Exam Hints

Friday, 15 Dec 2006, 13 – 16, S5

There is a ton of paper you could read
- Particularly RFCs, Internet drafts, etc.
- But this would simply be too much.

What you SHOULD do includes
- Understand all the slides from the lectures
- Read the overview parts of RTP, SAP, SDP, RTSP, MSRP, MRCP, SIP, ICE
  - Need a good grasp of the big picture of the respective protocols
- If there questions about some core aspects, look them up
  - E.g., if the semantics of the Expires: header in the REGISTER message is unclear
  - E.g., if you don’t know the purpose of a SIP Request URI
  - E.g., if you wonder what an RTSP session is and how it is created and destroyed
- There are too many details: concentrate on those discussed in the lecture
  - E.g., there are many error codes and additional headers in SIP we did not talk about
Exam Hints (2)

- Primary sources: RFCs and Internet Drafts
  - http://www.ietf.org/iesg/rfc_index.txt
  - https://datatracker.ietf.org/public/idindex.cgi

- Working groups

Exam Hints (3)

- Planning on 10 – 12 questions

- Questions will be about **concepts rather than details**
  - Concepts obviously include
    - Architecture, general operation and interactions, terminology, methods, and headers, basics of message exchanges and packet flows
  - Concepts do not include
    - Syntax details, tiny exceptions, state machines, long call flows in lots of detail, numbers of response codes…

- May include a **small design task**
  - How would you build a system that does X?
  - Where to get which data from?
  - Which protocols to apply? How to combine them?
  - May leverage what you have learned in the assignments
Exam Hints (3)

- Range: All lectures except for the “Real World SIP” part today
- Things learned when looking closer at the exercises
- Again: concepts rather than details
  - But going once through all the slides will likely be insufficient
  - So, take your time

- Task structure
  - 10 – 12 in total
  - Large fraction with (relatively) short answers (6 points each)
  - 2 – 4 requiring more time (6 points each)
  - Probably one “design” task (6 or 12 points)

- Some sample questions (probably not used in the exam :-)

Sample Questions

Short tasks (type A)

- How is a SIP transaction identified?
- Why do RTP packets carry a sequence number and a timestamp?
- Why is jitter not a problem for real-time communications in packet networks? What is the problem?
- What are the IMG FETCH and RESOLVE operations used for?
- What is the media level a=rtpmap attribute in SDP used for?
- Sketch the operation of SIP digest authentication.
Sample Questions (2)

**Longer tasks (type B)**

- Sketch the interaction of RTP and RTCP for synchronizing two media streams (e.g., audio and video) from the same source.
- Outline the operation of the SIP REGISTER messages. Which different semantics are supported? Which parameters are used to control these semantics?
- What is the basic idea of audio redundancy encoding? Contrast this approach to generic FEC, e.g., for use with video.
- What are the semantics of the following RTSP message? Describe the key fields. When will it be sent? Who will send it?

Sample Questions (3)

**Design tasks (type C)**

*(likely to revolve somehow around service creation)*

- Sketch one approach (out of many possible ones) to realize a call recording feature for a SIP user who uses a SIP hardware phone without built-in recording capabilities. Remember that this service must not require cooperation from the remote party on a call. Describe which components you will use, which functions they perform and when and how they interact (protocols, messages).
Any other Questions…?