

Red Hat Enterprise Linux (RHEL) / CentOS : Managing Network Services

Presentation

Objectives : Learn Red Hat Enterprise Server Network Services Management.

Who can benefit: Linux technicians and administrators.

Prerequisites: A clear understanding of basic Linux administration.

Learning technique : Clear, theoretical course content divided into lessons and extensive LABS available on-line 24/24 7/7.

Duration : 35 hours.

Instructor : Certified [LPI](#).

Student Progression : Student progression is monitored both in terms of effective course duration and in terms of student comprehension using self-assessment tests.

Resources : CentOS 7 Virtual Appliance.

Programme

- **Starting and stopping network services under Systemd**

- Systemd
- The systemctl command
- Configuration files
- The systemd-analyze command
- Managing services under Systemd

- **Managing the Network**

- TCP/IP
 - Messages, Datagrams and Segments
 - Establishing a TCP connection
 - The TCP header

- The UDP header
- Fragmentation and Re-encapsulation
- TCPv4 Classes
- Subnet Masks
 - Variable Length Subnet Masks - VLSM
- Ports and sockets
- Configuring a Network Client under Linux
 - /etc/services
 - Ethernet address resolution with arp
- Configuring TCP/IP on RHEL 6
 - DHCP
 - /etc/sysconfig/network
 - /etc/sysconfig/network-scripts/ifcfg-ethX (où X=0,1 ...)
 - Fixed IP Address
 - /etc/sysconfig/network
 - /etc/sysconfig/network-scripts/ifcfg-ethX (où X=0,1 ...)
 - The hostname command
 - The ifconfig command
 - Manually bringing up and down a network interface
 - The /etc/networks file
 - IP address resolution
 - /etc/resolv.conf
 - /etc/nsswitch.conf
 - /etc/hosts
- Configuring TCP/IP on RHEL 7
 - The nmcli command
 - Connections and Profiles
 - Adding a second IP address to an existing profile
 - The hostname command
 - The ip command
 - Manually bringing up and down a network interface
- Network Services
 - xinetd
 - TCP Wrapper

- Network Diagnostic Commands
 - ping
 - ping6
 - netstat-i
 - traceroute
 - traceroute 6
 - tracepath6
- Static Routing Tables on RHEL 6
 - The route Command
 - The netstat Command
 - Turning routing ON/OFF
- Static Routing Tables on RHEL 7
 - The ip Command
 - Turning routing ON/OFF
- Remote Administration
 - Telnet
 - ssh
 - wget
 - ftp
 - scp
- Administrating an NFS server
 - Presentation
 - NFSv3 services and processes
 - NFSv3 services and processes
 - Basic commands
 - Server installation
 - Client installation
 - The rpcinfo command
 - The nfsstat command
- Packet Sniffers
 - TCPdump
 - Wireshark
- Port Scanners
 - nmap

- netcat
- The Netfilter Firewall
 - Introduction
 - Configuration using scripts on RHEL 6
 - Configuration using firewalld on RHEL 7
- Cryptology
 - Public Key Infrastructures
 - X509 Certificates
 - SSH and SCP
 - SSH Tunneling

- **Managing the DNS, NTP, FTP and DHCP servers**

- The DNS server
 - Pre-installation configuration
 - Installation
 - Configuration files
 - named.ca
 - named.conf
 - Zones
 - Type
 - File
 - db.fenestros.loc.hosts
 - db.2.0.10.hosts
 - rndc
 - The rndc key
 - Configuration files
 - LAB #1 - Install and configure bind9
- The Time server
 - Introduction
 - Installation
 - The ntp.conf file
 - LAB #2 - Installing and configuring ntp
- The vsftpd FTP server
 - Installation

- Basic configuration
- /etc/ftpusers
- vsftpd Anonymous server
 - Configuration
- Virtual users
 - Introduction
 - Configuration
- LAB #3 - Installing and configuring vsftpd
- The DHCP server
 - Introduction
 - Installation
 - Basic configuration
 - The dhcpcd.conf file

- **Managing the Samba server**

- Microsoft networking
 - Microsoft network types
 - Windows client types
- Understanding Samba,
 - Samba Daemons
 - Samba commands
- Installation
 - Basic configuration
 - Manually starting Samba,
 - Samba configuration
 - Managing accounts and groups
 - Creating the smbpasswd file
 - Understanding the smb.conf file
 - Sécurité = share
 - Sécurité = user
 - Testing Samba.

- **Managing the Postfix server.**

- Sendmail basic configuration
- Installation & Configuration

- Installation
- Basic Configuration
- Dovecot
- Advanced configurations
 - Défining Aliases
 - SMTP AUTH
 - SSL
- **Managing the Apache server**
 - Presentation and Configuration
 - Testing Apache
 - with telnet
 - with a browser
 - Configuring the global environment and the main server
 - /etc/httpd/conf/httpd.conf
 - /etc/httpd/conf.d/autoindex.conf
 - /etc/httpd/conf.d/userdir.conf
 - /etc/httpd/conf.d/welcome.conf
 - /etc/httpd/conf.modules.d/00-*.*.conf
 - /etc/httpd/conf.d/local.conf
 - Virtual servers
 - Named virtual hosts
 - IP based virtual hosts
 - Additional modules
 - mod_userdir
 - mod_php
 - mod_auth_basic
 - mod_auth_mysql
 - mod_authnz_ldap
 - mod_ssl
 - mod_proxy
 - mod_dav
 - mod-rewrite
 - mod_header

- mod_suexec

- **Managing OpenLDAP**

- Presentation
 - What is LDAP?
 - The X.500 protocol
 - LDAP v3
 - How does LDAP work?
 - LDAP information model
 - DN versus RDN
 - LDAP structure
 - Attributes
 - User attributes
 - Operational attributes
 - Object classes
 - OID's
 - Schemas
- Installing the LDAP server
- Configuring the LDAP server
 - The local LDAP directory
 - Referrals
 - Replication
- Configuration files
 - slapd.conf
 - include
 - allow
 - referral
 - pidfile
 - argsfile
 - modulepath
 - moduleload
 - TLSCACertificateFile, TLSCertificateFile & TLSCertificateKeyFile
 - security
 - access to

- database config
- backend
- suffix DN
- checkpoint
- rootdn <DN>
- rootpw <mot de passe>
- directory
- index
- repllogfile <filename>
- replica host <hostname>[:<port>] [bindmethod={ simple | kerberos | sasl }]
- loglevel
- password-hash
- schemacheck
- idletimeout
- sizelimit
- timelimit
- readonly <on | off>
- lastmod <on | off>
- /etc/openldap/ldap.conf
- cn=config
- Securing the directory
 - Creating an adlinistrative password
 - Implementing SSL
- Creating and maintaining the databases
 - The LDIF format
 - Creating a database online
 - The ldapadd command
 - Using the luma graphical client
 - The Directory Information Tree
 - alias
 - attributes
 - classes
 - schemas
 - referrals

- The ldapsearch command
- The ldapmodify command
- The ldapdelete command
- Creating a database offline
 - The slapadd command
- Maintaining an LDAP database
 - The slapcat command
 - The slapindex command
 - The slapdn command
 - The slapttest command
 - The slappauth command
- LAB #1 - Replication
 - Preparation
 - Replication
 - Configuring the supply server
 - Configuring the consumer server
 - Tests