

Custom server assemblies using Geronimo Administrative console

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Geronimo has always been a flexible, component-based server environment which allowed lightweight server images to be custom built for specific application environments – minimizing server footprint and reducing server startup time. Until now, creating customized Geronimo server runtimes was largely a build-time operation. Geronimo 2.1 greatly simplifies build-time customization, but also allows users to export a new custom server image from a running Geronimo server. Users may take a function-centric approach, choosing the desired set of server plugins for the server (e.g. Web Container+JMS+Deploy capabilities), or an application-centric approach, choosing one or more application plugins and allowing Geronimo to calculate the necessary server components required by the applications.

In the following section we will illustrate the steps on assembling a customer server in Geronimo. We are using Apache Geronimo V2.1.1 for this tutorial. In this tutorial we are taking an application centric approach. Using this approach our application will define on the contents of server. Custom server will be built around our application and will include only the components required by our application. For the application we have used an existing tutorial from tutorial section. Refer [Stateless Session Bean](#) tutorial for application development and deployment. Later we will assemble a custom server which will only include functional components required by our application.

Clarification

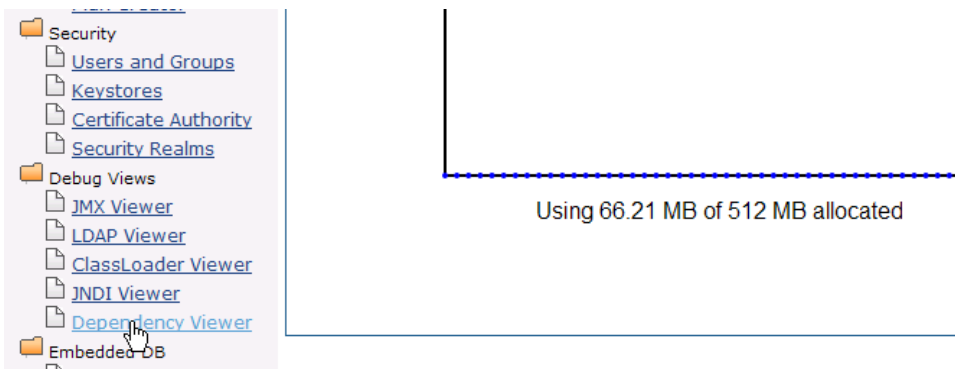
Application client referred in this tutorial is actually a Web Application Client.

Identifying the functional components required by our server.

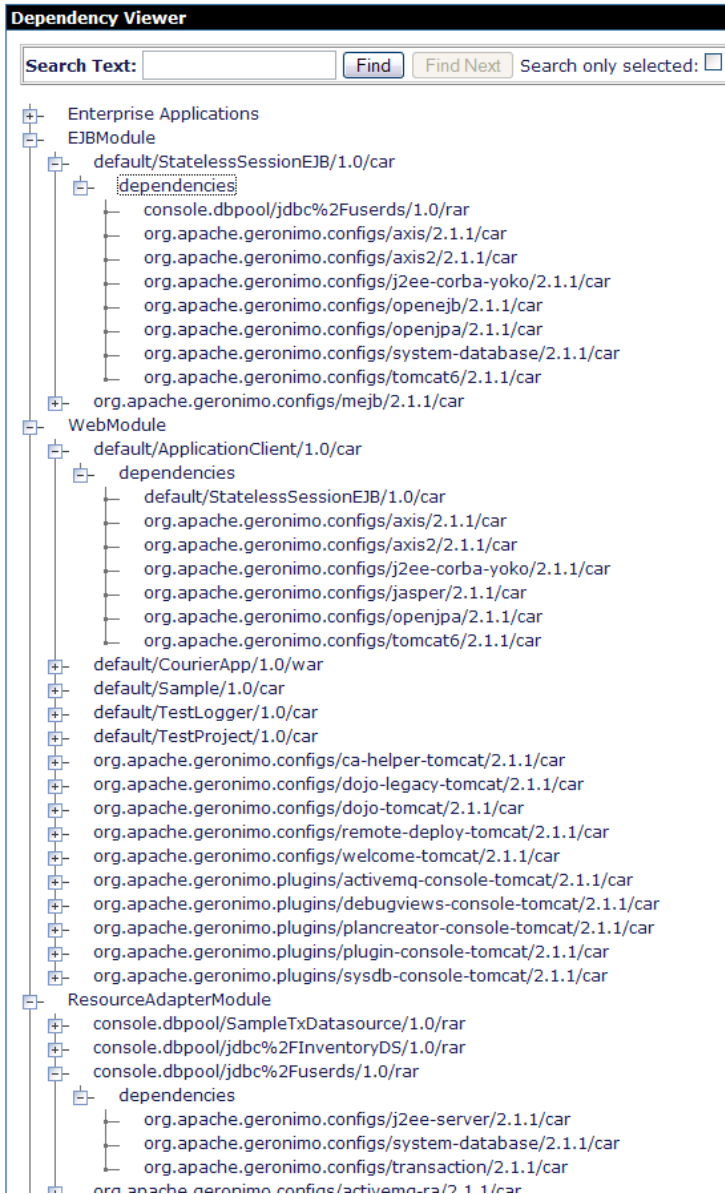
This step is required to identify the various dependencies required by our application. Since we are following an application centric approach we need to find out the various dependencies required by our application.

This is the major work required for our custom server which has been simplified by geronimo administrative console.

1. To assemble a server from existing instance of geronimo we need to include **geronimo-boilerplate-minimal** plugin which includes several files used to start the server. Refer [Plugin infrastructure](#) section for more information on geronimo-boilerplate-minimal.
2. To identify the various dependencies associated with our application Launch the **Dependency Viewer** under **Debug Views**.



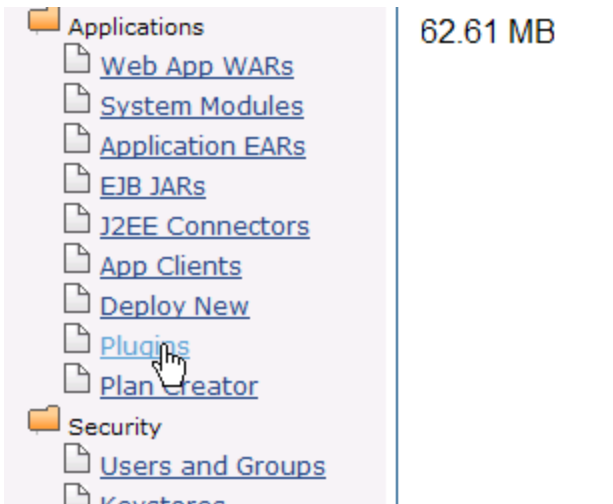
3. Expand EJBModule followed by **default/StatelessSessionEJB/1.0/car**. Select dependencies to list the dependencies for this application. Similarly expand **WebModule** followed by **default/ApplicationClient/1.0/car** and **ResourceAdapterModule** followed by **console.dbpool/jdbc%2Fuserds/1.0/rar**.



This completes the identification of all the functional component(dependencies) required by our application centric custom server.

Assembling a custom server.

1. Launch the administrative console and select **Plugins** under **Applications**.



2. Select Assemble a server.

Create and Install Plugins

This portlet lets you install or create Geronimo plugins. This can be used to install new features into a Geronimo server at runtime.

Install Geronimo Plugins

Choose a remote repository to inspect for available Geronimo plugins. The repository must have a `geronimo-plugins.xml` file in the root director

You can also download running configurations from another Geronimo server just as if you're browsing and installing third-party plugins. If you `http://geronimo-server:8080/plugin/maven-repo/` and the enter the administrator username and password in the optional authentication field

Repository:

[Update Repository List](#)

[Add Repository](#)

Optional Authentication: User: Password:

Create Geronimo Plugin

Choose a configuration in the current Geronimo server to export as a Geronimo plugin. The configuration will be saved as a CAR file to your local `META-INF/geronimo-plugin.xml` file to the CAR after you export it in order for it to be a valid plugin.

Assemble a server from plugins in this one

3. Name the artifacts as suggested in the figure.

Create and Install Plugins

Name the server to be assembled

Assembly target path:

Assembly groupId:

Assembly artifactId:

Assembly version:

Assembly format:

Plugins in local


	Name	Version	Category
<input type="checkbox"/>	org.apache.geronimo.assemblies/geronimo-boilerplate-minimal/2.1.1/jar	2.1.1	Geronimo Core
<input type="checkbox"/>	org.apache.geronimo.framework/upgrade-cli/2.1.1/car	2.1.1	Deployment
<input type="checkbox"/>	org.apache.geronimo.framework/client-system/2.1.1/car	2.1.1	Geronimo Core
<input type="checkbox"/>	org.apache.geronimo.framework/geronimo-gbean-deployer/2.1.1/car	2.1.1	Geronimo Core
<input type="checkbox"/>	org.apache.geronimo.framework/j2ee-security/2.1.1/car	2.1.1	Security
<input type="checkbox"/>	org.apache.geronimo.framework/j2ee-system/2.1.1/car	2.1.1	Geronimo Core
<input type="checkbox"/>	org.apache.geronimo.framework/jsr88-cli/2.1.1/car	2.1.1	Deployment

- Next step is to select the plugins required in our custom server assembly. Select **geronimo-boilerplate-minimal**, WAR, EJB and there respective dependencies. You also have to select **org.apache.geronimo.configs/derby/2.1.1/car** since our application uses derby database.
- To get a web based administrative console you need to select **org.apache.geronimo.plugins/console-tomcat/2.1.1/car**. For the database wizard select **org.apache.geronimo.plugins/sysdb-console-tomcat/2.1.1/car**.
- Final list of plugins we have selected are as follows
 - org.apache.geronimo.assemblies/geronimo-boilerplate-minimal/2.1.1/jar
 - org.apache.geronimo.configs/axis/2.1.1/car
 - org.apache.geronimo.configs/axis2/2.1.1/car
 - org.apache.geronimo.configs/j2ee-server/2.1.1/car
 - org.apache.geronimo.configs/j2ee-corba-yoko/2.1.1/car
 - org.apache.geronimo.configs/jasper/2.1.1/car
 - org.apache.geronimo.configs/openejb/2.1.1/car
 - org.apache.geronimo.configs/openjpa/2.1.1/car
 - org.apache.geronimo.plugins/sysdb-console-tomcat/2.1.1/car
 - org.apache.geronimo.configs/system-database/2.1.1/car
 - org.apache.geronimo.configs/tomcat6/2.1.1/car
 - default/StatelessSessionEJB/1.0/car
 - default/ApplicationClient/1.0/car
 - org.apache.geronimo.configs/derby/2.1.1/car
 - org.apache.geronimo.plugins/console-tomcat/2.1.1/car
 - org.apache.geronimo.plugins/sysdb-console-tomcat/2.1.1/car
- Once done select **Assemble**.

<input type="checkbox"/>	org.apache.geronimo.configs/jaxws-deployer/2.1.1/car	2.1.1	Web Services
<input type="checkbox"/>	org.apache.geronimo.configs/jaxws-ejb-deployer/2.1.1/car	2.1.1	Web Services
<input type="checkbox"/>	org.apache.geronimo.configs/jaxws-tools/2.1.1/jar	2.1.1	Web Services
<input type="checkbox"/>	org.apache.geronimo.configs/jasper-deployer/2.1.1/car	2.1.1	JavaEE deployment
<input checked="" type="checkbox"/>	org.apache.geronimo.configs/jasper/2.1.1/car	2.1.1	Web Framework
<input type="checkbox"/>	org.apache.geronimo.configs/javamail/2.1.1/car	2.1.1	JavaEE
<input type="checkbox"/>	org.apache.geronimo.configs/mejb/2.1.1/car	2.1.1	EJB
<input type="checkbox"/>	org.apache.geronimo.plugins/agent/2.1.1/car	2.1.1	Monitoring
<input type="checkbox"/>	org.apache.geronimo.plugins/agent-ds/2.1.1/car	2.1.1	Unspecified
<input type="checkbox"/>	org.apache.geronimo.plugins/mconsole-tomcat/2.1.1/car	2.1.1	Monitoring
<input type="checkbox"/>	org.apache.geronimo.plugins/mconsole-ds/2.1.1/car	2.1.1	Unspecified
<input type="checkbox"/>	org.apache.geronimo.configs/myfaces-deployer/2.1.1/car	2.1.1	Web Framework
<input type="checkbox"/>	org.apache.geronimo.configs/myfaces/2.1.1/car	2.1.1	Web Framework
<input type="checkbox"/>	org.apache.geronimo.configs/openejb-deployer/2.1.1/car	2.1.1	EJB Container
<input checked="" type="checkbox"/>	org.apache.geronimo.configs/openejb/2.1.1/car	2.1.1	EJB Container
<input type="checkbox"/>	org.apache.geronimo.configs/persistence-jpa10-deployer/2.1.1/car	2.1.1	Persistence
<input checked="" type="checkbox"/>	org.apache.geronimo.configs/openjpa/2.1.1/car	2.1.1	Persistence
<input type="checkbox"/>	org.apache.geronimo.plugins/plancreator-console-tomcat/2.1.1/car	2.1.1	Development tools
<input type="checkbox"/>	org.apache.geronimo.plugins/pluto-support/2.1.1/car	2.1.1	Portals
<input type="checkbox"/>	org.apache.geronimo.configs/remote-deploy-tomcat/2.1.1/car	2.1.1	Deployment
<input type="checkbox"/>	org.apache.geronimo.configs/sharedlib/2.1.1/car	2.1.1	Example
<input type="checkbox"/>	org.apache.geronimo.configs/spring/2.1.1/car	2.1.1	Geronimo Core
<input checked="" type="checkbox"/>	org.apache.geronimo.plugins/sysdb-console-tomcat/2.1.1/car	2.1.1	Databases
<input checked="" type="checkbox"/>	org.apache.geronimo.configs/system-database/2.1.1/car	2.1.1	Geronimo Core
<input type="checkbox"/>	org.apache.geronimo.configs/tomcat6-clustering-builder-wadi/2.1.1/car	2.1.1	Tomcat
<input type="checkbox"/>	org.apache.geronimo.configs/tomcat6-clustering-wadi/2.1.1/car	2.1.1	Tomcat
<input type="checkbox"/>	org.apache.geronimo.configs/tomcat6-deployer/2.1.1/car	2.1.1	Tomcat
<input checked="" type="checkbox"/>	org.apache.geronimo.configs/tomcat6/2.1.1/car	2.1.1	Tomcat
<input type="checkbox"/>	org.apache.geronimo.configs/uddi-tomcat/2.1.1/car	2.1.1	Web Services
<input type="checkbox"/>	org.apache.geronimo.configs/webservices-common/2.1.1/car	2.1.1	Web Services
<input type="checkbox"/>	org.apache.geronimo.configs/welcome-tomcat/2.1.1/car	2.1.1	Administration
<input checked="" type="checkbox"/>	default/StatelessSessionEJB/1.0/car	1.0	Unknown
<input checked="" type="checkbox"/>	default/ApplicationClient/1.0/car	1.0	Unknown

Assembly Cancel

8. On the next screen each artifact and its associated properties will be displayed. Select **Install**.



```

org.apache.geronimo.config.console/2.1.1/car
org.apache.tomcat/catalina/6.0.14-G614585/jar
org.apache.tomcat/catalina-ha/6.0.14/jar
org.apache.tomcat/tribes/6.0.14/jar
org.apache.tomcat/coyote/6.0.14/jar
org.apache.tomcat.extras/juli/6.0.14/jar
org.apache.tomcat.extras/juli-adapters/6.0.14/jar

Prerequisites: None
Obsoletes: None
Installable: ✓

org.apache.geronimo.system.plugin.model.ArtifactType@1ec21ec2

Module ID: default/StatelessSessionEJB/1.0/car
Group: Unknown
Description:
Author:
Web Site:
Geronimo Versions: 2.1.1
JVM Versions: Any
Dependencies: console.dbpool/jdbc%2Fuserds//car
org.apache.geronimo.config/opensjbj//car
org.apache.geronimo.config/system-database//car
org.apache.geronimo.config/tomcat6//car
org.apache.geronimo.config/axis//car
org.apache.geronimo.config/axis2//car
org.apache.geronimo.config/j2ee-corba-yoko//car
org.apache.geronimo.config/openjpa//car

Prerequisites: None
Obsoletes: default/StatelessSessionEJB//car
Installable: ✓

org.apache.geronimo.system.plugin.model.ArtifactType@f000f0

Module ID: default/ApplicationClient/1.0/car
Group: Unknown
Description:
Author:
Web Site:
Geronimo Versions: 2.1.1
JVM Versions: Any
Dependencies: default/StatelessSessionEJB/1.0/car
org.apache.geronimo.config/tomcat6/2.1.1/car
org.apache.geronimo.config/axis//car
org.apache.geronimo.config/axis2//car
org.apache.geronimo.config/opensjbj//car
org.apache.geronimo.config/j2ee-corba-yoko//car
org.apache.geronimo.config/openjpa//car
org.apache.geronimo.config/jasper//car

Prerequisites: None
Obsoletes: default/ApplicationClient//car
Installable: ✓

```

9. Once done you will receive a confirmation message suggesting the success or failure of server assembly. It will also enlist the location of the custom server assembly which by default is <GERONIMO_HOME>/var/temp/assembly.

Server Assembly Successful

Plugin:	Geronimo Assemblies :: Boilerplate Minimal
Module ID:	org.apache.geronimo.assemblies/geronimo-boilerplate-minimal/2.1.1/jar
Description:	Provides boilerplate files for all Geronimo minimal server (Little-G) assemblies.
Plugin:	Geronimo Plugins, AXIS :: AXIS
Module ID:	org.apache.geronimo.config/axis/2.1.1/car
Description:	Apache Axis 1 integration.
Plugin:	Geronimo Plugins, AXIS2 :: AXIS2
Module ID:	org.apache.geronimo.config/axis2/2.1.1/car
Description:	Geronimo Web Services ApacheJAXWS integration
Plugin:	Geronimo Plugins, Console :: Tomcat
Module ID:	org.apache.geronimo.plugins/console-tomcat/2.1.1/car
Description:	Geronimo administration console supporting dynamic extensions
Plugin:	Geronimo Plugins, Corba :: Yoko ORB
Module ID:	org.apache.geronimo.config/j2ee-corba-yoko/2.1.1/car
Description:	Yoko Orb server setup with naming service, protected orb, and unprotected orb.
Plugin:	Geronimo Plugins, Derby
Module ID:	org.apache.geronimo.config/derby/2.1.1/car
Description:	Geronimo module that supplies the Derby runtime in a single classloader.
Plugin:	Geronimo Plugins, J2EE :: Server
Module ID:	org.apache.geronimo.config/j2ee-server/2.1.1/car
Description:	Basic geronimo JavaEE support components including the transaction manager and connector framework
Plugin:	Geronimo Plugins, Jasper :: Jasper
Module ID:	org.apache.geronimo.config/jasper/2.1.1/car
Description:	Geronimo Jasper jsp integration including injection support.
Plugin:	Geronimo Plugins, OpenEJB :: OpenEJB
Module ID:	org.apache.geronimo.config/opensjbj/2.1.1/car
Description:	Geronimo integration of the OpenEJB ejb container.
Plugin:	Geronimo Plugins, OpenJPA :: OpenJPA
Module ID:	org.apache.geronimo.config/openjpa/2.1.1/car
Description:	This module provides OpenJPA together with all its dependencies.
Plugin:	Geronimo Plugins, System Database :: Console (Tomcat)
Module ID:	org.apache.geronimo.plugins/sysdb-console-tomcat/2.1.1/car
Description:	Geronimo System Database Plugin
Plugin:	Geronimo Plugins, System Database :: System Database
Module ID:	org.apache.geronimo.config/system-database/2.1.1/car
Description:	System database plugin for geronimo. This provides system database together with its dependencies as
Plugin:	Geronimo Plugins, Tomcat :: Tomcat
Module ID:	org.apache.geronimo.config/tomcat6/2.1.1/car
Description:	Geronimo Tomcat web server integration.
Plugin:	org.apache.geronimo.system.plugin.model.ArtifactType@1ec21ec2
Module ID:	default/StatelessSessionEJB/1.0/car
Description:	
Plugin:	org.apache.geronimo.system.plugin.model.ArtifactType@f000f0
Module ID:	default/ApplicationClient/1.0/car
Description:	

File Location: C:\AG\2.1.1\geronimo-tomcat6-javaee5-2.1.1\var\temp\assembly

Done

10. The server will be named as TestServer-1.0-bin.zip. Unzip it and start the server.
11. Since our [Stateless Session Bean](#) uses **userdbs** you need to create database and table as suggested in the tutorial. This completes our illustration for custom server assembly