



Certificate of Course Completion

CCNA 3—Switching Basics and Intermediate Routing

During the Cisco® Networking Academy® CCNA 3 course administered by the undersigned instructor, the student was able to proficiently:

- Compute and use Variable Length Subnet Masking (VLSM) techniques to design and implement effective and efficient IP addressing
- Describe, configure, verify, analyze, and troubleshoot the RIP v2 distance vector routing protocol
- Describe the concepts and techniques of link-state routing, and compare and contrast with distance vector routing
- Describe, configure, verify, analyze, and troubleshoot the OSPF link-state routing protocol in a single area mode of operation
- Describe, configure, verify, analyze, and troubleshoot the Extended IGRP routing protocol
- Demonstrate an ability to troubleshoot routing protocol problems, specifically using and interpreting the **show** and **debug** commands
- Describe the operation and technology of the IEEE 802.3 Ethernet variants
- Describe and compare the concepts and techniques used within Ethernet switched LANs
- Describe and compare the concepts and techniques used by Ethernet LAN switches
- Design a simple LAN using layered techniques
- Describe the three-layer process as used by Cisco for internetwork design purposes
- Describe, configure, and administer a Cisco Catalyst® LAN switch
- Compare and contrast various forms of redundancy built into networks, and explain the advantages and disadvantages of redundancy incorporation
- Describe the operation of the spanning-tree algorithm, and describe the methods by which it is implemented and used in a switched network
- Describe and compare the concepts, advantages, and disadvantages of virtual LANs
- Describe, configure, and administer inter-switch VLANs on Cisco switches
- Troubleshoot VLANs
- Describe, configure, and administer VTP on Cisco switches
- Describe, configure, and administer routing between VLANs on Cisco switches

TOHIR ZUHDI

Student's Name

9 Februari 2016

Date

Bambang Eka Purnama

Instructor

Universitas Surakarta

Organization

Surakarta

CISCO SYSTEMS



NETWORKING

Instructor's Signature

INFORMATIK ENGINEERING
UNIVERSITY SURAKARTA