

Ethical Hacking & Server Administrator

Session 1: Basic of Networking

1. Network fundamentals, Network elements (LAN, WAN, host, workstation, server), Physical topologies (bus, star, ring, mesh, backbone).
2. Physical media (coaxial cable, twisted, pair cable, fiber optics), Common network connectivity devices (NIC, hub, switch, bridge, router, gateway and other devices), Layers task, sender, receiver, carrier.
3. The OSI model, Layers in OSI models
4. Data and signals, Analog and digital, Periodic analog signals.
5. Digital signals, Attenuation, Distortion, Bandwidth, Throughput, Latency, Digital to digital conversion.
6. Analog to digital conversion, Twisted, pair cable with advantages and disadvantages, Coaxial cable with advantages and disadvantages.
7. Fiber optics cable with advantages and disadvantages. Radio waves, Microwaves, Infrared, Bluetooth, Wi-Fi, Wi-Max.

Session 2: OSI Layers

1. The OSI layers and its services, MAC sub layer, LLC sub layer.
2. Logical addressing, IPv4, Unicasting, multicasting, broadcasting, Addressing mapping, subnetting.
3. UDP (operation, use, diagram format), TCP (services, features, segment, packet format), Presentation layer services, Application layer services.
4. Backbone networks, Virtual LAN, Cellular telephony, Satellite network.
5. SONET/SDH (architecture, layers), Frame relay, ATM.
6. Name space, Domain name space, DNS in internet, Resolution, DNS message, Types of records, Remote login, electronic mail and file transfer.
7. Email architecture, message user agent, message access agent, message transfers, SMTP, POP, IMAP, FTP, web based mail.

Session 3: Network Management System

1. Network management system (Configuration management, fault management, performance Management).
2. SNMP (concept, management concept, structure of management, information management, information base, lexicographic ordering).
3. Cryptography, Symmetric, Key cryptography, Asymmetric, Key cryptography.
4. Server Administrator: New Features for Administrators, Server Integration, Server Databases, Server Security, Working with Server, Server architecture, Hardware Installation Considerations.
5. Server 2000 Editions, Installation Considerations, Methods of Installing Server, Verifying the Installation, Configuring Server Enterprise Manager.

Session 4: Database and Performing Administrative Task

1. Performing Administrative Tasks – Configuration Tasks Routine.
2. SQL Server Administrative Tasks, Automating Routine Maintenance Tasks, Creating Alerts Troubleshooting SQL Server Automation Automating Multiserver Jobs.
3. Backing Up Databases, Preventing Data Loss, Setting and Changing a Database Recovery Model.
4. SQL Server Backup, When to Back Up Databases, When to Back Up Databases, Types of Backup Methods, Planning a Backup Strategy.
5. Restoring Databases, SQL Server Recovery Process, Preparing to Restore a Database, Restoring Backups.
6. Restoring Databases from Different Backup Types, Restoring Damaged System Databases.

Session 5: The Business & Legal issues of Ethical Hacking

1. Introduction to Ethical Hacking, Legality and Ethics, Penetration Testing for Business.
2. Foot printing, Scanning, Enumerating.
3. System Hacking Techniques, Trojans, Backdoors, and Sniffers, Denial of Service Attacks and Session Hijacking, Penetration Testing Steps, Linux Hacking Tools.
4. Web Server Hacking and Web Application Vulnerabilities, SQL Injection Vulnerabilities, Cryptography, Cracking Web Password.
5. Wireless Network Attacks and Countermeasures, Viruses, Worms, and Buffer Overflows.