

## **RHCE – 30 hrs**

*Higher Certificate in RedHat Linux Certified Engineer*

### **課程簡介**

當 MCSE 作為熟悉 Windows Server 的衡量指標，RedHat 的 RHCE 便可作為熟悉 Linux 的指標性認證。RedHat 是眾多 Linux 中最為市場接納及最多人使用的品牌，可說是 Linux 系統中的領導性牌子。它的國際認證 RHCE 更以難度高見稱，在 2005 年十大認證排行榜中，RHCE 便名列其中。故一般學員如要考取 Linux 相關認證，一般以 RedHat RHCE 為目標。

### **課程目標**

本課程針對欲考取 RedHat RHCE 人仕而設，課程內容不但教授 Linux 系統的安裝，更會特別著重 Linux 的保安方面的知識，使學員能加強 Linux 的保安設定。修畢後，學員不但能從事 Linux 系統的管理工作，更可考取 RedHat RHCE 認證。

### **課程內容**

#### **Hardware and Installation**

- ✧ Hardware Compatibility
- ✧ CPU and Memory
- ✧ Devices
- ✧ Bus Support
- ✧ The Red Hat Installer
- ✧ Configuring Hard Drives and Filesystems
- ✧ Software RAID and LVM
- ✧ Security Configuration: Firewalls and SELinux
- ✧ Post-installation Configuration
- ✧ Validating the Installation

#### **The Boot Process**

- ✧ Partitioning Hard Disks
- ✧ Creating Filesystems
- ✧ Understanding Journaling Filesystems
- ✧ Mounting Filesystems: The mount Command and /etc/fstab
- ✧ The Automounter
- ✧ ext2/3 Filesystem Attributes
- ✧ Access Control Lists
- ✧ Understanding and Controlling SELinux

#### **Linux Filesystem Administration**

- ✧ Partitioning Hard Disks
- ✧ Creating Filesystems
- ✧ Understanding Journaling Filesystems
- ✧ Mounting Filesystems: The mount Command and /etc/fstab
- ✧ The Automounter
- ✧ ext2/3 Filesystem Attributes
- ✧ Access Control Lists
- ✧ Understanding and Controlling SELinux

#### **User Administration**

- ✧ Creating User Accounts
- ✧ Maintaining User Accounts
- ✧ Creating and Maintaining Groups
- ✧ The User Private Group Model
- ✧ Creating Group Directories: the SGID Mode
- ✧ The Initial User Environment
- ✧ Pluggable Authentication Modules
- ✧ Network Authentication Configuration: NIS and LDAP
- ✧ Configuring Quotas

#### **System Administration Tools**

- ✧ Configuring the Network with ifup and ifdown
- ✧ Interface Configuration Files
- ✧ The CUPS Printing System
- ✧ Queue Management Using CUPS
- ✧ Automating System Administration: The cron Subsystem
- ✧ Understanding, Maintaining, and Monitoring System Logs
- ✧ Network Installation Servers
- ✧ Using Kickstart to Automate Installations

#### **Kernel Services and Configuration**

- ✧ Understanding Kernel Modules
- ✧ The /proc Filesystem
- ✧ Advanced partitioning: Software RAID
- ✧ Advanced partitioning: Logical Volume Management
- ✧ Converting LVM1 Partitions to LVM2

### **The HTTP Service**

- ✧ The Apache Web Server
- ✧ Virtual Hosts
- ✧ Apache Access Configuration
- ✧ The Squid Web Proxy Cache

### **Network File Sharing Services**

- ✧ Configuring an NFS Server
- ✧ Client-side NFS
- ✧ The File Transfer Protocol and vsftpd
- ✧ Samba Services
- ✧ Configuring File and Print Services with Samba
- ✧ Samba and Security: Authentication Methods and Passwords
- ✧ Samba Client Tools

### **Domain Name Service**

- ✧ Understanding DNS: Zones, Domains, and Delegation
- ✧ The Berkeley Internet Name Domain (BIND)
- ✧ Running BIND in a chrooted Environment
- ✧ Zone Creation and Zone Files
- ✧ Delegating Subdomains
- ✧ BIND Utilities

### **Electronic Mail**

- ✧ Understanding E-mail: Mail Transport Agents, Mail Delivery Agents, and Mail User Agents
- ✧ Sendmail Configuration Files
- ✧ Using the m4 Macro Language to Create The sendmail.mc File
- ✧ Debugging Sendmail
- ✧ Using alternatives to Select an E-mail System
- ✧ Postfix: an Alternative Mail Transport Agent

- ✧ Configuring Postfix

### **xinetd, OpenSSH, and DHCP**

- ✧ Understanding the xinetd Daemon
- ✧ Configuring the xinetd Daemon
- ✧ Configuring xinetd-based Services
- ✧ The OpenSSH Server
- ✧ The DHCP Server

### **The X Window System**

- ✧ X11 and the Server/Client Relationship
- ✧ The Xorg Server Design and Configuration
- ✧ Xorg Server Startup
- ✧ Xorg Server Configuration Utilities
- ✧ Running Remote Applications
- ✧ Securing Services
- ✧ Using tcp\_wrappers to Secure Services
- ✧ Daemon and Client Specifications for tcp\_wrapper Rules
- ✧ Packet Filtering Using netfilter
- ✧ Firewalling and Data Flow
- ✧ Creating netfilter Rules
- ✧ Connection Tracking
- ✧ Network Address Translation
- ✧ netfilter Rule Persistence

### **Troubleshooting**

- ✧ Troubleshooting Strategies
- ✧ Things to Check
- ✧ Filesystem Corruption and Checking
- ✧ Recovery Runlevels
- ✧ The Rescue Environment