LAB 1

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1. **AMD Ryzen 7 which supports virtualization.**
2. **The cloud is almost everywhere in our lives now. What do you think are the fundamental reasons behind its success? Name three pros and three cons of cloud.**

- Pros:

    1. I can run applications, store, access files on the cloud and not have this physically machine around me. I can simply connect to cloud services to easily access files, applications wherever I am with internet connectivity.

    2. Scalability possibilities. I can easily decrease or increase storage, computing power for networking applications.

    3. Enables remote work and easy access to the company's product, which helps with marketing and brand making.

- Cons:

    1. Cloud providers can be expensive.

    2. Requires constant Internet connectivity.

    3. Requires constant maintenance and an extra security layer.

3. What is the primary function of a hypervisor in virtualization?

The purpose of a hypervisor in visualization is to create and manage virtual machines on a host system.

4. What is a virtual machine (VM)?

VM it's a software that emulates a physical computer. The VM is executed on the physical machine as an isolated container with the application inside.

5. What are the benefits of using virtual machines?

- Allows running multiple operating systems (or ecosystems) on a single physical machine.
- It is an isolated environment, so it is very good for testing different applications without affecting the main system.

- Enables easy horizontal and vertical scaling.
- Enables replication of a whole system (via Kubernetes or Docker Cloud)

6. List five use cases of virtual machines.

- Development and Testing Environment
- CI/CD (Continuous Integration, Continuous Delivery)
- Remote workspace
- Microservices
- Disaster Recovery (simulation of the production instability)

7. In virtualization, what is the guest operating system?

b) The operating system installed on a virtual machine

8. What does virtual machine isolation mean?

c) Virtual machines run independently and are isolated from each other and the host system.

9. What is the benefit of virtual machine portability?

c) It allows virtual machines to be moved between different physical machines with compatible hypervisors.

10. What is the purpose of cloning a virtual machine?

- Cloning for disaster recovery usage
- Scaling based on excessive service load
- Work environments on demand