



BAKER COLLEGE
STUDENT LEARNING OUTCOMES

CSC 4410 CCNP Troubleshooting
3 Semester Hours

Student Learning Outcomes & Enabling Objectives

1. Examine troubleshooting methods.
 - a. Discuss troubleshooting principles.
 - b. Define common troubleshooting approaches.
 - c. Explain troubleshooting example using six different approaches.
2. Examine structured troubleshooting.
 - a. Explain meaning of structured troubleshooting method and procedure.
 - b. Identify the sub-processes of structured troubleshooting, the actions taken within each sub-process, and how and when you move from one to another progressively.
 - c. Describe the troubleshooting example utilizing the structured troubleshooting method and procedures.
3. Apply network maintenance tasks and best practices.
 - a. Explain structured network maintenance.
 - b. Discuss network maintenance processes and procedures.
 - c. Identify network maintenance services and tools.
 - d. Apply integrating troubleshooting into the network maintenance process.
4. Apply basic switching and routing process and effective IOS troubleshooting commands.
 - a. Discuss basic layer 2 switching process.
 - b. Explain basic layer 3 routing process.
 - c. Use selective information gathering using IOS show commands, debug commands, ping, and telnet.
5. Use specialized maintenance and troubleshooting tools.
 - a. Identify categories of troubleshooting tools.
 - b. Discuss traffic-sapturing features and tools.
 - c. Define information gathering with SNMP.
 - d. Describe Information gathering with NetFlow.
 - e. Apply network event notification with EEM.
6. Perform troubleshooting for a networking scenario (Case Study: SECHNIK Networking).
 - a. Use troubleshooting to solve a given connectivity problem.
 - b. Explain NAT troubleshooting NAT.
 - c. Discuss troubleshooting IPv6 address assignment on clients.

7. Perform troubleshooting for relationship and routing issues (Case Study: TINC Garbage Disposal).
 - a. Apply BGP relationship troubleshooting.
 - b. Discuss troubleshooting OSPF Adjacency
 - c. Describe troubleshooting Erroneous routing information
 - d. Identify multiple masters within a VRRP
 8. Perform troubleshooting for adjacency and access issues (Case Study: PILE Forensic Accounting).
 - a. Apply troubleshooting EIGRP Adjacency tasks.
 - b. Discuss troubleshooting BGP route selection.
 - c. Explain unauthorized telnet access.
 9. Perform troubleshooting related to tracking scenarios (Case Study: Bank of POLONA).
 - a. Use troubleshooting VRRP with Interface Tracking.
 - b. Discuss FHRP tracking options.
 - c. Identify the issues while troubleshooting IP SLA test not starting.
 10. Perform troubleshooting related to routing and authentication issues (Case Study: RADULKO Transport).
 - a. Explain troubleshooting policy-based routing.
 - b. Describe troubleshooting EIGRP for IPv6.
 - c. Discuss troubleshooting the OSPFv3 address families feature.
 - d. Use troubleshooting OSPFv3 authentication.
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Big Ideas and Essential Questions

Big Ideas

- Verify and Define the Problem
- Gathering Information
- Analyzing Information and Proposing a Hypothesis
- Testing the Hypothesis and Solving the Problem

Essential Questions

1. What troubleshooting frameworks are available?
 2. How and when do I apply a specific framework?
 3. What commands do I use to gather information?
 4. How do we analyze information?
 5. How do we create a hypothesis?
 6. How do we test the hypothesis?
 7. How do we validate the solution?
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These SLOs are approved for experiential credit.

Effective: Fall 2017