



600-212

Implementing Cisco Service Provider Mobility

LTE Networks

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SUCCESS GUIDE TO CISCO CERTIFICATION

Exam Summary – Syllabus – Questions

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Introduction to 600-212 Exam on Implementing Cisco Service Provider Mobility LTE Networks

A great way to start the Cisco Service Provider Mobility CDMA to LTE Specialist / Cisco Service Provider Mobility UMTS to LTE Specialist (SPLTE) preparation is to begin by properly appreciating the role that syllabus and study guide play in the Cisco 600-212 certification exam. This study guide is an instrument to get you on the same page with Cisco and understand the nature of the Cisco Service Provider Mobility CDMA / UMTS to LTE exam.

Our team of experts has composed this Cisco 600-212 exam preparation guide to provide the overview about Cisco Implementing Cisco Service Provider Mobility LTE Networks exam, study material, sample questions, practice exam and ways to interpret the exam objectives to help you assess your readiness for the Cisco SPLTE exam by identifying prerequisite areas of knowledge. We recommend you to refer the simulation questions and practice test listed in this guide to determine what type of questions will be asked and the level of difficulty that could be tested in the Cisco Service Provider Mobility CDMA / UMTS to LTE certification exam.

Cisco 600-212 Certification Details:

Exam Name	Implementing Cisco Service Provider Mobility LTE Networks
Exam Number	600-212 SPLTE
Exam Price	\$300 USD
Duration	90 minutes
Number of Questions	65-75
Passing Score	Variable (750-850 / 1000 Approx.)
Recommended Training	Implementing Cisco Service Provider Mobility LTE Networks – (SPLTE)
Exam Registration	PEARSON VUE
Sample Questions	Cisco 600-212 Sample Questions
Practice Exam	Cisco Service Provider Mobility CDMA to LTE Specialist / Cisco Service Provider Mobility UMTS to LTE Specialist Practice Test

Cisco 600-212 Exam Syllabus:

Section	Weight	Objectives
LTE	5%	<p>1 Describe and differentiate LTE / SAE architecture</p> <p>2 Explain attach procedure and call flow</p>
MME (4G LTE)	16%	<p>1 Network functions LTE –MME</p> <p>a) Identify key functions of the MME and basic understanding of architecture and interfaces</p> <p>b) Describe MME states of MM and CM management</p> <p>c) Describe protocol stacks and procedures</p> <p>d) Describe mobility management signaling and call flows</p> <p>e) Describe session management signaling and call flows</p> <p>f) Describe location management signaling and call flows</p> <p>g) Describe SGS procedures and signaling call flows</p> <p>h) Describe intra-MME handovers procedure</p> <p>i) Describe intra-RAT handovers procedure</p> <p>j) Describe inter-MME handover procedures</p> <p>2 QOS architecture</p> <p>a) Describe the overall QOS functionality in LTE for single and multi pdn</p> <p>b) Describe the QOS mapping from UMTS to LTE</p> <p>3 Configurations</p> <p>a) Configure S1 interface with corresponding services and system parameters</p> <p>b) Configure S6a interface with corresponding services and system parameters</p> <p>c) Configure S11 interface with corresponding services and system parameters</p> <p>d) Configure S13 interface with corresponding services and system parameters</p> <p>e) Identify and implement gateway selection mechanisms</p> <p>f) Identify and implement MME operator policy and feature sets</p> <p>g) Troubleshoot configurations</p> <p>4 Network sharing</p> <p>a) Describe MOCN architecture</p> <p>b) Describe GWCN architecture</p> <p>5 Security</p> <p>a) Describe LTE security principles for MME network node</p>

Section	Weight	Objectives
		<p>b) Explain security functions for mobility management procedures</p> <p>6 Idle mode signaling reduction</p> <p>a) Identify IDLE mode signaling reduction in an LTE network</p> <p>b) Describe IDLE mode signaling establishment</p> <p>c) Describe IDLE mode signaling reduction deactivation</p> <p>7 CSFB</p> <p>a) Describe CSFB architecture in LTE network</p> <p>b) Describe CSFB call flow and signaling</p> <p>8 IPv6 support</p> <p>a) Configure IPV6 and dual stack EPS bearer scenarios</p> <p>b) Configure and implement transport plane IPV6 support for MME</p>
SGW (4G LTE)	10%	<p>1 Network functions LTE-SGW</p> <p>a) Identify key functions of the SGW and basic understanding of architecture and interfaces</p> <p>b) Describe SGW attach procedures and call flows</p> <p>c) Configure S1-U interface with corresponding services and system parameters</p> <p>d) Configure S5/S8 using PMIP/GTP interface with corresponding services and system parameters</p> <p>e) Configure S11 interface with corresponding services and system parameters</p> <p>2 Feature functionality and extended application</p> <p>a) Describe multi-PDN support for SGW</p> <p>b) Describe downlink delay notification for SGW</p> <p>c) Describe idle mode signaling reduction support for SGW</p> <p>d) Configure and implement IPV6 support for SGW</p> <p>3 Internetworking between LTE and other technologies</p> <p>a) Describe interaction with CDMA/eHRPD internetworking</p> <p>b) Describe interaction with GSM/UMTS internetworking</p> <p>c) Configure S4 interface with corresponding services and system parameters</p> <p>d) Configure S12 interface with corresponding services and system parameters</p> <p>e) Configure S103 interface with corresponding services and system parameters</p>

Section	Weight	Objectives
		<p>4 Charging a) Configure Gx interface with corresponding services and system parameters</p> <p>5 QoS a) Describe QoS bearer management and marking for SGW b) Configuring DSCP marking for SGW</p>
PGW (4G LTE/EHRPD)	15%	<p>1 Architecture overview a) Identify key functions of the PGW and basic understanding of architecture and interfaces</p> <p>2 Implement S5/S8 and Gn/Gp interface a) Describe GTP protocol b) Describe mobility management/session management call flows c) Describe QoS in EPC d) Configure S5/S8 interface with corresponding services and system parameters e) Troubleshoot S5/S8 and Gn/Gp</p> <p>3 APN a) Describe the various IP address allocation mechanisms b) Describe the concept of virtual APNs c) Configure APNs and virtual APNs with corresponding service and system parameters d) Configure IP source address validation and access control list e) Troubleshoot APN</p> <p>4 Implement Gx interface a) Describe the important diameter AVPs needed for Gx b) Describe basic Gx call flows c) Configure Gx interface with corresponding services and system parameters d) Troubleshoot Gx interface e) Describe the common policy use cases f) Configure failure handling modes g) Configure usage monitoring over Gx</p> <p>5 Implement Gy interface a) Describe the important diameter AVPs needed for Gy b) Describe the basic Gy call flows c) Configure Gy interface with corresponding services and system parameters</p>

Section	Weight	Objectives
		<p>d) Troubleshoot Gy interface e) Configure failure handling modes f) Describe OCS selection based on static configuration g) Describe RADIUS attributes and PCRF out-of-quota redirection handling</p> <p>6 Implement AAA Interface a) Describe the basic AAA authentication and accounting call flows b) Describe the important RADIUS attributes for authentication and accounting c) Configure RADIUS interface with corresponding services and system parameters d) Troubleshoot RADIUS interface</p> <p>7 Implement S6b interface a) Describe the important diameter AVPs needed for S6b b) Describe the basic S6b call flows c) Configure S6b interface with corresponding services and system parameters d) Troubleshoot S6b interface</p> <p>8 Interworking with non-3GPP access networks a) Configure S2a interface with corresponding services and system parameters b) Configure S2b interface with corresponding services and system parameters c) Configure S2c interface with corresponding services and system parameters d) Configure LMA functionality on a PGW e) Configure non-3GPP IRAT handovers f) Troubleshoot S2b and S2c interfaces</p> <p>9 SGi Interface a) Configure and implement various IP transport types b) Configure and implement static and dynamic routing protocols</p>
Voice Over LTE	20%	<p>1 VoLTE application messages/protocols a) Describe VoLTE specific diameter interface b) Describe XCAP, LDAP, SPML c) Describe CAMEL, CAP, INAP, SOAP, MSML</p> <p>2 Voice over LTE architecture a) Describe voice evolution in mobile network b) Identify VoLTE system architecture and functions of network elements</p>

Section	Weight	Objectives
		<p>3 Network elements in voice over LTE</p> <ul style="list-style-type: none"> a) Describe CSCF b) Describe ENUM c) Describe MNP — mobile number portability/database d) Describe telephony application server e) Describe DRA/DEA f) Describe HSS g) Describe PCRF h) Describe ATCF,ATGW i) Describe MRF j) Describe understand OSS and BSS <p>4 QoS</p> <ul style="list-style-type: none"> a) Describe QoS in EPS b) Describe end-to-end QoS in VoLTE <p>5 Interfaces and signaling messages</p> <ul style="list-style-type: none"> a) Configure Gx interface and signaling b) Design Rx interface and signaling c) Implement Cx interface and signaling d) Describe ISC interface and signaling e) Describe Ut interface <p>6 End-to-end call flow</p> <ul style="list-style-type: none"> a) Describe IMS client attach to EPC b) Describe P-CSCF discovery c) Describe IMS registration, re-registration and de-registration d) Describe mobile-originated VoLTE call e) Describe mobile-terminated VoLTE call f) Describe emergency VoLTE call <p>7 Supplementary services</p> <ul style="list-style-type: none"> a) Describe IR.92 supplementary service overview b) Describe IR.94 supplementary service overview c) Describe Important services call flows <p>8 VoLTE Interworking</p> <ul style="list-style-type: none"> a) Describe PSTN interworking b) Describe IMS/SIP interworking c) Describe e-SRVCC
Other Interfaces	5%	<p>1 AAA/diameter related interfaces</p> <ul style="list-style-type: none"> a) Describe SWx interface b) Describe S9 interface c) Describe Sp interface <p>2 HRPD related interfaces</p>

Section	Weight	Objectives
		<ul style="list-style-type: none"> a) Describe S101 b) Describe S103
Charging	13%	<ul style="list-style-type: none"> 1 Offline charging service <ul style="list-style-type: none"> a) Describe offline charging architecture b) Explain the GTPP protocol header and messages c) Explain charging data record transport through GTP' d) Compare and contrast GTPP transfer scenarios e) Describe and differentiate mobility records generated by MPC nodes f) Identify and list conditions for record closure and generation g) Explain Rf offline charging scenarios h) Identify and list offline charging error cases i) Configure for offline billing j) Troubleshoot for offline billing
Lawful Intercept	5%	<ul style="list-style-type: none"> 1 Describe lawful intercept architecture and events 2 Configure lawful interception 3 Describe lawful intercept trigger element
Management Protocols	11%	<ul style="list-style-type: none"> 1 TACACS <ul style="list-style-type: none"> a) Describe admin authentication and command authorization methods b) Configure Local administration levels c) Configure external authentication TACACS servers 2 Performance counters/statistics <ul style="list-style-type: none"> a) Describe the various performance counters b) Describe the collection and processing of performance counters c) Describe the common KPIs for various MPC nodes d) Configure counters and KPIs 3 Fault management <ul style="list-style-type: none"> a) Describe SNMP protocols, alarms, notification and MIBs b) Configure SNMP traps, filters and thresholds 4 syslog/events Log <ul style="list-style-type: none"> a) Describe system log formats and filters b) Configure syslog servers and event logs 5 Security <ul style="list-style-type: none"> a) Describe user access control 6 NTP <ul style="list-style-type: none"> a) Describe system timing

Section	Weight	Objectives
		b) Configure NTP servers, system clock, time zone and timestamps

600-212 Sample Questions:

01. In which two ways is P-CSCF discovered by the Voice over LTE IMS client?

(Choose two.)

- a) Retrieve the list of P-CSCF information that is stored locally on the IMS client.
- b) Obtain P-CSCF information from other registered IMS clients.
- c) Retrieve the list of P-CSCF information from the Mobility Management Entity.
- d) Obtain P-CSCF information in the protocol configuration options during bearer context activation.
- e) Obtain P-CSCF information from the Telephony Application Server during IMS registration.

02. Which authentication protocol is used for the S6b interface?

- a) EAP-TLS
- b) EAP-AKA
- c) IPsec
- d) SSL

03. Which EPS integrity algorithm is mandatory for the UEs?

- a) EIA0
- b) SNOW 3G
- c) AES
- d) ZUC

04. Which network function converts Voice over LTE voice bearer to PSTN voice bearer?

- a) border gateway control function
- b) media gateway function
- c) multimedia resource function
- d) session border controller function

05. Which option describes SNMP inform requests?

- a) notifications sent to and acknowledged by an SNMP agent
- b) notifications sent to and acknowledged by an SNMP management station
- c) notifications sent to but not acknowledged by an SNMP agent
- d) notifications sent to but not acknowledged by an SNMP management station

06. Which option describes where the Sp reference point is located?

- a) between PCRF and SPR
- b) between PCRF and the application function
- c) between PGW and trusted non-3GPP IP access
- d) between PCRF and ePDG

07. Which protocol runs on the 3GPP Rx interface?

- a) GTPv2
- b) SS7
- c) RADIUS
- d) Diameter
- e) SIP

08. Which two Diameter interfaces are used in Voice over LTE?

(Choose two.)

- a) Gn
- b) Gx
- c) ISC
- d) Gi
- e) Cx
- f) Sv

09. Which two radio technologies are used in LTE?

(Choose two.)

- a) OFDMA
- b) MIMO
- c) TDMA
- d) EV-DO
- e) VOR
- f) DME

10. Which types can be classified as bulk stats on the Cisco ASR 5000?

- a) Counter, Gauge, Information
- b) Gauge, Counter, Iterative
- c) Circular, Gauge, Counter
- d) Watermark, Counter, Gauge

Answers to 600-212 Exam Questions:

Question: 01	Question: 02	Question: 03	Question: 04	Question: 05
Answer: a, d	Answer: b	Answer: a	Answer: b	Answer: b
Question: 06	Question: 07	Question: 08	Question: 09	Question: 10
Answer: a	Answer: d	Answer: b, e	Answer: a, b	Answer: a

Note: If you find any typo or data entry error in these sample questions, we request you to update us by commenting on this page or write an email on feedback@nwexam.com