



EMu Documentation

Scheduled Exports

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SECTION 1

Overview



To be able to use the Export Schedules facility, a user must have (or be a member of a group that has) the `daExport` operations permission.

EMu 4.0.02 introduces a new facility that enables data to be exported on a regular basis. Users can define:

- A set of fields for export.
- A sort order for the exported records.
- A TexQL statement to determine which records to export.
- Dates on which the export is to occur.

Data can be scheduled to be exported on anything from a daily to an annual basis. The export occurs outside working hours (generally early in the morning) and the results are stored on the EMu server. A user may then view the results and save / view the export files produced.

The Scheduled Exports facility provides two new modules:

- **Schedules**  Schedules
Holds one record per Scheduled Export containing the definition of the export (as defined above).
- **Exports**  Exports
Holds one record per set of export files produced. When a Scheduled Export is run a new exports record is created containing the output of the export process.

See The Schedules and Exports Modules (page 35) for more details.

An audit of all Scheduled Exports is produced and these records are not removed from the system, so it is possible to search / view all exports performed by all users (provided that you have sufficient privileges to do so).

When a Scheduled Export is executed, the default output is XML, which is the same format used by the EMu reporting facility. A filter may be set to transform the XML produced into another format (CSV for example). System Administrators may define their own filters to produce custom output formats. A custom filter may also be used to:

- Email export files to users.
- Print export files.

- Copy export files to a known location (for collection).
- Transmit export files to another machine.

See [Creating Filters](#) (page 39) for more details on how to create custom filters.

SECTION 2

Creating a Scheduled Export

Configuring a Scheduled Export is very similar to configuring a report. In fact the Properties dialog box used to select the fields for export is the same as used by the reporting process. In this section we step through the creation of a new Scheduled Export.

Set up the Export schedule: the Export tab

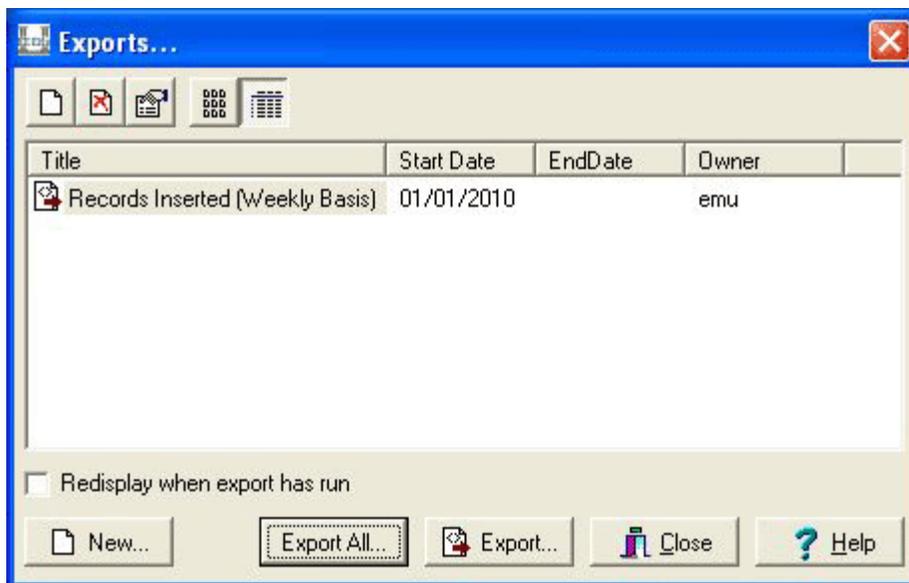
In the module from which the records are to be exported:

1. Search for or otherwise list a group of records.
2. Select **Tools>Exports** in the Menu bar.

-OR-

Use the keyboard shortcut, ALT+T+X.

The Exports dialog box displays with a list of all Scheduled Exports for the current module:

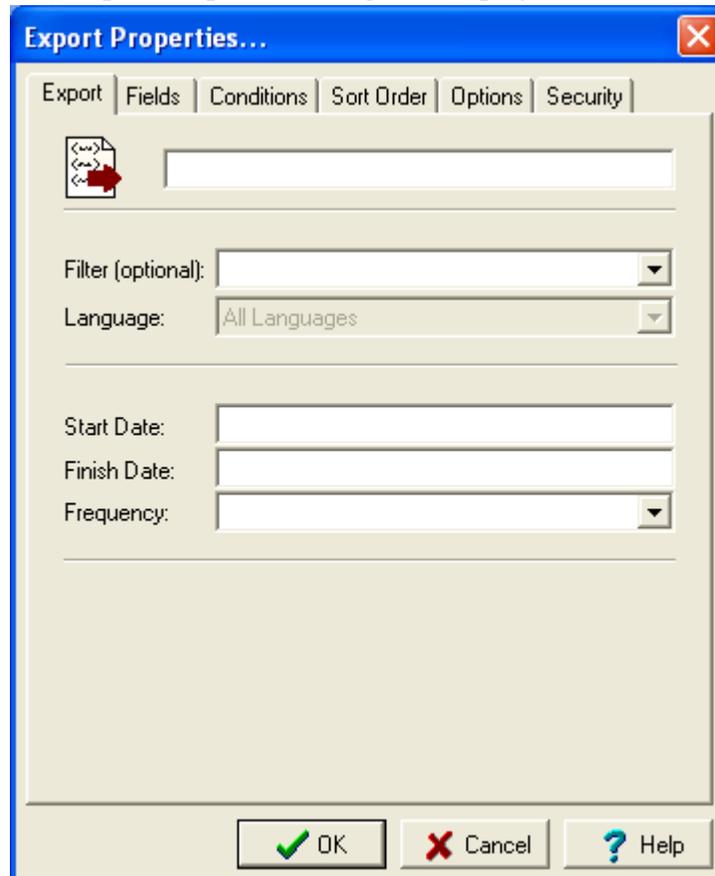


3. Select **New**

-OR-

Select **New**

The Export Properties dialog box displays:



4. Enter a descriptive name for the Export Schedule in the top text field.
The title will display in the Exports dialog box, from where it can be selected by authorized users to run the export on an adhoc basis.
5. If you require the exported data to be transformed from XML format to another format (e.g. CSV), select a filter from the *Filter (optional)* drop list.
Filters are defined by the System Administrator. If a filter is not selected, the exported data is saved in EMu XML format. See Creating Filters (page 39) for more details.
6. Select the language of the data to be exported from the *Language* drop list.
A language may only be selected if your EMu system supports more than one data language. Any of the available languages in which data is recorded may be selected or All Languages may be used to export the complete contents of the exported fields.
7. Enter the first date on which the export will be produced in the *Start Date* field.
This date is also used to calculate the next time an export should occur when the report frequency is specified as a number of days / months / years.
The format of the date (e.g. dd/mmm/yyyy) is as specified for your EMu system.
A start date must be provided.

8. Enter an end date in the *Finish Date* field.



An end date is not required, however if specified, data will not be exported after that date has been reached. An empty end date implies no final date for exporting data.

9. Select an export frequency from the *Frequency* drop list.
There are four frequency values to choose from:

Adhoc Use **Adhoc** when defining an export that will not be run at a regular interval, for example if you are contacted irregularly to produce the export data.

As the export is not scheduled, it must be run manually to produce the export data. See *Unscheduled Exports* (page 27) for more details.

Daily Use **Daily** if the data is exported on anything less than a monthly basis. The following options are displayed when **Daily** is selected:

Frequency: Daily ▼

Every Day(s) On Sunday Thursday
 Monday Friday
 Tuesday Saturday
 Wednesday

There are three ways to configure daily exports:

1. The simplest is to select the days of the week on which the export is to occur. The export is run early in the morning of the day(s) selected. If no *Finish Date* is specified, the export will run every week on the specified day(s).
Typically an export would be run once per week or every day.
If there is an interval between exports (the export is scheduled for Sunday and Thursday, for instance), the records exported on Sunday would be from the previous Thursday, and the records exported on the Thursday would be from the previous Sunday.
2. Specify the number of days between exports (starting from the *Start Date*) in the *Every nnn Day(s)* field.
For example, a value of 14 indicates that the export is to be run fortnightly from the *Start Date*.

- Specify the day on which an export will first be run and the interval between exports.

For example, a value of *Every 14 Day(s)*, with *Thursday* selected indicates that an export will commence on the first Thursday after or on the Start Date and will run every 14 days.

Monthly

Use **Monthly** when data exports occur on a monthly basis but less than annually. The following options are displayed when Monthly is selected:



The screenshot shows a dialog box with a 'Frequency' dropdown menu set to 'Monthly'. Below the dropdown are three options for scheduling: 'Every [] Month(s)', 'Day [] of the Month', and a checkbox labeled 'First Weekday of the Month'. The 'Every' and 'Day' fields are currently empty.

Specify how many months must elapse between each report using the *Every nnn Month(s)* field. If a value is not given, the export will occur monthly. For example, a value of 3 indicates that the export will occur quarterly.

Use the *Day nnn of the Month* field to specify on what day in the month the export is to occur. A value of 1 indicates that the export will run on the first day of the month. A value of 31 implies the last day of the month, regardless of how many days are in the month.

The *First Weekday of the Month* checkbox may be selected instead of specifying a day of the month. In this case, the export is run early in the morning on the first Monday of the month.

A value must be supplied for either *Every nnn Month(s)* or the *First Weekday of the Month*.

Annually Use **Annually** for any data export required on a yearly basis. The following options are displayed when **Annually** is selected:



The screenshot shows a configuration window for an annual export. At the top, the 'Frequency' dropdown menu is set to 'Annually'. Below this, there are three options for specifying the export date: 1. 'Day [] of the Year', where [] is a text input field. 2. 'Day [] and Month [] of Each Year', where [] is a text input field and [] is a dropdown menu. 3. A checkbox labeled 'First Weekday of the Year' which is currently unchecked.

There are three ways to configure annual exports:

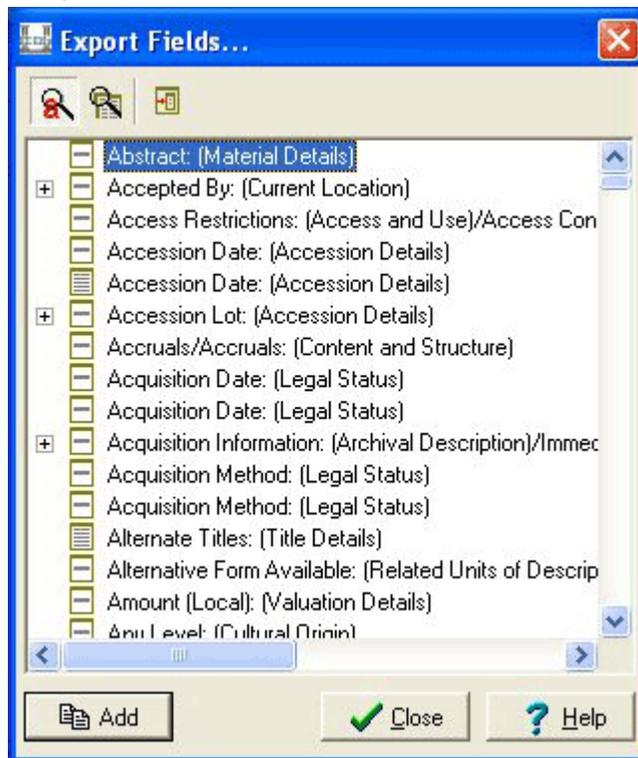
1. Specify the day of the year on which the export is to take place using the *Day nnn of the Year* field. A value between 1 and 365 can be used.
2. Specify a specific day in a given month using the *Day nnn and Month mmm of Each Year* field.
For example, a setting of *Day 1 and Month JULY of Each Year* would allow data up to and including 30 June to be exported.
3. The *First Weekday of the Year* checkbox may be selected instead of specifying a day within a month. In this case, the export is executed early in the morning of the first Monday of the Year.

Select the fields to include in the export: the Fields tab

1. In the Export Properties dialog box, select the **Fields** tab.
Here we add the fields to be exported.

2. Select **Add** .

The Export Fields box displays with a list of all fields in the current module, as well as fields in attached modules (an attachment field is indicated by the plus  icon):



3. In the Export Fields dialog box, select a field and select **Add** 

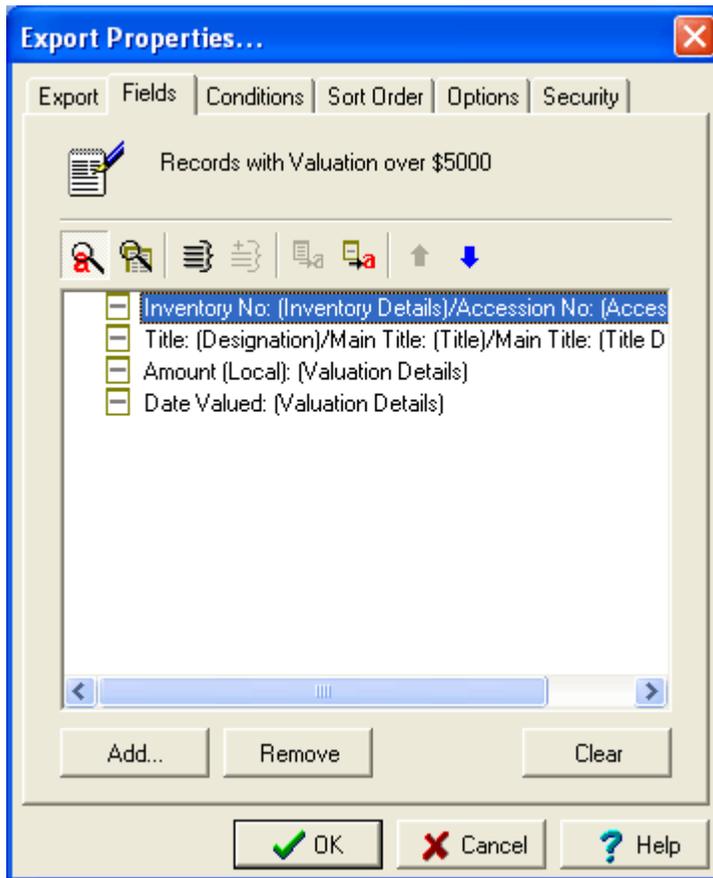
-OR-

Double-click a field.

The field is added to the Fields list in the Export Properties box.

4. When all required fields are added, select **Close**  in the Export Fields dialog box.

The Export Properties dialog box now lists all the fields that will be included in the export:



For more details regarding the selection of fields for export see *Select the fields to include in the report: the Fields tab* in the Reports section of the EMu help.

Determine which records to export: the Conditions tab

1. In the Export Properties dialog box, select the **Conditions** tab.
On the Conditions tab we add a TexQL statement to determine which records will be exported.

2. Enter a TexQL statement into the Conditions text box.

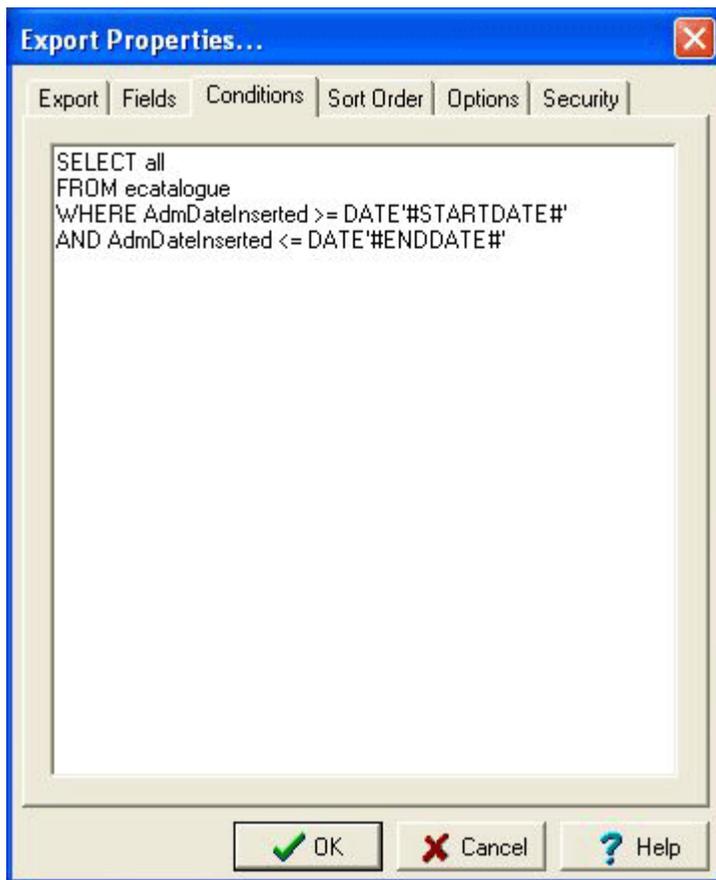
The following placeholders may be used in the TexQL statement:

#TODAY#	This placeholder is replaced with the date on which the export is run. The date order used (e.g. day/month/year, month/day/year) is as specified for your EMu system.
#STARTDATE#	This placeholder is replaced with the date of the first day after the end date of the previous export. It is used for date range queries to specify the starting date for the exported records.
#ENDDATE#	This placeholder is replaced with the date of the last day for the records to be exported. The end date is always the day before the scheduled date as exports are run early in the morning of the scheduled day.
#MONTH#	This placeholder is replaced with the month of the day that falls immediately prior to the day of the export. The month is a number between 1 and 12. For example, if the export date is 3 May, #MONTH# is 5 (May); if the export date is 1 May, #MONTH# is 4 (April).
#YEAR#	This placeholder is replaced with the year of the day prior to the execution of the export.



Placeholders use the day before the date on which the export is run as the closing date because exports are run early in the morning: the closing date for searches does not include the current date as the day is not yet complete.

When the Export Properties dialog box is closed by selecting the **OK** button, the TexQL statement is checked to ensure that a valid query has been specified:



Hint - Determining the TexQL Conditions statement

A TexQL condition statement is a query used to retrieve the records to be exported. Any valid TexQL query statement may be used. Unfortunately the format of the statement may be hard to piece together unless you are familiar with SQL. Fortunately EMu provides an easy mechanism for generating a statement based on query terms entered into the current module.

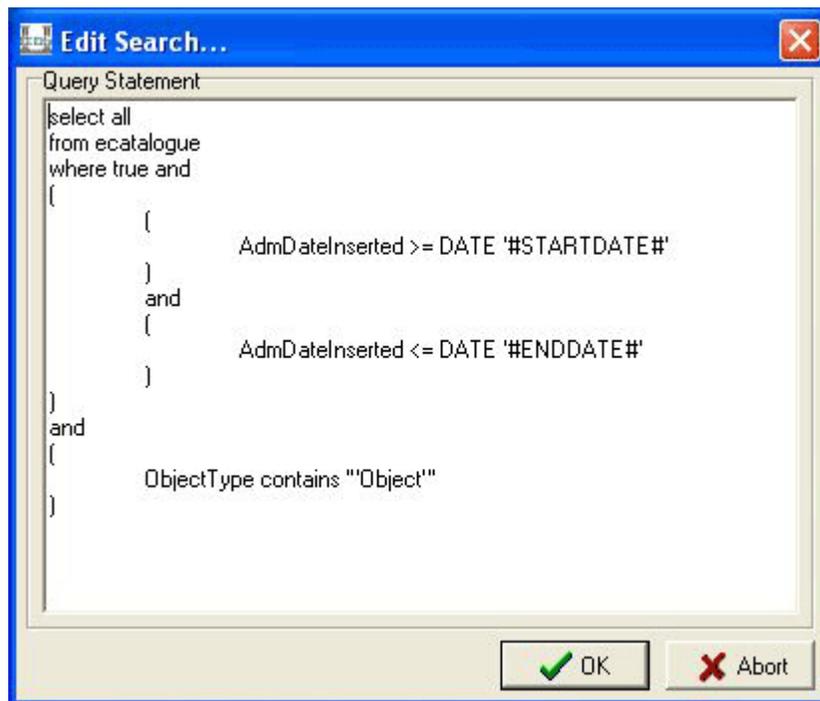
1. Open the module from which the records are to be exported.
The module should be in Search mode.
2. Enter search terms as though you were retrieving the records you would like to export.



Note that there may be search terms specified in a module by default. If these are not required, clear them.

Where you want to use a date range containing place markers, enter the place marker into the control:

3. Select **File>Show Search** in the Menu bar
-OR-
Use the keyboard shortcut, ALT+F+O.
The Edit Search dialog box displays:



4. Copy the contents of the Edit Search box.

5. Select **Abort** .

The Edit Search box is closed.

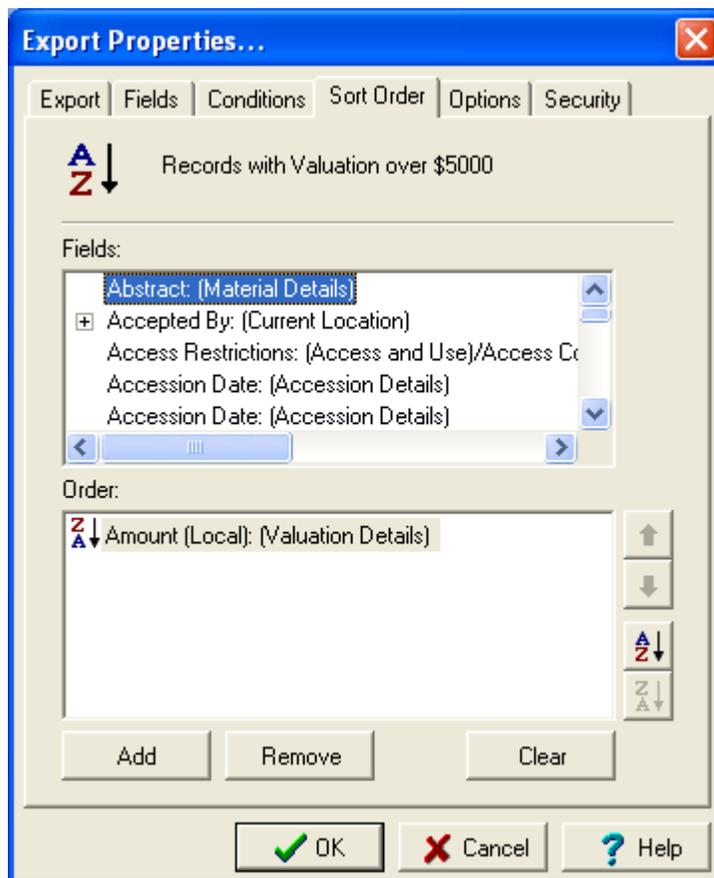
The TexQL condition statement to use for your export can now be pasted into the Conditions tab when defining your Export Properties.

Define sort order: the Sort Order tab

1. In the Export Properties dialog box, select the **Sort Order** tab.
All fields in the module are listed in the Fields list.
2. Select a field in the Fields list and select **Add**  to add it to the Order list.

-OR-

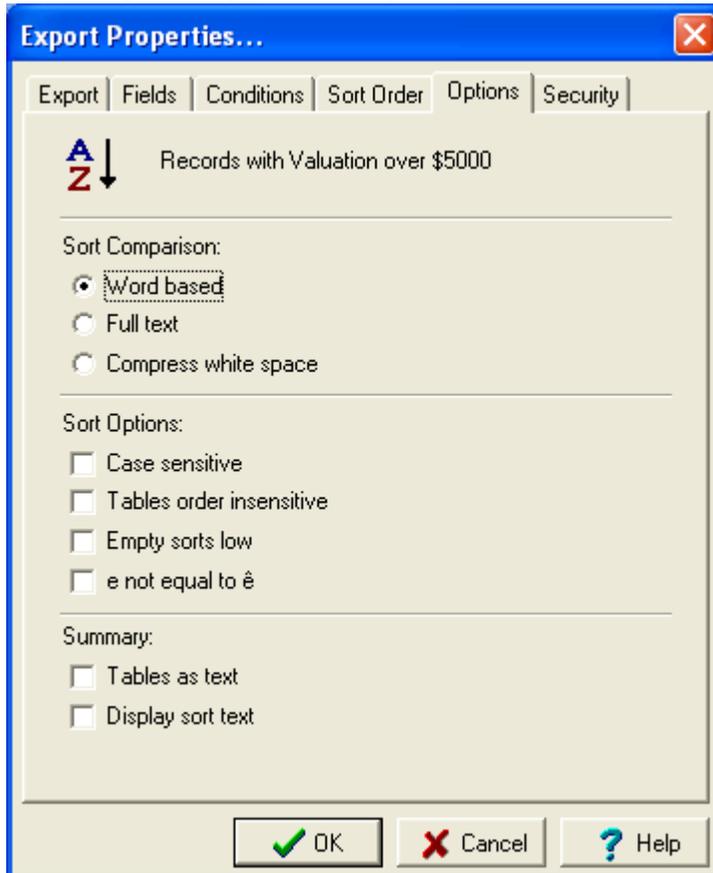
Double-click the field name in the Fields list:



Add as many fields on which to sort as required.

Set sort options: the Options tab

1. In the Export Properties dialog box, select the **Options** tab:

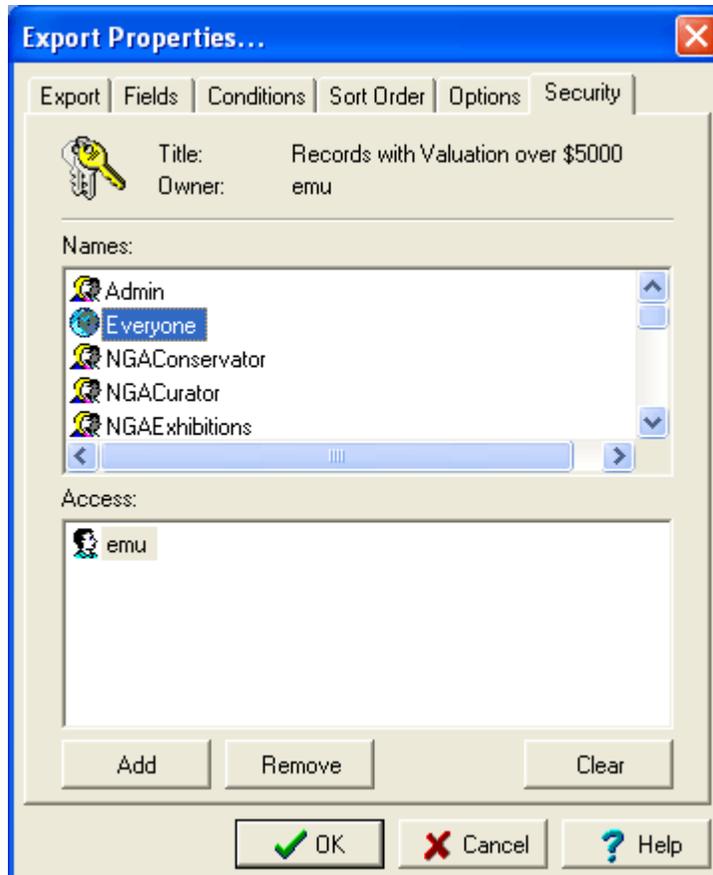


2. Select the required Sort Options.
For more details regarding sort options see *Set sort options: the Options tab* in the Reports section of the EMu help.

Set security options: the Security tab

On the Security tab we determine who is authorized to run your export by adding users or groups to the Access list:

1. In the Export Properties box, select the **Security** tab:



2. Select a user / group name (e.g. **Everyone**) in the Names box and select **Add**

Add

-OR-

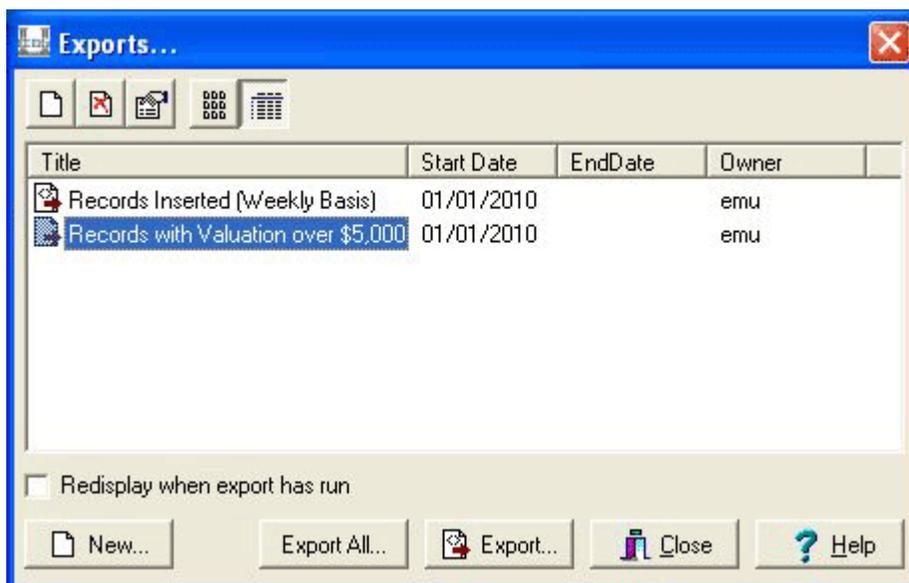
Double-click the user / group name in the Names list.

The name is added to the Access list.

3. Select **OK**

OK

Any TexQL statement added on the Conditions tab is now validated and if all is well the new scheduled export will display in the Exports dialog box:



Examples

Scenario 1

A record creation project is under way. As part of the outputs of the project a weekly file is to be produced containing the *Accession Number*, *Title* and *Valuation* of all records added in the week.

Solution

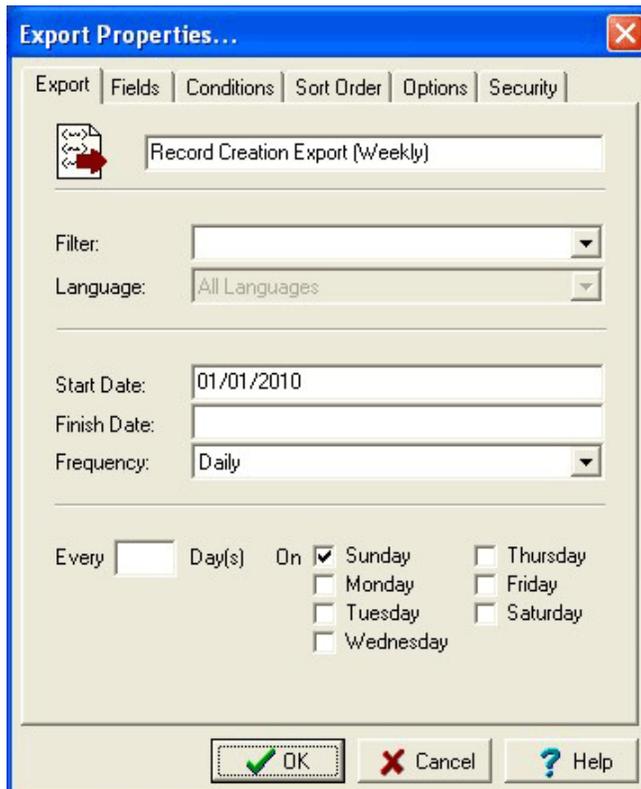
As the file is to be produced weekly, the export frequency required is `Daily` (as the frequency is less than monthly). The `Sunday` checkbox should be selected. As no Finish Date is specified, these settings will result in the export running early Sunday morning, once a week, exporting all data from the previous Sunday through to the Saturday.

The Conditions statement needs to query for all records inserted into the Catalog module in the previous week. As the export is run once a week the `#STARTDATE#` place holder will be set to the date of the previous Sunday and the `#ENDDATE#` will be the date of the Saturday immediately before the export is run.

For example, if the export is run on the morning of Sunday, 14 February 2010, then `#ENDDATE#` will be 13 February 2010 (Saturday) and `#STARTDATE#` will be 7 February 2010 (the previous Sunday). The required Conditions statement is:

```
SELECT all
FROM    ecatalogue
WHERE   AdmDateInserted >= DATE '#STARTDATE#'
AND     AdmDateInserted <= DATE '#ENDDATE#'
```

The Export and Conditions tabs are:



Scenario 2

A quarterly export of all objects with a valuation of at least \$500.00 is required by your insurance company. The export must list the *Accession Number*, *Title*, *Valuation Amount* and *Date Valued*.

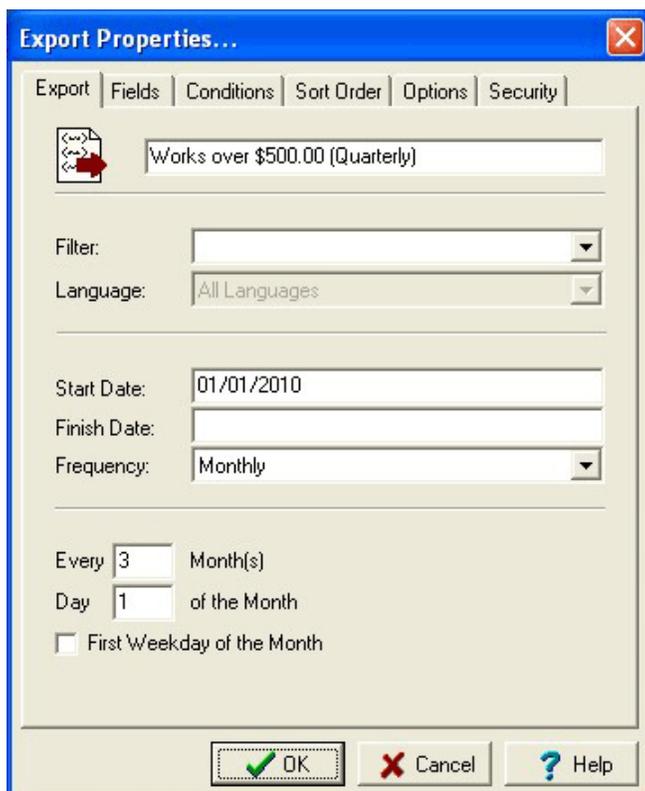
Solution

Since the export is required every three months, the `Monthly` export frequency should be chosen. The *Every nnn Month(s)* field should be set to 3 to ensure the export only occurs once every three months (that is, quarterly). The *Day nnn of the Month* field should be set to 1 as we want the export to include all records up to but not including the first day of the month. Finally the *Start Date* needs to be set to the first day of a quarterly date boundary. If our quarters start on 1 January, 1 April, 1 July and 1 October, then one of these dates should be chosen.

The Conditions statement needs to retrieve all records with a valuation of at least \$500.00. As there are no date restrictions, we do not require a date range as part of the statement. A suitable Conditions statement would be:

```
SELECT all
FROM   ecatalogue
WHERE  ValValuationAmount >= 500.00
```

The Export and Conditions tabs are:



Scenario 3

In order to send a copy of the Annual Report to all Financial Contributors to your institution, an export file containing mailing addresses is required. The report is only sent to Financial Contributors registered on 30 June in the given year. The export should produce a CSV file.

Solution

Since we are dealing with people, the Scheduled Export needs to be created in the Parties module. The data is generated annually, so the `Annually` export frequency should be used. The *Day nnn and Month mmm of Each Year* should be set to *Day 1 and Month JULY of Each Year*. As the export is run early in the morning on 1 July, it will include all records up to and including 30 June. As CSV (Comma Separated Values) output is required, the *Filter* should be set to `CSV Format (iso-8899-1)`.

The Conditions statement needs to find all Financial Contributors registered on 30 June. We only need to find Parties records containing a *Role* of `Financial Contributor`. A suitable Conditions statement is:

```
SELECT all
FROM   eparties
WHERE  EXISTS
(
      Role_tab WHERE Role CONTAINS 'Financial Contributor'
)
```

The required Export and Conditions tabs are:

Export Properties...

Export | Fields | Conditions | Sort Order | Options | Security

Annual Report Addresses (CSV)

Filter: CSV Format (iso-8859-1)

Language: All Languages

Start Date: 01/07/2010

Finish Date:

Frequency: Annually

Day of the Year

Day 1 and Month July of Each Year

First Weekday of the Year

OK Cancel Help

Export Properties...

Export | Fields | Conditions | Sort Order | Options | Security

```
SELECT all
FROM eparties
WHERE EXISTS
(
  Role_tab WHERE Role CONTAINS 'Financial Contributor'
)
```

OK Cancel Help

Scenario 4

You work in the ornithology department of a natural history museum. From time to time you receive requests from your local environmental authority asking for a data file containing a list of all specimens you hold for a given taxon. The data must be supplied in Darwin Core XML format.

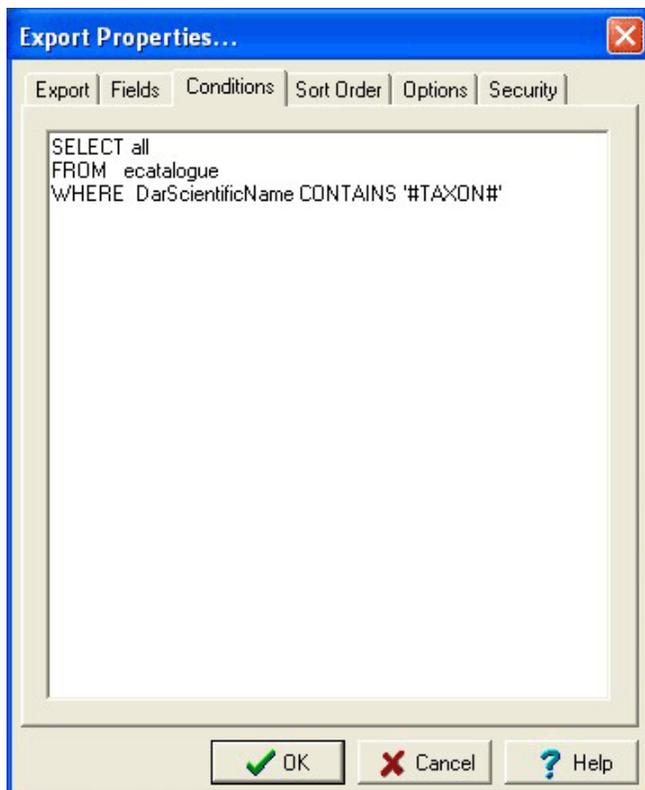
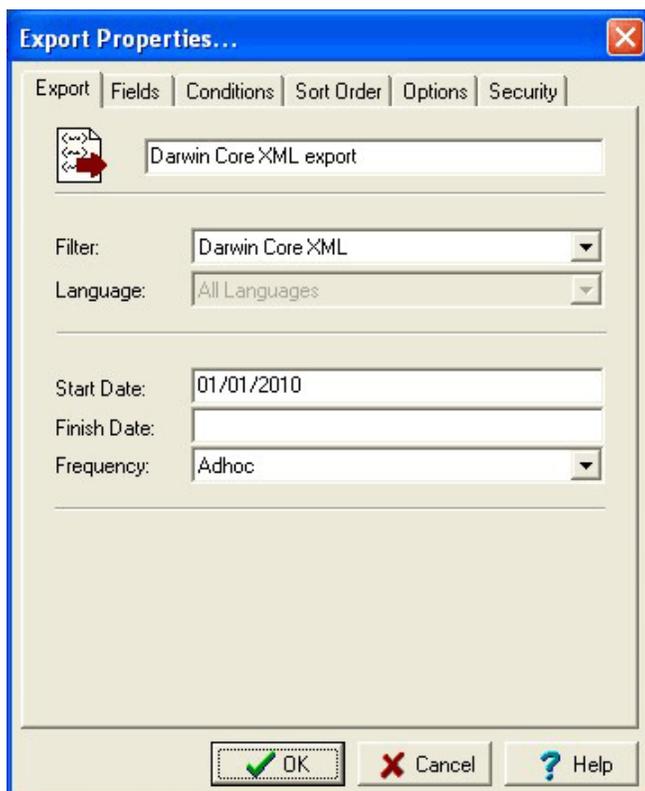
Solution

The data exports are not required on a regular basis, so the `Adhoc` export frequency should be used. As a schedule is not defined for Adhoc exports you will need to run an unscheduled export to produce the required data file. See [Unscheduled Exports](#) (page 27) for more details. In order to produce the correct output format the `Darwin Core XML` filter should be used.

The `Conditions` statement needs to retrieve all specimens for a given taxon. The Darwin Core `DarScientificName` field allows us to find the required Catalog records. A suitable `Conditions` statement would be:

```
SELECT all
FROM    ecatalogue
WHERE   DarScientificName CONTAINS '#TAXON#'
```

We have added our own `#TAXON#` place holder in the `Conditions` statement. Before running an export we need to replace the place holder with the required taxon (simply edit the `TexQL` on the `Conditions` tab, replacing `#TAXON#` with the desired taxon). The required `Export` and `Conditions` tabs are:



SECTION 3

Unscheduled Exports

The Scheduled Exports facility allows you to have data exports occur at defined date intervals. It may also be useful to perform a data export immediately rather than at the scheduled time. In this case, we generate the export data by running the export manually. These manual runs are known as Unscheduled Exports.

Another difference between an Unscheduled and Scheduled Export is that Unscheduled Exports use the current matching records as the data source, whereas a Scheduled Export uses the Conditions statement to retrieve the records to be exported. Unscheduled Exports ignore the Conditions statement.

Running Unscheduled Exports

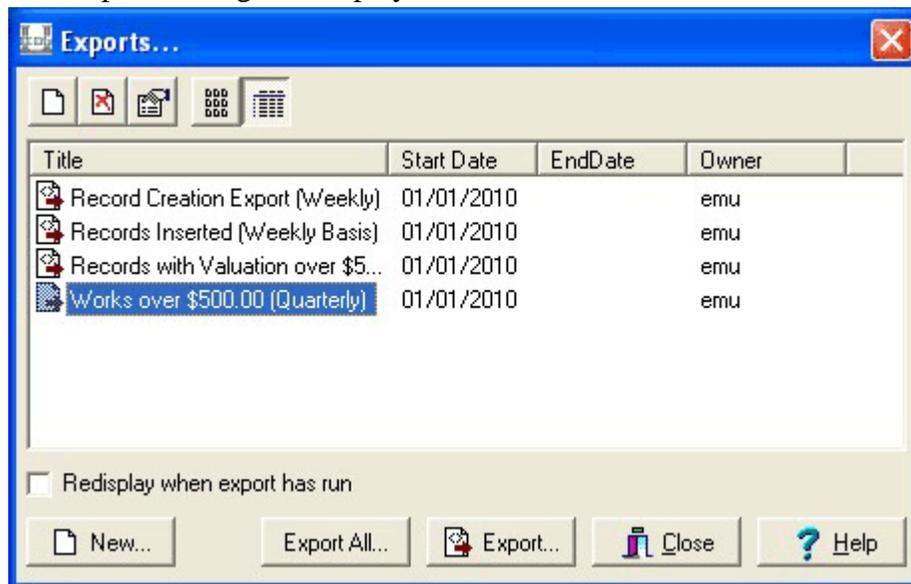
To run an Unscheduled Export:

1. Search for or otherwise list a group of records.
2. Select **Tools>Exports** in the Menu bar.

-OR-

Use the keyboard shortcut, ALT+T+X.

The Exports dialog box displays:



3. Select the export to run.
4. Select **Export**  to export the current record or selected records

-OR-

Select **Export All**  to export all listed records.

The export is run with a status dialog box displayed. When the export has finished, a completed dialog box displays:



5. Select **OK** .

The results of the export are stored on the EMu server. To view the results it is necessary to look in the Exports module. See [Viewing Export Results \(page 31\)](#) for more details.

SECTION 4

Viewing Export Results

Scheduled Exports are run automatically by EMu. For each export executed a record is created in the Exports module. The record includes:

- Name of the Scheduled Export
- Number of records exported
- The module from which the records were exported
- The filter used (if any)
- The #STARTDATE# and #ENDDATE# values used
- Any errors that occurred
- The export data files

View Export Results

1. Select **Exports**  from the Command Center.
The Exports module displays in Search mode.
2. Enter the name of the Export to view in *Schedule: (Export Details)*.



If you're looking for a recently run export, you could run a search without entering search terms in *Schedule: (Export Details)* as exports are listed with most recent exports first.

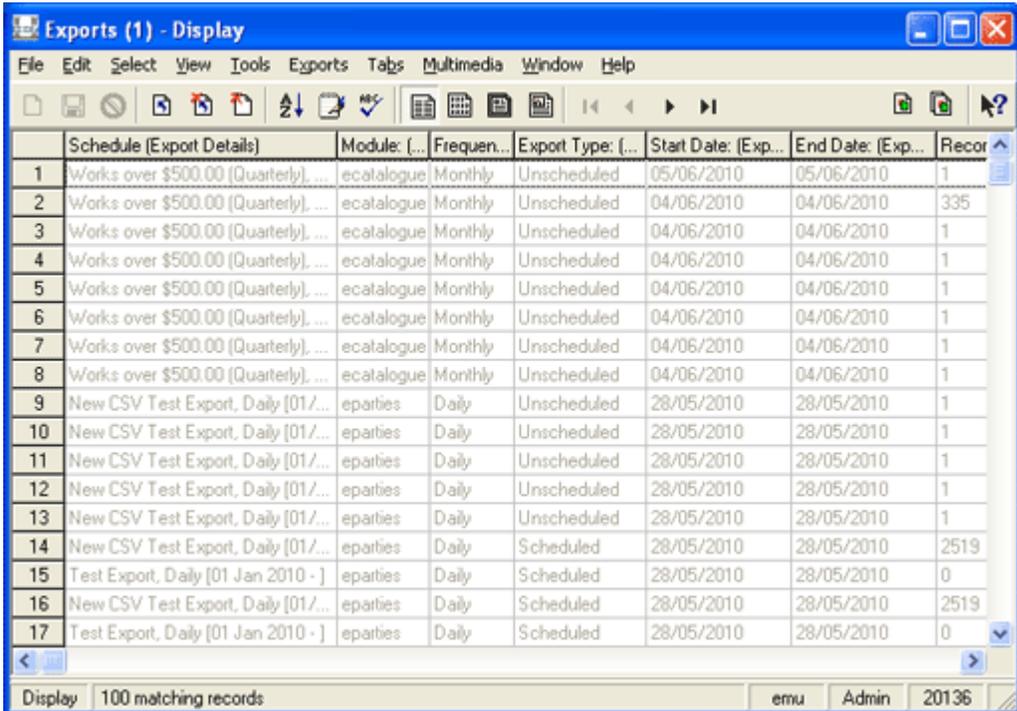
3. Select **File>Search** in the Menu bar
-OR-

Select **Search**  in the Toolbar

-OR-

Use the keyboard shortcut, CTRL+F.

A list of matching exports displays:



	Schedule (Export Details)	Module: (...)	Frequen...	Export Type: (...)	Start Date: (Exp...	End Date: (Exp...	Recor
1	Works over \$500.00 (Quarterly), ...	ecatalogue	Monthly	Unscheduled	05/06/2010	05/06/2010	1
2	Works over \$500.00 (Quarterly), ...	ecatalogue	Monthly	Unscheduled	04/06/2010	04/06/2010	335
3	Works over \$500.00 (Quarterly), ...	ecatalogue	Monthly	Unscheduled	04/06/2010	04/06/2010	1
4	Works over \$500.00 (Quarterly), ...	ecatalogue	Monthly	Unscheduled	04/06/2010	04/06/2010	1
5	Works over \$500.00 (Quarterly), ...	ecatalogue	Monthly	Unscheduled	04/06/2010	04/06/2010	1
6	Works over \$500.00 (Quarterly), ...	ecatalogue	Monthly	Unscheduled	04/06/2010	04/06/2010	1
7	Works over \$500.00 (Quarterly), ...	ecatalogue	Monthly	Unscheduled	04/06/2010	04/06/2010	1
8	Works over \$500.00 (Quarterly), ...	ecatalogue	Monthly	Unscheduled	04/06/2010	04/06/2010	1
9	New CSV Test Export, Daily [01/...	eparties	Daily	Unscheduled	28/05/2010	28/05/2010	1
10	New CSV Test Export, Daily [01/...	eparties	Daily	Unscheduled	28/05/2010	28/05/2010	1
11	New CSV Test Export, Daily [01/...	eparties	Daily	Unscheduled	28/05/2010	28/05/2010	1
12	New CSV Test Export, Daily [01/...	eparties	Daily	Unscheduled	28/05/2010	28/05/2010	1
13	New CSV Test Export, Daily [01/...	eparties	Daily	Unscheduled	28/05/2010	28/05/2010	1
14	New CSV Test Export, Daily [01/...	eparties	Daily	Scheduled	28/05/2010	28/05/2010	2519
15	Test Export, Daily [01 Jan 2010 -]	eparties	Daily	Scheduled	28/05/2010	28/05/2010	0
16	New CSV Test Export, Daily [01/...	eparties	Daily	Scheduled	28/05/2010	28/05/2010	2519
17	Test Export, Daily [01 Jan 2010 -]	eparties	Daily	Scheduled	28/05/2010	28/05/2010	0

Display 100 matching records

4. Select the export you want to view.

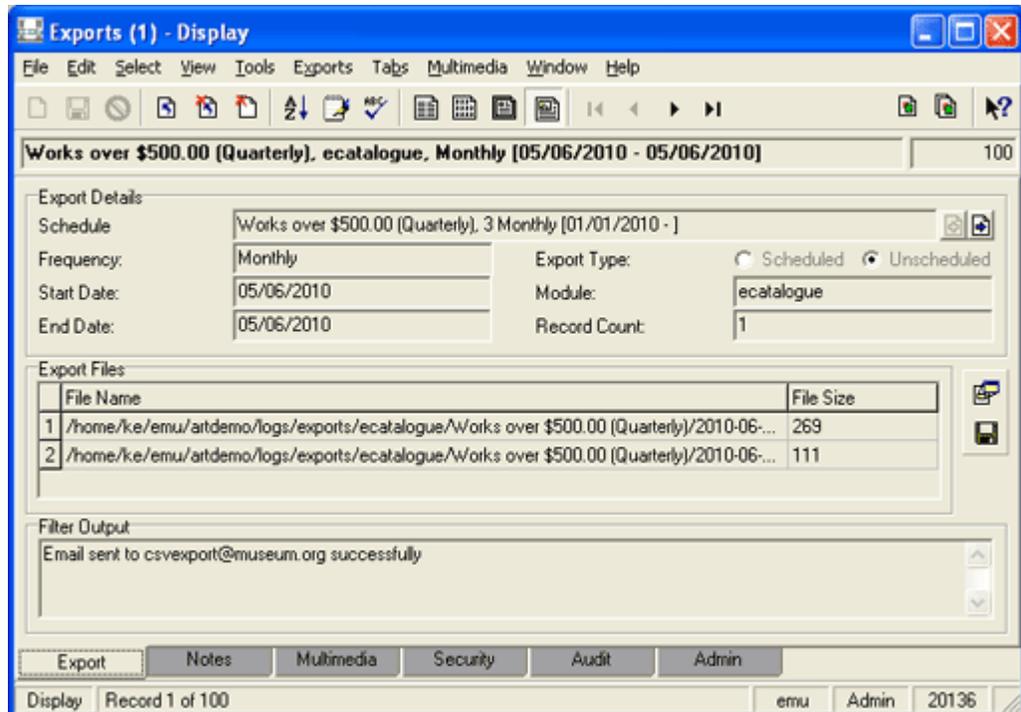
5. Select **View>Details** in the Menu bar
-OR-

Select **View Details**  in the Toolbar

-OR-

Use the keyboard shortcut, ALT+V+D.

The details of the export displays:



The export files generated in the export process are listed in the *Export Files* table. The files are stored on the EMu server. Any messages or errors are shown in the *Filter Output* box.

View Export Data

1. Click the row in the *Export Files* table with the file to be viewed.
2. Select **Launch Viewer**  next to the Export Files table.

-OR-

Select **Exports>Launch** in the Menu bar and select the file to be viewed from the sub-menu that displays.

The application / viewer associated with the file extension is invoked to display the file.

Save all Export Data files

1. Select **Save All**  beside the *Export Files* table

-OR-

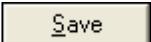
Select **Exports>Save>All** in the Menu bar.

The Browse for Folder dialog box displays.

2. Choose the directory into which all export files will be saved.
3. Select **OK** .

Save an Export Data file

1. Select **Exports>Save** in the Menu bar
- OR-
- Use the keyboard shortcut, ALT+X+S.
- The Save sub-menu lists all export data files.
 2. Select the file to save from the sub-menu.

The Save As dialog box displays.
 3. Choose the location to save the export file.
 4. Select **Save** .

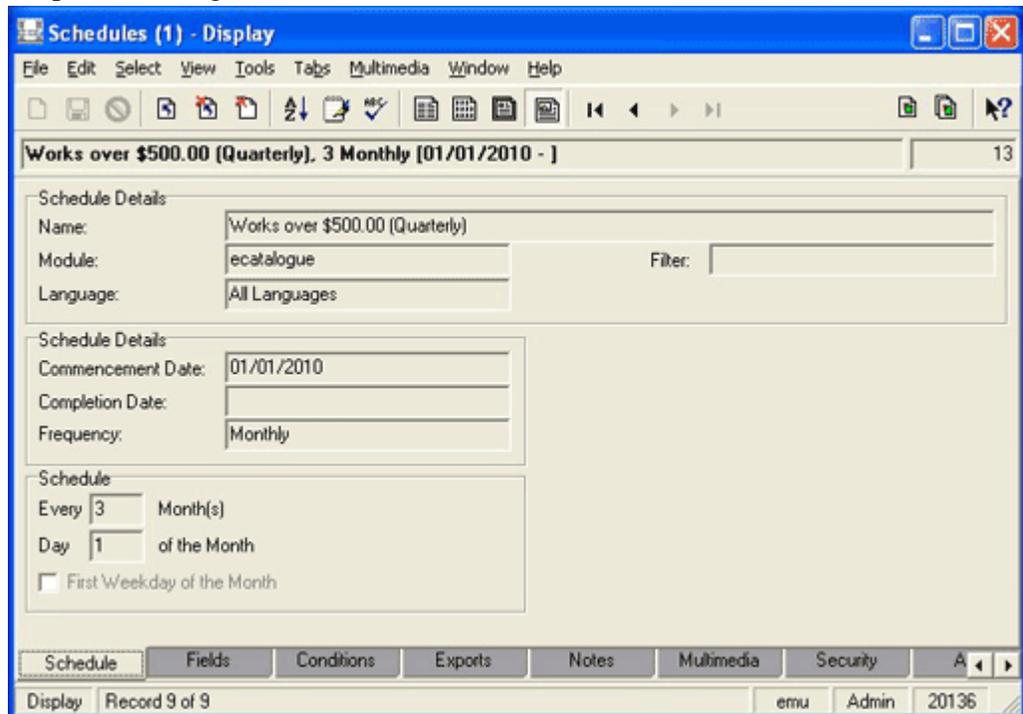
SECTION 5

The Schedules and Exports Modules

The Scheduled Exports facility uses two modules to store export details:

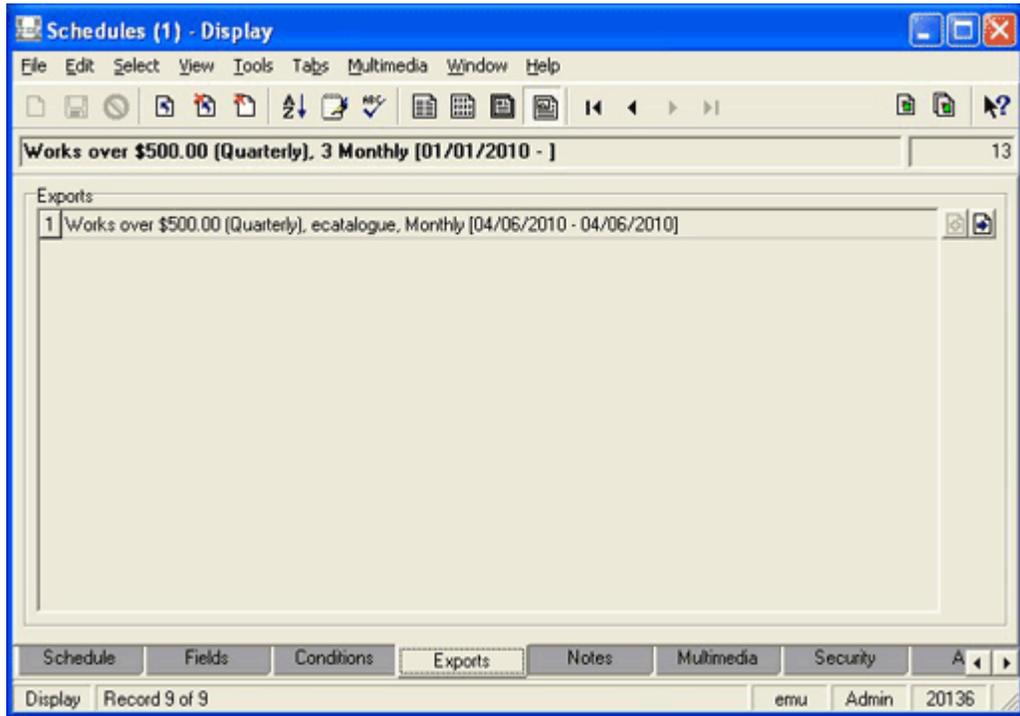
- Schedules Module  Schedules

The Schedules module holds one record for each export defined in the Export Properties dialog box:



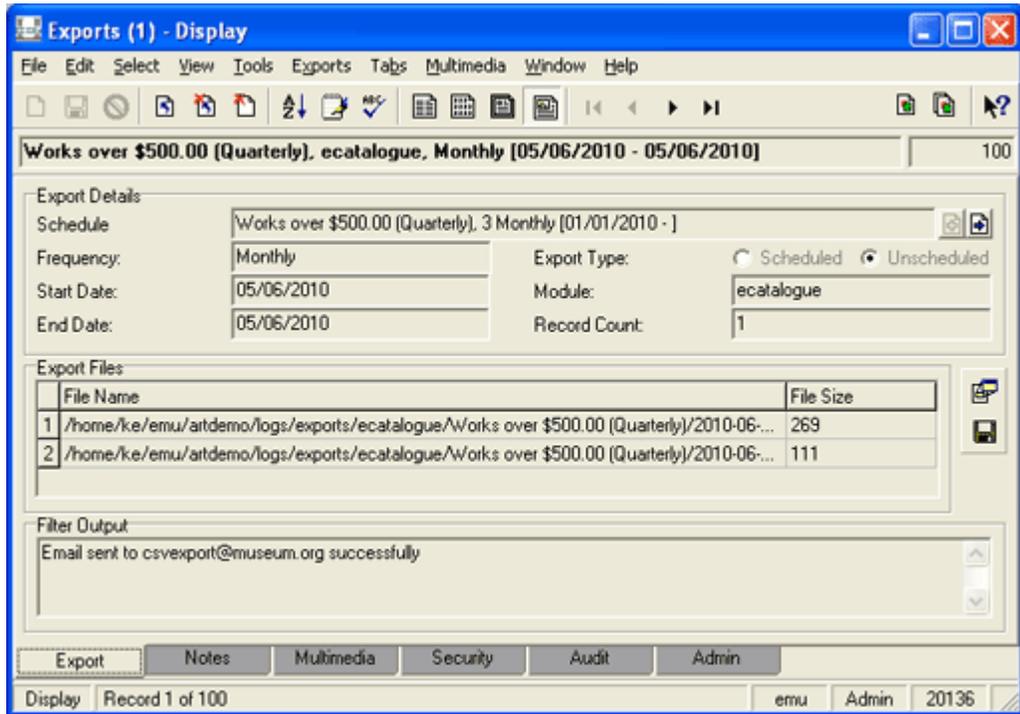
The Scheduled Export settings on the Schedule, Fields, Conditions and Exports tabs are read-only as the values are maintained via the Export Properties dialog box; all other Tabs are editable.

The Exports tab lists all data exports performed via this Schedules record. The list is sorted from most recent export to the oldest. Both Scheduled and Unscheduled Exports are shown:



- Exports Module 

The Exports module holds one record per export executed. An Exports record is linked to its associated Schedules record:



The *Export Files* table lists all files created when the export was run, along with their size. Any messages or errors generated display in the *Filter Output* box. Data values displaying on the Export tab are read-only; all other Tabs are editable.

As with other EMu modules, the Schedules and Exports modules provide reporting, sorting, etc.

SECTION 6

Creating Filters

When defining a Scheduled Export in the Export Properties dialog box, it is possible to select a filter that transforms the standard XML export data format into another format suitable for delivery (e.g. CSV). If a filter is not specified, the export files contain EMu XML formatted data (as used by the EMu reporting facility). As final delivery formats may vary widely, System Administrators may need to create localized filters. In this section we look at how to add a filter into the Scheduled Exports facility.

Where are filters stored?

Filters, which are programs or scripts, reside under the `etc/exports` or `local/etc/exports` directory on the EMu server.

They may be module specific or may be applicable to all modules. Module specific filters are stored under a sub-directory named after the module to which they apply. For example, Parties module specific filters would be located under `etc/exports/eparties` or `local/etc/exports/eparties`.



When adding your own filters to the EMu server, they should be placed under `local/etc/exports` as `etc/exports` is reserved for use by EMu upgrades.

The name of the file containing the program or script is the label displayed in the Filters drop list when specifying a new Scheduled Export.

How is a filter invoked?

When an export is performed the initial data export is in EMu XML format. The data is placed in a temporary file on the EMu server and passed as an argument to the filter specified for the Scheduled Export. The filter receives only one argument, the name of the file containing the exported data.

Several environment variables are set and available to the filter when it executes:

EXPORTTITLE	The title given to the Scheduled Export when it was created.
EXPORTIRN	The IRN (Internal Record Number) of the Schedules record used to generate the exported data file. Using <code>EXPORTIRN</code> it is possible to retrieve details from the Schedules record.
EXPORTTABLE	The module from which the data was exported.
EXPORTSTARTDATE	The value of <code>#STARTDATE#</code> used by the export process.
EXPORTENDDATE	The value of <code>#ENDDATE#</code> used by the export process.
EXPORTRECORDCOUNT	The number of records exported.

Filter Output and Errors

If the filter is unable to process the exported data, any error messages should be written to `STDERR` and the export terminated with a non-zero exit status. This notifies EMu that the filter did not complete successfully and an export failure is recorded. Any text written to `STDERR` is displayed in the *Filter Output* box for an Exports record in the Exports module.

Once the filter has processed the export data it should print out to `STDOUT` a list of all the files generated. These files are moved under the `logs/exports` directory on the EMu server. The file names are displayed in the *Export Files* table in the Exports record created. If the filter completed successfully, it should return a zero exit status.

Filtering Data

The filter may manipulate the export data in any way required. It may email the data (via `sendmail`), print it (via `lpr` or `lp`) or even send it to remote machines (via `rsh` or `ssh`). A copy of the data exported should always be attached to the Export record so it can be reviewed at a later date, if required.

An example filter

In this example filter we convert the export data from XML to CSV (Comma Separated Values) and email the file(s) produced to a mail alias address (csvexport@client.org) on our local mail server. The mail server will then forward the email onto a host of recipients.

We can use `texxmlodbc` to convert the export XML to CSV files. The filter is written using the perl scripting language as it provides a nice package for sending multi-part email messages.

The filter is:

```
#!/usr/bin/perl

use strict;
use warnings 'all';
use MIME::Lite;

#
# First we convert the EMu XML to CSV and save
# the list of files generated.
#
if (! open(FILES, "texxmlodbc --output-encoding=iso-8859-1 '$ARGV[0]'
|"))
{
    print STDERR "Cannot execute texxmlodbc";
    exit(1);
}
my @files = <FILES>;
close(FILES);

#
# Build up the message to send.
#
my $body = <<END;
The attached files were generated by the EMu Scheduled Export
facility.
The details of the export are:

Title: $ENV{EXPORTTITLE}
Module: $ENV{EXPORTTABLE}
Start Date: $ENV{EXPORTSTARTDATE}
End Date: $ENV{EXPORTENDDATE}
END

#
# Create an email message to csvexport@client.org
#
my $msg = MIME::Lite->new(
    To => 'csvexport@client.org',
    Subject => 'EMu Scheduled Export CSV Files',
```

```

        Type    => 'multipart/mixed'
    );

#
# Add the email text first.
#
$msg->attach(
    Type    => 'TEXT',
    Data    => $body
);

#
# Add each file.
#
foreach my $file (@files)
{
    #
    # Figure out the file mime type and attach it
    #
    chomp($file);
    my $type = ($file =~ /\.ini$/i) ? 'TEXT' : 'text/csv';
    $msg->attach(
        Type            => $type,
        Path            => $file,
        Disposition     => 'attachment'
    );
}

#
# Send the email.
#
if (! $msg->send())
{
    print STDERR 'Cannot send email to csvexport@client.org';
    exit(1);
}
print STDERR 'Email sent to csvexport@client.org successfully';

#
# Output the file list for the export record.
#
print join("\n", @files);
exit(0);

```

Notice how the filter outputs the names of the CSV files at the end so they can be attached to the Export record created. Once attached these files may be reviewed at any time.

SECTION 7

Cron setup

In order for Scheduled Exports to be produced the `emuexport` command must be run, typically early each morning. The server based cron facility provides this ability. The following crontab entry needs to be installed to ensure the correct functioning of the Scheduled Export facility:

```
0 1 * * * ~emu/bin/emurun emuexport 2>&1 | ~emu/bin/emurun emulogger  
-t "KE EMu Scheduled Exports Report" exports
```

where `~emu` is replaced with the full path to where EMu is installed on the server machine.

The time at which the command is run (1:00 am in the example above) should be adjusted to fit in with any EMu maintenance scheduled.

SECTION 8

Using emuexport

The `emuexport` command is the program used to execute Scheduled Exports. It interacts with the Schedules and Exports modules to ensure that data exports occur when scheduled. The program may be used in four different ways:

1. **Run all Scheduled Exports**

Usage: `emuexport`

Any Scheduled Exports required to be run will be executed. The current date is used to determine what exports are required. This form of the command is used by cron on a daily basis to ensure all Scheduled Exports for the given day are performed.

2. **Run an Unscheduled Export**

Usage: `emuexport -f filename -g recordcount -i irn`

The `filename` argument is the path to a file containing the export data in EMu XML format. A suitable file can be generated using the EMu reporting facility and selecting a Report *Type* of **Export XML Document**. The `recordcount` is the number of records in the XML file and `irn` is the IRN of the Schedules record to execute. An Unscheduled Export run within EMu uses this form of `emuexport`.

3. **Run Scheduled Exports for a specific date**

Usage: `emuexport -R date [-i irn]`

The `date` argument indicates the date to use to determine what Scheduled Exports need to be run. The date format expected is `yyyy/mm/dd`. An optional IRN of a Schedules record may be supplied to force a particular Scheduled Export to execute using the supplied date. This form of `emuexport` is useful for re-running Scheduled Exports for a given date, generally because of problems with the nightly automatic run. It can also be used for internal testing of `emuexport`.

4. **Run a specific Scheduled Export**

Usage: `emuexport -i irn [-s startdate -e enddate]`

The `irn` argument is the IRN of a Schedules record to be executed. Optional `startdate` and `enddate` values (in `yyyy/mm/dd` format) may be used to override the computed `#STARTDATE#` and `#ENDDATE#` values respectively. This form of `emuexport` is very useful for testing filters as it allows a specific schedule to be run without waiting for the Scheduled Export date to arrive.

In all usages of `emuexport` the appropriate Exports record is created for each export executed.

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