



UXL-104: Linux Administration Part 2

Course Details

Course Code: UXL-104

Duration: 2 days

Notes:

- This course syllabus should be used to determine whether the course is appropriate for the students, based on their current skills and technical training needs.
- Course content, prices, and availability are subject to change without notice.
- Terms and Conditions apply

Elements of this syllabus are subject to change.

About this course

This two day course provides a follow-up to Linux System Administration (Part 1), for those who wish to network their Linux systems. The course covers the essential elements of configuring the network connection including routing, and installing major services such as NFS, NIS and DNS, plus other services. The SAMBA PC file and printer sharing software will also be briefly examined, as will the Apache webserver; working installations of both systems will be created. The course uses the Redhat and CentOS Linux ES distributions.

Course Objective

To teach experienced Linux administrators, or those who have attended the Linux System Administration (Part 1) course, to configure and connect Linux systems to a network and make use of network services.

Prerequisites

Experience of Linux systems admin similar to the level described in the Linux System Administration (Part 1) course.

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Ethernet overview.

Concepts and limitations. Physical network components. Current Ethernet technology, including Fast Ethernet, Gigabit, Wireless, etc. IP network concepts and addressing.

Connecting a Linux system to the network.

Where network configuration information is stored. Using the GUI tools to configure a network interface. Testing network connections. Formulating IP addresses. Obtaining your own IP network address. Using private addresses as per RFC 1918. Subnetting and CIDR. Logical addressing. Creating logical interfaces on the same NIC. NIC bonding for failover and loadspreading. Using commands such as ssh to login to other systems and run remote commands. Understanding and setting up network security, including basic Firewall. Enabling and disabling network services with xinetd. Configuring TCP Wrappers for controlled access and logging. Monitoring network activity using a variety of system utilities.

Routing

Using Linux systems as routers. How to set up a route to another network and a default route. Configuring various routing scenarios, including backbone configurations. Enabling packet forwarding in the Kernel.

Network File System (NFS) services

What is NFS, and what are its benefits? Enabling and using the NFS services as both server and client. Mounting and exporting file system resources. Format of /etc/exports entries. Mounting resources from the NFS server. Updating the /etc/fstab file. Introduction to automounting. NFS security issues.

Network Monitoring

Using utilities to monitor and troubleshoot networks. (ifconfig, ethtool, ip, netstat, wireshark, arp and tcpdump).

Name Services

Introduction to Name Services. What is available. Name Service configuration. The /etc/nsswitch.conf name service switch.

Network Information Service.

Setting up a Linux system as a NIS server and client. Master server setup preparation. Running ypinit. Enabling Master Server NIS

services. Updating and propagating updates. Adding clients. Adding slave servers. Using the Netgroup facility. Utilities such as ypcat and ypwhich. The NIS Makefile. Changing Makefile entries. NIS compatibility issues with NIS on other systems such as Solaris.

Domain Name System (DNS) aka BIND.

Setting up DNS server services on Linux from scratch. The named daemon and the named.conf file. Domains and Zones of authority. Resource record format. Adding secondary (slave) servers. Maintaining DNS data files. Setting up DNS clients. Resolving at a higher level. Adding reverse mapping. Implementing named Logging Using rndc and enabling rndc access security. Forwarding and Cache-only servers DNS and IPv6.

Samba

The SAMBA PC File and printer sharing protocol. What is SAMBA? How to obtain it for other platforms. Basic setup. SAMBA facilities, including file and printer sharing from PCs. Configuration file setup. Using client facilities (smbclient) from the Linux machine. Enabling the swat GUI to perform graphical SAMBA configuration.

Apache Web server

Web server installation using the apache web server. Setting up a web site. Invoking a browser and accessing the site. Major apache directives.