

MCR10175

Add `exec_com` to Set Up GCOS Daemon

Revision 1.1

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1 Problem Description

Ticket <https://multics-trac.swenson.org/ticket/139> calls for an `exec_com` to aid in the setup of the GCOS daemon. While the Multics documentation does include all the required setup steps, they all manual and easily gotten wrong. An `exec_com` that performs the initial setup would be helpful.

2 Proposed Fix

This MCR proposes an `exec_com`, to be installed in `>tools`, where other such `exec_coms` live, to perform the following tasks:

- Create the `>ddd>GCOS` directory
- Create the `gcos_user_table_`
- Initialize the `gcos_user_table_`
- Add the Repair.SysAdmin user so at least one known user can test out the setup
- Register the GCOS user in the PNT
- Register the Anonymous user in the PNT (required for GCOS daemon's operation)
- Add the GCOS user to the SysDaemon project
- Convert the SysDaemon project PMF
- Install the SysDaemon project PDT
- Create the GCOS project PMF, adding the Anonymous user to it
- Convert the GCOS project PMF
- Intall the GCOS project PDT
- Create the `input_dir`, `pool_dir`, and Anonymous directories under `>ddd>GCOS`
- Set appropriate access on these directories

- Create the >gc_{os}_directory_directory
- Create the SysAdmin directory under it (so that the SysAdmin project can use the daemon)
- Create the Repair directory under the SysAdmin directory (so that the Repair.SysDaemon user can use the daemon)
- Set appropriate access on these directories
- Make sure the ring brackets are set correctly on >ddd>idd>iod_working_tables
- Create the >sc1>gc_{os}.message segment so that GCOS.SysDaemon can use the message coordinator
- Log in the GCOS.SysDaemon process
- Issue the “gc_{os} attach” command in that process
- Issue the “gc_{os} read” command in that process

Those steps should allow the installer to test that the GCOS daemon is functioning properly.

Of course, in order to allow other users to use the GCOS daemon, manual steps will be required to add the GCOS user (that corresponds to the Multics user), and create the appropriate Project and Person directories under >gc_{os}_directory_directory with appropriate access. Those steps are documented in the manuals.

The provided exec_{com} isn’t robust enough to handle all situations, but should work on newly installed systems and most systems that are expected to be place today.

The proposed exec_{com} is provided below. All the whitespace (empty lines) are there because the programs that are invoked require them.

setup_gc_{os}_daemon.ec 09/11/26 1526.9 pdt Fri

```
&version 2
&-
&- HISTORY COMMENTS:
&- 1) change(2026-09-10,Swenson), approve(2026-09-10,MCR10175):
&-   Written.
&-
&-                                     END HISTORY COMMENTS
&-
&trace &command on

&print setup_gcos_daemon.ec: This execcom sets up the users, projects,
&print directories and access to allow the GCOS.SysDaemon process to
&print be created. GCOS.SysDaemon is a daemon that automatically reads
&print GCOS card decks and executes GCOS jobs on behalf of regular
&print users.
&print
&print This execcom is intended to be executed only by a user on the
&print SysAdmin project, with appropriate access to register users,
&print update projects, send admin commands to the Initializer process.
&print
```

```

&-
&set USER_NAME &[user name]
&set USER_PROJECT &[user project]
&-
&if &[not [equal &(USER_PROJECT) SysAdmin]] &then &do
    &print setup_gcos_daemon.ec: User project, &(USER_PROJECT), is not SysAdmin. Aborting.
    &goto QUIT
&end
&-
&print The following steps will be performed if not already performed
&print
&print 1. Checking effective access to >ddd
&print 2. Checking effective access to >udd>sa>a
&print 3. Creating >ddd>GCOS
&print 4. Creating >ddd>GCOS>gcos_user_table_
&print 5. Adding user &(USER_NAME).&(USER_PROJECT) to the GCOS user table
&print 6. Displaying header and user from GCOS user table
&print 7. Adding the GCOS user
&print 8. Adding the Anonymous user
&print 9. Registering the GCOS user on the SysDaemon project
&print 10. Creating the GCOS project and adding the Anonymous user to that project
&print 11. Creating directories under >ddd>GCOS
&print 12. Setting access to directories under >ddd>GCOS
&print 13. Creating >gcos_directory_directory (>gdd)
&print 14. Setting access to >gcos_directory_directory (>gdd)
&print 15. Creating directory >gdd>&(USER_PROJECT)
&print 16. Creating directory >gdd>&(USER_PROJECT)>&(USER_NAME)
&print 17. Setting access to directory >gdd>&(USER_PROJECT)
&print 18. Setting access to directory >gdd>&(USER_PROJECT)>&(USER_NAME)
&print 19. Ensuring correct ring brackets on >ddd>idd>iod_working_tables
&print 20. Creating >sc1>gcos.message
&print 21. Setting access on >sc1>gcos.message
&print 22. Logging in GCOS.SysDaemon
&print 23. Issuing the "attach" command to GCOS.SysDaemon
&print 24. Issuing the "read" command to GCOS.SysDaemon
&print
&set CONTINUE &[response "Do you want to proceed with the execution of this exec_com?"
    -accept yes no]
&if &[not [equal &(CONTINUE) yes]] &then &goto QUIT
&-
&print Checking effective access to >ddd...
&if &[not [equal [gea >ddd] sma]] &then &do
    &print setup_gcos_daemon.ec: User does not have sma access to >ddd. Aborting.
    &goto QUIT
&end
&-
&print Checking effective access to >udd>sa>a...
&if &[not [equal [gea >udd>sa>a] sma]] &then &do
    &print setup_gcos_daemon.ec: User does not have sma access to >udd>sa>a. Aborting.
    &goto QUIT
&end
&-

```

```

&if &[exists directory >ddd>GCOS] &then &do
    &print Skipping creation of >ddd>GCOS as it already exists
&end
&else &do
    &print Creating >ddd>GCOS directory and setting up GCOS user table...
    create_dir >ddd>GCOS
&end
&-
cwd >ddd>GCOS
&if &[exists segment gcos_user_table_] &then &do
    &print Skipping creation of >ddd>GCOS>gcos_user_table_ as segment already exists
&end
&else &do
    &print Creating segment >ddd>GCOS>gcos_user_table_...
    cr gcos_user_table_
    &print Running gcos_user$init_table
    gcos_user$init_table
&end
&-
&print Adding single user &(USER_NAME).&(USER_PROJECT) to GCOS user table...
&attach
gcos_user$add
&[lowercase &(USER_NAME)]
&(USER_NAME)
&(USER_PROJECT)
&detach
&-
&print Showing gcos_user_table_ header
gcos_user$print -hdr
&-
&print Showing newly created GCOS user
gcos_user$print -gaid &[lowercase &(USER_NAME)]
&-
&print Checking to see if user GCOS is already registered...
&if &[is_he_user GCOS] &then &do
    &print GCOS user is already registered. Skipping registration.
&end
&else &do
    &print Registering user GCOS...
&attach
ec master register GCOS
Daemon, GCOS
foo

```

SysDaemon

```

no
GCOS
y
no

```

```

&detach
&end
&-
&print Checking to see if user Anonymous is already registered...
&if &[is_he_user Anonymous] &then &do
    &print Anonymous user is already registered. Skipping registration.
&end
&else &do
    &print Registering user Anonymous...
&attach
ec master register Anonymous
GCOS, Anonymous
foo

GCOS

no
Anonymous
y
no
&detach
&end
&-
&print Checking to see if GCOS user is already registered on the SysDaemon project...
&if &[ec is_user_in_proj SysDaemon GCOS] &then &do
    &print Skipping adding GCOS user to SysDaemon project since already present.
&end
&else &do
&print Checking to see if SysDaemon.pmf is already extracted from pmf.archive...
&if &[exists segment SysDaemon.pmf] &then &do
    &print SysDaemon.pmf is already present in >udd>sa>a. Skipping extraction from
        pmf.archive...
&end
&else &do
    &print Extracting SysAdmin.pmf from pmf.archive...
    ac x pmf SysDaemon.pmf
&end
&-
&print Updating SysDaemon.pmf to add GCOS user...
&attach
ted
r SysDaemon.pmf
/end;/
i
personid:&HT(1)GCOS;
homedir:&HT(1)>ddd>GCOS;
initproc:&HT(1)>unb>gcoss_daemon;
\f
w
q
&detach

```

```

&-
&print Converting SysDaemon.pmf to PDT...
cv_pmf SysDaemon
&-
&print Installing SysDaemon.pdt
install SysDaemon.pdt
&end
&-
&print Checking to see if GCOS project exists...
&if &[ec does_project_exist GCOS] &then &do
    &print Skipping creating of GCOS project since it already exists
&end
&else &do
&attach
ec master new_proj GCOS
GCOS

```

System

```

no
root
Anonymous
.
&detach

ac x pmf GCOS.pmf

```

```

&attach
ted
r GCOS.pmf
/Anonymous/
a
homedir:&HT(1)>ddd>GCOS>Anonymous;
initproc:&HT(1)process_overseer_;
ring:&HT(1)5,5;
\f
w
q
&detach

cv_pmf GCOS
install GCOS.pdt
&end
&-
&print Creating directories under >ddd>GCOS, if not already present
cwd >ddd>GCOS
&-
&if &[not [exists directory input_dir]] &then &do
create_dir input_dir
&end
&-
&if &[not [exists directory pool_dir]] &then &do
create_dir pool_dir
&end
&-
&if &[not [exists directory Anonymous]] &then &do
create_dir Anonymous
&end
&print Setting access to input_dir, pool_dir, and Anonymous under >ddd>GCOS
sa (input_dir pool_dir Anonymous) sma GCOS.SysDaemon.* sma Anonymous.GCOS.* sma *.SysAdmin
sis (input_dir pool_dir Anonymous) rw Anonymous.GCOS.* rw *.SysAdmin
&-
&if &[exists directory >gcos_directory_directory] &then &do
&print Skipping creation of >gcos_directory_directory because it already exists
&end
&else &do
&print Creating >gcos_directory_directory...
sac cd >gcos_directory_directory -quota 2000
sac an >gcos_directory_directory gdd
&end
&-
&print Setting access to >gdd
sac sa >gdd sma GCOS.SysDaemon sma *.SysAdmin
pause 5
&-
cwd >gdd
&if &[exists directory >gdd>&(USER_PROJECT)] &then &do
&print Skipping creation of >gdd>&(USER_PROJECT) as it already exists
&end

```

```

&else &do
    &print Creating directory >gdd>&(USER_PROJECT)
    create_dir &(USER_PROJECT)
&end
&-
&if &[exists directory >gdd>&(USER_PROJECT)>&(USER_NAME)] &then &do
    &print Skipping creation of >gdd>&(USER_PROJECT)>&(USER_NAME) as it already exists
&end
&else &do
    &print Creating directory >gdd>&(USER_PROJECT)>&(USER_NAME)
    create_dir &(USER_PROJECT)>&(USER_NAME)
&end
&-
&print Setting access to directory >gdd>&(USER_PROJECT)
sa &(USER_PROJECT) sma GCOS.SysDaemon.* sma Anonymous.GCOS.* sma *.SysAdmin
&-
&print Setting access to directory >gdd>&(USER_PROJECT) project]>&(USER_NAME)
sa &(USER_PROJECT)>&(USER_NAME) sma GCOS.SysDaemon.* sma Anonymous.GCOS.* sma
    Repair.SysAdmin sma *.SysAdmin
sis &(USER_PROJECT)>&(USER_NAME) rw Anonymous.GCOS.* rw Repair.SysAdmin rw *.SysAdmin
&-
&print Ensuring correct ring brackets on directory >ddd>idd>iod_working_tables...
sac srb >ddd>idd>iod_working_tables 4 5 5
pause 5
&-
&if &[exists segment >sc1>gcos.message] &then &do
    &print Skipping creation of >sc1>gcos.message as it already exists
&end
&else &do
    &print Creating >sc1>gcos.message
    cr >sc1>gcos.message
&end
&-
&print Setting access on >sc1>gcos.message
sa >sc1>gcos.message rw GCOS.SysDaemon
&-
&print Logging in GCOS.SysDaemon
sac sc_command login GCOS SysDaemon gcos
pause 5
&-
&print Sending GCOS.SysDaemon an "attach" command
sac sc_command r gcos attach
pause 5
&-
&print Sendong GCOS.SYsDaemon a "read" command
sac sc_command r gcos read
pause 5
&-
&print GCOS daemon is setup.
&print
&print Documentation on the GCOS Daemon, and how to configure it can be found in the
&print Multics GCOS Environment Simulator manual, AN05-02A, in Appendix A.

```

```
&print
&label QUIT
&quit
```

3 Documentation

The installation instructions and software release bulletin will point out the existence of this `exec.com` and provide direction as to how to invoke it and what should be expected. The Multics GCOS Environment Simulator manual (AN05-02A), Appendix A describes the Multics GCOS daemon and everything required to set it up and manage it.

4 Test

This `exec.com` has been tested on GHM and on new MR12.9 systems (upgraded and cold booted).

5 Version History

2026-09-10	1.0	Initial version of the MCR.
2026-09-11	1.1	Made <code>exec.com</code> more robust and added messages indicating what it is doing