On Mid Term — Fall 2015
ENCS691K
Procedure

• Correct answers / Discussions

• Copies / grades back to students (10 minutes)

• Copies back to course instructor

• More explanations about the grades during the office hours
Question 1  (5 points)

• Question #1
  a. What is the main difference between intra data center networking and inter data center networking?  
     (2.5 point)

  b. Give 2 examples of functional challenges and 2 examples of non-functional challenges for clouds  
     (2.5 point)
Question 1.a (See course material)

- Intra data center networking: Networking within a same data center
- Inter data center networking: Networking between data centers
  - Nil: If you switch the definition around
Question 1.b

• See course material
Question 2  (10 points)

- Figure out the data set (2 points)
  - Conference
  - Sub-conference (Was missing on several copies)
  - Participant
  - (Media could be added but not mandatory)
Question 2  (10 points)

- Split the data set into resources (2 points)
  - Conference
  - Participant
  - Sub-conference
  - List of conferences
  - List of sub-conferences
  - List of participants

Note: Could be more refined with list of participants for each sub-conference
Question 2  (10 points)

Name the resources with URIs (2 points)
Note: Concept of subordinates should be used (e.g. sub-conferences belong to conferences)
Question 2  (10 points)

Draw a sequence diagram with the conference manager, the conferencing service and the HTTP operations for the following actions (4 points)

- Creation of conference A
- Creation of sub-conference A1
- Creation of sub-conference A2
- Addition of Alice and Bob to conference A
- Move of Bob from conference A to sub-conference A1
- Move of Alice from conference A to sub-conference A2
Question 2   (10 points)

Draw a sequence diagram with the conference manager, the conferencing service and the HTTP operations for the following actions (4 points)

- Notes
  - HTTP operations need to appear explicitly (e.g. POST, DELETE)
  - POST should be used instead of PUT
  - Move from a conference should be expressed by
    - POST
    - DELETE
      - No need for a special resource !!!
Question 3  (5 points)

• What is the main difference between bare metal hypervisor and hosted hypervisor? (2 points)
• Give an example of advantage of bare metal hypervisor and also an example of disadvantage (1 point)
• Give an example of advantage of hosted hypervisor and also an example of disadvantage (1 point)
• What is the difference between full virtualization and para-virtualization? (1 point)
Question 3 (5 points)

• Answers: See course material
Question 4 (5 points)

What are the 4 phases of application / service life cycle a PaaS should consider?

Answers: See course material
Question 5 (5 points)

• Give 2 examples of non-functional challenges an IaaS should meet (2 points)

b. Why is server consolidation needed? (not graded)

d. What is the main difference between interoperability and portability at the IaaS level? (3 points)

e. Give an example of drawback of suspend and copy live migration technique (Not graded)

Answers: See course material