EMu Documentation

Multi-group Support

Document Version 1

EMu Version 4.0.0.3

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S ECTION 1

Overview

Users are given access to EMu by assigning them to a group. Each group has a set of permissions associated with it, and the user inherits the permissions of the group to which they have been assigned. Individual user based permissions may then be defined to override group based settings as required. The use of group based permissions means that it's not necessary to specify all the permissions on a per user basis, and only the difference between the group permissions and any user specific permissions need to be defined for any one user.

Groups are generally based around real life roles, with each group reflecting the permissions required by all users who undertake the role. For example:

- A *Curatorial* group might allow users to create new Catalog records, but not to register new loans.
- A *Loans Officer* group would have permission to create loans records, but not to create Catalog records, and only to update the *Condition Check* and *Locations* fields for existing Catalog records.

Assigning a user to the *Curatorial* group, casts that user in the curatorial role.

In general, the group system works well in EMu, except when a user performs more than one role within the institution. For example, a curator (group *Curatorial*) may also manage the loans for a small part of the collection (and so requires *Loans Officer* permissions). Until now, EMu provided two solutions to this dilemma:

1. Create two usernames, assigning one to group *Curatorial* and the other to group *Loans Officer*. The user must then use the correct username when logging into EMu to perform the required role.

   Moving from one role to the other (e.g. a new loan arrives while the user is logged in as a curator), requires the user to log out of EMu and back in using the *Loans Officer* username. This could become tedious, and it requires that the user remembers two user names and two passwords.

2. The second solution requires a new group to be created which is a merge of the permissions of the *Curatorial* and *Loans Officer* groups.

   The problem with this solution is that the combined privileges present a view of the world that is neither curatorial nor loan specific: it is possible to alter any field in a Catalog record while raising a new loan. In other words, a new hybrid role is created (curator-loans office).

In most cases the two original roles are sufficient and all that is required is a mechanism to switch between the two groups without having to log out and back in as another user.

EMu 4.0.03 introduces multi-group support, which allows a single user to be registered in more than one group:

- A user who is a member of more than one group can select the group name to use from the Login dialog box when logging into EMu.
- At any time it is possible to switch to another group without logging out and back in again.
- When switching groups the user decides whether opened modules should remain open or whether they should be closed.
- Any new modules opened will use the group permissions assigned to the group that the user switched to.

By not closing open modules it is possible to have modules in different groups open at the same time. EMu ensures the correct group permissions are observed based on the group associated with the module.

With multi-group support, a user is able to log in using one group, switch to another group while leaving existing modules open, perform operations in the new group and then switch back to the previous group, all without having to close any modules. A key feature of multi-group support is that it allows users to change roles without losing their current work position and then to return to that position at a later time.

Texpress 8.2.009 or later must be installed to provide the back-end security facilities for multi-group support.

S ECTION 2

Specifying a user's groups

The EMu Group Registry entry defines which group a user is assigned to. It is consulted whenever a user logs in to EMu. The format of the Registry entry is:

`User|`*username*`|Group|`*groupname*

where *groupname* specifies the group to use when determining permissions.

For example:

`User|badenov|Group|Curatorial`

specifies that user `badenov` is a member of the Curatorial group and has all the permissions assigned to that group.

In order to provide multi-group support, the Group Registry entry has been extended to allow a semi-colon separated list of groups to be specified. The order of the groups is not important.

For example:

`User|badenov|Group|Curatorial;Loans Officer`

specifies that user `badenov` is a member of both the `Curatorial` and `Loans Officer` groups.

> Changes to the list of groups that a user has access to only come into effect when the user logs into EMu following any change to their Group Registry entry. If they are logged in when the change is made, they will need to log out and back in again in order to have access to the updated list of groups.
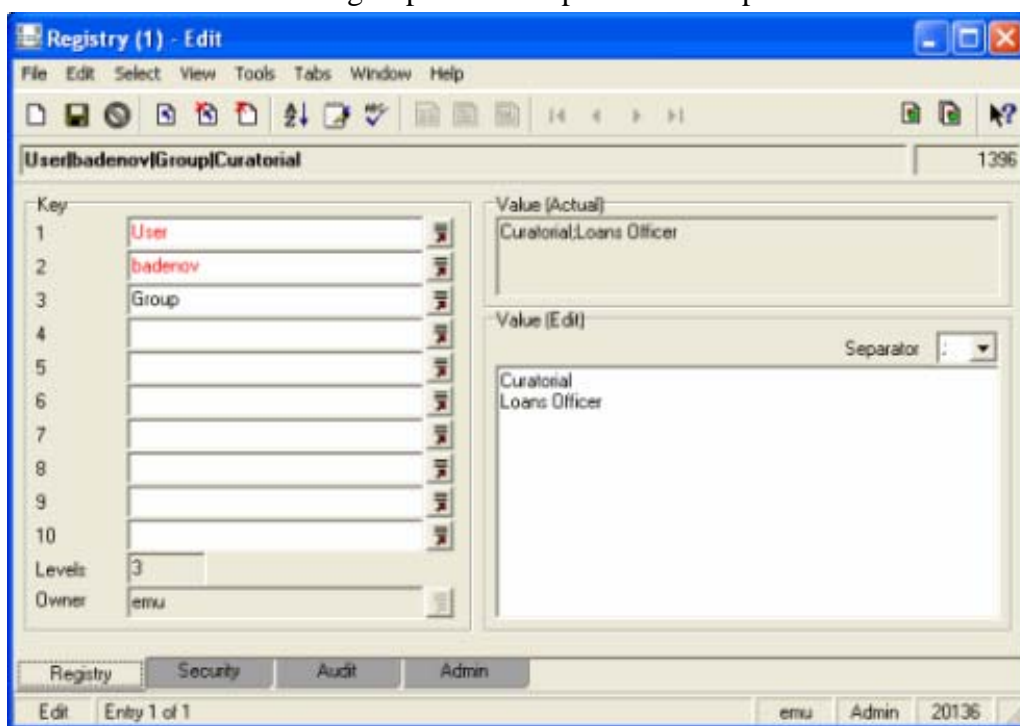
How to set an existing user's groups

1. Log in to EMu as a System Administrator.
2. In the Registry module, search for the user's Group Registry entry:
   i. Enter `User` into the *Key 1* field.
   ii. Enter the user's username into *Key 2*.
   iii. Enter `Group` into *Key 3*.

   The matching Registry entry displays:
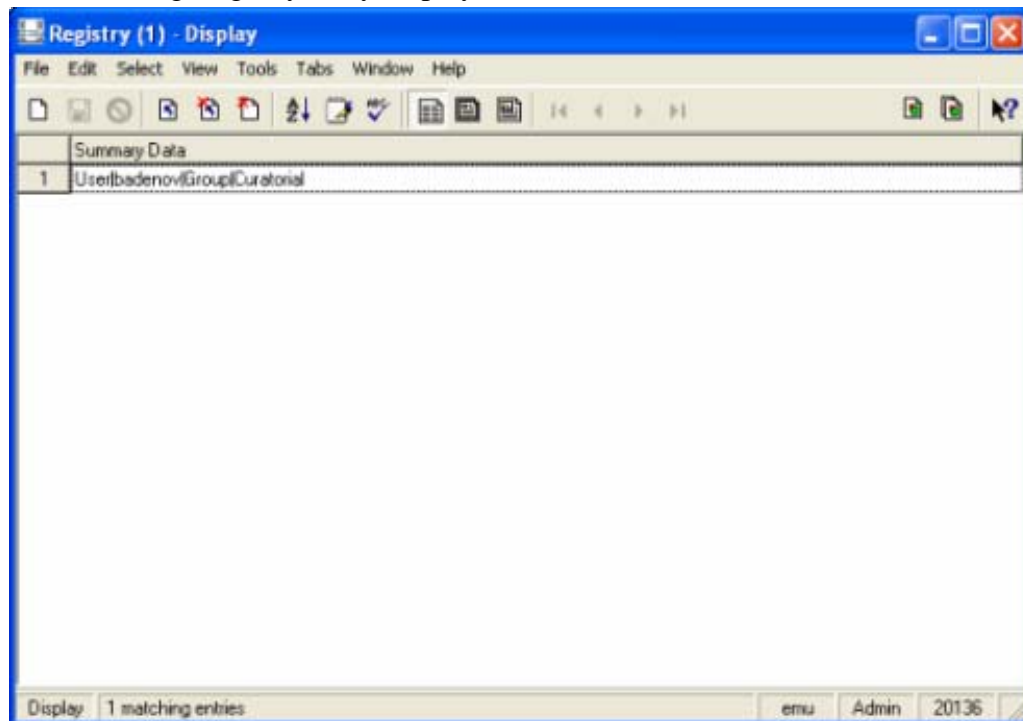
3. In the *Value (Edit)* field on the Registry tab, enter the name of all groups that the user is a member of. Each group should be placed on a separate line:
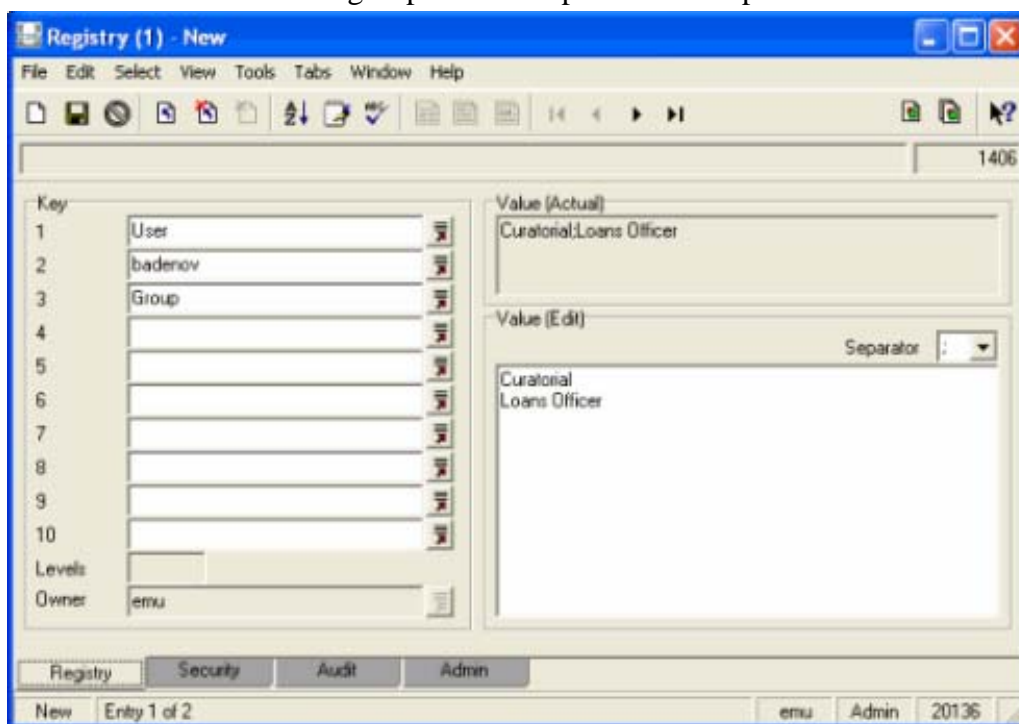

4. Save the record.

> As of EMu 4.0.03, security profiles are generated automatically after saving any user registration based Registry entries and it is no longer necessary to run **Tools>Generate Record Security** after changing user settings.

How to set a new user's groups

1. Log in as a System Administrator.
2. Add a new record in the Registry module:
   i.   Enter `User` into the *Key 1* field.
   ii. Enter the user's username into *Key 2*.
   iii. Enter `Group` into *Key 3*.
3. In the *Value (Edit)* field on the Registry tab, enter the name of all groups that the user is a member of. Each group should be placed on a separate line:

4. Save the record.

> As of EMu 4.0.03, security profiles are generated automatically after saving any user registration based Registry entries and it is no longer necessary to run **Tools>Generate Record Security** after changing user settings.

S ECTION 3

Using multiple groups

When a user has been registered to use multiple groups, the EMu Login dialog box includes a drop list with the names of all available groups for the user.

> The list of groups that displays is determined by the combination of *username + service*. A user can have the same *username* on multiple services, and in each service may be a member of different groups.

The list is displayed only if the *username* supports more than one group.

> A user must log in to EMu after changes have been made to their group membership before the (updated) list of groups will appear at login. Once a user has successfully logged in to EMu, the system Options may be used to switch to another group. See *Switching groups via a module* (page 10) for details.
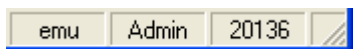
Active group and module group

EMu keeps track of the group selected when a user logs in to the system. This group is known as the active group and it is displayed in the title bar of the Command Center. In this example, the active group is group Admin:
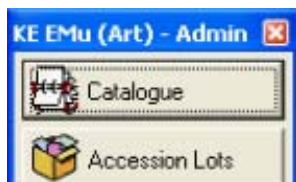
Modules started by clicking a button in the Command Center belong to the active group. The active group is also highlighted in the Login dialog box the next time the user logs in to EMu.

Modules are also associated with a group. When a module is invoked from the Command Center its group is that of the Command Center, namely the active group. If a module is created from within another module, by selecting **Window>New>**_module_, the module is associated with the same group as the module from which it was created. A module's group is displayed in the Status bar at the bottom right of the window. In this example the module's group is group Admin:

A module cannot change group. Once it is created and associated with a group, it will remain in that group.

It is possible to change the active group however. By doing so it is possible to create modules in different groups, thus allowing users to have multiple roles within the one EMu session.

Logging in to a group

1. Start the EMu application.
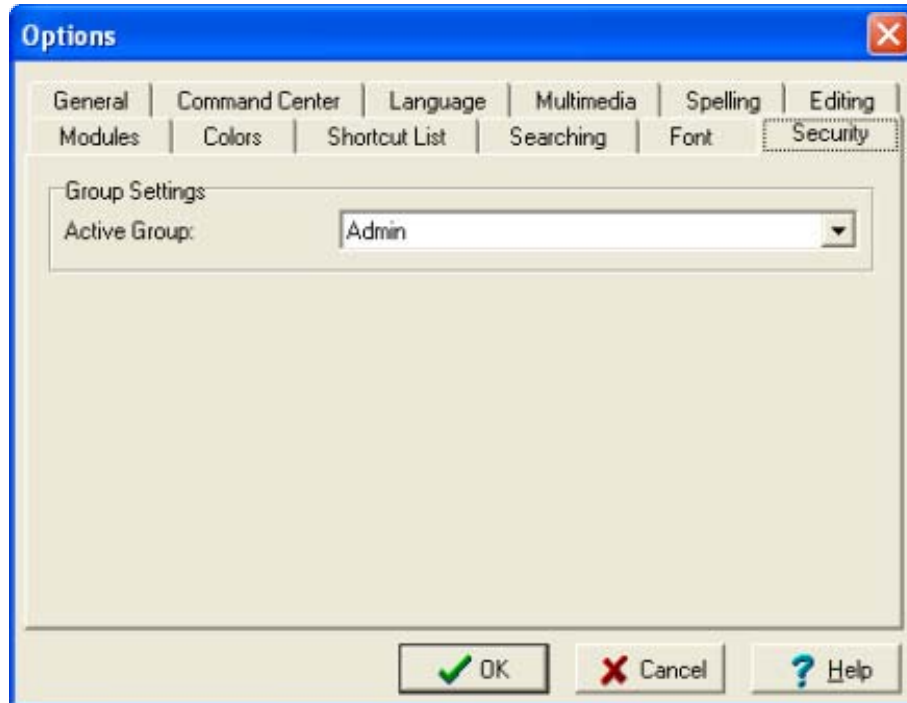   The Login dialog box displays:

2. Enter your username into the *User* field.
    If you are registered for more than one group with the current Service and you
    have logged in successfully previously, a Group drop list will be added to the
   Login dialog box*:*
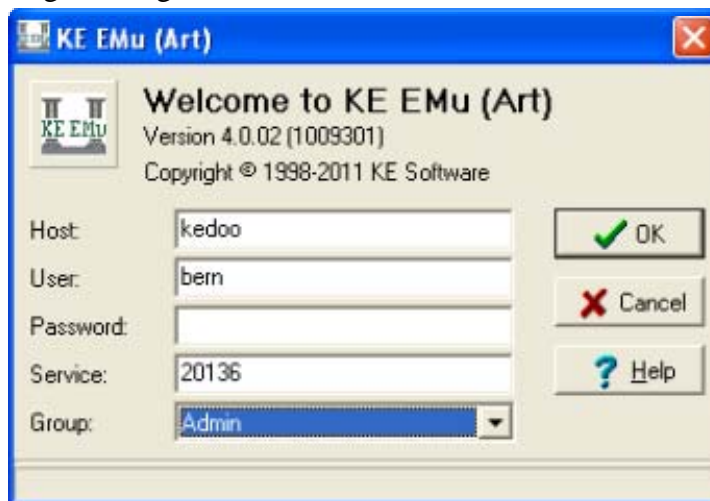
3. Select a group from the Group drop list.

4. Complete the rest of the log in details and select .

Switching groups via a module

1. Select **Tools>Options** from the Menu bar of any open module.
   The Options dialog box displays.
2. Select the **Security** tab:

The current active group is displayed in the *Active Group* drop list.
3. Select a group from the *Active Group* drop list.
   The list only contains those groups the user is registered to use.

4. Select [✓ OK].
   The Change Group dialog box displays.
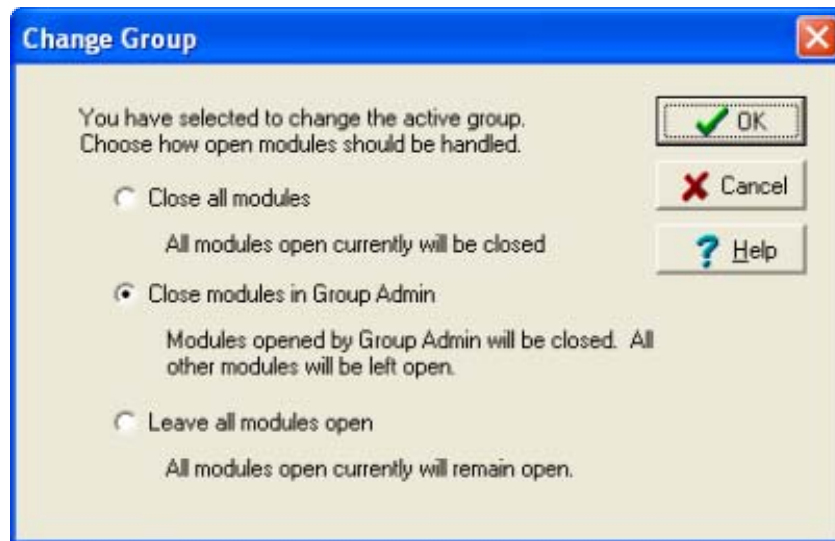
5. Select how any open modules should be handled when the active group is changed:

- **Close all modules**

  All open modules will be closed. Only the Command Center will remain open.

- **Close all modules in Group** *group*

 All modules open in the active group (*group*) will be closed.

  This option is useful for closing all modules created since the last time the group was switched. For example, if you were asked a question that required switching groups to respond, this option will close the module(s) created to answer the question. All other open modules are left untouched.
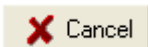
- **Leave all modules open**

  All modules currently open will remain open. Each module will remain in its current state and group. Once the switch is complete the modules may be used as required. Each open module will continue to provide functionality consistent with the module's group.

6. Select [✓ OK].

   The active group will be switched. If a module scheduled for closure contains unsaved data, a message will display prompting the user to save the data before the module is terminated:
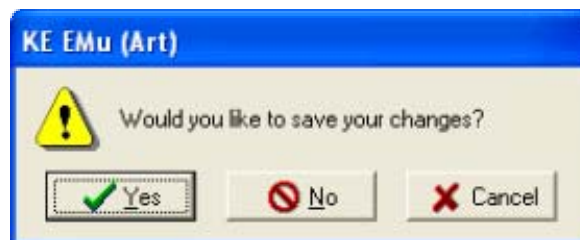
Selecting [✗ Cancel] will abort the switching process.

Switching groups via the Command Center

1. Right click the Command Center.
   A context menu displays:

2. Select **Options**.
   The Options dialog displays
3. Continue from Step 2 above (page 10).

SECTION 4

Registry cache

The permissions of all groups and users in the system are specified in the EMu Registry and this information is stored on the EMu server. The Registry must be consulted each time the EMu client is required to determine whether a user is permitted to perform a given operation. As EMu provides a sophisticated security module the Registry may be accessed heavily for certain operations (starting a new module for example). In order to reduce the time required to query the Registry for permissions, the EMu client now contains a Registry cache. The cache is a mechanism that remembers what permissions have been asked for and the associated response. If the same question is asked again, the answer can be given without the need to access the EMu server. The Registry cache reduces traffic to the EMu server and provides a speed improvement in the EMu client.

The one disadvantage of using a cache is that changes made to the EMu Registry by other users will not be picked up until either the cache is cleared (flushed) or you log out and log back in again. For example, if you are using EMu and you have been producing reports from the Parties module, and another user adds a new report to the Parties module, you will not see the report listed until you log out and log back in again, or until you flush the cache.

In practice this tends not to be a serious issue and the speed gains more than outweigh any inconvenience. However, it may occasionally be necessary to clear the Registry cache:

Flushing the Registry cache

1.	Select **Tools>Options** from the Menu bar of any open module.
	The Options dialog box displays.
2.	Select the **General** tab.
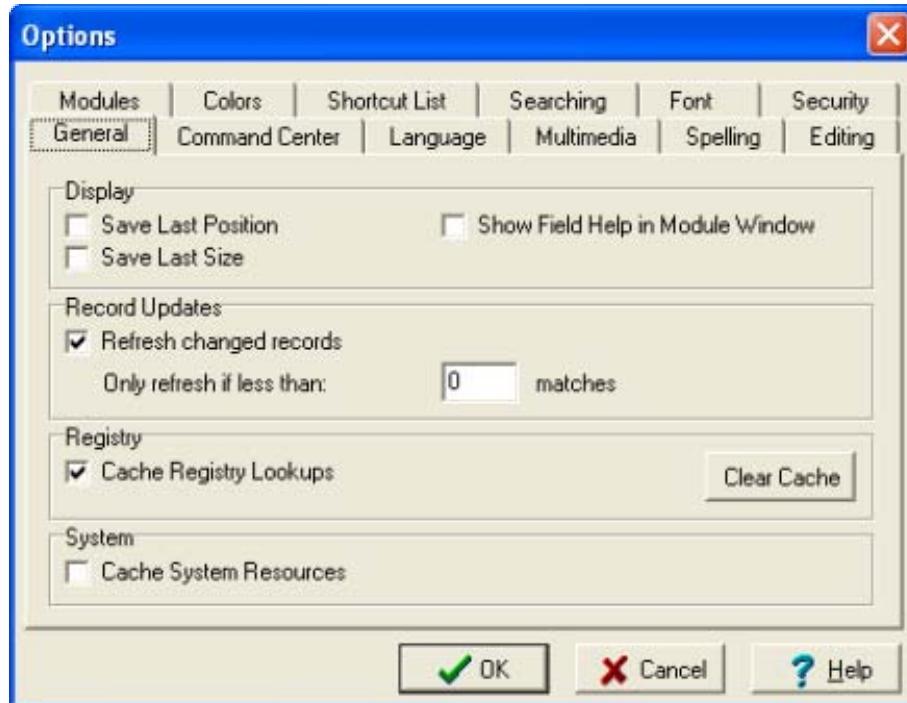
3.	Select [Clear Cache] .
4.	Select [✓ OK] .
	A message displays once the cache is empty.

Flushing the cache removes all Registry responses stored in the EMu client. Next time a Registry question is raised, the EMu client will contact the server for a response and the response will be added to the cache again. Until the cache becomes populated again a decrease in client performance may be experienced.

Enable / disable the Registry cache

1. Select **Tools>Options** from the Menu bar in any open module.
   The Options dialog box displays.

2. Select the **General** tab:
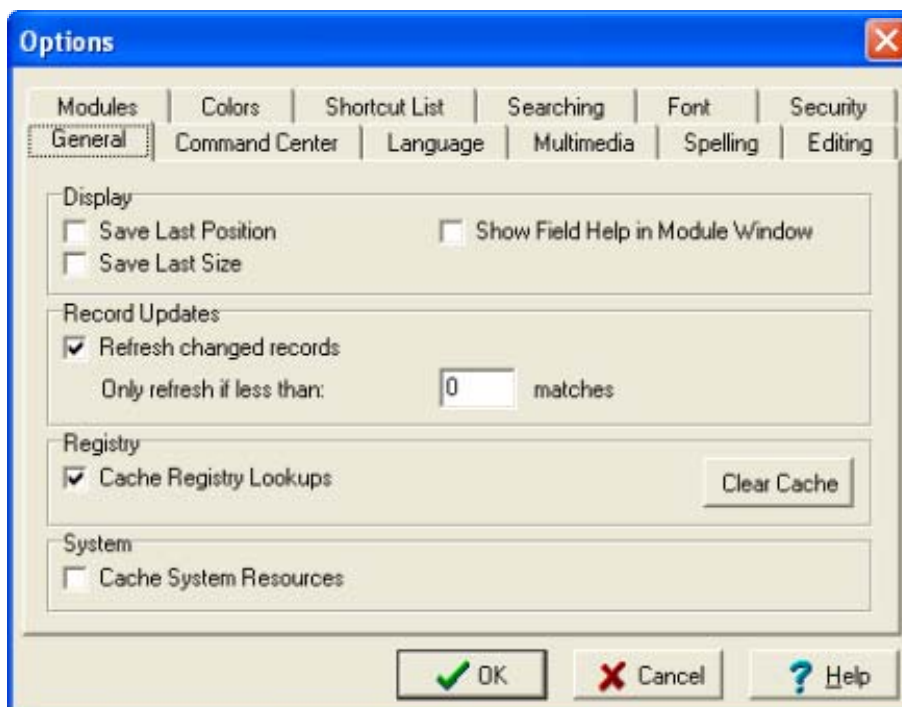
3. Tick / un-tick the **Cache Registry Lookup**s checkbox to enable / disable the Registry cache.

4. Select ✔ OK.

   If the Registry cache is disabled, it is flushed silently as its entries can no longer be used.

Disabling the Registry cache will cause the EMu client to run significantly slower as all Registry queries must be answered by the server. The only useful purpose achieved by disabling the cache is to test the effect changing Registry entries has on a module, without the need to flush the Registry cache. In day to day use, the cache should be enabled.

S ECTION 5

Module caching

Allowing users to switch between groups has implications for how EMu performs module caching.

Module caching is a mechanism that allows modules to be hidden, rather than destroyed, when they are closed. If a new instance of the module is required, the hidden module may be used. Module caching provides significant speed improvements in situations in which modules are opened and closed on a regular basis. Module caching is configured via the Modules tab in the Options dialog box:
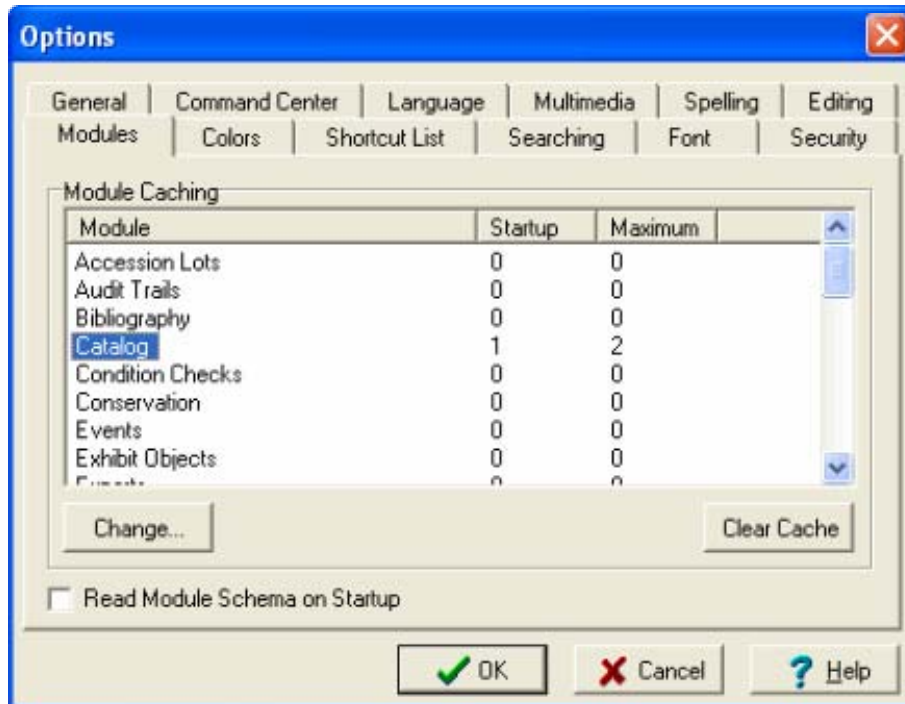
In the example above, one instance of the Catalog module is created when EMu is invoked. When a Catalog module is closed, a maximum of two instances are maintained in the module cache.
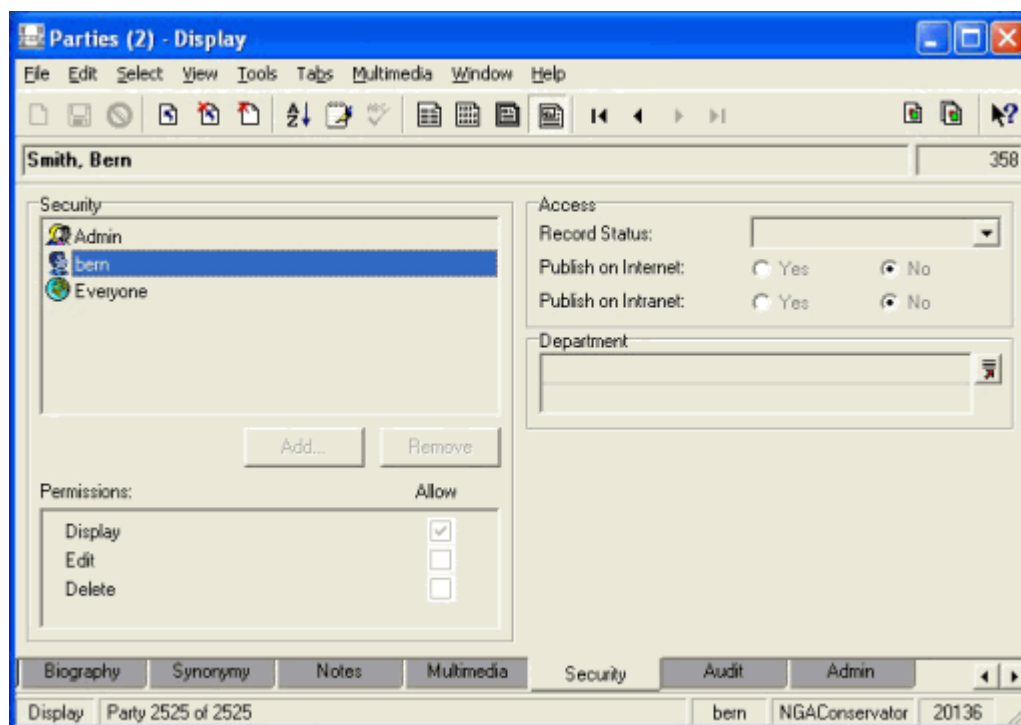
With the introduction of support for multiple groups, the number of modules to cache now applies on a per group basis. Thus for the previous example, up to two instances of the Catalog module will be cached per group.

When switching groups, the Change Groups dialog box allows the user to indicate not only how open modules should be handled, but also how cached modules are dealt with. For example, if you choose to *Close all modules*, then all open modules are closed and all cached modules are flushed.

S ECTION 6

Record Level Security

Enabling users to be a member of multiple groups has implications for how record level security permissions are displayed in the EMu client.

Name selected in the *Security* field:	Permissions displayed
The person currently logged in to EMu	The permissions displayed are the group permissions that apply to the module.
	A module joins a group in one of two ways:
	• If the module was created by clicking a button in the Command Center, the module's group is the one that the user was logged in as when the module was opened.
	• If the module was created by selecting **Window>New>***module* from a module Menu bar, the module's group is the same as the module from which it was created.
	The module's group is shown in the module's Status bar at the bottom right of the window (NGAConservator in the example above).
	For example, if a user is in two groups, Curatorial and Loans Officer, and the module was opened from the Command Center when the user was logged in as a member of the Curatorial group, then the permissions displayed are those of the Curatorial group.
	This is as expected as the permissions reflect what operations (edit, delete) can be performed on the displayed record.
Anyone else	The permissions displayed are a merging of all the user's group permissions.
	For example, if a user is in two groups, Curatorial and Loans Officer, where group Curatorial has permission to delete the record, but group Loans Officer does not, then the permissions displayed will indicate that the user has delete permission.
	This is as expected as the user does have permission to delete the record, provided they log in or switch to group Curatorial.

In the example above, user *bern* is logged in to EMu and the Parties module is in group *NGAConservator* (indicated in the Status bar). The record level permissions indicate that *bern* does not have permission to edit or delete the record, even though *bern* is also in group *Admin*, which does have edit permission.

S ECTION 7

Security profile extensions

The EMu server security profiles have been extended to provide support for multiple groups per user. The profiles are maintained in XML format in a file named `security` in the database directory. Two new attributes have been added to the `<user>` tag to provide support for multiple groups:

- `level`

  The `level` attribute defines a label for the user profile. By changing the value of the `level` label for a given user, a different set of security settings is enabled. The group name is used as the label value for EMu databases. To switch between groups the EMu client changes the `level` value to match the group of the module with focus, that is, the module with which the user is interacting.

- `default`

  A `"yes"` value indicates this set of security settings should be used if the client has not set a `level` value. When the EMu client first connects, a `level` has not been set as the EMu Registry has not yet been consulted (a chicken and egg problem). Once the Registry can verify the log in group, the `level` is set to the supplied value.

A user security profile is created for each group that a user is registered to use (via the `User|`*username*`|Group` Registry entry). If user `badenov` has the following Registry entry:

```
User|badenov|Group|Curatorial;Loans Officer
```

the following XML security segments are generated:

```
<user name="badenov" level="Curatorial" default="yes">
 ...
</user>
<user name="badenov" level="Loans Officer">
 ...
</user>
```

The security profiles are built by the `emusecurity` command. This server side command consults the EMu Registry and builds suitable security profiles for all modules, for all users, for each group a user is in. The command is invoked automatically whenever a `User|`*username*`|Group` Registry entry is created, modified or deleted. `emusecurity` sets the `default` attribute to `"yes"` for the first group listed for each user.

The security level is set via the `seclevel` database option. The value of the option is the security level to use. If the option has not been set or the value is empty, the

security profile with the `default="yes"` attribute specified is used. For example, to load data into the parties module using group Curatorial the following commands could be used:

```
epartiesopts=seclevel=Curatorial
export epartiesopts
texload ....
```

When using TexAPI, the `seclevel` is set via the `TexOptionSet()` call. For example, to change the security level to use group Curatorial for all EMu tables, the following call could be used:

```
TexOptionSet(session, NULL, "seclevel", "Curatorial");
```

For perl based scripts, the `OptionSet()` call is used to alter the security level. For example, to change the security level to use group Curatorial for all EMu tables, the following call could be used:

```
$session->OptionSet("", "seclevel", "Curatorial");
```

The `seclevel` option may be set on a per database basis or a system wide basis.

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