Cisco switches, multi-tier networks

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SII-183 **4 Days (28 Hours)**

Description

At the end of this course you will be able to implement a level 2 switched network and ensure its reliability through redundancy. You will also see how to implement the QoS necessary for VoIP processing, as well as how to secure the ports of a switch.

Who is this training for ?

For whom

Network technicians and administrators.

Prerequisites

Aucune

Training objectives

- Deploy Enterprise Network Infrastructure with Cisco Multi-Tier Switches Configure distribution and access switches Securing switch ports Implement redundant Ethernet switching Implement QoS

Training program

Les réseaux de campus

- Evolution of LANs.
- Bridging, routing and switching.
- Advantages and disadvantages of the different possibilities.
- Choose a suitable solution.
- Organization of a network of switches.
- Topology rules.

Construction d'un réseau de campus

- The elements of the physical layer.
- From 10MB Ethernet to Gigabit Ethernet.
- Full Duplex Ethernet.
- Principles and protocols.
- Virtual LAN: VLAN.
- VLAN design criteria (ports, addresses).
- Extended virtual LANs.
- VLAN Truncking Protocol (VTP).
- Mobile access assignment.
- Dynamic Trunk Protocol (DTP).
- Cisco Discovery Protocol (CDP).
- Switch-to-switch link.
- Inter Switch Link (Cisco ISL) or 802.
- 1.
- q (IEEE standard).
- Link grouping: Ether Channel.
- Practical work Configuration of a switched network.
- Implementation of interconnected virtual LANs.
- VTP configuration.

Gestion des liaisons redondantes

- Spanning Tree Protocol (STP).
- Principles, algorithm.
- Configuring a redundant topology.
- Implementation precautions.
- Impact on convergence.
- PVST+ (Per VLAN Spanning Tree), evolution of Spanning Tree.
- Inter-VLAN routing.
- Define working groups.
- Practical work Redundant Gigabit interconnections of switches.
- Implementation of STP.
- Configuration of priorities, management of emergency.
- Incident handling based on settings.

Gestion du trafic

- VLAN-to-VLAN traffic.
- Integration via a backbone.
- IP routing performance with multi-level switching.
- Storm management and associated actions.
- Configuration of quality of service for data traffic and VoIP traffic.
- 802 service classes.
- 1P and their DSCP mapping.
- Flow marking, prioritization and resource reservation.
- VoIP VLAN.
- MPLS (Multi Protocol Label Switching) contributions.
- IP Switches.
- Practical work Implementation of different traffic.
- Performance comparison.

Fiabilisation

- The HSRP (Hot Standby Routing Protocol).
- Implementation of a reliable solution.
- Validation of failovers.
- Practical work Configuration of a switch control cluster with transparent fallback by HSRP.
- Validation of failovers.
- Configuration of priorities and preemption.

Contrôle d'accès au réseau

- Filtering mechanisms.
- Traffic filtering.
- Standard lists, extended.
- By address, port, applications, flows.
- Secure ports and associated actions.
- Practical work Implementation of access protection by criteria.
- Filtering on physical access.
- Traffic filtering.