

**COURSE TITLE:**

SO114 - Solaris 10 OE Network Administration

**LENGTH:**

40 Hours

**DESCRIPTION:**

This comprehensive course provides instruction on Solaris OE network administration. Students will be introduced to networking terminology and will learn how to administer the Solaris OE network environment through lectures and hands-on exercises. Topics include how to use basic network commands, how to install and configure network hardware, configuring network services, installation and configuration of network printers, the Network File System (NFS), the Domain Name Service (DNS), the Lightweight Directory Access Protocol, the Dynamic Host Control Protocol (DHCP), the Network Information System (NIS), and the Network Time Protocol (NTP). At the completion of this course the students will perform a comprehensive laboratory project in which they will configure a complete network services environment using the Solaris OE.

This course is applicable to the Solaris 10 Operating Environment.

**AUDIENCE**

This course is designed for system administrators who will be performing network administration procedures on a Solaris 10 OE.

**COURSE OBJECTIVES:**

Upon completion of this course the student will be able to:

1. Describe and state the purpose of various network protocols
2. Check network hardware proper operation
3. Configure basic network services
4. Set up network printers
5. Set up and manage NFS, DNS, LDAP, DHCP, NIS and NTP services

**PREREQUISITES:**

Before attending this course, attendees should:

1. have attended the **SO112 - Solaris 10 OE System Administration I** course and
2. have attended the **SO113 - Solaris 10 OE System Administration II** course  
or
3. have one year experience performing Solaris system administration

COURSE CONTENT

**Unit 1 - Network Hardware & Software**

1. Network Hardware
2. Typical Network Diagram
3. Types of Networks
4. Ethernet Networks
5. Ethernet Hardware
6. Ethernet Communications
7. Ethernet Addresses
8. Types of Networks
9. Top Level Domains
10. Domain and Hostnames
11. Gateways
12. Packets
13. Network Protocols
14. The OSI Network Model
15. The OSI Model
16. The TCP/IP Model
17. The TCP/IP Protocol Stack
18. Network Filesystems
19. Protocol Overview
20. Connection Types
21. Internet Protocol
22. IP Addresses
23. Subnets
24. Classless Internet Domain Routing Notation
25. Determining Network System Information

**Unit 2 - Network Commands**

1. Conventions Used In This Unit
2. telnet - Remote Terminal Service
3. **rlogin** - Remote Login
4. rsh - Remote Shell
5. ftp - File Transfer Protocol
6. Transferring Multiple Files
7. rcp - Remote Copy
8. rwho - Remote Who
9. ruptime - Remote System Status
10. **finger** - Remote User Information
11. Security Notes on Network Commands

**Unit 3 - Network Administration**

1. Network Daemons
2. inetd - Internet Daemon
3. Optional Service Daemons
4. Network Control Files
5. Network Startup
6. The **ifconfig** Command
7. Modifying Network Settings

8. Reconfiguring the Network
9. Checking Network Status

#### **Unit 4 - Network Printing**

1. Overview of Network Printing
2. Setting Up Network Printers
3. Modifying Printer Configuration
4. Deleting A Printer
5. Using the CDE Printer Administrator Tool

#### **Unit 5 - Network File Systems**

1. NFS - Network File System
2. NFS Terminology
3. NFS Daemons
4. File System Sharing and Exporting
5. NFS Commands and Files
6. The **/usr/sbin/share** Command
7. Additional Resource Sharing Related Commands
8. The **/etc/mount** Command
9. Configuring NFS
10. Setting Up the NFS Server
11. Setting Up A NFS Client
12. Removing a NFS Resource

#### **Unit 6 - Domain Name Service (DNS)**

1. The DNS Database
2. DNS Overview
3. DNS Terminology
4. DNS Daemons and Programs
5. DNS Configuration Files
6. DNS Control and Log Files
7. The **in.named** Daemon
8. Controlling the named Daemon
9. DNS Configuration Files
10. Reverse DNS
11. Slave DNS Servers
12. The **nslookup** command
13. Setting up a DNS Client
14. Configuring a DNS Server
15. DNS Trouble Shooting

#### **Unit 7 - Lightweight Directory Access Protocol (LDAP)**

1. Setting up a LDAP Server
2. Setting up a LDAP Client

#### **Unit 8 - Dynamic Host Configuration Protocol (DHCP)**

1. Introduction to DHCP
2. What is DHCP?
3. What is DHCP Good For?

4. What DHCP is NOT Good For?
5. The DHCP Protocol
6. Allocation of network addresses
7. How DHCP Works
8. Controlling the dhcpd Server
9. DHCP Server Configuration
10. Testing the DHCP Service
11. Removing DHCP Services
12. Configuring a Solaris Workstation as a DHCP Client

### **Unit 9 - Network Information Service (NIS)**

1. Overview of NIS+
2. The NIS Client-Server Model
3. NIS+ Information Management
4. Setting Up NIS+
5. Setting Up A NIS+ Server
6. Setting Up a NIS+ Client
7. Setting Up A NIS+ Client
8. Initializing NIS+ Client Users
9. Unconfiguring NIS+

### **Unit 10 - Network Time Protocol**

1. The **xntpd** Daemon
2. NTP Modes
3. Internet Time Servers
4. NTP Programs
5. NTP Files
6. The */etc/inet/ntp.conf* File
7. Starting and Stopping the **xntpd** Daemon
8. Configuring an xntpd Server
9. Troubleshooting **xntpd**

### **Unit 11 - Architecture Differences between SPARC and X86 Solaris**

1. Network Basics Differences
2. Virtual File Systems and Core Dumps Differences
3. Storage Volumes Differences
4. Controlling Access and Configuring System Messaging Differences
5. Setting Up Name Services Differences
6. Performing Advanced Installation Procedures Differences

### **Unit 12 - Laboratory Project**

1. Laboratory Project Overview
2. Step 1 - Plan the Network
3. Step 2 - Install Solaris
4. Step 3 - Set Up the Network Printer
5. Step 4 - Set Up Network File Systems
6. Step 5 - Set Up Network Services

**Appendix A: Network Settings**

**Appendix B: Answers to Review Questions & Exercises**

**Appendix B - Answers to Review Questions**

