

Grouper Custom UI Examples

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The Grouper Custom UI can be applied per group in your Grouper system to provide special capabilities, including:

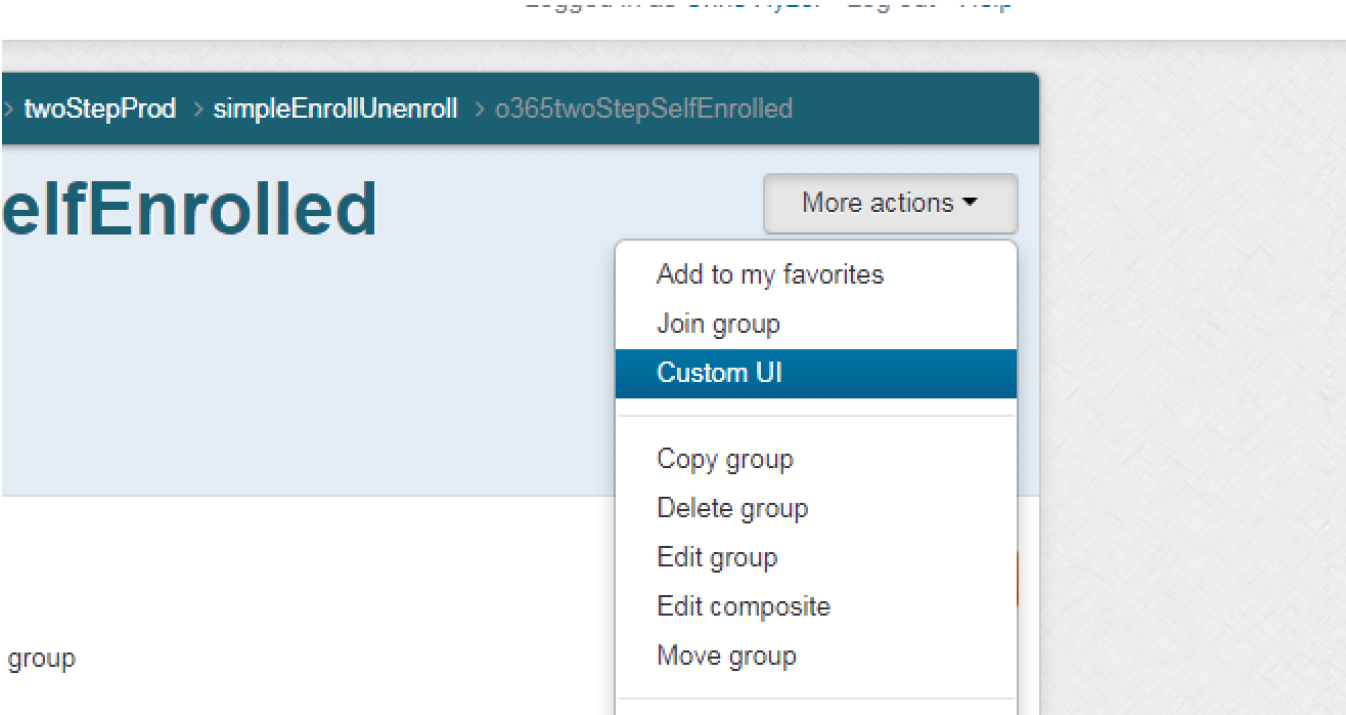
- Helps end users and administrators view and troubleshoot access state and problems
- (optional) Allows end users to easily opt in or opt out of a group without all the bells and whistles of the Grouper UI
- When the user joins/leaves, or when a manager adds/removes someone, an optional custom email can be sent to the user

Grouper Custom UI is a new feature in API patch 2.4.96+ and included in Grouper v2.5+

 Grouper Custom Templates via GSH are a different feature from Grouper Custom UI. See [this page to learn about Custom Templates via GSH](#).

To use Grouper Custom UI, configure this in the grouper.properties or on the Miscellaneous Custom UI screen

Then there is link in the More Actions menu if you have the custom UI attributes assigned on the group



That link goes to the custom ui, here is an example from penn:



Logged in as Katherine R Wilson · [Log out](#) · [Help](#)

PennO365 Two-Step Verification

To improve Penn's data security, you will be required to enroll in Two-Step Verification for O365 by **2020/05/14**. Enroll now to ensure that you're not locked out of email and other O365 services.

You must enroll for O365 even if you are already enrolled in Two-Step Verification for Penn WebLogin (PennKey).

Enrollment status: **Pending to be unenrolled. Generally takes less than 1 hour.**

[Enroll](#)

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If a user is a manager (READ/UPDATE), then they will be able to pull users up, see the screen they see, see the answers to all their variables, and enroll or unenroll those users

PennO365 Two-Step Verification

View status of users in Two-Step Verification with O365. Enroll or unenroll users if applicable.

You will see what the user sees below when you pull up a user

Person name or ID:

Chris Hyzer (mchyzer, 10021368) (active) Staff - Isc-applications & Information Services - Application !

Enter an entity name or ID

Select user

To improve Penn's data security, you will be required to enroll in Two-Step Verification for O365 on **2020/05/14**.

Enrollment status: **Enrolled**

Unenroll

User environment

Environment	Result	Description
In PennGroup for Two-Step Verification in PennO365 (required or self-enrolled)	Yes	Member of group o365_two_step_prod (policy)
Self-enrolled in PennO365 Two-Step Verification	Yes	Member of group o365twoStepSelfEnrolled
Allowed to enroll or unenroll since has a future	Yes	Has privileges Optin , Optout of group o365twoStepSelfEnrolled

The configuration used to be done with JSON from simple javabeans, but now is done in grouper.properties configuration or from the UI. See the [Atlassian Jira Custom UI example for the current way to configure](#)

User query config bean

These configs identify variables that can be used in the screen to conditionally set text, adjust email text, etc. They are set from some operation like checking a membership in a group or an LDAP or SQL call or something

The queries are of type: `userQueryType` which is from the enum: `CustomUiUserQueryType`:

- grouper: check a membership or privilege
- ldap: execute an ldap filter
- sql: run a sql query against grouper or another database
- expressionLanguage: some expression (could call java)
- azure: check an azure membership or user object
- zoom: check zoom api and make attributes available (added 2.5.35+)

The queries assign variables which must be prefixed with "cu_" for "Custom UI"

You can configure a default that will fill in values for all config beans (maybe useful if there are a bunch of similar ldap calls)

Field	Type	Required for type	Optional for type	Description
attributeDefId	String		expressionLanguage, grouper, sql	uuid of attribute def to look up
azureGroupId	String	azure		if hardcoding the uuid of group in azure
bindVar0	String		sql	bind var for sql
bindVar0type	String		sql	bind var type in sql: string or integer
bindVar1	String		sql	bind var for sql
bindVar1type	String		sql	bind var type in sql: string or integer
bindVar2	String		sql	bind var for sql
bindVar2type	String		sql	bind var type in sql: string or integer
configId	String	azure, ldap, zoom	sql	id in grouper config for azure, ldap, or sql
enabled	Boolean		azure, expressionLanguage, grouper, ldap, sql, zoom	true or false if this var is enabled
errorLabel	String	azure, zoom	expressionLanguage, grouper, ldap, sql	label on screen for the error variable
fieldNames	String		grouper	comma separated privs in grouper, e.g. members, readers, admins, viewers, updaters, optins, optouts, groupAttrReaders, groupAttrUpdaters, creators, stemAdmins, stemAttrReaders, stemAttrUpdaters, attrReaders, attrUpdaters, attrDefAttrReaders, attrDefAttrUpdaters, attrOptins, attrOptouts, attrAdmins
forLoggedInUser	Boolean		azure, expressionLanguage, grouper, ldap, sql	true if should run this rule for the logged in user (if manager using screen), or by default its the user being acted on (which might be the user logged in)
groupId	String		azure, expressionLanguage, grouper, ldap, sql	group uuid to look up a group
groupName	String		azure, expressionLanguage, grouper, ldap, sql	group name to look up a group
label	String	azure, expressionLanguage, grouper, ldap, sql, zoom		label to see on screen when variables are displayed
ldapAttributeToRetrieve	String	ldap		which attribute in ldap to retrieve
ldapFilter	String	ldap		ldap filter to run
ldapSearchDn	String		ldap	if not using the default dn in connection, search in this dn

nameOfAttributeDef	String		expressionLanguage, grouper, sql	name of attribute definition to lookup
order	Integer		azure, expressionLanguage, grouper, ldap, sql, zoom	integer and rules will be ordered by this integer, when displayed on screen
query	String	sql		sql query to execute
script	String	expressionLanguage	azure(2.5.30+), zoom	EL expression to run
stemId	String		expressionLanguage, grouper, sql	uuid of stem to lookup
stemName	String		expressionLanguage, grouper, sql	name of stem to lookup
userQueryType	String	azure, expressionLanguage, grouper, ldap, sql, zoom		identify the type of query, enter either: azure, expressionLanguage, grouper, ldap, sql. dropdown.
variableToAssign	String	azure, expressionLanguage, grouper, ldap, sql, zoom		name of variable must start with cu_ if the value is "default" then each attribute value will be the default for any bean without that set where its a valid value. dropdown. you cant have two variables with the same name
variableToAssignOnError	String	azure, zoom	expressionLanguage, grouper, ldap, sql	name of variable to assign on error, must start with cu_ you cant have two variables with the same name
variableType	String		expressionLanguage, grouper, ldap, sql, azure, zoom	type of variable: boolean, integer, string

Examples

Default user query bean to set some LDAP settings

```
{
  "variableToAssign": "default",
  "ldapSearchDn": "DC=one,DC=upenn,DC=edu",
  "ldapFilter": "(&(objectclass=user)(employeeID=${subject.getId()})(memberOf=CN=${group.getName()},OU=365Groups,DC=one,DC=upenn,DC=edu))",
  "ldapAttributeToRetrieve": "employeeID"
}
```

Check if a user is in a group

```
{
  "variableToAssign": "cu_o365twoStepSelfEnrolled",
  "fieldNames": "members",
  "userQueryType": "grouper",
  "variableType": "boolean",
  "groupName": "penn:isc:ait:apps:0365:twoStepProd:simpleEnrollUnenroll:o365twoStepSelfEnrolled",
  "label": "${textContainer.text['penn_o365twoStep_cu_o365twoStepSelfEnrolled']}",
  "order": 20
}
```

Note the label in the [grouper.text.en.us.properties](#)

```
penn_o365twoStep_cu_o365twoStepSelfEnrolled = Self-enrolled in Penn0365 Two-Step Verification
```

If the person using the app (logged in user) is a manager (reader and updater on the group)

```
{
  "variableToAssign": "cu_o365twoStepAllowedToManage",
  "fieldNames": "updaters, readers",
  "userQueryType": "grouper",
  "variableType": "boolean",
  "groupName": "penn:isc:ait:apps:0365:twoStepProd:simpleEnrollUnenroll:o365twoStepSelfEnrolled",
  "label": "${textContainer.text['penn_o365twoStep_cu_o365twoStepAllowedToManage']}",
  "order": 100,
  "forLoggedInUser": true
}
```

Note the label in the [grouper.text.en.us.properties](#)

```
penn_o365twoStep_cu_o365twoStepAllowedToManage = Manager of Penn0365 Two-Step self enrollments
```

Find the min required date (custom attribute on group) that the operated on user is a member of

```
{
  "variableToAssign": "cu_o365twoStepRequiredDate",
  "bindVar0": "${subject.id}",
  "userQueryType": "sql",
  "variableType": "string",
  "configId": "grouper",
  "bindVar0type": "string",
  "query": "select min(value_string) from authz_o365_twostep_req_date_v where subject_id = ?",
  "label": "${textContainer.text['penn_o365twoStep_cu_o365twoStepRequiredDate']}",
  "order": 50
}
```

The view is:

```
CREATE OR REPLACE VIEW penngrouper.authz_o365_twostep_req_date_v AS
SELECT gaagv.value_string,
       gmlv.subject_id
  FROM grouper_aval_asn_group_v gaagv,
       grouper_memberships_lw_v gmlv
 WHERE gaagv.group_name = gmlv.group_name
AND gmlv.list_name = 'members'
AND gmlv.subject_source = 'pennperson'
AND gaagv.enabled = 'T'
AND gaagv.group_name like 'penn:isc:ait:apps:0365:twoStepProd:simpleEnrollUnenroll:
o365twoStepGroupsToBeRequired:%'
AND gaagv.attribute_def_name_name = 'penn:isc:ait:apps:0365:twoStepProd:simpleEnrollUnenroll:
o365twoStepRequiredDate';
```

Ldap query (note: depends on default bean above)

```
{
  "variableToAssign": "cu_o365twoStepInLdap",
  "userQueryType": "ldap",
  "variableToAssignOnError": "cu_o365twoStepInLdapError",
  "groupName": "penn:isc:ait:apps:0365:twoStepProd:o365_two_step_prod",
  "label": "${textContainer.text['penn_o365twoStep_cu_o365twoStepInLdap']}",
  "errorLabel": "${textContainer.text['penn_o365twoStep_cu_o365twoStepInLdapError']}",
  "order": 70,
  "configId": "oneProdAd"
}
```

Built-in variables

These variables are there for you to key off. Note: you should not start your variable names with "cu_grouper" since that namespace is for built in variables

Variable name	Description
cu_grouperEnroll	true if the user clicked the enroll button, false if the user clicked the unenroll button (e.g. for email templates)
cu_grouperTurnOffManager	url variable if you do not want to see the manager panel

Text config beans

These are a little misnamed, they are for text or for other decisions about the screen. Could be a boolean result. It is strongly encouraged to externalize text in the UI externalized text config

These generally take the variables defined above, and use boolean logic to decide which text to show or who is allowed to do certain things

The type of text is the decision or text to compute. The engine will run through the config and append the ones that match, unless the one that matches says to stop processing. You can also have defaults

Every text bean returns a string, but if its "true" or "false" it will be interpreted as a boolean.

Text type	Type	Description
canAssignVariables	boolean	if the screen allows variables to be assigned in the URL for testing. e.g. to simulate various users and see how the screen responds note: only allow trusted users to be able to do this. Only Grouper admins can do this by default
canSeeScreenState	boolean	if the screen state analysis should be displayed on the screen to help the user understand why access exists or not. By default only Grouper admins can see screen state. Note that more columns of the user environment will also display
canSeeUserEnvironment	boolean	if the user variables and results should display. By default group readers and updaters can see this. Note that these are abbreviated if the user cannot also see screen state
emailBccGroupName	String	if there are emails and a group should be bcc'ed then return the group name here
emailBody	String	if there are emails then this is the body. Note you can have a template that is dynamic, or different templates in different scenarios
emailSubject	String	if there are emails then this is the subject. Note you can have a template that is dynamic, or different templates in different scenarios
emailToUser	boolean	true if an email should be sent to user. Note you can send under certain circumstances if you like
enrollButtonShow	boolean	true if the enroll button should show. Note that the user cant enroll if they dont have optin on the group
enrollButtonText	String	Button text of enroll button. Defaults to: Enroll
enrollmentLabel	String	Text above the enrollment button that shows the state of the enrollment or whatever else
header	String	The H1 of the page
helpLink	String	Link where the help button goes
instructions1	String	Instructions at the top of the page
logo	String	Link for logo
managerInstructions	String	Instructions to appear for readers/updaters who are managing users in this group
unenrollButtonShow	boolean	true if the unenroll button should show. Note that the user cant enroll if they dont have optout on the group. Note that the enroll and unenroll button will not show at once
unenrollButtonText	String	Button text of unenroll button. Defaults to: Unenroll
manageMembership	boolean	(v2.5.38+) true or false, if the button will add the user to the group or remove them
redirectToUrl	String	(v2.5.38+) URL that the user should be redirected to after clicking button

gshScript	String	(v2.5.38+) GSH script that should be run. Note this is a stripped down version of GSH, so only use Java (no GSH functions), and fully qualify anything not in the base grouper or util java package. This is for performance reasons.
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The screenshot shows the PennO365 Two-Step Verification page. Annotations include:

- logo**: Points to the University of Pennsylvania logo.
- header**: Points to the main title "PennO365 Two-Step Verification".
- helpLink**: Points to the "Help" link in the top right corner.
- instructions1**: Points to the text "To improve Penn's data security, you will be required to enroll in Two-Step Verification for O365 by 2020/05/14. Enroll now to ensure that you're not locked out of email and other O365 services."
- enrollmentLabel**: Points to the text "Enrollment status: Pending to be unenrolled. Generally takes less than 1 hour."
- enrollButtonShow?**: Points to the "Enroll" button.
- enrollButtonText**: Points to the text "Enroll" on the button.

GSH script to generate a text bean

```
customUiTextConfigBean = new edu.internet2.middleware.grouper.ui.customUi.CustomUiTextConfigBean();

customUiTextConfigBean.setCustomUiTextType(CustomUiTextType.instructions1.name());
customUiTextConfigBean.setIndex(10);
customUiTextConfigBean.setScript("${cu_o365twoStepRequiredToEnroll}");
customUiTextConfigBean.setText("${textContainer.text['penn_o365twoStep_instructions_requiredToEnroll']}");
customUiTextConfigBean.setEndIfMatches(true);

System.out.println(GrouperUtil.jsonConvertTo(customUiTextConfigBean, false));
```

JSON which is generated

```
{
  "variableToAssign": "cu_o365twoStepRequiredToEnroll",
  "fieldNames": "members",
  "userQueryType": "grouper",
  "variableType": "boolean",
  "groupName": "penn:isc:ait:apps:0365:twoStepProd:o365_two_step_prod_policy",
  "label": "${textContainer.text['penn_o365twoStep_cu_o365twoStepRequiredToEnroll']}",
  "order": 40
}
```

Examples

Always show header, note, this is the default for "header"

```
{
  "customUiTextType":"header",
  "defaultText":true,
  "text":"${textContainer.text['penn_o365twoStep_header']}"
}
```

In [grouper.text.en.us.properties](#)

```
penn_o365twoStep_header = <h1>Penn0365 Two-Step Verification</h1>
```

For instructions1, if the operated on user is not required to enroll, if the are enrolled in o365/mfa, if they have a mailbox, and the are allowed to enroll /unenroll

```
{
  "endIfMatches":true,
  "customUiTextType":"instructions1",
  "index":20,
  "defaultText":false,
  "text":"${textContainer.text['penn_o365twoStep_instructions_willBeRequiredToEnroll']}",
  "script":"${ !cu_o365twoStepRequiredToEnroll && cu_o365twoStepEnrolled && cu_o365hasMailbox && cu_o365twoStepCanEnrollUnenroll}"
}
```

In [grouper.text.en.us.properties](#). Note the required date, calculated in a variable, is displayed on the screen

```
penn_o365twoStep_instructions_willBeRequiredToEnroll = To improve Penn's data security, you will be required to enroll in Two-Step Verification for 0365 on <b>${cu_o365twoStepRequiredDate}</b>.<br /><br />
```

For instructions1, if the user operated on is not required to enroll, and not enrolled, and can enroll and unenroll, and is not enrolled in mfa

```
{
  "endIfMatches":true,
  "customUiTextType":"instructions1",
  "index":30,
  "defaultText":false,
  "text":"${textContainer.text['penn_o365twoStep_instructions_needsTwoStep']}",
  "script":"${!cu_o365twoStepRequiredToEnroll && !cu_o365twoStepEnrolled && cu_o365twoStepCanEnrollUnenroll && !cu_twoStepUsers}"
}
```

In [grouper.text.en.us.properties](#).

```
penn_o365twoStep_instructions_needsTwoStep = You are not enrolled in Two-Step Verification. <a href="https://twostep.apps.upenn.edu/twoFactor/twoFactorUi/app/UiMain.index">Enroll now</a>.<br /><br />
```

Show the enroll button if not enrolled in o365/mfa, if can enroll/unenroll, if in mfa, if has a mailbox, show the button

```
{
  "endIfMatches":true,
  "customUiTextType":"enrollButtonShow",
  "index":0,
  "text":"${!cu_o365twoStepEnrolled && cu_o365twoStepCanEnrollUnenroll && cu_twoStepUsers && cu_o365hasMailbox}"
}
```

User environment

You can show the variables, and results, and links to the grouper admin, the group manager (default), an arbitrary group, or the end user. This explains the access (if the user needs something, if the access is provisioned, etc)

Note, you can control who has access to the user environment table with the customUiTextType: canSeeUserEnvironment

Environment	Result	Description
In PennGroup for Two-Step Verification in PennO365 (required or self-enrolled)	No	Member of group o365_two_step_prod (policy)
Self-enrolled in PennO365 Two-Step Verification	No	Member of group o365twoStepSelfEnrolled
Allowed to enroll or unenroll since has a future deadline	Yes	Has privileges Optin , Optout of group o365twoStepSelfEnrolled
Required to enroll because org was required in past	No	Member of group o365_two_step_prod_policy
Date required to enroll	2020/05/14	Query: select min(value_string) from authz_o365_twostep_req_date_v where subject_id = ?
In O365 Azure (final data flow destination) means Two-Step on for O365	No	User in group o365_two_step_prod (policy) in Azure (pennAzure)
Is there an error checking Azure O365?	No	
In One AD LDAP (intermediary data flow destination)	No	Group o365_two_step_prod (policy) in LDAP filter: (&(objectclass=user)(employeeID=\${subject.getId()})(memberof=CN=\${group.getName()},OU=Grouper,OU=365Groups,DC=one,DC=upenn,DC=edu))
Is there an error checking One AD?	No	
O365 mailbox	Yes	Member of group o365hasMailbox
Two-Step Verification	Yes	Member of group twoStepUsers

Text state

You can show another level of debugging by showing the text state. By default only grouper admins can see this but you can show it to an arbitrary group with the customUiTextType: canSeeScreenState. This explains why the decisions and text were made and shown the way they were.

This shows three things:

- 1. More columns in the user environment
- 2. The decisions for the current user
- 3. All text rules and how they are evaluated for the current user

User environment

Environment	Result	Description	Variable name	Type	Operation	For logged in user
In PennGroup for Two-Step Verification in PennO365 (required or self-enrolled)	Yes	Member of group o365_two_step_prod (policy)	cu_o365twoStepEnrolled	boolean	Grouper	No
Self-enrolled in PennO365 Two-Step Verification	Yes	Member of group o365twoStepSelfEnrolled	cu_o365twoStepSelfEnrolled	boolean	Grouper	No
Allowed to enroll or unenroll since has a future deadline	Yes	Has privileges Optin , Optout of group o365twoStepSelfEnrolled	cu_o365twoStepCanEnrollUnenroll	boolean	Grouper	No
Required to enroll because org was required in past	No	Member of group o365_two_step_prod_policy	cu_o365twoStepRequiredToEnroll	boolean	Grouper	No
Date required to enroll	2020/05/14	Query: select min(value_string) from authz_o365_twostep_req_date_v where subject_id = ?	cu_o365twoStepRequiredDate	string	SQL	No
In O365 Azure (final data flow destination) means Two-Step on for O365	Yes	User in group o365_two_step_prod (policy) in Azure (pennAzure)	cu_o365twoStepInAzure	boolean	Azure	No
Is there an error checking Azure O365?	No		cu_o365twoStepInAzureError	boolean	Azure	
In One AD LDAP (intermediary data flow destination)	<blank>	Group o365_two_step_prod (policy) in LDAP filter: (&(objectclass=user)(employeeID=\${subject.getId()}) (memberof=CN=\${group.getName()},OU=Grouper,OU=365Groups,DC=one,DC=upenn,DC=edu))	cu_o365twoStepInLdap	boolean	LDAP	No
Is there an error checking One AD?	Yes		cu_o365twoStepInLdapError	boolean	LDAP	
O365 mailbox	Yes	Member of group o365hasMailbox	cu_o365hasMailbox	boolean	Grouper	No
Two-Step Verification	Yes	Member of group twoStepUsers	cu_twoStepUsers	boolean	Grouper	No
Manager of PennO365 Two-Step self enrollments	Yes	Has privileges Read , Update of group o365twoStepSelfEnrolled	cu_o365twoStepAllowedToManage	boolean	Grouper	Yes
On O365 Two-Step team	Yes	Member of group o365twoStepTeam	cu_o365twoStepTeam	boolean	Grouper	Yes

Screen state

Text type	Rule index	Expression	Configured text	Evaluated text
canAssignVariables	0		\$(cu_o365twoStepTeam)	true
canSeeScreenState	0		false	false
helpLink			\$(textContainer.text[penn_o365twoStep_helpLink])	Help
header			\$(textContainer.text[penn_o365twoStep_header])	PennO365 Two-Step Verification
managerInstructions	0	\$(cu_o365twoStepAllowedToManage)	\$(textContainer.text[penn_o365twoStep_instructions_manager])	View status of users in Two-Step Verification with O365. Enroll or unenroll users if applicable. You will see what the user sees below when you pull up a user
instructions1	20	\$(lcu_o365twoStepRequiredToEnroll && cu_o365twoStepEnrolled && cu_o365hasMailbox && cu_o365twoStepCanEnrollUnenroll)	\$(textContainer.text[penn_o365twoStep_instructions_willBeRequiredToEnroll])	To improve Penn's data security, you will be required to enroll in Two-Step Verification for O365 on 2020/05/14.
enrollmentLabel	50	\$(cu_o365twoStepEnrolled && cu_o365twoStepInAzure)	\$(textContainer.text[penn_o365twoStep_enrollLabel_enrolled])	Enrollment status: <b style="color: green; font-size: 120%">Enrolled
enrollButtonShow	0		\$(lcu_o365twoStepEnrolled && cu_o365twoStepCanEnrollUnenroll && cu_twoStepUsers && cu_o365hasMailbox)	false
unenrollButtonShow	0		\$(cu_o365twoStepEnrolled && cu_o365twoStepCanEnrollUnenroll && lcu_o365twoStepRequiredToEnroll)	true
unenrollButtonText	0		\$(textContainer.text[penn_o365twoStep_unenrollButtonText])	Unenroll
canSeeUserEnvironment	0		\$(cu_o365twoStepAllowedToManage)	true

All screen text

Text type	Rule index	Expression	Expression result	Configured text	Evaluated text	Default	End if matche
emailBccGroupName	0		Yes	penn.isc:ait:apps:O365:twoStepProd:simpleEnrollUnenroll:o365twoStepAllowedToAdmin	penn.isc:ait:apps:O365:twoStepProd:simpleEnrollUnenroll:o365twoStepAllowedToAdmin		Yes
canSeeUserEnvironment	0		Yes	\$(cu_o365twoStepAllowedToManage)	true		Yes
canSeeScreenState	0		Yes	false	false		Yes
canAssignVariables	0		Yes	\$(cu_o365twoStepTeam)	true		Yes
emailBody	0	\$(cu_grouperEnroll)	No	\$(textContainer.text["penn_o365twoStep_enroll_emailBody"])	Dear Chris Hyzer, Thank you for enrolling in Two-Step Verification for PennO365. When you log in to PennO365 using your Microsoft account, you will be routinely prompted for a single-use verifica... more		Yes
emailBody	10	\$(cu_grouperEnroll)	Yes	\$(textContainer.text["penn_o365twoStep_unenroll_emailBody"])	Dear Chris Hyzer, You have unenrolled from Two-Step Verification for PennO365. When you log in to PennO365 using your Microsoft account you will no longer be routinely prompted for a single-use v... more		Yes
emailSubject	0		Yes	\$(cu_grouperEnroll ? textContainer.text["penn_o365twoStep_enroll_emailSubject"] : textContainer.text["penn_o365twoStep_unenroll_emailSubject"])	Penn Two-Step Verification - you have unenrolled from Two-Step Verification for PennO365		Yes
emailToUser	0		Yes	true	true		
instructions1	10	\$(cu_o365twoStepRequiredToEnroll)	No	\$(textContainer.text["penn_o365twoStep_instructions_requiredToEnroll"])	To improve Penn's data security, you are required to use Two-Step Verification with O365. 		Yes
instructions1	20	\$(cu_o365twoStepRequiredToEnroll && cu_o365twoStepEnrolled && cu_o365hasMailbox && cu_o365twoStepCanEnrollUnenroll)	Yes	\$(textContainer.text["penn_o365twoStep_instructions_willBeRequiredToEnroll"])	To improve Penn's data security, you will be required to enroll in Two-Step Verification for O365 on 2020/05/14. 		Yes
instructions1	30	\$(cu_o365twoStepRequiredToEnroll && cu_o365twoStepCanEnrollUnenroll && cu_twoStepUsers)	No	\$(textContainer.text["penn_o365twoStep_instructions_needsTwoStep"])	You are not enrolled in Two-Step Verification. Enroll now. 		Yes
instructions1	40	\$(cu_o365twoStepRequiredToEnroll && cu_o365twoStepEnrolled && cu_o365twoStepCanEnrollUnenroll && cu_o365hasMailbox)	No	\$(textContainer.text["penn_o365twoStep_instructions_needsO365"])	You need an O365 account. 		Yes
instructions1	50	\$(cu_o365twoStepRequiredToEnroll && cu_o365twoStepEnrolled && cu_o365twoStepCanEnrollUnenroll && cu_twoStepUsers && cu_o365hasMailbox)	No	\$(textContainer.text["penn_o365twoStep_instructions_notEnrolledButCanEnroll"])	To improve Penn's data security, you will be required to enroll in Two-Step Verification for O365 by 2020/05/14. Enroll now to ensure that you're not locked out of email and other O365 serv... more		Yes
instructions1	60	\$(cu_o365twoStepRequiredToEnroll)	Yes	\$(textContainer.text["penn_o365twoStep_instructions_notRequiredCannotEnroll"])	You are not required to enroll, and you are not allowed to enroll. 		Yes
managerInstructions	0	\$(cu_o365twoStepAllowedToManage)	Yes	\$(textContainer.text["penn_o365twoStep_instructions_manager"])	View status of users in Two-Step Verification with O365. Enroll or unenroll users if applicable. You will see what the user sees below when you pull up a user. 		Yes
enrollmentLabel	0	\$(cu_o365twoStepEnrolled && cu_o365twoStepInAzureError)	No	\$(textContainer.text["penn_o365twoStep_enrollLabel_notEnrolledErrorInAzure"])	Enrollment status: <b style="color: red; font-size: 120%;">Not enrolled in this system but an error occurred checking your enrollment in O365		Yes
enrollmentLabel	10	\$(cu_o365twoStepEnrolled && cu_o365twoStepInAzure)	No	\$(textContainer.text["penn_o365twoStep_enrollLabel_notEnrolled"])	Enrollment status: <b style="color: red; font-size: 120%;">Not enrolled		Yes
enrollmentLabel	20	\$(cu_o365twoStepEnrolled && (cu_o365twoStepInLdapError cu_o365twoStepInLdap) && cu_o365twoStepInAzure)	No	\$(textContainer.text["penn_o365twoStep_enrollLabel_notEnrolledPendingInLdapAndAzure"])	Enrollment status: <b style="color: brown; font-size: 120%;">Pending to be unenrolled. Generally takes less than 1 hour.		Yes
enrollmentLabel	30	\$(cu_o365twoStepEnrolled && cu_o365twoStepInAzure)	No	\$(textContainer.text["penn_o365twoStep_enrollLabel_notEnrolledPendingNotInLdapButInAzure"])	Enrollment status: <b style="color: brown; font-size: 120%;">Pending to be unenrolled. Generally takes less than 15 minutes.		Yes
enrollmentLabel	40	\$(cu_o365twoStepEnrolled && cu_o365twoStepInAzureError)	No	\$(textContainer.text["penn_o365twoStep_enrollLabel_enrolledErrorInAzure"])	Enrollment status: <b style="color: brown; font-size: 120%;">Enrolled in this system but an error occurred checking your enrollment in O365		Yes
enrollmentLabel	50	\$(cu_o365twoStepEnrolled && cu_o365twoStepInAzure)	Yes	\$(textContainer.text["penn_o365twoStep_enrollLabel_enrolled"])	Enrollment status: <b style="color: green; font-size: 120%;">Enrolled		Yes
enrollmentLabel	60	\$(cu_o365twoStepEnrolled && (cu_o365twoStepInLdapError cu_o365twoStepInLdap) && cu_o365twoStepInAzure)	No	\$(textContainer.text["penn_o365twoStep_enrollLabel_enrolledPendingInLdapAndAzure"])	Enrollment status: <b style="color: brown; font-size: 120%;">Pending. Generally takes less than 1 hour.		Yes
enrollmentLabel	70	\$(cu_o365twoStepEnrolled && cu_o365twoStepInAzure)	No	\$(textContainer.text["penn_o365twoStep_enrollLabel_enrolledPendingNotInLdapButInAzure"])	Enrollment status: <b style="color: brown; font-size: 120%;">Pending. Generally takes less than 15 minutes.		Yes
enrollButtonShow	0		Yes	\$(cu_o365twoStepEnrolled && cu_o365twoStepCanEnrollUnenroll && cu_twoStepUsers && cu_o365hasMailbox)	false		Yes
enrollButtonText	0		Yes	\$(textContainer.text["penn_o365twoStep_enrollButtonText"])	Enroll		Yes
unenrollButtonShow	0		Yes	\$(cu_o365twoStepEnrolled && cu_o365twoStepCanEnrollUnenroll && cu_o365twoStepRequiredToEnroll)	true		Yes
unenrollButtonText	0		Yes	\$(textContainer.text["penn_o365twoStep_unenrollButtonText"])	Unenroll		Yes

Assign variables

If you are a Grouper admin (by default), or are allowed since customUiTextType: canAssignVariables. You can send variables in the URL to simulate how the screen would look, to test all the rules

Someone to enroll

https://grouper.server.school.edu/grouper/grouperUi/app/UiV2Main.indexCustomUi?operation=UiV2CustomUi.

customUiGroup&groupId=61bcaad67d57438ab1fea11c426c2f64&cu_o365twoStepAllowedToManage=false&cu_grouperTurnOffManager=true&cu_o365twoStepInAzure=false&cu_o365twoStepInAzureError=false&cu_o365twoStepCanEnrollUnenroll=true&cu_o365twoStepSelfEnrolled=false&cu_o365twoStepEnrolled=false&cu_o365twoStepRequiredToEnroll=false&cu_twoStepUsers=true&cu_o365hasMailbox=true&cu_o365twoStepInLdap=false&cu_o365twoStepInLdapError=false&cu_o365twoStepRequiredDate=2020/05/01



PennO365 Two-Step Verification

To improve Penn's data security, you will be required to enroll in Two-Step Verification for O365 by **2020/05/01**. Enroll now to ensure that you're not locked out of email and other O365 services.

You must enroll for O365 even if you are already enrolled in Two-Step Verification for Penn WebLogin (PennKey).

Enrollment status: **Not enrolled**

Enroll

Someone enrolled

https://grouper.server.school.edu/grouper/grouperUi/app/UiV2Main.indexCustomUi?operation=UiV2CustomUi.customUiGroup&groupId=61bcaad67d57438ab1fea11c426c2f64&cu_o365twoStepAllowedToManage=false&cu_grouperTurnOffManager=true&cu_o365twoStepInAzure=true&cu_o365twoStepInAzureError=false&cu_o365twoStepCanEnrollUnenroll=true&cu_o365twoStepSelfEnrolled=true&cu_o365twoStepEnrolled=true&cu_o365twoStepRequiredToEnroll=false&cu_twoStepUsers=true&cu_o365hasMailbox=true&cu_o365twoStepInLdap=true&cu_o365twoStepInLdapError=false&cu_o365twoStepRequiredDate=2020/05/01



PennO365 Two-Step Verification

To improve Penn's data security, you will be required to enroll in Two-Step Verification for O365 on **2020/05/01**.

Enrollment status: **Enrolled**

Unenroll

Azure membership

Configure an azure connection in grouper.properties

```
grouper.azureConnector.myAzure.loginEndpoint = https://login.microsoftonline.com
grouper.azureConnector.myAzure.DirectoryID = 6c4dxxx0d
grouper.azureConnector.myAzure.client_id = fd805xxxxdfb
grouper.azureConnector.myAzure.client_secret = *****
grouper.azureConnector.myAzure.resource = https://graph.microsoft.com
grouper.azureConnector.myAzure.graphEndpoint = https://graph.microsoft.com
grouper.azureConnector.myAzure.graphVersion = v1.0
grouper.azureConnector.myAzure.groupLookupAttribute = displayName
grouper.azureConnector.myAzure.groupLookupValueFormat = ${group.getName()}
grouper.azureConnector.myAzure.requireSubjectAttribute = PENNNAME
grouper.azureConnector.myAzure.subjectIdValueFormat = ${subject.getAttributeValue("PENNNAME")}@upenn.edu
```

Run a membership check

See Also

[Customizing UI \(security headers\)](#)

[Grouper Custom Template via GSH](#)