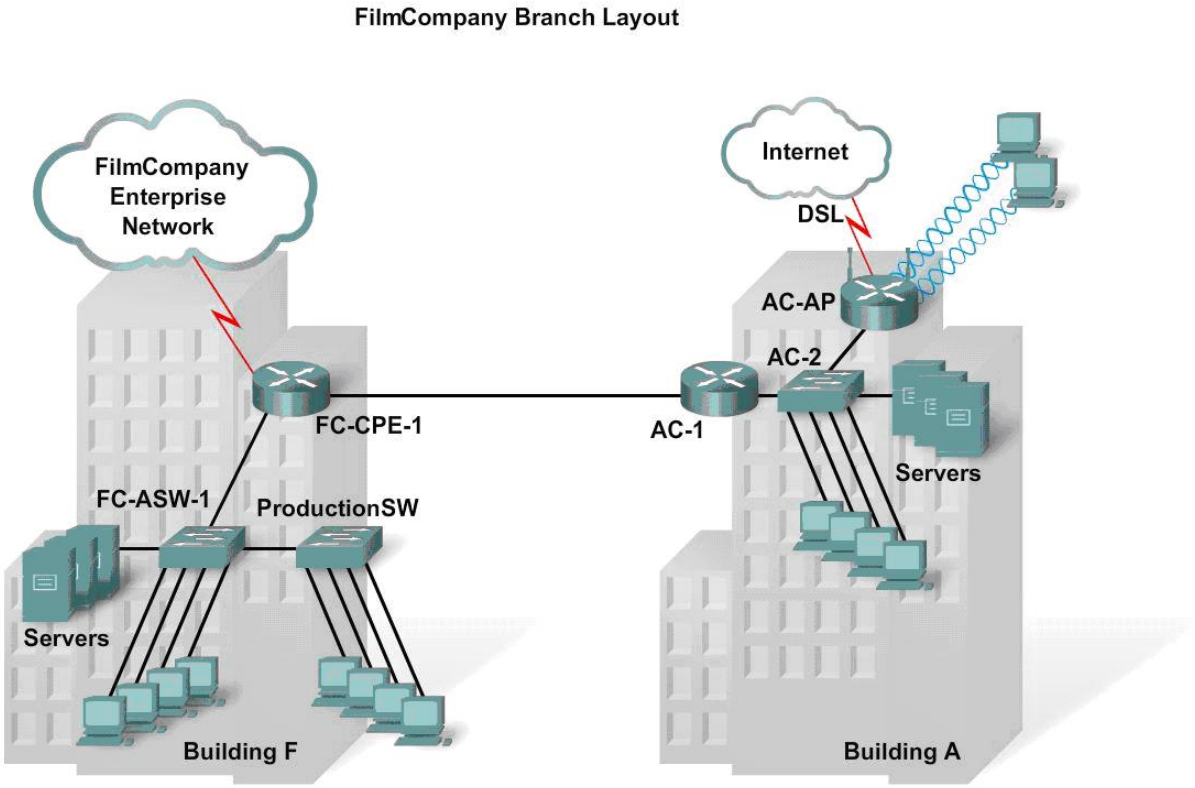
# Lab 5.2.4.2 Creating a Diagram of the FilmCompany LAN




**Existing Layout**

## Objective

- Design and diagram the new FilmCompany LAN.

## 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?

_____

_____

_____

What are the benefits of designing and diagramming a LAN before installation begins?

_____

_____

_____

What advantages and disadvantages are there to using the existing network equipment?

_____

_____

_____

## Background / Preparation

FilmCompany is an expanding 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.

As a member of the network design team, the student will investigate the Film Company existing network and will plan, design, and prototype the upgrades necessary to enable the network to cope with this growth in business.

Developing a diagram of the LAN enables the designer to analyze the proposed design and identify where the network can be improved. The logical topology diagram shows that the switches are identified; each computer should have a unique address. Redundant paths from the switches should be planned and implemented when applicable. The logical design for the LAN must be aligned with the initial business goals and technical requirements of the customer. The diagram gives the designer and customer a visual idea of what is already on the network and helps to get a better view of what is still required.

In this lab, you will use a graphic program  to create the LAN design.

### Step 1: Identify LAN Requirements

a. Use word processing software to create a new document called “LAN Diagram.”

b. Use the identified topology and associated equipment to determine LAN design requirements.

**Design requirements for the LAN include:**

High-speed connectivity to the Access Layer switches

24 x 7 availability

High-speed redundant links between switches on the LAN and the Access Layer devices

Identifying available hardware for the LAN

c. Brainstorm with other students to identify areas that may have been missed in the initial requirements document.

### Step 2: Determine equipment features

Using the list developed from the brainstorming session create a LAN based on technical requirements (design only).

a. Create your design using the existing equipment.

**The FilmCompany network equipment includes:**

2 x 1841 Routers (FC-CPE-1, FC-CPE-2)

3 x 2960 Switches (FC-ASW-1, FC-ASW-2, ProductionSW)

1 x ADSL Modem for Internet Access

b. Using the list of equipment, identify modules that can be added to the existing equipment to support new features, such as redundancy.

c. Save your LAN Diagram document.

### Step 3: Select LAN devices

a. Use word processing software to create an addition to the LAN Diagram document.

b. The identified LAN diagram will be used to adjust the Access Layer design. Equipment selected must include existing equipment.

c. Save your LAN Diagram document.

### Step 4: Design Redundancy

a. Use word processing software to create an addition to the LAN Diagram document.

b. Design a redundancy plan that combines multiple Layer 2 links to increase available bandwidth.

c. Create a design that incorporates redundancy.

d. Save your LAN Diagram document.

### Step 5: Reflection / Challenge

The design strategies for the FilmCompany LAN pose many challenges for the designer. What were a few of the more difficult challenges you encountered?

_____

_____

_____

_____

Consider and discuss the identified strategies. Do all of the strategies designed accomplish the task the same way?

_____

_____

Would one be less expensive or less time-consuming than the other?

_____

_____

Would the chosen LAN design allow for future growth and the addition of the WLAN?

_____

_____