

# EXCHANGE GROUP CALENDAR 3.0 (Exchange 2007SP1 or higher)

## What it does

- Collates everyone's calendar items into one or more public group calendars.
- Users don't have to do anything. No software to install for the users.
- Selective filtering per group calendar to display only items that matter or hide private items.
- Admin users can push items to users and users can not change or remove those
- Admin users can modify items in the groupcalendar and the change will replicate back to the user who has the item in the personal calendar
- Team members can push team items to the personal calendar of everyone in their team so these will also display on mobile calendar devices.
- Users can create new items for other users from their personal calendar or pda/phone
- Define one company wide category list and category color schema.
- Group Calendars are accessible from Outlook web access. (web browser)
- Runs on any computer or server that can connect to the (hosted/local) Exchange server.
- EGC Software management can be done from any computer that can connect to the machine that runs the EGC software.
- Uses the same methods to talk to Exchange as Outlook, nothing needed on the server.
- No left-overs when uninstalled. Registry is not used.

## GroupCalendar Installation steps (Detailed but not complicated)

See step 12 for uninstallation or update.

- 1- Create a **new** user account (GCadmin) in the active directory and give it a mailbox. This is the service account that we will refer to as "the Gcadmin" or "the Gcadmin account"  
(when migrating from a previous groupcalendar version, create a new Gcadmin account. E.g. gcadmin2010).  
Member of domain users is all it need.

- 2- When you use **Exchange 2007 SP1+** run the following command in the Exchange Shell:

```
Get-ExchangeServer | where {$_.IsClientAccessServer -eq $TRUE} |  
ForEach-Object {Add-ADPermission -Identity $_.distinguishedname -User  
(Get-User -Identity gcadmin | select-object).identity -extendedRight ms-  
Exch-EPI-Impersonation}
```

and after that run

```
Get-MailboxDatabase | Add-ADPermission -User gcadmin -extendedRights ms-  
Exch-EPI-May-Impersonate -InheritanceType none
```

If you have **Exchange 2010** you run

```
New-ManagementRoleAssignment -Name:EGCimpersonation -  
Role:ApplicationImpersonation -User:gcadmin
```

Note You will have to adjust the command If you use another service account name than **GCADMIN**.

Note2: Make sure the command that you paste in the shell is one long line. You may want to copy it into notepad first.

3. Download the EGC\_EWS.zip file from the website and extract it to a folder on any 64 bit computer or server that will not be shut down while Exchange server is being used. You can copy it to the Exchange server itself but that is not a requirement. The following files should be present in the extracted folder:
  - **ExchangeGroupCalendar\_EWS.exe** (the processing component of the software)
  - **EGChlp.dll** (a helper dll for the processing component)
  - **gcadmin.exe** (the management console)
  - **InstallService.bat Un-InstallService.bat RunEGCasService.exe RunEGCasService.ini** (scripts and files to install the processing component as a service)
  - **Microsoft.Exchange.WebServices.dll** (the API that is used to talk to Exchange Server)

4. You are free to run the Gcadmin.exe (console) on a desktop computer while having the processing component on any 64 bit server. To do that, simply copy Gcadmin.exe and the (64 bits) Microsoft.Exchange.WebServices.dll to the pc. If the machine is using a 32 bit OS than you will have to install the 32 bit EWS 1.1 API from this url.

<http://www.microsoft.com/downloads/en/details.aspx?FamilyID=c3342fb3-fbcc-4127-becf-872c746840e1>

5. You can now start the GCADMIN.EXE.  
The console's only function is to compose a config.ini file for the processing part of the application. (You may edit the ini file manually too, for instance to copy a list of user email addresses to the [Users] section. See point 13) By default it will do that in the directory where Gcadmin.exe is installed but the settings will not be used by the processing component if Gcadmin.exe is in another location than ExchangeGroupCalendar\_EWS.exe. To prevent confusion it is best to click the "INI file" button on the bottom left and browse (over the network?) to select the config.ini file on the computer/server that runs the EGC processing software.
6. Now you can begin your configuration. The first thing to do is to enter the gcadmin account email address and password and click the "Test Credentials" button. At the bottom of the console you will see what happens and if all goes well you will be notified there that you logged on to your server successfully.

**If you can not log on and get a Autodiscover error:** This can be caused by a problem with the certificates on your exchange server. To test the services from the Exchange shell you can run the following command:

**Test-OutlookWebServices -Identity:gcadmin@domain.com >c:\test.txt**

this creates a test.txt file in the root of the c drive. Look for errors related to your certificates and if there are errors you may find this video usefull:

[http://www.msexchange.org/articles\\_tutorials/videos/exchange-server-2010/video-certificate-wizard-Exchange-2010.html](http://www.msexchange.org/articles_tutorials/videos/exchange-server-2010/video-certificate-wizard-Exchange-2010.html)

In the gcadmin console are some additional options to help you find the reason for the errors you may get. The [test SCP in AD] button locates the service point in the Active Directory which holds the information of you AutoDiscover URL. To test if you have a certificate problem you can try to [test credentials] with "ignore certificate errors" checked. And to overrule the URL that your autodiscover service returns you can manually set the url to the exchange services. That url has a format of <https://server.domain.com/EWS/Exchange.asmx>  
The three test options are there for trouble shooting only. Use them only to fix the errors that prevent the [Test credentials] button from logging on correctly.




7. When you can log on correctly it is time to create one or more groupcalendar folders in the public folders store by using MS Outlook. You can give the group calendar any name you like and place it under any other folder but of course it must be a folder of type Calendar. When you open the properties/permissions of your newly created group calendar in Outlook you will see that you are the owner. **It is vital that the gcadmin account is (also) designated as an OWNER of that group calendar.** Admin users can be given the **Editor** role while normal users must have Author permissions so they can edit their own items but can not modify other items. For Users that are not a member of a group calendar the "folder visible" permission can be removed. Note: All members must have their mailbox on the server or group of servers that are being processed by the EGC software.

You can add every individual user to the calendar and give them permissions but you can also use groups (distribution lists) and add all users with the same role to the same group in your active directory.

8. In the GCADMIN.EXE add the Group Calendars to the list with a path in the form of "/folder/sub folder/sub sub folder" (for errors here check the FAQ below)
9. Add all the user email addresses. You only have to add users that need to have their calendar items shared in the group calendar. Any user that only needs to see the content of a

groupcalendar does not have to be added to the list. You can use the ENTER key after typing an email address to add the user. The user list is sorted, select a user in the list and type the first character of the name to jump to the name that starts with that character.

10. Assign users to your groupcalendars. A user can be a member of one or more group calendars. Being a member means that the calendar items in the personal calendar can replicate (if filters permit) to the group calendar and the group calendar items may replicate to the user calendar.
11. If you need the functionality of Teams communicating with each other by the use of their PGC tick the checkbox in the group calendar members list to designate the selected group calendar as the Primary Group Calendar (PGC) for that user. (read the concepts section below for more info)
12. Now it's time to install the processing component. Browse to the folder where you copied the extracted zip file (from the console of that machine/server, not over the network) and **open** the file RunEGCasService.ini

 UN-InstallService.bat	13-12-2010 14:14	Windows Batch File	1 KB
 InstallService.bat	12-12-2010 15:14	Windows Batch File	1 KB
 RunEGCasService.ini	12-12-2010 15:11	Configuration settings	1 KB




In that ini file you see **command line and workingdir**. Make sure that the path matches the install location of the ExchangeGroupCalendar\_EWS.exe and close/save the file.

So if you unpacked everything in c:\GroupCalendar then you should have in your RunEGCasService.ini the following:

*CommandLine = c:\GroupCalendar \ExchangeGroupCalendar\_EWS.exe*

*WorkingDir = c:\GroupCalendar*

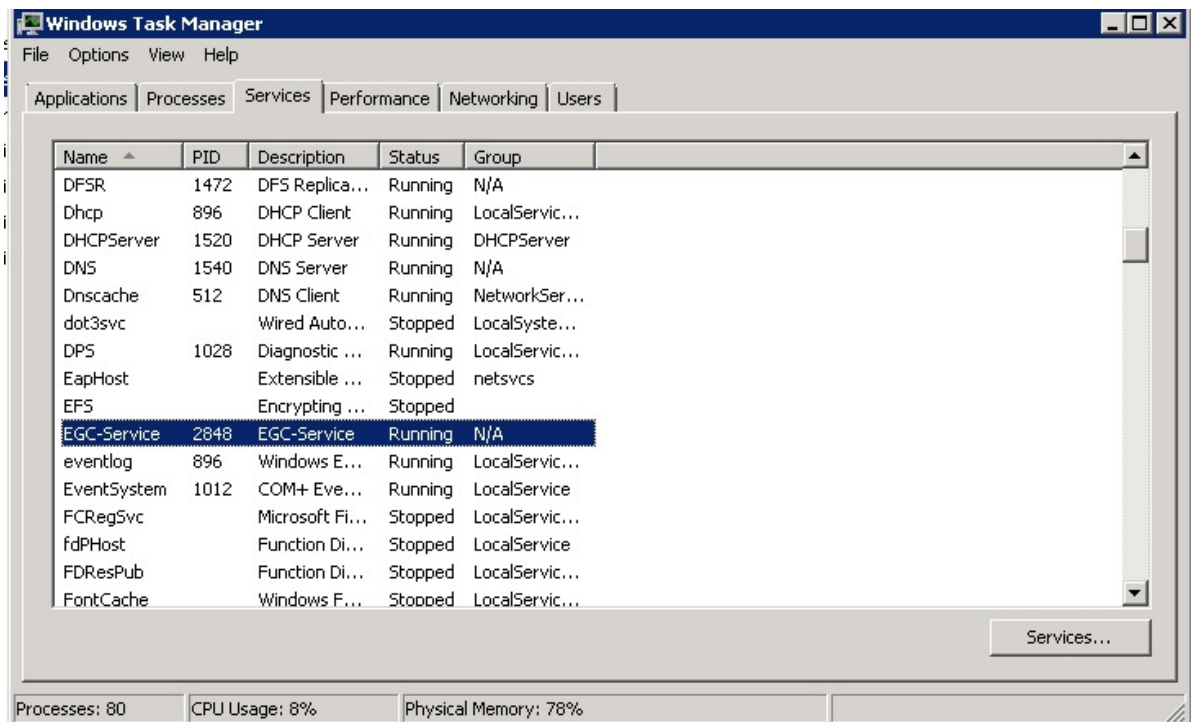
Now run InstallService.bat

 UN-InstallService.bat	13-12-2010 14:14	Windows Batch File	1 KB
 InstallService.bat	12-12-2010 15:14	Windows Batch File	1 KB
 RunEGCasService.ini	12-12-2010 15:11	Configuration settings	1 KB

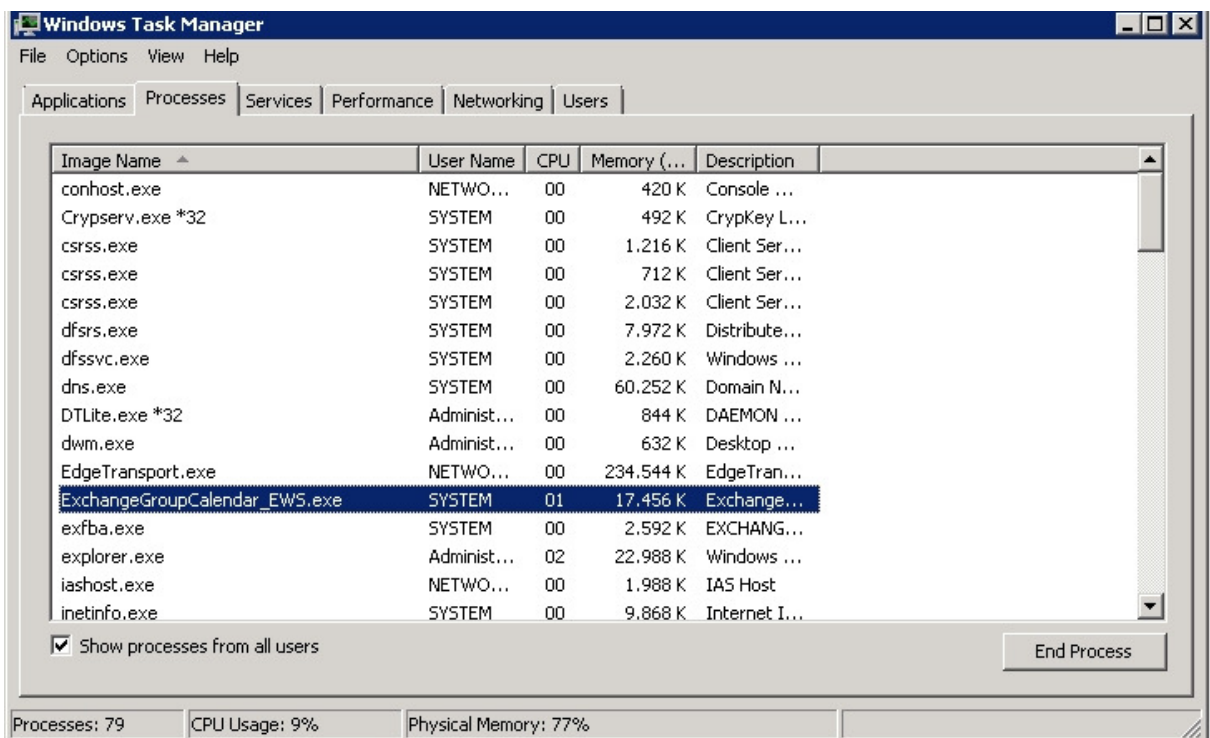
and you're done. (if installservice.bat gives an error then edit it to include the full path or run it from a command shell prompt after navigating to the folder).

When you want to update the software you always first run *UN-installservice.bat*, replace the EXE files and then run *installservice.bat*. Do not overwrite your RunEGCasService.ini when you do an update.

In Task Manager / Services you can see that the EGC-Service is running.



Please make sure that you also see it running in Task Manager / Processes if you enable the check box "Show processes from all users"



and that you don't see it running when you uncheck "Show processes from all users". If you still see it running when you uncheck the box, this means that you started ExchangeGroupCalendar\_EWS.EXE manually which is not good because when you log off, it will stop working.

To uninstall the software simply run UN-InstallService.bat and delete the entire folder.

13. You can edit the config.ini file manually or from a script without using the Gcadmin console. If you want to copy a list of user email addresses to the [Users] section, make sure they all

have a unique index ([1=Jane@b.com](mailto:1=Jane@b.com) / [2=jack@b.com](mailto:2=jack@b.com) etc) and in the [Indexes] section make sure that UserIndex= corresponds to the last user index that was used in the [Users] list.

More info about indexes:

under [Indexes]

Gcindex= max number of groupcalendars

MemberIndex(number) = number of members of the groupcalendar with that number

PGC-(number)= max number of users that have groupcalendar (number) as PGC

under [PGC-number]

number =number ; first number is just a counter, second number is the unique user number.

Another thing you can do with the INI file (from a script) is to import the existing items of one or more users. The processing component will look for the following:

Under the header [Import] you can see

ImportNow=False

PastDays=30

FutureDays=30

Users=a@b.com;c@b.com;d@b.com

It's obvious that when you set False to True, that the import will start. If there are user email addresses in list with a ";" as separator it will import the items from their calendars. If no user names are specified then all user calendar items will be imported.

**With regards to testing the application on exchange 2010, please start your tests with only one single test user that has a newly created mailbox (not migrated) on the exchange 2010 server. Do not use the Gcadmin account mailbox/calendar as test user!**

## Exchange Group Calendar Concepts:

**EGC:** The Exchange Group Calendar software

**User calendar :** The standard user calendar in the Outlook/Exchange mailbox for every user.

**Group Calendar :** A Public Folder of type Calendar in the Exchange server public folders structure.

**Members :** Users (calendars) that are linked/connected to one or more GroupCalendars.

**PGC:** Primary Group Calendar. Members can be a member of one or more Group Calendars.

However there is only one **Primary Group Calendar** per user.

**Filtering:** . Member appointments may or may not be displayed in groupcalendars depending on other configuration settings. (for example a user can be a member of 10 groupcalendars but never show any item in any of the groupcalendars because the items he creates in his personal calendar don't have the correct category or word in the subject that is needed to bypass the filters of the group calendars.

**Star Item:** A normal calendar item that has a astrix/star " \* " in the subject when it is saved.

**Admin:** A user that has public folder permissions to manipulate the items in the groupcalendar and have those changed replicated to the members of that groupcalendar.

### Basic functionality for the ordinary member

A member creates an appointment in his/her personal calendar. The EGC copies the item to the (one or more) group calendars that the user is a member of. Changes to the personal item (change, delete) will be replicated to the item in the groupcalendar.

### Basic functionality for the Admin user

The admin can change or delete the item in the groupcalendar and those changes will replicate back to the user calendar from where the item originated.

### Advanced functionality for ordinary members and users

Users can promote any item in their personal calendar to a team item. Simply by adding a \* to the subject of any appointment it will replicate to all team members' personal calendars.

Any user who has the same PGC defines him/her as a team member.

This item can be deleted or changed by any team member but that change will only replicate to the item that other team members see in their personal calendar when the subject again has a \* in it. In the PGC of the team this item is visible with [.] in front of the subject.

**To delete a team item**, any member of the PGC can add “ \*X” (a star plus a x) to the subject of the team item. Simply deleting it will remove it only from the personal calendar.

**To change a team item** , any member of the PGC can add “ \*” (a star) to the subject of the team item. Simply changing it will change it only in the personal calendar.

**The above functionality also works from a smart phone or BlackBerry.**

In addition to team items it is also possible for normal users to create an item in their personal calendar or mobile device calendar and have that item move to the personal calendar of any other user!

To create an item for an other user the subject needs to contain #username# so the EGC knows where the items should be moved to. Example: To create an item for Jack@opusflow.com you either create a new item in your personal calendar or use an existing item and make sure that the subject begins with #jack# . (admin users can do this too in either their personal calendar or a groupcalendar) Note that this works for users who are configured to be member of a groupcalendar **as well as users that are not a member of a groupcalendar**. They only have to be added to the users list in the gadmin console.

Note. The “##” item that moves to the user calendar will have a user name and creation date in the body of the item so it is always possible to see who created it.

## Advanced functionality for admin users

Admins can manipulate the items in all group calendars where they have been granted public folder permissions. (and the changes will replicate back to the original item in a member user calendar)

Admins can modify a team item in the PGC (to be identified by [.] in the subject) and that change will replicate to all the team members' personal calendars.

Admins can create company wide events in all member calendars:

When a admin user creates a \* item in a group calendar, that item is replicated to the personal calendar of all members of that particular group calendar. (so not just the members that have that group calendar as their PGC but also the users that have that group calendar configured as a secondary group calendar)

Admins can delete any item from the group calendars by simply adding “\*x” to the subject of the item in the group calendar and the item will be deleted from the user calendar(s) where it originated from.

Admins can create items for other individual users when the subject starts with #username#

If a ordinary user deletes or modifies a star item (that was created by a admin) in his/her personal calendar, the item is recreated in the user calendar. So users can not override Admin items in their personal calendar.

## Meetings

A meeting will show up in the groupcalendar as one item. The subject of the item shows [meeting] in front of the normal subject. The word “Meeting” is configurable in the Gadmin console. Behind the subject a list of meeting attendants shows up together with their response to the meeting request.

Example **[meeting] test subject {user1-A|user2-U|Users3-D|User4-T}**

The above subject shows the following information:

- It is a meeting
- The subject is: test subject
- User1 was invited to the meeting and **Accepted**
- User2 was invited to the meeting and has not yet responded (**Unknown**)
- User1 was invited to the meeting and **Declined**
- User1 was invited to the meeting and **Tentatively accepted**

An admin user can modify the meeting in the groupcalendar. This will result in a change to the meeting item that the organizer has in the personal calendar.

## Attachments

Attachments added to the item in the personal calendar will be copied to the item in the group calendar.

## Wrap-up / Things to remember

## ADMINS

- If you are an admin user you can create a new item for all members of the group calendar by adding a \* to the subject
- As an admin user you can adjust any item in the groupcalendar and it will replicate the change to the users
- As an admin user you can delete any item by adding \*X to the subject (and it deletes from the user calendars)

## USERS

- As a normal user you can create an item in your personal calendar and add a \* to the subject and it will replicate to all other members who have the same PGC setting.
- As a normal user you can change a team item and have the changes replicate to the members of your team by adding a \* to the subject.
- As a normal user you can delete such a team item from all calendars of your team by adding \*X to the subject.
- As a normal user you can create an item in your personal calendar and start the subject with #username# and that item will move to the user calendar of the selected user.

### Using filters and transforms

Filters can be used to limit the type of items that show up in the group calendars. You may for instance create a number of different group calendars that contain only specific items. There are positive and negative filters, for instance you can decide to show only the items that have a category of 'holiday' in one groupcalendar and set a filter on all other groupcalendars so they don't show any items with the category 'holiday'. That way you have one overview of all scheduled vacations.

The filter section is easy to understand. Here is an example

- In the GCADMIN console, Type the following; **apple ,pear**, in the text box under description "Hide when subject contains.
- In a user calendar create a new appointment with subject: apple
- In a user calendar create a new appointment with subject: apples
- In a user calendar create a new appointment with subject: apple pie
- In a user calendar create a new appointment with subject: appear
- Notice that the items with the subject apple and apple pie and appear don't display in a group calendar. (because the filter has apple plus a blank defined and pear is part of appear)
- Notice that the item with subject apples does show up in a group calendar.

### Master Category definition

By default, every Outlook user can define categories and assign a color to them. User1 can define category "Vacation" and assign the color "Yellow" to it while User2 can define the same category "vacation" and assign the color "Red" to it.

When both users are a member of the same GroupCalendar and they both have an appointment in their personal calendar with the category "Vacation" then User1 sees both items in yellow while user2 sees both items in red. When user3 looks at the groupcalendar without having the category "vacation" defined in outlook, he will see white.

In the console you can define a list of categories and a color. The processing part of the EGC software will periodically (30 minutes or so) push this category list to all users that are defined in the user list.

To Create a category list you start with the category name, add a dash, add a number for the color and end with a comma. Example: Vacation-2,Team building-19,Follow up-24,  
This results in all users having the **orange** category **vacation**, the **Dark Yellow** category **Team Building** and **Dark purple** category **Follow up** in their master category list.

Available Colors in Outlook 2007+

Red = 1	Gray = 13
Orange = 2	DarkGray = 14
Peach = 3	Black = 15



Yellow = 4	DarkRed = 16
Green = 5	DarkOrange = 17
Teal = 6	DarkPeach = 18
Olive = 7	DarkYellow = 19
Blue = 8	DarkGreen = 20
Purple = 9	DarkTeal = 21
Maroon = 10	DarkOlive = 22
Steel = 11	DarkBlue = 23
DarkSteel = 12	DarkPurple = 24
	DarkMaroon = 25

## Private items

There may be occasions that a user enters an appointment in their calendar that is just meant as a reminder like "call the dentist". This time slot is not occupied and should not be visible in the groupcalendar. For these items you can use the string @@@ in the body of the appointment.

- In a user calendar create a new appointment with any subject but add @@@ to the body text
- Notice that the item does not display in a groupcalendar until you remove the @@@.

There are however occasions that a user enters an appointment that does occupy a time slot but other users should not be informed about the reason why the user is busy. The groupcalendar console offers 3 methods of dealing with these items.

- In a user calendar create a new appointment with any subject and tick the PRIVATE checkbox
- Notice that the item either
  - o Shows like any other item on the groupcalendar (not private!)
  - o Does not appear in the groupcalendar
  - o Appears with a different subject and all other details invisible.

This behavior corresponds to the Private Settings in the gcalendar console.

## Test Scenario's:

### The basics

- Create a normal item in the personal calendar of user 1
- See it replicate to all of the groupcalendars that user 1 is a member of.
- Change the subject of the item in the personal calendar of user 1
- See the changed subject replicate to all of the groupcalendar that user 1 is a member of
- Change the subject of the item in the groupcalendar (make sure to have public folder permissions to do that)
- See the changed subject replicate to the item in the personal calendar of user 1
- Add \*X to the subject of the item in the group calendar
- See the item being deleted from user calendar and all groupcalendars.

### Admin tasks

- Create an item in the groupcalendar with a \* in the subject
- See it replicate to all user calendars who are a member of this groupcalendar
- Move the item in the groupcalendar to another time or change the subject
- See the changes replicate to all personal calendars who are a member of this groupcalendar
- Look in the groupcalendar to check what the exact name is of another user. (say John)
- Create an item in your personal calendar OR in the group calendar with this subject #john# test
- Notice that it gets removed from the calendar where it was created (moved to John's calendar)
- See that it shows up in the group calendar as [john] test
- Open the item in the groupcalendar and see that your name and the time of creation is logged.

Demonstrate that users can not change Admin items



- Move the item in one of the user calendars (or change the subject or delete it).
- See the user changes being undone and the original item properties being restored

#### Team tasks

- Create a normal item in the personal calendar of user 1 with a \* in the subject.
- See the item being replicated to the groupcalendar that is this users' PGC
- See that the subject has [.] in front of it to indicate a team item in the PGC
- Check the user calendars of the other team members and see the item there as well with a dot in front of the subject to indicate a team item.
- In any of the team members' personal calendars, change the subject of the item and add a \* to the subject
- see the changed subject in all other team members' calendars.
- Admin only: Move the item in the PGC to another start time to see the item move in all personal calendars of the team too.
- In any of the team members' personal calendars or in the PGC (as admin), add \*X to the subject and see the item being removed from all team members' personal calendars as well as their PGC.

## FAQ

The password of the Gcadmin account is visible in the Gcadmin console. Is there a risk?

- The config.ini file contains the password. This file should not be accessible for non administrators. Apart from that, the Gcadmin account is just another user account, it does not have special permissions on the exchange server or active directory.

## Error messages in Gcadmin console or in the log files:

Logging can be enable from the Gcadmin console (log to text file). It then creates up to 10 log files, overwriting the oldest. On new installations logging should always be enabled to make sure that no errors are logged.

**Impersonation error for user abc@def.com : Invalid URI: The hostname could not be parsed.**

- Check the email address of the user. It may be typed incorrectly in Gcadmin.exe.

**Unable to cast object of type 'System.Int32' to type 'System.Byte[]'.**

- Was fixed after reinstalling service pack 3 of outlook 2003 on the client pc.

**Problem while trying to delete replicaitems: Object variable or With block variable not set.**

- Make sure the user has author permissions in the groupcalendars that he/she is member of.

**Exchange 2007 error: The server to which the application is connected cannot impersonate the requested user due to insufficient permission."**

- Start AD Sites and Services
- Click on the root node of the tree on the left hand pane and then choose View | Show Services Node (make sure it is checked).
- Expand the Services node as follows:  
Services/Microsoft Exchange/First Organization/Administrative Groups/Exchange Administrative Group/Servers/
- Choose your CAS server (it should be a child of "Servers")
- Right click on your CAS server and choose Properties and go to the Security tab on the property page.
- Scroll through the list of users in the list box at the top and find your "gcadmin" account. If it isn't there, then the right wasn't stamped properly.
- Assuming for a moment that the account is indeed there, select the "gcadmin" account in the upper list box and then scroll down the list of privileges until you get to "Exchange Web Services Impersonation". Make sure that is is checked (and not greyed out).
- If the account was not there, then you need to add an ACE for that account. Click Add (under the groups/users list box), find the account and then go to step "g".

Do the same procedure from point C. for this path .. Services/Microsoft Exchange/First Organization/Information Store/First Storage Group/Mailbox Database  
Right click on the Mailbox Data node in the left tree view and choose Properties and go to the Security tab. Find your "gcadmin" account just like before and make sure that the "Allow Impersonation to Exchange Personal information" is there and checked (and not greyed out).



## Licensing structure

More and more software becomes a service (in the cloud). More and more companies need flexible licensing based on ever changing demand. To accommodate for that, EGC uses a flexible subscription based (pre-paid) licensing model without any initial costs but with unlimited support and version updates.

The EGC software counts the number of calendars that are being serviced by the EGC software. Every groupcalendar and every user calendar needs a license. So if you plan to have 1 group calendar and 5 users participating in it then you need 6 licenses.

When demand grows and more licenses are needed, those additional licenses can be ordered with the same end date as the existing subscription. After payment the EGC software will automatically know what the new maximum user count should be.

A license is valid for one month or longer.

The license includes free unlimited support and software updates.

The cost per calendar per month is as follows:

1 to 5 calendars: 3 euro per calendar per month  
6 to 10 calendars : 2.50 euro per calendar per month.  
11 to 20 calendars : 1.50 euro per calendar per month  
21 to 50 calendars : 1.00 euro per calendar per month  
51 to 200 calendars : 0.8 euro per calendar per month  
201 to 500 calendars : 0.5 euro per calendar per month  
501 to 1000 calendars : 0.3 euro per calendar per month  
1001 to 5000 calendars : 0.2 euro per calendar per month

One year license : 10% discount

Two year license : 20% discount

Three year license : 30% discount

*Example: 25 users and 5 groupcalendars = 30 calendars*

*license for 1 month =  $30 * 1 \text{ euro} = 30 \text{ euro}$*

*license for 1 year =  $30 * 1 * 12 * 0.9 = 324 \text{ euro}$  (one year license comes with 10% discount)*

*license for 3 years =  $30 * 1 * 12 * 3 * 0.7 = 756 \text{ euro}$  (three year license comes with 30% discount)*

To license the software and move from trial status to registered status you will need the unique ID that you used to unlock your demo version.

To pay for a license you go to Avangate url :

Enter the unique ID as well as company name and all other required fields.

Select the number of licenses and the number of months that you want to license the software.

A discount is applied to the sum when selecting the relevant license period.