

Διαχείριση Edge και Cloud δικτύων βασισμένων στο
λογισμικό
Ερωτήσεις για την τελική εξέταση

1. **What is Mininet primarily used for in networking?**
 - a. Monitoring real-time traffic in enterprise networks
 - b. Emulating SDNs on a single machine
 - c. Creating physical network infrastructure
 - d. Encrypting network data for secure communications
2. **What is a key advantage of SDN?**
 - a. It eliminates the need for switches and routers
 - b. It centralizes network control, allowing more flexible and programmable network management
 - c. It only works with wireless networks
 - d. It reduces the speed of data transmission due to software overhead
3. **Which of the following best describes the use of POX in a SDN environment?**
 - a. It is a protocol used to encrypt OpenFlow messages
 - b. It is a hardware switch used to implement flow tables
 - c. It is a Python-based SDN controller used for prototyping and developing network control logic
 - d. It is a network monitoring tool for detecting intrusions in SDN
4. **In a SDN architecture, what role does the controller play?**
 - a. It forwards packets at the data plane
 - b. It physically connects network devices together
 - c. It acts as the brain of the network, making decisions about traffic flow
 - d. It encrypts network traffic to ensure security
5. **How can SDN be used to implement a firewall in a network?**
 - a. By replacing all switches with physical firewalls
 - b. By programming the SDN controller to define flow rules that allow or block specific traffic
 - c. By installing antivirus software on all SDN switches
 - d. By disabling the control plane in the network
6. **What is meant by generalized forwarding (as opposed to destination-based forwarding) in a router or switch?**
 - a. Any of several actions (including drop (block), forward to a given interface, or duplicate-and-forward) can be made based on the contents of one or more packet header fields.
 - b. The decision about which output port to forward a packet to can be made based on the link-type of the outgoing port (e.g., Ethernet versus WiFi).
 - c. In addition to performing forwarding, the device can generalize its services, also performing hop-by-hop reliable data transfer and per-hop congestion control.
 - d. None of the other answers is a correct definition of generalized forwarding.
7. **Which of the following is an advantage of using an SDN-based firewall over traditional firewalls?**
 - a. It only supports wireless networks
 - b. It requires no software configuration

- c. It can dynamically update rules across the entire network from a central controller
 - d. It filters traffic using physical hardware only
- 8. According to the IQX hypothesis:**
- a. If QoE is very high, a small disturbance will strongly decrease it
 - b. If QoE is very high, a further disturbance will not be so perceived
 - c. If QoE is already low, a further disturbance will be greatly perceived
 - d. If QoE is very high, a small disturbance will not affect it
- 9. Which are the various Mobile Cloud Networking (MCN) architecture options?**
- a. Mobile phone (lightweight) using a central Cloud to handle “hungry” applications
 - b. Cloud is no longer central but local, while the resources can be hosted on other mobile devices
 - c. Virtual Cloud concept or small cloud or “Cloudlet” which moves with the client
 - d. All of the above
- 10. What is a primary benefit of introducing computing resources at the edge of access networks in IoT scenarios?**
- a. Increased centralized data storage capacity
 - b. Improved low latency, real-time capabilities, and context-awareness
 - c. Elimination of the need for machine learning algorithms
 - d. Guaranteed data privacy through edge nodes
- 11. Which of the following best describes a key principle of REST in web-based application architecture?**
- a. Resources must be tightly coupled to ensure reliable communication
 - b. REST eliminates the need for HTTP and URIs
 - c. REST emphasizes loose coupling and interaction through resources identified by URIs
 - d. Web applications should avoid using a resource-based approach
- 12. What does the principle of statelessness in REST architecture imply?**
- a. Clients and servers must maintain session state using cookies
 - b. Each request must contain all necessary information to be understood without relying on stored context
 - c. Servers should store client state to improve performance
 - d. Statelessness requires frequent synchronization between client and server
- 13. According to the Richardson Maturity Model, what does a higher level indicate about a web application?**
- a. It relies more on service-based architecture than resource-based interactions
 - b. It increases coupling between client and server
 - c. It uses SOAP payloads to define semantics
 - d. It is more RESTful, with interactions modeled around resources and HTTP methods
- 14. What is a key feature of messaging systems in asynchronous communication models?**
- a. Tight coupling between senders and consumers for faster delivery
 - b. Immediate deletion of messages upon sending
 - c. Use of brokers to decouple publishers and subscribers, enabling scalability
 - d. Requirement that each message be consumed by only one subscriber
- 15. How do Big Stream systems differ from Big Data systems in the context of modern cloud architectures?**
- a. Big Stream systems analyze historical data, while Big Data systems handle real-time data flows

- b. Big Stream systems focus on managing continuous data flows, while Big Data systems focus on data analysis
- c. Big Stream systems are limited to IoT scenarios only
- d. Big Data systems require lower latency than Big Stream systems

16. What is a key characteristic of Fog Computing compared to traditional Cloud Computing?

- a. It replaces the cloud entirely to provide centralized computing power
- b. It offers location-aware, low-latency services by running applications closer to end users
- c. It eliminates the need for Virtual Machines (VMs) at the edge
- d. It primarily supports batch processing and offline analytics

ΕΠΙΠΛΕΟΝ ερωτήσεις εδώ:

Επισκεφτείτε τον ιστότοπο του βιβλίου:

https://gaia.cs.umass.edu/kurose_ross/knowledgechecks/

CHAPTER 4: NETWORK LAYER: DATA PLANE

[Generalized Forwarding](#)

CHAPTER 5: NETWORK LAYER: CONTROL PLANE

[The SDN Control Plane](#)

- *Μην εστιάσετε στις ερωτήσεις των υλοποιήσεων συγκεκριμένων SDN Controllers.*

CHAPTER 7: WIRELESS AND MOBILE NETWORKS

[WiFi: 802.11 Wireless LANs](#)

[Cellular Networks: 4G and 5G](#)

- *Όχι Bluetooth.*
- *Όχι LoRa*
- *Όχι AI in ECAS*

Δεν θα υπάρχει αρνητική βαθμολογία.

Καλή επιτυχία!!!