Defining the Needs
Runtime Client & Feature Management

- Manage valid client identities and their status
- Assign bundle lineups to specific clients, track their updates
- Allow clients to check, load, and ghost their bundle lineups
- Allow for remote configuration of clients (or even servers)
The Runtime Solution

Client Management:
- Device Registration
- Feature/Lineup Synchronization
- Status Reporting
- Configuration Push/Pull

System Management:
- Client Feature Lineup Assignments
- Clients Status Reporting
- Operational Log Viewing
- Bundle Registry & History Reporting
- Lineup Change History Reporting

Communications protocols operate over secure private or open public networks. Data encryption options are available.

Bundle Management:
- Bundle Registry
- Feature and Lineup Registry
- Lineup Assignment Registry
- Client Device Registry
- Client Status Logging

Relational Database Persistence Engine

Servlet Interface

Management Server

HTTP/HTTPS

Web Accessible Remote Management Portal

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“Real World” OSGi Deployments

- Bundles sometimes too fine-grained
  - “What level of firmware do I have installed?”
  - Lineup: a versioned set of versioned bundles

- Clean system start-up and provisioning
  - Unique ID needed for querying assigned lineup
  - Provision via network, USB key, etc
  - “Base” feature bundles have necessary logic to detect and install assigned lineup(s)

- Updating bundles
  - Bundle lineups downloaded entirely before installation
  - Base bundles require restart of system
  - Application bundles hot swappable (watch synchronization issues)

- Remote APIs
  - Need standardized mechanism for controlling OSGi runtime, querying state