

10.0 Folder Management and Archiving

The concept of folders in FEMIS provides a means to associate the activities done in a specific EOC over a time period of one or more days. A folder is normally initiated when some new type of activity commences. The new folder may be initialized with some preset information, but much of the folder specific information is empty at the time of creation. Information in the folder increases depending on what is happening during the time the folder is open. When the activities are completed or after some predefined length of time has elapsed, the folder is closed. A folder limits the amount of data seen by the EOC users and makes their jobs easier to perform. Since a folder contains only related information, it is easy to review this information at a later time.

Folders can be used to review information and decisions that were made in the past. This may be done informally to determine how well EOC users perform their tasks, or it may be done as part of some legal action arising from property or personal damages. For both of these activities it is recommended to copy or move the information from the EOC to another platform where the integrity of the data can be guaranteed. If the folder database information is not saved in a timely manner, it will be difficult or impossible to reconstruct since new information will overwrite or modify it.

10.1 External Storage

Folder data must be saved on the EOC server where it was created and put in a form so it can be moved to another database. The data must be saved soon after the folder is closed in order to capture a true snapshot of the conditions present at that time. If this is not done, changes made at other EOCs will change the database.

The Oracle export utility is used for saving the folder on a medium that can be used to recreate the database at a later time. A system level database export is performed each workday evening as part of the database backup policy. The export creates a disk file on the server each night during the workweek. These export files get backed up to tape as part of the server file backup. The export file could be copied to another server or copied to a tape that could be stored with other folder exports for long period of time.

The process is controlled by a FEMIS cron job that normally runs at 22:00 each workday night. This schedule can be modified to suit the needs of the site. The process does a system level export of the database and then calls the Folder Deletion process described below.

10.2 Folder Data Deletion

The FEMIS database contains information, such as meteorological data and D2PC cases that will build up many records during a month's interval. In older versions of FEMIS, a timed archive process saved the data and then deleted some of it to keep the tables at a manageable size. With folders, other tables besides those now archived, such as Work Plans, will grow in size and need to be saved so the history data will be available. With the addition of folders in FEMIS v1.4.7, the archiving in older versions is now performed by the folder delete process combined with the External Storage process described above.

Folder Deletion considers whether a folder is using a database table, and if it is, whether the folder is closed and marked for deletion. Tables containing status board data, D2PC cases, and Journal data are used by folders so obsolete records will be removed when the folder is no longer needed. The Folder Delete process for the depot is more complicated than for offpost EOCs due to the presence of Work Plans and meteorological data that only resides in the depot database.

Special business rules for deleting folder data are used for the Journal table and Met tables. The Journal table may get large even though it is a folder table, so the delete process checks the first Monday of each month to look for records older than 28 days. If any records are found, they are deleted. The Met tables are checked each Monday of every week, and data is removed that is older than 7 days.

To aid in the Folder Deletion process, a new Oracle stored procedure has been developed. This procedure is executed each time the External Store exports the database. It will delete folder data for all EOCs that reside on the server.

10.3 Archiving D2PC Cases

If a database is accumulating a large number of D2PC cases, some of the older cases should be archived to free up database space and improve the performance of the software. The `archive_d2.sh` script has been written to do this. This script has two parts: 1) it does a database export of all the D2PC tables to a dump file, and 2) it deletes old D2PC cases from the database.

STOP

Do not archive cases if you think you will need to quickly retrieve them. Running this script will write all the D2PC cases to a dump file and delete them from the database.

10.3.1 Using the `archive_d2.sh` Script

The `archive_d2.sh` script should be located in the `/home/femis/database/eocdba` directory along with the following support files: `archive_d2.exp`, `archive_d2.sql`, and `archive_d2_n.sql`. Move to the appropriate directory and start the script as shown below:

```
% cd /home/femis/database/eocdba
% archive_d2.sh
```

A menu will display the possible databases on which to perform the D2PC archive. Below is an example of what this menu would look like for Oregon/Washington.

```
Databases
=====
umcd
cben
cmor
```

```
cuma
sore
swas
=====
Choice ==>
```

Enter the four-character site code for which you want to perform D2PC archiving.

Then the following menu presents two options for deleting cases. If you want to delete cases older than a certain date, enter the number 1. If you wish to keep a certain number of the most recent cases, enter the number 2. Sections 10.3.1.1, Archiving D2PC by Date, and 10.3.1.2, Archiving D2PC by Number of Cases, provide details for using these options.

Note: Option 2 is not recommended for an onpost FEMIS database unless it is getting its D2PC cases from EMIS. See Section 10.3.3, Archiving Limitations, for more information.

```
Archive D2PC Menu
=====
1) Archive D2PC by date
2) Archive D2PC by number of cases
=====
Choice ==>
```

At this point, the script will export all of the D2PC database tables to a dump file with a filename form of <site code>_<year>-<month>-<day>-<hour>-<minute>_d2.dmp. For example, if the current date/time is March 6, 1997 09:11, and you are exporting from the swas database, the filename would be swas_1997-03-06-09-11_d2.dmp. If you watch during processing, a message will display with the specific filename created by this script.

Once the export has completed, you will receive the following prompt.

```
Did the export complete successfully? [N] ==>
```

If a message saying the export was terminated without warnings or errors, enter the letter Y.

From this point on, the script behaves differently based on whether you have chosen to archive by date or by the number of cases. See the appropriate sections below for details.

10.3.1.1 Archiving D2PC by Date

If archiving by date, you will receive the following prompt.

```
Archive cases not modified in how many days? [7] ==>
```

If you accept the default, the script will remove any cases older than 7 days. You can change the default number of days to the number of days you want.

Note: If you have a specific date in mind and do not know how many days ago it was, you may also simply press <enter> and wait for the verification date prompt that comes up next.

You will be prompted for verification of the cutoff date for deleting D2PC cases. Below is an example of this prompt.

The date 7 days ago was 02/19/97.
Enter archive date if date shown is incorrect (MM/DD/YY) [02/19/97] ==>

Once you have accepted the cutoff date for D2PC case deletion, you will be given one more chance for verification.

Note: Any D2PC cases older than the displayed date will be deleted from the system.

Another prompt displays the following:

Do you really want to delete records older than 02/19/97? [N] ==>

The script will then perform the D2PC deletions and return with the following message.

*** MSG: Archive of D2PC in <site> is complete.

10.3.1.2 Archiving D2PC by Number of Cases

If archiving by number of cases, you will be prompted for the number of cases you want to keep in the database for a particular exercise.

How many D2PC cases to you want to keep [1000] ==>

Enter any number of cases you want to keep. If you accept the default value of 1000, then all but the most recent 1000 D2PC cases for that exercise will be deleted.

You will be prompted for an exercise number on which to perform the archive:

What exercise number do you wish to archive? [0] ==>

Normal operations is exercise number 0 (zero). You can accept this number or enter another exercise number.

The script will then perform the D2PC deletions and return with the following message.

*** MSG: Archive of D2PC in <site> is complete

10.3.2 Running D2PC Archiving from the Command Line

If no command line options are specified, `archive_d2.sh` runs with user-interactive prompts. It is possible; however, to run the script with the following command line options.

- h will display syntax help.
- n will allow you to archive all but a certain number of the most recent cases for an exercise.
- d will allow you to archive all cases older than a certain number of days.

The syntax for the `-n` option is

```
-n <database> <num cases> <exercise> [export dir]
```

where `<database>` is the four character database code in lower case (i.e., `umcd`, `sore`, `swas`).

`<num cases>` is the number of the most recently modified cases you want to keep.

`<exercise>` is the exercise number for which you want to perform the archive. Exercise number 0 is normal operations.

`[export dir]` is an optional parameter specifying the output directory for the export dump file. If a directory is not specified, the export will be placed in your current working directory.

The following command line is an example of the `-n` option that will archive all but the most recent 55 cases found in exercise number 0 on the `sore` database. It will write the export file to the `/tmp/` directory

```
archive_d2.sh -n sore 55 0 /tmp/
```

The syntax for the `-d` option is

```
-d <database> <num days> [export dir]
```

where `<database>` is the four character database code in lower case (i.e., `umcd`, `sore`, `swas`).

`<num days>` is the number days cases you wish to keep in the database. Cases older than the number of days specified will be deleted from the database.

`[export dir]` is an optional parameter specifying the output directory for the export dump file. If a directory is not specified, the export will be placed in your current working directory.

The following command is an example for the -d option that will archive all cases more than 7 days old on the sore database. It will write the export file to the /tmp/ directory.

```
archive_d2.sh -d sore 7 /tmp/
```

10.3.3 Archiving Limitations

This archiving script deletes cases based on the XMIT_INIT_DATE found in the D2_INPUT database table. The purpose of this field is to trigger replication of information from one EOC to another, and as such, this date is only set for cases that have been marked for replication. If this date is not set, the archive script cannot tell how old the unmarked case is. In this instance, the behavior of the archive script can be unpredictable for the option to archive D2PC by number of cases. This set of circumstances should only arise for onpost databases in which users have created cases within FEMIS but have not sent them offpost. Because all offpost cases are automatically replicated, the archive script should work fine for all offpost databases. Also, because all cases sent from EMIS to FEMIS are replicated, the script should also work on all onpost FEMIS databases connected to EMIS.

CAUTION

This script will archive the current operational D2PC case if it matches the criteria selected for archival.