Section 1

Kurikulum
Teknik Komputer dan Jaringan

Fundamental Kemampuan IT

- Komponen-komponen Hardware Komputer
- Jenis - jenis koneksi dan fungsinya
  - NFC
  - Bluetooth
  - Wifi
  - Infrared
- Sistem Operasi dan Troubleshooting
  - Windows
  - Linux
  - MacOS
- Memahami aplikasi Office
  - Ms Office
  - Google Suite
- Memahami Dasar Jaringan Komputer
  - Crimping Kabel UTP
  - Fiber Optic (urgent)
  - Basic Subnetting IPv4
  - Public & Private IP Address
  - OSI Layer

IP & Terminology

- localhost
- loopback
- CIDR
- Class
- subnet mask
- default gateway
- LAN
- MAN
- WAN
- WLAN
- Switch
- Router
- DHCP
- NAT
- RING
- STAR
- MESH
- BUS
- SSH
- RDP
- FTP
- SFTP
- HTTP / HTTPS
- SSL / TLS
- pengetahuan port number

Project Kelompok

Maintenance LAB SMP/ Kantor

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Modul Praktik Jaringan untuk Small Office, rekomendasi budgeting

Ujian Sertifikasi Industri Semester 1

Membuat Jaringan untuk Small Office

MikroTik Network Associate

Introduction

- Winbox & MAC-Winbox
- Webfig & Quick Set
- Default configuration
- RouterOS CLI
- RouterOS CLI principles
- Initial configuration (Internet Access)
  - WAN DHCP Client
  - LAN IP Address and default gateway
  - Basic Firewall - NAT Masquerade
- Upgrading RouterOS
- Router Identity
- Manage RouterOS logins
- Manage RouterOS services
- Managing configuration backups
- Resetting RouterOS device
- Netinstall

DHCP

- DHCP Server & Client
- Address Resolution Protocol

Bridging

- Bridging overview
- Bridge wireless networks

Routing

- Routing overview
- Static Routing

Wireless

- 802.11a/b/g/n/ac Concepts
- Setup a simple wireless link
- Wireless Security & Encryption
- Monitoring Tools

Tunnels

- PPP settings
- IP pool
- Secure local network
- Point to point addresses
- Secure remote networks communication

QoS

- Simple Queue
- PCQ

Misc

- RouterOS Tools
- Monitoring

Firewall

- Firewall principles
- Firewall Filter in action
- Basic Address-List
- Source NAT
- Destination NAT
- FastTrack

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Modul Praktik Jaringan dengan MikroTik

Project Kelompok

Membuat Jaringan Internet di Rumah / Wifi Corner dengan MikroTik coba instalasi di UMKM (Wireless)

Ujian Sertifikasi Industri Semester 2

Membuat Jaringan untuk SOHO dengan MikroTik

MikroTik Routing

Static Routing

- more specific routes
- ECMP
- How to force gateway over specific interface
- Gateway reachability check and route distance
- Routing mark and route policy
- Recursive next-hop and scope/ target-scope usage

Point to Point Addressing

- point to point address config

VPN

- What's VPN ?
- Different types of VPN
- Site to site connectivity with tunnels IPIP, EoIP, PPTP, SSTP, L2TP, PPPoE
- VLAN and it's usage
- VLAN and managed switch

OSPF

- What's OSPF ?
- How OSPF protocol works
- OSPF network structure (areas, Router types)
- OSPF neighbors and neighbor states (DR and BDR election)
- External Route Distribution methods (type1, type2)
- Interface cost and interface types (broadcast, NBMA, etc.)
- Stub, NSSA and area ranges (route aggregation)
- Virtual links, usage and limitations
- OSPF routing filters and limitations

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Video Simulasi Jaringan Mikrotik dengan PnetLab

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Modul Praktik Jaringan dengan MikroTik

Cisco

- Cisco Basic Command
- VLAN
- Encapsulation
- DHCP
- Port Security
- Static Route
- Dynamic Route RIP, EIGRP, OSPF, BGP
- Access List

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Video Simulasi Jairngan Kantor dengan Cisco di PnetLab

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Modul Praktik Jaringan dengan Cisco

Ujian Sertifikasi Industri Semester 3

Membuat Jaringan WAN MikroTik

Linux Sysadmin

- Linux Installation
- Basic Command Linux
- DHCP Server
- Domain Host Server
- LAMPP
- File Hierarchy, Directory
- FTP
- Mail Server
- Database
- VPS

Project Kelompok

Hosting Server dengan Proxmox dan AAPanel

Ujian Sertifikasi Industri Semester 4

Membangun Server LAMPP dengan Linux

Cyber Security

- Keamanan Sistem Informasi
- Jenis Ancaman Cyber
- Net Defence/Digital Forensic
- CIA TRIAD
- Tools Dasar Cyber Security
- IPS/IDS
- Network Security (Fortinet)
- Wireshark, Agent EDR/OSEC
- Hydra, SOAE
- SIEM, EDR, NDR

Sertikom