BLACKBIRD FOR TRAINING

Switch Configuration and VLANs

25 – 29 October 2027
Amsterdam (Netherlands)



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Ref: 3255320_192638 **Date:** 25 – 29 October 2027 **Location:** Amsterdam (Netherlands) **Fees:** 5900 GBP

Introduction

Effective switch configuration and network segmentation are vital for achieving high performance, scalability, and security in enterprise networks.

This training program equips IT professionals, network engineers, and administrators with the practical knowledge and technical skills required to design, configure, and manage network switches and VLANs effectively.

Through hands-on exercises and real-world case studies, participants will learn how to build structured, efficient, and secure network infrastructures that enhance communication and ensure business continuity.

The course combines theoretical understanding with applied practice, enabling participants to directly implement learned techniques within their organizational environments.

Course Objectives

By the end of this course, participants will be able to:

- Understand local area network LAN architecture and switching fundamentals.
- Configure switches, assign IP addresses, and manage interface connectivity.
- Design and implement VLANs, trunk links, and inter-VLAN routing.
- Apply port security, redundancy, and loop prevention protocols.
- Monitor network traffic and troubleshoot segmentation and connectivity issues.
- Conduct hands-on labs on switch configuration, VLAN setup, and network optimization.

Course Outlines

Day 1: Switch Fundamentals and Network Architecture

- Overview of LAN design and switch hierarchy access, distribution, and core layers.
- Understanding network topologies: star, mesh, and hybrid.
- Basics of Ethernet and data forwarding concepts.
- The role of MAC addresses and collision domains in switching.
- Introduction to VLANs: purpose, structure, and benefits of segmentation.
- Practical lab: exploring switch interfaces and initial setup.



Day 2: Basic Switch Configuration

- Configuring switch interfaces and assigning IP addresses.
- Setting VLAN memberships and defining port modes.
- Understanding VLAN trunking and tagging methods.
- Configuring access and trunk ports for inter-switch communication.
- Lab exercise: configuring basic VLAN assignments and connectivity.
- Troubleshooting connectivity and port configuration issues.

Day 3: VLANs and Advanced Configuration

- Designing VLAN segmentation for security and performance.
- Implementing inter-VLAN routing using Layer 3 switches.
- Configuring redundancy and high availability protocols STP, RSTP.
- Preventing network loops and optimizing topology performance.
- Lab exercise: create multiple VLANs and enable inter-VLAN communication.
- Reviewing performance metrics and analyzing network flow.

Day 4: Switch Security and Optimization

- Implementing port security and MAC address filtering.
- Applying Quality of Service QoS for traffic prioritization.
- Identifying and resolving VLAN and connectivity issues.
- Monitoring switch operations using network management tools.
- Lab exercise: apply security measures and test network stability.
- Troubleshooting real-world configuration and access problems.

Day 5: Integrated Switch Management and Practical Labs

- Best practices for scalable and resilient network design.
- Implementing network optimization, redundancy, and monitoring strategies.
- Comprehensive lab: build and configure a secure, multi-VLAN network.
- Testing and validating network segmentation and performance.
- Review and discussion of best practices in enterprise switch management.
- Final assessment and Q&A session.



Why Attend This Course? Wins & Losses!

- Master essential skills in switch configuration and VLAN management.
- Gain hands-on experience through practical labs and real-world simulations.
- Strengthen your professional credibility in enterprise network administration.
- Enhance network performance and operational reliability.
- Improve overall network security with advanced segmentation techniques.
- Increase your organization's network scalability and stability.
- Develop troubleshooting and analytical skills for complex environments.
- Build a strong foundation for advanced networking certifications.

Conclusion

The Switch Configuration and VLANs course equips IT professionals with the tools and practical knowledge to design, implement, and manage secure, efficient, and scalable networks.Combining structured theory with extensive hands-on training, the program empowers participants to enhance performance, strengthen security, and resolve real-world network challenges with confidence.

This course serves as a cornerstone for professionals aiming to build a strong foundation in network management and advance their expertise in modern infrastructure operations.

