

Exercise for the lecture

Distributed Systems

Summer 2012

Sheet 3

EXERCISE 3:

1. Multicast communication

You are running set of n processes.

- What is the difference between basic multicast and IP multicast?
- Describe an algorithm that implements basic multicast over IP multicast.
- Can a single Byzantine process disrupt your algorithm? Describe how it can be done or why it is impossible!
- What if instead the channel has Byzantine failures?
- If a network is not completely connected has this influence to the limit $3f < n$ of the maximum amount of byzantine processes f to influence a concensus?
- Explain how epidemic information dissemination would work instead of a IP multicast.
- What implications does using epidemic information dissemination have for omission / Byzantine failures.

2. Implementing Multicast

Have a look at the provided Java project. There are several comments starting with **TODO**. Finish the project / get all the **TODOs** done!