MODULE: 11

CCNA: AUTOMATION AND PROGRAMMABILYTY

Q1. Explain How Automation Impacts Network Management.

ANS: automation used in network automating the arranging managing, testing, organizing and set up of physical and virtual device inside a network and with routine duty and function automatic processes controlled and arrange automatically network service availability increases.

* Reduced set-up cost
* Upper up times
* Minor mistakes
* Effective control
* Improved network control
* Increased business agility

Q2. Compare Traditional network with Controller based networking.

ANS: traditional network:

Traditional networking uses fixed-function and delicate hardware and network control containing switches and routers to control network traffic.

Controller based networking:

Controller based network often with software – defined networking is a network architecture that separates the control plane from the documents plane.

Q3. Explain virtualization.

ANS: Virtualization makes a simulated computer environment instead of using just physical hardware. It creates computer-generated versions of things like hardware, operating systems, and storage devices. This means you can run multiple virtual machines on one physical machine, allowing for better use of resources and easier management.

Q4. Describe characteristics of REST-based API.

ANS: REST API (Representational State Transfer Application Programming Interface) is a way for different software applications to talk to each other over the internet. It provides guidelines for creating and using web services.

* Statelessness
* Client-server architecture
* Resource-based
* Representation
* Stateless communication
* Cacheability
* Layered system
* Uniform interface

Q5. Explain methods of Automation.

ANS: there are some methods of automation in network management are as follow:-

* Network Automation: Automation tools are used to manage and configure network devices, such as routers, switches, and firewalls.
* Security Automation: Security automation tools are used to detect and respond to security incidents and threats in real-time.
* Infrastructure Automation: Infrastructure automation tools are used to manage the deploying and scaling of network infrastructure.
* Orchestration Automation: Orchestration automation tools are used to manage the deployment and orchestration of services across distributed systems.
* Provisioning Automation: Provisioning automation tools are used to automate the process of deploying and configuring network devices and services.
* Monitoring Automation: Monitoring automation tools are used to collect and analyze network data and performance metrics.

Q6. Explain SDN.

ANS: Software – defined networking (SDN) is an approach to networking that uses software – based controllers or application programming interfaces (APIs) to communicate wide under trying hardware infrastructure and direct traffic on a network.

Q7. Explain DNA Center.

ANS: Digital network architecture (DAN) it is a cisco GUI for managing all things in a campus switch, wireless, IOT, etc. network, now with tie-ins for SD – WAN.

Q8. Explain SD-Access and SD-WAN.

ANS: SD-Access: SD-Access helps separate user, device, and application traffic without needing to change the physical network. It provides clear visibility and automates how traffic is managed across the network. As a key part of the zero-trust security approach, SD-Access combines security measures with network management, making the network both safer and easier to operate.

SD-WAN: it is virtual network architecture that allows business to securely connect users to application SD-WAN uses a centralization control function to manage traffic across the WAN and to trusted SaaS and laas providers.