

# WAS Liberty Core

Simplified app development

Right-sized infrastructure



# Agenda

## What is the WAS Liberty profile?

...

Demo / Lab

Right-sized infrastructure

# What is the WAS Liberty profile?

- WAS Liberty profile is:
  - a production-ready Java EE 6 Web Profile certified application server

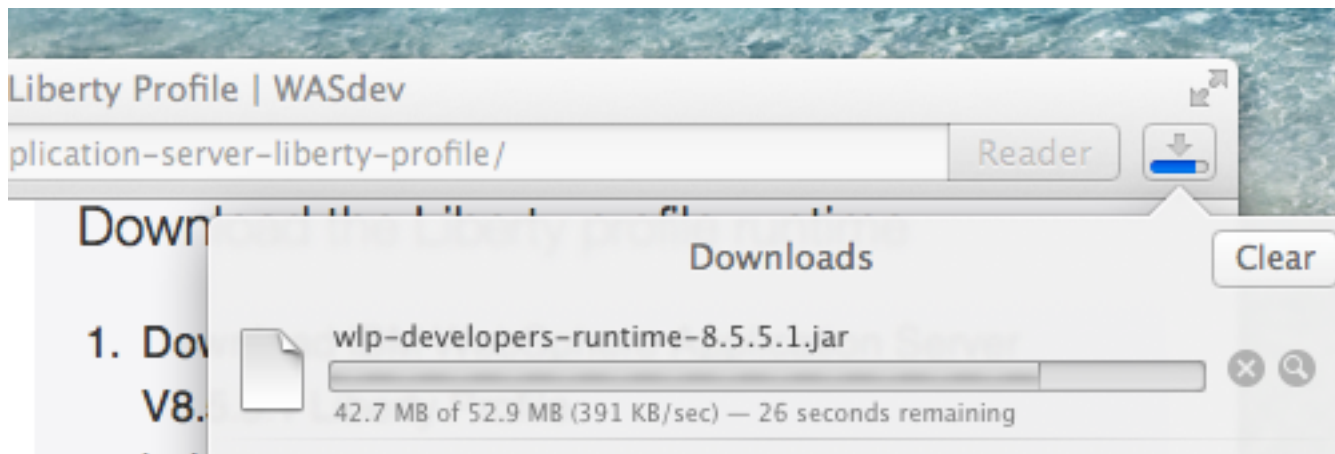
that is also:

- Lightweight
- Composable
- Simple
- Portable
- Flexible
- Dynamic
- Extensible



## Lightweight

- **Java EE 6 Web Profile** certified app server in a 53MB download
- Server starts in less than 3 seconds
- Memory footprint is less than 60MB.



# Agenda

What is the WAS Liberty profile?

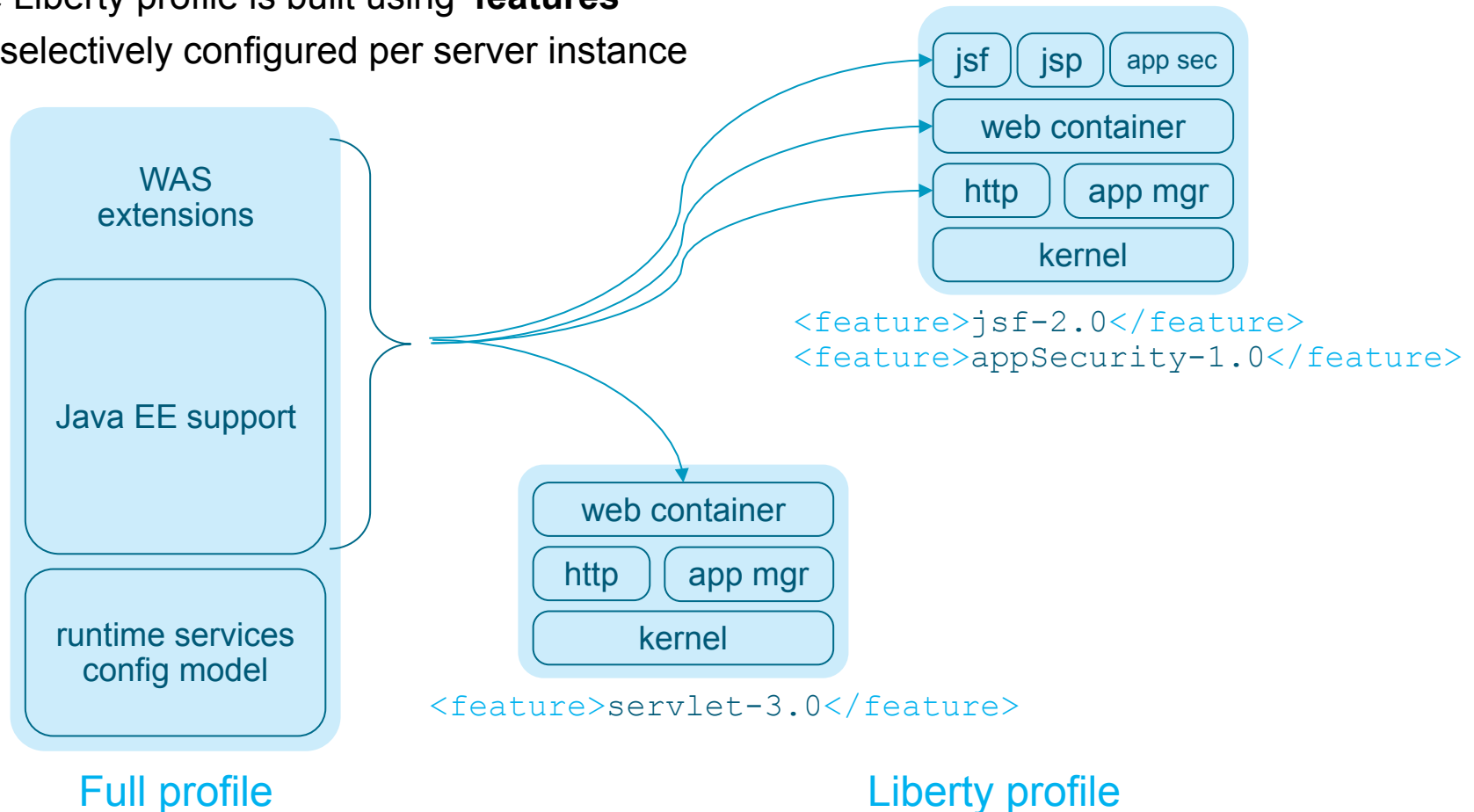
- Lightweight
- **Composable**
- ...

Demo / Lab

Right-sized infrastructure

## Composable: Features enable a right-sized runtime

- The Liberty profile is built using **‘features’**
  - selectively configured per server instance



## Composable: Features have varying granularity

- Some convenience features, e.g. webProfile-6.0
- Also finer-grained features, e.g. servlet-3.0

### webProfile-6.0

servlet-3.0

cdi-1.0

ejbLite-3.1

jsf-2.0

jsp-2.2

beanValidation-1.0

ssl-1.0

jpa-2.0

jdbc-4.0

jndi-1.0

appSecurity-2.0

managedBeans-1.0

# Composable: Features are installable units

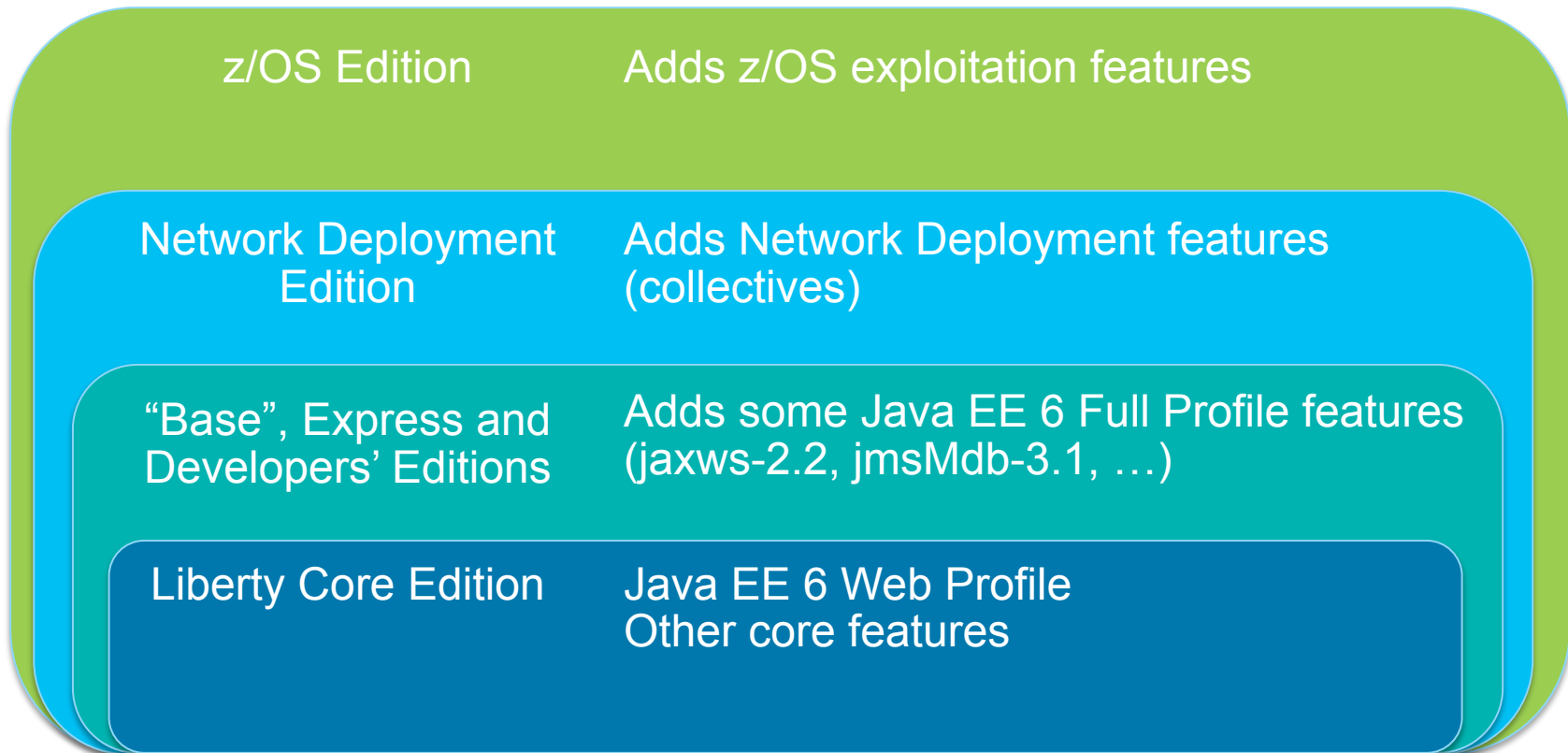
- Each feature is self contained (install and runtime)
- Additional features can be installed from the repository on WASdev (<http://wasdev.net>)

The screenshot shows the WASdev website interface. At the top is a dark navigation bar with the 'WASdev' logo and links for Downloads, Docs, Repository, Get help, Events, and Blog. A search bar is on the right. Below the navigation bar, the 'Liberty Repository' title is displayed. Under 'FILTER BY TYPE:', there are six buttons: 'All assets', 'Product samples', 'Features' (which is highlighted in purple), 'Admin scripts', 'Open source integration', and 'Config snippets'. Below the filters, there is a pagination bar with 'FEATURES' on the left, a navigation sequence '← PREV 1 / 2 NEXT →', and a 'FILTER BY TAG: (none)' dropdown. The first feature listed is 'Portlet Container', dated 'JANUARY 24, 2014'. The description for this feature states: 'This feature provides a runtime environment for JSR 168 and JSR 286 compliant portlets.'



## Composable: Product editions and features

- Product editions contain nested sets of features



# Agenda

What is the WAS Liberty profile?

- Lightweight
- Composable
- **Simple**
- ...

Demo / Lab

Right-sized infrastructure

## Simple requirements

- Any J2SE 1.6 or J2SE 7 compatible Java implementation
- (YES, you can run this on your Mac!)

## Simple to download and install...

- Download from wasdev.net with no login

Download the Liberty profile runtime

1. Download IBM WebSphere Application Server V8.5.5.1 Liberty Profile below.
2. Run the following command:  

```
java -jar wlp-developers-runtime-8.5.5.1.jar
```

[Download](#)

- ... or let the developer tools do it for you

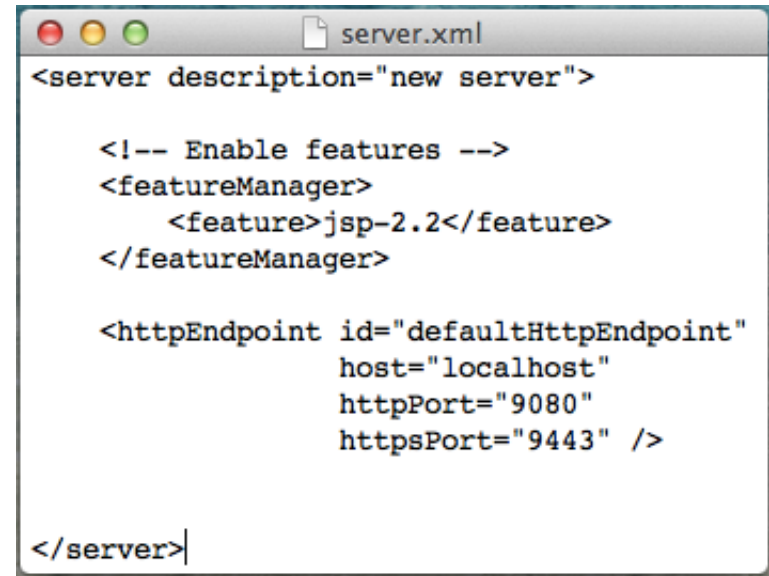
Try in Eclipse

1. Install [Eclipse 4.3.2 for Java EE Developers \(Kepler SR2\)](#).
2. Drag the install button  and drop it onto the Eclipse toolbar then follow the prompts.
3. From the Eclipse servers view, define a new Liberty profile server. You can download and install the runtime as a part of defining a new server.

- `java -jar wlp-developers-runtime-8.5.5.1.jar`

## Simple to configure

- Keep your configuration in a single file
  - Use your favorite text editor
- Configuration is sparse:
  - usable defaults
  - change only what you need

A screenshot of a text editor window titled 'server.xml'. The window contains XML code for configuring a server. The code is as follows:

```
<server description="new server">

    <!-- Enable features -->
    <featureManager>
        <feature>jsp-2.2</feature>
    </featureManager>

    <httpEndpoint id="defaultHttpEndpoint"
        host="localhost"
        httpPort="9080"
        httpsPort="9443" />

</server>
```

## Simple to share

- Create a deployment zip with only the features you need

`server package myServer --include=minify`



# Agenda

## What is the WAS Liberty profile?

- Lightweight
- Composable
- Simple
- **Flexible**
- ...

Demo / Lab

Right-sized infrastructure

## Flexible configuration

- Structure your configuration in whatever way works best:

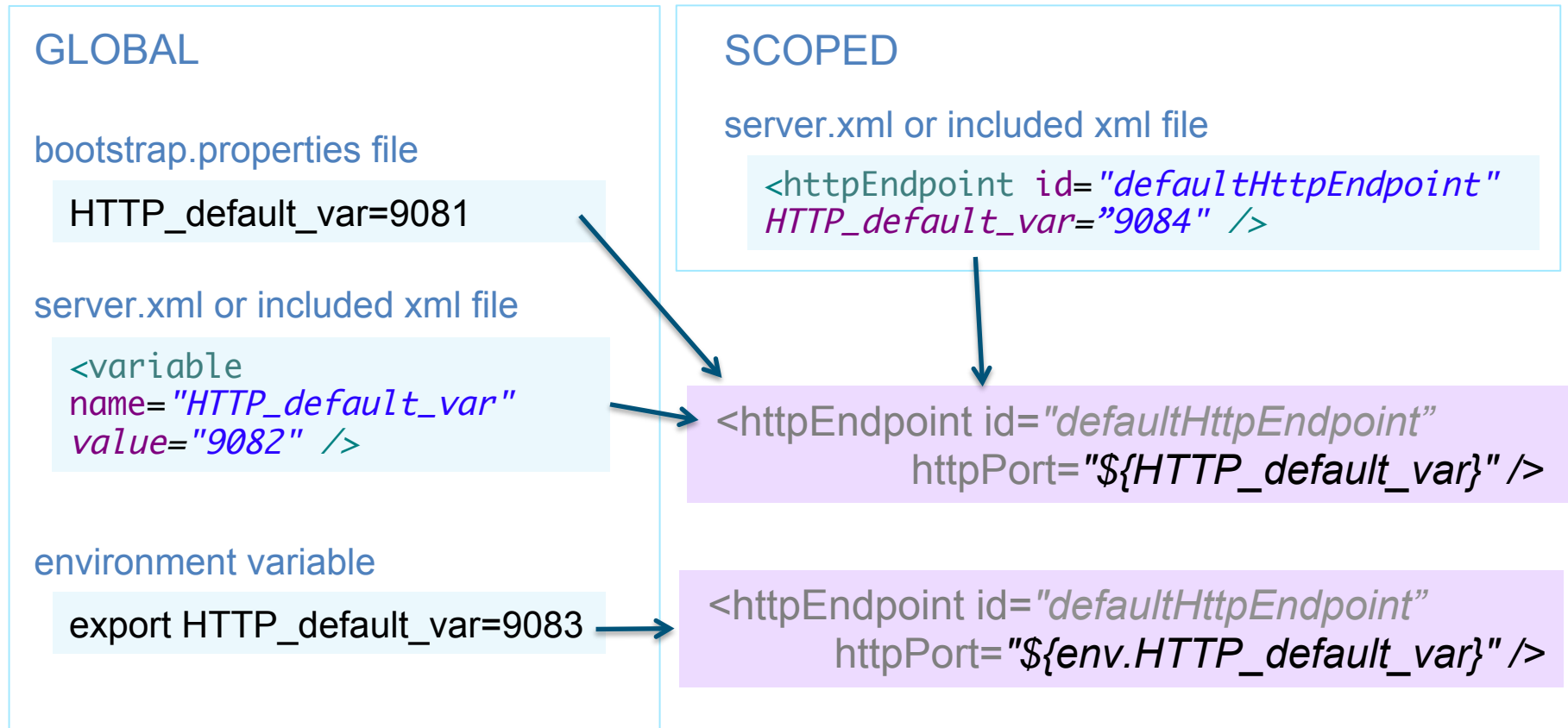
```
<server description="server clone_1">  
    <variable name="HTTP_default_var" value="9082" />  
    <include location="http://commoncfg/global.xml" />  
    <include location="${shared.config.dir}/datasource-1.xml" />  
</server>
```

- Some configuration might stay with the machine
- Some might stay with the app
- Some might be common
- ...



# Flexible configuration

- Maximize configuration sharing with variables



# Agenda

## What is the WAS Liberty profile?

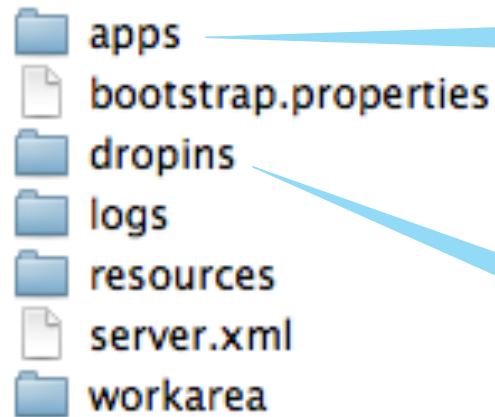
- Lightweight
- Composable
- Simple
- Flexible
- **Dynamic**
- ...

## Demo / Lab

## Right-sized infrastructure

## Dynamic applications

- Drop-in application install
- Dynamic application updates

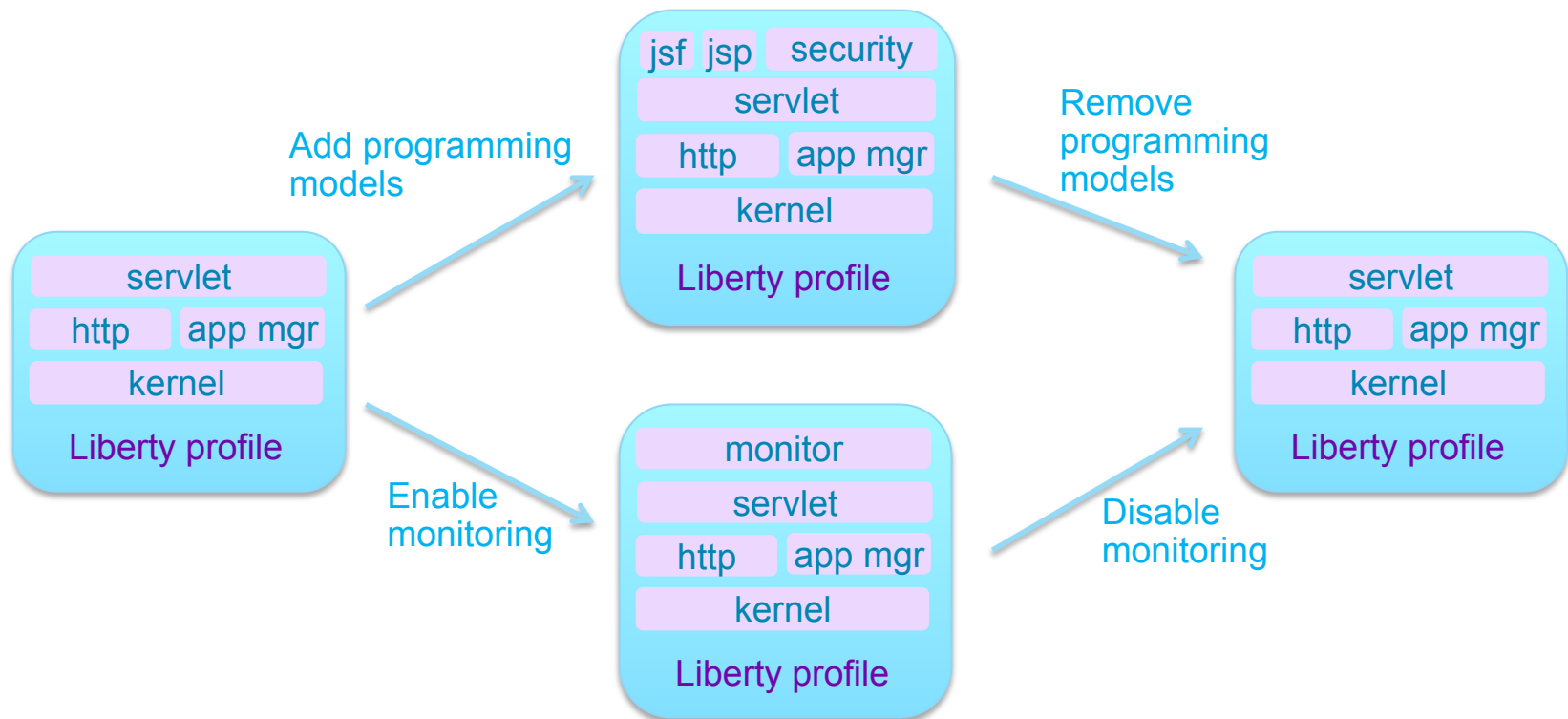


Configured applications go here by default, but can be anywhere

Monitored directory for applications

# Dynamic configuration

- Configuration files are monitored for updates
  - All configuration changes are dynamic
  - Features can be added and removed without a server restart



# Agenda

## What is the WAS Liberty profile?

- Lightweight
- Composable
- Simple
- Flexible
- Dynamic
- **Extensible**
- ...

Demo / Lab

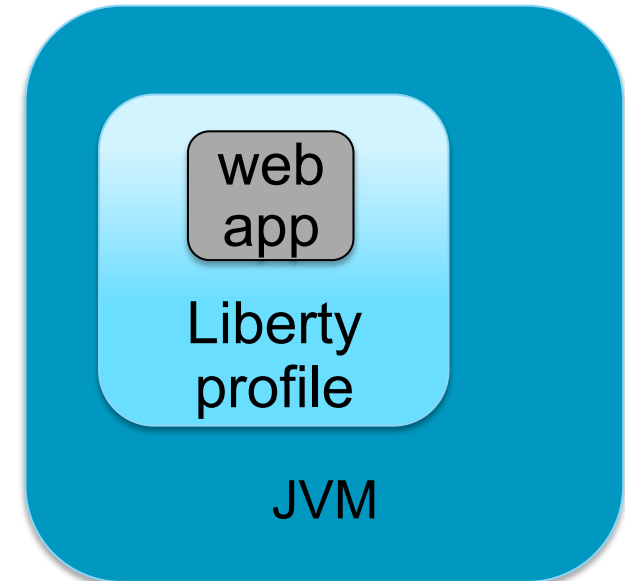
Right-sized infrastructure

## Extensible: Run inside a java process

- The Embeddable SPI allows the server to be launched from within another process:

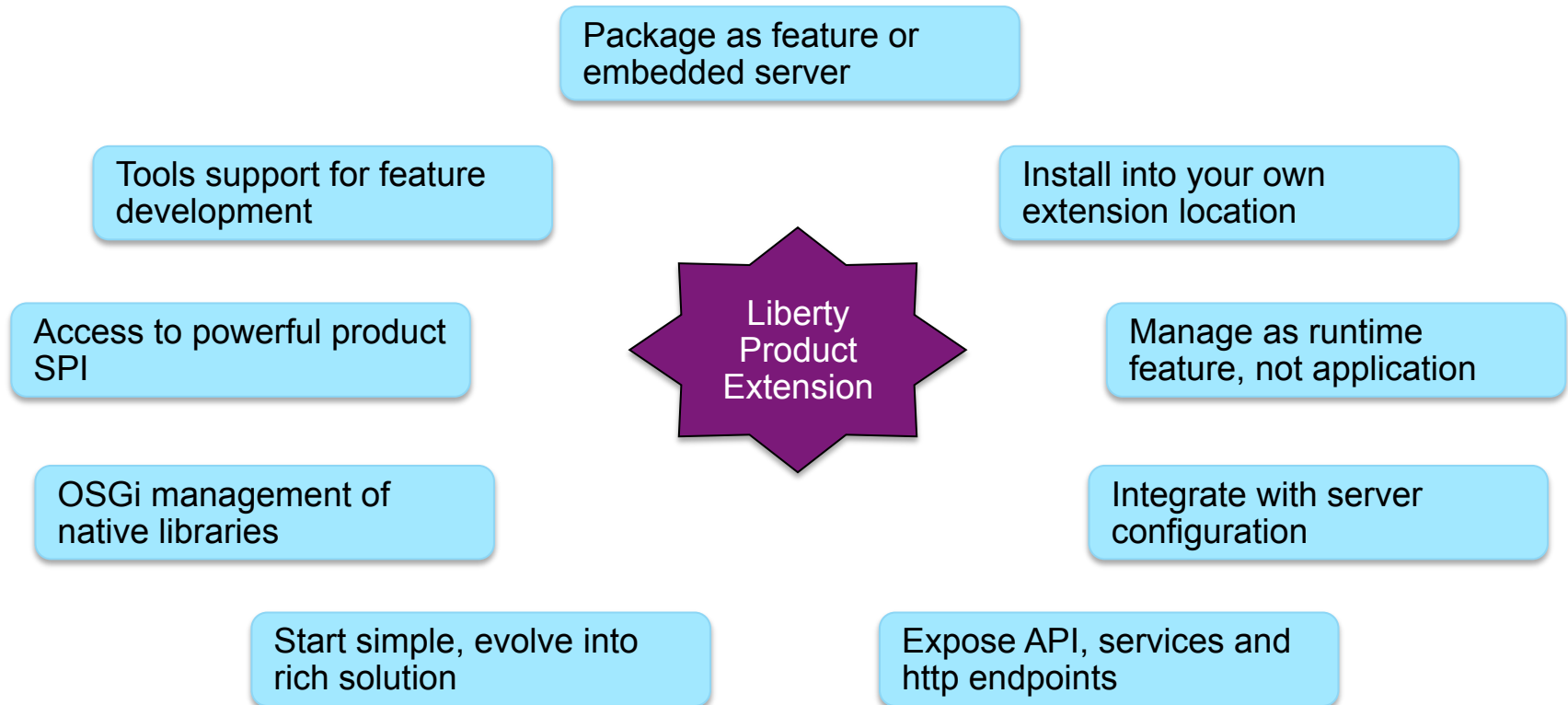
```
Future<Result> startFuture = libertyServer.start();
```

```
Future<Result> stopFuture = libertyServer.stop();
```



# Extensible

- Download and install new features from the Liberty Repository
- Plugin your own features using the Liberty SPI



---

# QUESTIONS?



## Agenda

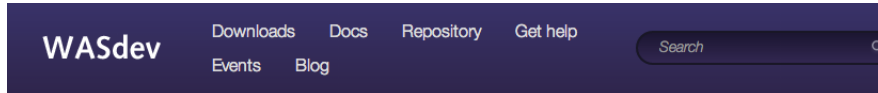
### What is the WAS Liberty profile?

- Lightweight
- Composable
- Simple
- Flexible
- Dynamic
- Extensible
- Questions?

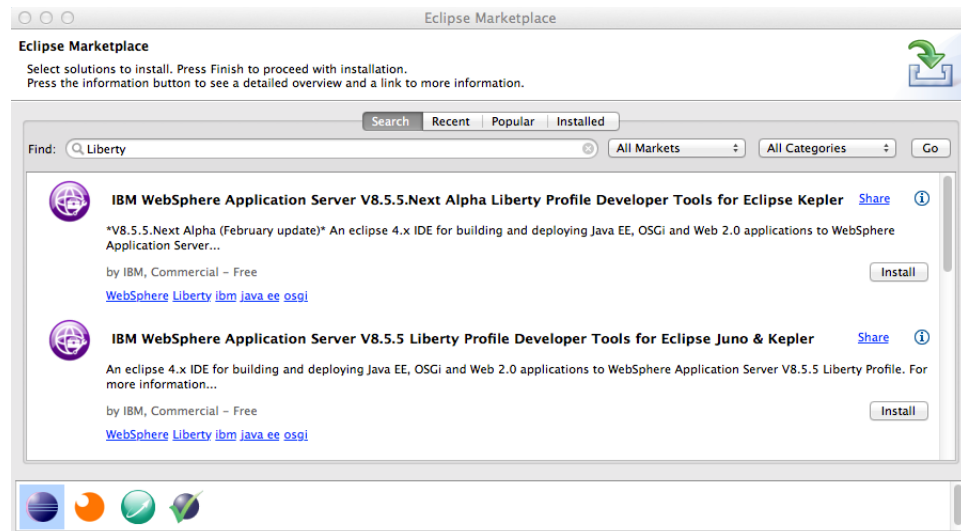
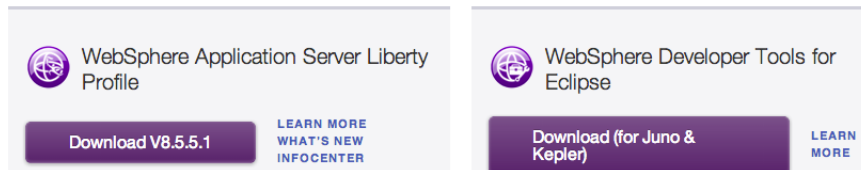
### Demo / Lab

Right-sized infrastructure

# Demo/Lab: Starting up Eclipse/WDT and creating a Liberty server



## Downloads



# Agenda

## What is the WAS Liberty profile?

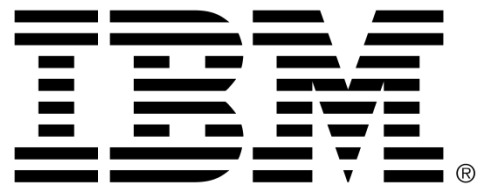
- Lightweight
- Composable
- Simple
- Flexible
- Dynamic
- Extensible

## Demo / Lab

## Right-sized infrastructure

## Right-sized infrastructure

- Create custom servers for your infrastructure that contain (only) what you need.
- End-to-end:
  - Create and test applications and associated configuration
  - Package the application, the server, and the server configuration (server package... )
  - Deploy that packaged (minified) image on one or more servers for production..



## Legal Disclaimer

- © IBM Corporation 2013. All Rights Reserved.
- The information contained in this publication is provided for informational purposes only. While efforts were made to verify the completeness and accuracy of the information contained in this publication, it is provided AS IS without warranty of any kind, express or implied. In addition, this information is based on IBM's current product plans and strategy, which are subject to change by IBM without notice. IBM shall not be responsible for any damages arising out of the use of, or otherwise related to, this publication or any other materials. Nothing contained in this publication is intended to, nor shall have the effect of, creating any warranties or representations from IBM or its suppliers or licensors, or altering the terms and conditions of the applicable license agreement governing the use of IBM software.
- References in this presentation to IBM products, programs, or services do not imply that they will be available in all countries in which IBM operates. Product release dates and/or capabilities referenced in this presentation may change at any time at IBM's sole discretion based on market opportunities or other factors, and are not intended to be a commitment to future product or feature availability in any way. Nothing contained in these materials is intended to, nor shall have the effect of, stating or implying that any activities undertaken by you will result in any specific sales, revenue growth or other results.
- Performance is based on measurements and projections using standard IBM benchmarks in a controlled environment. The actual throughput or performance that any user will experience will vary depending upon many factors, including considerations such as the amount of multiprogramming in the user's job stream, the I/O configuration, the storage configuration, and the workload processed. Therefore, no assurance can be given that an individual user will achieve results similar to those stated here.
- Java and all Java-based trademarks are trademarks of Sun Microsystems, Inc. in the United States, other countries, or both.

## Simple config: Easy to edit...

```
<server>
  <featureManager>
    <feature>jsp-2.2</feature>
    <feature>jdbc-4.0</feature>
  </featureManager>
```

Single XML file (minimal)  
Specify only what you need to customize

Features control which capabilities (bundles)  
are installed in the server

'Singleton' configurations apply to runtime  
services like logging

```
<logging traceSpecification="webcontainer=all=enabled:*=info=enabled"/>
```

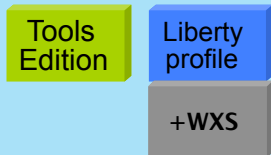
'Instance' configurations define multiple  
resources like applications or datasource  
definitions

```
<application name="tradelite" location="tradelite.war"/>
```

```
<dataSource jndiName="jdbc/TradeDataSource">
  <properties.derby.embedded databaseName="${server.config.dir}/tradedb"/>
</dataSource>
</server>
```

# How does the WAS Liberty profile fit in the WAS family?

## WAS for Dev



Enables efficient development of innovative apps that will run on WAS in production

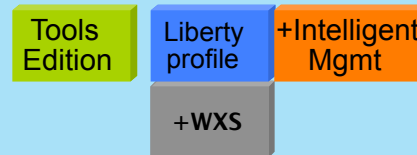
Available as a no-charge edition for the developer desktop and includes Eclipse adapters

## WAS Hypervisor Edition



Optimized to instantly run in VMware, PowerVM, zVM and other server virtualization environments

## WAS ND



Delivers near-continuous availability, with advanced performance and intelligent management capabilities, for mission-critical apps. Full entitlement to eXtreme Scale.

## WAS for z/OS



Takes full advantage of the z/OS Sysplex to deliver a highly secure, reliable, and resource efficient server experience

## WAS



Provides secure, high performance transaction engine for moderately sized configurations with web tier clustering and failover across up to five application server profiles. Entitlement to eXtreme Scale for session caching and dynacache.

## WAS Liberty Core

Liberty Profile Only  
(Web Profile)

NEW

A lightweight and low-cost Liberty profile based offering (not full-profile WAS), providing the capabilities to rapidly build and deliver web applications not requiring the full Java EE stack. (Price point close to current WAS Express.)



# Composable

core

ssl-1.0

webCache-1.0

concurrent-1.0

wab-1.0

blueprint-1.0

collectiveMember-1.0

restConnector-1.0

localConnector-1.0

sessionDatabase-1.0

ldapRegistry-3.0

jaxrs-1.2

json-1.0

timedOperations-1.0

monitor-1.0

oauth-2.0

cdi-1.0

ejbLite-3.1

jsf-2.0

jsp-2.2

servlet-3.0

jpa-2.0

jdbc-4.0

jndi-1.0

appSecurity-2.0

managedBeans-1.0

# Composable

base

core

wsSecurity-1.1

jaxb-2.2

jaxws-2.2

wasJmsServer-1.0

wmqJmsClient-1.1

wasJmsClient-1.1

mongodb-2.0

jmsMdb-3.1

wasJmsSecurity-1.0

ssl-1.0

webCache-1.0

concurrent-1.0

wab-1.0

blueprint-1.0

collectiveMember-1.0

restConnector-1.0

localConnector-1.0

sessionDatabase-1.0

ldapRegistry-3.0

jaxrs-1.2

json-1.0

timedOperations-1.0

monitor-1.0

oauth-2.0

cdi-1.0

ejbLite-3.1

jsf-2.0

jsp-2.2

servlet-3.0

jpa-2.0

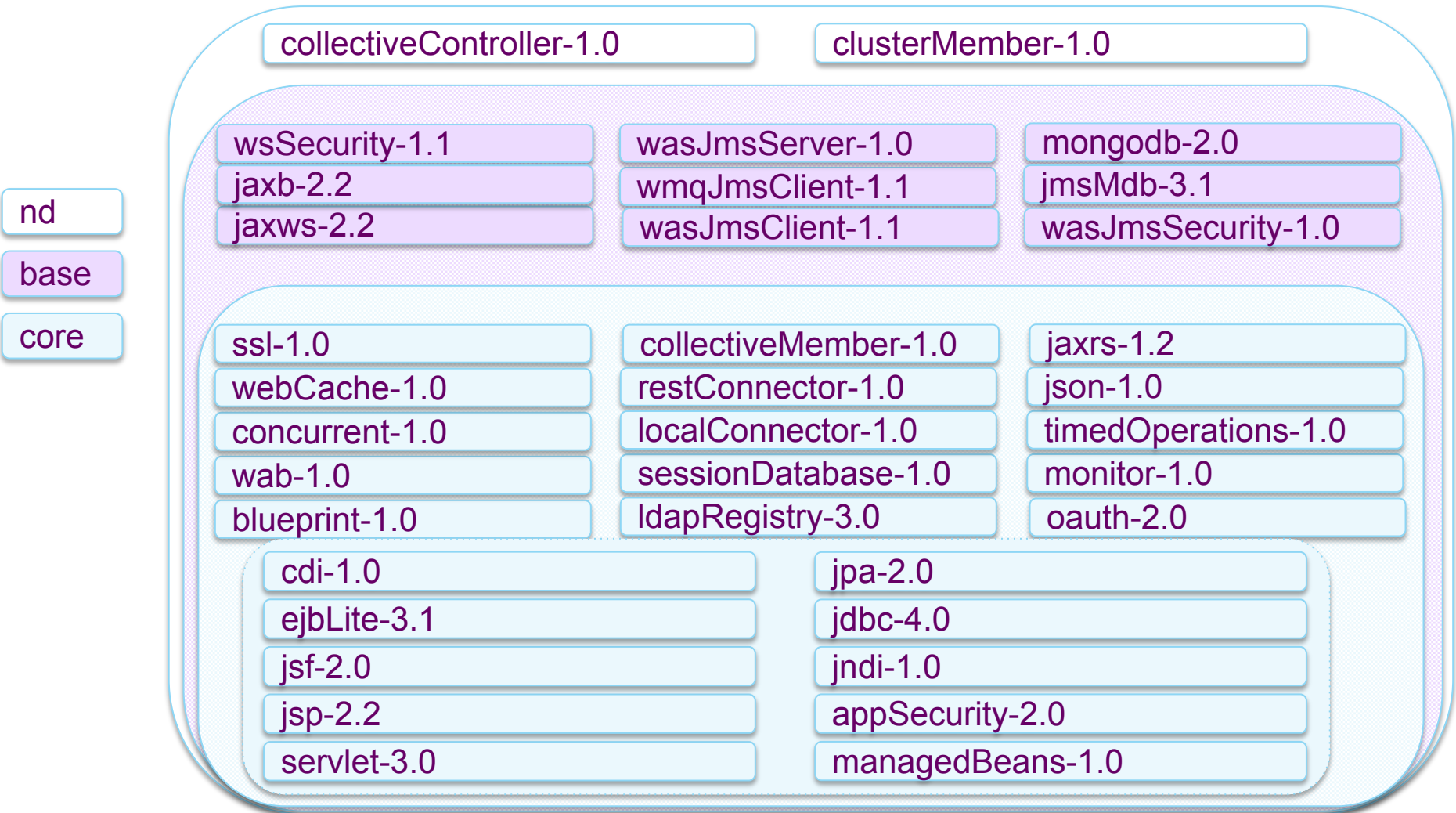
jdbc-4.0

jndi-1.0

appSecurity-2.0

managedBeans-1.0

# Composable



# Composable

zosSecurity-1.0

zosTransaction-1.0

zosWlm-1.0

collectiveController-1.0

clusterMember-1.0

wsSecurity-1.1

wasJmsServer-1.0

mongodb-2.0

jaxb-2.2

wmqJmsClient-1.1

jmsMdb-3.1

jaxws-2.2

wasJmsClient-1.1

wasJmsSecurity-1.0

ssl-1.0

collectiveMember-1.0

jaxrs-1.2

webCache-1.0

restConnector-1.0

json-1.0

concurrent-1.0

localConnector-1.0

timedOperations-1.0

wab-1.0

sessionDatabase-1.0

monitor-1.0

blueprint-1.0

ldapRegistry-3.0

oauth-2.0

cdi-1.0

jpa-2.0

ejbLite-3.1

jdbc-4.0

jsf-2.0

jndi-1.0

jsp-2.2

appSecurity-2.0

servlet-3.0

managedBeans-1.0

zos

nd

base

core