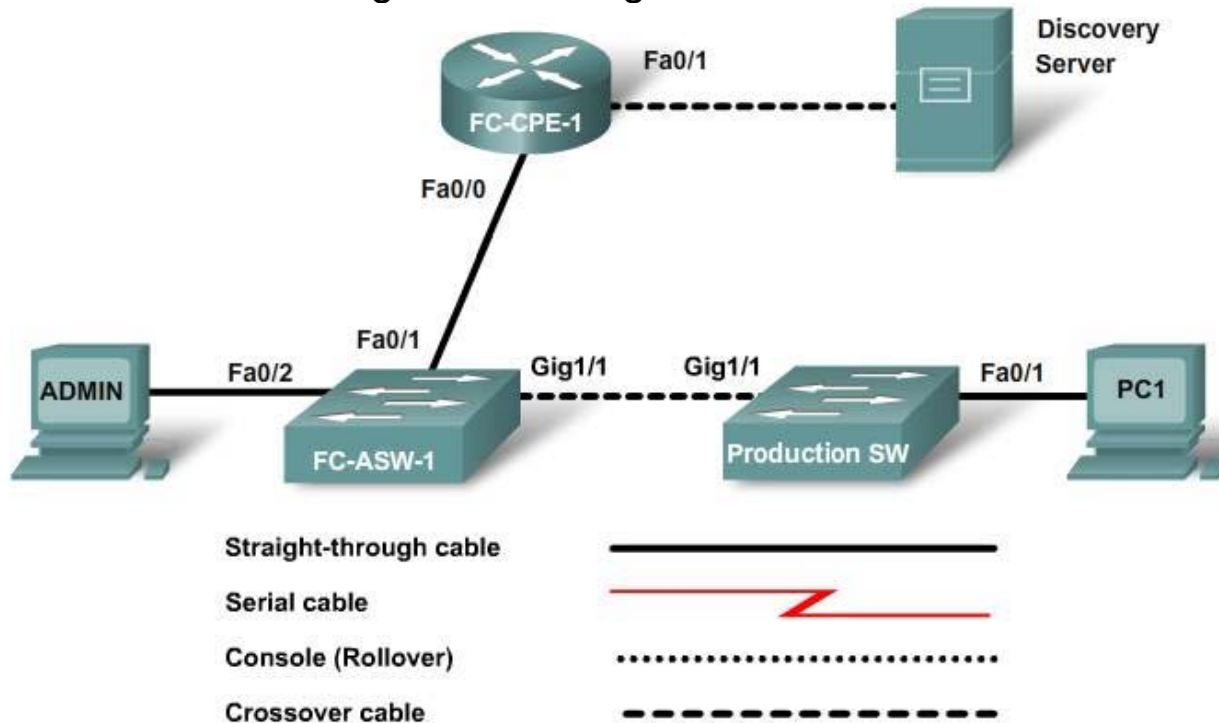


Lab 2.1.6 Observing Traffic Using Cisco Network Assistant



Device Designation	Device Name	IP Address	Subnet mask
Switch 1	FC-ASW-1	VLAN1 10.0.0.4	
Switch 2	ProductionSW	VLAN1 10.0.0.5	
Admin PC	ADMIN	10.0.0.2	255.255.255.0
PC1	PC1	10.0.0.3	255.255.255.0
Router	FC-CPE-1	Fa0/0 10.0.0.1 Fa0/1 172.17.0.1	255.255.255.0 255.255.0.0
Discovery Server	Discovery Server	172.17.1.1	255.255.0.0

Objectives

- Explain what occurs during the Operate Phase of the network lifecycle.
- Use Cisco Network Assistant to monitor the outcomes of the Operate Phase of the network lifecycle.
- Establish the network baseline performance.

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.
- Verify device configuration and network connectivity using ping, traceroute, Telnet, SSH or other utilities.
- Determine the path between two hosts across 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?

What benefits are gained from determining the network baseline performance of a network?

What are the probable outcomes if the network baseline performance is exceeded?

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. In this lab, 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.

After the network is upgraded, the FilmCompany personnel will manage the network to ensure that it is performing to the design specifications outlined in the Prepare and Plan phases.

The Operate and Optimize phases of the network lifecycle are ongoing. They represent the day-to-day operations of a network. The purpose of this lab is to introduce the Cisco Network Assistant as a tool to monitor the current FilmCompany network and establish a network baseline. A network baseline will help the company achieve maximum availability, scalability, security, and manageability.

The lab examines the principle of determining a network baseline. Cisco Network Assistant is required to be installed on one PC used in this lab. Cisco Network Assistant is a network management and monitoring program that is provided for free and can be downloaded from <http://www.cisco.com>. See your instructor if this program is not available in the lab.

Step 1: Establish the network baseline criteria

Network baselining is the measuring and rating of the performance of a network as it transports data in real time.

A baseline is a type of "network snapshot" of the devices and their performance. Creating a baseline enables you to see the current network load and, by maintaining that baseline, identify network issues before they become critical. For example, with all the network routers baselined, including the CPU capability and usage, if gradual increases in CPU usage are noted, the issue can be addressed before network performance deteriorates.

List the devices in the lab network and the characteristics that should be monitored.

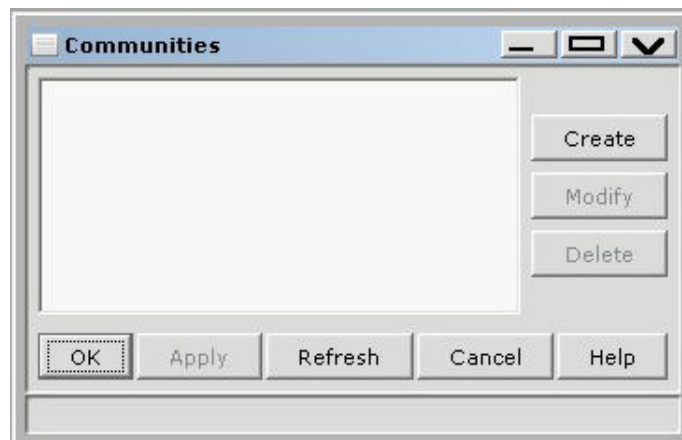
Step 2: Configure network connectivity

NOTE: If the PCs used in this lab are also connected to your Academy LAN or to the Internet, ensure that you record the cable connections and TCP/IP settings so these can be restored at the conclusion of the lab.

- Connect the devices in accordance with the given topology and configuration. Your instructor may substitute Discovery Server with an equivalent server for this lab.
- See your instructor regarding device configuration. If the devices are not configured, then from the Admin PC, establish a terminal session in turn to each switch and the router using HyperTerminal or TeraTerm. Configure these devices in accordance with the configuration details provided.
- Ping between all devices to confirm network connectivity. Troubleshoot and establish connectivity if the pings fail.

Step 3: Set up Cisco Network Assistant

- From the Admin PC, launch the Cisco Network Assistant program.
- Set Cisco Network Assistant to discover the network. One method is to establish a "community" of devices. From the **Application** menu, click **Communities**.



- c. In the Communities window, click **Create**.

Create Community

Name: **Advanced**

Discover devices

Discover: a single device by IP address

IP Address:

Start

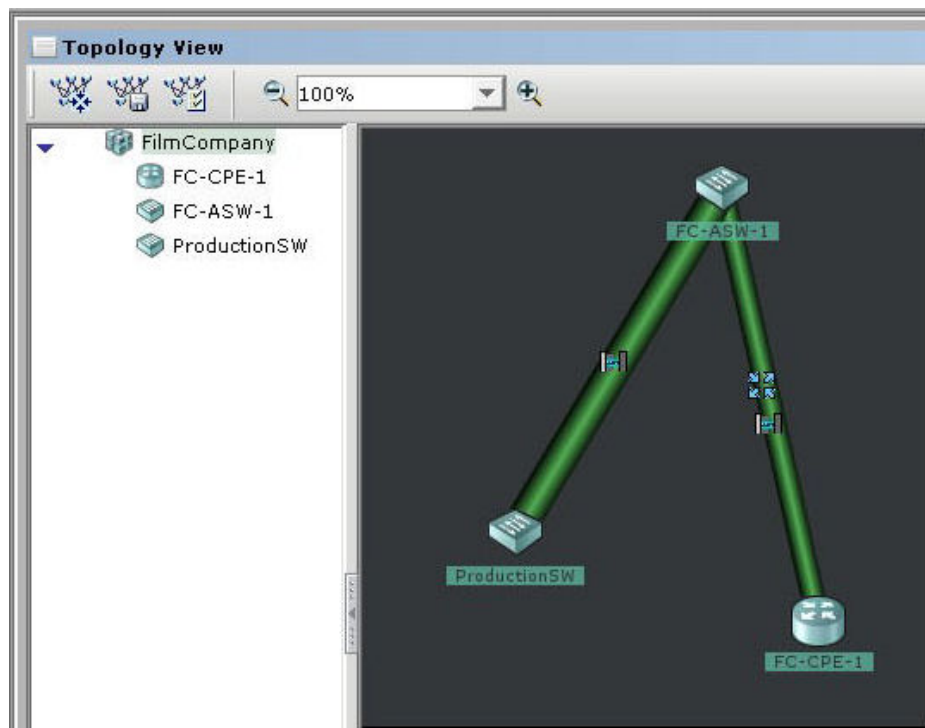
Devices

Member	IP Address	Hostname	Communic...	Device Type	Status
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Total Rows: 0

OK **Cancel** **Help**

- d. In the Name field, enter **FilmCompany**.
- e. List the four options available in the Discover field:
- _____
- _____
- _____
- _____
- f. From the Discover drop-down list, select **Devices in an IP address range**.
- g. At the Start IP address, enter **10.0.0.1**
- h. At the End IP address, enter **10.0.0.5**
- i. Click **Start**. The devices found will be listed.
- j. Click **OK** on the **Create Community** and **Communities** dialog boxes. Note the range of icons now available on the top toolbar.
- k. Click the **Topology** icon on the top toolbar and view the topology that Cisco Network Assistant has created.



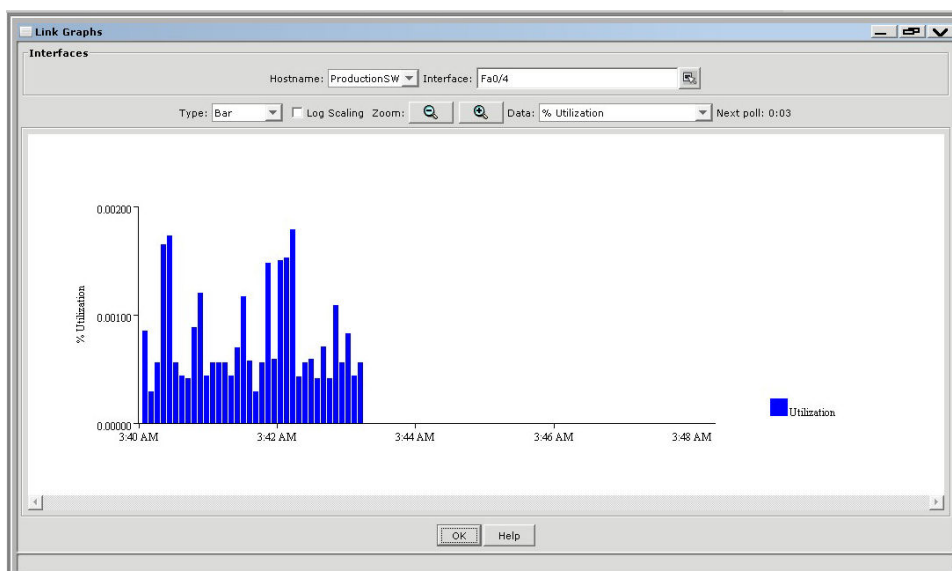
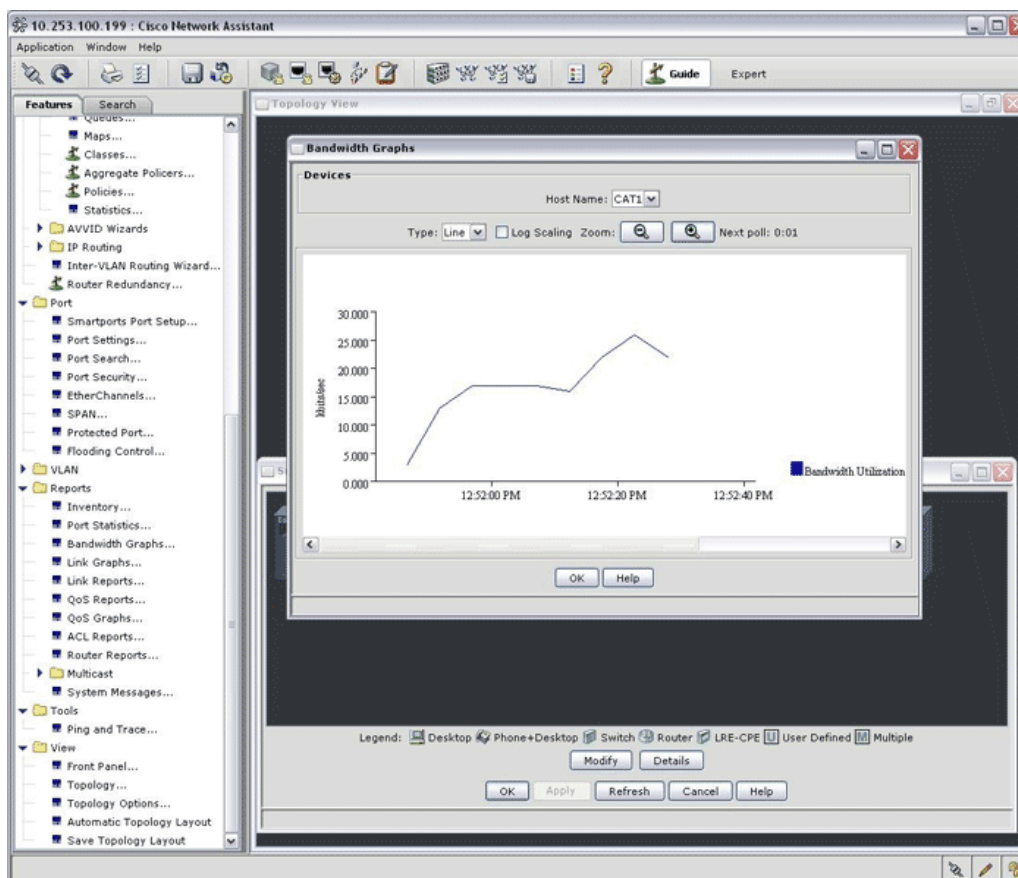
Step 4: Examine Cisco Network Assistant features

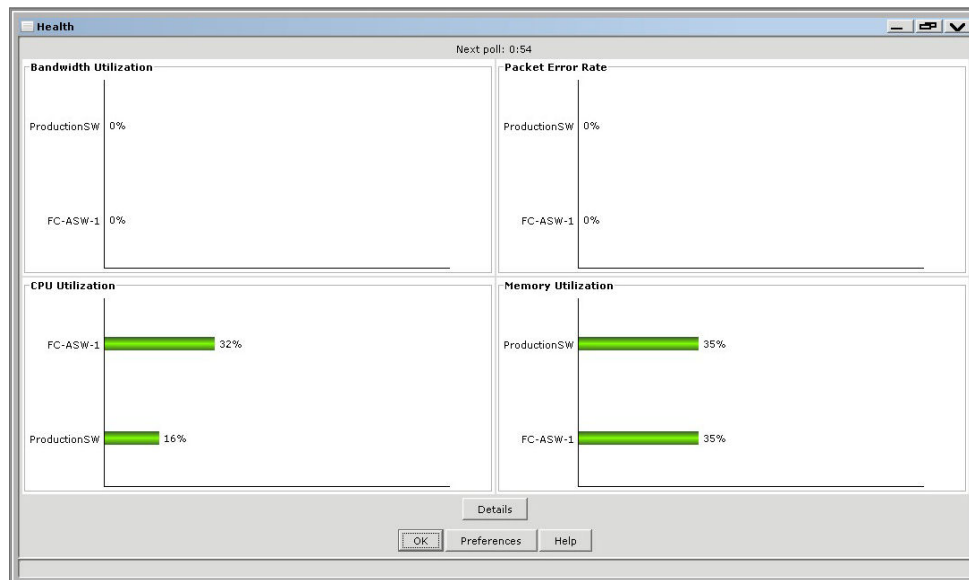
Cisco Network Assistant provides a range of features to display text and graphical information about the network devices. From the topology view window, right click each device's ID and select properties.

What protocol is used to discover and obtain the device information displayed?

Step 5: Examine sample Cisco Network Assistant output

Once devices are added to the community, the links can be monitored from the Monitor tab of Cisco Network Assistant.





Step 6: Clean up

Erase the configurations and reload the routers and switches. Disconnect and store the cabling. For PC hosts that are normally connected to other networks (such as the school LAN or to the Internet), reconnect the appropriate cabling and restore the TCP/IP settings.

Challenge

This lab focused on monitoring individual devices in a network. Consider, research, and discuss the network factors that should be included in network baseline measurements.
