Advanced Operating System Issues (AOSI)

Practical Excercise Sheet 1
Due date: 01.11.2012

1 Practical Task 1

The first part of the practical excercise consists of two client applications for an example client-server authentication system. Whereas the authentication system itself is not as important as the introduction of various communication paradigms. Therefore one client should be implemented using UDP-Socket communication. The other client should use the SUN-RPC as communication mechanism.

We provide two servers as testbed for the implemented clients as well interface information in the form of a header file and a RPC-Description.

- UDP-Server or /home/steup/Shared/AOSI/udpServer

- RPC-Server or /home/steup/Shared/AOSI/rpcServer

- format.h or /home/steup/Shared/AOSI/format.h

- auth_rpc.x or /home/steup/Shared/AOSI/auth_rpc.x

After the implementation of the clients you should be able to answer the following questions:

1. Test your implementation by issuing challenges to both servers containing:

$$id = aosi2012$$
$$passwd = yetAnotherPassword$$

   What was the response of the server?

2. Use a package monitoring system like tcpdump or wireshark to capture the packages that are transmitted during the challenge-response communication with each server!

3. Analyze the dump of the mpiServer communication. How many messages are transmitted and which useful information can you extract from these?

4. Analyze the dump of the rpcServer communication. How many messages are transmitted and which useful information can you extract from these?

5. Which communication scheme is more appropriate for the task? Discuss these parameters:
   - ease of development
   - ease of use
   - complexity
   - reliability
   - security