

CCIE/CCDE Evolving Technologies Exam Topics v1.1

The Cisco CCIE® and CCDE Evolving Technologies domain includes Cloud, Network Programmability and Internet of Things (IoT) which span across all CCIE/CCDE written exams.

This domain, worth 10% overall, is to ensure all CCIE/CCDE candidates have a clear understanding of important Cloud, Network Programmability and IoT concepts and are well equipped to participate in meaningful discussions with business leaders about new technical areas that can help drive business outcomes in global enterprises. An Evolving Technologies section is included in the written exam only. It will enable candidates to bridge their core technology expertise with knowledge of the evolving technologies that are being adopted at an accelerated pace, such as Cloud, Network Programmability, and IoT.

The Evolving Technology domain will be refreshed timely when new and emerging technologies as these are developed and adopted by the industry. More mature and track specific evolving technologies will be added to the track specific exam topics over time.

The following topics are general guidelines for the content likely to be included on the exam. However, other related topics may also appear on any specific delivery of the exam. In order to better reflect the contents of the exam and for clarity purposes, the guidelines below may change at any time without notice.

NOTE: This CCIE/CCDE Evolving Technologies exam topics v1.1 should be referenced for written exams scheduled on August 30, 2018 and beyond.

| Domain Number | Domain | Written Exam Percentage (%) | Lab Exam Percentage (%) |
|---------------|-----------------------|-----------------------------|-------------------------|
| 1 | Evolving Technologies | 10 | N/A |

1.0 Cloud

- 1.a Compare and contrast public, private, hybrid, and multi-cloud design considerations
 - 1.a (i) Infrastructure, platform, and software as a service (XaaS)
 - 1.a (ii) Performance, scalability, and high availability
 - 1.a (iii) Security implications, compliance, and policy
 - 1.a (iv) Workload migration

- 1.b Describe cloud infrastructure and operations
 - 1.b (i) Compute virtualization (containers and virtual machines)
 - 1.b (ii) Connectivity (virtual switches, SD-WAN and SD-Access)
 - 1.b (iii) Virtualization functions (NFVi, VNF, and L4/L1)
 - 1.b (iv) Automation and orchestration tools (cloud center, DNA-center, and Kubernetes)

2.0 Network programmability (SDN)

- 2.a Describe architectural and operational considerations for a programmable network
 - 2.a (i) Data models and structures (YANG, JSON and XML)
 - 2.a (ii) Device programmability (gRPC, NETCONF and RESTCONF)
 - 2.a (iii) Controller based network design (policy driven configuration and northbound/ southbound APIs)
 - 2.a (iv) Configuration management tools (agent and agent-less) and version control systems (Git and SVN)

3.0 Internet of things (IoT)

- 3.a Describe architectural framework and deployment considerations for Internet of Things (IoT)
 - 3.a (i) IoT technology stack (IoT Network Hierarchy, data acquisition and flow)
 - 3.a (ii) IoT standards and protocols (characteristics within IT and OT environment)
 - 3.a (iii) IoT security (network segmentation, device profiling, and secure remote access)
 - 3.a (iv) IoT edge and fog computing (data aggregation and edge intelligence)

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