

Module 11 CCNA -Automation and Programmability

Beginner Question

1. Explain How Automation Impacts Network Management

Automation in network management revolutionizes the way tasks such as configuration, monitoring, and troubleshooting are handled. By leveraging automated scripts, tools, and orchestration platforms, network administrators can streamline repetitive processes, minimize human errors, and enhance overall efficiency. Automation also enables self-healing capabilities, where networks can automatically detect and respond to issues without manual intervention, leading to improved reliability and uptime.

2. Compare Traditional network with Controller based networking

Traditional network architectures involve managing individual networking devices separately, each with its own configuration and management interface. This approach can lead to complexity, inconsistency, and inefficiency, especially in large-scale deployments. In contrast, controller-based networking centralizes management functions through a software-defined controller, providing a single point of control for configuring, monitoring, and managing network devices. This centralized approach offers greater simplicity, scalability, and flexibility, enabling organizations to adapt quickly to changing business needs and network demands.

3. Explain Virtualization

Virtualization in networking involves abstracting physical network resources into virtual entities, allowing multiple virtual networks to operate independently on the same physical infrastructure. This technology enables organizations to optimize resource utilization, reduce hardware costs, and improve flexibility and agility in network provisioning. By decoupling network services and applications from underlying hardware, virtualization facilitates easier management, faster deployment, and more efficient utilization of network resources. Additionally, virtualization enhances security by isolating network traffic and providing more granular control over network access and policies.

Intermediate Question

1. Describe Characteristics of REST-based API

Advance Question

1. Explain methods of Automation

There are few methods of automation like Scripting, Management Tools, APIs and SDKs

2. Explain SDN

SDN separates control and data, centralizing control in software-based controllers. It offers centralized management, provisioning, and support for virtualization and automation.

3. Explain DNA Center

4. Explain SD-Access and SD-WAN

Software-Defined Access and Wide Area Network. SD-Access automates access layer policies based on user, device, and application context, enhancing security and flexibility. SD-WAN optimizes WAN connectivity by dynamically routing traffic across multiple links based on application requirements and network conditions, reducing costs and improving performance.