



THE UNIVERSITY OF  
WESTERN  
AUSTRALIA

CSSE

**S2 2018 MID-SEMESTER EXAMINATION**

**CITS5503**

**Cloud Computing**

FAMILY NAME: \_\_\_\_\_ GIVEN NAMES: \_\_\_\_\_

STUDENT ID:

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SIGNATURE: \_\_\_\_\_

This Paper Contains: **X** pages (including title page)

Time allowed: **1:00 hour**

**Instructions:**

This exam is marked out of 70 points and is worth 20% of the overall unit mark.

- Closed Book: Students may not bring in to the exam any non-electronic materials.
- Your name and ID number should be written on the cover page of the answer booklet.
- This test is worth a total of 100 marks.
- Please do NOT use a pencil or a red pen.
- Please use readable handwriting. What we cannot read will not give you any points.

**PLEASE NOTE**

*Examination candidates may only bring authorised materials into the examination room. If a supervisor finds, during the examination, that you have unauthorised material, in whatever form, in the vicinity of your desk or on your person, whether in the examination room or the toilets or en route to/from the toilets, the matter will be reported to the head of school and disciplinary action will normally be taken against you. This action may result in your being deprived of any credit for this examination or even, in some cases, for the whole unit. This will apply regardless of whether the material has been used at the time it is found.*

*Therefore, any candidate who has brought any unauthorised material whatsoever into the examination room should declare it to the supervisor immediately. Candidates who are uncertain whether any material is authorised should ask the supervisor for clarification.*

**(5 points)**

[a] The evolution of Cloud Computing has been compared to the evolution of electricity supply as a utility. Describe specific problems that Cloud Computing solves as compared to businesses running their own data centres.

**(5 points)**

[b] Describe the different categories of services (XaaS) cloud computing can provide with specific examples of each service.

**Question 2 Virtual Machines (10 points)**

**(5 points)**

[a] Describe the names and characteristics of the properties of Virtual Machines

[b] Name three different levels of virtualisation and describe what each type virtualises

**Question 3 Docker (10 points)**

**(5 points)**

[a] Describe the different components of Docker's architecture.

**(5 points)**

[b] Starting with a Dockerfile and the source code referenced by that file, name the commands needed to create an image and push that image to Docker Hub

**Question 4 Storage (20 points)**

**(5 points)**

[a] Describe how S3 handles consistency of objects and how this approach affects the state of objects when they are read using a GET.



[b] Name the ways in which access to buckets \*and\* objects on S3 can be controlled and for each control state whether it affects buckets or objects, what it restricts and for whom.

**(5 points)**

[c] Describe what AWS Athena does and how it could be used with CloudTrail

[d] What are the core components of DynamoDB



**Question 5 Identity and Access Management (10 points)**

**(5 points)**

[a] What aspects of security does the OSI Security Architecture X.800 standard cover? Which particular components of this standard does AWS Identity and Access Management deal with?

**(5 points)**

[b] Name 3 of the keys that you would find in a Policy. Explain their role. An example of a key is "Version" that specifies the version of the policy syntax and is normally "Version": "2012-10-17"

**Question 6 Networking (10 points)**

**(5 points)**

[a] What are the steps involved in setting up an Application Load Balancer on AWS?

[a] What are the main advantages of an Application Load Balancer when running a load balanced web application?