

RKN Assignment 1

Peer-to-Peer
in brief

Client / Server Architecture

- Server provides object(s) of interest
- Client consumes object(s) from certain server(s)
- Communication required to match property to server
 - more often server has to be known
- Centralized network

Peer-to-Peer

- Peer = coequal (“gleichrangig”)
- Each participant may provide and use object(s) of interest
- Diverse connectivity between participants
- Used for connecting nodes via ad hoc connections
 - one node connects to another (e.g. telephony)
- Connection needed to lookup for desired object(s)
 - Overlay Network
 - Routing

Popular actions in P2P networks

- **join**
 - when a new node wants to participate it has to join the network
 - may be combined with further action
 - registration at central server (not 100% P2P!)
- **leave**
 - leave network
 - signal somehow that node isn't available any longer
- **send**
 - send data to specific node(s)
 - lookup needed before
- **receive**
- **broadcast**
- **lookup**
 - search for data or node(s)
 - provided by Overlay Network

Conclusion

- **P2P very powerful**
 - decentralized network
 - achieves maximal efficiency
- **However, security aspects have to be considered**
 - who is allowed to join and distribute data
 - how to prevent attacks?

To Do ...

- Come up with a good idea for a **reasonable P2P application** (e.g. file sharing, chat, ...)
- Use the given P2P-framework for your implementation.
- (*watch additional functionalities of the given framework ... even if not needed for assignment 1*)

Working environment

- **Java 6 SE**
 - current: JDK 6 Update 5
 - <http://java.sun.com/javase/downloads/index.jsp>
 - JDK (not RE)
 - Netbeans not required
- **Eclipse**
 - powerful and efficient development platform
 - <http://www.eclipse.org/>