



INFO 3606 – Cloud Computing Take home Assignment

Weight: 20%

This assignment consists of 4 questions.

1. a) How is multi-tenancy configured in Infrastructure as a Service (IaaS) cloud environments, and why is isolation important for security? [5 marks]
- b) What is a hyperjacking attack, and how does it differ from a virtual machine escape attack? [4 marks]
- c) What are the security concerns related to PaaS cloud and what is the responsibility of the service providers in terms of security? [5 marks]
- d) What are some common security mechanisms that PaaS cloud providers should implement? [4 marks]

[Total: 18 marks]

2. a) What are the main objectives of cloud monitoring for cloud service providers? [4 marks]
- b) What is physical monitoring in cloud monitoring and what metrics are measured by computation-based tests and network-based tests? [5 marks]
- c) What is virtual monitoring in cloud monitoring and what information does it provide? [4 marks]
- d) How does virtualization pose a challenge to monitoring in the cloud? [3 marks]

[Total: 16 marks]

3. a) What is multi-cloud brokering, and why is it becoming increasingly important in the era of connected and federated clouds? [4 marks]
- b) How do CMPs enable enterprises to scale infrastructure and applications rapidly, deploy new functionality, and keep up with changing business requirements? [2 marks]
- c) What are some of the benefits of using cloud management tools, and how can they improve IT productivity, reduce manual labor, and facilitate proactive/predictive monitoring? [3 marks]
- d) How do cloud management platforms handle service request management, provisioning, orchestration, and automation, and what tools are available for monitoring, metering, security, and identity management in the cloud environment? [4 marks]

[Total: 13 marks]

4. a) What is the difference between automation and orchestration in cloud computing, and why is orchestration necessary for automating business processes? [3 marks]
- b) How does cloud orchestration help enterprises overcome the challenges associated with a multi-cloud environment, and how does it differ from cloud service brokerage? [3 marks]
- c) How does an orchestration engine ensure policy-based governance and logical application modeling to deliver multi-vendor and multi-cloud services at the right size and service level for each task performed? [4 marks]
- d) What are the cognitive functions used by an orchestration engine to enable intelligent orchestration and smart automation, and how do they improve the automation capabilities of the engine? [3 marks]

[Total: 13 marks]

[Assignment Total: 60 marks]