



- u. Configure and verify basic RIPv1, RIPv2, single area OSPF, and EIGRP operations in a small routed network
- v. Use router commands to troubleshoot common errors that occur in small routed networks.

## OBJECTIVES

- I. Introduction to Routing and Packet Forwarding
  - a. Inside the Router
  - b. CLI Configuration and Addressing
  - c. Building the Routing Table
  - d. Path Determination and Switching Functions
- II. Static Routing
  - a. Routers in Networks
  - b. Router Configuration Review
  - c. Exploring Directly-Connected Networks
  - d. Static Routes with “Next Hop” Addresses
  - e. Static Routes with Exit Interfaces
  - f. Summary and Default Static Routes
  - g. Managing and Troubleshooting Static Routes
- III. Introduction to Dynamic Routing Protocols
  - a. Introduction and Advantages
  - b. Classifying Dynamic Routing Protocols
  - c. Metrics and Administrative Distances
  - d. Routing Protocol and Subnetting Activities
- IV. Distance Vector Routing Protocols
  - a. Introduction to Distance Vector Routing Protocols
  - b. Network Discovery
  - c. Routing Table Maintenance
  - d. Routing Loops
  - e. Distance Vector Routing Protocols Today
- V. RIP Version 1
  - a. RIPv1: Distance Vector, Classful Routing Protocol
  - b. Basic RIPv1 Configuration
  - c. Verification and Troubleshooting
  - d. Automatic Summarization
  - e. Default Route and RIPv1
- VI. VLSM and CIDR
  - a. Classful and Classless Addressing
  - b. VLSM
  - c. CIDR
  - d. VLSM and Route Summarization Activity

- VII. RIPv2
  - a. RIPv1 Limitations
  - b. Configuring RIPv2
  - c. VLSM and CIDR
  - d. Verifying and Troubleshooting RIPv2
  
- VIII. The Routing Table: A Closer Look
  - a. The Routing Table Structure
  - b. Routing Table Lookup Process
  - c. Routing Behavior
  
- IX. EIGRP
  - a. Introduction to EIGRP
  - b. Basic EIGRP Configuration
  - c. EIGRP Metric Calculation
  - d. DUAL
  
- X. Link-State Routing Protocols
  - a. Link-State Routing Protocols
  - b. Implementing Link-State Routing Protocols
  
- XI. OSPF
  - a. Introduction to OSPF
  - b. Basic OSPF Configuration
  - c. The OSPF Metric
  - d. OSPF and Multi-Access Networks

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Text to be assigned by the instructor each semester

**A M N O D N D AB L**