

| Product            | Version | Theme              | Environment | Date       | Department  | Person            | Language |
|--------------------|---------|--------------------|-------------|------------|-------------|-------------------|----------|
| SEE Electrical PLM | V4Rx    | Application server | Windows     | 23/02/2017 | After Sales | Technical Support | EN       |

**Subject:**

# How to analyze SEE Electrical PLM V4 service interruptions

**Description:**

This document describes how to analyze situations when all users seem to be blocked simultaneously on one product family. It is reserved to IT support having access to the SEE Electrical PLM V4 application and database servers.

**Our proposed solution:**

**Method for problems analysis with SEE Electrical PLM V4R7 and later versions (application server and connected applications).**

## 1 - Characterize the problem at client level

### 1.1 - What is the problem at client level?

- the client session is alive, but all functions fail, typically with message "Transaction failed".  
This case is characteristic of a loss of the connection to the application server  
Check the problem at application server level (see below)
- the client still works properly, but no new client can be started  
See below
- all clients work properly, but extremely slow  
Check the problems at application and database server levels.
- does the same problem occur on different client computers?

### 1.2 - In case of problem to start a new client

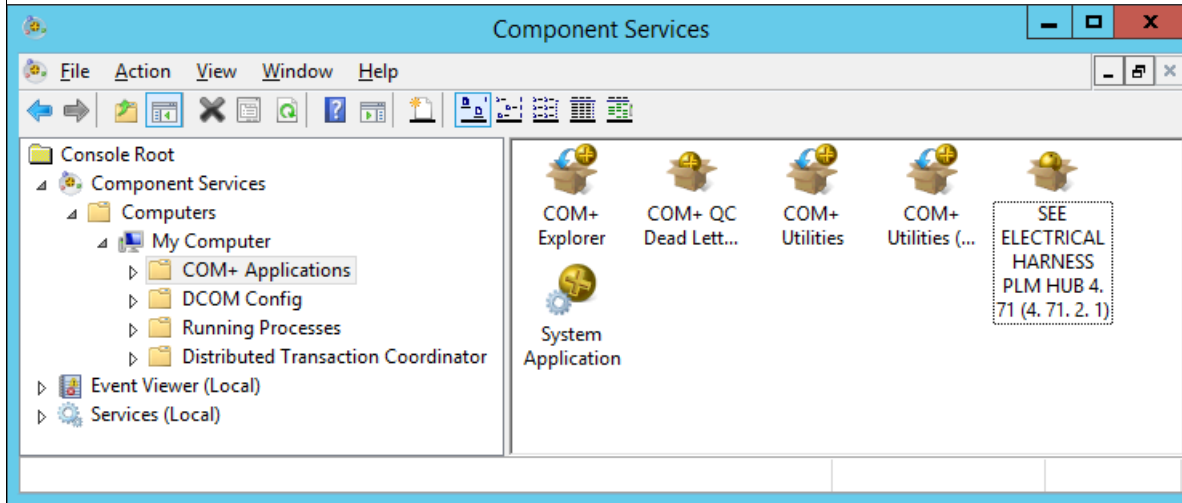
- What messages do you get:
  - at client level (report the message displayed to the user)?
  - in PLM Hub logs (report the messages in the log as defined under the Hub Configurator)?
- Is the problem similar with Topology, Device Manager and Administration Tool?
- If messages suggest a problem to connect to the PLM Hub
  - check the network connection

## 2 - Characterize the problem at application server level

### 2.1 - Is the PLM Hub com+ component service still running?

To be checked on the PLM Hub A/S computer, under the component services (see Control Panel\All Control Panel Items\Administrative Tools and double click on Component Services icon).

Its name depends on the version, but is prefixed by "SEE ELECTRICAL HARNESS PLM HUB".

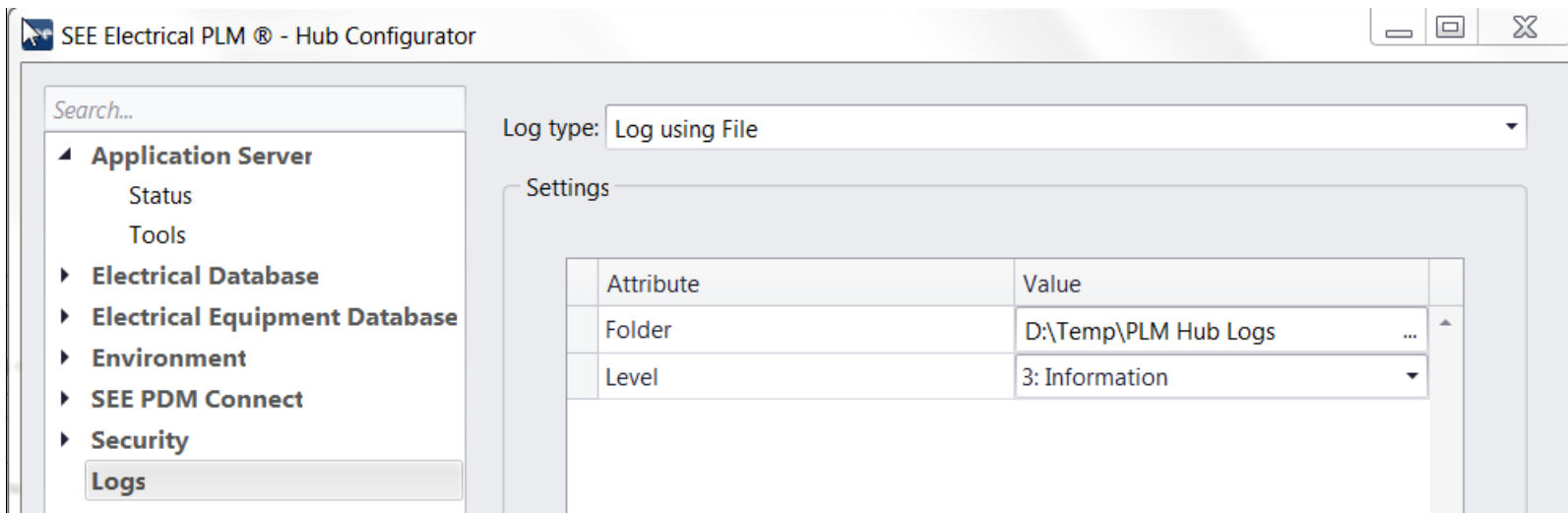


### 2.2 - if stopped

It means the application server service was stopped, probably unexpectedly.

#### 2.2.1 – Check the application server log

Under the Hub configurator, there is an option to save execution logs of the application server to file:



(these are our recommended settings).

Check if a log file has been generated, and if so, sent it to IGE+XAO support, it may contain some important information.

Note that the error level 1 is correct in most of the cases, level 3 can be used in case of recurrent problems.

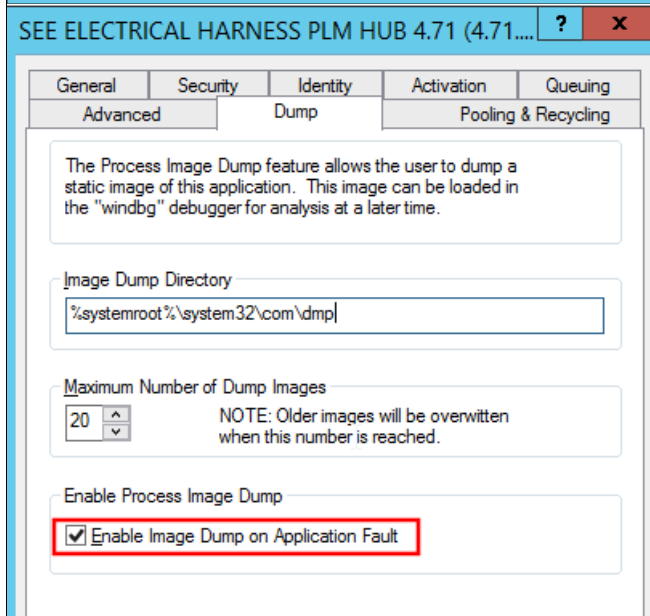
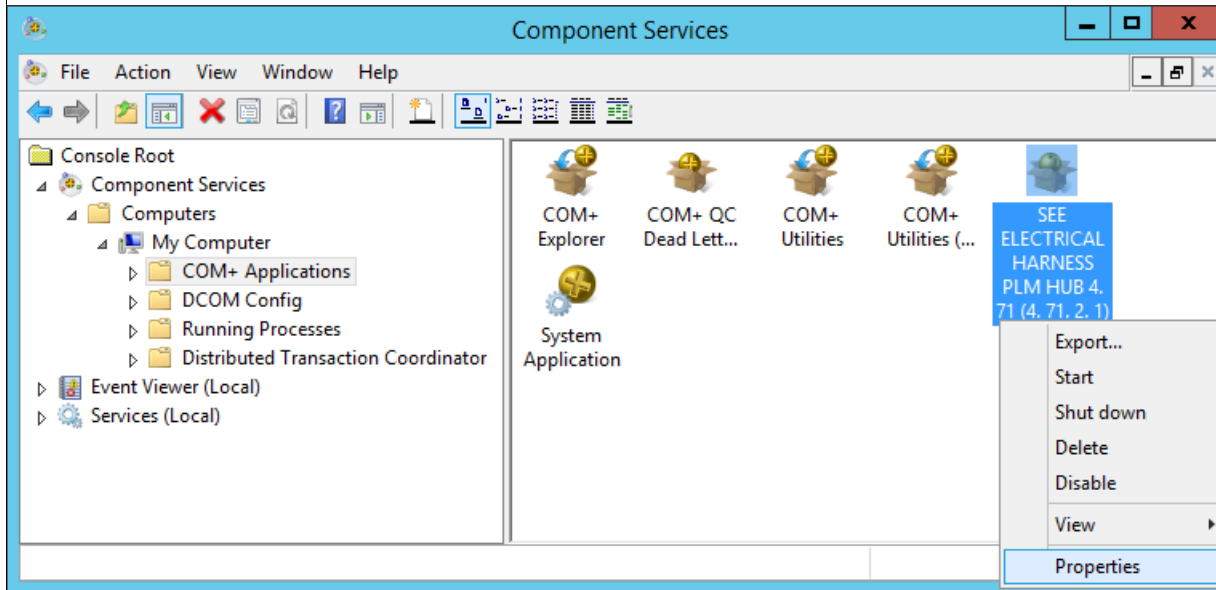
Higher levels can be used, but may have a significant impact on the performance of the service. Do not use them without request from IGE+XAO.

### 2.2.2 - Is there a dump of the PLM application server?

In case of crash of the application server service, it is possible to have a dump generated automatically.

There are several possibilities to find the dump file:

First, the dump could be found at the position defined by the parameter in the properties of the COM+ service. If necessary, enable this option at the COM+ service level, as shown below:



**Second, there could be a dump in the following directory:**

C:\ProgramData\Microsoft\Windows\WER\ReportQueue.

It may contain some sub-directories referring to the name of the process for which an event report has been generated.

In case of PLM Hub problems, it should refer to the "dllhost.exe" process.

Such a sub-directory may contain dump files suffixed by ".hdmp". Note that such a file may also be missing. It seems that it can be in case of very similar events already reported by the Windows Event Report system.

To avoid this case, it is possible to customize the Windows reporting mechanism, and force dumps whenever possible.

See the explanations in this discussion:

<https://blogs.msdn.microsoft.com/chaun/2013/11/12/steps-to-catch-a-simple-crash-dump-of-a-crashing-process/>

To apply this method to the case of PLM Hub, you need to update the registries of the PLM Hub computer to create this key:

**[HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\Windows\Windows Error Reporting\LocalDumps\dllhost.exe]**

**"DumpCount"=dword:00000005**

**"DumpType"=dword:00000002**

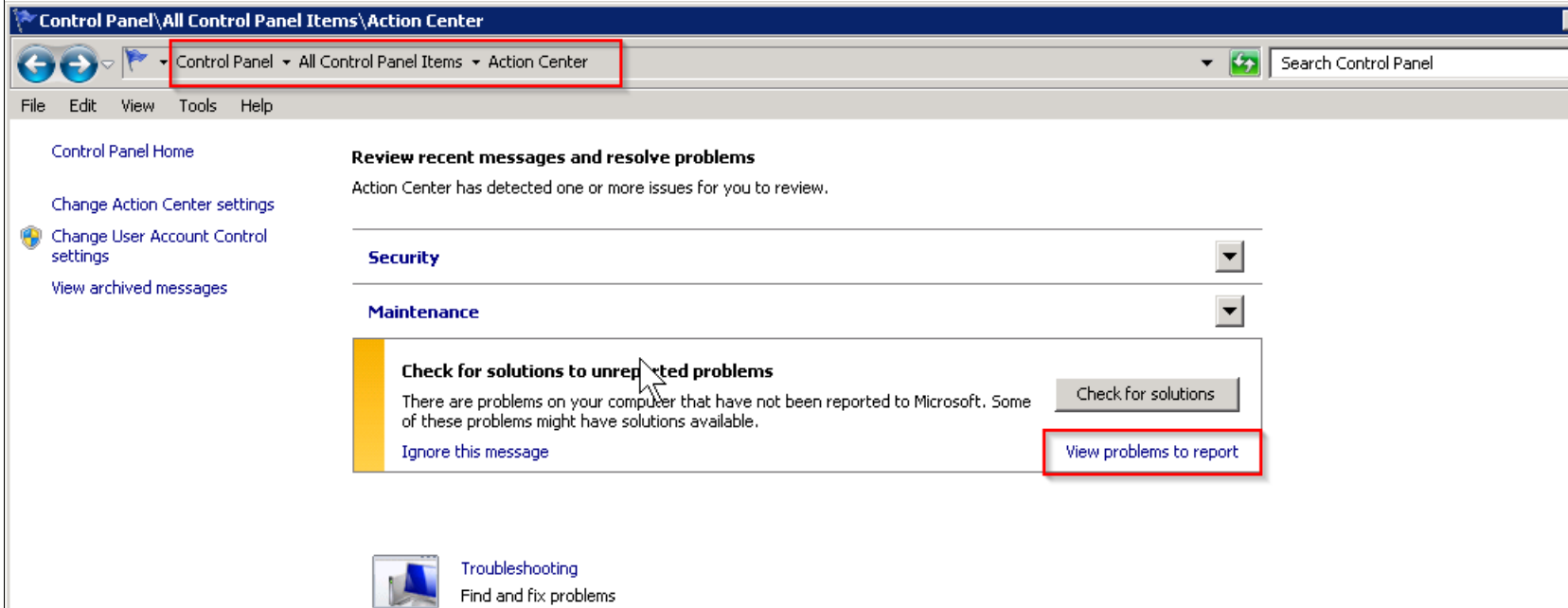
**"DumpFolder"=hex(2):44,00,3a,00,5c,00,54,00,65,00,6d,00,70,00,5c,00,43,00,72,\  
00,61,00,73,00,68,00,44,00,75,00,6d,00,70,00,73,00,00,00**

"Dumpfolder" represents the path to the folder where dump files should be created.

In case there is a dump, please provide the full ReportQueue sub-directory and the dump to IGE+XAO for analyze.

### Third, the dump could be found using the control panel

For this, open the Action Center in the control panel:



Click on the "View problems to report" link (not active if no interesting problems). The following window appears:

Control Panel\All Control Panel Items\Action Center\Check For Solutions

Control Panel > All Control Panel Items > Action Center > Check For Solutions

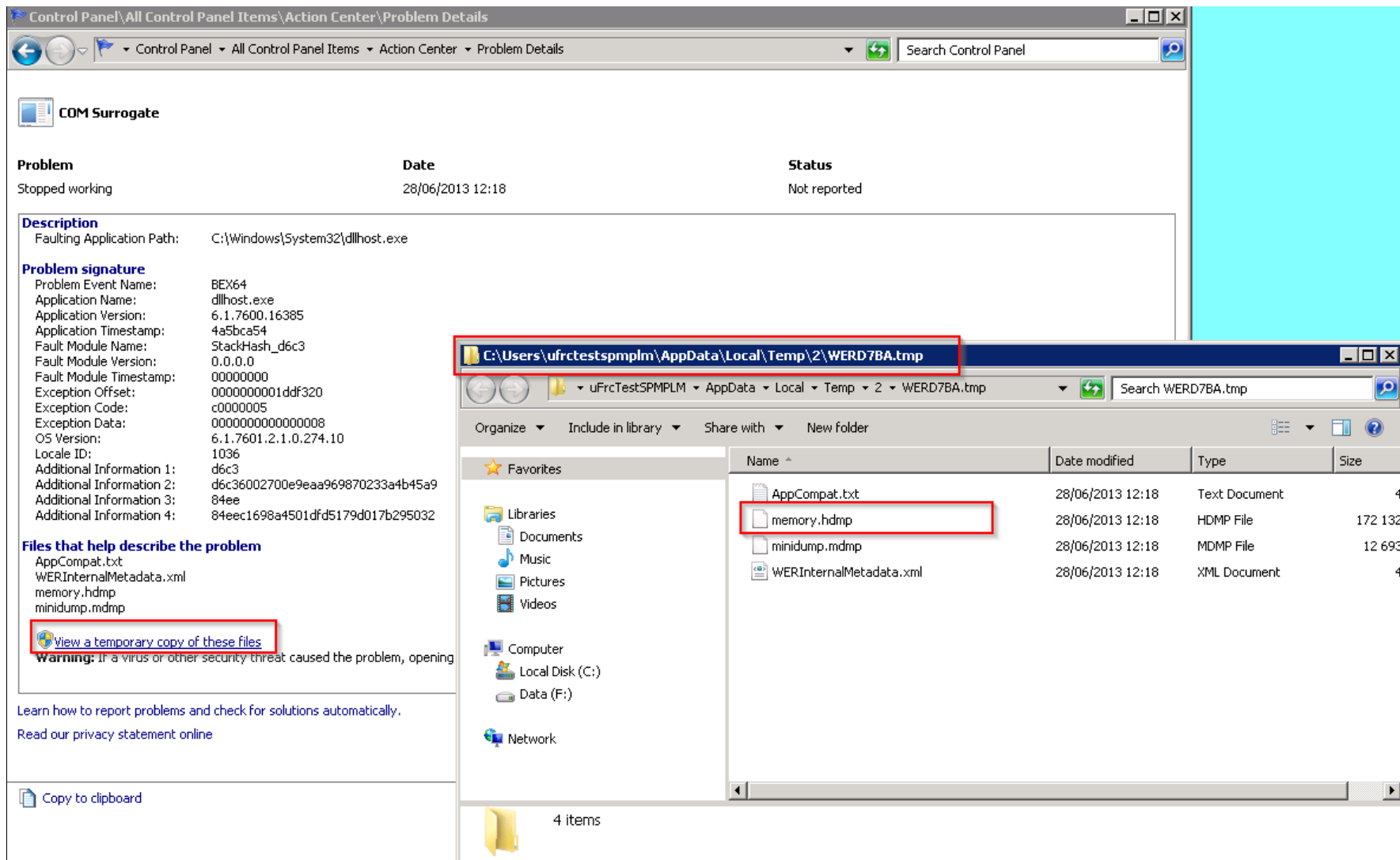
Search Control Panel

**Check for solutions to these problems**  
 Windows will send a description of each problem to Microsoft and look for steps you can take to solve it. Sending information about problems also helps create solutions.

Select all

| Source  | Summary                            | Date                              | Details                               |
|---|------------------------------------|-----------------------------------|---------------------------------------|
| <b>COM Surrogate</b>                          |                                    |                                   |                                       |
| <input checked="" type="checkbox"/>           | COM Surrogate                      | Stopped working                   | 28/06/2013 12:18                      |
|   |                                    |                                   | <a href="#">View technical det...</a> |
| <b>Diagnostics Troubleshooting Wizard (2)</b> |                                    |                                   |                                       |
| <input checked="" type="checkbox"/>           | Diagnostics Troubleshooting Wizard | Problem not fixed                 | 08/04/2014 11:53                      |
| <input checked="" type="checkbox"/>           | Diagnostics Troubleshooting Wizard | Problem not fixed                 | 08/04/2014 11:53                      |
|   |                                    |                                   | <a href="#">View technical det...</a> |
|   |                                    |                                   | <a href="#">View technical det...</a> |
| <b>Driver software installation (4)</b>       |                                    |                                   |                                       |
| <input checked="" type="checkbox"/>           | Driver software installation       | Installed generic driver software | 02/06/2014 15:05                      |
| <input checked="" type="checkbox"/>           | Driver software installation       | Installed generic driver software | 02/06/2014 15:05                      |
| <input checked="" type="checkbox"/>           | Driver software installation       | Installed generic driver software | 16/07/2015 12:25                      |
|   |                                    |                                   | <a href="#">View technical det...</a> |

Look at possible “COM surrogate” problems. If any corresponding to the date/time of the PLM Hub problem, click on the “View technical details” link. The following window opens:



You can then see a number of information about the problem, especially if there is a dump or other files attached to the event. Click on the “See a temporary copy of these files” link. A dump file may be visible in the opened window.

**Fourth, the dump could be at the position defined under the Microsoft Debugdiag tool, in case this tool has been started to monitor the crashes.**

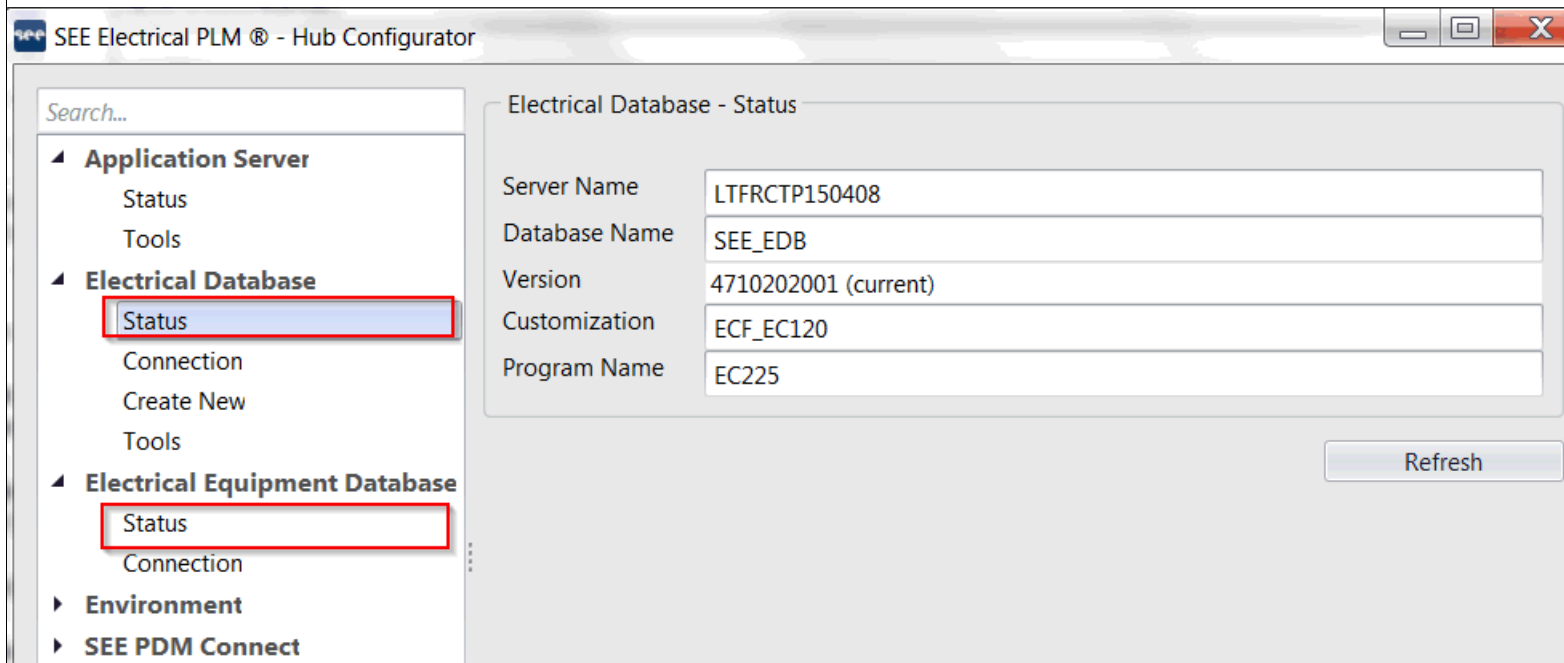
Whatever the case, if there is a dump file, please provide it to IGE+XAO support, there has probably been an A/S crash.



## 2.2.4- Try to restart the service manually.

If the Windows COM+ component services application cannot be started:

- You may have a problem with database connection. Please test them under the Hub Configurator, to make sure the database is still accessible from the Hub.



In case of problem, see the part about the database server.

- You may have a problem at Windows level (some Windows service not running properly, typically).

You may need to restart the application server computer. You may also check the Windows events for some information about the problem.

If it can be restarted, maybe all is unblocked now. Check with the applicative users.

## 2.3 - If running

### 2.3.1 - it is possible that Hub was stopped then restarted automatically.

Like in the case of application server stopped above:

- Check the PLM Hub log as described in point 2.2.1. If level of the log was 3, you can see a new log at the time it was restarted.
- Check if a dump was generated, as described in point 2.2.2.

### 2.3.2 - if you believe the Hub was not restarted automatically

Two possible problems:

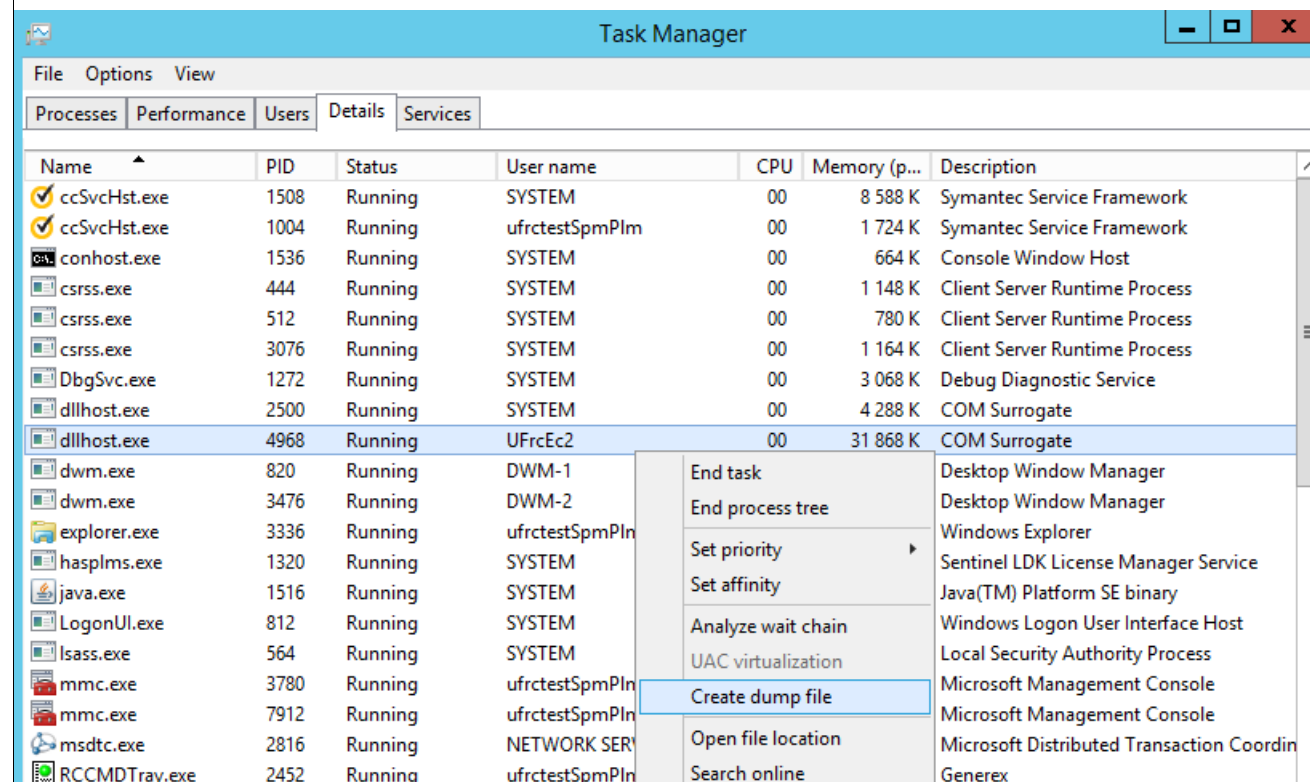
- Hub is running normally, but is waiting for processes to finish at database server level.

Maybe there is a performance problem at database level. See the part about the database server.

- Hub is running but more or less frozen (new clients cannot be started, already connected ones have no activity).

Then it is necessary to dump the application server service.

It can be done under the task manager: dump the 64bits dllhost process which owner is not "system", as shown in this image:

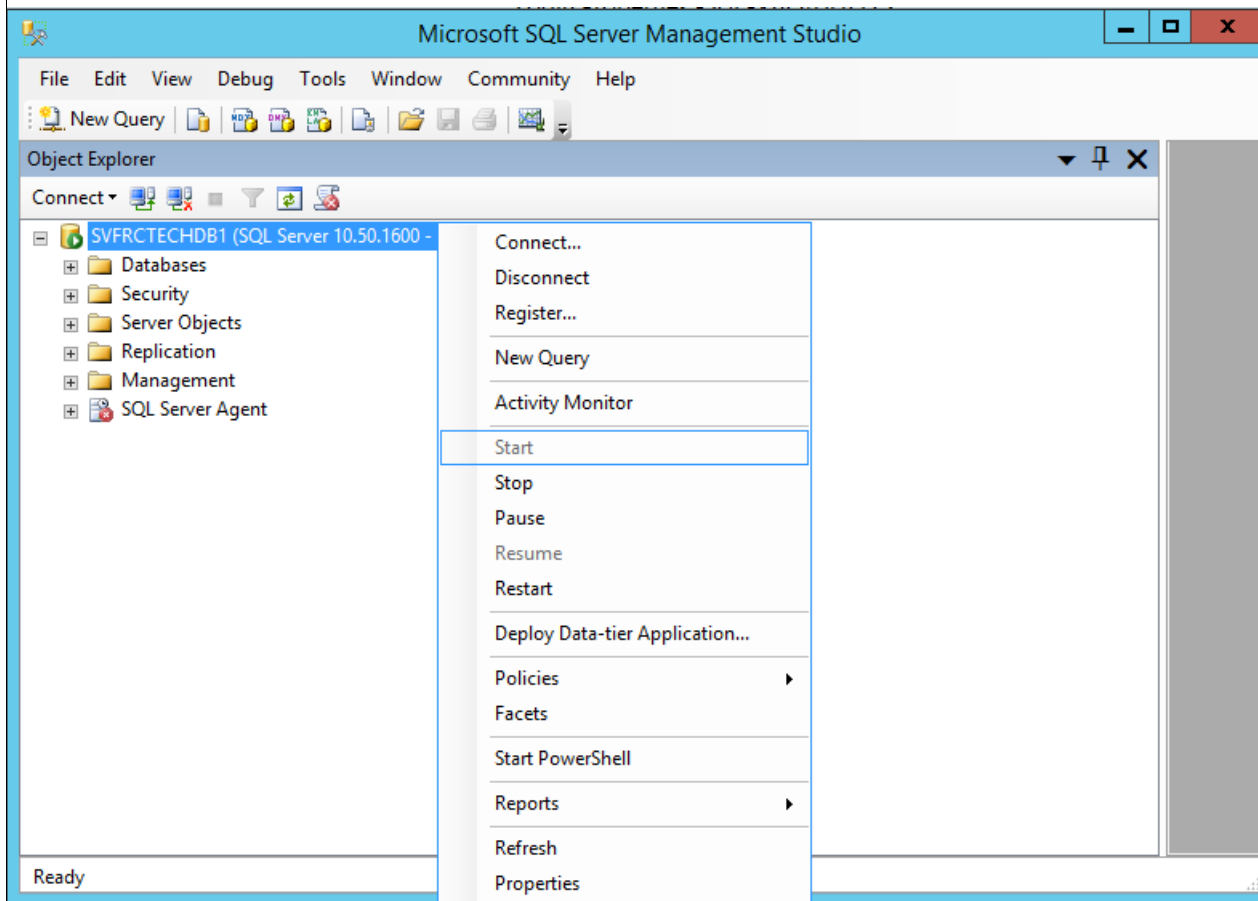


Note that you may have additional dllhost.exe \*32 processes, that are side processes of PLM Hub. Dumps should not be generated for them, only for the \*64 one.

### 3 - Characterize the problem at database server

#### 3.1 - is the SQL server still running?

- To be checked under the SQL server Management studio. If not, it explains why the PLM Hub A/S does not work.



#### 3.2 - If it seems to work too slowly

- Check the DB/S computer resources (memory, disk space for the EDB database but also the temporary tablespace, disk activity)...
- Check if some SQL processes are running on your EDB database, using the Activity Monitor typically. You should see a number of SQL processes in "RUNNING" state, at least one.

Maybe one process is long and blocking the other ones (concurrent engineering problem at DB/S level).

It is good in this case to record an SQL trace of the activity during 5 minutes, using the SQL Server Profiler.

Trace settings to be used are the following:

**Events:** important to select only those that are necessary, to avoid too big traces that can create a disk space problem.

There can be the typical ones: Audit Login, Audit Logout, ExistingConnection

But we are interested mostly in these ones:

Stored Procedures

- RPC Output Parameter
- RPC:Completed
- RPC:Starting
- SP:Completed
- SP:Recompile
- SP:Starting
- SP:StmtCompleted
- SP:StmtStarting

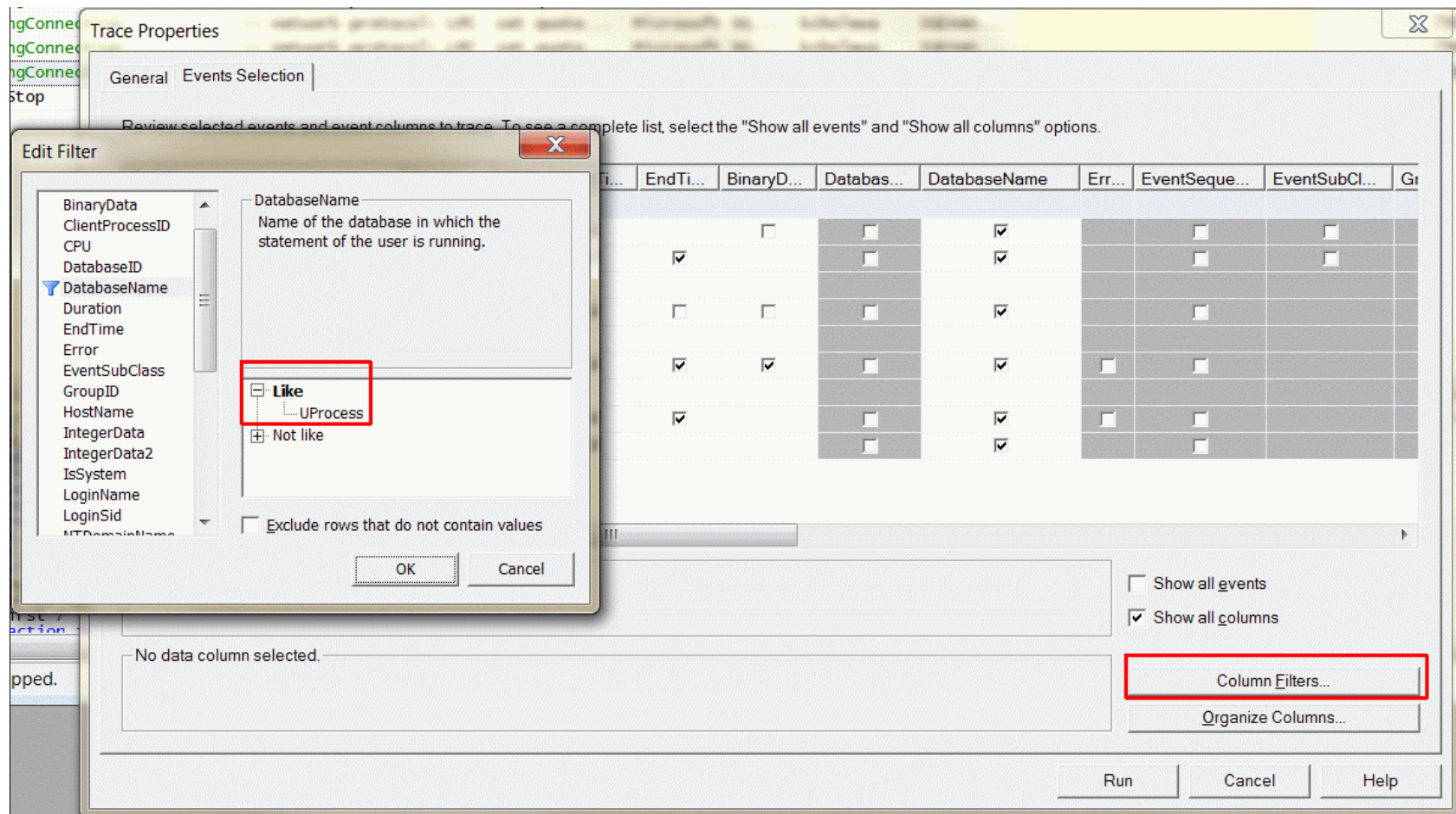
TSQL

- Exec Prepared SQL
- Prepare SQL
- SQL:BatchCompleted
- SQL:BatchStarting

**Columns:**

| Events                   | TextData                 | ApplicationName          | NTUserName               | LoginName                | CPU | Reads | Writes | Duration | ClientProcessID          | SPID                     | StartTime                | EndTime | DatabaseName             |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|-----|-------|--------|----------|--------------------------|--------------------------|--------------------------|---------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |     |       |        |          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |         | <input type="checkbox"/> |
| Events                   | EndTime                  | DatabaseName             | Error                    | RowCounts                |     |       |        |          |                          |                          |                          |         |                          |

**Filters:** to trace only the EDB database you are interested in, in case your server is managing others at the same time.



Send the trace to IGE+XAO support.

- if it seems no request is executed, there are several possibilities:

- There is no running query (A/S are maybe blocked and requested no task at DB/S level). See the part about A/S, a dump of the A/S is necessary in this case.

- There is one or several running queries that take a long time to execute (performance problem or some kind of deadlock). See the part about A/S, a dump of the A/S is necessary in this case.

### 3.3 – in case some client processes seem to be hanging, analyze the DB/S state

Start those 4 queries on the database:

--1. list of processes

```
SELECT w.wait_duration_ms
,w.wait_type
,w.blocking_session_id
,w.resource_description
,qry_text.text
,s.spid
,s.login_time
,s.last_batch
,s.status
,s.blocked
,s.cpu
,s.memusage
,s.program_name
,s.open_tran
,s.cmd
,s.stmt_start, s.stmt_end
,DB_NAME(s.dbid) as database_name
FROM sys.sysprocesses s
LEFT OUTER JOIN sys.dm_os_waiting_tasks w ON w.session_id = s.spid
CROSS APPLY sys.dm_exec_sql_text(s.sql_handle) qry_text
--WHERE s.dbid in case of security constraints this query can be limited to selected database
ORDER by s.dbid, w.blocking_session_id DESC
FOR XML PATH
```

GO

--2. List of exec and statements

```
SELECT
er.session_id
,er.blocking_session_id
,er.status
,er.wait_type
,er.last_wait_type
,er.wait_time
,er.wait_resource
,er.open_transaction_count
,er.transaction_isolation_level
```

```

,er.nest_level
,er.start_time
,DB_NAME(er.database_id) as database_name
,CASE
WHEN LEN(qry_text.text) > 0 AND er.statement_end_offset - er.statement_start_offset >0 THEN SUBSTRING(qry_text.text, er.statement_start_offset / 2,
(er.statement_end_offset - er.statement_start_offset) / 2)
WHEN LEN(qry_text.text) > 0 AND er.statement_start_offset > 0 THEN RIGHT(qry_text.text, er.statement_start_offset / 2)
END AS s_statement
,er.statement_start_offset
,er.statement_end_offset
,qry_text.text
FROM sys.dm_exec_requests er
CROSS APPLY sys.dm_exec_sql_text (er.plan_handle) qry_text
ORDER by er.database_id, er.blocking_session_id DESC
FOR XML PATH
GO

```

--3. Input buffers

```

--DROP TABLE #Inputbuffer
CREATE TABLE #Inputbuffer(
id INT IDENTITY,
spid INT NULL,
EventType NVARCHAR(100) NULL,
Parameters INT NULL,
EventInfo NVARCHAR(MAX) NULL
)
GO
DECLARE @spid INT
DECLARE @qry NVARCHAR(128)
DECLARE sysp CURSOR LOCAL STATIC FOR SELECT spid FROM sys.sysprocesses sp WHERE spid>=50
OPEN sysp
FETCH NEXT FROM sysp INTO @spid
WHILE (@@FETCH_STATUS =0)
BEGIN
    SET @qry = 'DBCC INPUTBUFFER (' + CAST(@spid AS NVARCHAR(50)) + ') WITH NO_INFOMSGS'
    INSERT INTO #Inputbuffer (EventType, Parameters, EventInfo)
    EXEC (@qry)
    UPDATE #Inputbuffer SET spid = @spid WHERE id = SCOPE_IDENTITY()

    FETCH NEXT FROM sysp INTO @spid
END
CLOSE sysp
DEALLOCATE sysp

```

```
SELECT * FROM #Inputbuffer FOR XML PATH
GO
DROP TABLE #Inputbuffer
GO
```

--4. Locks

```
SELECT tl.resource_type
,tl.resource_associated_entity_id
,p.object_id
,OBJECT_NAME(p.object_id) AS object_name_
,tl.request_status
,tl.request_mode
,tl.request_session_id
,tl.resource_description
,DB_NAME(tl.resource_database_id) as database_name
FROM sys.dm_tran_locks tl
LEFT JOIN sys.partitions p
ON p.hobt_id = tl.resource_associated_entity_id
WHERE request_status != 'GRANT'
ORDER BY tl.resource_database_id, tl.request_session_id DESC
FOR XML PATH
GO
```

And send the result to IGE+XAO support, **with:**

- **a dump of the application server service**, to compare the A/S and DB/S states.
- **The SQL server log**, to check if there is no unusual event reported

### 3.4 - If DB/S seems to work properly

- we can think there is no problem at DB/S level. See the part about A/S, a dump of the A/S is necessary