

## **SWITCH 642-813(6 DAYS): (includes TSHOOT 642-832)**

The SWITCH **642-813** exam will certify that the successful candidate has important knowledge and skills necessary to plan, configure and verify the implementation of complex enterprise switching solutions using Cisco's Campus Enterprise Architecture. The SWITCH exam also covers secure integration of VLANs, WLANs, voice and video into campus networks. The TSHOOT **642-832** exam will certify that the successful candidate has important knowledge and skills necessary to (1) plan and perform regular maintenance on complex enterprise routed and switched networks and (2) use technology-based practices and a systematic ITIL-compliant approach to perform network troubleshooting.

### **Conduct the operation of Spanning Tree protocols in a hierarchical network**

- Explain the functions and operations of the Spanning Tree protocols (i.e., RSTP, PVRST, MISTP).
- Configure RSTP (PVRST) and MISTP.
- Describe and configure STP security mechanisms (i.e., BPDU Guard, BPDU Filtering, Root Guard).
- Configure and Verify UDLD and Loop Guard.
- Verify or troubleshoot Spanning Tree protocol operations.
- Configure and verify link aggregation using PAgP or LACP.
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### **Implement Inter-VLAN routing**

- Explain and configure Inter-VLAN routing (i.e., SVI and routed ports).
- Explain and enable CEF operation.
- Verify or troubleshoot InterVLAN routing configurations.

### **Implement gateway redundancy technologies**

- Explain the functions and operations of gateway redundancy protocols (i.e., HSRP, VRRP, and GLBP).
- Configure HSRP, VRRP, and GLBP.
- Verify High Availability configurations.

### **Describe and configure wireless client access**

- Describe the components and operations of WLAN topologies (i.e., AP and Bridge).
- Describe the features of Client Devices, Network Unification, and Mobility Platforms (i.e., CCX, LWAPP).
- Configure a wireless client (i.e., ADU).

### **Describe and configure security features in a switched network**

- Describe common Layer 2 network attacks (e.g., MAC Flooding, Rogue Devices, VLAN Hopping, DHCP Spoofing, etc.)
- Explain and configure Port Security, 802.1x, VACLs, Private VLANs, DHCP Snooping, and DAI.
- Verify Catalyst switch (IOS-based) security configurations (i.e., Port Security, 802.1x, VACLs, Private VLANs, DHCP Snooping, and DAI).

## **Configure support for voice**

- Describe the characteristics of voice in the campus network.
- Describe the functions of Voice VLANs and trust boundaries.
- Configure and verify basic IP Phone support (i.e. Voice VLAN, Trust and CoS options, AutoQoS for voice)
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The following topics are covered in our SWITCH Labs

## **VLANs and VTP**

- Configure VLANs, Static and Dynamic Vlan
- Configuring VTP v1 and VTP v2 Server, Transparent and Client
- Use the show and debug commands to fault find VLAN and VTP configurations.

## **Spanning Tree protocols in a hierarchical network**

- Configure STP
- Configure RSTP (PVRST)
- Configure MISTP
- Configure STP security mechanisms BPDU Guard
- Configure STP BPDU Filtering
- Configure STP Root Guard
- Configure and fault find UDLD and Loop Guard.
- Use the show and debug commands Spanning Tree protocol operations.
- Configure link aggregation using PAgP and LACP
- Configure Load balancing using Etherchannel
- Use the show and debug commands to fault find Etherchannel

## **Configure Inter-VLAN routing**

- Configure Inter-VLAN routing (i.e., SVI and routed ports).
- Configure CEF operation.
- Use the show and debug commands to fault find InterVLAN routing configurations.

## **Implement gateway redundancy technologies**

- Configure the operation of gateway redundancy protocols HSRP
- Use the show and debug commands to fault find HSRP

## **Configure wireless client access**

- Configure Wireless Access Points
- Configure Wireless WEP and WPA security
- Configure a wireless clients

## **Configure security features in a switched network**

- Configure and launch MAC Flooding.
- Set up Rogue Devices, Rogue switches

- Configure DHCP Spoofing and test
- Configure Port Security and test
- Configure and use Err-disable features
- Configure and fault find Broadcast and Multicast suppression
- Configure 802.1x port based security using Windows RADIUS server
- VACLs, Private VLANs, DHCP Snooping, and DAI.

### **Configure support for voice**

- Configure IP Phone support Voice VLAN
- Configure LAN QoS AutoQoS for voice
- Configure LAN QoS CoS options

### **Configure support for Multicasting**

Understand and configure IGMP

Configure PIM Dense mode

Configure PIM Sparse-Mode

Configure PIM Sparse-Dense Mode

Understand and Configure Rendezvous Point

Understand and Configure PIM in NBMA mode

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And above all you will get more hands on than you thought possible, lots of break / fix scenarios, once you have completed the labs exercises faults will be introduced into the lab for you to fix, we are the only training school to do this, why, because as engineers we will show you real-life faults that we see in the real world and then you have to fix them