software using Live Upgrade and new Quantum Leap upgrade method
- Perform advanced data service configuration in Sun Cluster 3.2
- Add and delete nodes from a running cluster
- Perform disk replacement in a running cluster
- Administer failover QFS and shared QFS in Sun Cluster 3.2
- Administer failover ZFS in Sun Cluster 3.2
- Administer failover and scalable applications in Solaris zones in Sun Cluster 3.2
- Configure IPMP, VxVM, and quorum using best practices
- Secure Sun Cluster 3.2 systems using best security practices and the Solaris Security Toolkit
- Troubleshoot cluster problems

REGISTRATION AND INFORMATION

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Related Courses

- Solaris Volume Manager Administration (ES-222)
- VERITAS Volume Manager 4.0 Administration (ES-310)
- Sun Cluster 3.2 Administration (ES-345)
- Solaris 10 System & Network (SA-200/202/300-S10)
- Solaris 9 System & Network (SA-239/SA-299/SA-399)

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Content

Upgrades in the Sun Cluster Environment

- Describe high availability issues when performing upgrades in the Sun Cluster environment
- Describe the required relationships for upgrading the Sun Cluster software
- Describe the different upgrade strategies
- Describe and perform an upgrade of the Solaris OS using the Solaris Live Upgrade software
- Upgrade the Veritas Volume Manager (VxVM) software into the Solaris Live Upgrade environment

Upgrading the Sun Cluster Software

- Upgrade Sun Cluster software when not using Live Upgrade
- Use the scinstall options that control the dual-partitioned upgrade method, when not using Live Upgrade
- Use Live Upgrade to upgrade the Sun Cluster software
- Upgrade resource types and resource

Advanced Data Service Configuration

- Understand Sun Cluster data services
- Write Sun Cluster 3.2 software data services
- Control RGM behavior through resource group properties and resource properties
- Use advanced resource group relationships
- Tune multimaster and scalable applications

Performing Recovery and Maintenance Procedures

- Add a new node to a running cluster
- Remove a node from the cluster
- Replace a failed node in the cluster
- Uninstall the Sun Cluster 3.2 software from a node
- Replace failed disks
- Back up and restore the Cluster Configuration Repository (CCR)

Advanced Features

- Manage HA-ZFS in the Sun Cluster environment
- Understand the design and features of the QFS file system
- Configure a standard QFS file system
- Configure a shared QFS file system in the cluster using the Solaris OS Volume Manager multiowner diskset devices
- Configure application agents in Solaris 10 zones
- Failover applications between Solaris 10 zones on different nodes

Best Practices

- Define and implement best practices for Internet Protocol multipathing (IPMP)
- Define and implement best practices for failover and global file systems using HAStoragePlus
- Define and implement best practices for boot disk encapsulation and mirroring
- Define and implement best practices for quorum devices and quorum servers
- Define and implement best practices for campus clusters

Hardening Cluster Security

- Identify security vulnerabilities in a Sun Cluster 3.2 software environment
- Use the Solaris Security Toolkit software
- Download and install security software on the cluster nodes
- Implement the Toolkit software secure cluster driver
- Provide secure clustered services

Examining Troubleshooting Tips

- Describe how to troubleshoot clustered services
- Identify log files for each layer

Troubleshooting the Sun Cluster Software

- Observe self-induced problems
- Resolve instructor-induced problems and faults in your cluster
- Perform node disaster recovery

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