

Getting started with hooks2

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Hooks Example - Assign a UNIX ID to Each New Group

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[Proof of concept](#) (A veto hook)

- Assign a Unix id to each new group

Here is another hooks example. This will assign a Unix id to each new group, by a database auto-increment. Also, the attribute is not editable (by non wheel / root)

- Download and unzip [Grouper binary api 1.5](#) (should work in later version)
- This example is for mysql, make a schema

```
CREATE DATABASE grouper_v1_5;
CREATE USER 'grouper_v1_5'@'localhost' IDENTIFIED BY '*****';
grant all on grouper_v1_5.* to 'grouper_v1_5'@'localhost';
```

- Configure the grouper.hibernate.properties

```
hibernate.dialect                = org.hibernate.dialect.MySQL5Dialect
hibernate.cache.use_query_cache  = true
hibernate.connection.driver_class = com.mysql.jdbc.Driver
hibernate.connection.url         = jdbc:mysql://localhost:3306/grouper_v1_5
hibernate.connection.username    = grouper_v1_5
hibernate.connection.password    = *****
```

- Initialize the database

```
C:\temp\grouper.apiBinary-1.5.3\bin> gsh -registry -runscript
```

- Add a type and an attribute and stem

```
C:\temp\grouper.apiBinary-1.5.3\bin> gsh
gsh 0% grouperSession = GrouperSession.startRootSession();
gsh 1% addRootStem("aStem", "aStem");
gsh 2% typeAdd("posixGroup");
gsh 3% typeAddAttr("posixGroup", "gidNumber", AccessPrivilege.READ, AccessPrivilege.ADMIN, false);
```

- Create a table to auto-increment an id (note, this is easier with postgres or oracle with sequences)

```
create table `grouper_v1_5`.`posix_groupids` (
  `gid` bigint NOT NULL AUTO_INCREMENT,
  `groupid` varchar(50) NOT NULL,
  PRIMARY KEY (`gid`)
);
```

- Secure the type/attribute in grouper.properties:

```
#before Grouper 1.6, you need to set this to true due to jira GRP-451
grouperIncludeExclude.requireGroups.use = true

#secure this type/attribute so that non admins cannot edit it once in place
security.types.posixGroup.wheelOnly = true
```

- Write the hook source, and put it in source/test/GroupAddUosHook.java

```
package test;

import java.util.List;

import org.apache.commons.lang.StringUtils;

import edu.internet2.middleware.grouper.Group;
import edu.internet2.middleware.grouper.GroupType;
import edu.internet2.middleware.grouper.GroupTypeFinder;
import edu.internet2.middleware.grouper.GrouperSession;
import edu.internet2.middleware.grouper.exception.GrouperSessionException;
import edu.internet2.middleware.grouper.hibernate.HibUtils;
import edu.internet2.middleware.grouper.hibernate.HibernateSession;
import edu.internet2.middleware.grouper.hooks.beans.HooksContext;
import edu.internet2.middleware.grouper.hooks.beans.HooksGroupBean;
import edu.internet2.middleware.grouper.misc.GrouperSessionHandler;
import edu.internet2.middleware.grouper.util.GrouperUtil;

/**
 * add a type after a group insert
 */
public class GroupAddUosHook extends
    edu.internet2.middleware.grouper.hooks.GroupHooks {

    /**
     *
     * @see edu.internet2.middleware.grouper.hooks.GroupHooks#groupPostInsert(edu.internet2.middleware.
    grouper.hooks.beans.HooksContext, edu.internet2.middleware.grouper.hooks.beans.HooksGroupBean)
     */
    @SuppressWarnings("unchecked")
    @Override
    public void groupPostInsert(HooksContext hooksContext,
        final HooksGroupBean postInsertBean) {

        super.groupPostInsert(hooksContext, postInsertBean);

        try {

            //since we have security on the type/attribute, we need to do this as root
            GrouperSession.callbackGrouperSession(
                GrouperSession.staticGrouperSession().internal_getRootSession(), new GrouperSessionHandler() {

                @Override
                public Object callback(GrouperSession grouperSession) throws GrouperSessionException {

                    Group group = postInsertBean.getGroup();
                    GroupType posixGroup = GroupTypeFinder.find("posixGroup", true);
                    group.addType(posixGroup);

                    //its possible this is already there (e.g. from import or something)
                    //select by list since if not by list it must be there
                    List<String> gidList = HibernateSession.bySqlStatic().listSelect(String.class,
                        "select gid from posix_groupids where groupid = ?", HibUtils.listObject(group.getId()));

                    if (GrouperUtil.length(gidList) == 0) {
                        HibernateSession.bySqlStatic().executeSql("insert into posix_groupids (groupid) values (?)",
                            HibUtils.listObject(group.getId()));
                        gidList = HibernateSession.bySqlStatic().listSelect(String.class,
```

```

        "select gid from posix_groupids where groupid = ?", HibUtils.listObject(group.getId()));
    }

    String gid = gidList.get(0);
    if (StringUtils.isBlank(gid)) {
        throw new RuntimeException("Why is gid blank??? " + group);
    }
    group.setAttribute("gidNumber", gid);

    return null;
}
});

} catch (Exception e) {
    throw new RuntimeException(e.getMessage(), e);
}
}
}

```

- Put this build.xml in the base dir:

```

<project name="grouperHooks" default="build" basedir=".>

    <path id="theClasspath">
        <fileset dir="lib">
            <include name="**/*.jar"/>
        </fileset>
        <fileset dir="dist">
            <include name="**/*.jar"/>
        </fileset>
        <pathelement location="classes"/>
    </path>

    <target name="build">

        <mkdir dir="classes"/>
        <delete dir="classes"/>
        <mkdir dir="classes"/>

        <mkdir dir="distHooks"/>
        <delete dir="distHooks"/>
        <mkdir dir="distHooks"/>

        <javac srcdir="source" destdir="classes" debug="true"
            source="1.5" target="1.5">
            <classpath refid="theClasspath"/>
            <include name="**/*.java" />
        </javac>

        <jar destfile="distHooks/hooksForGrouper.jar">
            <manifest>
                <attribute name="Built-By" value="${user.name}"/>
            </manifest>
            <fileset dir="classes">
                <include name="**/*.class"/>
            </fileset>
            <fileset dir="source">
                <include name="**/*"/>
            </fileset>
        </jar>

        <copy todir="lib/custom" file="distHooks/hooksforGrouper.jar" />
    </target>
</project>

```

- Run ant

```

C:\temp\grouper.apiBinary-1.5.3>ant
Buildfile: build.xml

build:
[delete] Deleting directory C:\temp\grouper.apiBinary-1.5.3\classes
[mkdir] Created dir: C:\temp\grouper.apiBinary-1.5.3\classes
[delete] Deleting directory C:\temp\grouper.apiBinary-1.5.3\distHooks
[mkdir] Created dir: C:\temp\grouper.apiBinary-1.5.3\distHooks
[javac] Compiling 1 source file to C:\temp\grouper.apiBinary-1.5.3\classes
[jar] Building jar: C:\temp\grouper.apiBinary-1.5.3\distHooks\hooksForGrouper.jar
[copy] Copying 1 file to C:\temp\grouper.apiBinary-1.5.3\lib\custom

BUILD SUCCESSFUL
Total time: 1 second
C:\temp\grouper.apiBinary-1.5.3>

```

- Register the hook in the grouper.properties

```
hooks.group.class=test.GroupAddUosHook
```

- Try it out in gsh (restart gsh)

```

gsh 0% grouperSession = GrouperSession.startRootSession();
edu.internet2.middleware.grouper.GrouperSession:
c54ae34f1fed4e908cf2731691857745, 'GrouperSystem', 'application'
gsh 1% stem = new edu.internet2.middleware.grouper.StemSave(grouperSession).assignStemNameToEdit
("aStem").assignName("aStem").assignCreateParentStemsIfNotExist(true).save();
stem: name='aStem' displayName='aStem' uuid='576e26d770584119a1903d7095fab9f2'
gsh 2% subject = SubjectFinder.findById("test.subject.0", true);
subject: id='test.subject.0' type='person' source='jdbc' name='my name is test.subject.0'
gsh 3% stem.grantPriv(subject, NamingPrivilege.CREATE, false);
true
gsh 4% GrouperSession.stopQuietly(grouperSession);
gsh 5% exit

```

Start again to get new grouper session (necessary pre Grouper 1.6)

```

gsh 0% subject = SubjectFinder.findById("test.subject.0", true);
subject: id='test.subject.0' type='person' source='jdbc' name='my name is test.subject.0'
gsh 1% grouperSession = GrouperSession.start(subject);
edu.internet2.middleware.grouper.GrouperSession: f81e665ebe6c41818d5d98120fb940a0, 'test.subject.
0', 'person'
gsh 2% addGroup("aStem", "aGroup9", "aGroup9");
group: name='aStem:aGroup9' displayName='aStem:aGroup9' uuid='bfac07adf0964722a3226355af09c927'
gsh 3% groupGetTypes("aStem:aGroup9");
type: 'base'
type: 'posixGroup'
gsh 4% getGroupAttr("aStem:aGroup9", "gidNumber");
8
gsh 5% setGroupAttr("aStem:aGroup9", "gidNumber", "7");
gsh 6% // Error: unable to evaluate command: Sourced file: inline evaluation of: ``setGroupAttr("aStem:
aGroup9", "gidNumber", "7"); ;'' : Error invoking compiled command: : Error in compiled command: edu.
internet2.middleware.grouper.hooks.logic.HookVeto: cantEditTypeNotInGroup: Not allowed to edit type:
posixGroup, changing attribute gidNumber since the user Subject id: test.subject.0, sourceId: jdbc is
not in group: null

```

-