

**Course Length:** 5 days

**Course Description:** This course is designed to give the Linux system administrator an in-depth look at common and not so common Linux system problems. This course takes a hands on approach to troubleshooting with a break-fix philosophy, 25% lecture, and 75% lab intensive content. Lab exercises contain a pool of over 120 simple and complex real-world troubleshooting scenarios. Lab work is flexible enough to satisfy the expectations of experienced to intermediate administrators through ranked difficulty of scenarios. Students will find the approach of this course of structure with flexibility very rewarding. Lab tasks let students choose the type of scenarios they would like to tackle, with hints, helps, and solutions to make learning very effective.

**Prerequisites:** Students are expected to have experience using and administering Linux. Fundamentals such as an understanding of the Linux filesystem, process management, and the ability to manipulate and edit files is considered a must, and will NOT be covered in class. Equivalent knowledge of the GL-120, GL-250 and GL-275 courses recommended.

**Distributions:** This courses is currently supported on the latest releases of Red Hat Enterprise Linux.

#### DAY 1

- Troubleshooting Methodology
- Common Troubleshooting Tools
- RPM Queries and Verification
- src Packages and spec Files
- strace, ltrace, lsof and fuser
- ipcs and ipcrm
- vmstat, iostat, mpstat, and sar
- ifconfig, ip, arp and route
- netstat, rpcinfo, nmap, nc
- tcpdump and ethereal
- Rescue Environments and Procedures
- Linux Boot Process Troubleshooting
- Process Management and Troubleshooting
- File Systems Concepts and Troubleshooting
- Backups Concepts and Troubleshooting

#### DAY 2

- Networking Commands Review and Troubleshooting
- IP Aliases vs Virtual Interfaces
- Concepts and Troubleshooting:  
xinetd, TCP Wrappers, iptables
- X11, Syslog, RPM
- CUPS, at, cron

#### DAY 3

- Users and Groups Troubleshooting
- PAM Concepts and Troubleshooting
- Filesystem Quotas and Quotas Troubleshooting
- File Access Control Lists and Troubleshooting
- DNS Concepts and Troubleshooting

#### DAY 4

Apache Concepts and Troubleshooting  
FTP Concepts and Troubleshooting  
Squid Concepts and Troubleshooting  
Samba Concepts and Troubleshooting  
Sendmail Concepts and Troubleshooting  
Postfix Concepts and Troubleshooting

**DAY 5**

IMAP & POP Concepts and Troubleshooting  
Kernel Modules and Troubleshooting  
Logical Volume Management and Creating Logical Volumes  
LVM Deployment Issues and Troubleshooting  
RAID Concepts and Troubleshooting  
Lightweight Directory Access Protocol and LDAP Troubleshooting