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Building World Class MIS Teams, for you!

CS503-# Solaris OE Network Administration

- CS503-8 Solaris 8
- CS503-9 Solaris 9

Length: 5 Days

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 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.

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, DHCP, NIS and NTP services

Course Content

Unit 1 - Network Hardware & Software

1. Introduction
2. Network Hardware
3. Typical Network Diagram
4. Types of Networks
 - A 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

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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
 - A Connection Types
 - B Internet Protocol
20. IP Addresses
 - A Subnets
 - B Classless Internet Domain Routing Notation
21. Determining Network System Information
22. Unit Review

Unit 2 - Network Commands

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

Unit 3 - Network Administration

1. Unit Introduction
2. t Introduction
3. Network Daemons
 - A inetd - Internet Daemon
 - B 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
10. Unit Review

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Unit 4 - Network Printing

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

Unit 5 - Network File Systems

8. Introduction
9. NFS - Network File System
10. NFS Terminology
11. NFS Daemons
12. File System Sharing and Exporting
13. NFS Commands and Files
 - A The /usr/sbin/share Command
 - B The /etc/mount Command
14. Configuring NFS
15. Setting Up the NFS Server
16. Setting Up A NFS Client
17. Removing a NFS Resource
18. Unit Review

Unit 6 - Domain Name Service (DNS)

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

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Unit 7 - Dynamic Host Configuration Protocol (DHCP)

1. Unit Introduction
2. Introduction to DHCP
 - A What is DHCP?
 - B What is DHCP Good For?
 - C What DHCP is NOT Good For?
3. The DHCP Protocol
 - A Allocation of network addresses
 - B How DHCP Works
4. Controlling the dhcpd Server
5. DHCP Server Configuration
6. Testing the DHCP Service
7. Removing DHCP Services
8. Configuring a Solaris Workstation as a DHCP Client
9. Unit Review

Unit 8 - Network Information Service (NIS)

1. Unit Introduction
2. Overview of NIS+
3. The NIS Client-Server Model
4. NIS+ Information Management
5. Setting Up NIS+
 - A Setting Up A NIS+ Server
 - B Setting Up a NIS+ Client
 - C Initializing NIS+ Client Users
6. Unconfiguring NIS+
7. Unit Review

Unit 9 - Using and Administering SSH

1. Introduction
2. What is SSH?
 - A Why Use SSH?
 - B History of SSH
3. The SSH Protocol
 - A RSA Key Authentication
 - B SSH Communication Sequence
 - C SSH Servers
 - D SSH Clients
4. Using the SSH Client
 - A Connecting To A Server
 - B Connecting as a Different User
 - C Executing Remote Commands
 - D Debugging SSH Connections

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5. File Transfer Client (sftp)
 - A sftp Command Reference
 - B sftp Option Reference
 - C Uploading Files
 - D Downloading Files
 - E Preserving Permissions
 - F Copying Remote Files
6. Key Based Authentication
 - A What is a Key?
 - B Types of Keys
 - C Setting Up Key Authentication
 - D Authenticating Using Keys
 - E Authenticating Without a Password
 - F Empty Passwords
 - G Host Based Authentication
 - H SSH Key
 - I Look, No Password!
7. Port Forwarding
 - A Port Forwarding Example
 - B Port Forwarding Uses
 - C Forwarding X Connections
8. Configuring the OpenSSH Server
 - A Configuration Files
 - B Server Configuration Settings
9. Unit Review

Unit 10 - Sendmail

1. Introduction
2. What is Sendmail?
3. Installing Sendmail
4. Sendmail Programs
5. Sendmail Configuration Files
6. The /etc/mail/sendmail.cw File
7. The /etc/aliases File
8. The /etc/mail/virtusertable File
9. Sendmail Directories and Log Files
10. Configuring Sendmail
11. Controlling Sendmail
12. Testing Sendmail
13. Debugging sendmail
14. The mailq Program
15. Mail Aliases
16. Regenerating the /etc/aliases File
17. Forwarding E-Mail
18. Controlling SPAM
19. Setting Up a Mail Server
20. Installing IMAP and POP Servers
21. The Post Office Protocol (POP)

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22. IMAP - Internet Message Access Protocol
23. Setting Up E-Mail Clients
24. Setting Up Microsoft Windows E-Mail Clients
25. UNIX/Linux E-Mail Clients
26. Sendmail Security
27. Unit Review

Unit 11 - Network Time Protocol

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

Unit 12 - Laboratory Project

1. Unit Introduction
2. Laboratory Project
 - A Step 1 - Plan the Network
 - B Step 2 - Install Solaris
 - C Step 3 - Set Up the Network Printer
 - D Step 4 - Set Up Network File Systems
 - E Step 5 - Set Up Network Services
3. Unit Review

Appendix A: Network Settings

Appendix B: Answers to Review Questions & Exercises