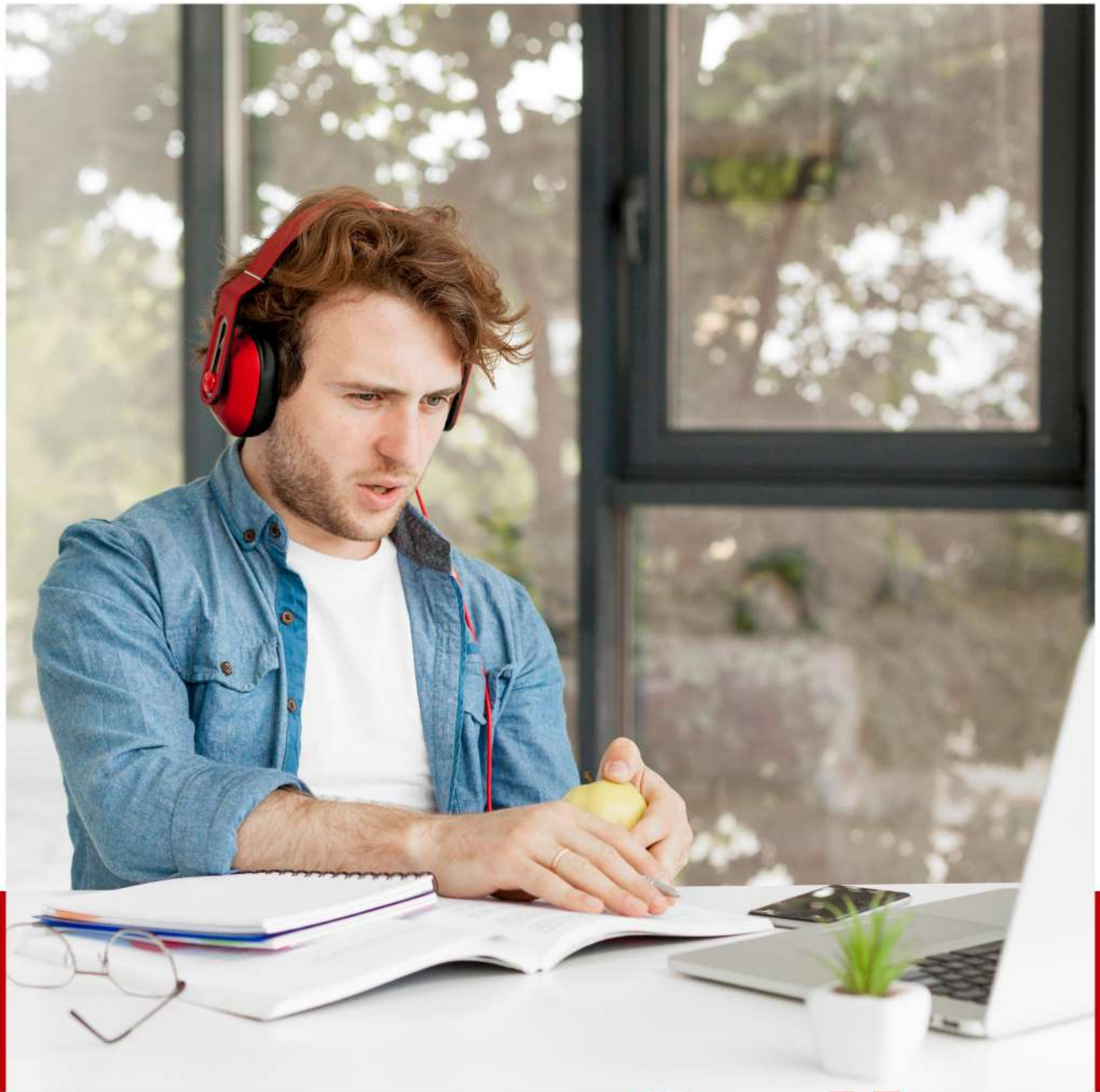




Online Course

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Course Modules

1. Network Fundamentals

- o What is a network?
- o What is a Protocol?
- o OSI Reference Model
- o Encapsulation, frames, packets, segments
- o Layer 2 to Layer 7 headers
- o Media, cabling, Ethernet/wifi headers
- o Binary/Hex/Decimal theory and conversion
- o TCP/IP Stack (IP addressing & Transport Protocols TCP/UDP)
- o Types of traffic: Unicast, Broadcast, Multicast



2. TCP/IP Stack

- Overview
- Ethernet frames
- IPv4 Header
- TCP Header – Three-way Handshake
- TCP Header – Sequence Numbers
- TCP Header – Port Numbers
- TCP Header
- UDP Header

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ArubaOS-CX Switching Fundamentals

3. Basic Networking with Aruba Solutions

- o Networking devices: Switches, Routers, Multilayer Switches, etc.,
- o 2-Tier vs 3-Tier hierarchy
- o Introduction to AOS-CX and feature set
- o Port numbering
- o Accessing Aruba OS-CX CLI
- o Prompt modes/levels and navigation
- o Context sensitive help
- o Show logs, configuration, interfaces, transceivers, flash, version
- o Hostname/interface name, enabling interfaces
- o Link Layer Discovery Protocol
- o ICMP and reachability testing tools: Ping and Traceroute
- o PoE (standards one slide and what we support and one \



4. VLANs

- o Broadcast/collision domains
- o VLAN benefits
- o VLAN creation
- o DHCP server configuration in switches (optional)
- o 802.1Q tagging
- o Switchports vs. Routed ports
- o MAC address table
- o ARP table
- o Packet Delivery part 1



ArubaOS-CX Switching Fundamentals

5.Spanning Tree Protocol

- o Redundant network
- o L2 loops
- o 802.1D
- o Common Spanning Tree
- o 802.1s
- o 802.1w overview
- o 802.1w load balancing
- o 802.1w region configuration



6.Link Aggregation

- o Static Aggregation
- o LACP
- o Load Balancing

7.IP Routing - Part 1

- o Default Gateway
- o DHCP IP Helper Address
- o IP Routing Service
- o Inter-VLAN routing
- o Packet Delivery Part 2
- o Need for layer 3 redundancy
- o Introduction to VRF



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8.VRRP

- o VRRP overview
- o VRRP basic operation
- o VRRP failover and preempt
- o VRRP and MSTP coordination



9.IP Routing - Part 2

- o Subnetting
- o CIDR
- o Static routes
- o Administrative Distance
- o Floating routes
- o Scalability issues

10. IP Routing - Part 3

- o IGP vs EGP
- o Distance Vector vs Link State
- o OSPF Router-ID and Hello Messages
- o Passive interfaces
- o States
- o DR and BDR
- o LSDB: LSA 1 and 2
- o Path selection and convergence
- o Using cost to manipulate routes



11. Stacking

- o Control Plane, Management Plane, and Data Plane
- o Introduction to Stacking technologies
- o Stacking Benefits
- o Centralized control and management plane
- o Distributed Data Plane and Distributed Link Aggregation
- o VSF
- o VSF requirements
- o VSF Link and member roles
- o VSF member IDs and port numbers
- o VSF Configuration
- o VSF Provisioning use cases
- o Tracing Layer 2 traffic: Unicast
- o Tracing Layer 2 traffic: Broadcast, Multicast, and Unknown Unicast
- o VSF Failover and OSFP Graceful-Restart
- o VSF Link failure without MAD
- o MAD
- o VSX Introduction



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12. Secure Management and Maintenance

- o OOBM port
- o Management VRF
- o Secure Management Protocols: AAA, SSH, HTTPS, RBAC
- o Radius-based management auth (VSA)
- o SNMP
- o Web interface
- o Configuration file management (Backup, restore, checkpoint, etc)
- o Operating System image management (backup and restore)
- o Factory default/password recovery

13. AOS-CX Management tools

- o Intro to NetEdit
- o NetEdit installation
- o Basic monitoring with NetEdit
- o AOS-CX Mobile App

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