IBM Rational Software

Equinox on the Server

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Eclipse as a Server Platform

- Equinox is the Eclipse module system
- Based on OSGi Service Platform R4 specification
- Modular, Dynamic and Flexible
  - Ideal for server side use
- Two scenarios
  - Direct server runtime
  - Embedded in other server technology

Adobe Version Cue

- Embedded client/server document management system
- Project management functionality for small workgroups
  - version control, file collaboration, streamlined reviews
- Eclipse offers
  - Multi-platform support
  - Strong, dynamic, standard component model (Equinox/OSGi)
  - Configuration management
  - Reuse components on clients and servers

Eclipse and OSGi Server Projects

- Projects investigating or using Eclipse and/or OSGi

Eclipse
- Equinox
- Rich Ajax Platform
- Rich Server Platform – UI
- Communications Framework
- Corona
- Enterprise Component Project
- …

Apache
- Felix
- Directory
- Cocoon
- James
- Geronimo

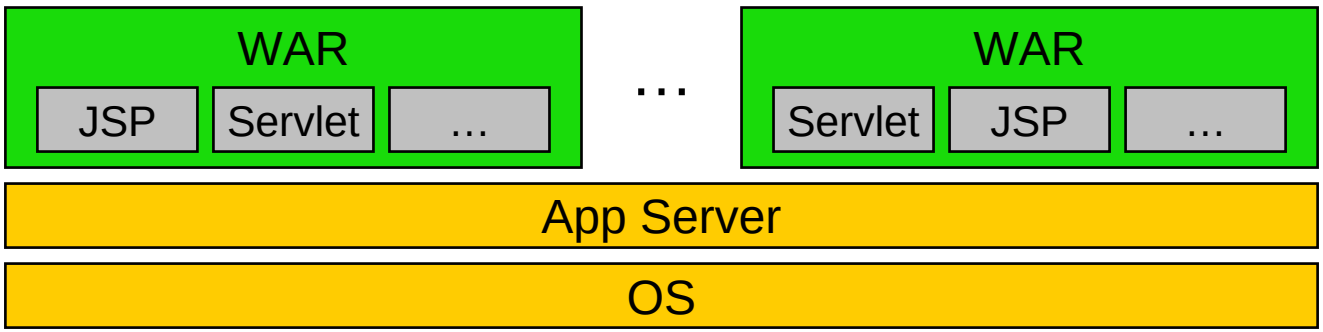
- Spring community investigating OSGi integration
- IBM WAS 6.1 based on Equinox
- Apache Harmony using OSGi modularity

Eclipse on the Server

- All the power of Eclipse on your server…
- Variations
  - Traditional App Server
  - Equinox nested in an App Server
  - Raw Equinox
  - Equinox nested in another Equinox
  - App Server on Equinox

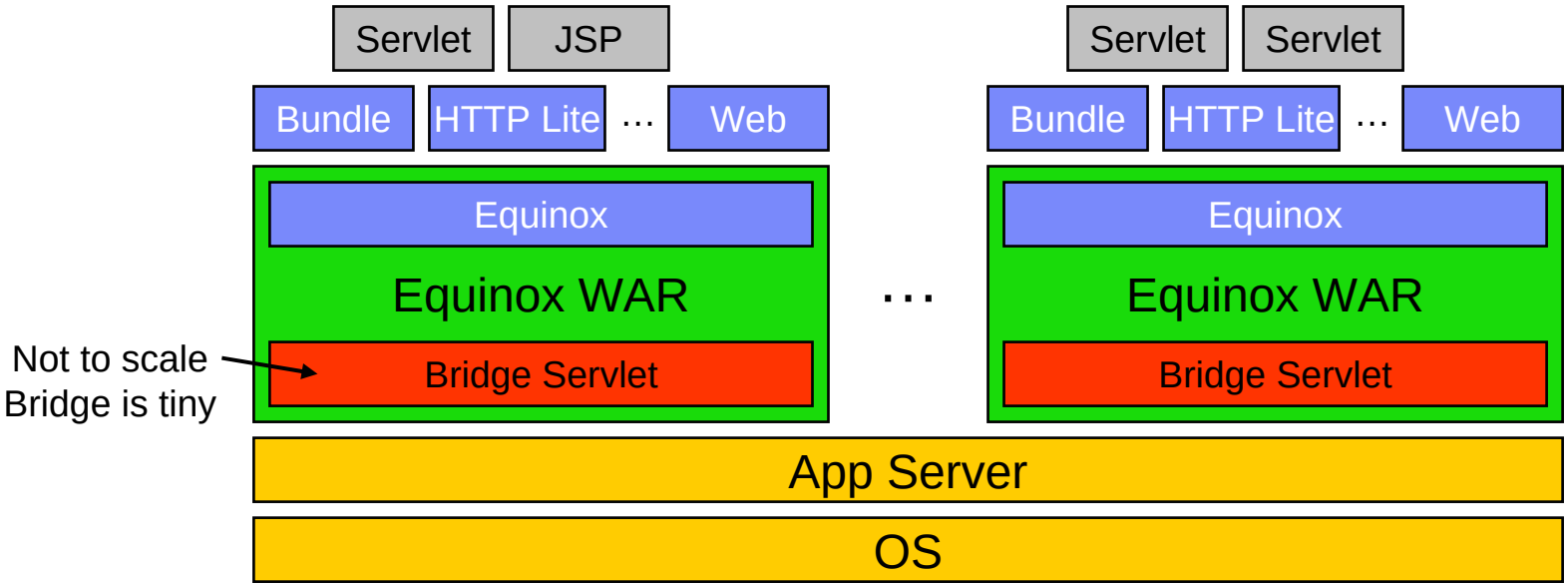
Traditional Server Example

- Server function (e.g., servlets) packaged in a WAR
- Application Install/Update/Manage whole WARs
- Application isolation



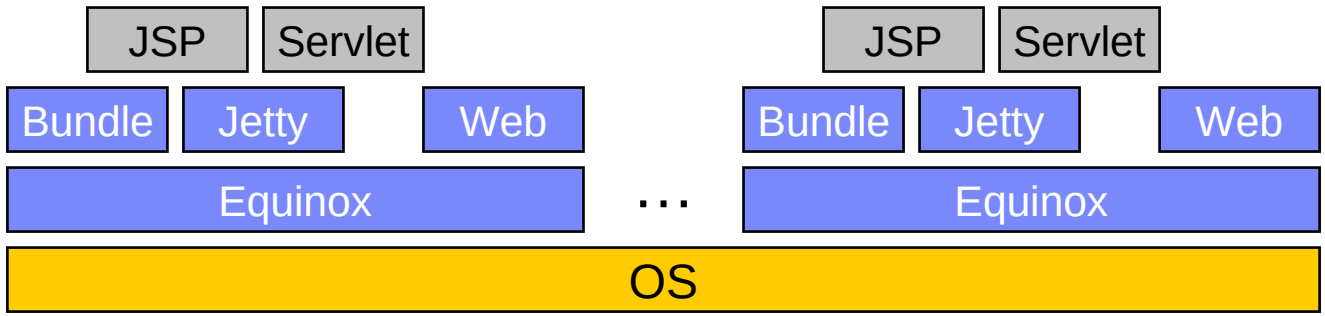
Equinox in an App Server

- Bridge servlet hosts Equinox in traditional App Server
- Application isolation
- Integration with existing infrastructure
- Forwarding (Lite) HTTP Service
  - Expose App Server capabilities
- Add application function as bundles or servlets or JSPs, …
- Install/Update/Manage “WAR” by managing bundles



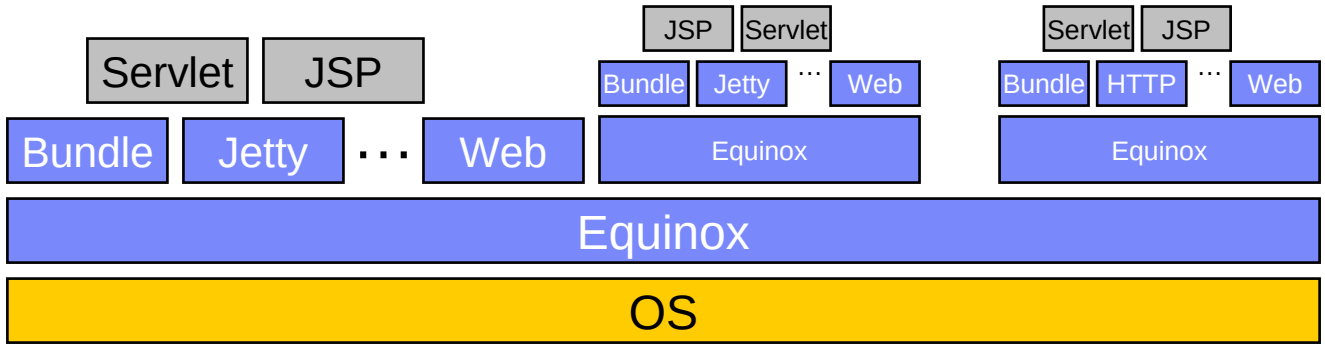
Raw Equinox

- Run Equinox directly
- Process isolation
- HTTP Service (e.g., embedded Jetty bundle)
- Add application function as bundles or servlets or JSPs, …
- Install/Update/Manage server by managing bundles
- Web Services



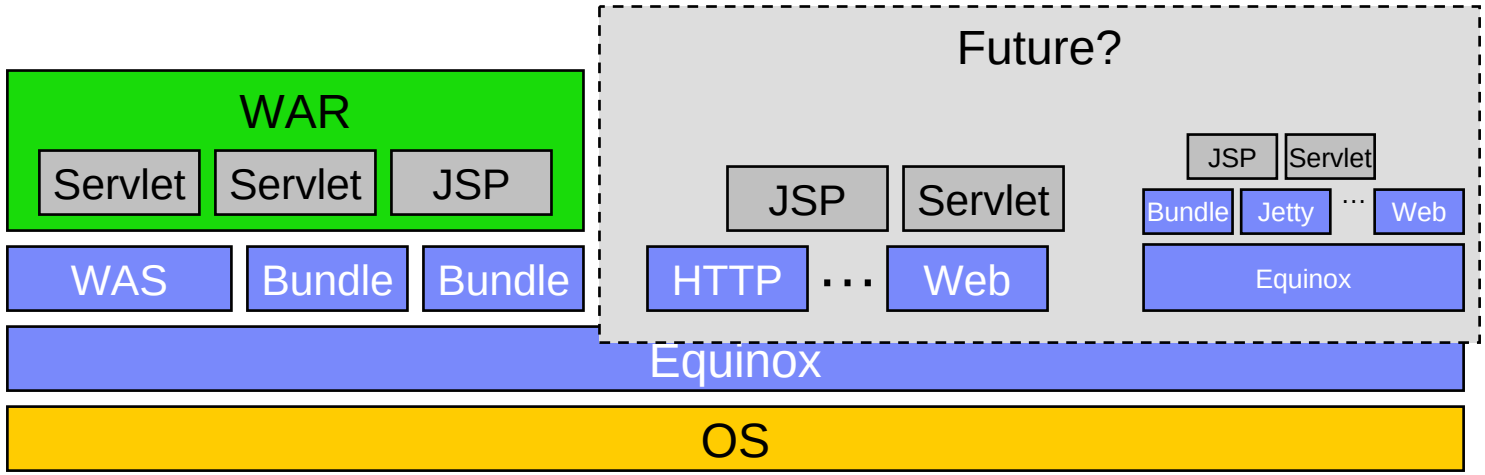
Equinox nested in Equinox

- Run Equinox directly, nest other Equinox instances
- Nested framework isolation
- HTTP Service (e.g., embedded Jetty bundle)
- Add server function as bundles, servlets, JSPs, …
- Install/Update/Manage server by managing bundles
- Web Services, …



App Server on Equinox

- IBM WebSphere 6.1 is built on Equinox
- Add server function as bundles
- Tailor server configuration to match application needs
  - Dynamically
- Potential to combine all other approaches!



Advantages

- Incremental update of server function
- Run multiple versions simultaneously
- Individual configuration and management
- Accommodate disparate application prerequisites
- Class loading performance

- Share components across client and server
  - E.g., support disconnected mode

Technical Challenges

- Classloaders
  - Classloader parenting
  - Isolate nested entities from outside world
  - Context Classloader use
- System property isolation
- Statics and factories in the JRE
  - URLStreamHandlerFactory can only be set once

Questions?