

## CCIE Wireless

### Written and Lab Exam Content Updates

#### Introduction

The CCIE Wireless exam topics have been refreshed from version 2.0 to version 3.0. The new exam curriculum comprises eight domains. The new segmentation into these eight domains was done to improve the logical structure of the overall topics, as well as to align to our wireless portfolio.

Each domain lists specific tasks that we expect a minimally qualified candidate to perform. Note the exam topics serve as a general guideline for the content likely to be included in your exam. However, other - related topics - may also appear on any delivery of the exam. Some of the domains or tasks listed appear on both the Written and the Lab exam, other domains or tasks appear only in the Written exam, like Planning & Designing WLAN Technologies.

#### Domain comparison between CCIE Wireless v2.0 and CCIE Wireless v3.0

Below you can find a domain level comparison between the CCIE Wireless v2.0 and CCIE Wireless v3.0, based upon domains.

##### CCIE Wireless v2.0

1. Planning & Designing WLAN Technologies
2. Configure and Troubleshoot L2/L3 Network Infrastructure to Support WLANs
3. Configure and Troubleshoot Infrastructure Application Services
4. Configure and Troubleshoot an Autonomous Deployment Model
5. Configure and Troubleshoot a Unified Deployment Model
6. Configure and Troubleshoot WCS
7. Configure and Troubleshoot WLAN Services

##### CCIE Wireless v3.0

1. Planning & Designing WLAN Technologies
2. Configure and Troubleshoot the network Infrastructure
3. Configure and Troubleshoot an Autonomous Deployment Model
4. Configure and Troubleshoot a Unified Deployment Model (Centralized)
5. Configure and Troubleshoot a Unified Deployment Model (Converged)
6. Configure and Troubleshoot Security & Identity Management
7. Configure and Troubleshoot Prime Infrastructure and MSE.
8. Configure and Troubleshoot WLAN media and application services

Compared to v2.0, no domains have been removed from the CCIE curriculum in v3.0. New domains were added, re-named or re-shuffled slightly to include current technologies. In v3.0, the Unified Deployment Model is split up in Configure and Troubleshoot a Unified Deployment Model (Centralized) and Configure and Troubleshoot a Unified Deployment Model (Converged), reflecting our current Wireless product portfolio.

A new module Configure and Troubleshoot Security & Identity Management was added, as policy management is becoming more important. The Configure and Troubleshoot WCS module was replaced with Configure and Troubleshoot Prime Infrastructure and MSE, adding our Prime Infrastructure solution.



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#### CCIE Wireless v3.0 Changes

The decision to add, move or retire domains or tasks was based on the feedback received from Wireless Subject Matter Experts during the Job Role Analysis and Job Task Analysis. The Exam Topics changes reflect both the evolving Wireless enterprise environment as the evolving CCIE Wireless job role. Please refer to the actual Exam Topics on for all topics covered in the updated CCIE Wireless Written and Lab exams v3.0.

#### Topics added to the CCIE Wireless Exam v3.0:

- Configure and troubleshoot stacking
- Configure and troubleshoot basic OSPFv3
- Configure and troubleshoot basic IPv6 EIGRP address families
- Configure and troubleshoot SXP/SGT
- Configure and troubleshoot PSPF
- Configure and troubleshoot Flexconnect
- Configure and troubleshoot new mobility
- ENTIRE DOMAIN: Configure and troubleshoot a Unified Deployment Model (Converged)
- Configure and troubleshoot client profiling and provisioning
- Configure and troubleshoot CoA
- Configure and troubleshoot basic sponsor policy (Guest)
- Implement and troubleshoot CMX
- Integrate ISE
- Integrate NetFlow
- Configure and troubleshoot BDRL
- Configure and troubleshoot mDNS
- Configure and troubleshoot AVC and NetFlow

#### Topics removed from the CCIE Wireless Lab Exam v2.0:

- Configure and troubleshoot MFP
- Configure and troubleshoot peer-to-peer blocking
- Configure and troubleshoot IGMP snooping
- Configure and troubleshoot WDS (L2)
- Upgrade Autonomous to Unified
- Configure and troubleshoot H-REAP
- Implement local DHCP services for clients

As not only the Exam Topics were updated, but the hardware and software list was updated as well in v3.0, the required implementation and troubleshooting skills changed significantly for some of the tasks, although the task itself is identical compared to v2.0. Below a high level overview of what changed from a hardware and software perspective, please refer to the Lab Equipment and Software List for more detailed information.



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CCIE Wireless v2.0	CCIE Wireless v3.0
Cisco 5500 WLC, CUWN software 7.0  Cisco Aironet 1040/1260/3500 Series AP Cisco Catalyst 6500-E Series Switches (Sup 8-E) Cisco Catalyst 2960/3560 Series Switches Cisco WCS Cisco ACS Cisco 3300 Series MSE	Cisco 5500 WLC, CUWN software 8.0 Cisco 5700 WLC, IOS XE 3.6 Cisco Aironet 1600/3700 Series AP Cisco Catalyst 4500-E Series Switches (Sup 8-E) Cisco Catalyst 3650 Series Switches Cisco PI 2.2 Cisco ISE 1.3 Cisco 3300 Series MSE

### CCIE Wireless Exam v3.0 Format

The exam number changed from 350-001 to 400-351. However the Written exam format essentially remains identical. The web-based delivery infrastructure supporting the new Lab exam is very similar to v2.0. The format of the Lab exam itself however has changed significantly compared to v2.0. The Lab exam format has been updated in analogy to other CCIE tracks to include a Diagnostic module.

As a result, the CCIE Wireless Lab v3.0 format today looks as follows:

- Part 1: Diagnostic module
- Part 2: Configuration & Troubleshooting module.



The new Diagnostic module, which has a length of 60 min, focuses on the skills required to properly diagnose network issues, without having device access. The main objective of the Diagnostic module is to assess the skills required to properly diagnose network issues. These skills include:

- Analyze
- Correlate
  - Discerning multiple sources of documentation (in example e-mail threads, network topology diagrams, console outputs, logs, and even traffic captures.)

These activities are naturally part of the overall troubleshooting skills. They are designed as a separated Lab module because the format of the items is significantly different. In the Troubleshooting component of the Configuration and Troubleshooting candidates need to be able to troubleshoot and resolve networking issues on actual devices.



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In the Diagnostic module candidates need to make choices between pre-defined options to either indicate:

- What the root cause of the issue is
- Where the issue is located in the diagram
- What critical piece of information allows us to identify what the root cause is
- What piece of information is missing to be able to identify the root cause

The Configuration and Troubleshooting module consists of one topology, similar as in CCIE Wireless v2.0. The length of the Configuration and Troubleshooting module is seven hours. This module provides a real life enterprise wireless scenario, including wireless client access. At the beginning of the module, the candidate has a full overview of the entire module; and can make a choice of working on items in sequence or not, depending on his/her comfort level, the overall scenario and question interdependencies.

The Diagnostic and Configuration and Troubleshooting modules in the Lab exam are delivered in a fixed sequence: you start the day with the 1 hour Diagnostic module, which is followed by the 7 hours Configuration and Troubleshooting module. The entire Lab exam lasts up to eight hours. Note that you are not allowed to go back and forth between modules.

#### Diagnostic Module

For the Diagnostic module, no device access is provided. Candidates are provided various pieces of information (in example emails, show and/or debug outputs, network diagrams etc. in analogy to in example information that is provided to a wireless support engineer that is assisting a customer finding the root cause of a network issue, or in analogy to information that is provided by a colleague who is stuck in a troubleshooting a network issue.

Within the Diagnostic module, the items are presented in a similar format as within the Written exam. The module includes multiple-choice (single answer or multiple answers), drag-and-drop style items, or even point-and-click style questions. The major difference between the Written exam and the Diagnostic module is that the items in the Diagnostic module (called troubleshoot tickets) contain a set of documents that the candidate must consult in order to be able to understand and identify the root cause of the issue presented. Candidates need to analyze and correlate information (after discerning between valuable and worthless pieces of information) in order to make a right choice among the pre-defined options provided.

All tickets will be close-ended (as opposed to open-ended) so grading will be deterministic, ensuring a fair and consistent scoring process. The new module allows us to grant credit to candidates who are able to accurately identify the root cause of a networking issue, but fail to resolve it within specific constraints (as in the Configuration and Troubleshooting module).

Real-life experience is certainly the best training to prepare for this module. Candidates with limited experience should focus on discovering, practicing and applying efficient and effective troubleshooting methodologies that are used for any realistic networking challenge.

#### Passing Criteria

In order to pass the Lab exam, the candidate must meet both the following conditions:

- The minimum cut-score of the each individual module must be achieved.
- The total score of both modules together must be higher as the minimum value of the combined cut-score.

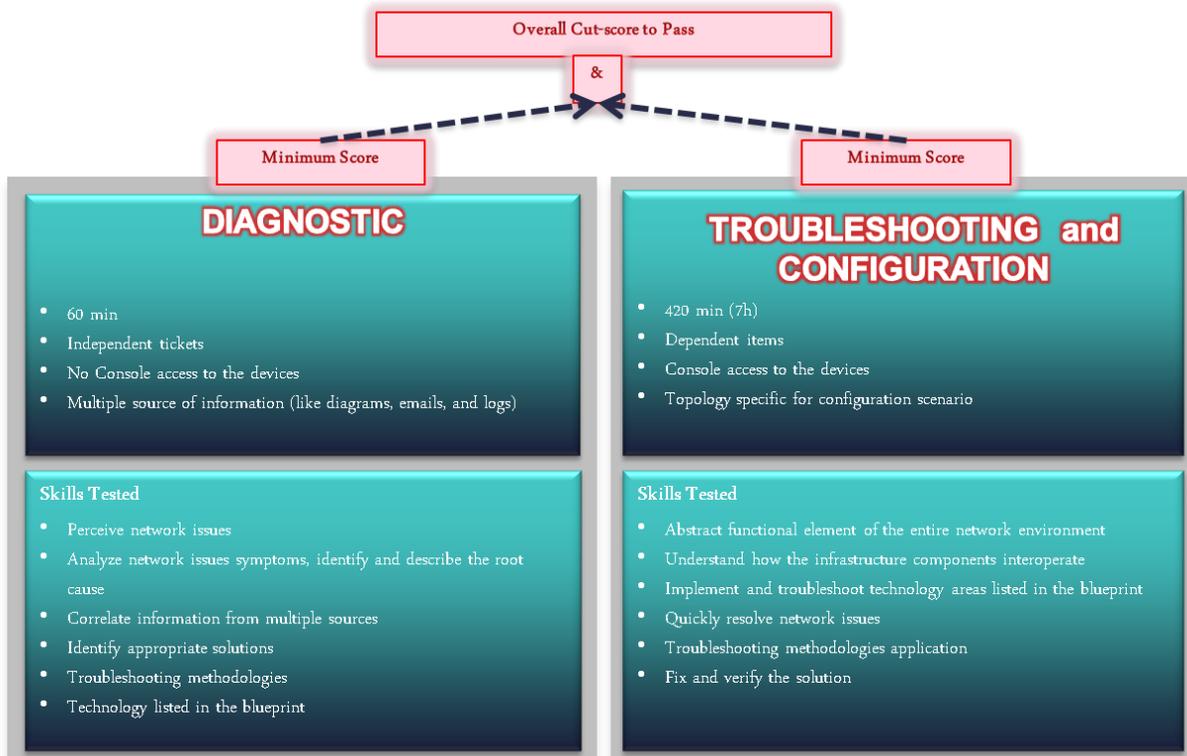
The reason of these criteria is to prevent a candidate from passing the Lab exam while failing or even bypassing one of the two modules.



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The point value(s) of each item in both modules is known to the candidate. Note points are only granted when all requirements and sometimes restrictions of the item are met. There is no partial scoring for any items.



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