Introduction

1.0.1

Why should I take this module?

Welcome to Single-Area OSPFv2 Concepts!

Welcome to the first module in CCNA Enterprise Networking, Security, and Automation v7.0 (ENSA)!

Imagine that it is time for your family to visit your grandparents. You pack your bags and load them into the car. But this takes a bit longer than you planned for and now you are running late. You pull out your map. There are three different routes. One route is no good because there is a lot of construction on the main road and it is temporarily closed. Another route is very scenic, but it takes an additional hour to get to your destination. The third route is not as pretty but it includes a highway, which is much faster. In fact, it is so much faster that you might actually be on time if you take it.

In networking, packets do not need to take the scenic route. The *fastest available* route is always the best. Open Shortest Path First (OSPF) is designed to find the fastest available path for a packet from source to destination. This module covers the basic concepts of single-area OSPFv2. Let's get started!

1.0.2

What will I learn to do in this module?

Module Title: Single-Area OSPF Concepts

Module Objective: Explain how single-area OSPF operates in both point-to-point and broadcast multiaccess networks.

Topic Title	Topic Objective
OSPF Features and Characteristics	Describe basic OSPF features and characteristics.
OSPF Packets	Describe the OSPF packet types used in single-area OSPF.
OSPF Operation	Explain how single-area OSPF operates.

1.0.3

Video - Download and Install Packet Tracer

This video will show you how to download and install Packet Tracer. You will use Packet Tracer to simulate creating and testing networks on your computer. Packet Tracer is a fun, take-home, flexible software program that will give you the opportunity to use the network representations and theories that you have just learned to build network models and explore relatively complex LANs and WANs.

Students commonly use Packet Tracer to:

- Prepare for a certification exam.
- Practice what they learn in networking courses.
- Sharpen their skills for a job interview.
- Examine the impact of adding new technologies into existing network designs.
- Build their skills for jobs in the Internet of Things.
- Compete in Global Design Challenges (take a look at the 2017 PT 7 Design Challenge on Facebook).

Packet Tracer is an essential learning tool used in many Cisco Networking Academy courses.

To obtain and install your copy of Cisco Packet Tracer follow these steps:

Step 1. Log into your Cisco Networking Academy "I'm Learning" page.
Step 2. Select Resources.
Step 3. Select Download Packet Tracer.
Step 4. Select the version of Packet Tracer you require.
Step 5. Save the file to your computer.
Step 6. Launch the Packet Tracer install program.

Click Play in the video for a detailed walk-through of the Packet Tracer download and installation process.

1.0.4

Video - Getting Started in Cisco Packet Tracer

Packet Tracer is a tool that allows you to simulate real networks. It provides three main menus:

- You can add devices and connect them via cables or wireless.
- You can select, delete, inspect, label, and group components within your network.
- You can manage your network by opening an existing/sample network, saving your current network, and modifying your user profile or preferences.

If you have used any program such as a word processor or spreadsheet, you are already familiar with the File menu commands located in the top menu bar. The Open, Save, Save As, and Exit commands work as they would for any program, but there are two commands that are special to Packet Tracer.

The Open Samples command will display a directory of prebuilt examples of features and configurations of various network and Internet of Things devices included within Packet Tracer.

The Exit and Logout command will remove the registration information for this copy of Packet Tracer and require the next user of this copy of Packet Tracer to do the login procedure again.

Click Play in the video to learn how to use the menus and how to create your first Packet Tracer network.

1.0.5

Packet Tracer - Logical and Physical Mode Exploration

The network model in this Packet Tracer Physical Mode (PTPM) activity incorporates many of the technologies that you can master in Cisco Networking Academy courses. It represents a simplified version of how a small to medium-sized business network might look.

Most of the devices in the Seward branch office and Warrenton data center are already deployed and configured. You have just been hired to review the devices and networks deployed. It is not important that you understand everything you see and do in this activity. Feel free to explore the network on your own. If you wish to proceed more systematically, follow the steps below. Answer the questions to the best of your ability.

Logical and Physical Mode Exploration

Logical and Physical Mode Exploration