

## **Sun Cluster 3.2 Administration (ES-345)**

**Days: 5**

The Sun Cluster 3.2 Administration course provides students with the essential information and skills needed to install and administer Sun Cluster 3.2 hardware and software systems. Students are introduced to Sun Cluster hardware and software product features, hardware configuration, and software installation along with configuration, data service configuration, and system operation.

### **Who Can Benefit**

Students who can benefit from this course are system administrators, database administrators, and support personnel.

### **Prerequisites**

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

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:**

- Describe the major Sun Cluster hardware and software components and functions
- Configure different methods of connecting to node consoles
- Configure a cluster administrative workstation
- Install and configure the Sun Cluster 3.2 software
- Configure Sun Cluster 3.2 quorum devices
- Configure VERITAS Volume Manager in the Sun Cluster software environment
- Configure Solaris Volume Manager software in the Sun Cluster software environment
- Create Internet Protocol Multipathing (IPMP) failover groups in the Sun Cluster 3.2 software environment
- Understand resources and resource groups, configure a failover data service resource group (Network File System [NFS]), and resource group (Apache)
- Configure failover between Solaris 10 zones, failover ORACLE, and ORACLE Real Application Clusters (RAC) in the Sun Cluster software environment

### **Related Courses**

**After: ES-445:** Sun Cluster 3.2 Advanced Administration

**After: WGS-PREX-0345:** Sun Cluster 3.2 Administration Assessment

### **Related Courses**

**Before:**

System Administration for the Solaris 10 Operating System Part 1 (SA-200-S10)

System Administration for the Solaris 10 Operating System Part 2 (SA-202-S10)  
Network Administration for the Solaris 10 Operating System (SA-300-S10)  
VERITAS Volume Manager 4.1 Administration (ES-311)  
Solaris Volume Manager Administration (ES-222)

## **Course Content**

### **Module 1 - Introducing Sun Cluster Hardware and Software**

Define the concept of clustering  
Describe the hardware and software environment  
Identify the data service support  
Explore the high availability (HA) framework  
Define global storage services differences

### **Module 2 - Exploring Node Console Connectivity and the Cluster Console Software**

Access the Node consoles on domain-based servers  
Configure the Sun Cluster console software  
Use the Cluster console tools

### **Module 3 - Preparing for Installation and Understanding Quorum Devices**

List the Sun Cluster software boot disk requirements and restrictions  
Identify typical cluster storage topologies  
Describe quorum votes and quorum devices  
Configure a quorum server  
Describe persistent quorum reservations and cluster amnesia  
Describe data fencing  
Configure a supported cluster interconnect system  
Identify public network adapters  
Configure shared physical adapters

### **Module 4 - Installing and Configuring the Sun Cluster Software Framework**

Install the Sun Cluster packages using the Sun Java Enterprise System (Java ES) installer  
Describe the Sun Cluster Framework configuration  
Describe the files and settings that are automatically configured by scinstall  
Perform automatic quorum configuration  
Describe the manual quorum selection

### **Module 5 - Performing Basic Cluster Administration**

Identify the cluster daemons  
Perform basic cluster startup and shutdown operations  
Describe the Sun Cluster administration utilities

### **Module 6 - Using VERITAS Volume Manager for Volume Management**

Describe the most important concepts of VERITAS Volume Manager (VxVM)  
Initialize a VERITAS Volume Manager disk  
Install VxVM 5.0 software  
Use basic commands to put disks in disk groups and build volumes  
Register and resynchronize VxVM disk groups with the cluster

### **Module 7 - Managing Volumes With Solaris Volume Manager**

Describe the most important concepts of Solaris Volume Manager  
Describe Solaris Volume Manager soft partitions

Explain shared disksets, local disksets and multiowner disksets  
Describe volume database (metadb) management issues  
Install and configure the software  
Create the local metadbs  
Add disks to shared disksets  
Perform device group management  
Perform cluster-specific changes to device groups  
Create global file systems  
Mirror the boot disk

### **Module 8 - Managing the Public Network With IPMP**

Define the concepts for an IPMP group  
List examples of network adapters in IPMP groups  
Describe the operation of the in.mpathd daemon  
List the new options to the ifconfig command that support IPMP, and configure IPMP with /etc/hostname.xxx files  
Perform a forced failover of an adapter in an IPMP group  
Configure IPMP manually  
Describe the integration of IPMP into the Sun Cluster software environment

### **Module 9 - Introducing Data Services, Resource Groups, and HA-NFS**

List the components of a data service agent  
Describe the primary purpose of resource groups  
Differentiate between failover and scalable data services  
Use the clrg and clres command to control resources and resource groups  
Use the rg and clres cstat command to view resource and group status  
Use the clsetup utility for resources and resource group operations

### **Module 10 - Configuring Scalable Services and Advanced Resource Group Relationships**

Describe scalable services  
Create the failover resource group  
Create the scalable resource group  
Describe the SharedAddress resource  
Use the clrg and clres commands

### **Module 11 - Performing Supplemental Exercises for Sun Cluster 3.2 Software**

Configure a failover applications that fails over between zones  
Configure HA-ORACLE in a Sun Cluster 3.2 software environment as a failover application  
Configure ORACLE Real Application Cluster (RAC) 10g in a Sun Cluster 3.2 software environment