

DISTRIBUTED SYSTEMS examination

DAY: 28/3 - 08 TIME: 8.30 - 12.30 ROOMS: V

Responsible: Sven-Arne Andreasson 1043

Results ready: Estimated 14/4 -08 (see course home page for more information)

Grades: GU: G 24p, VG 42p
 CTH: 3:a 24p, 4:a 36p, 5:a 48p
 of maximum 60 points.

Allowed aids: Nothing except paper, pencil and English - xx dictionary.

NOTE:

- All questions **MUST** be answered in English only!
- Write clearly and use the pages in a clever way so it is easy to read.
- Each task should be started on a new sheet. Use only one side of each paper.
- When describing an algorithm (protocol) use numbered paragraphs in order to make it easier to read (and get right).
- All answers should be motivated!

Task 1) Computer Communication.

- a) What is meant by *flow control*?
- b) What are the main mechanisms when implementing *flow control*?
- c) Explain “Saltzer’s *End-To-End-Argument*”.

(10 points)

Task 2) Describe briefly what CORBA stands for. How is it supposed to be used? What are its benefits?

(10 points)

Task 3) Vector Clocks is a concept that can be used in a distributed system.

- a) How are they defined?
- b) How can they be implemented?
- c) Give two applications where they can be used.

(10 points)

Task 4) Explain different ways how complexity analysis can be performed on distributed algorithms.

(10 points)

Task 5) Consider the Snapshot algorithm.

- a) What are the prerequisites for the algorithm?
- b) What is it that the algorithm computes and why is it defined this way?
- c) Describe the algorithm.

(10 points)

Task 6) Transparency:

- a) Explain what is meant by the concept *transparency* in distributed systems.
- b) Give examples of some (>3) different types of transparency.
Why are they desirable and what might be their disadvantages?

(10 points)