Implement TPN Event Journal Collection for PHD

Lesson Objective

Objective

Perform the necessary configuration to retrieve TPN event journal data from the TPN History Module and store it to the Oracle relational database.

Topics

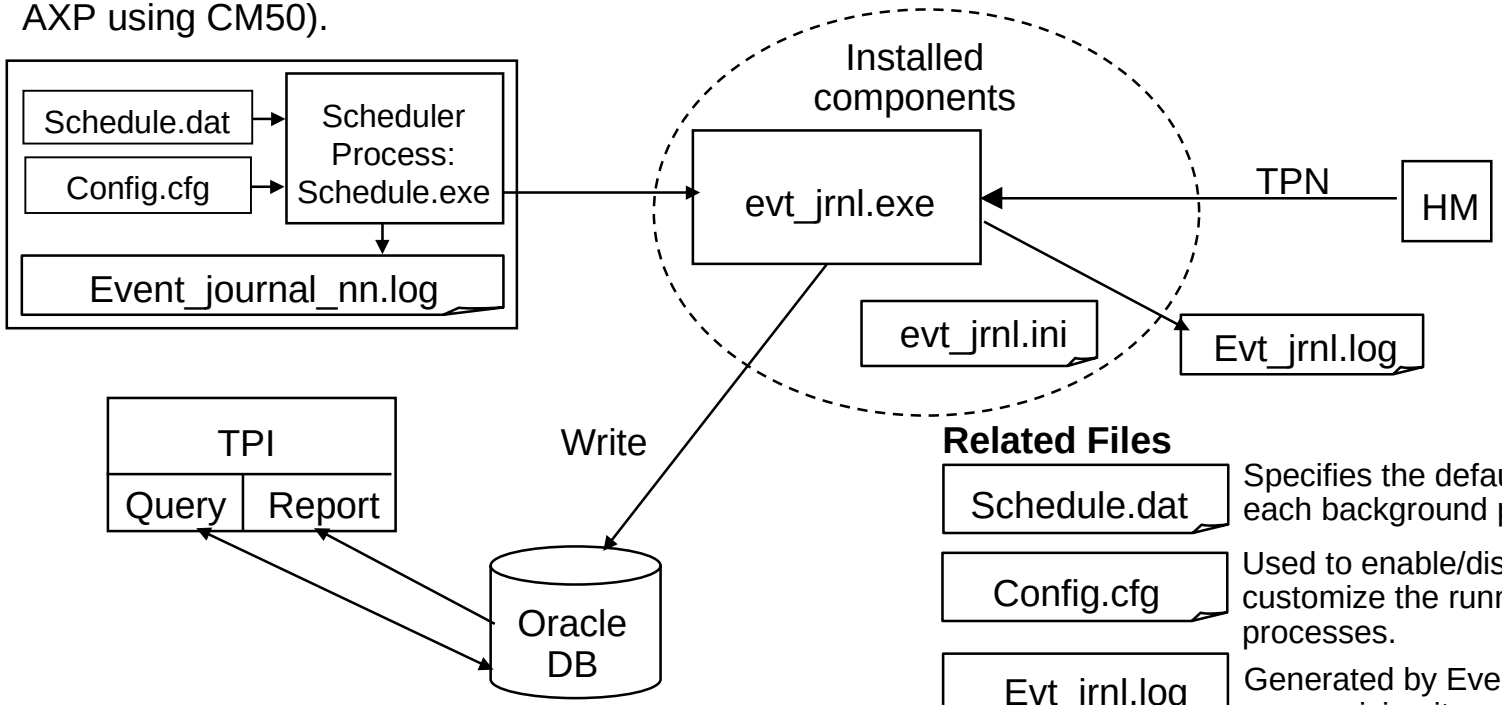
- Components and Data Flow
- Event Journal Configuration Form
- Event Journal .ini File
- Scheduling Event Journal Collection
- Event Journal Reports
- Event Journal .evt Files
- Event Journal Maintenance
- Event Journal Log

References:

PHD User Manual, PIM0201, Event Journal Node Information
Event Journal Request
Reports
Background Processes
Uniformance System Environment User Guide, SM0401
Uniformance Application Server Installation Guide, SM0501

Event Journal - Components and Data Flow

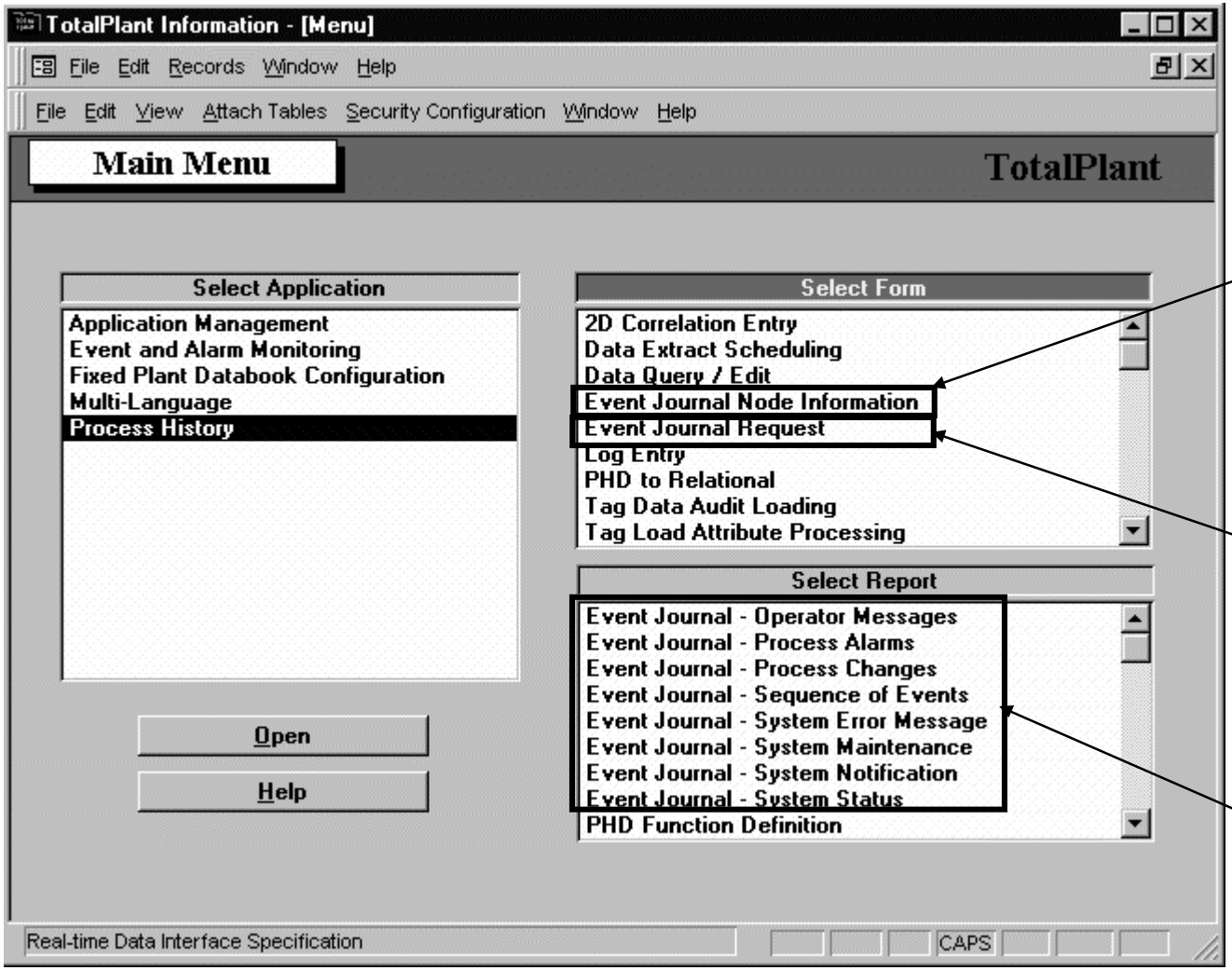
- The TPN Event Journal Collection and Storage function is a *purchasable option* for a PHD system (licensed per LCN).
- It is a background process running on a user defined frequency (the default frequency is 60 minutes).
- It gathers event journal records from the TPN History Module and stores them in **Oracle** relational database tables. The user may then create SQL reports from the data.
- The Event Journal application must run on a node connected to the LCN (a PHD node, an AxM, or an AXP using CM50).



Related Files

Schedule.dat	Specifies the default schedule for each background process.
Config.cfg	Used to enable/disable and to customize the running of background processes.
Evt_jrnl.log	Generated by Event Journal summarizing its collection activity.
Event_journal_nn.log	Generated by Scheduler summarizing its collection activity. 100 logs

Event Journal Forms and Reports



The Event Journal Node Information form is for viewing the status of the event journal collector (journal node).

The Event Journal Request form is used to specify which journals the node is to collect.

The Event Journal Reports are for viewing the journal data that was collected.

Event Journal Request Form

Use this form to configure the requests that the Journal Node will execute at the configured frequency. (Journal Node = Event Journal Collector = Event Journal Request).

(After Honeywell installs the background processes, the installer runs the Event Journal once in order to cause the node identifiers (defined in the evt_journal.ini file) to be written into the Oracle database. Then, after a short delay and if the Event Journal executes successfully, this form can be accessed and configured.)

Configuration Procedure:

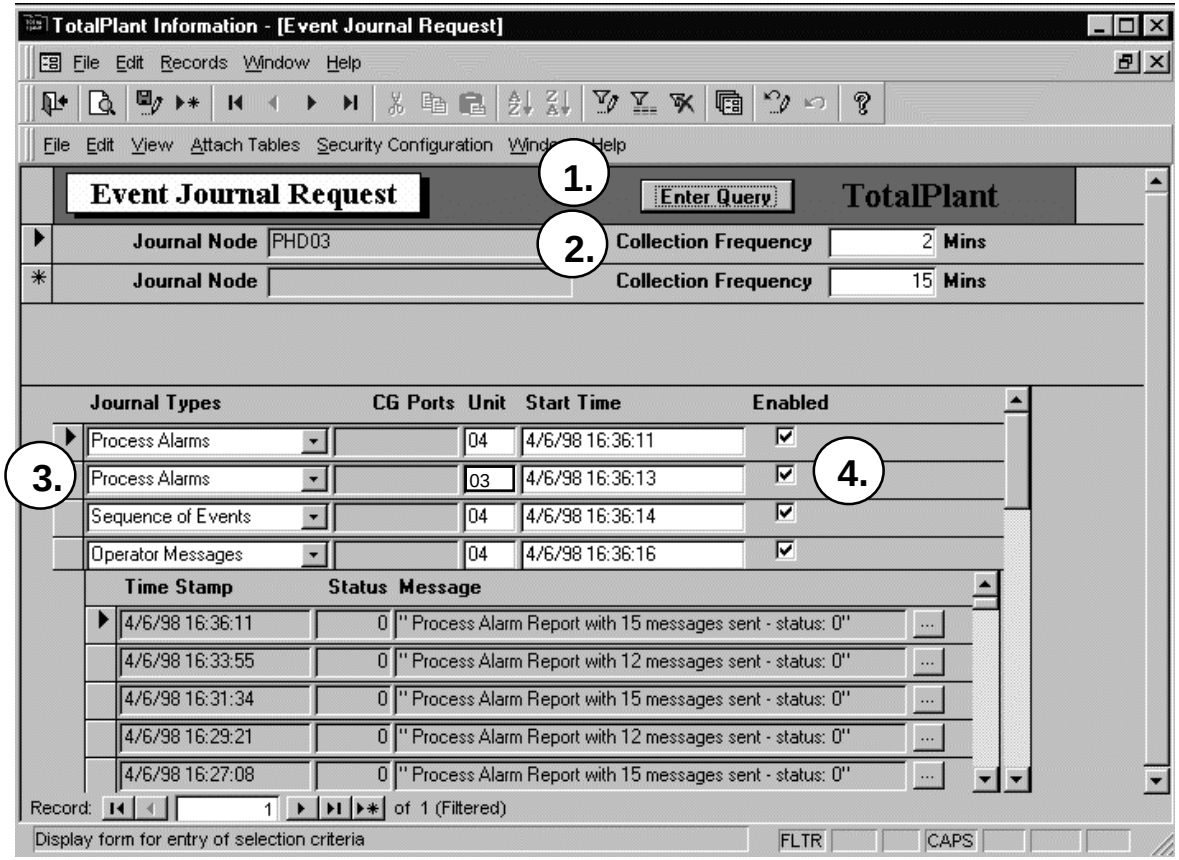
1. To obtain the form, do a **query** of the journal node to be configured.

2. Enter the **Collection Frequency** (default = 60 minutes).

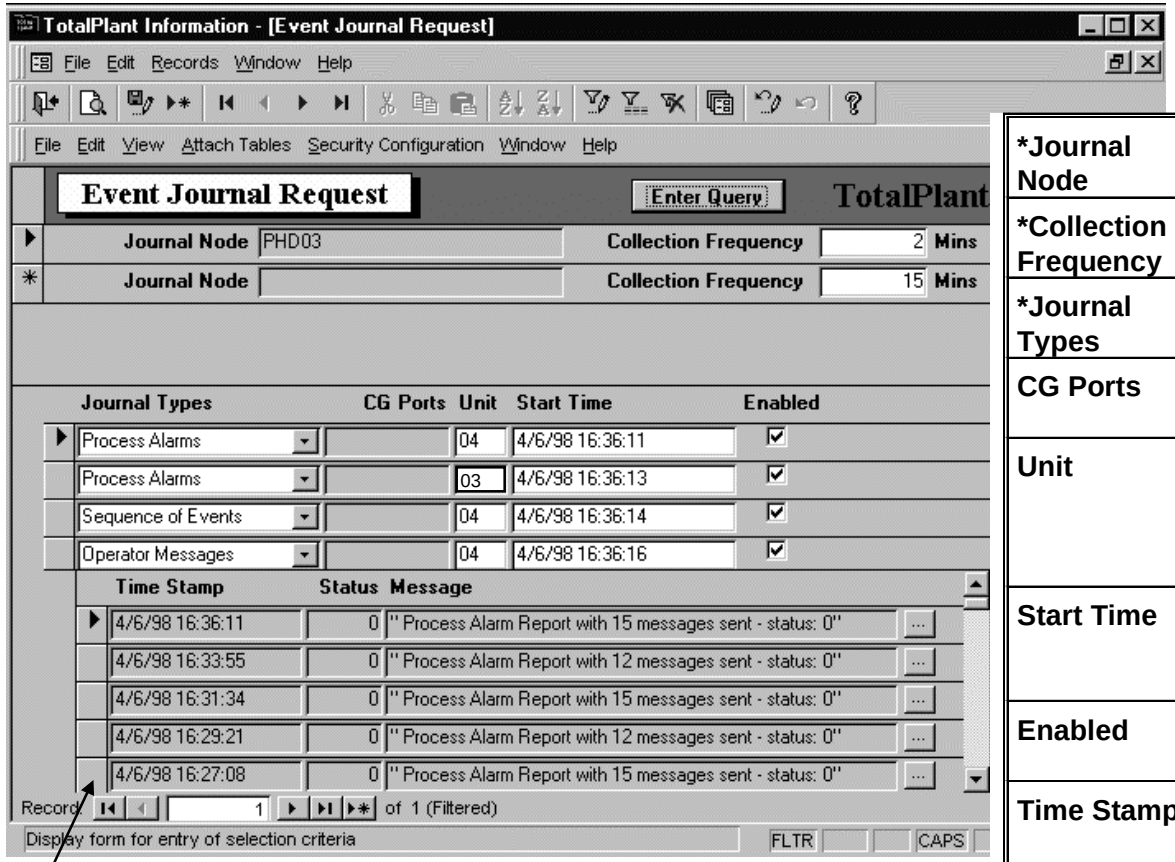
3. Insert the **journal types** that are to be requested. You must enter an alphanumeric Unit ID for process alarms, operator messages, SOE, and process changes.

4. **Enable** the journal requests.

5. Kill the Event Journal executable. It will restart and begin retrieval at the specified Collection Frequency.



Event Journal Request Form, *continued*



Event Journal nodes (collectors) record and maintain status information for each journal request. Select a journal type to view its status messages.

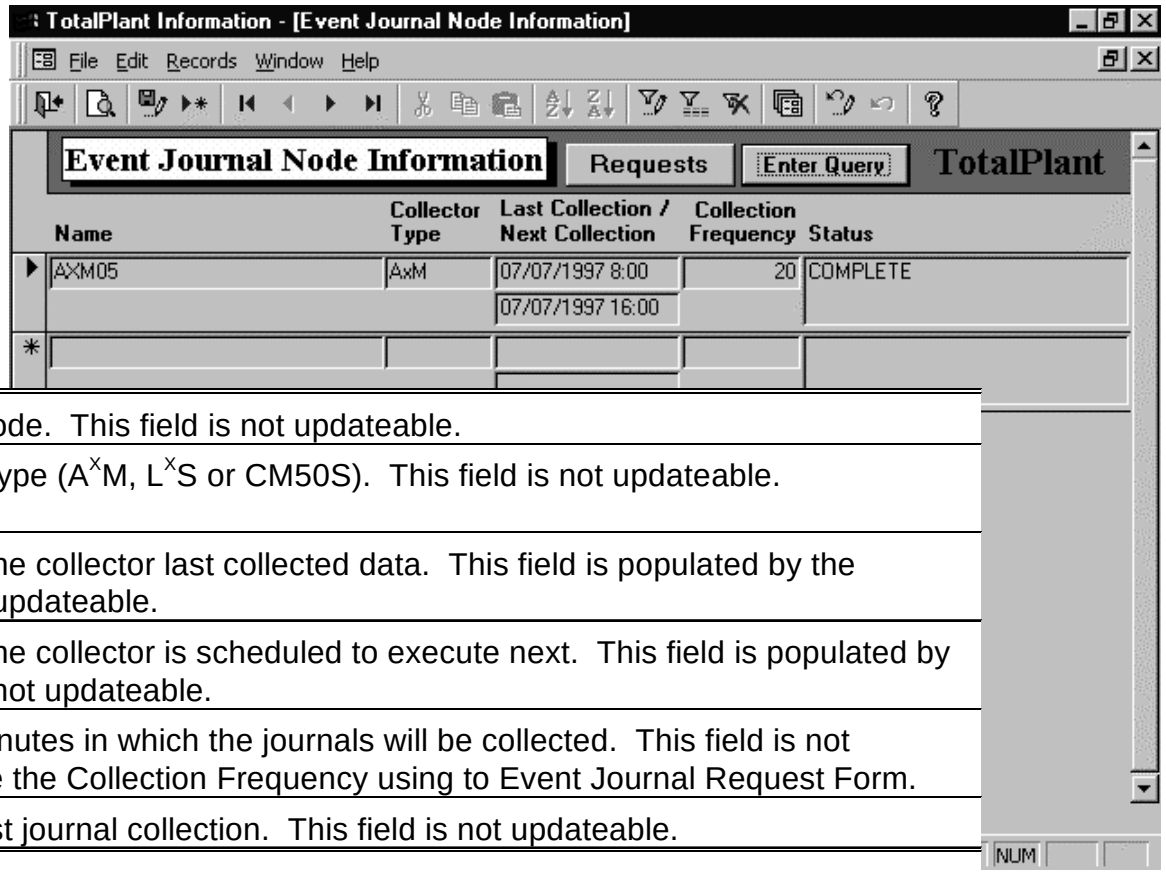
***Journal Node**	The name of the journal node. This field is not updateable.
***Collection Frequency**	The frequency in minutes in which the collector will retrieve information from the HM.
***Journal Types**	The type of journal to be collected.
CG Ports	The CG Port used to retrieve event information. Valid entries are 1-4. (CM50S Only).
Unit	The Unit to retrieve event information for. The Unit field is unlocked for the following Journal Types: Operator Messages, Process Alarms, Sequence of Events and Process Changes.
Start Time	The Date and Time to begin retrieving log information. This field defaults to the date and time the record was inserted.
Enabled	When checked, the record is active and information will be collected.
Time Stamp	The date and time of the event. This field is populated by the event journal collector and is not updateable.
Status	The status of the event. This field is populated by the collector and is not updateable.
Message	The event message. This field is populated by the collector and is not updateable.

* Mandatory Fields

For more details, refer to *PHD User Manual*, Forms, Event Journal Request

Event Journal Node Information Form

- This form is read-only for viewing node configuration data and collection status.
- The the Event Journal Collector inserts the form data.
- Double Click the node name or select the Requests button to call up the Event Journal Request Form.



Name	The event journal node. This field is not updateable.
Collector Type	The node collector type ($A^X M$, $L^X S$ or CM50S). This field is not updateable.
Last Collection	The date and time the collector last collected data. This field is populated by the collector and is not updateable.
Next Collection	The date and time the collector is scheduled to execute next. This field is populated by the collector and is not updateable.
Collection Frequency	The frequency in minutes in which the journals will be collected. This field is not updateable. Update the Collection Frequency using to Event Journal Request Form.
Status	The status of the last journal collection. This field is not updateable.

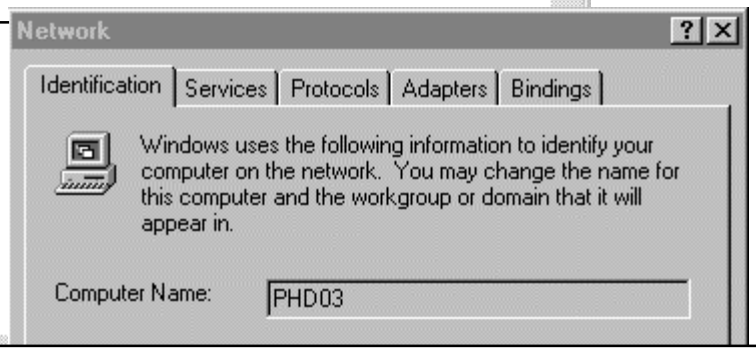
For more details, refer to *PHD User Manual*, Forms, Event Journal Node Information

Evt_jrnl.ini File

evt_jrnl.ini - Notepad

File Edit Search Help

```
# Initialization file for Event Journal Collector.
#
# EJC_DB_ALIAS    -- Specifies the Oracle Database to be accessed. If not specified or
#                    left blank, the default Database is accessed. Default = " " (local database)
# EJC_DB_USERNAME -- The user name to login to the Oracle Database. The username and
#                    password can be specified together, but separated by "/".
#                    Specify only "/" to locally access the "OPS$xxxx" account. Default = "/".
# EJC_DB_PASSWORD -- The password for the user account. Do not specify this parameter if
#                    the password is already specified by EJC_DB_USERNAME. Default = " "
# EJC_NODE        -- The local host name.  (specified during installation)
# EJC_LOG_STARTUP -- Log the startup message in the evt_jrnl.log file when a collection
#                    cycle is started. Set it to 0 to not log the startup messages. The
#                    default is 1.
# EJC_ARCHIVE_EVENTS -- Instruct the Event Journal Collector to also archive the locally
#                    collected events into files. Set it to 1 to enable the archiving. The
#                    default is 0.
# EJC_ARCHIVE_DIR -- The directory where the locally archived files go. The default directory
#                    is %IP_ROOT%\log.
#
EJC_DB_USERNAME=/
#EJC_DB_PASSWORD=
EJC_LOG_STARTUP=1
EJC_ARCHIVE_EVENTS=0
EJC_ARCHIVE_DIR
EJC_DB_ALIAS=totalplant
EJC_NODE=PHD03
```



The Event Journal interface uses parameters defined in the Evt_jrnl.ini file to control its operation.

For more details, refer to *PHD User Manual*, Background Processes, Event Journal Node Information

For a default Oracle logon (EJC_DB_USERNAME= /), the Event Journal interface will log onto Oracle using the operating system authentication logon (username *OPS$name*, where *name* is the operating system username).

Scheduling Event Journal Collection

Schedule.dat - Notepad

File Edit Search Help

```
#
#  File with process scheduling information, used by schedule process
#
# Format:
# process name, schedule type, program name, process frequency, default frequency [, optional arguments]
#       where optional arguments take the form:
#       argument name, argument type, argument value
# eg: OPERATION_ALARMS,PERIODIC,op_alarm.exe, OPERATION_ALARMS_QUEUE_FREQ,00:15:00
#
#
OPERATION_ALARMS,PERIODIC,op_alarm.exe, OPERATION_ALARMS_QUEUE_FREQ,00:15:00
OPERATION_EVENTS,PERIODIC,op_event.exe, OPERATION_EVENTS_QUEUE_FREQ,00:15:00
TAG_SYNCHRONIZATION,TIMEOFDAY,tagsync.exe,TAGSYNC_EXECUTION_TIME,06:30:00
PHD_TO_REL,PERIODIC,phd2rel.exe,PHD_TO_REL_QUEUE_FREQ,00:15:00,PHD_TO_REL_INIFILE,PHD2REL.INI
REL_TO_PHD,PERIODIC,pipetophd.exe,REL_TO_PHD_QUEUE_FREQ,00:00:01
EVENT_JOURNAL,PERIODIC,evt_jrnl.exe,EVENT_JOURNAL_QUEUE_FREQ,00:15:00,EVENT_JOURNAL_INIFILE,EVT_JRNL.INI
```

config.cfg - Notepad

File Edit Search Help

```
/ Uniformance Application Server INI
/ Comments in this file are introduce
/ is much like an INI file.

[APPLICATIONS]
EVENT_JOURNAL
TAG_SYNCHRONIZATION
REL_TO_PHD
PHD_TO_REL
/OPERATION_EVENTS
/OPERATION_ALARMS

[APPLICATION_PARAMETERS]
EVENT_JOURNAL_INI_FILE=EVT_JRNL.INI
EVENT_JOURNAL_QUEUE_FREQ=00:00:01
TAGSYNC_EXECUTION_TIME=01:00:00
REL_TO_PHD_QUEUE_FREQ=00:00:01
PHD_TO_REL_QUEUE_FREQ=00:15:00
PHD_TO_REL_INIFILE=PHD2REL.INI
OPERATION_EVENTS_QUEUE_FREQ=00:06:00
OPERATION_ALARMS_QUEUE_FREQ=00:05:00
```

Honeywell recommends that you not change the application parameters for the Event Journal in `config.cfg`. Leave the Queue Frequency at one Second.

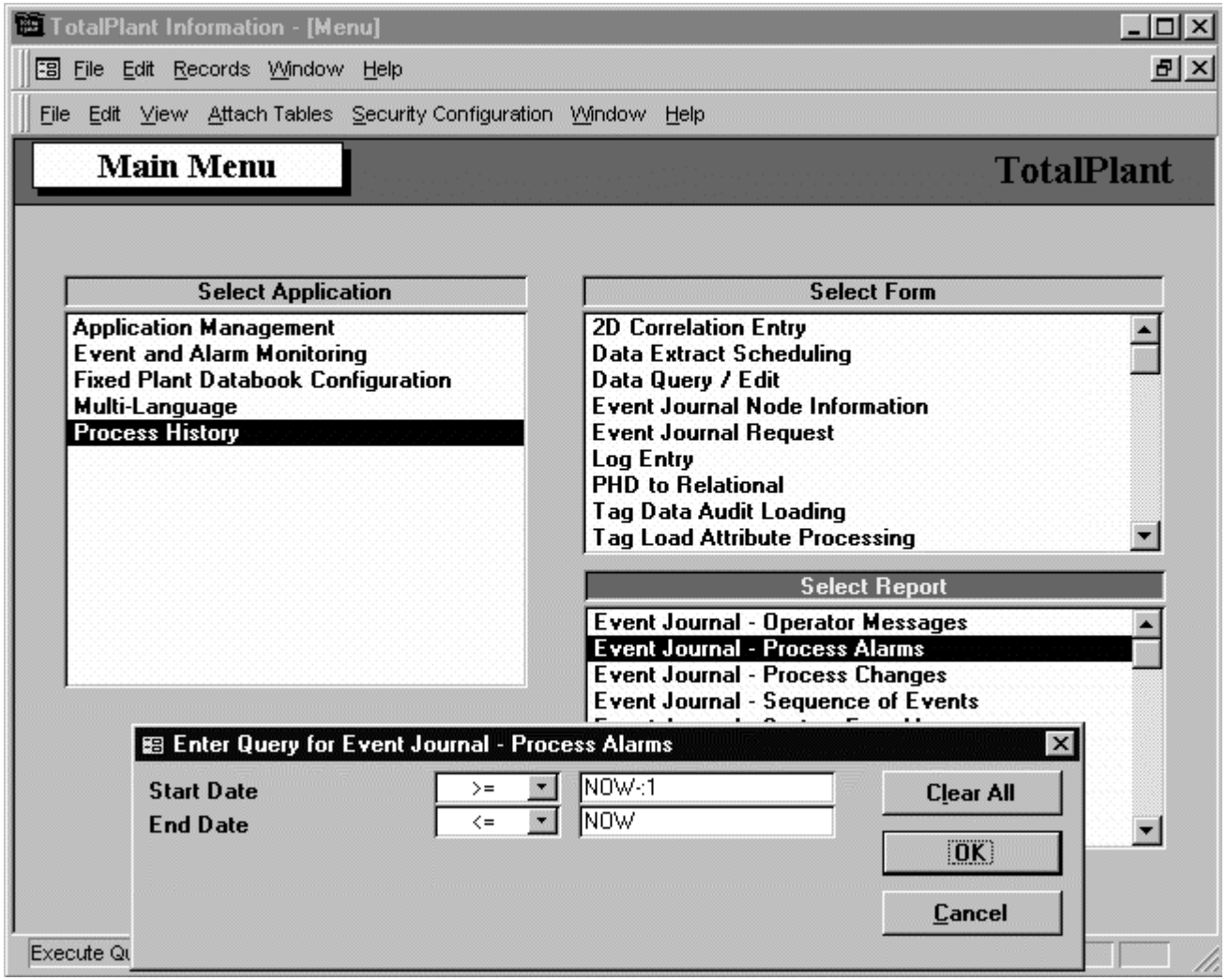
The Queue Frequency parameter for the Event Journal does not work the same as for other background processes.

If you specify 60 minutes as the Collection Frequency for a particular Event Journal Node (collector) in the TPI Event Journal Request form, then after the collector finishes its requests, it waits 60 minutes before exiting. The Scheduler waits 1 second (Queue Frequency) before running the Event Journal process again.

Event Journal Reports

To view a journal, enter the starting timestamp for the report.

If you do not have a Sequence of Events journal on the HM, the collector returns the Process Alarms Journal when you request the Sequence of Event Journal. This will be changed in R130.



For more details, refer to *PHD User Manual*, Reports, Event Journal

Event Journal Reports, *continued*

EVENT JOURNAL - PROCESS ALARMS

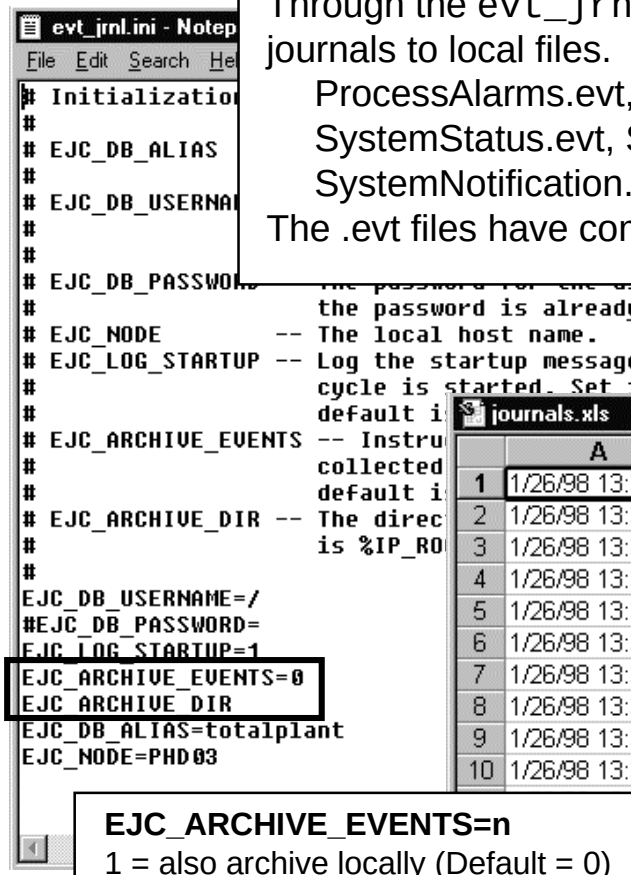
Time Stamp / Unit ID	Point Name / Point Description	Tripped Value	Alarm Type / Alarm Priority	Status / Event No	Source / Sequence of Events Info.
4/6/98 16:38:26	RAMP1001	1.000	PV HI	ALM	PHD03
04	ADV GRAPHICS BUILDING		LOW	21	20.000
4/6/98 16:38:26	RAMP1001	1.000	PV HI	ALM	PHD03
04	ADV GRAPHICS BUILDING		LOW	21	20.000
4/6/98 16:38:25	RAMP1001		PT ACTIVE		EX1AXP
04	ADV GRAPHICS BUILDING			24	
4/6/98 16:38:25	RAMP1001		PT INACTIVE		EX1AXP
04	ADV GRAPHICS BUILDING			24	
4/6/98 16:38:25	RAMP1001		PT INACTIVE		PHD03
04	ADV GRAPHICS BUILDING			24	
4/6/98 16:38:25	RAMP1001		PT ACTIVE		PHD03
04	ADV GRAPHICS BUILDING			24	
4/6/98 16:38:25	RAMP1001		PT INACTIVE		PHD03
04	ADV GRAPHICS BUILDING			24	
4/6/98 16:38:25	RAMP1001		PT ACTIVE		PHD03
04	ADV GRAPHICS BUILDING			24	
4/6/98 16:38:22	A100	1.000	PV HI	ALM	PHD03
03	SIMPLE POINT FOR STP		EMERGNCY	21	29.000
4/6/98 16:38:21	A100		PT INACTIVE		PHD03
03	SIMPLE POINT FOR STP			24	
4/6/98 16:38:21	A100		PT ACTIVE		PHD03
03	SIMPLE POINT FOR STP			24	
4/6/98 16:37:56	RAMP1001	1.000	PV HI	ALM	EX1AXP

Event Journal Files (.evt)

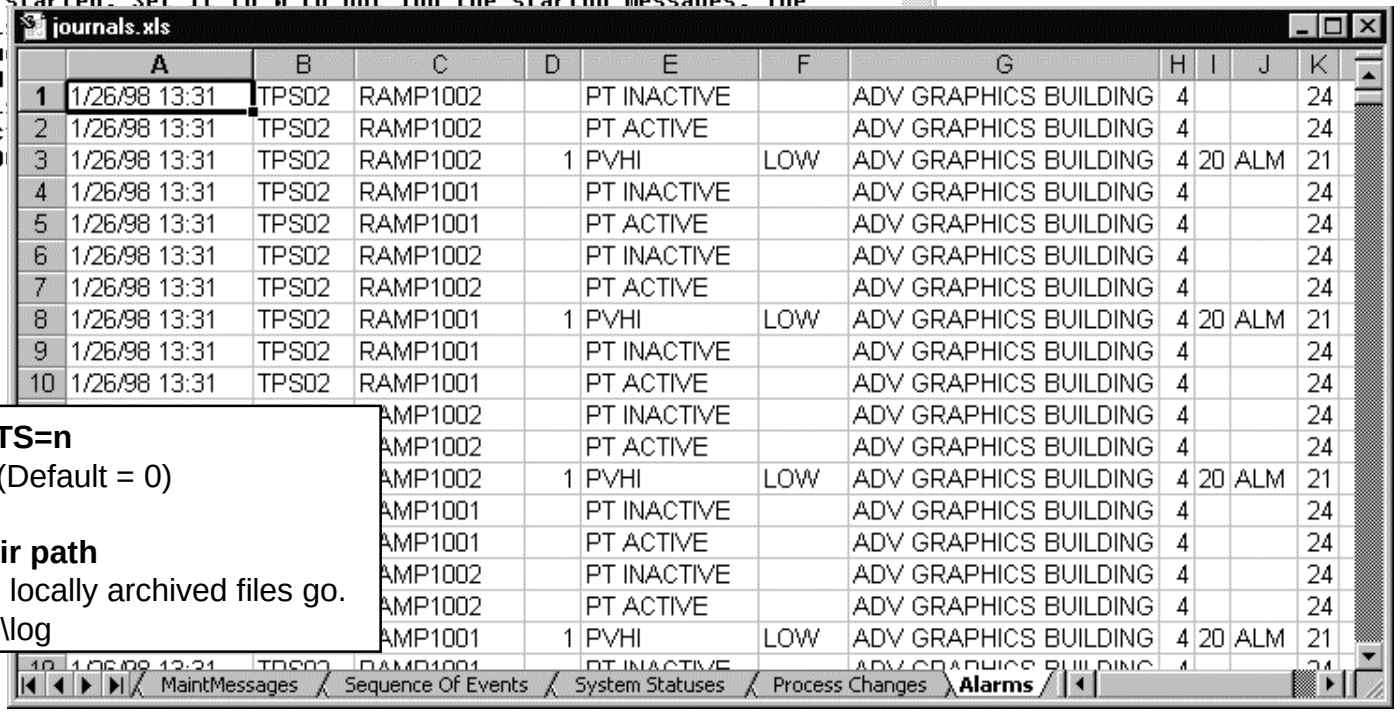
Through the `evt_jrnl.ini` file, you may configure the Event Journal to also dump the journals to local files. The files are named

ProcessAlarms.evt, OperatorMessage.evt, ProcessChanges.evt, SequenceOfEvent.evt, SystemStatus.evt, SystemMaintenance,evt, SystemErrorMessage.evt, and SystemNotification.evt.

The .evt files have comma separated values and may be imported into Excel as shown below.



the password is already specified by EJC_DB_USERNAME.
cycle is started. Set it to 0 to not log the startup messages. The
default i
collected
default i
is %IP_RO

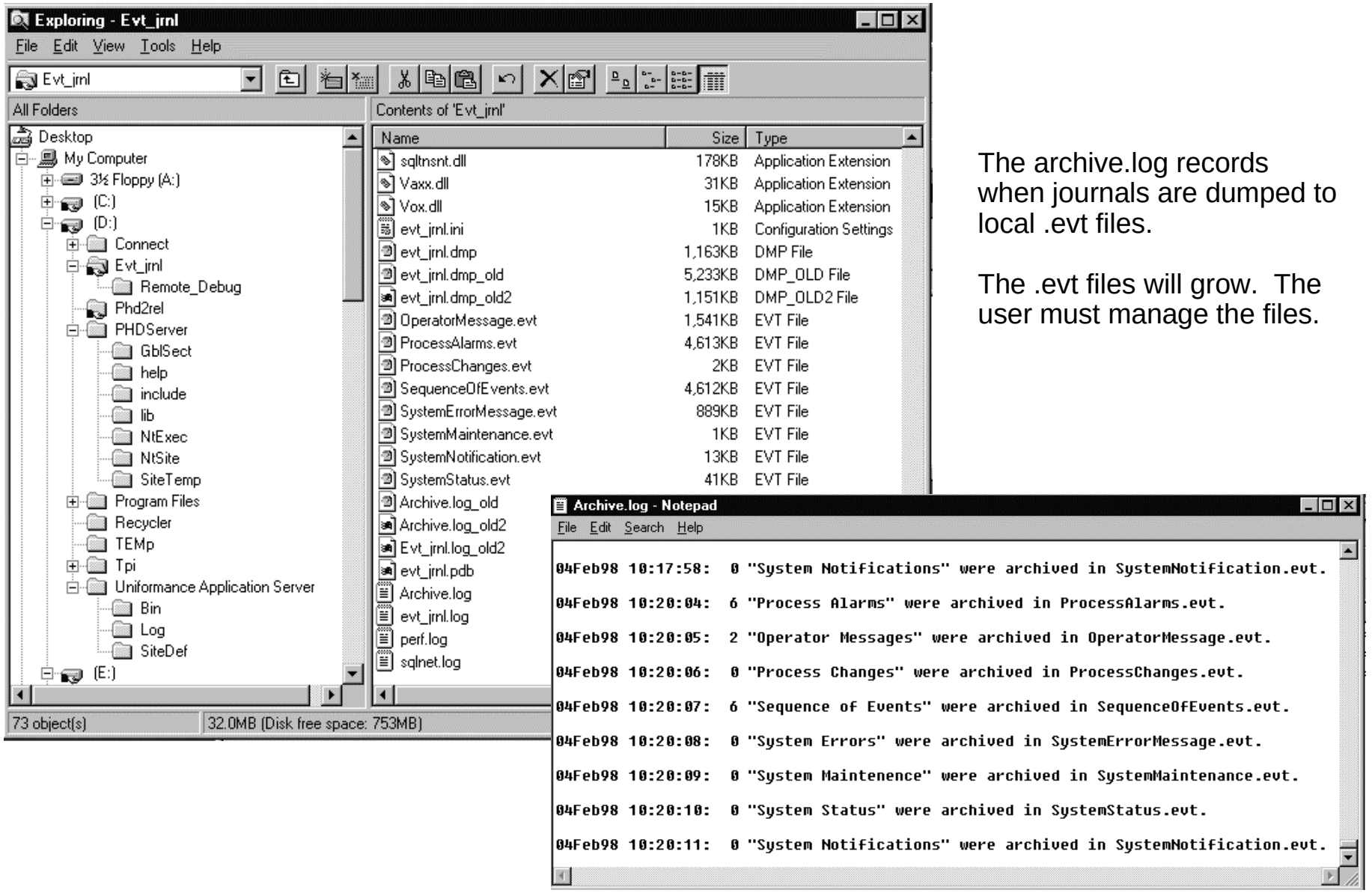


	A	B	C	D	E	F	G	H	I	J	K
1	1/26/98 13:31	TPS02	RAMP1002		PT INACTIVE		ADV GRAPHICS BUILDING	4			24
2	1/26/98 13:31	TPS02	RAMP1002		PT ACTIVE		ADV GRAPHICS BUILDING	4			24
3	1/26/98 13:31	TPS02	RAMP1002	1	PVHI	LOW	ADV GRAPHICS BUILDING	4	20	ALM	21
4	1/26/98 13:31	TPS02	RAMP1001		PT INACTIVE		ADV GRAPHICS BUILDING	4			24
5	1/26/98 13:31	TPS02	RAMP1001		PT ACTIVE		ADV GRAPHICS BUILDING	4			24
6	1/26/98 13:31	TPS02	RAMP1002		PT INACTIVE		ADV GRAPHICS BUILDING	4			24
7	1/26/98 13:31	TPS02	RAMP1002		PT ACTIVE		ADV GRAPHICS BUILDING	4			24
8	1/26/98 13:31	TPS02	RAMP1001	1	PVHI	LOW	ADV GRAPHICS BUILDING	4	20	ALM	21
9	1/26/98 13:31	TPS02	RAMP1001		PT INACTIVE		ADV GRAPHICS BUILDING	4			24
10	1/26/98 13:31	TPS02	RAMP1001		PT ACTIVE		ADV GRAPHICS BUILDING	4			24
			AMP1002		PT INACTIVE		ADV GRAPHICS BUILDING	4			24
			AMP1002		PT ACTIVE		ADV GRAPHICS BUILDING	4			24
			AMP1002	1	PVHI	LOW	ADV GRAPHICS BUILDING	4	20	ALM	21
			AMP1001		PT INACTIVE		ADV GRAPHICS BUILDING	4			24
			AMP1001		PT ACTIVE		ADV GRAPHICS BUILDING	4			24
			AMP1002		PT INACTIVE		ADV GRAPHICS BUILDING	4			24
			AMP1002		PT ACTIVE		ADV GRAPHICS BUILDING	4			24
			AMP1001	1	PVHI	LOW	ADV GRAPHICS BUILDING	4	20	ALM	21

EJC_ARCHIVE_EVENTS=n
1 = also archive locally (Default = 0)

EJC_ARCHIVE_DIR=dir path
The directory where the locally archived files go.
Default = %IP_ROOT%\log

Event Journal Files (.evt), *continued*



The archive.log records when journals are dumped to local .evt files.

The .evt files will grow. The user must manage the files.

Oracle Tables for Event Journals

The .evt files contain only the locally collected events. If the user has more than one Event Journal collector running, the user needs to go to the Oracle database to see all the events. The output from the Event Journal collectors are stored in eight database tables. These tables are:

```
IP_EJC_PRCSS_ALARM
IP_EJC_OPRTR_MSG
IP_EJC_PRCSS_CHNGS
IP_EJC_SEQ_OF_EVNT
IP_EJC_SYSTEM_ERROR_MSG
IP_EJC_SYSTEM_MAINT
IP_EJC_SYSTEM_NOTIFICATION
IP_EJC_SYSTEM_STAT
```

One way to see the content in these tables is to use the TPI Reports. Other ways are: using MS Access to link to these tables, using MS Excel to import data from these tables, or use the SQL statements in the Oracle ODBC Test32 or Plus33 tools.

There are views created for these tables (The views' names are the same as the TPH Event Journal tables.)

```
PROCESSALARMS
OPERATORMESSAGES
PROCESSCHANGES
SEQUENCEOFEVENTS
SYSTEMERRORMESSAGE
SYSTEMMAINTENANCE
SYSTEMNOTIFICATION
SYSTEMSTATUS
```

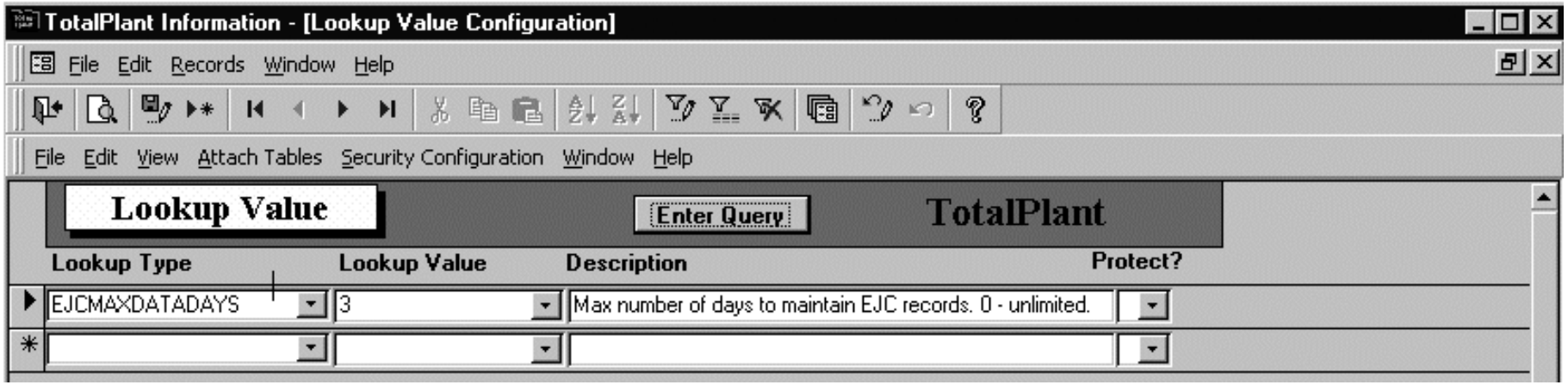
Event Journal Maintenance

- Multiple Event Journal collectors can exist on multiple nodes storing the collected events to Oracle tables at the same time. If not managed, the journal tables will eventually fill up the entire table space.

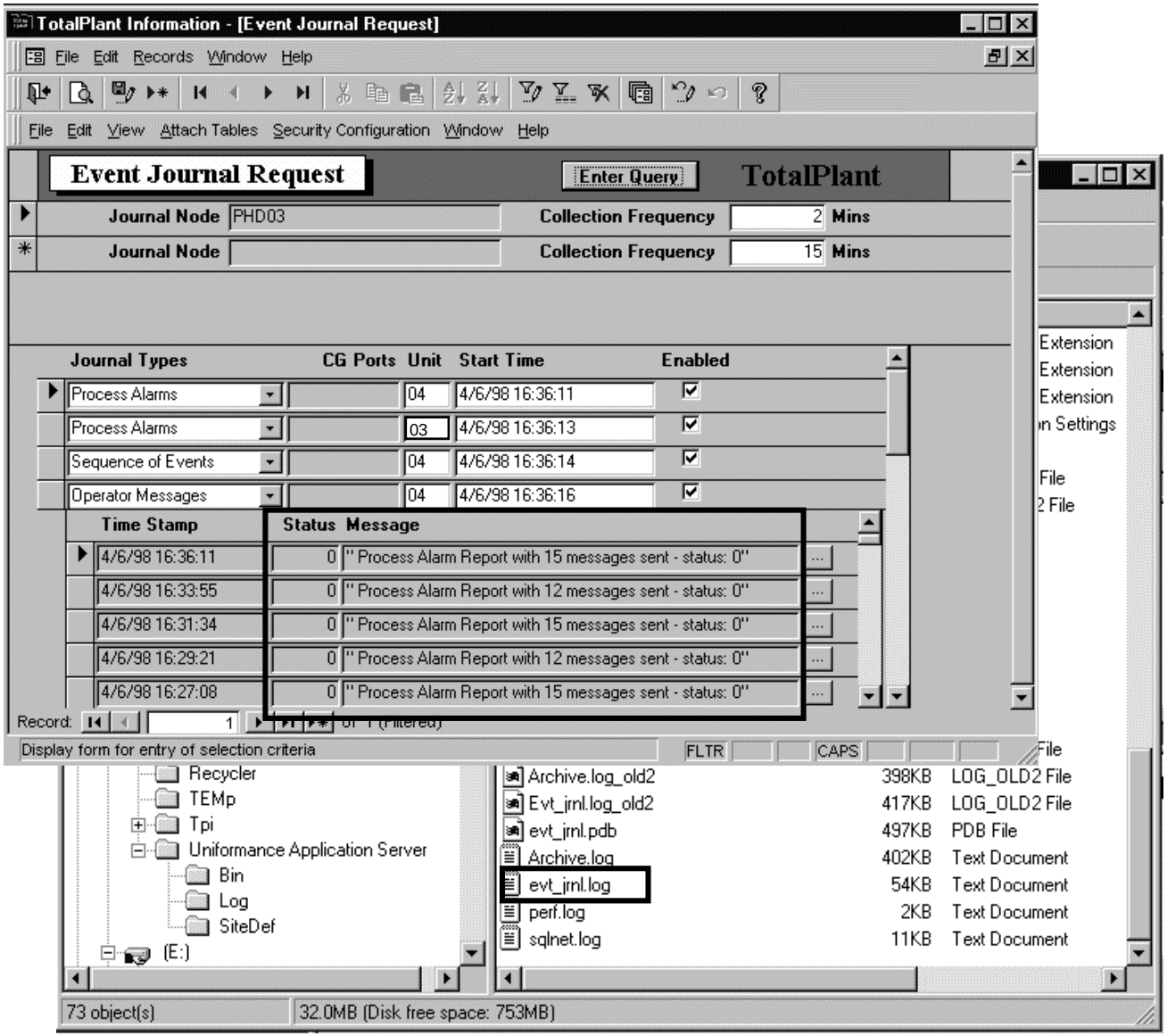
  To turn on the automated control function for managing event journals, you must set "EJCMAXDATADAYS" to a number that represents the days of data to be retained in the journal tables. (EJCMAXDATADAYS is a Lookup Value in the Common (Fixed Plant) Databook - see screen below.)

  The Event Journal collector routinely checks this value and deletes the events whose time stamps are older than "TODAY – days-of-data-to-keep".

- It is the user's responsibility to backup the journal database.



Event Journal Log



An event journal log provides status messages relating to event journal collection and storage.

The Event Journal Request form shows contents of the log: a status code and message for each request.

Status Codes and Messages:

700000000 - Errors relating to database accesses. The message will ask the user to see the evt_jrnl.log for details.

700000xxx - L^{X}S related errors. The error message will be shown on the form as well as in the evt_jrnl.log.

2xxxxxxxx - CM50 errors. The user will need to see the *CM50 User Manual* or use the OpenVMS F$MESSAGE function for details.

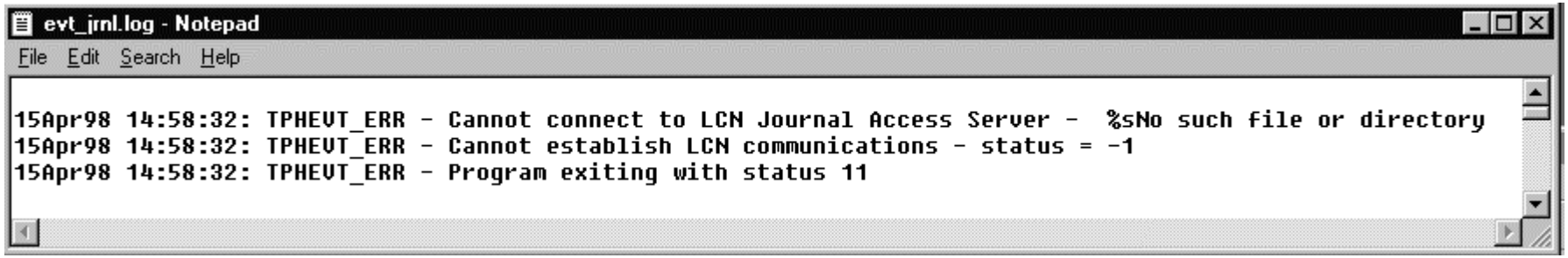
Event Journal Log, *continued*

- The most common error status the user will see is 70000000. It is most often caused by a broken database connection or Oracle being out of table space.

- For a broken database connection, the user needs to
  - Check if the database is shut down, and
  - Verify that the DB alias or the username/password specified in the evt_jrnl.ini is correct.

- For out of table space, the user needs to extend the table space and restart Oracle, or reduce the EJCMAXDATADAYS.

- If the LCN side is not loaded on the local node, the Event Journal will fail on connecting to the LCN and exit before trying to connect to the Oracle database; consequently the LCN connection error messages will be shown in the evt_jrnl.log file instead on the TPI forms.



- Journal access errors (see next page).

- The .log files will grow. The user must manage the files.

Event Journal Log, *continued*

In general, the L^{X}S Journal accesses may return the following messages:

```
static char *journal_errors[21] = {
        "Journal success",
        "Invalid journal type",                          /* 700000001 */
        "Invalid journal revision",                       /*700000002 */
        "Internal error -- BAD start and end periods",   /* and so on ...*/
        "Internal error -- Invalid continuation ID",
        "Journal out of memory",
        "Journal node stopped or not configured",
        "Journal retrieval request check error",
        "Journal retrieval reply check error",
        "Journal unit conversion error",
        "Internal error -- Unused",
        "Internal error -- Continuation ID not in use",
        "Internal error -- Maximum number of journals in use",
        "Internal error -- Invalid number of keys",
        "Internal error -- Continuation message mismatch",
        "Journal node box range error",
        "Internal error -- Bad key type for journal",
        "Journal hiway range error",
        "Journal multiple hiway UCN error",
        "Journal memory put error",
        "Journal feature not implemented error"
}
```

Hands-On Exercise

In this exercise, you will look at the Event Journal configuration screens and logs, and view an Event Journal.

1. Look at the **Config.cfg** file for the system you are working on.
   Is the Event Journal background task configured to run?_____

2. Look at the **Evt_jrnl.ini** file.
   What is the Event Journal collector node name?_____
   Is the collector configured to dump the journals to local files also?_____

3. From the Main Menu, call up the **Event Journal Request form**. Query for the node you are using.
   What journals are being collected by the node?_____
   What is the collection frequency?_____

4. From the Main Menu, call up the **Event Journal Node Information form**.
   Query for the status of all journal nodes on this system.

5. Select REQUESTS to return to the Event Journal Request form.

6. From the Main Menu, call up the **Event Journal Report of Process Alarms**.

7. Look at the most recent **Event_journal_nn.log** file.

8. Look at the **Evt_jrnl.log** file and the **Archive.log** file.
   Is the Event Journal collector creating local files?

9. Import one of the local **.evt** files into Excel.

End of Exercise

Helping You Manage Your World