

COURSE OUTLINE
CSCO-670
Building Cisco Multilayer Switched Networks
3 Credits

HOWARD COMMUNITY COLLEGE

Description

The purpose of Building Cisco Multilayer Switched Networks (BCMSN) is to teach students how to build campus networks using multilayer switching technologies over high speed Ethernet. This course presents routing and switching concepts and implementations. This course addresses how these technologies work together. This course prepares students to pass one of the CCNP certification, exam number 640-504.

Prerequisite: CSCO-272 or CCNA certification. (2 hours lecture and 3 hours lab).

Overall Course Objectives

Upon completion of this course, the student will be able to:

1. Deploy a campus design that includes multilayer switching over Fast Ethernet, deploy the required Cisco products and services.
2. Implement the necessary services at each layer of the network to all users to obtain membership to multicast groups in a working multilayer switched network.
3. Implement a necessary admission policy at each layer of the network topology for a given working multilayer switched network.
4. Rectify incorrectly working multilayer switched network through the use of Cisco System, Inc., device external management tools.
5. Describes how VLANs simplify moving a user from one location to another.
6. Describe how to control flooding of unneeded protocols.
7. Explain why some form of loop-prevention protocol is required to prevent broadcast and bridge table corruption.
8. Describe the advantage of trunks and compare various trunk connection methods for interconnecting Catalysts, routers, and servers.
9. Discuss how routing, and therefore Layer 3 switching, is the key to building large-scale networks that are stable and easy to manage.
10. Implement Cisco's Hot Standby Router Protocol for both resiliency and performance.
11. Explain how VTP pruning works and how to configure it.
12. Discuss CGMP and IGMP multicasting protocols and how they are implemented.
13. List probable areas where switched network problems can occur.

Major Topics

The BCMSN course is divided into eleven chapters:

- I. Overview of a Campus Network
- II. Building a Campus Network
- III. Defining Common Workgroups IV
- IV. Managing Redundant Links
- V. Understanding Spanning Tree
- VI. Inter VLAN Routing
- VII. Trunking Technologies and Applications
- VIII. VLAN Trunking Protocol
- IX. Layer 3 Switching
- X. Managing Network Traffic
- XI. Configuring HSRP for a Fault-Tolerant Routing
- XII. Multicast Overview
- XIII. Configuring IP Multicast
- XIV. Controlling Access to the Campus Network

Cisco Networking Academy Curriculum at HCC

When a student takes a Cisco course at HCC, that student usually receives more instruction time than they would receive in other formats. Therefore, while taking Cisco Networking courses at HCC, the student may expect not only instruction from Cisco materials but additional academic and practical exercises and course work to better equip the student not only for the corresponding certification exam but for eventual utilization in their professional endeavors.

Course Requirements

Grading/exams: Grading procedures will be determined by the individual faculty member but will be calculated on the basis of tests, lab reports, quizzes and final exam. This course includes a comprehensive final exam and lab practical.

Other Course Information

This course is a course in the Computer Support Technology program and Telecommunications Technology program.

This course is also intended for students who wish to become a Cisco Certified Network Professional (CCNP).