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Java EE Configuration Service

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Some Common Requests and Use Cases

- Single application, multiple deployments
  - Don’t want to rip open application for each deployment
  - Multiple different resource definition packages
- Script-based configuration deployment
  - Don’t require manual deployment tool
- Deployment profiles
  - Development, Testing, Production, etc
- Environment properties 2.0
  - Available to one or to all apps
  - Simple to define and manage

Additional Requests

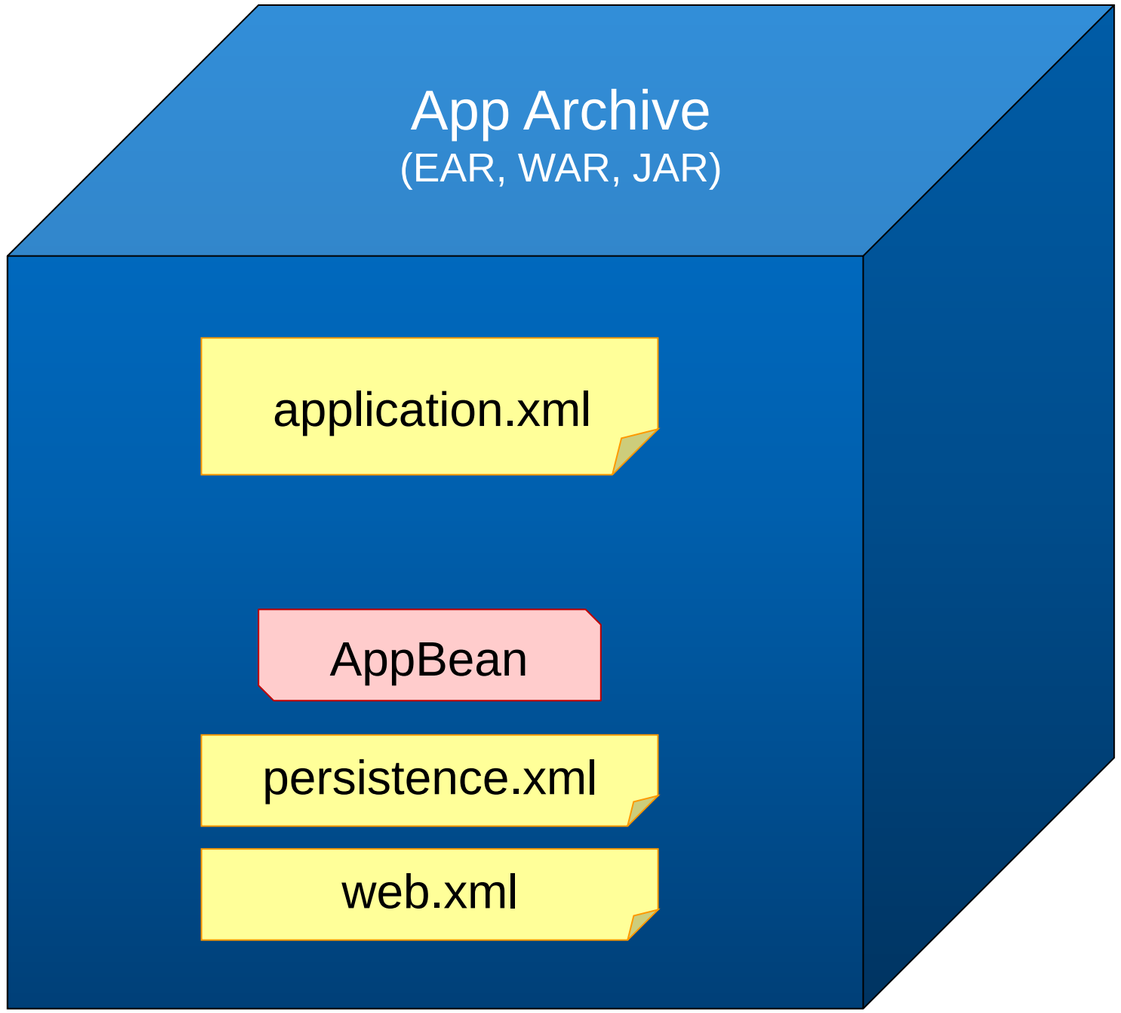
- Multiple modes of configuration access
  - Injection, integration with CDI
  - Java API for runtime access
- Versioned configuration
  - Dependency on a specific configuration version
- Dynamic SaaS tenant configuration
  - Admin wants to be able to add tenants (w/o restart)
  - SaaS application uses an API to look up a given tenant configuration
- Dynamic configuration change notification
  - Some apps want to be notified when a configuration change occurs

The Solution

- Add configuration support to Java EE
  - Configuration archives (e.g .car)
    - Created and deployed separately from application archives
    - Contain resource and property configuration definitions
  - Container integrates deployed configurations with existing services
  - Applications can declare dependencies on named configurations
  - Injection into Java EE managed components
  - Java API to access configured resources

Example – Application Development

```
<application … >
  <application-name>MyApp
  </application-name>
  ...
  <required-configs>
    <config
       name="myapp.config"/>
  </required-configs>
  ...
</application>
```



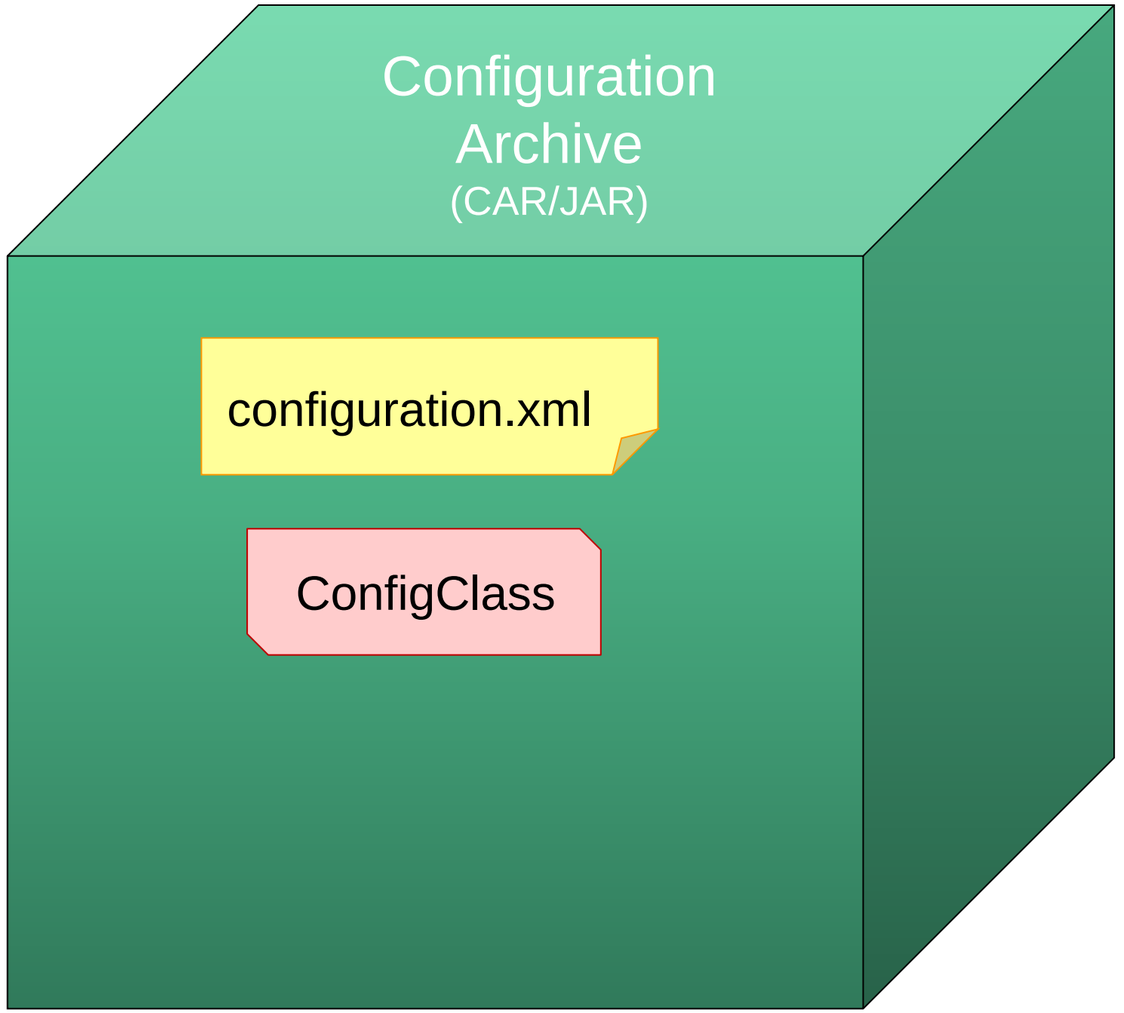

```
class AppBean {

  @Inject
  @Config("app.ds")
  DataSource someDS;
  ...
}
```

```
<persistence … >
  ...
  <jta-datasource>
     java:global/jdbc/myDS
  </jta-datasource>
  ...
</persistence>
```

```
<web-app … >
  ...
  <servlet-mapping>
     ...
    <url-pattern>${vendor}/*
    </url-pattern>
  </servlet-mapping>
  ...
</web-app>
```

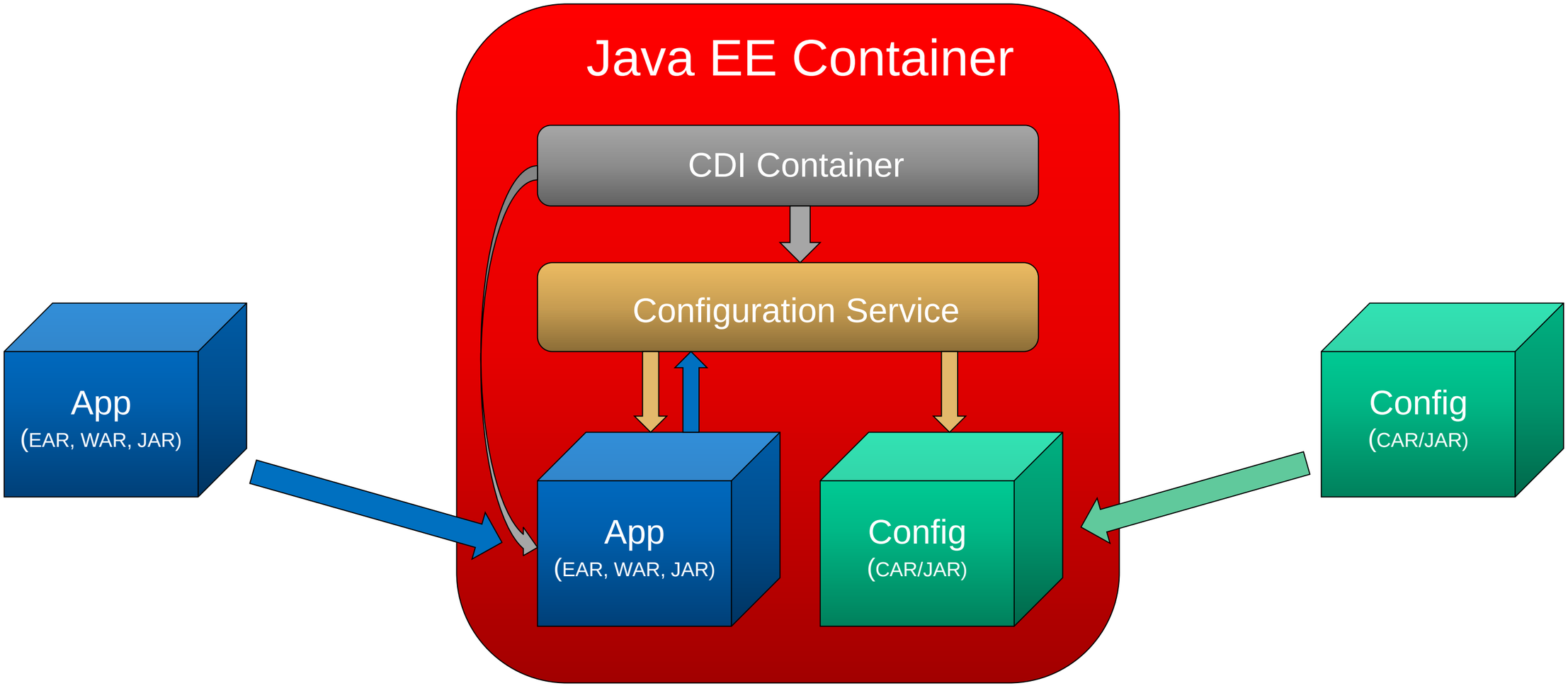
Example – Configuration Development

```
<configuration
   name="myapp.config“,
   scope=GLOBAL,
   profile=PRODUCTION,
   ... >
 <property name="app.ds">
  <data-source>
    <name>java:global/jdbc/myDS
    </name>
    <class-name>org…DataSource
    </class-name>
    <url>jdbc:…/myDB</url>
    ...
  </data-source>
 </property>
 <property name="vendor"
           value="acme"/>
</configuration>
```




```
@Configuration("myapp.config")
@ConfigProperty(name="app.ds",
 dataSource=
  @DataSourceDefinition(
  name="java:global/jdbc/MyDS",
  className="org…DataSource",
  url="jdbc:…/myDB",
  ...
  ))
@ConfigProperty(name="vendor",
                value="acme")
class ConfigClass { }
```

Example – Deployment and Runtime



Configuration API

- API used by applications to access configuration objects

```
interface ConfigurationService {

    Configuration getConfiguration(String configName);
    Collection<Configuration> getConfigurations(String nameFilter);

    Object getProperty(String propertyName);
    <T> T getProperty(String propertyName, Class<T> valueClass)
}

interface Configuration {

    String getName();

    String getProfile();

    boolean isGlobal();

    Object getProperty(String propertyName);
    <T> T getProperty(String propertyName, Class<T> valueClass)
}
```

Configuration API - Example

```
@ManagedBean
public class ApplicationBean {

  @Resource ConfigurationService configService;
  String vendor;

  @PostConstruct
  public void initialize() {
    vendor = configService.getProperty("vendor", String.class);
  }

  // ...

}
```

Feedback

- Do you experience any of the kinds of problems this service proposes to solve?
- If so, would this solution meet your need?
- Have you ever had a need for dynamic configuration (such as what OSGi might provide)?
- What kind of tool support would you expect to see for this?
- Do you have any different problems that you wish a service like this would solve?
- Other feedback?