

# Grouper rules use case - Email notification on flattened membership remove

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If an entity is no longer a member of the employee group, send an email to the employee and an admin

## Java example

```
//add a rule on stem:a saying if you are out of the group by all paths (flattened), then send an email
AttributeAssign attributeAssign = ruleGroup
    .getAttributeDelegate().addAttribute(RuleUtils.ruleAttributeDefName()).getAttributeAssign();

attributeAssign.getAttributeValueDelegate().assignValue(
    RuleUtils.ruleActAsSubjectSourceIdName(), actAsSubject.getSourceId());
attributeAssign.getAttributeValueDelegate().assignValue(
    RuleUtils.ruleActAsSubjectIdName(), actAsSubject.getId());
attributeAssign.getAttributeValueDelegate().assignValue(
    RuleUtils.ruleCheckTypeName(),
    RuleCheckType.flattenedMembershipRemove.name());
attributeAssign.getAttributeValueDelegate().assignValue(
    RuleUtils.ruleThenEnumName(), RuleThenEnum.sendEmail.name());
attributeAssign.getAttributeValueDelegate().assignValue(
    RuleUtils.ruleThenEnumArg0Name(), emailToValue);
attributeAssign.getAttributeValueDelegate().assignValue(
    RuleUtils.ruleThenEnumArg1Name(), emailSubjectValue);

//the to, subject, or body could be text with EL variables, or could be a template. If template, it is
//read from the classpath from package: grouperRulesEmailTemplates/theTemplateName.txt
//or you could configure grouper.properties to keep them in an external folder, not in the classpath
attributeAssign.getAttributeValueDelegate().assignValue(
    RuleUtils.ruleThenEnumArg2Name(), emailBodyValue);

//should be valid
String isValidString = attributeAssign.getAttributeValueDelegate().retrieveValueString(
    RuleUtils.ruleValidName());

if (!StringUtil.equals("T", isValidString)) {
    throw new RuntimeException(isValidString);
}
```

## GSH shorthand method

```
RuleApi.emailOnFlattenedMembershipRemove(SubjectFinder.findRootSubject(), groupEmployee, "mchyzer@isc.upenn.
edu, ${safeSubject.emailAddress}", "You will be removed from group: ${groupDisplayExtension}", "template:
testEmailGroupBodyFlattenedRemove");
```

## GSH test case

```

gsh 0% grouperSession = GrouperSession.startRootSession();
edu.internet2.middleware.grouper.GrouperSession: 7e02ec4d078c4edcac5ba92f257c3eeb,'GrouperSystem','application'
gsh 1% groupEmployee = new GroupSave(grouperSession).assignName("stem:employee").
assignCreateParentStemsIfNotExist(true).save();
group: name='stem:employee' displayName='stem:employee' uuid='b336b02622ff421394de1c70e6f4fc12'
gsh 2% groupProgrammer = new GroupSave(grouperSession).assignName("stem:programmer").
assignCreateParentStemsIfNotExist(true).save();
group: name='stem:programmer' displayName='stem:programmer' uuid='d14cdd6d96cd4822b74b7dfae89ba2da'
gsh 3% groupResearcher = new GroupSave(grouperSession).assignName("stem:researcher").
assignCreateParentStemsIfNotExist(true).save();
group: name='stem:researcher' displayName='stem:researcher' uuid='8d140e4054f34cf08c1calce7ef43f3c'
gsh 4% groupEmployee.addMember(groupProgrammer.toSubject());
gsh 5% groupEmployee.addMember(groupResearcher.toSubject());
gsh 6% subject0 = SubjectFinder.findByIdAndSource("test.subject.0", "jdbc", true);
subject: id='test.subject.0' type='person' source='jdbc' name='my name is test.subject.0'
gsh 7% groupProgrammer.addMember(subject0, false);
true
gsh 8% groupResearcher.addMember(subject0, false);
true
gsh 9% RuleApi.emailOnFlattenedMembershipRemove(SubjectFinder.findRootSubject(), groupEmployee, "a@b.school.
edu, ${safeSubject.emailAddress}", "You will be removed from group: ${groupDisplayExtension}", "template:
testEmailGroupBodyFlattenedRemove");
gsh 10% groupProgrammer.deleteMember(subject0);
gsh 18% edu.internet2.middleware.grouper.app.loader.GrouperLoader.runOnceByJobName(grouperSession,
"CHANGE_LOG_changeLogTempToChangeLog");
gsh 19% edu.internet2.middleware.grouper.app.loader.GrouperLoader.GrouperLoader.runOnceByJobName
(grouperSession, "CHANGE_LOG_consumer_grouperRules");
gsh 21% groupResearcher.deleteMember(subject0);
gsh 22% edu.internet2.middleware.grouper.app.loader.GrouperLoader.runOnceByJobName(grouperSession,
"CHANGE_LOG_changeLogTempToChangeLog");
gsh 23% edu.internet2.middleware.grouper.app.loader.GrouperLoader.GrouperLoader.runOnceByJobName
(grouperSession, "CHANGE_LOG_consumer_grouperRules");

```

## GSH daemon

There is no daemon for this email rule