

Project: Network Design Proposal

Purpose

Unified communications and e-commerce have introduced new ways to conduct business. You will design a comprehensive networking design incorporating all of the concepts learned in this course.

Your ability to execute the tasks and present them will be evaluated against the learning objectives as identified and described in previous units of instruction for this course.

Learning Objectives and Outcomes

Successful completion of this project will ensure that you are capable of creating and presenting a network design plan for an organization. To be able to do so, you need to be able to do the following:

- Transform business requirements into communication and networking solutions.
- Differentiate between the Ethernet standards, specifications, and technologies that drive current LAN connectivity.
- Address how IP is used to support voice, video, data, and Internet communications.
- Translate IPv4 and IPv6 IP addressing schemas and perform logical IP addressing schema designs.
- Apply wireless standards and security methodologies to increase business productivity.
- Analyze how Layer 2 and Layer 3 networking technology is used for end-point connectivity and developing resiliency solutions.
- Design and configure routing protocols to meet business needs
- Apply network management and security techniques using the FCAPS process.

Required Source Information and Tools

You will require the following resources to complete this project:

- A computer with:
 - Access to the ITT Tech Virtual Library
 - Access to the Internet
 - Microsoft (MS) Office Suite—MS Word, MS PowerPoint, and MS Visio or any other comparable editing, presentation, and drawing software
 - Note-taking systems, such as pens, paper, and printers

Project Logistics and Deliverables

Deliverables will be as follows:

Unit 2 – Choice of business entity. The business entity must contain the following elements:

- 225,000 employees in five countries
- Corporate office and 18 district offices
- Include server, switches, routers, desktops, mobile computers, and wireless devices

You should select a business entity that you are interested in. Some suggestions include: computer manufacturer, automotive parts manufacturer, restaurant franchising, software development, and network consulting.

Each week you will add a layer to the network project. The following are ungraded checkpoints for the project that must be submitted to your instructor at the beginning of class for approval.

Due	Project Component
Unit 2	Entity selection
Unit 3	IEEE standards networking design and protocols
Unit 4	Communication methods
Unit 5	Choice of IPv4 or IPv6 and addressing schema identified
Unit 6	Wireless standards and design selected
Unit 7	Departmental VLANs identified and designed
Unit 8	Layer 3 routing designed
Unit 9	Distance vector routing protocols for unified communications identified
Unit 10	Link-state routing protocols for unified communications identified

The final submission must include:

1. A description of the business entity
2. The communication methods used by the organization
3. A detailed network drawing with all protocols, devices, and IP subnets marked appropriately

4. VLAN and WLAN configurations that meet business requirements
5. Unified communications selected and the appropriate routing protocols identified
6. A best practices document for network security, management, and monitoring
7. A 15-minute electronic presentation to be presented to the chief information officer (CIO) and selected technology staff that describes the overall scope of the project and identifies and addresses all design issues.

Self-Assessment Checklist

Use the following checklist to support your work on the course project:

- I have provided a description of the business entity and the communication methods used.
- I have defined the communication methods used by the organization.
- I have developed a detailed network drawing with all protocols, devices, and IP subnets marked appropriately.
- I have designed VLAN and WLAN configurations to meet business requirements.
- I have selected unified communications methods and identified the appropriate routing protocols.
- I have developed a best practices document for network security, management, and monitoring.
- I have followed the submission requirements and necessary details for writing the report and have prepared a 15-minute presentation for management on the overall scope of the project.