

# Specsheet

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## Grouper Product Specs as of v2.4.0

Component	Details
<b>RDBMS</b>	<ul style="list-style-type: none"><li>Grouper is supported on Oracle, MySQL, and PostgreSQL (note: works with Postgres v9, might have issues with v10)</li><li>Object persistence is provided by Hibernate and JDBC so you might be able to use other databases. There have been performance issues on large deployments on SQL server.</li></ul>
<b>Java Servlet Container</b>	<ul style="list-style-type: none"><li>Servlet API Version 3.1.</li><li>The recommended Tomcat version is 8.5</li><li>The TIER SCIM API runs on TomEE</li></ul>
<b>Authentication</b>	User Interface - Servlet container, REMOTE_USER via servlet container, or user-installable servlet filter. <ul style="list-style-type: none"><li><a href="#">Instructions for Shibboleth</a></li><li><a href="#">Instructions for CAS</a></li></ul> Web Services - Servlet container, HTTP Basic, HTTP Basic with Kerberos, Rampart, or user-installable plug-in.
<b>Java</b>	<ul style="list-style-type: none"><li>JDK v8 or later.<ul style="list-style-type: none"><li>You should use the PSPNG. Java8 in the deprecated PSP can have scripting problems with the example code. If you run the PSP use Java7.</li></ul></li><li>Minimum heap memory size: 500M. (-Xmx500M) (needs to be larger for big deployments)</li></ul>
<b>Browser Requirements</b>	<ul style="list-style-type: none"><li>Modern common browser (e.g. latest Chrome, Firefox, IE)</li><li>cookies must be enabled</li><li>javascript must be enabled</li><li>AJAX compatible</li></ul>

## Grouper Product Specs as of v2.3.0

Component	Details
<b>RDBMS</b>	<ul style="list-style-type: none"><li>Object persistence is provided by Hibernate v3.2.6 (v3.6.7 in Grouper 2.1+) (custom hibernate 3.6.7 in Grouper 2.2.0+_, which in turn uses JDBC to connect with a back-end RDBMS).</li><li>DDL is generated by Apache's DdlUtils. Grouper is currently tested against Oracle, MySQL, PostgreSQL, SQL Server but should work with most databases that implement views and are supported by Hibernate.</li><li>If you are using SQL Server, the packaged JDBC driver for SQL Server along with JTDS 1.2.5 are known to work properly, though SQL server does not have as good of performance as Oracle, MySQL, or postgres.</li></ul>
<b>Java Servlet Container</b>	<ul style="list-style-type: none"><li>Servlet API Version 2.3.</li><li>Known to run properly in Apache Tomcat 6.0. ( Tomcat 8.5 is also an option in the <a href="#">installer</a>.)</li><li>Have not tested/verified other servlet containers.</li></ul>
<b>Authentication</b>	User Interface - Servlet container, REMOTE_USER via servlet container, or user-installable servlet filter. <i>Contributions:</i> <a href="#">Yale CAS authentication</a> filter. Web Services - Servlet container, HTTP Basic, HTTP Basic with Kerberos, Rampart, or user-installable plug-in.
<b>Java</b>	<ul style="list-style-type: none"><li>JDK v6.0.13 or later. Java8 in the PSP can have scripting problems with the example code. For now stay with Java 7 or 6.</li><li>Minimum permgen memory size: 130M (-XX:MaxPermSize=130M) (needs to be larger if more classes loaded)</li><li>Minimum heap memory size: 500M. (-Xmx500M) (needs to be larger for big deployments)</li></ul>
<b>Compiler</b>	Ant v1.7.0 or later. Ensure that Ant can process Tomcat tasks by verifying that tools.jar (found in \$JAVA_HOME/lib) and catalina-ant.jar (in \$TOMCAT_HOME/server/lib) are in the classpath.

<b>Browser Requirements</b>	<ul style="list-style-type: none"> <li>• XHTML 1.0</li> <li>• CSS 2.1</li> <li>• cookies must be enabled</li> <li>• javascript must be enabled</li> <li>• AJAX compatible</li> </ul>
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## Grouper Product Specs as of v2.0.0

Component	Details
<b>RDBMS</b>	<ul style="list-style-type: none"> <li>• Object persistence is provided by Hibernate v3.2.6 (v3.6.7 in Grouper 2.1+) (custom hibernate 3.6.7 in Grouper 2.2.0+_, which in turn uses JDBC to connect with a back-end RDBMS).</li> <li>• DDL is generated by Apache's DdlUtils. Grouper is currently tested against Oracle, MySQL, PostgreSQL, SQL Server but should work with most databases that implement views and are supported by Hibernate.</li> <li>• If you are using SQL Server, the packaged JDBC driver for SQL Server along with jTDS 1.2.5 are known to work properly, though SQL server does not have as good of performance as Oracle, MySQL, or postgres.</li> </ul>
<b>Java Servlet Container</b>	<ul style="list-style-type: none"> <li>• Servlet API Version 2.3.</li> <li>• Known to run properly in Apache Tomcat 6.0.</li> <li>• Have not tested/verified other servlet containers.</li> </ul>
<b>Authentication</b>	<p>User Interface - Servlet container, REMOTE_USER via servlet container, or user-installable servlet filter.  <i>Contributions:</i> <a href="#">Yale CAS authentication</a> filter.</p> <p>Web Services - Servlet container, HTTP Basic, HTTP Basic with Kerberos, Rampart, or user-installable plug-in.</p>
<b>Java</b>	<ul style="list-style-type: none"> <li>• JDK v6.0.13 or later. Java8 in the PSP can have scripting problems with the example code. For now stay with Java 7 or 6.</li> <li>• Minimum permgen memory size: 130M (-XX:MaxPermSize=130M) (needs to be larger if more classes loaded)</li> <li>• Minimum heap memory size: 500M. (-Xmx500M) (needs to be larger for big deployments)</li> </ul>
<b>Compiler</b>	Ant v1.7.0 or later. Ensure that Ant can process Tomcat tasks by verifying that tools.jar (found in \$JAVA_HOME/lib) and catalina-ant.jar (in \$TOMCAT_HOME/server/lib) are in the classpath.
<b>Browser Requirements</b>	<ul style="list-style-type: none"> <li>• XHTML 1.0</li> <li>• CSS 2.1</li> <li>• cookies must be enabled</li> <li>• javascript must be enabled</li> <li>• AJAX compatible</li> </ul>

## Grouper Product Specs as of v1.5.0

Component	Details
<b>RDBMS</b>	<ul style="list-style-type: none"> <li>• Object persistence is provided by Hibernate v3.2.6, which in turn uses JDBC to connect with a back-end RDBMS.</li> <li>• DDL is generated by Apache's DdlUtils. Grouper is currently tested against Oracle, MySQL, and PostgreSQL but should work with most databases that implement views and are supported by Hibernate.</li> </ul>
<b>Java Servlet Container</b>	<ul style="list-style-type: none"> <li>• Servlet API Version 2.3.</li> <li>• Known to run properly in Apache Tomcat 5.5.</li> <li>• Have not tested/verified other servlet containers.</li> </ul>
<b>Authentication</b>	<p>User Interface - Servlet container, REMOTE_USER via servlet container, or user-installable servlet filter.  <i>Contributions:</i> <a href="#">Yale CAS authentication</a> filter.</p> <p>Web Services - Servlet container, HTTP Basic, HTTP Basic with Kerberos, Rampart, or user-installable plug-in.</p>
<b>Java</b>	JDK v5.0.6 or later.
<b>Compiler</b>	Ant v1.7.0 or later. Ensure that Ant can process Tomcat tasks by verifying that tools.jar (found in \$JAVA_HOME/lib) and catalina-ant.jar (in \$TOMCAT_HOME/server/lib) are in the classpath.

<b>Browser Requirements</b>	<ul style="list-style-type: none"> <li>• XHTML 1.0</li> <li>• CSS 2.1</li> <li>• cookies must be enabled</li> <li>• javascript must be enabled</li> <li>• AJAX compatible</li> </ul>
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## Grouper Product Specs as of v1.4.0

Component	Details
<b>RDBMS</b>	<ul style="list-style-type: none"> <li>• Object persistence is provided by Hibernate v3.2.6, which in turn uses JDBC to connect with a back-end RDBMS.</li> <li>• DDL is generated by Hibernate. Grouper is currently tested against Oracle 9i, MySQL ?? and PostgreSQL 8 but should work with most databases supported by Hibernate.</li> </ul>
<b>Java Servlet Container</b>	<ul style="list-style-type: none"> <li>• Servlet API Version 2.3.</li> <li>• Known to run properly in Apache Tomcat 5.5.</li> <li>• Have not tested/verified other servlet containers.</li> </ul>
<b>Authentication</b>	<p>Through servlet container via REMOTE_USER, or via user-installable filter.</p> <p><i>Contributions:</i> <a href="#">Yale CAS authentication filter</a>.</p>
<b>Java</b>	JDK v5.0.6 or later.
<b>Compiler</b>	Ant v1.7.0 or later. Ensure that Ant can process Tomcat tasks by verifying that tools.jar (found in \$JAVA_HOME/lib) and catalina-ant.jar (in \$TOMCAT_HOME/server/lib) are in the classpath.
<b>Browser Requirements</b>	<ul style="list-style-type: none"> <li>• XHTML 1.0</li> <li>• CSS 2.1</li> <li>• cookies must be enabled</li> <li>• javascript must be enabled</li> </ul>

## Grouper Product Specs as of v1.3.0

Component	Details
<b>RDBMS</b>	<ul style="list-style-type: none"> <li>• Object persistence is provided by Hibernate v3.2.6, which in turn uses JDBC to connect with a back-end RDBMS.</li> <li>• DDL is generated by Hibernate. Grouper is currently tested against HSQLDB 1.7.2, Oracle 9i and PostgreSQL 8 but should work with most databases supported by Hibernate.</li> </ul>
<b>Java Servlet Container</b>	<ul style="list-style-type: none"> <li>• Servlet API Version 2.3.</li> <li>• Known to run properly in Apache Tomcat 5.5.</li> <li>• Have not tested/verified other servlet containers.</li> </ul>
<b>Authentication</b>	<p>Through servlet container via REMOTE_USER, or via user-installable filter.</p> <p><i>Contributions:</i> <a href="#">Yale CAS authentication filter</a>.</p>
<b>Java</b>	JDK v5.0.6 or later.
<b>Compiler</b>	Ant v1.6.3 or later.
<b>Browser Requirements</b>	<ul style="list-style-type: none"> <li>• XHTML 1.0</li> <li>• CSS 2.1</li> <li>• cookies must be enabled</li> <li>• javascript must be enabled</li> </ul>

## Grouper Product Spec Sheet through v1.2.1

Component	Details
<b>RDBMS</b>	<ul style="list-style-type: none"><li>• Object persistence is provided by Hibernate v2.1.8, which in turn uses JDBC to connect with a back-end RDBMS.</li><li>• DDL is generated by Hibernate. Grouper is currently tested against HSQLDB 1.7.2, Oracle 9i and PostgreSQL 8 but should work with most databases supported by Hibernate.</li></ul>
<b>Java Servlet Container</b>	<ul style="list-style-type: none"><li>• Servlet API Version 2.3.</li><li>• Known to run properly in Apache Tomcat 4.1 and 5.5.</li><li>• Have not tested/verified other servlet containers.</li></ul>
<b>Authentication</b>	Through servlet container via REMOTE_USER, or via user-installable filter. <i>Contributions:</i> <a href="#">Yale CAS authentication filter</a> .
<b>Java</b>	JDK v5.0.6 or later.
<b>Compiler</b>	Ant v1.6 or later.
<b>Browser Requirements</b>	<ul style="list-style-type: none"><li>• XHTML 1.0</li><li>• CSS 2.1</li><li>• cookies must be enabled</li><li>• no javascript needed, except for debug mode used only by UI developers</li></ul>

## Reference

Java: If needed, download and install the latest version of JDK 1.5.0+ (5.0) from <http://java.sun.com/j2se/1.5.0>.

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