

**RUCKUS Certified Networking
Implementer**



**Online
Course**

ZETLAN TECHNOLOGIES
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Course Modules

1. RF concepts and relations to 802.11 standard

- 802.11 channelization and frequency bands (a/b/g/n/ac/ax/BE)
- Antenna patterns and characteristics
- Fresnel Zone
- Mesh vs. P2P bridge
- OFDM vs. OFDMA

2. Wi-Fi authentication methods

- Wi-Fi authentication methods and association steps
- Certificate signing process, certificate management/PKI
- Hotspot 2.0, OSU, 802.11u, ANQP, WISPr, WebAuth

3. Client roaming

- Client roaming across APs (high-level concept)



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4. RUCKUS proprietary technologies

- RUCKUS proprietary Wi-Fi technologies
- RUCKUS implementation of Bonjour Gateway and Fencing
- Auto-cell sizing
- RUCKUS approach to Zero Touch: SWIPE, deploy APs, Registrar, ..

5. RUCKUS controllers & access points (AP)

- Appropriate choice of controller/platform sizing: SmartZone, etc.,
- SmartZone options
- ICX switch management from controller
- API capabilities
- Data planes: SmartZone-144D, SmartZone-100D, vDP
- AP software types
- Clustering, geo-redundancy, and failover
- IoT basics, integration into APs, and related hardware & software



6. Positioning additional RUCKUS services and products

- Positioning of additional services: CloudPath, RUCKUS Analytics..



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7. RUCKUS support tools

- Licensing and registration for RUCKUS Products (including R1)
- Support site documentation, software, firmware downloads

8. Design requirements gathering

- Process, methods, and tools used in site survey at basic levels
- Wireless planning add parameters
- Processes for gathering needs and system requirements
- Use cases for tunneling v. local breakout
- Network segmentation — tunneling, Edge (premise cloud), etc.,

9. Traffic and load planning

- Traffic management and security strategies
- Load and band balancing



10. Product selection for solution

- Appropriate products for design/verticals
- Requirements for additional RUCKUS services
- Appropriate hypervisor/host/resource sizing





11. Security planning & access control

- Security planning
- Role-based access control (RBAC)
- Fundamentals of firewall
- Basics of PKI protocols and sequence

12. WLAN management planning

- AP discovery methods
- PoE budget and priorities and link speed
- Zone, domain, group planning, and templates
- Cluster, redundancy, failover planning
- VLAN tag scheme System setup & config fr SmartZone & RUCKUS
- Initial wireless network design
- Basic controller setup
- Licensing implementatn (controllers, APs, Google Maps, clusters)
- WLAN and AP groups, zones, and domains
- Licensing (APs, Switches, MSP, essentials vs professional)
- AP groups and venues



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13. Access point (AP) configuration

- Deployment best practices
- Preprovisioning
- Discovery methods
- Attributes
- Migration and reimaging
- CLI set-up, configuration, and management

14. Advanced WLAN Configuration

- Bonjour Gateway and fencing
- Additional RUCKUS services (IoT, AI, CloudPath, etc.)
- Traffic-management policies
- VLAN pooling and dynamic VLANs
- Floor plan/maps
- Mesh, SmartMesh, Zero Touch Mesh



15. Security & access control

- WLAN Security, authentication, and encryption (MAC)
- Role-based access control (RBAC)
- Guest access configuration: WISPr, walled garden, captive portal, ..



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16. Wi-Fi Solution Enhancement through Tuning & Optimization

- Wi-Fi performance optimization
- Load and band balancing
- Airtime fairness, decongestion
- 802.11k, 802.11r, 802.11v, sticky client
- Client Admission Control (CAC)
- Enabling & config OFDM-Only, BSS Minrate, & Tx Mangmnt rates
- Channel selection and optimization: DFS, pros and cons of DFS,..
- Automatic v. manual power optimization



17. Wi-Fi Solution Troubleshooting & Repair

- Data gathering, analysis and troubleshooting
- Client connectivity troubleshooting tools and processes
- AP to controller troubleshooting
- Packet/frame capture
- 3rd party and internal communication: APIs, NBI, AAA logs, etc.,



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18. RUCKUS Wi-Fi Solution Management

- Solution management functions (SmartZone and RUCKUS One)
- Upgrade path and process management
- Administrators and administrative role management
- Events and alarms (SNMP, Syslog)
- Administrative action monitoring and audit logging
- Backup and restoration on SmartZone
- Report creation
- Health dashboards and threshold settings
- Rogue APs and locate on map (SSID spoofing, MAC spoofing)



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