

## Lab 3.5.5 Analyzing an Existing Network

### Objective

- Characterize the current network in relation to the identified business and technical requirements of a new network design project.

### 640-802 CCNA Exam Objectives

This lab contains skills that relate to the following CCNA exam objectives:

- Describe the purpose and functions of various network devices.
- Interpret network diagrams.

### Expected Results and Success Criteria

Before starting this lab, read through the tasks that you are expected to perform. What do you expect the result of performing these tasks will be?

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How can a network analysis be useful in network topology upgrades?

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### Background / Preparation

FilmCompany is an expanding small advertising company moving into interactive advertising media, including video presentations. This company has just been awarded a large video support contract by the StadiumCompany. With this new contract, FilmCompany expects to see their business grow approximately 70 percent.

To facilitate this growth, the FilmCompany has decided to significantly upgrade its data network. You have the role of network designer. Your job is to develop network design and project documents for FilmCompany that will meet the requirements of this upgrade.

As part of the new network design requirements, the current network has to be analyzed against the project technical requirements.

This section of the network design document describes what can be done to improve or eliminate the weaknesses and to build on the strengths of the existing network.

### Step 1: Document and confirm existing network topology, addressing, and naming schemes

- a. Examine the existing network topology diagram.
  - 1) Record the current addressing scheme in a table.
  - 2) Associate device names with addresses on the table.
- b. Highlight any inconsistencies in the naming and addressing schemes.

For example:

- Naming some devices by location and others by function
  - Inconsistent or confusing use of abbreviations
  - Some gateway addresses as the first address of a subnet, others as the last address
- c. Use word processing software to create a Current Network document.

**Step 2: Identify those parts of the existing network that currently meet the project technical requirements**

- a. Examine the network topology and specifications.

Record which current features meet the technical requirements of the proposed network upgrade.

Examples include:

- Capacity (bandwidth, address ranges, VLANs)
- Redundant links
- Router and switch interfaces and ports
- Router and switch feature sets, memory, and processing capability
- WAN
- Wireless
- QoS

- b. Include these strengths and capabilities in your Current Network document.

**Step 3: Identify those parts of the existing network that can be scaled to meet the project technical requirements**

- a. Examine the network topology and specifications.

Record which current features do not meet the technical requirements of the proposed network upgrade but can be scaled within the capacity of the network to do so.

Examples include:

- Capacity (bandwidth, address ranges, VLANs)
- Redundant links
- Router and switch interfaces and ports
- Router and switch feature sets, memory, and processing capability
- WAN
- Wireless
- QoS

- b. Include these scalable features and capabilities in your Current Network document.

**Step 4: Identify those parts of the existing network that do not to meet the project technical requirements**

- a. Examine the network topology and specifications.

Record which current features do not meet the technical requirements of the proposed network upgrade and what additional networking resources are required.

Examples include:

- Capacity (bandwidth, address ranges, VLANs)
- Redundant links
- Router and switch interfaces and ports
- Router and switch feature sets, memory, and processing capability
- WAN
- Wireless
- QoS

b. Include these weaknesses and shortfalls in your Current Network document.

### **Step 5: Obtain agreement and authorization from the company to continue with the network upgrade design**

- a. Finalize the Current Network document so that the strengths and shortfalls are clearly and precisely presented.
- b. Discuss and review your Current Network document with another student to ensure that it clearly states which parts of the network meet the technical requirements of the upgrade project and which parts do not. Amend the document as necessary to clarify any areas that could be misunderstood. At this stage of the network design process, a meeting with the FilmCompany management would be held to obtain their agreement and authorization to continue with the design of the upgrade.
- c. Save and retain your Current Network document so that it can be incorporated with the previous documents to complete this network design case study.

### **Step 6: Reflection**

Consider the resources and information that will facilitate the task of analyzing a current network.

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### FilmCompany Branch Layout

