

IT302T – Linux Administration SYLLABUS – Summer Quarter 2008

Instructor: Pat Nolan

Office hours: By Appointment

Class hours: Saturday: 1:30 p.m. – 6:00 p.m.

COURSE DESCRIPTION

This course covers intermediate to advanced system and network administrative tasks and related skills required by a Linux based network. Functional areas include the setup, configuration, maintenance, security and troubleshooting of Linux servers and related services in a complex network environment. Tools and scripting skills associated with these areas will also be discussed.

MAJOR INSTRUCTIONAL AREAS

1. Advanced Installation Options
2. Setting up Servers
3. Advanced Linux Configuration and Administration
4. Configuring Local Network Services on a Linux server including DHCP, NFS, Samba, and NIS
5. Configure Wide Area Network Services on a Linux server including DNS, E-mail, Web, and FTP
6. Advanced Scripting in Linux
7. Kernel Compiling
8. Linux Server Security

COURSE OBJECTIVES

1. Plan and implement an installation of Linux to be used as a server.
2. Administer a Linux server using various tools and methods.
3. Describe and implement services used in a typical LAN server.
4. Describe and implement services used in a typical WAN server.
5. Plan and implement services or configuration changes to secure a Linux server.

Related SCANS Objectives

1. Identify the need for data, obtain them from existing sources or create them, and evaluate their relevance and accuracy.
2. Work cooperatively with others and contribute to group with ideas, suggestions, and effort.
3. Distinguish trends, predict impact of actions on system operations, diagnose

deviations in the function of a system/organization, and take necessary action to correct performance.

4. Make suggestions to modify existing systems to improve products or services, and develop new or alternative systems.
5. Judge which set of procedures, tools, or machines, including computers and their programs, will produce the desired results.
6. Understand the overall intent and the proper procedures for setting up and operating machines, including computers and their programming systems.
7. Prevent, identify, or solve problems in machines, computers, and other technologies.

TEACHING STRATEGIES

This course is designed to promote a variety of teaching strategies that support the outcomes described in the course objectives fostering higher cognitive skills. The delivery makes use of various media and delivery tools in the classrooms. Each unit provides multiple exercises to give the students a solid foundation of where Linux can be applied in the business world. The course is designed to build on the IT250 Linux Operating System course to build upon the student's knowledge and hands-on skills. Students are also encouraged to log into the ITT Technical Institute Virtual Library for additional research materials.

COURSE RESOURCES

Student Textbook Package

„ Sobell, Mark G. A Practical Guide to Red Hat Linux. 3rd ed. Upper Saddle River, NJ: Pearson Prentice Hall, 2007.

References and Resources

ITT Tech Virtual Library

Log on to the ITT Tech Virtual Library (<http://www.library.itt-tech.edu/>) to access online books, journals, and other reference resources selected to support ITT Tech curriculums.

„ *General References*

- >Reference Resources> Certification> Linux Professional Institute Certification
- >Reference Resources> Certification> RedHat Certifications
- >Program Links> Information Technology-Computer Network Systems (ITCNS)> Professional Organizations
- >Program Links> Information Technology-Computer Network Systems (ITCNS)> Self-Assessment
- >Program Links> Information Technology-Computer Network Systems (ITCNS)> Recommended Links

- *Books*

The following books are related to this course and are available through the ITT Tech Virtual Library:

f NetLibrary> Barkakati, Naba. Red Hat Linux Fedora All-in-One Desk Reference for Dummies. Hoboken, NJ: John Wiley & Sons. 2004.

f NetLibrary> Barkakati, Nabajyoti. Red Hat Fedora Linux Secrets. Indianapolis, IN: John Wiley & Sons. 2005.

f NetLibrary> Love, Robert. Linux Kernel Development. 2nd ed. Indianapolis, IN: Pearson Education, Inc., 2005.

f NetLibrary> Negus, Chris. Linux Bible: Boot Up to Fedora, KNOPPIX, Debian, SUSE, Ubuntu, and 7 Other Distributions. Indianapolis, IN: John Wiley & Sons. 2006.

f NetLibrary> Smith, Roderick W. Linux+ Study Guide. San Francisco, CA: Sybex. 2005.

f NetLibrary> Tracy, Robb H. Novell Certified Linux Engineer (Novell CLE): Study Guide. 3rd ed. Indianapolis, IN: Pearson Education, Inc., 2005.

- *Periodicals*

f EbscoHost

- o Szulik, Matthew J. "Open for change" Educause Review, Jan/Feb2007, Vol. 42 Issue 1, p4-5, 2p, 1c

- o Bauer, Mick. "Introduction to SELinux, Part II" Linux Journal, Mar2007, Issue 155, p30-33, 4p, 1c

- o Bauer, Mick. "Introduction to SELinux" Linux Journal, Feb2007 Issue 154, p36-39, 3p

- o Brooks, Jason. "Fedora Core 5: Shape-shifter" eWeek, Apr 17, 2006, Vol. 23 Issue 16, p43-44, 2p

f ProQuest

- o Sandra Gittlen. "Open source, tried and true" Network World, Framingham: Feb 28, 2005, Vol. 22, Issue 8, p66, 2p

- o Ed Nisley. "Linux for corporations" Dr. Dobb's Journal, San Mateo: Aug2006, Vol. 31, Issue 8, p58, 5p

„ *Other Resources*

- *Books:*

f Jang, Michael. Red Hat Certified Engineer Linux Study Guide. 4th ed.

Emeryville, CA: McGraw-Hill/Osborne, 2004.

f Sobell, Mark G. A Practical Guide to Linux Commands, Editors, and Shell Programming. Upper Saddle River, NJ: Pearson Prentice Hall, 2006.

- *Web sites:*

f "DeskTopLinux"

<http://www.desktoplinux.com> (accessed 28 March 2007)

f “Fedora Project”

<http://fedoraproject.org/wiki/> (accessed 28 March 2007)

f “FreshMeat”

<http://www.freshmeat.net> (accessed 28 March 2007)

f “IceWalkers”

<http://www.icewalkers.com> (accessed 28 March 2007)

f “Linux Journal”

<http://www.linuxjournal.com/> (accessed 28 March 2007)

f “Linux Magazine”

<http://www.linux-mag.com/> (accessed 28 March 2007)

f “Linux Newbie Administration Guide”

<http://linux-newbie.sunsite.dk/> (accessed 28 March 2007)

f “Linux Security”

<http://www.linuxsecurity.com> (accessed 28 March 2007)

f “Mad Penguin”

<http://www.madpenguin.org> (accessed 28 March 2007)

f “Red Hat Linux”

<http://www.redhat.com> (accessed 28 March 2007)

f “SourceForge”

<http://www.sourceforge.net> (accessed 28 March 2007)

f “TuxMe”

<http://www.tuxme.com> (accessed 28 March 2007)

All links to Web references outside of the virtual library are always subject to change without prior notice.

EVALUATION & GRADING

COURSE REQUIREMENTS

1. Attendance and Participation

Regular attendance and participation are essential for satisfactory progress in this course.

2. Completed Assignments

Each student is responsible for completing all assignments on time.

3. Team Participation (if applicable)

Each student is responsible for participating in team assignments and for completing the delegated task. Each team member must honestly evaluate the contributions by all members of their respective teams.

Evaluation Criteria Table

The final grade will be based on the following weighted categories:

CATEGORY WEIGHT

Homework	20%
Labs	30%
Quizzes	15%
Lab Project	15%
Final Exam	20%
Total	100%

Grade Conversion Table

Final grades will be calculated from the percentages earned in class as follows:

Grade	Percentage	Credit
A	90–100%	4.0
B+	85–89%	3.5
B	80–84%	3.0
C+	75–79%	2.5
C	70–74%	2.0
D+	65–69%	1.5
D	60–64%	1.0
F	<60%	0.0

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