



Key Data

Course #: **RH253**
Number of Days: **4-days**
Format: Instructor-Led

Hilton Computer Strategies

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Red Hat Linux Networking & Security Administration Description

Elements of this syllabus are subject to change.

Course Description

This course includes:

- 4 days intensive training on Red Hat Enterprise Linux
- Hands-on labs and exercises
- Catered lunch
- One workstation per student!
- Student materials, pre-assessment questionnaire, study aids, handouts
- Red Hat promotional items!

Duration:

4-days Instructor-led

Prerequisites

- RH133 Red Hat Linux System administration or equivalent experience with Red Hat Linux.
- LAN/WAN fundamentals or equivalent; Internetworking with TCP/IP or equivalent.

Audience

Linux or UNIX system administrators who already have some real world experience with Red Hat Linux systems administration and want a first course in networking services and security.

Course Outline

Unit 1: Introduction to Network Services

- Red Hat Linux Network Components
- Connecting Networks
- Service Management
- chkconfig
- xinetd Services
- The xinetd Daemon
- Fault Analysis

Hands-on lab: Introduction to Network Services

Unit 2: Organizing Networked Systems

- DNS Basics
- Internet DNS Hierarchy
- Name Server Hierarchy
- Client-side DNS
- Server-side DNS
- Berkeley Internet Name Domain (BIND)
- Configuring BIND
- Configuration File Basics
- Address Match Lists and acl
- rndc
- Zone Files
- Main Record Types
- Delegating Subdomains
- Caching-only Name Server
- BIND Utilities
- BIND Syntax Utilities
- Configuring the DHCP server

Hands-on lab: Organizing Networked Systems

Unit 3: Network File Sharing Services

- Configuring NFS services
- Configuring FTP services
- Samba Services
- Samba Daemons
- Configuring Samba
- Configuring File and Directory Sharing
- Printing to the Samba Server
- Authentication Methods
- Samba Client Tools: smbclient and smbmount

Hands-on lab: Network File Sharing Services

Unit 4: Electronic Mail Services

- sendmail Features
- Security and "Anti-Spam" Features
- An Email Review
- Simple Operational Overview
- Main Configuration Files
- sendmail Configuration with the m4 Macro Language
- sendmail Client Configuration
- Blacklisting Recipients
- Debugging sendmail
- Postfix
- Using Postfix
- Additional postfix Configuration Files
- procmail Local Delivery
- Hands-on lab: Electronic Mail Services

Unit 5: The HTTP Service

- Apache Features
- Apache Configuration
- Apache Server Configuration
- Virtual Hosts
- Apache Namespace Configuration

- CGI
- Apache Encrypted Web Server
- Squid Web Proxy Cache

Hands-on lab: The HTTP Service

Unit 6: Security Concerns and Policy

- Security Terms
- Basic Network Security
- Which Services Are Running?
- Remote Service Detection
- Definitions of Security
- Security Policy
- Backup Policies

Hands-on lab: Security Concerns and Policy

Unit 7: Authentication Services

- Authentication Basics
- Service Profile: PAM
- PAM Operation
- Core PAM Modules
- Authentication Modules
- Password Security
- Password Policy
- Resource Limits
- User Access Control
- Single User Mode
- Authentication Troubleshooting
- NIS Overview
- NIS Server Topology
- Configuring an NIS Server
- NIS Client Configuration
- NIS Troubleshooting

Hands-on lab: Authentication Services

Unit 8: System Monitoring

- Introduction to System Monitoring
- File System Analysis
- Set User and Group ID Permissions
- Typical Problematic Permissions
- EXT2 Filesystem Attributes
- Monitoring Data Integrity with tripwire
- Configuring tripwire
- System Log Files
- syslogd and klogd configuration
- Advanced syslogd configuration
- Log File Analysis
- Monitoring and Limiting Processes
- Monitoring Processes with top
- Monitoring Processes Graphically
- System Activity Reporting
- Process Accounting Tools

Hands-on lab: System Monitoring

Unit 9: Securing Networks

- Packet Filtering Capabilities
- Netfilter Architecture

- Netfilter Packet Flow
- Chain Operations
- Rule targets
- Rule Matching
- Network Address Translation(NAT)
- Connection Tracking
- Rule persistence
- The "Bastion Host"

Hands-on lab: Securing Networks

Unit 10: Securing Services

- SystemV Startup Control
- Securing the Service
- tcp_wrappers Configuration
- Daemon Specification
- Client Specification
- Advanced Syntax
- xinetd-based security
- xinetd Access Control
- Host Patterns
- Advanced Security Options

Hands-on lab: Securing Services

Unit 11: Securing Data

- The Need For Encryption
- Cryptographic Building Blocks
- Random Numbers
- One-Way Hashes
- Symmetric Encryption
- Asymmetric Encryption
- Public Key Infrastructures
- Digital Certificates
- Generating Digital Certificates
- OpenSSH Overview
- The OpenSSH
- OpenSSH Authentication
- Protecting Your Keys
- Applications: RPM

Hands-on lab: Securing Data