Training Objectives: -

The objective of this summer training program is to to produce Enterprise Networking professionals capable of implementing, administering, maintaining Computer Networks and overall Security Systems. It is an advanced level program that measures the ability to administer any networking problems , This program has been designed to keep in mind that in now day's scenario for engineering graduate students from any stream.

Career Option:
- ✓ Network Administrator
- ✓ System Administrator
- ✓ Windows Administrator
- ✓ Telecom Engineer
- ✓ Network Engineer

DURATION: 4 WEEKS (80 Hours)
FEE : RS. 6000/-(Inclusive of Service .Tax)*
ELIGIBILITY: B.E / B.TECH. in CS/IT/EC/EI/ IInd/ IIIrd/ IVth Year Students or MCA/M.Sc (IT/CS/Electronics), Diploma in any Stream
Form Fee Rs 50.00 Extra

How to Apply:

For Admission, submit your college reference/training letter along with fee of Rs 6000 (either in Cash or Demand Draft in favour of "**NIELIT, Gorakhpur**". The application form may be downloaded from our website or collected from reception.

Accommodation:

Hostel accommodation is available for Male candidates only.

Training Highlights:

- Well Managed Course pattern
- Daily Handouts & Lab Exercise
- Industry Compliant Syllabus
- Use of Latest Tools & Technology
- Regular Quiz

Course Contents (Syllabus of Training)
Module I

Internet Protocols: - TCP/IP Model, IP Addressing, IP Terminology, IP Addressing Scheme, TCP/IP Troubleshooting utilities ping, arp, traceroute, tracert, nslookup, netstat etc.

Troubleshooting IP Addressing. Subnetting ICMP, IP addressing, IP address Classes, Public & private IP address, Basics of Subnetting, and Subnet Masking. TCP/IP troubleshooting command line utilities, Introduction to Transport layer, TCP and UDP Protocols, Port No. Socket Address, TCP & UDP Port No, Port types. IPv6, IPv4 vs IPv6

Module II

Introduction to Computer Networks, Element of Networks, Types of Networks, Network Topologies: Bus, Star, Mesh, Ring, Hybrid etc.Physical Vs Logical Topologies. Network operating system Vs Client operating System.

Guided Media Vs Unguided Media, Common LAN Media: STP, UTP, Coaxial cable, and Optical fiber, TIA/EIA standards, Making & testing Cable, Straight thru Cable, Crossover Cable, and Connectors. NIC, Repeaters, Hub, Switches, Routers, Converter etc.Internetworking Vs Internetworking Devices, Collision Domain Vs Broadcast Domain

Module III

Windows 2008 server, Windows 2008 server family, sharing file & folder, managing file and folder attributes. Managing shared folder permissions. user and group and its Permissions Configuring and managing the distributed file system. Creating and configuring a Dfs Root/Dfs links, their types, replicas. Configuring client computers to user Dfs. Managing NTFS file and folder security, NTFS permissions, EFS. How user and group NTFS permissions combine? Taking ownership of files and folders. Configuring and monitoring disk quotas. Troubleshooting.

Module IV:

Introduction to Application Layer Protocols and their role e.g. RDP, HTTP, FTP, DNS, DHCP, Telnet, SMTP, POP3, SMTP, SNTP, TFTP, SNMP etc

Module V:

Introduction to DHCP Server configuration, DHCP Scope, Reservation, DNS Server configuration Primary & secondary DNS Server, Forward lookup zones and reverse lookup zone, Root Hints, Zone Transfer, Terminal Server, Telnet, IIS Web server, Configuring a website ,Configuring multiple website using multiple IP address, Virtual directory and multiple ports, Configuring a FTP site, Configuring multiple ftp sites using

multiple IP address, Virtual directory and multiple ports, Configuring Routing and Remote Access service (RRAS)

Module VI

Active Directory. Understanding the Features of Active Directory. Naming conventions logical structure of Active Directory. Windows 2008 domain organizational units (OUs), trees and forests. Objects and classes, schema, global catalog server. Installing Active Directory Replication, Domain Name System(DNS). Installing Active Directory. What is DNS? What does DNS have to do with Active Directory? DNS domain names and naming conventions. Configuring DNS zones, configuring zone transfers. Removing Active Directory. Verifying and troubleshooting an Active Directory installation. Organizational Unit (OU), Creating OUs, configuring OU, properties. Managing Active Directory objects..

Module VII

Backup and Recovery: User data and system state, data backup types. Backup strategies, scheduling, recovering user data and system state, data recovering from a system failure

Module VIII

Introduction to ISM Band, Infra red communication Vs Radio wave communication & their advantage and disadvantage,IEEE 802.11 standard for WLAN, Types of Wireless LANs,Devices used in WLAN such as Acces Point, LAN NIC,Antennas(Dipole, Directional and Omni directional), Planning for a Wireless Network, Designing the Wireless LAN Deploying a Wireless Network.

Module IX

Working with file systems, FAT, FAT32 NTFS. File conversion, understanding disks and volumes. Types of disks/partitions/volumes. Using disk management. Creating and formatting partitions. Upgrading a disk. Creating a simple spanned, striped, mirrored, RAID-0, RAID-1 & RAID-5. Logical drives, recovering disks and volumes. Software vs Hardware RAID, RAID calculator

Module X

Internet, connection types, ISP, ISP study, Web hosting, Top Web Hosting Companies in India performing whois to get IP by name, Name by IP & IP address owner information , IANA, IANA Root Zone Database, IANA Number Resources,

local Internet registry (LIR),National Internet Registry (NIR), AfriNIC, APNIC, ARIN, LACNIC, RIPE NCC, Regional Internet Registry (RIR),Registration of a domain, Top Domain Registrars, Registrar for .EDU.IN, .RES.IN, .AC.IN, .GOV.IN in INDIA

Lab Modules

1. To create a Crossover Cable using standard color-coding (RJ-45, UTP, Crimping tools).
2. To create a Straight cable using standard color-coding.
3. To identify various media (STP, UTP, Co-axial, Fiber optics etc) and its connectors.
4. To install NIC, installation of TCP/IP, assigning of IP address to the system.
5. To connect two PCs using a crossover cable.
6. To setup a LAN with a number of PCs using 8/16 port HUB/Switch.
7. To Use the Ping command (with all switches) to verify the TCP/IP Connection between the two workstations
8. To study TCP/IP command utility.
9. To share a file or folder on a windows Network.
10. To study backup types (Normal, Copy, Incremental, Differential) and Recovery procedure.
11. Managing & configuring file sharing
12. Installing and managing Primary Domain Name System (DNS) server [Forward & Reverse lookup Zone
13. Configuring Zone Transfer and managing Secondary (DNS) server.
14. Installing and uninstalling Active directory. Verifying installation and managing it. Joining a computer to an active directory domain.
15. Creating and configuring Organization Unit (OU).
16. Creating Roaming and Mandatory user profile.
17. Understanding and applying Group policy
18. Software deployment using Group policy
19. To study IIS and configuring it for Web server(HTTP).
20. To study IIS and configuring it for FTP server
21. To get remote access to a PC by configuring Terminal server (RDP) and Terminal services clients.
22. Configuring win2008 as DHCP Server
23. Creating and configuring DFS server
24. Managing Disks /volume their creation and conversion, recovering from disk failure

25. Configuring Routing using RRAS in Windows 2008 Server. Using RIS Server to install OSs remotely in Attended and Unattended Mode
26. Configuring VPN(Virtual Private Network) using RRAS in Windows 2008 Server
27. Configuring NAT (Network Address Translation) using RRAS in Windows 2008 Server
28. Configuring ICS (Internet Connection Sharing) in Windows / 2008 Server
29. Configuring Proxy Server for managing Internet resources.
30. To study installation and Configuration of Wireless LAN NIC.
31. To study installation and Configuration of Access Point.
32. Wireless LAN Setup using ADHOC mode.
33. Wireless LAN Setup using Infrastructure mode.
34. Using Access Point as a DHCP Server
35. To study Security implementation in Wireless LAN.
36. To implement Wi-Fi Protected Access (WPA) in WLAN.
37. To implement Wired Equivalent Privacy (WEP) in WLAN.
38. To implement MAC Filtering security in Wireless LAN.

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SUMMER TRAINING
In

ENTERPRISE NETWORKING
A Practical Approach

रा.इ.सू.प्रौ.सं
NIELIT

ORGANIZED BY

राष्ट्रीय इलेक्ट्रॉनिकी एवं सूचना प्रौद्योगिकी संस्थान, गोरखपुर

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