Syllabus – Intro to Linux

Instructor: Nathan Isburgh – instructor@edgecloud.com
Length: 24 hours
Format: Lecture and lab
Required Texts: None
Optional Texts:

- "Linux Administration Handbook" - Prentice Hall – second edition
- "Linux in a Nutshell" - O'Reilly – sixth edition

Abstract: This course is designed as a 24 hour jump start in the Linux operating system. CentOS will be used in the lab, though the instruction will focus on cross-distribution knowledge and skills. No particular previous knowledge of Linux is assumed, though basic familiarity will be beneficial to the student due to the rapid pace of the course. Instruction will start with a general overview of Linux, followed by in-depth lecture and lab time in the shell environment. Theory will continue covering topics such as filesystems, processes and their kernel structures. The majority of the course will be divided between system administration tasks and networking. The course will end with a very brief overview of remaining Linux+ topics needed for certification.
Syllabus:

1) **Linux Big Picture**
    1. Kernel + modules, libraries, applications
    2. Distributions
    3. Multiuser
    4. Multitasking
2) **Shells**
    1. Command line
        1. The Big Loop
        2. Metacharacters and Quoting
        3. Basic commands
    2. Working directories and hierarchal relationships
    3. Environment
    4. Man pages
    5. Redirection
    6. Pipes
3) **Filesystems**
    1. File types and directories
    2. Ownership
    3. Permissions
    4. Links
    5. Editing files
4) **Processes**
    1. Structure
    2. Listing
    3. States
    4. Signals
5) **System Administration**
    1. Users and Groups
    2. Backups
        1. tar
        2. Compression
    3. Troubleshooting

        1. Logs
        2. Top
        3. Sysstat
    4. Performance Tuning
        1. Benchmarks
    5. Filesystems
        1. Mounting/Unmounting
        2. Partitioning
        3. Formating
        4. Checking
    6. Shell scripting
    7. Crond and atd
    8. Software installation
        1. From packages
        2. From source

6) Networking

1. Overview
    1. IP addresses and networks, Routing, DNS
2. Configuration
3. Services
    1. FTP, HTTP, POP3, IMAP, SSH, SMTP
4. Troubleshooting

7) Homework for optional Linux+ Certification

1. History
2. Open source movement and licensing
3. Installation
4. X Windows