Lab 5.1.3.5 Identifying Availability Strategies

Objective

- Use the identified availability strategies to assist in the design of a network.

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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Why is identifying an availability strategy that applies to a project an important part of the network design?

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How can developing availability strategies assist in the completion of the project?

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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.

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

This lab is one of a series of labs that explore the FilmCompany existing network and its upgrade requirements.

Step 1: Identify the areas that will be used for designing a strategy that facilitates availability

a. Use word processing software to create a new document called “Availability Strategies.”

b. Use the identified constraints that set limits or boundaries on the network upgrade project and the potential trade-offs to assist in brainstorming ideas with other students.

The strategy should cover the following areas:

Availability strategies for switches:

- Redundant power supplies and modules
- Hot-swappable cards and controllers

- Redundant links
- UPS and generator power

Availability strategies for routers:

- Redundant power supplies, UPS, and generator power
- Redundant devices
- Redundant links
- Out-of-band management
- Fast converging routing protocols

Availability strategies for Internet/Enterprise Edge:

- Dual ISP providers or dual connectivity to a single provider
- Co-located servers
- Secondary DNS servers

Step 2: Create availability strategies for switches

a. Using the list developed from the brainstorming session, create a list of equipment that will be incorporated into the availability strategy.

b. Using the list of equipment, identify modules and redundant power supplies that will increase availability for the switches.

c. Identify potential hot swappable cards and controllers that can be used. Create a list that identifies each with cost and features.

d. Develop a diagram that shows potential redundant links that can be incorporated into the network design.

e. Identify at least two possible UPS devices that can be incorporated into the design. Create a list that identifies the cost and features of each.

f. Save your Availability Strategies document.

Step 3: Create availability strategies for routers

a. Use word processing software to create an addition to the Availability Strategies document.

b. Using the list of equipment, identify redundant power supplies that will increase availability for the switches.

c. Identify potential redundant devices and links that can be used. Create a list that identifies each with cost and features.

d. Create a diagram that displays the redundant connections.

e. Develop a list of potential routing protocols that will facilitate fast convergence times.

f. Save your Availability Strategies document.

Step 4: Create availability strategies for Internet/Enterprise Edge

a. Use word processing software to create an addition to the Availability Strategies document.

b. Identify options available that would allow for dual ISP or dual connectivity to a single provider.

c. Create a design that will co-locate the servers to allow for redundancy and ease of maintenance.

d. Save your Availability Strategies document.

Step 5: Reflection

The creation of availability strategies poses many challenges for the designer. What were a few of the more difficult challenges you encountered?

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

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

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