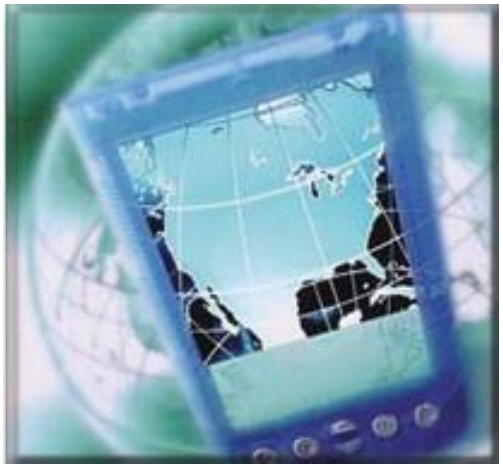
Technical Overview



- Methodology
- 802.11b
- Migration
- How can you benefit from 802.11b
- Wireless Architectures
- Centralized Administrative Management

Methodology

- Feasibility Study
- WBS (Work Breakdown Structure)
  - Requirements Phase
    - JAD (Joint Application Development)
  - Design Phase
    - Porting existing applications
      - Application Decomposition
      - Design Patterns
      - UML
  - Development Phase
  - Operational Support Preparation Phase
  - Installation and Testing Phase

802.11b (also known as WiFi)

- Benefits of 802.11b specification
  - IEEE standard for direct sequence modulation for data rates up to 11Mbps in the 2.4GHz frequency range band
  - Appliance interoperability
  - Fast product development
  - Stable future migration
  - Price reductions
- Gotchas
  - Some vendors use proprietary extensions
  - Attenuation and EM (electromagnetic) interference
  - Roaming isn't inherent in the 802.11b specification
  - 802.11a IEEE standard for OFDM (Orthogonal Frequency-Division Multiplexing) operating in the 5GHz frequency range band up to 54 Mbps, may be coming into market shortly

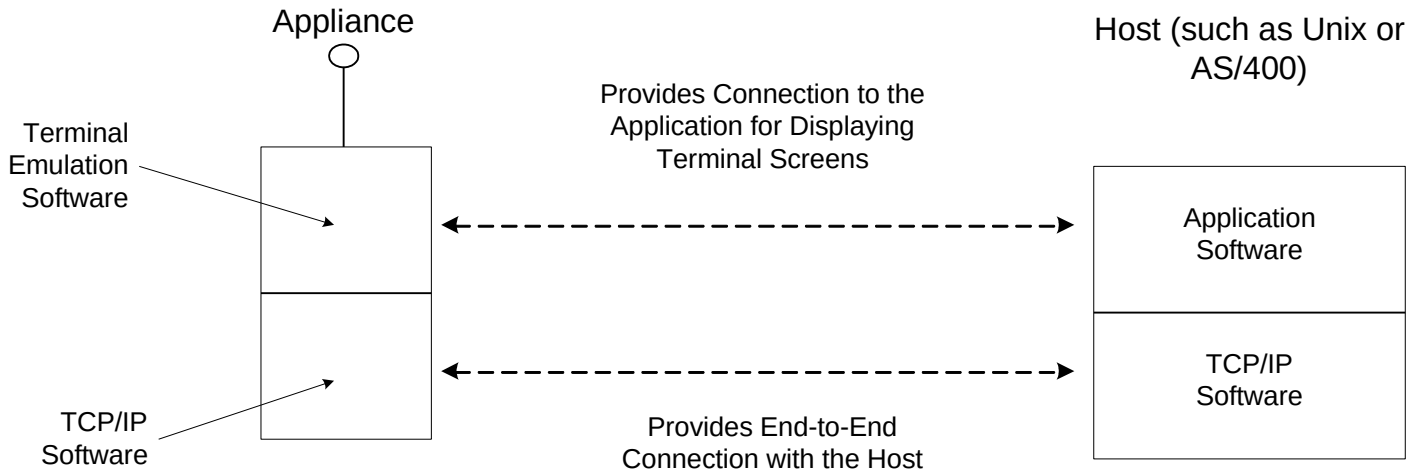
How will you Benefit from 802.11b

- Efficiency
  - Higher bandwidth
- Stability
  - Single specification
- Scalability
  - Cost is low
- Extensibility
  - Future application development
- Management
  - MAC (Media access control)
  - MIB (Management Information Base)

Wireless Architectures

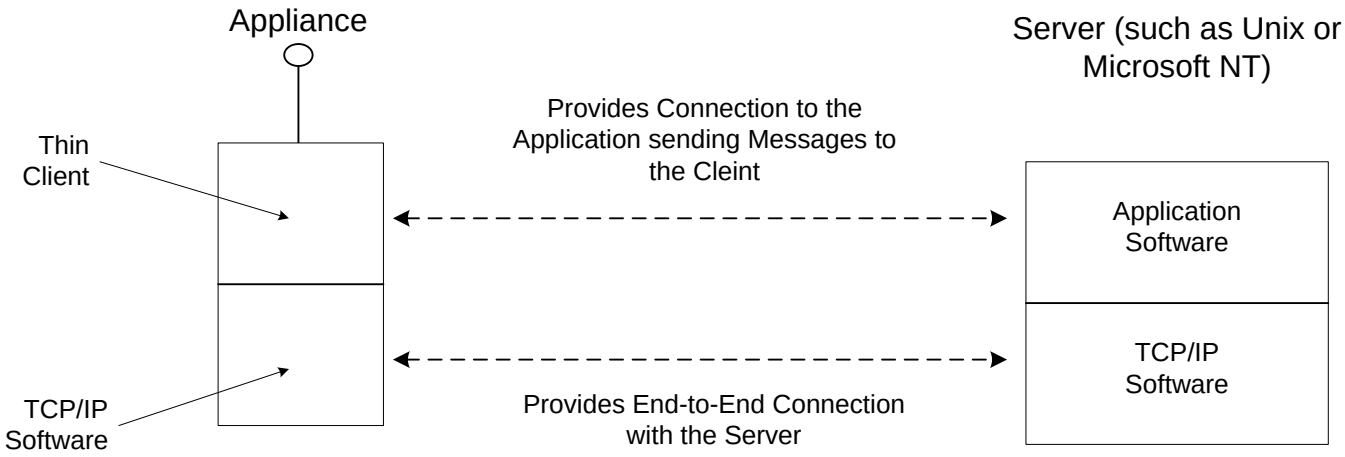
- Terminal Emulation
- Thin Client
- Thick Client (also known as Casually Connected)
- Direct Database Connectivity
- Intranet-Based Connectivity
- Middleware

Terminal Emulation



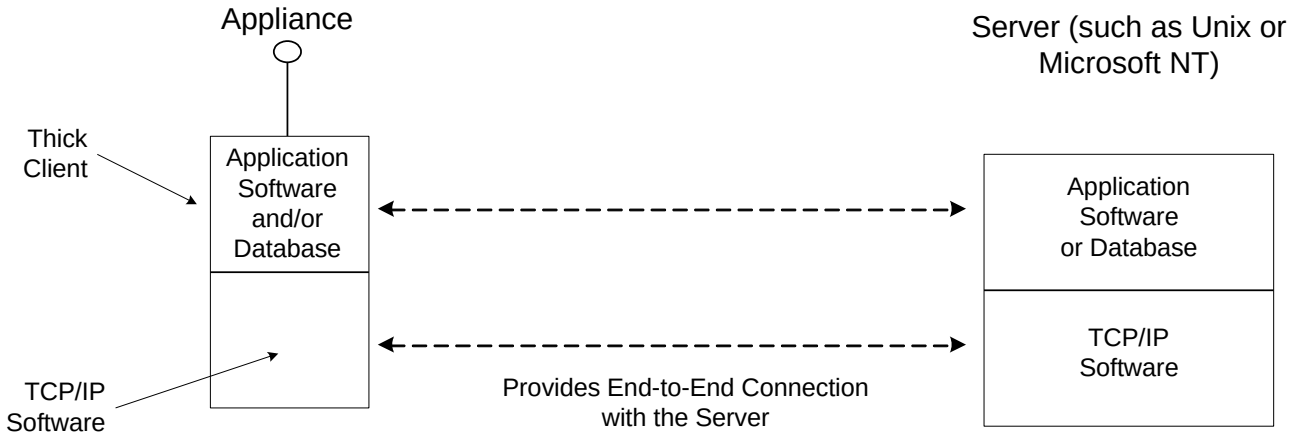
- Pros
  - Very little if any programming needed to interface with existing host-based applications
  - Central application software control
  - Low cost
- Cons
  - Limited availability of terminal-emulation software for DOS-based applications
  - Inflexible programming environment
  - Limited support for migration to client/server systems
  - Difficult in supporting the appliances
  - Significant effect on wireless networks

Thin Client



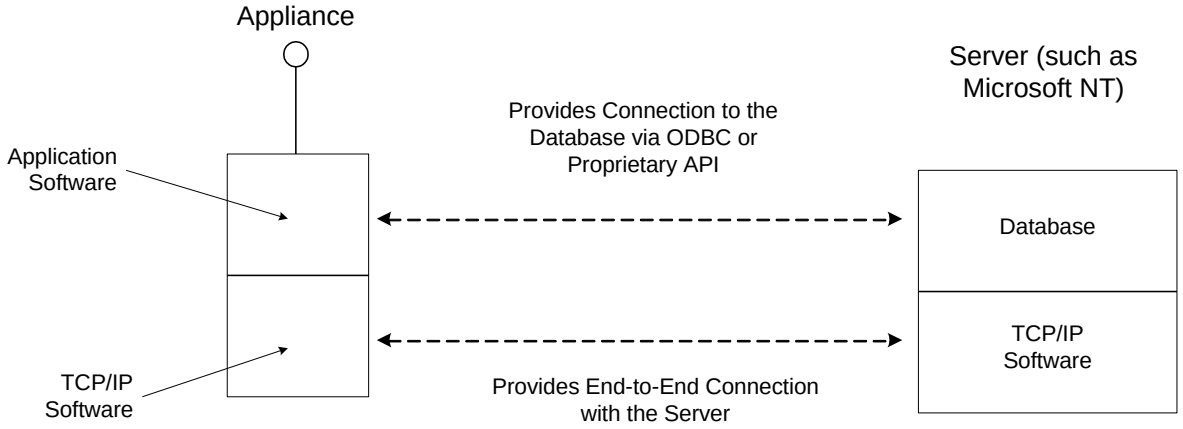
- Pros
  - Distributed application software control
  - Changes can be made to the code base on the host without being concerned about the clients
  - Ideal for devices with low resources
  - Conserves on battery power
- Cons
  - Must have a host to support the application
  - All code resides on server
  - Device has limited functionality
  - Transaction must be done real-time

Thick Client



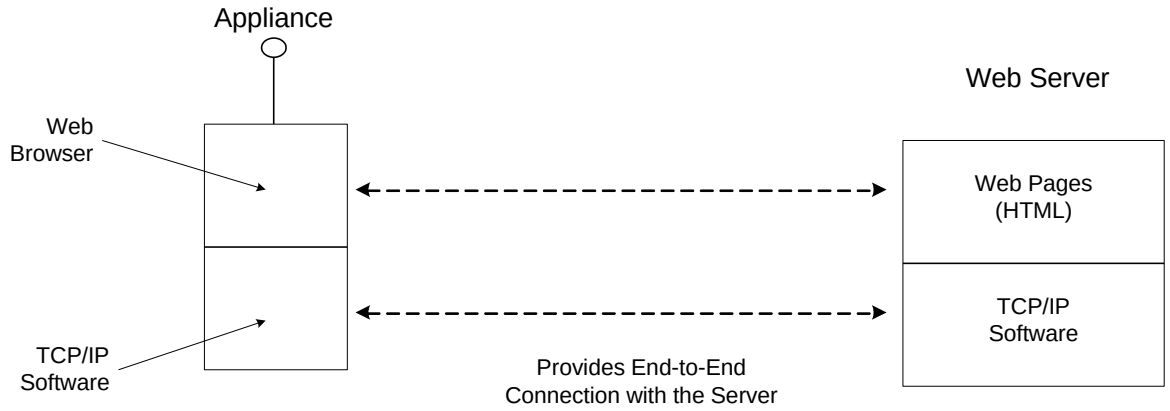
- Pros
  - Store-and-Forward messaging
  - Processing is done locally on device
  - Fairly robust applications can be developed
  - Out of radio range no problem
- Cons
  - Must have adequate resources on the device
  - Data synchronization issues
  - Takes up battery power
  - Must use distributed application software control

Direct Database Connectivity



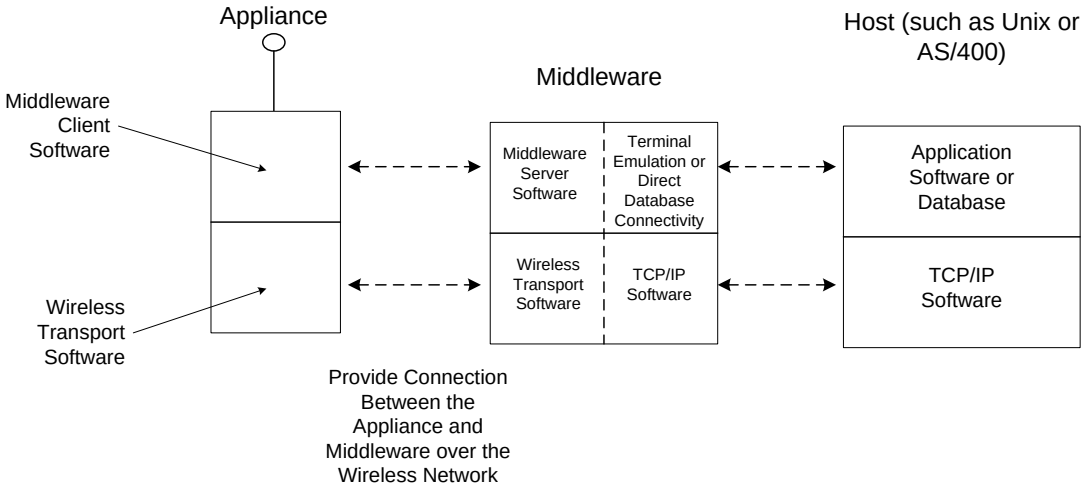
- Pros
  - Flexible programming environment
  - Low cost
  - Good support for client/server systems
  - Distributed application software control
- Cons
  - Moderate amount of programming needed to interface new appliances with existing applications
  - Application size limited to the appliance memory
  - Wireless network impacts

Intranet-Based Connectivity



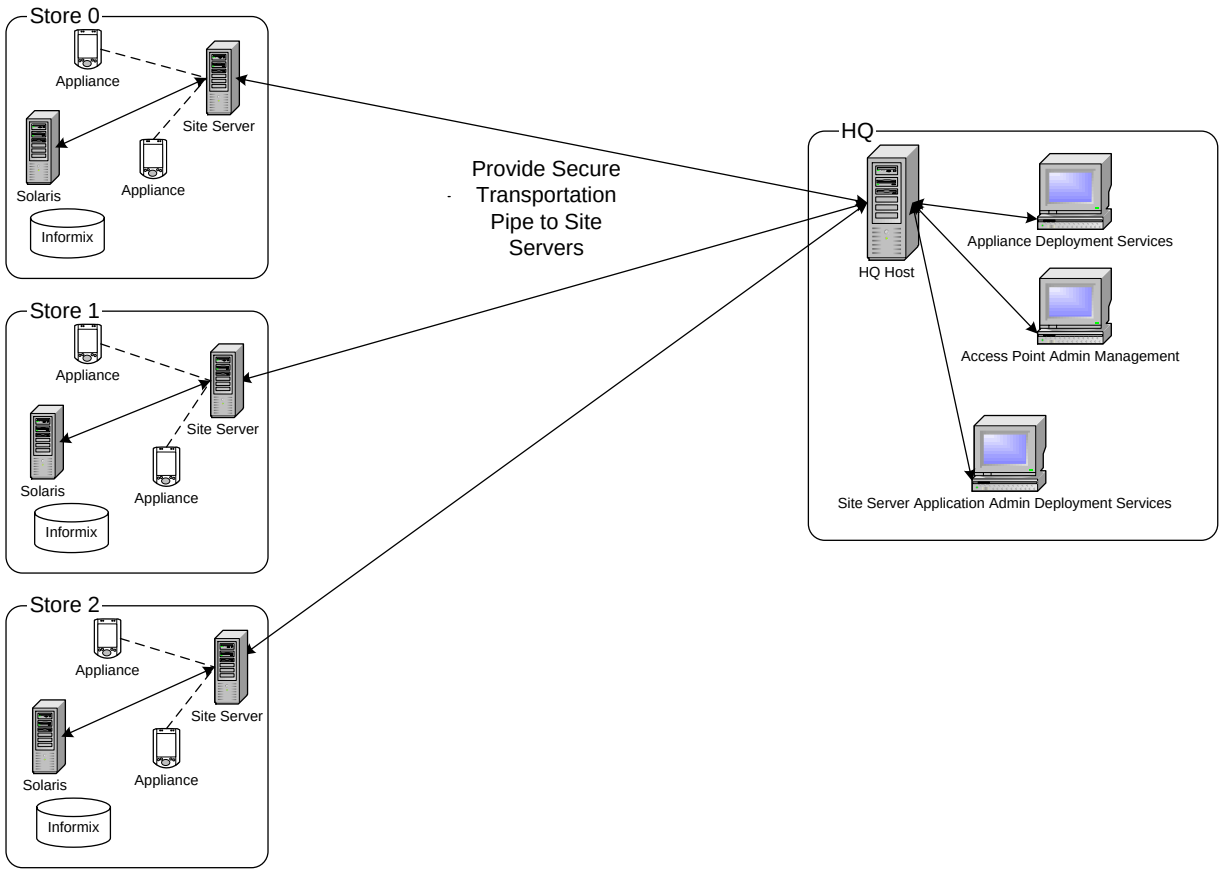
- Pros
  - Very little or no program needed to interface with existing host-based applications
  - Centralized application software control
  - Low cost
  - Strong support for client/server systems
- Cons
  - Potential effect on wireless network performance

Middleware



- Pros
  - Optimization techniques
  - Intelligent restarts
  - Data bundling
  - Embedded acknowledgements
  - Store-and-Forward messaging
  - Screen scraping and reshaping
  - Support for Mobile IP
  - Operational Support Mechanisms
  - Highly efficient operation over wireless networks
  - Reduces programming on appliance or host/server
  - Support for migration from terminal/host to client/server system
  - Support for multiple vendor appliances
  - Long-term cost savings
- Cons
  - Higher initial cost for implementations with smaller number of appliances

Centralized Management Architecture



Architectural Overview

- Administrative Management
  - Single Point Management and view of global infrastructure
  - Access Point Management
    - Roaming with the use of Mobile IP
    - Device Auto Discovery
  - Client Device Management
    - Auto configuration
    - Version Control
      - Always keep your devices up to date
  - Application Management
    - Persistence
    - Process Control
      - Know when an app is out of service
- Multiple Store Deployment
  - Replace old hardware with new hardware store by store or in chunks
  - Use old hardware to support existing store hardware or sell $$$