Linux Operations

Index: **TR002**
Duration: **24 hours**

Description

This course explores the various tools and techniques commonly used by Linux system administrators and end-users to achieve their day-to-day work in a Linux environment using automation techniques. Linux Operations course is designed for experienced computer users who have limited or no previous exposure to Linux, whether they are working in an individual or Enterprise environment.

Target Audience

The course targets participants with basic knowledge in IT or networking environment:

- IT security personnel
- Incident responders
- Security analysts

Pre-requisites

- None

Objectives

- Using Linux command-line operations
- Understanding system configurations of Linux
- Using automation in Linux
- Learning to deal with Dockers

Module 1: Advanced Command-Line

During this model, we will explore the advanced features of the Linux command-line. Students will learn to control it, as well as advanced text manipulation. The goal of this module is to allow students to master the command-line fully.

- **The Terminal - CLI (Command Line Interface)**
  - Search and Indexing Files Tools
  - Shell Types
  - Exploring Distributions
  - File Manipulation Commands
    - Special Permissions (GUID/SUID)
    - Sticky Bits Permission
    - Default System Permissions Configuration (umask)
    - Set New Owner and Group to an Object
- **Advanced Log Parsing**
  - Using Cut, Sort, Uniq, Tail and Head
  - Basic and Extended Regular Expressions
  - Streams, Redirection and Pipes
- **Package Management**
  - Linux OS Package Program
  - Using APT and DEB
  - System Updates
  - Tools and Distribution Upgrade

Module 2: Administering the System

This module will teach the students to gain full control of the Linux Environment; the students will learn to administrate their system and manage software and services.

- **Network Troubleshooting**
  - Network Configuring
  - Network Tools and Commands
  - Administrative Commands
- **Environment Control**
  - Automating Using Cron
  - Job Control
  - Managing Software and Packages
  - Managing Process and Services
  - Logs and Journals

Module 3: Linux Administrator

During this module, participants will study how to manage the administrative side of the system, ensure proper configuration and system update management.

- **Bash Shell Scripting**
  - Introduction to Programming
  - Writing First Bash Scripts
  - System Administration Automation
- **Hardware Management**
  - Storage and Drive Control
  - Understanding Filesystems
  - Structure of the Linux Filesystem
  - Partitioning Tools in Linux
  - Mounting Basics

Module 4: Using Docker

In this module, students will learn to run and manage a containerized application inside the Docker environment.

- **The Docker Application**
  - Introduction and Installing to Docker
  - Docker Images and Containers
  - Running Containerized Applications
  - Creating Containers
  - Basic Networking
    - Exposing Container Ports
    - Networking Commands