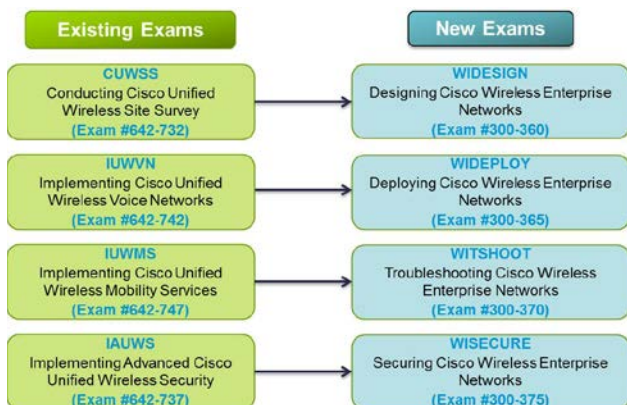


Introduction

The CCNP Wireless certification has been completely restructured and new content has been redistributed across each of the training courses and exams. The course names, exam numbers and acronyms have all been updated. The following diagram outlines those changes and identifies how the existing exams align to the new exams.



This document will provide a summary of the updates that have been made to the new versions of each exam. Each domain lists the technology topics. The topics are general guidelines for the content likely to be included in the exam. However, other related topics may also appear on any specific delivery of the exams.

The domains better reflect the job roles and tasks required in current jobs typically held by CCNP Wireless Certified individuals.

Wireless Design Exam Summary

The 642-732 CUWSS exam will be replaced by 300-360 WIDESIGN exam. The overall number of domains has changed from five to seven. The current CUWSS course is focused on performing a site survey and not on designing a wireless network. WIDESIGN is a completely new course and was created based upon products AireOS v.8.0, IOS-XE v.3.6, ISE v.1.3, and Prime Infrastructure v.2.2.

WIDESIGN course also includes the use of the Ekahau site survey tool, and the Metageek Chanalyzer. The Ekahau software is used for verifying the RF coverage and predictive network design. The Metageek Chanalyzer is used for performing a layer 1 survey.

Domain Comparison

640-732 CUWSS	300-360 WIDESIGN
1.0 Prepare for the Site Survey	1.0 Obtaining Customer Requirements as Related to the WLAN Installation
2.0 Plan for the Site Survey	2.0 Determine Facility Type and Constraints Related to WLAN Deployments
3.0 Conduct the Site Survey	3.0 WLAN Predictive Design
4.0 Design the RF Network	4.0 Pre-Deployment Site Survey
5.0 Conduct Post-Deployment Assessment	5.0 Post-Deployment Site Survey
	6.0 Design the Infrastructure of the Wireless Network
	7.0 Describe and Design Wireless Architecture for Real Time Applications

Included within each exam domain is a more in-depth list of topics. They are as follows:

1.0 Obtaining Customer Requirements as Related to the WLAN Installation

- Identify Business and RF application needs
- Identify client density, capabilities and their impact on the wireless network
- Identify the challenges of setting up a Wireless network by various vertical markets
- Describe required site survey documentation
- Identify coverage area requirements

2.0 Determine Facility Type and Constraints Related to WLAN Deployments

- Describe Impact of Regulatory domains
- Identify deployment location safety considerations
- Identify the impact of customer aesthetic limitations on the installation
- Assess the existing wired and wireless infrastructure
- Identify impact of material attenuation

3.0 WLAN Predictive Design

- Demonstrate the impact of frequency planning in a high density environment
- Use PI planning tools to make network plan
- Use Ekahau planning tools to make network plan

4.0 Pre-Deployment Site Survey

- Identify the appropriate site survey equipment and access requirements based on environmental needs
- Complete the layer 2 site survey for indoor
- Complete the layer 2 site survey for outdoor mesh environments (2 hop environments)
- Complete layer 1 survey (Cisco CleanAir, Metageek Chanalyzer)

5.0 Post-Deployment Site Survey

- Verify RF coverage
- Verify network applications and performance
- Reconcile any deployment issues
- Assemble and deliver installation report to customer

6.0 Designing the Infrastructure of the Wireless Network

- Determine physical infrastructure requirements
- Determine logical infrastructure requirements
- Describe IPv6 optimization on the WLC

7.0 Describing and Designing Wireless Architectures for Real Time Applications

- Describe the relationship between real time applications & the wireless networks
- Describe voice and video as they apply to the wireless network
- Describe real time applications (other than voice and video) as they apply to the wireless network
- Design wireless roaming parameters for supporting real time applications
- Design wireless parameters for supporting real time applications

Wireless Deploy Exam Summary

The 642-742 IUWVN exam will be replaced by 300-365 WIDEPLOY exam. The overall number of domains has changed from five to eight. WIDEPLOY has significant update in terms of content coverage and is based upon products AireOS v.8.0, IOS-XE v.3.6, ISE v.1.3, and Prime Infrastructure v.2.2.

Apart from several new modules that are added to the course, significant more lab time has been added. Multiple additional Discovery Labs are introduced to the course, allowing the instructor to demonstrate new features for the students. The students have the opportunity to watch and learn before they have to perform the task in a Challenge Lab.

Domain Comparison

642-742 IUWVN	300-365 WIDEPLOY
1.0 Describe and Design Voice Over Wireless Architecture	1.0 Implement QoS for Wireless Applications
2.0 Implement VoWLAN	2.0 Implement Multicast over Wireless
3.0 Implement QoS for Wireless Applications	3.0 Implement High Density
4.0 Implement multicast over wireless	4.0 Design and Deploy WLAN Infrastructure for Mobility
5.0 Prepare the Wireless Network for Video and High-Bandwidth Applications	5.0 Implement Cisco MSE Architecture
	6.0 Design and Implement FlexConnect Architecture
	7.0 Implement Controller and AP High Availability
	8.0 Wireless Bridging (MESH)

Included within each exam domain is a more in-depth list of topics. They are as follows:

1.0 Implementing QoS for Wireless Applications

- Describe and implement general considerations for wired QoS
- Describe and implement the appropriate wireless QoS deployment schemes
- Configure infrastructure QoS for wireless clients
- Configure infrastructure QoS for wireless clients
- Implement AVC

2.0 Implementing Multicast Over Wireless

- Describe general multicast concepts (L2, L3, and SPG)
- Describe implications for multicast in 802.11
- Configure multicast in a wireless network
- Configure mDNS (*Focus on mDNS gateway, LSS, service advertisement and how all of the pieces inter-relate to each other)

3.0 Implementing High Density

- Design for High Density
- Implement RXSOP
- Implement enhanced roaming
- Implement AP Groups

- Implement Interface Groups
- Implement client limits (*including client counts and client bandwidth)

4.0 Designing and Deploying WLAN Infrastructure for Mobility

- Describe the impact of client VLAN assignment on mobility
- Minimize inter controller roaming (Avoid salt and pepper deployment)
- Describe mobility control plane architectures (*AireOS; in IOS-XE limit to MC/MA, no MO)
- Describe mobility tunneling process
- Implementing client mobility

5.0 Implementing Cisco MSE Architecture

- Describe Cisco MSE capabilities and integration with wireless network architecture
- Describe location techniques
- Identify the relevant parameters required Initialize MSE for network operations
- Implement Base location services
- Implement Advanced location services
- Integrate MSE with PI

6.0 Designing and Implementing FlexConnect Architecture

- Compare and contrast the components of FlexConnect architecture
- Describe and implement the capabilities of a FlexConnect group
- Describe the impact of FlexConnect architecture on roaming
- Describe and Implement Office Extend operation

7.0 Implementing Controller and AP High Availability

- Configure the wireless network for high availability
- Configure high availability for the AP
- Configure high availability for the Controller

8.0 Wireless bridging (MESH)

- Describe the following mesh AP modes of operation
- Describe the considerations for a MESH deployment (*indoor to outdoor extensions maximum 2 hops)
- Describe the convergence of a MESH network
- Implement Workgroup Bridge
- Describe the passive client feature

Wireless Troubleshooting Exam Summary

The 642-747 IUWMS exam will be replaced by 300-370 WITSHOOT exam. The overall number of domains has changed from five to seven. WITSHOOT is based on AireOS v.8.0, IOS-XE v.3.6, ISE v.1.3, and Prime Infrastructure v.2.2.

WITSHOOT is a new exam within the CCNP Wireless certification program. Much of the troubleshooting topics were interspersed across each of the existing CCNP Wireless exams. That content has been consolidated now, into a single troubleshooting exam. New to the exam is also the inclusion of methodology, techniques, tools and utilities helpful in troubleshooting.

The labs in this course are developed around the concept of trouble tickets and presented with real life wireless network problems. The students will then use the methodologies, techniques, tool and utilities to resolve the issues.

Domain Comparison

642-747 IUWMS	300-370 WITSHOOT
1.0 Implement Location-Based Services	1.0 Troubleshooting Methodology
2.0 Design and Deploy WLAN Infrastructure for Mobility	2.0 Troubleshoot AP Joining Issues
3.0 Implement Cisco MSE Architecture	3.0 Troubleshoot Client Connectivity Issues
4.0 Implement and Manage Indoor and Outdoor Mesh	4.0 Identify and Locate RF Interferences
5.0 Implement Advanced Services and Manage with Cisco WCS and Navigator	5.0 Troubleshoot Client Performance Issues
	6.0 Identify Common Wired Infrastructure Issues Based on the Output From Common Troubleshooting Tools
	7.0 Troubleshoot WLC and AP High Availability Issues

Included within each exam domain is a more in-depth list of topics. They are as follows:

1.0 Troubleshooting Methodology

- Apply the appropriate trouble shooting methods to identify an issue
- Utilize the appropriate tools to assist in isolating an issue

2.0 Troubleshooting AP Joining Issues

- Resolve Controller Discovery issues (*tools used = Controller Debugs, AP Debugs, WLC logs, Firewall Ports)
- Resolve DTLS session Establishment issues
- Resolve AP Joining issues

3.0 Troubleshooting Client Connectivity Issues

- Identify and resolve authentication issues
- Identify RF signal issues
- Resolve supplicant configuration issues – (iOS, Android, Windows, MAC OS, year 2013+)
- Troubleshooting autonomous AP links

4.0 Identifying and locating RF Interferences

- Identify and Mitigate rogues (*tools used = CleanAir, heat maps, link test, and spectrum analyzer)
- Manage non-802.11 interferences

5.0 Troubleshooting Client Performance Issues

- Characterize roaming issues
- Evaluate throughput and data rate issues
- Identify the source of poor user experience

6.0 Identifying Common Wired Infrastructure Issues Based on the Output From Common Troubleshooting Tools

- Identify DNS issues
- Identify DHCP - DHCPv4 / DHCPv6 issues
- Identify VLAN issues
- Analyze end to End IP connectivity issues
- Assess POE issues

- Describe stacking as it related to wireless licenses and WCM role *Tools to supply the output –
- Show Commands (WLC, switch, and AP), Debugs (WLC, switch, and AP), Log Files (WLC switch, AP, and AAA), WLCCA, WLC GUI
- PI Troubleshooting tools (wireless client and PI 360 views), ISE reports available from Prime Infrastructure

7.0 Troubleshooting WLC and AP High Availability Issues

- Troubleshoot Primary, Secondary, Tertiary controller join issues
- Troubleshoot Stateful Switch Over (SSO) issues

Wireless Security Exam Summary

The 642-737 IAUWS exam will be replaced by 300-375 WISECURE exam. The overall number of domains has changed from seven to five. WISECURE contains significant updates in terms of content coverage and is based upon products AireOS v.8.0, IOS-XE v.3.6, ISE v.1.3, and Prime Infrastructure v.2.2. The NAC, WCS, and ACS products have been removed and updated to ISE v.1.3

With the addition of several new modules, significantly more lab time has also been added. Multiple Discovery Labs are introduced to the course, allowing the instructor to demonstrate new features for the students. Students will have the opportunity to watch and learn before they have to perform the task in a Challenge Lab.

Domain Comparison

642-737 IAUWS	300-375 WISECURE
1.0 Integrate Client Device Security	1.0 Integrate Client Device Security
2.0 Design and Integrate Wireless Network with NAC	2.0 Implement Secure Distribution System Connectivity Services on the Wireless Infrastructure
3.0 Implement Secure Wireless Connectivity Services	3.0 Implement Secure Client Connectivity Services on the Wireless Infrastructure
4.0 Design and Implement Guest Access Services	4.0 Implement Secure Management Access on the WLAN Infrastructure
5.0 Translate Organizational and Regulatory Security Policies and Enforce Security Compliance	5.0 Monitoring Security on the WLAN Infrastructure
6.0 Configure Native WLC Security Feature Sets: IPS/IDS	
7.0 Integrate Wireless Network with Advanced Security Platforms	

Included within each exam domain is a more in-depth list of topics. They are as follows:

1.0 Integrating Client Device Security

- Describe Extensible Authentication Protocol (EAP) authentication process
- Configure client for secure EAP authentication (*EAP-FAST, PEAP, EAP-TLS)
- Describe the impact of security configurations on application and client roaming
- Implement 802.11w Protected Management Frame (PMF) on the WLAN
- Implement Cisco Management Frame Protection (MFP)
- Describe and configure client profiling

2.0 Implementing Secure Distribution System Connectivity Services on the Wireless infrastructure

- Implement BYOD policies
- Implement AAA based Layer 3 security on the controller

- Describe regulatory compliance considerations for protecting data and access and providing accountability
- Utilize security audit tools for Distribution Systems

3.0 Implementing Secure Client Connectivity Services on the Wireless infrastructure

- Implement 802.1x wireless client authentication
- Implement Identity Based Networking (IBN)
- Implement ISE AAA parameters for integration with the wireless network
- Implement AAA based Layer 3 security using ISE
- Configure MSE based web authentication (*visitor connect)

4.0 New Module on implementing secure management access on the WLAN infrastructure (hardening the infrastructure)

- Controlling administrative access to the wireless infrastructure
- Implement SNMPv3 on the wireless infrastructure

5.0 Monitoring Security on the WLAN infrastructure

- Execute Security reports on PI
- Perform Rogue Management
- Monitor rogue APs and clients
- Monitor Alarms
- Identify RF related Security interferers on WLC and PI Maps

Learn More

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