

Design option 2: SoR groups to Grouper

The sequence is very similar to the first scenario, with some minor differences.

To start the second scenario use this (note the **complex2** directory):

```
$ cd demo/complex2
$ docker-compose up
```

After start up, we have to upload basic configuration objects to midPoint:

```
$ ./after-installation.sh
* Uploading objects...
Uploading midpoint-objects/users/user-banderson.xml (users, e897468f-20bd-419c-8fc5-1fe60e2600de)
Uploading midpoint-objects/systemConfigurations/SystemConfiguration.xml (systemConfigurations, 00000000-0000-0000-0000-000000000001)
Uploading midpoint-objects/orgs/org-generic-groups.xml (orgs, 1f339075-5b2f-4a18-9c98-451f3eb0d28d)
Uploading midpoint-objects/orgs/org-mailing-lists.xml (orgs, d81fb46c-20c7-44d3-8402-fef404ea1264)
Uploading midpoint-objects/orgs/org-affiliations.xml (orgs, 1d7c0e3a-4456-409c-9f50-95407b2eb785)
Uploading midpoint-objects/orgs/org-departments.xml (orgs, bee44c51-2469-411d-bac7-695728e9c241)
Uploading midpoint-objects/orgs/org-courses.xml (orgs, 225e9360-0639-40ba-8a31-7f31bef067be)
Uploading midpoint-objects/functionLibraries/function-library-grouper.xml (functionLibraries, 2eef4181-25fa-420f-909d-846a36ca90f3)
Uploading midpoint-objects/roles/metarole-mailing-list.xml (roles, 1c7beff4-cdf6-4e9f-b54c-79d0766f6f6e)
Uploading midpoint-objects/roles/role-ldap-basic.xml (roles, c89f31dd-8d4f-4e0a-82cb-58ff9d8c1b2f)
Uploading midpoint-objects/roles/metarole-course.xml (roles, 8aa99e7b-f7d3-4585-9800-14bab4d26a43)
Uploading midpoint-objects/roles/metarole-affiliation.xml (roles, fecae27b-d1d3-40ae-95fa-8f7e44e2ee70)
Uploading midpoint-objects/roles/role-grouper-sysadmin.xml (roles, d48ec05b-fffd-4262-acd3-d9ff63365b62)
Uploading midpoint-objects/roles/metarole-grouper-group.xml (roles, 48e231be-8474-4ed0-a85e-6acfc4c5e8d52)
Uploading midpoint-objects/roles/metarole-midpoint-group.xml (roles, c691e15a-f30b-4e15-8445-532db07ceeeb)
Uploading midpoint-objects/roles/metarole-department.xml (roles, ffa9eaec-9539-4d15-97aa-24cd5b92ca5b)
Uploading midpoint-objects/objectTemplates/template-org-affiliation.xml (objectTemplates, d87aa04f-189c-4d6f-b6e1-216dad622142)
Uploading midpoint-objects/objectTemplates/template-user.xml (objectTemplates, 8098b124-c20c-4965-8adf-e528abedf7a4)
Uploading midpoint-objects/objectTemplates/template-org-generic-group.xml (objectTemplates, e2a6193a-8981-4143-9da1-9a7b32c0b819)
Uploading midpoint-objects/objectTemplates/template-org-department.xml (objectTemplates, 0caf2f69-7c72-4946-b218-d84e78b2a057)
Uploading midpoint-objects/objectTemplates/template-role-midpoint-group.xml (objectTemplates, 804f8658-0828-4dab-a2ed-f13985e4f80b)
Uploading midpoint-objects/objectTemplates/template-org-mailing-list.xml (objectTemplates, be84a39a-c004-490b-9b78-a871b837f6df)
Uploading midpoint-objects/objectTemplates/template-org-course.xml (objectTemplates, d35bdec6-643b-41d8-ad5d-8eeb701169d1)
Uploading midpoint-objects/resources/target-faculty-portal.xml (resources, e417225d-8a08-46f3-9b5d-624990b52386)
Uploading midpoint-objects/resources/ldap-main.xml (resources, 0a37121f-d515-4a23-9b6d-554c5ef61272)
Uploading midpoint-objects/resources/scriptedsql-sis-persons.xml (resources, 4d70a0da-02dd-41cf-b0a1-00e75d3eaa15)
Uploading midpoint-objects/resources/resource-grouper.xml (resources, 1eff65de-5bb6-483d-9edf-8cc2c2ee0233)
Uploading midpoint-objects/resources/target-mailing-lists.xml (resources, fe805d13-481b-43ec-97d8-9d2df72cd38e)
Uploading midpoint-objects/resources/target-cs-portal.xml (resources, a343fc2e-3954-4034-bala-2b72c21e577a)
* Testing LDAP and SQL resources...
Resource 0a37121f-d515-4a23-9b6d-554c5ef61272 test succeeded
Resource 4d70a0da-02dd-41cf-b0a1-00e75d3eaa15 test succeeded
Resource a343fc2e-3954-4034-bala-2b72c21e577a test succeeded
Resource e417225d-8a08-46f3-9b5d-624990b52386 test succeeded
Resource fe805d13-481b-43ec-97d8-9d2df72cd38e test succeeded
* Recomputing Grouper admin group and user object...
Object roles/d48ec05b-fffd-4262-acd3-d9ff63365b62 recomputation succeeded
Object users/e897468f-20bd-419c-8fc5-1fe60e2600de recomputation succeeded
* Waiting 120 seconds for changes to propagate to Grouper...
* Testing Grouper resource...
Resource 1eff65de-5bb6-483d-9edf-8cc2c2ee0233 test succeeded
* Done
```

Contrary to the first scenario, loader jobs in Grouper are not created yet. The reason is that there are no users in LDAP but the group membership is already present in the source database. So loaders would complain that they cannot find LDAP entries for subjects referenced in the source database. (The functionality would be preserved but with a lot of warnings.)

Therefore, let's first import person data from SIS to midPoint and therefore to LDAP:

```
$ ./upload-import-sis-persons.sh
Uploading midpoint-objects-manual/tasks/task-import-sis-persons.xml (tasks, 22c2a3d0-0961-4255-9eec-
c550a79aeaaa)
```

Now wait for the task to successfully finish, checking it e.g. via GUI or by running:

```
$ ./get-import-sis-persons-status.sh
% Total      % Received % Xferd  Average Speed   Time    Time       Time  Current
                               Dload  Upload   Total   Spent    Left   Speed
100 21678      0 21450  100   228    246k    2682  --:--:--  --:--:--  --:--:--  249k
Task execution status: closed
```

Note that there's no need to import courses from SIS, because they are imported to Grouper.

After the import is done, we should create loaders in Grouper:

```
$ ./create-ref-loaders.sh
...
==> c728fddbcd5245298f9fd64432bf89a8,'GrouperSystem','application'
==> Group[name=etc:affiliationLoader,uuid=7bc1324a56e04489bc3f5a5a2b947020]
==> null
==> null
==> null
==> null
==> null
==> null
==> null
==> null
==> Group[name=etc:deptLoader,uuid=4116b32b1b044defb77b8873ded58d97]
==> null
==> null
==> null
==> null
==> null
==> null
==> null
==> Group[name=etc:coursesLoader,uuid=3fc4751e6b9d49f9a4ceb9e763aaec14]
==> null
==> null
==> null
==> null
==> null
==> null
==> null
groovy:000> :exit
```

Now wait until loaders run (should be in minute or two) and you can verify the fact in Grouper GUI (log in as banderson/password):

+ Create new group

Quick links

My groups
My folders
My favorites
My services
My activity
Miscellaneous

Browse folders

Root

- app
- basis
- bundle
- etc
- midpoint
- org
- ref
- test

Home · Miscellaneous · Loader jobs

Loader jobs

List of all loader jobs and statuses

Group	Status	Actions	Count	Recent changes	Type	Source	Schedule	Query
affiliationLoader	SUCCESS	Loader actions	147	0	SQL_GROUP_LIST	sis	CRON: 0 * * * * ? Every minute	SELECT
coursesLoader	SUCCESS	Loader actions	256	0	SQL_GROUP_LIST	sis	CRON: 0 * * * * ? Every minute	SELECT
deptLoader	SUCCESS	Loader actions	98	0	SQL_GROUP_LIST	sis	CRON: 0 * * * * ? Every minute	SELECT
sysadmingroup	SUCCESS	Loader actions	1	1	LDAP_SIMPLE	demo	0 * * * * ? Every minute	(cn=sys

After loaders are done, we need to add groups in ref stem (that have been just loaded) to etc:midpointGroups and some other ones groups:

```
$ ./add-ref-groups.sh
...
==> Group[name=app:cs,uid=8bdc671be953440aa43230a5a0c3d13c]
Adding: Group[name=ref:affiliation:alum,uid=a8391a22fc154e42aa00e24ceb8c2880]
Ignoring: Group[name=ref:affiliation:alum_excludes,uid=af581cb6fce74a3d884e707a3dd76fd4]
Ignoring: Group[name=ref:affiliation:alum_includes,uid=786ebc91f0e3441393558b292a125c75]
Ignoring: Group[name=ref:affiliation:alum_systemOfRecord,uid=7a8e0a96382040818e0076d5dc47d06f]
Ignoring: Group[name=ref:affiliation:alum_systemOfRecordAndIncludes,uid=9b80e51e16e340138f00a32b70dc6fd1]
Adding: Group[name=ref:affiliation:community,uid=766b924bd9724d7b84e3cb647f14a92b]
Ignoring: Group[name=ref:affiliation:community_excludes,uid=25165de8dc714c29892d6ac4c0e8e603]
Ignoring: Group[name=ref:affiliation:community_includes,uid=336ee485d64c43f1835e65e112494e1f]
Ignoring: Group[name=ref:affiliation:community_systemOfRecord,uid=ed385c26822f4ec2b041818bc81b0316]
Ignoring: Group[name=ref:affiliation:community_systemOfRecordAndIncludes,uid=6c612424d38641d6915bfe905f5f9bb5]
Adding: Group[name=ref:affiliation:faculty,uid=f72efbdbff864ba792d27d0d794e3148]
Ignoring: Group[name=ref:affiliation:faculty_excludes,uid=61aabl782aa74a518560615eb42501d0]
Ignoring: Group[name=ref:affiliation:faculty_includes,uid=6ac6ba16d3564b08b15317a8aad5a996]
Ignoring: Group[name=ref:affiliation:faculty_systemOfRecord,uid=054e86cc61dc42b9b695df85f0363d60]
Ignoring: Group[name=ref:affiliation:faculty_systemOfRecordAndIncludes,uid=4d5b485be02d470b959d1ddc3110fe71]
Adding: Group[name=ref:affiliation:member,uid=980f3106eca0400dafa71c0444905773]
Ignoring: Group[name=ref:affiliation:member_excludes,uid=04b734ac3f0a45eba7262ad4cb916c30]
Ignoring: Group[name=ref:affiliation:member_includes,uid=3aad7883c9b0443a87d326b4f92721c4]
Ignoring: Group[name=ref:affiliation:member_systemOfRecord,uid=bb391dedde8646bf9663811566eb36bc]
Ignoring: Group[name=ref:affiliation:member_systemOfRecordAndIncludes,uid=124a7ccfe4a14ac29edf057ca790a4a7]
Adding: Group[name=ref:affiliation:staff,uid=759b024cd6b4413a91f95aba717ad475]
Ignoring: Group[name=ref:affiliation:staff_excludes,uid=b13ed72144e1497ea4e83e447ef01864]
Ignoring: Group[name=ref:affiliation:staff_includes,uid=e1505c9731594e5891e2637eafc46a40]
Ignoring: Group[name=ref:affiliation:staff_systemOfRecord,uid=a07c568af4a4424c98d4fe6b6cc57251]
Ignoring: Group[name=ref:affiliation:staff_systemOfRecordAndIncludes,uid=4941ef84b985439e90aeecc8603082d2e]
Adding: Group[name=ref:affiliation:student,uid=fd74a23ef3e644f993d178dad6cddd1]
Ignoring: Group[name=ref:affiliation:student_excludes,uid=a39012fe7d5e40298190cdce29b7092e]
Ignoring: Group[name=ref:affiliation:student_includes,uid=f578df21bb484d5c8d1de78b644bfb12]
Ignoring: Group[name=ref:affiliation:student_systemOfRecord,uid=399307175f4c4b9bbcfcd2578d89f3a3d]
Ignoring: Group[name=ref:affiliation:student_systemOfRecordAndIncludes,uid=1fc4359d099944a99c487346c52632e9]
==> null
==> true
==> true
Ignoring: Group[name=ref:course:ACCT101,uid=cfacdd40c42b4678blade008039177a2]
Ignoring: Group[name=ref:course:ACCT201,uid=6709e844c88f41b871ea66739e6cdf9]
Adding: Group[name=ref:course:CS251,uid=7c1e9ebf89994b5cbbabc490b4e9f439]
Adding: Group[name=ref:course:CS252,uid=4c0baf4ccd7d48069a28f90f33fe3c84]
Ignoring: Group[name=ref:course:MATH100,uid=023053c0334b4d359bec19cdb22eadb]
Ignoring: Group[name=ref:course:MATH101,uid=f804a858ca2c4fa0ab8bae2b74267859]
Ignoring: Group[name=ref:course:SCI123,uid=622f6e4a9306459fa95ee71118e5d5fe]
Ignoring: Group[name=ref:course:SCI404,uid=921429626b8c4b899eb05ce9efc43337]
==> null
groovy:000> :exit
```

Now synchronize Grouper with midPoint by starting asynchronous update task:

```
$ ./upload-async-update-task.sh
Uploading midpoint-objects-manual/tasks/task-async-update-grouper.xml (tasks, 47fc57bd-8c34-4555-9b9f-7087ff179860)
```

...and wait until all messages are processed (i.e. there are 0 messages in the `sampleQueue`):

```
$ ./show-queue-size.sh
Timeout: 60.0 seconds ...
Listing queues for vhost / ...
sampleQueue      7
```

Now we are ready to make some changes in Grouper and see how they are propagated to midPoint.


Let us make the following ones:

1. modify bgasper's affiliation from alum to faculty by adding him to `ref:affiliation:alum_excludes` and `ref:affiliation:faculty_includes`
2. add bgasper to `app:mailinglist:chess` and `app:mailinglist:idm-fans`
3. add bgasper to `test:volunteers`

We can do this either manually or we can execute the script:










```
$ ./update-bgasper-in-grouper.sh
...
Type help() for instructions
Groovy Shell (2.5.0-beta-2, JVM: 1.8.0_181)
Type ':help' or ':h' for help.
-----
groovy:000> :load '/opt/grouper/grouper.apiBinary/conf/groovysh.profile'
groovy:000> :gshFileLoad '/tmp/update-bgasper-in-grouper.gsh'
====> true
====> d9aa949d4ea749738c45510595a473a0,'GrouperSystem','application'
====> Subject id: bgasper, sourceId: ldap, name: Bill Gasper
====> true
====> true
====> true
====> true
====> true
====> true
groovy:000> :exit
```


Let's wait for approximately 1 minute and verify the changes were propagated to midPoint and other systems:


Bill Gasper (@gasper)

Basic
 Projection
 Assignments
History
Tools
Personas
Delegations
Delegated to me

Up
Note
Organization
Service
Resource
Data protection

<input type="checkbox"/>	Name	Action
<input type="checkbox"/> 	mls@big-chem	enabled
<input type="checkbox"/> 	CS251	enabled
<input type="checkbox"/> 	WPTX138	enabled
<input type="checkbox"/> 	Business	enabled
<input type="checkbox"/> 	uplink	enabled
<input type="checkbox"/> 	ABB Service Facility	enabled
<input type="checkbox"/> 	Modeling tool chain	enabled
<input type="checkbox"/> 	Modeling tool interfaces	enabled
<input type="checkbox"/> 	Modeling interfaces	enabled



[illegible]

```
# cat faculty-portal.csv
uid,givenName,familyName,fullName,mail
hmorrison,Heather,Morrison,Heather Morrison,hmorrison@example.edu
jmartinez77,Jo,Martinez,Jo Martinez,jmartinez77@example.edu
sgonazles,Sarah,Gonzales,Sarah Gonzales,sgonazles@example.edu
rmartinez,Robert,Martinez,Robert Martinez,rmartinez@example.edu
mgasper,Mary,Gasper,Mary Gasper,mgasper@example.edu
hbrown,Heather,Brown,Heather Brown,hbrown@example.edu
kjohnson,Kiersten,Johnson,Kiersten Johnson,kjohnson@example.edu
jclark,Jennifer,Clark,Jennifer Clark,jclark@example.edu
nlee,Nancy,Lee,Nancy Lee,nlee@example.edu
wscott79,William,Scott,William Scott,wscott79@example.edu
gmorrison,Greg,Morrison,Greg Morrison,gmorrison@example.edu
wsmith,William,Smith,William Smith,wsmith@example.edu
kmorrison,Kiersten,Morrison,Kiersten Morrison,kmorrison@example.edu
jscott56,Jo,Scott,Jo Scott,jscott56@example.edu
cmorrison,Colin,Morrison,Colin Morrison,cmorrison@example.edu
bgasper28,Bill,Gasper,Bill Gasper,bgasper28@example.edu
awhite,Ann,White,Ann White,awhite@example.edu
lwilliams,Lisa,Williams,Lisa Williams,lwilliams@example.edu
hsmith,Heather,Smith,Heather Smith,hsmith@example.edu
eprice84,Erik,Price,Erik Price,eprice84@example.edu
jlopez,Jennifer,Lopez,Jennifer Lopez,jlopez@example.edu
dlopez,David,Lopez,David Lopez,dlopez@example.edu
dlangenberg,David,Langenberg,David Langenberg,dlangenberg@example.edu
bgasper,Bill,Gasper,Bill Gasper,bgasper@example.edu
```

```
# cat portal.csv
identifier,name,mail,courses
idm,Heather Morrison,hmorrison@example.edu,C201
idm,Jo Martinez,jmartinez77@example.edu,C201,C202
idm,Robert Martinez,rmartinez@example.edu,C201
idm,Sarah Gonzales,sgonazles@example.edu,C201
idm,Heather Brown,hbrown@example.edu,C201,C202
idm,Kiersten Johnson,kjohnson@example.edu,C201
idm,Jennifer Clark,jclark@example.edu,C201
idm,Nancy Lee,nlee@example.edu,C201,C202
idm,William Scott,wscott79@example.edu,C201
idm,Greg Morrison,gmorrison@example.edu,C201
idm,William Smith,wsmith@example.edu,C201
idm,Kiersten Morrison,kmorrison@example.edu,C201
idm,Jo Scott,jscott56@example.edu,C201
idm,Colin Morrison,cmorrison@example.edu,C201
idm,Bill Gasper,bgasper28@example.edu,C201
idm,Ann White,awhite@example.edu,C201
idm,Lisa Williams,lwilliams@example.edu,C201
idm,Heather Smith,hsmith@example.edu,C201
idm,Erik Price,eprice84@example.edu,C201
idm,Jennifer Lopez,jlopez@example.edu,C201
idm,David Lopez,dlopez@example.edu,C201
idm,David Langenberg,dlangenberg@example.edu,C201
idm,Bill Gasper,bgasper@example.edu,C201
```

```
# cat mailing-lists.csv
uid,mail,lists
bgasper,bgasper@example.edu,chess;idm-fans
```

DN: uid=bgasper,ou=People,dc=internet2,dc=edu

Attribute Description	Value
objectClass	eduPerson (auxiliary)
objectClass	inetOrgPerson (structural)
objectClass	organizationalPerson (structural)
objectClass	person (structural)
objectClass	top (abstract)
cn	Bill Gasper
sn	Gasper
businessCategory	Business
givenName	Bill
mail	bgasper@example.edu
uid	bgasper

Now we can freely modify group membership in Grouper and observe changes in midPoint and in target systems.