

Grouper - Loader for attribute or permission definitions

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The Grouper Loader can be used to manage [attribute definitions](#) (for attributes or permissions). You can manage 4 parts of the attribute definition (each is optional, though you should pick one or won't need the Loader):

- AttributeDefNames: these are the attribute or permission names: you can specify the name (mandatory), displayName (optional), and description (optional)
- AttributeDefNameSets: relationships among attribute def names. e.g. if one attribute def name implies another. e.g. if org123 implies org1234
- Actions: if you have actions that should be driven by database
- ActionSets: if an action implies another, e.g. ADMIN implies READ and UPDATE

Specify the built in attributes in the grouper.properties:

```
#####  
## attribute framework  
#####  
  
# root stem in grouper where built in attributes are put  
grouper.attribute.rootStem = etc:attribute  
  
# if the attribute loader attributes should be autoconfigured (created, etc)  
grouper.attribute.loader.autoconfigure = true
```

The next time you start Grouper, it will auto-create the loader attributes that you can assign to an attributeDef. The prefix is the attribute root stem in the grouper.properties (above), concatenated with "attrLoader", and the extension. Note, the etc:attribute:attrLoader:attributeDefLoaderTypeDef is the definition for the loader "type". You can control access to who can assign loader jobs with that loader. By default only root or wheel can use this (probably how it should be or a restricted group of users for security reasons).

Attribute name (prefix etc:attribute:attrLoader configured in grouper.properties)	Meaning
etc:attribute:attrLoader:attributeLoader	Assign this to an attributeDef to designate it as a "loader" type. Then the other a
etc:attribute:attrLoader:attributeLoaderType	Type of loader, e.g. ATTR_SQL_SIMPLE
etc:attribute:attrLoader:attributeLoaderDbName	DB name in grouper-loader.properties or default grouper db if blank
etc:attribute:attrLoader:attributeLoaderScheduleType	Type of schedule. Defaults to CRON if a cron schedule is entered, or START_TO_START_INTERVAL if an interval is entered
etc:attribute:attrLoader:attributeLoaderQuartzCron	If a CRON schedule type, this is the cron setting string from the quartz product to run a job daily, hourly, weekly, etc. e.g. daily at 7am: 0 0 7 * * ?
etc:attribute:attrLoader:attributeLoaderIntervalSeconds	If a START_TO_START_INTERVAL schedule type, this is the number of seconds between runs
etc:attribute:attrLoader:attributeLoaderPriority	Quartz has a fixed threadpool (max configured in the grouper-loader.properties), and when the max is reached, then jobs are prioritized by this integer. The higher the better, and the default if not set is 5.
etc:attribute:attrLoader:attributeLoaderAttrLike	If empty, then orphans (for attributeDefName and attributeDefNameSets) will be left alone. If %, then all orphans deleted. If a SQL like string, then only ones in that like string not in loader will be deleted
etc:attribute:attrLoader:attributeLoaderAttrQuery	SQL query with at least some of the following columns: attr_name, attr_display_name, attr_description
etc:attribute:attrLoader:attributeLoaderAttrSetQuery	SQL query with at least the following columns: if_has_attr_name, then_has_attr_name
etc:attribute:attrLoader:attributeLoaderActionQuery	SQL query with at least the following column: action_name
etc:attribute:attrLoader:attributeLoaderActionSetQuery	SQL query with at least the following columns: if_has_action_name, then_has_action_name

Here is an example of loading org units into an attribute definition for org unit permissions (e.g. READ on org123 or WRITE on org234) including hierarchies

Create two views, one for attribute definitions, one for the relationships among them. Here is the attribute view that has 1100 rows

ORG_ATTRIBUTE_DEF_NAME	ORG_ATTRIBUTE_DEF_DISPLAY_NAME
penn:community:employee:org:TOPU:UNIV:UADM:91XX	penn:community:employee:org:TOPU:UNIV:UADM:91XX - Information Systems and Computing Parent
penn:community:employee:org:TOPU:UNIV:UADM:91XX:91YY	penn:community:employee:org:TOPU:UNIV:UADM:91XX:91YY - ISC Other Parent
penn:community:employee:org:TOPU:UNIV:UADM:91XX:91YY:9100	penn:community:employee:org:TOPU:UNIV:UADM:91XX:91YY:9100 - Information Systems and Computing
penn:community:employee:org:TOPU:UNIV:UADM:91XX:91YY:9101	penn:community:employee:org:TOPU:UNIV:UADM:91XX:91YY:9101 - ISC Finance and HR
penn:community:employee:org:TOPU:UNIV:UADM:91XX:AIS:9142	penn:community:employee:org:TOPU:UNIV:UADM:91XX:AIS:9142 - Administrative Information Technology and Data Admin
penn:community:employee:org:TOPU:UNIV:UADM:91XX:AIS:9147	penn:community:employee:org:TOPU:UNIV:UADM:91XX:AIS:9147 - Information Security Project Office and Technology
penn:community:employee:org:TOPU:UNIV:UADM:91XX:AIS:SEOG	penn:community:employee:org:TOPU:UNIV:UADM:91XX:AIS:SEOG - Systems Engineering & Operations Group Parent
penn:community:employee:org:TOPU:UNIV:UADM:91XX:AIS:SEOG:9143	penn:community:employee:org:TOPU:UNIV:UADM:91XX:AIS:SEOG:9143 - ISC-Systems Engineering
penn:community:employee:org:TOPU:UNIV:UADM:91XX:AIS:SEOG:9145	penn:community:employee:org:TOPU:UNIV:UADM:91XX:AIS:SEOG:9145 - Computer Operations
penn:community:employee:org:TOPU:UNIV:UADM:91XX:ITS:9153	penn:community:employee:org:TOPU:UNIV:UADM:91XX:ITS:9153 - ISC Support-On-Site
penn:community:employee:org:TOPU:UNIV:UADM:91XX:ITS:9156	penn:community:employee:org:TOPU:UNIV:UADM:91XX:ITS:9156 - ISC Communications Group
penn:community:employee:org:TOPU:UNIV:UADM:91XX:ITS:9157	penn:community:employee:org:TOPU:UNIV:UADM:91XX:ITS:9157 - Technology Support Services
penn:community:employee:org:TOPU:UNIV:UADM:91XX:NETO	penn:community:employee:org:TOPU:UNIV:UADM:91XX:NETO - Network Operations Parent
penn:community:employee:org:TOPU:UNIV:UADM:91XX:NETO:9131	penn:community:employee:org:TOPU:UNIV:UADM:91XX:NETO:9131 - Network Engineering and Services
penn:community:employee:org:TOPU:UNIV:UADM:91XX:NETO:9161	penn:community:employee:org:TOPU:UNIV:UADM:91XX:NETO:9161 - Telecommunications Services
penn:community:employee:org:TOPU:UNIV:UADM:91XX:NETO:9166	penn:community:employee:org:TOPU:UNIV:UADM:91XX:NETO:9166 - Network Operations
penn:community:employee:org:TOPU:UNIV:UADM:91XX:NETO:9181	penn:community:employee:org:TOPU:UNIV:UADM:91XX:NETO:9181 - Metropolitan Area GigaPoP in Philadelphia for Internet2
penn:community:employee:org:TOPU:UNIV:UADM:91XX:NETO:9182	penn:community:employee:org:TOPU:UNIV:UADM:91XX:NETO:9182 - Next Generation PennNet Projects
penn:community:employee:org:TOPU:UNIV:UADM:91XX:NETO:9183	penn:community:employee:org:TOPU:UNIV:UADM:91XX:NETO:9183 - Penn Video Network Video Services
penn:community:employee:org:TOPU:UNIV:UADM:92XX	penn:community:employee:org:TOPU:UNIV:UADM:92XX - Human Resources Parent

Another view with the relationships among orgs that has 1100 immediate relationships (the size is a coincidence). Note, only parent0child relationships need to be represented here, not grandparent or other relationships, those will be provided by Grouper automatically.

IF_HAS_ATTRIBUTE_DEF_NAME	THEN_HAS_ATTRIBUTE_DEF_NAME
penn:community:employee:org:TOPU:UNIV:UADM:90XX:DEVS	penn:community:employee:org:TOPU:UNIV:UADM:90XX:DEVS:9010
penn:community:employee:org:TOPU:UNIV:UADM:91XX	penn:community:employee:org:TOPU:UNIV:UADM:91XX:NETO
penn:community:employee:org:TOPU:UNIV:UADM:91XX	penn:community:employee:org:TOPU:UNIV:UADM:91XX:ITS
penn:community:employee:org:TOPU:UNIV:UADM:91XX	penn:community:employee:org:TOPU:UNIV:UADM:91XX:91YY

penn:community:employee:org:TOPU:UNIV:UADM:91XX	penn:community:employee:org:TOPU:UNIV:UADM:91XX:AIS
penn:community:employee:org:TOPU:UNIV:UADM:91XX:91YY	penn:community:employee:org:TOPU:UNIV:UADM:91XX:91YY:9101
penn:community:employee:org:TOPU:UNIV:UADM:91XX:91YY	penn:community:employee:org:TOPU:UNIV:UADM:91XX:91YY:9100
penn:community:employee:org:TOPU:UNIV:UADM:91XX:AIS	penn:community:employee:org:TOPU:UNIV:UADM:91XX:AIS:SEOG
penn:community:employee:org:TOPU:UNIV:UADM:91XX:AIS	penn:community:employee:org:TOPU:UNIV:UADM:91XX:AIS:9142
penn:community:employee:org:TOPU:UNIV:UADM:91XX:AIS	penn:community:employee:org:TOPU:UNIV:UADM:91XX:AIS:9147
penn:community:employee:org:TOPU:UNIV:UADM:91XX:AIS:SEOG	penn:community:employee:org:TOPU:UNIV:UADM:91XX:AIS:SEOG:9143
penn:community:employee:org:TOPU:UNIV:UADM:91XX:AIS:SEOG	penn:community:employee:org:TOPU:UNIV:UADM:91XX:AIS:SEOG:9145
penn:community:employee:org:TOPU:UNIV:UADM:91XX:ITS	penn:community:employee:org:TOPU:UNIV:UADM:91XX:ITS:9157
penn:community:employee:org:TOPU:UNIV:UADM:91XX:ITS	penn:community:employee:org:TOPU:UNIV:UADM:91XX:ITS:9153
penn:community:employee:org:TOPU:UNIV:UADM:91XX:ITS	penn:community:employee:org:TOPU:UNIV:UADM:91XX:ITS:9156
penn:community:employee:org:TOPU:UNIV:UADM:91XX:NETO	penn:community:employee:org:TOPU:UNIV:UADM:91XX:NETO:9183
penn:community:employee:org:TOPU:UNIV:UADM:91XX:NETO	penn:community:employee:org:TOPU:UNIV:UADM:91XX:NETO:9181
penn:community:employee:org:TOPU:UNIV:UADM:91XX:NETO	penn:community:employee:org:TOPU:UNIV:UADM:91XX:NETO:9161
penn:community:employee:org:TOPU:UNIV:UADM:91XX:NETO	penn:community:employee:org:TOPU:UNIV:UADM:91XX:NETO:9182
penn:community:employee:org:TOPU:UNIV:UADM:91XX:NETO	penn:community:employee:org:TOPU:UNIV:UADM:91XX:NETO:9166
penn:community:employee:org:TOPU:UNIV:UADM:91XX:NETO	penn:community:employee:org:TOPU:UNIV:UADM:91XX:NETO:9131
penn:community:employee:org:TOPU:UNIV:UADM:92XX	penn:community:employee:org:TOPU:UNIV:UADM:92XX:HRS

Create an attribute definition:

```
grouperSession = GrouperSession.startRootSession();
orgAttributeDef = new AttributeDefSave(grouperSession).assignName("penn:community:employee:orgPermissions:
orgs").assignAttributeDefType(AttributeDefType.perm).assignToEffMembership(true).assignToGroup(true).save();
orgAttributeDef.getAttributeDefActionDelegate().configureActionList(GrouperUtil.toSet(new Object[]{"read",
"write"}));
```

Assign the loader type and attributes to that attribute definition

```
orgAttributeDef.getAttributeDelegate().assignAttributeByName(GrouperCheckConfig.attributeLoaderStemName() + ":
attributeLoader");
orgAttributeDef.getAttributeValueDelegate().assignValue(GrouperCheckConfig.attributeLoaderStemName() + ":
attributeLoaderType", "ATTR_SQL_SIMPLE");
orgAttributeDef.getAttributeValueDelegate().assignValue(GrouperCheckConfig.attributeLoaderStemName() + ":
attributeLoaderQuartzCron", "0 0 7 * * ?");
orgAttributeDef.getAttributeValueDelegate().assignValue(GrouperCheckConfig.attributeLoaderStemName() + ":
attributeLoaderAttrsLike", "%");
orgAttributeDef.getAttributeValueDelegate().assignValue(GrouperCheckConfig.attributeLoaderStemName() + ":
attributeLoaderAttrQuery", "select oadf.ATTRIBUTE_NAME attr_name, oadf.ATTRIBUTE_DISPLAY_NAME attr_display_name
from org_attribute_def_name oadf");
orgAttributeDef.getAttributeValueDelegate().assignValue(GrouperCheckConfig.attributeLoaderStemName() + ":
attributeLoaderAttrSetQuery", "select oadns.IF_HAS_ATTRIBUTE_DEF_NAME if_has_attr_name, oadns.
THEN_HAS_ATTRIBUTE_DEF_NAME then_has_attr_name from org_attribute_def_name_set oadns");
```

Schedule the job:

```
GrouperLoaderType.scheduleAttributeLoads();
```

Run the job once via gsh

```
grouperSession = GrouperSession.startRootSession();
attributeDef = AttributeDefFinder.findByName("a:b:c", true);
loaderRunOneJobAttr(attributeDef);
...
2010-05-04 02:19:47,723: [main] INFO  GrouperLoaderType.helperSyncAttributeDefNameSets(2108) - penn:community:
employee:orgPermissions:orgs processed 1535 attributeDefNameSet records, finding new attributeDefNameSets to
insert/remove, 500 of 1077 attributeDefNameSets
2010-05-04 02:20:54,663: [main] INFO  GrouperLoaderType.helperSyncAttributeDefNameSets(2108) - penn:community:
employee:orgPermissions:orgs processed 2035 attributeDefNameSet records, finding new attributeDefNameSets to
insert/remove, 1000 of 1077 attributeDefNameSets
2010-05-04 02:21:08,648: [main] INFO  GrouperLoaderType.syncOneAttributeDef(1743) - penn:community:employee:
orgPermissions:orgs done syncing attributeDef, processed 2194 records. Total members: 2111, inserts: 994,
deletes: 0
loader ran successfully, inserted 994 memberships, deleted 0 records, total record count: 2194
```

sdaf