Seamless Connectivity in Public Wireless LANs using Agent based Technology

manas
the soul of mobile

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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**
  - **M**obile **A**gent **N**etwork **A**ccess **S**ervice
- 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

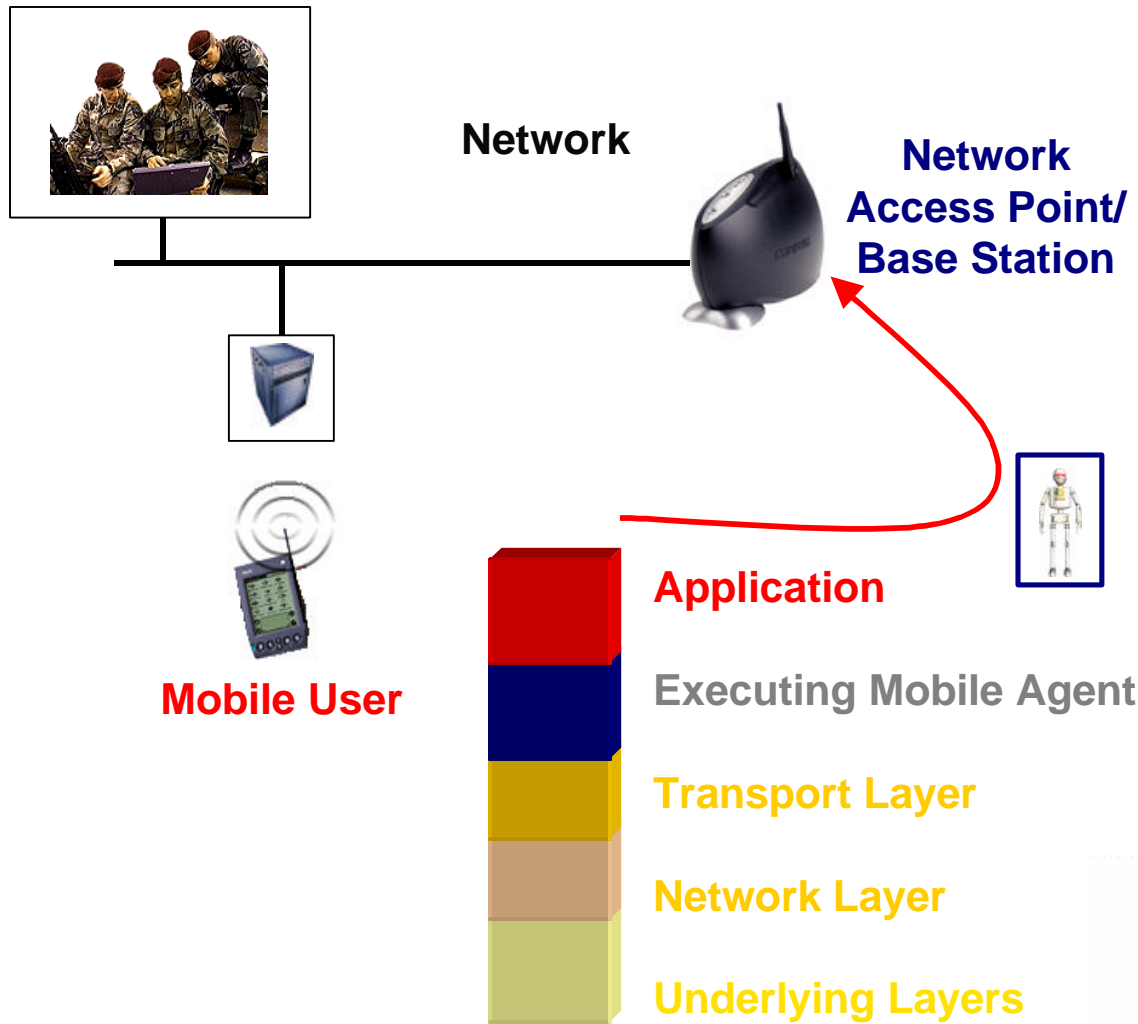- Once the device is authenticated, access is provided

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 !

Network

Network Access Point/ Base Station

Mobile User

Application

Executing Mobile Agent

Transport Layer

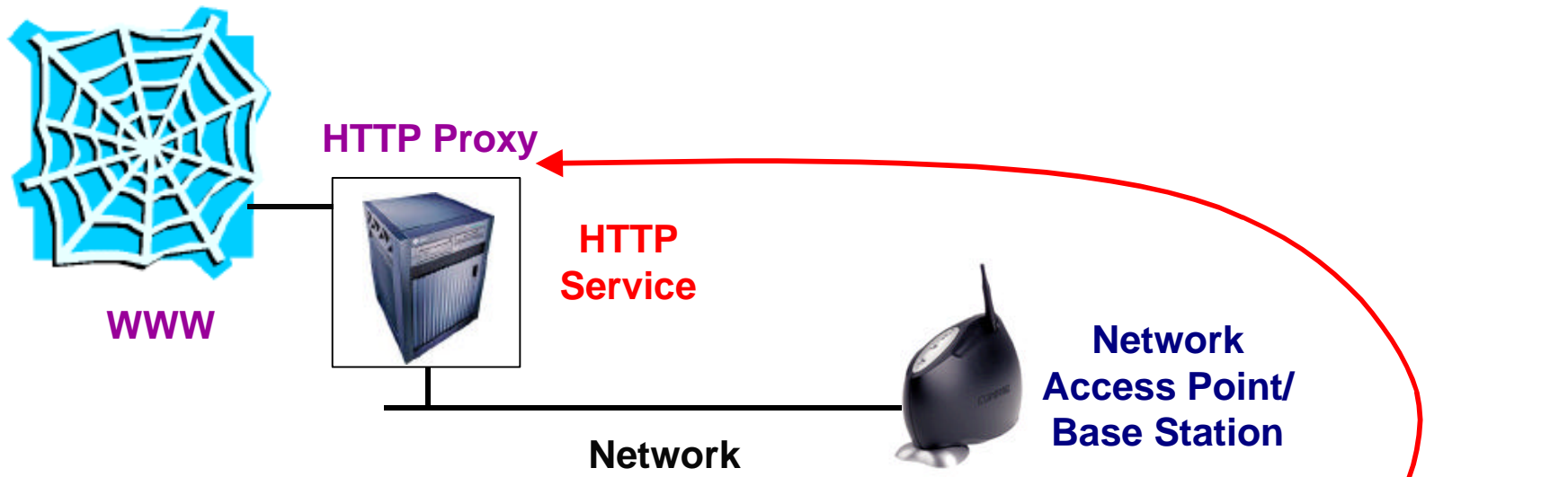**Network Layer**

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

HTTP Proxy

WWW

HTTP Service

Network Access Point/ Base Station

Network

HTTP/Web Access

Mobile User

Web Browser

Executing Mobile Agent

Transport Layer

Network Layer

Underlying Layers

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