

AIM:

The student will get exposure to operating system and networking concepts at source code level.

OBJECTIVES:

- To learn the setting up of GNU/Linux-based servers and workstation
- To learn shell programming
- To learn to configure application and server software
- To learn to perform system administration tasks
- To learn to use free and open source components.

Experiments in the following topics:

1. GNU/Linux OS installation (provide details of how to detect hardware, configure disk partitions & filesystems and successfully install a GNU/Linux distribution)
2. Basic shell commands - logging in, listing files, editing files, copying/moving files, viewing file contents, changing file modes and permissions, process management
3. User and group management, file ownerships and permissions, PAM authentication, Introduction to common system configuration files & log files
4. Configuring networking, basics of TCP/IP networking and routing, connecting to the Internet (through dialup, DSL, ethernet, leased line)
5. Configuring additional hardware - sound cards, displays & display cards, network cards, modems, usb drives, CD writers
6. Performing every day tasks using GNU/Linux - accessing the Internet, playing music, editing documents and spreadsheets, sending and receiving email, copy files from disks and over the network, playing games, writing CDs
7. Setting up email servers - using postfix (for SMTP services), courier (for IMAP & POP3 services), squirrelmail (for webmail services)
8. Setting up web servers - using Apache (for HTTP services), Setting up proxy services, printer services, firewall
9. Using the GNU Compiler Collection - getting acquainted with the the GNU compiler tools - the C preprocessor (cpp), the C compiler (gcc) and the C++ compiler (g++), and the assembler (gas)
10. Understanding build systems - constructing makefiles and using make, using autoconf and autogen to automatically generate makefiles tailored for different development environments, Using flex (lex) and bison (yacc) to design parsers

TOTAL= 45 PERIODS