Seamless Connectivity in Public Wireless LANs using Agent based Technology

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Motivation

- Proliferation of various mobile devices
- WLANs being set up in public places
- Need for monitored access for these devices
- Need for authentication of these hard to locate and manage devices
- Need to define local policies for these roaming devices
MANAS - The Future of Nomadic Access

- **MANAS**
  - Mobile Agent Network Access Service
- MANAS
  - In the Sanskrit derived language Malayalam
    - MANAS ~ mind; heart; soul
  - The *soul* of nomadic access
- Strives to solve the problem of managing nomadic devices accessing local network resources
- Looks at the problem, taking care of the issues faced by mobile devices
- Uses Jini as the underlying technology
Mobile Device Issues

- Low bandwidth
- Less computing power
- Less storage capacity
- Computing power at the cost of battery power
Overview

• A mobile device wishing to access network resources would need a MANAS client framework implanted in it.

• When it comes within range of a network service provider, it locates it and requests network access.

• Once the device is authenticated, access is provided.
Overview

• The mobile device does not need to have complicated software installed

• No major computation done on the device

• Local policies of the network may be implemented

• Security QoS may be implemented as per the authentication level passed by the device
Backstage

• How does all this happen?

• The Keyword is Jini!
Application
Executing Mobile Agent
Transport Layer
Network Layer
Underlying Layers
Prototype

• Currently developed an HTTP Service for web access for a new device entering the network

• The location of the proxy to access the web is obtained dynamically
Prototype

• The Mobile MANAS Agent starts a local data pipe on the device

• The Agent has the information regarding the location of the network HTTP proxy

• Packets may be filtered/monitored by the local Agent and feedback sent to a network security manager
Conclusions

• MANAS – a solution for instant, hassle free network connectivity for mobile devices
• Custom tailored solution for wireless LANs with mobile devices
• Network Protocol and Operating System agnostic solution