

CCIECERT CCIE SP Real Lab

Please review the [Lab Exam Overview](#) for general information about the CCIE Service Provider lab exam. The blueprint is a detailed outline of the topics likely to appear on the lab exam. Knowledge of troubleshooting is an important skill and candidates are expected to diagnose and solve issues as part of the CCIE lab exam. The topics listed are guidelines and other relevant or related topics may also appear. In general, new product features become eligible for testing on CCIE lab exams six months after general release.

Bridging and Switching

- VTP, VLAN, Trunk, Spanning tree
- Frame Relay, DLCI, FR multilink
- ATM PVC, SVC, FR/ATM interworking
- PPPoE

IGP Routing

- IS-IS, Level 1/2, Metric
- OSPF, LSA, Area
- Redistribution, Summarization, Filtering
- Policy routing

EGP Routing

- IBGP, EBGP
- BGP attributes
- Confederation, Route reflector
- Synchronization, Aggregation, Stability
- Redistribution, Filtering
- Multipath

SP Multicast

- PIM-SM, PIM-DM, SSM, PIM-BIDIR, IGMP
- Auto RP, Static RP, BSR, Anycast RP
- MP-BGP for multicast, MSDP

MPLS

- Label distribution, LDP/ TDP
- Label filtering, Label merging, Multipath
- MPLS COS
- MPLS Netflow
- MPLS over ATM

- MPLS Traffic Engineering

L3/L2 VPN

- MPLS VPN, MP-iBGP
- PE-CE routing, RIPv2, OSPF, EIGRP, Static, ISIS, EBGp
- BGP Extended Community
- Inter AS MPLS VPN
- Carrier Supporting Carrier
- VRF-Lite, VRF Select
- Multicast MPLS VPN
- GRE, multipoint GRE
- AToM, L2TPv3
- 802.QinQ

SP QoS and Security

- DSCP/EXP, TOS, NBAR
- Marking, Shaping, Policing
- CAR, FRTS
- WRQ, CBWFQ, LLQ, PQ, CQ
- RED, WRED
- LFI, cRTP
- RSVP
- ACL, RPF, Filtering
- Routing update security
- Common attacks

High Availability

- NSF, GLBP
- Fast reroute, Link/Node protection
- HSRP, VRRP

Management

- SNMP, SYSLOG, RMON
- Accounting
- Netflow
- NTP

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