

Syllabus

- Session 1 Linux Design and Architecture (Linux abstractions - File, Process, Memory mapping etc.)
- Session 2 Overview of Embedded Linux System (File system, busybox, glibc / uclibc etc.)
- Session 3 Kernel Device Drivers
- Session 4 Networking (BSD sockets, Unix domain sockets, SCTP, TCP vs. UDP vs. SCTP, TCP streams architecture, TCP buffering etc.)
- Session 5 Threads, Processes, IPC Shared Memory - Posix Processes, Thread Model, Linux Threads, Event-Driven Programming, Process Based Concurrency, Process Based Shared Memory, Sys V vs Posix Semaphores
- Session 6 Extension and Scripting Languages - Tcl/Tk, Lua, C Integration
- Session 7 Debugging - Malloc/Free Problems, brk/sbrk, mmap, mtrace, memory leaks, top, Electric Fence, catchsegv, LD_PRELOAD, strace, ltrace, core dumps, ptrace(), gdb, gdbserver, kernel debugging, /proc
- Session 8 Advanced Linux Programming I - System Calls, VDSO, API's, ABI's, Posix, SUS, File I/O, Scatter Gather I/O, Delayed Writes, Synchronized I/O, Direct I/O, Multiplexed I/O, VFS, Page Cache, Page Writeback, mmap
- Session 9 Advanced Linux Programming II - Zero Copy Networking, I/O Schedulers, AIO, Process Management, Scheduling
- Session 10 Advanced Linux Programming III - Semaphores, Futex'es, Fuser FS, Ssh, Signals