HCIP-LTE V1.0 Exam Outline

Certificate Summary

HCIP-LTE is positioned to validate the capabilities of network configuration management and problem analysis and handling for Huawei LTE radio networks, aiming at standardizing professional skills in LTE radio network O&M.

HCIP-LTE curriculum includes but is not limited to LTE air interface principles, LTE protocols and procedures, hardware specifications and networking principles, data planning, and data configuration by running MML/CME commands, operations and troubleshooting of Huawei eNodeBs.

With an **HCIP-LTE certification**, you demonstrate the capabilities of independently performing parameter planning and configuration, routine operations and troubleshooting for Huawei LTE network.

With engineers who are **HCIP-LTE** certified, enterprises are able to perform routine maintenance and troubleshooting of LTE radio networks to ensure stable network operation.

Prerequisites

None

Validity Period of Exam Results

This exam result is valid for 3 years.

Recertification Method

Before a certificate expires, the certificate holder can extend the validity of this certificate using the following method:

- *Take and pass the written examination again.*

Key Points of Exam

LTE Air Interface (30%)

1. The evolution of cellular networks and 3Gpp release
2. Radio interface techniques
3. OFDMA/SC-FDMA principle, signal generation and processing
4. Radio interface protocols
5. Time-domain and frequency-domain structure in the radio interface in UL and DL for both FDD and TDD mode
6. Channel structure of the radio interface
7. Uplink/downlink transmission technique
8. The paging procedure
9. The cell search procedure

10. The random access procedure
11. Uplink/downlink power controls
12. HARQ
13. Concepts of layers, channel rank, spatial multiplexing, open and closed loop spatial multiplexing, TX diversity, beamforming, SU-MIMO and MU-MIMO

LTE Signaling and Protocols (27%)

1. Basics for LTE Signaling and Protocols
2. UE Power on and Attach Procedure
3. Dedicated Bearer Procedure
4. Paging Procedure
5. TAU Procedure
6. Handover Procedure
7. Detach Procedure

eNodeB Reconfiguration (13%)

1. Reconfiguration Working Flow
2. Reconfiguration Tools and Operation
3. Radio/Device/Transmission Data Reconfiguration
4. Data Reconfiguration in Typical Scenarios

LTE Advance Troubleshooting (30%)

1. eNodeB LTE Antenna & Feeder System Fault Analysis and Troubleshooting
   - Faults related to antenna & feeder system
   - PIM principle and fault analysis
   - VSWR principle and fault analysis
   - TMA working principle and power supply
   - Location by section method in PIM and VSWR troubleshooting
   - Troubleshooting with help of Huawei U2000 and Web LMT
2. EPS End to End IP Protocol Analysis
   - End to end IP protocol architecture
   - Method/ tools on collecting IP layer message
   - Trace analysis:
   - O&M trace
   - Control Plane trace
   - User Plane trace
3. LTE Throughput Analysis
   - Factors affecting LTE throughput
   - Analysis on throughput problem
   - Low throughput

- Fluctuating Throughput

NOTE

The exam content provided here serves only as a general guide to participants. Other basic knowledge not mentioned here may also be included in the actual exam.

References

LTE Air Interface

LTE Protocols and Procedures

LTE Operation and Configuration

LTE Reconfiguration

LTE Troubleshooting

Recommended Training Program

Training Program	Level	Duration
HCIP-LTE Training	III	10 days