

GIN204 - Systèmes cloudifiés

Contrôle de connaissances

(# Questions : 9)

Les documents et les appareils électroniques sont interdits.

Durée : 1h30

Indiquez vos nom et prénom ci-dessous puis répondez aux questions suivantes.

Nom :

Prénom :

Groupe :

Select all answers that apply.

1. The technique used to provide several instances of a machine on top of a given infrastructure is called :
 - ☐ Serverless
 - ☐ Virtualization
 - ☐ Resource sharing
 - ☐ Big data
 - ☐ Software-defined networking
 - ☐ Full-metal alchemist
2. What are the services that a cloud system can provide to a customer ?
 - ☐ Storage
 - ☐ TCP and UDP protocols
 - ☐ Processing
 - ☐ Networking
 - ☐ Connection-less access
 - ☐ Hardware components
3. In the function-as-a-service model, a newly spawned container may experience a delay in execution for the first function call. This is called :
 - ☐ Scale-down
 - ☐ Ghost in the shell
 - ☐ Hard provisioning
 - ☐ Cold start
 - ☐ Warm start

4. Choose the correct(s) statement(s) about cloud deployments.

- ☐ Internet connection is required to access a cloud management console
- ☐ Cloud systems replace native hardware and software
- ☐ Cloud services are delivered locally
- ☐ IaaS provides virtual servers for application hosting
- ☐ A SaaS product requires to install the software before using it
- ☐ With FaaS, the virtual instance is running during the idle-time, incurring additional costs
- ☐ None of the above

5. Choose the correct(s) statement(s) about cloud services

- ☐ Computing services are only charged by-the-hour
- ☐ Computing services can be charged by the hour or on a subscription-basis
- ☐ Cloud computing transforms the upfront cost into variable cost
- ☐ Cloud computing transforms variable costs into upfront costs
- ☐ Services can be added or reduced as needed
- ☐ Cloud does not offer cost management
- ☐ None of the above

6. Choose which feature of Cloud services makes it possible to manage computing infrastructure better and more efficiently.

- ☐ Network abstraction
- ☐ Software switching/routing
- ☐ Scalability
- ☐ Cloud-native applications
- ☐ None of the above
- ☐ Not enough data to answer

7. Choose the correct(s) statement(s) about Docker and containers :

- ☐ Docker is a hypervisor
- ☐ The Docker engine is used to spawn and manage containers
- ☐ Two different Docker containers can run different operating systems
- ☐ A Dockerfile is used to describe the steps to create a novel container
- ☐ Docker uses a declarative paradigm
- ☐ None of the above

8. Choose the correct(s) statement(s) about OpenStack :

- ☐ OpenStack is used to provide SaaS applications
- ☐ OpenStack manages the internal connections via a softwarized programmable network
- ☐ Thanks to its flexibility, all OpenStack components are optional
- ☐ It is possible to create VMs with the command `openstack domain create --description "VM" instance`
- ☐ "Floating IPs" can be assigned to any created VM to create external connectivity
- ☐ None of the above

9. You have been hired by the Airbender® company to design their cloud system. After a preliminary analysis, you have the following elements :
- 4 different micro-services, accessed by 4 different user-bases
 - one management service, that can access any of the previously-mentioned microservices
 - the users' requests are uniformly distributed over a day, without any noticeable pattern
 - the requested data are not privacy-sensitive
 - the user-base is not growing

Design a cloud system that is suitable for their experience. Provide the important design choices that you take into account (E.g., on-premises vs public cloud, XaaS model, VMs or containers, ...) and briefly justify your choices.

Fin du CC