Customizing and Deploying Web and Grid Services

To customize an enabled package or to deploy newly enabled packages as web services, perform the following:

1. Create a deployment project directory with the command
   `R -e "library(RWebServices); unpackAntScript('/path/to')"`
   Visit the `RWebServicesEnv.properties` and `RWebServicesTuning.properties` files in this directory to ensure suitable configuration.
2. In the directory created above, execute the following commands to unpack and compile the package
   `ant map-package –Dpkg=<package> -DcaGridProj=/path/to`
   `ant unpack-package –Dpkg=<package>`
   `ant precompile`
   Combine several packages into a single service with a comma-separated list of packages in place of a single <package> name.
3. To use data types or methods of the package, build the jar for the package and copy it into the lib directory of a cagrid web service module with an ant command combined with: **`–Dpkg=xxx –DcaGridProj=xxx`**:
   `ant cagrid-build –Dpkg=<package> -DcaGridProj=/path/to/cagrid_webservice`
4. Go to the cagrid web service module directory
   `ant deployTomcat`
   to deploy cagrid web service to Tomcat server.
5. Go to Tomcat server and restart Tomcat.