TECHNISCHE UNIVERSITÄT DRESDEN

Department of Computer Science Institute for System Architecture, Chair for Computer Networks

Application Development for Mobile and Ubiquitous Computing

Task 2: JXTA Chat and Content Sharing Second Presentation

Group 4
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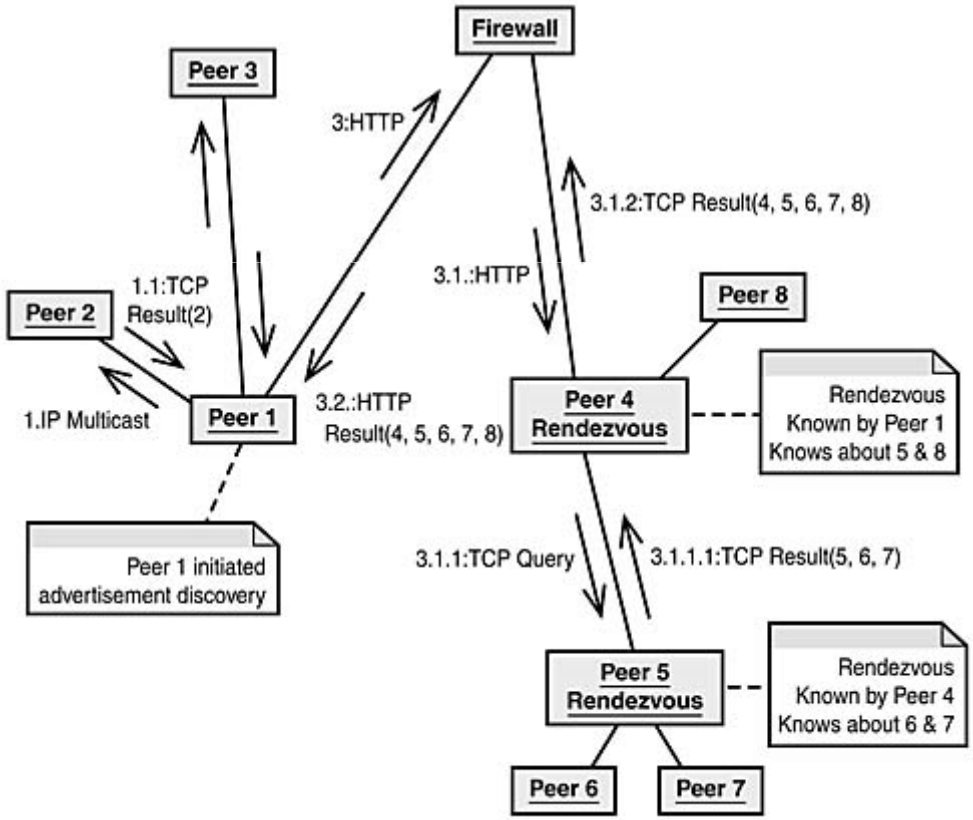
Application Scenario

- Instant messaging application for mobile phones
- Access to a peer-to-peer network
- Communicate with each other
- Create own group
- Join a group for sending messages to multiple people
- Exchange files

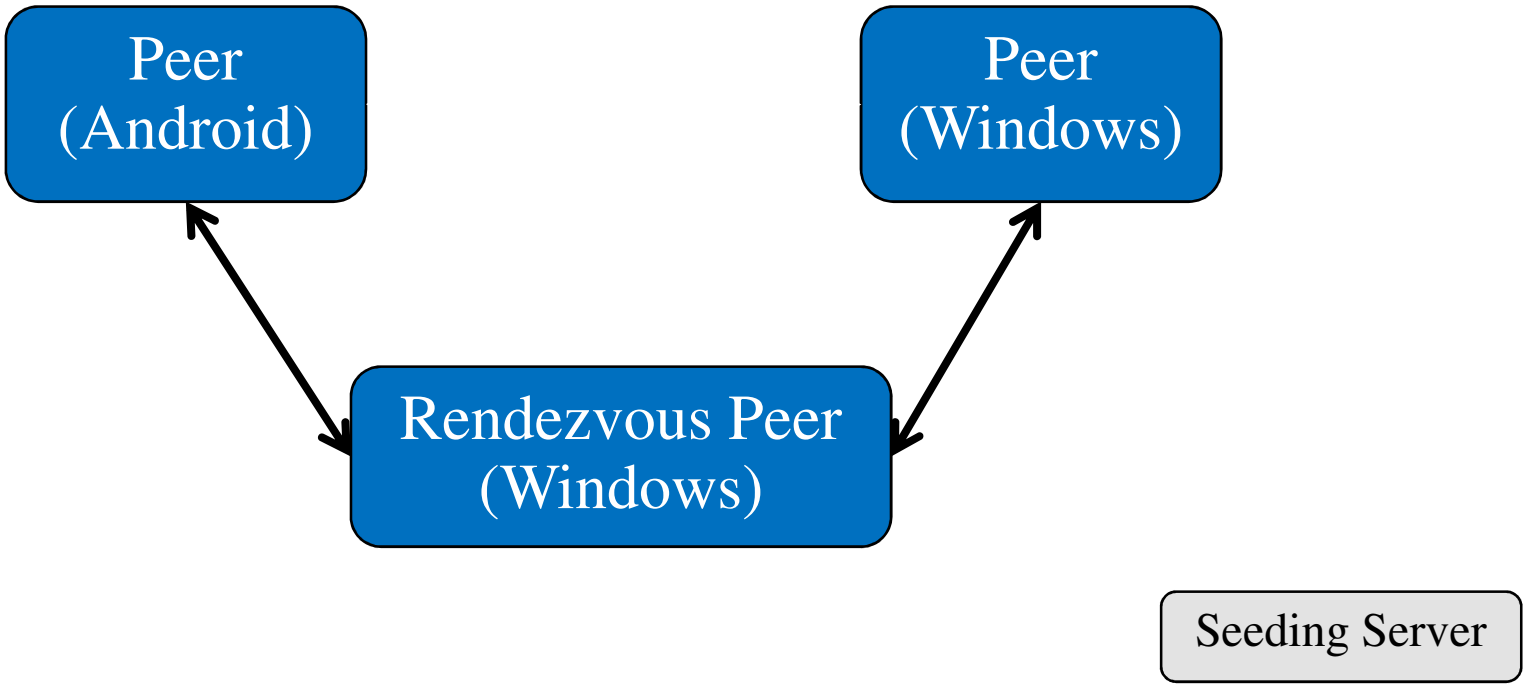
Technologies

- **Android**
  - mobile operating system running on the Linux kernel
- **JXTA**
  - JXTA is an open source peer-to-peer protocol specification
  - The JXTA protocols allow any device connected to a network to exchange messages and collaborate independently of the underlying network topology
- **PeerDroid**
  - Peer Droid is the porting of JXTA protocol to Android Platform
  - Still under development, but working

JXTA peer-to-peer Network



JXTA peer-to-peer Network (our configuration)



Screenshot

- **Chat view**
  - Enter new message
  - Show message history

Challenges

- **Heterogeneity of network technologies and connectivity**
  - Connection to WLAN, UMTS, GPRS, …
  - Interact with each other even when some of them are behind firewalls
- **Access to distributed network architecture for smart phones**
  - No central server required
- **Usability**
  - Personalization (own buddy list or group list)
  - Mobility of users

Work plan

- ~~**18.12. Second presentation**~~
  - ~~First prototype of the application~~
  - ~~A simple GUI on Android~~
  - ~~Exchange (unsecure) messages with your buddies~~

- **29.01. Final presentation**
  - List of other peers
  - Group-based communication
  - Encrypted file and message exchange (if implemented)
  - Start audio conversations

- **05.02. Final release**

Links

- **Android**
  - http://www.android.com/
  - API: http://developer.android.com/reference/packages.html
- **JXTA**
  - https://jxta.dev.java.net/
  - JXSE API: https://jxta-docs.dev.java.net/jxse-javadoc/current/jxse/api/overview-summary.html
- **PeerDroid**
  - http://code.google.com/p/peerdroid/