HOME

User Manual

DELMIA Process Engineer®

Database Upgrade

DELMIA

Foreword

This manual provides an introduction to the basic operations and functions of the database upgrade.

While developing these functions we have made every effort to create a clearly organized, easy-to-understand program structure.

A user-friendly interface as well as a clear menu guide will enable you to quickly learn how to operate the program and to get familiar with its functions so that you can carry out your planning tasks in a quick and reliable way.

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Table of Contents

1. Introduction

This manual explains how to use the Process Engineer database upgrade for your planning purposes.

1.1 How to Use this Manual

This manual enables you to get familiar with the operation and functions of the Process Engineer. This manual briefly describes:

- Database Upgrade Functions

Note

When handling the Database Upgrade functions, please also refer to the general introduction to Process Engineer in the General Introduction Manual.

Click General Introduction to access the manual.

1.2 Documentation Conventions and Symbols

The symbols used in this manual are intended to provide you with keys to the contents in an immediately understandable manner.

This symbol is used to introduce key concepts that are covered in the sections immediately following this symbol. As a result, this symbol most frequently appears at the beginning of chapters or sections.

Note

*This symbol is used to mark notes, which provide you with additional information you need to have for further work. You will either find the Note sign at the beginning of a chapter or in a particular text passage in the chapter. Texts bearing this sign are additionally marked with **Note**. The text is always in italics.*

Caution

*This symbol indicates that the text that follows describes particular circumstances that you must avoid to avoid potential errors with the operation of the program or harm to data. You will either find the Caution sign at the beginning of a chapter or near a particular text passage in the chapter. Texts that are introduced by this sign are additionally marked with **Caution**. The text is always in italics.*

This symbol marks examples which serve to illustrate a certain situation.

1 This symbol marks the individual operational steps involved in a particular operating instruction. Operating instructions describe operational steps, for example, how to open a menu or execute a function.

This symbol marks listed subjects. The symbol for listed subjects can be either used to structure a continuous text or to list main subject keywords.

➢ This symbol marks list inside a bulleted or numbered list.

 This symbol marks cross reference information that is available in another manual.

1.3 New Functions in Database Upgrade

No new functionality has been added in this release.

2. Overview

Modifications to the object-oriented data model of the E5 database need to be made between the various release and service pack cycles of the DPE on a regular basis due to improvements to and modernization of the software architecture.

The version number of the model is increased by one for every modification to the data model. Since it was previously possible to make modifications to the data model between two service packs, the DB versions do not correspond to the release numbers of the DPE. Table 1 shows the connection between the database version and the corresponding DPE release:

Table 1: Database Version and DPE Release

DB-Version	DPE-Release
18	PE 5.12
19	PE 5.13
20	PE 5.14
21	PE 5.15
22	PE 5.16
23	PE 5.17
24	PE 5.18

Whenever a new software update is installed it is necessary to upgrade existing databases to the modified data model.
The following is differentiated throughout the text:

- **Software updates** (improvements, modernization of the software) and
- **Database upgrades** (upgrades of the database content).

Furthermore, the database versions are specified as a version reference throughout the text (e.g. DB18).

Note

Because of the potentially high number of objects to be modified, transaction protection was excluded (size of the recovery log). Therefore, it is essential to ensure that there are NO connections to the database when starting an upgrade. In this case the upgrader would definitely abort with an error. Furthermore the database should be backed up by means of an export BEFORE STARTING THE UPGRADER, since an upgrade of the database can not be undone.

Sections of the Manual

- **Section 1** on page 5 provides a short overview of the interaction between object-oriented and relational databases and their resultant difficulties.
- **Section 2** page 6 roughly describes the functionality of the database upgrade and its individual working steps as well as the individual components of the upgrade.
- **Section 3** page 10 describes the embedding of the upgrade call-up in the setup routines of a DPE installation.

- **Section 4** page 12 explains how to manually upgrade an (old) database after a new installation of the DPE software.
- **Section 5** page 14 discusses the possible reasons for an erroneous upgrade as well as its remedy.

Audiences

This manual has been written mainly for system administrators and employees with administrator rights. Not every user needs to know all of the functions described in the following.

Before reading this manual you should, if you are not familiar with older versions of the DELMIA Process Engineer, read the ORACLE Installation Manual, General Introduction Manual, the PPR-Navigator Manual, the Administrator Manual, the manuals on the Project and System Library, as well as the Settings Manual.

3. Object-Oriented and Relational Databases

The DELMIA Process Engineer® works with object-oriented databases. In an object-oriented database, the data model is by definition described by its data classes and their relations to one another (derivation hierarchy).

In the DPE, the implementation of FastObjects (earlier Poet) is used for this.

The data model is saved by FastObjects in so-called **Dictionaries**. If the data model is modified, the dictionaries are changed as well. A Dictionary contains the description of all classes of the database.

The relational database of ORACLE is used on the lowest level for the physical storage of the data of this object-oriented database. In order to transfer and store the data between these different database philosophies, a special 'mapping' of the object-oriented database must be made for the relational database. This 'mapping' is implemented by FastObjects and it requires a special relational database scheme based on the current object-oriented database scheme. Therefore, considerable modifications to the relational scheme are necessary if the class definitions are changed in the object-oriented view.

These modifications to the relational scheme are carried out by the previously mentioned ORACLE Changefiles. Since the scheme modifications are set analytically, it is possible to generate the change files by an automatism.

4. Operation Mode of Database Upgrade

4.1 Introduction

A database upgrade can be divided into two rough categories: the syntactic upgrade and the semantic upgrade.

- The **syntactic** upgrade refers to modifications to the data model and the related execution of the change files as well as the installation of the new dictionaries for the description of the object-oriented data model.
- The **semantic** upgrade describes the modifications to the data content. These are often necessary in order to keep the database consistent after the modification of the model.

The 'Syntactic' Upgrade
A syntactic upgrade is necessary when the definition of the classes has changed for the improvements to the software in the data model.

The new dictionaries are installed in the first step in order to familiarize the runtime environment of FastObjects with the new data model.

Since the data are saved in a basis ORACLE database, this means that the structure of the ORACLE tables, columns, views, and indices must be adapted to the new object-oriented data model.

- Therefore so-called 'ORACLE change files' are executed in the second step. This step can take anywhere from around 5 minutes to several hours depending on the scope of the modifications to the data model and the size of the upgraded database.

After the database is given a new scheme, it is generally necessary to carry out further semantic modifications.

The 'Semantic' Upgrade
A semantic upgrade is necessary whenever the structural changes are insufficient for the assignment of the values of an ORACLE table.

- This is the case when, for example, the definition of a class has changed so much that the contents of a table column are completely moved to another table column, with a type conversion whenever possible.

A semantic upgrade is also required whenever a new class is inserted into the class hierarchy of the data model. Related to this is the moving of objects of an existing class into a new class.

- This step can also easily take several hours for extensive modifications to the database scheme and a large database. This value is subject to major fluctuations between version changes.

4.2 Working Mode of the Database Upgrade

Since several release cycles can be skipped for a software update, the database upgrader must also be able to follow the release changes.

Since the maintenance of all possible release transitions would be too complicated, which would make it difficult to ensure consistent results

- the **PE 5.11**->**PE 5.12->PE 5.13->PE 5.14** would have to produce the same result as **PE 5.11->PE 5.13->PE 5.14 or PE 5.11->PE 5.14** -,
all necessary upgrade steps are executed iteratively whenever the database is upgraded. Only in this way is it possible to achieve the same results if, e.g. a PE 5.12 database is upgraded first with a PE 5.13 upgrader to PE 5.13, then with a PE 5.14 upgrader to PE 5.14, or if one upgrades the same PE 5.12 database directly with a PE 5.14 upgrader to PE 5.14.
For this reason the database upgrader consists of several components:

- The 'control program' (ep5DBupgrade.exe) which is called up for starting the conversion.
- The upgrade DLLs (ep5DBupgrade_(x)_(x+1).dll) that contain the functionality of the semantic upgrade of version (x) to version (x+1).

The control program first determines the current status of an existing database (the database version) and then decides which upgrade steps are then to be called up.

To prevent that the size of the upgrade program increases with every new release it is restricted to support the upgrade of four releases maximum; i.e. the upgrade of PE 5.16 is able to upgrade databases of releases PE 5.12, PE 5.13, PE5.14, and PE 5.15 to PE 5.16.
If you want to upgrade more release, for example run an upgrade from PE 5.10 to PE 5.16, you first need to upgrade to an intermediate release (for example PE 5.13 and then run the final upgrade to your target release.

Figure 1 shows that the upgrader has found a PE 5.11 database with the DB version 17 and it wants to upgrade it to the DB version 20 (PE 5.14).
Please refer to the Table 1.

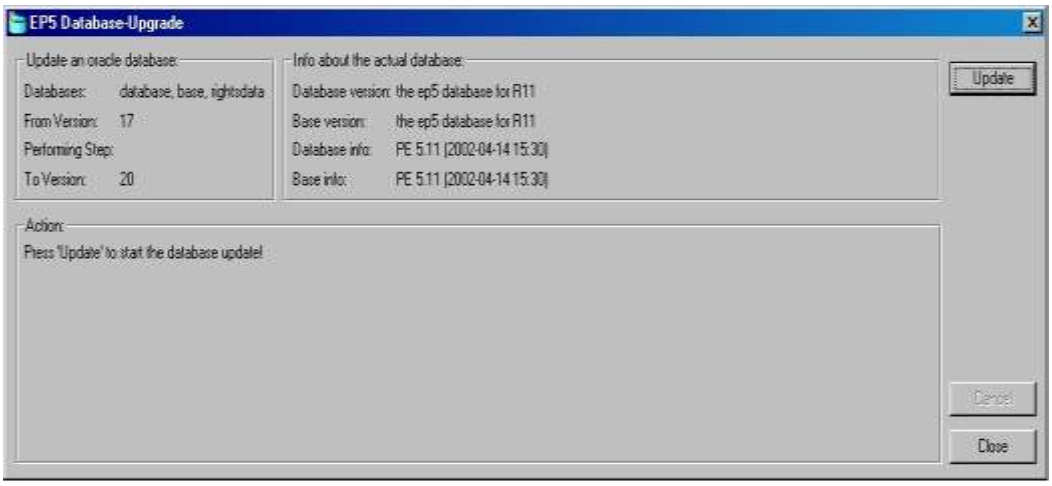


Figure 1: Upgrade to the DB Version 20

Every upgrade step includes the aforementioned syntactic and semantic actions. Since the syntactic upgrade actions exist in the form of ORACLE Changefiles and the FastObjects Dictionaries as separate files, the control program can install the Dictionaries for every step and start an SQL process that executes the changefiles corresponding to the upgrade step.

The semantic actions follow the syntactic upgrade actions. These could be further SQL scripts that modify content in the desired form in the ORACLE database or in C++ programmed modules, if the modifications to the content are more complex. These programmed modules can be found in the aforementioned DLLs, the additional SQL scripts also exist as separate files.

These are also found by the control program and are started in an SQL process, then the programmed modules are called up in the corresponding DLL. *Please refer to the* Figure 2.

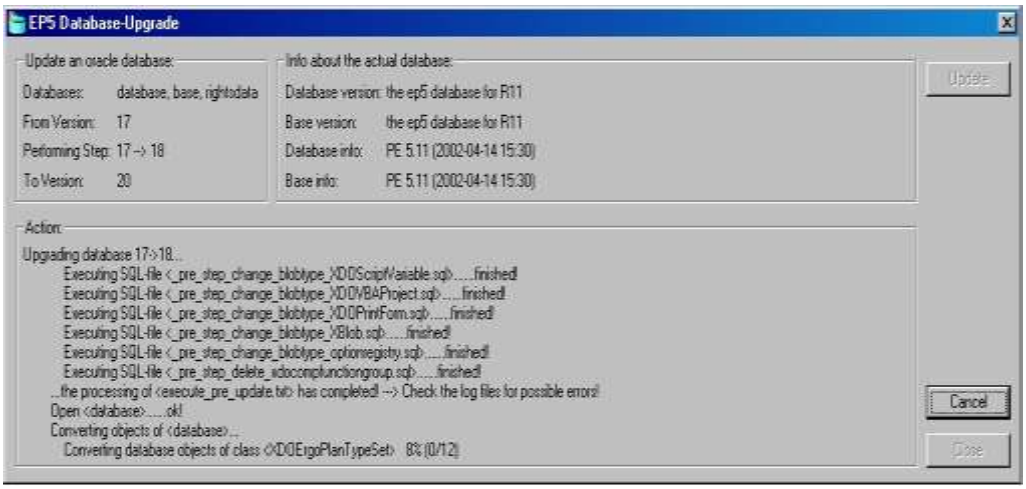


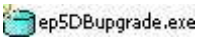
Figure 2: Programmed Modules Called up in the Corresponding DLL

This encapsulation of the semantic upgrade actions of a step into the DLLs and the syntactic actions of step into the separate SQL files makes it possible to work in previously tested functionalities into the upgrader of a higher release without changing them, which achieves the objective of maintaining constant consistence.

4.3 Components of Database Upgrade

A folder exists after the installation of the PPRServers

($PPRServer)/**epupgrader**



This folder and its subfolders contain the files necessary for the database upgrade. These include:

- ep5DBupgrade.exe
  the control program
- ep5DBupgrade_14_15.dll
  the semantic upgrade actions for the upgrade DB14->DB15
- ep5DBupgrade_19_20.dll
  the semantic upgrade actions for the upgrade DB19->DB20

In the folders dict_14_15, configdict_14_15, and rightsdict_14_15 are the FastObjects Dictionaries for the corresponding version as well as their ORACLE Changefiles and the other SQL scripts for the additional semantic actions to be executed on the SQL level.

4.4 Logging

All important steps executed by the database upgrader are logged in the folder '($PPRServer)/log'.

The log files are divided into the same logical units as the upgrader itself. The process number of the currently running upgrader is included in the file name in order to prevent older log files from being overwritten.

This means that the log files are named as follows:

- ep5DBupgrade.exe_1_xxx.log
  the actions of the control program
- ep5DBupgrade_17_18.dll_1_xxx.log
  The actions of the semantic upgrade actions DB17->DB18

'xxx' is the number of the created process.

The SQL scripts of the ORACLE Changefiles also create log files in this folder with the names:

- update_e5_database_pe513.log
- update_e5_base_pe513.log

In the Appendix you can find an example log file for an upgrade of a PE 5.11 database to PE 5.14 (DB 17 --> DB 20).

5. Automatic Start of the Upgrade

5.1 Upgrade Execution in the Setup

If the update mode is selected in the setup, the update is automatically executed by the setup after the DLLs are copied. When updating, the setup for the client must be executed first, and then the setup for the server can be executed.

In order to execute the upgrade of the database within the scope of the PPRServer setup, the 'update' mode must be selected in the setup options (instead of 'new installation'). *Please refer to the* Figure 3.

Note

If you want to install the PPRServer in the 'update' mode, ensure that the setup for the PPRClient is executed FIRST and only then is the setup for the Server executed.

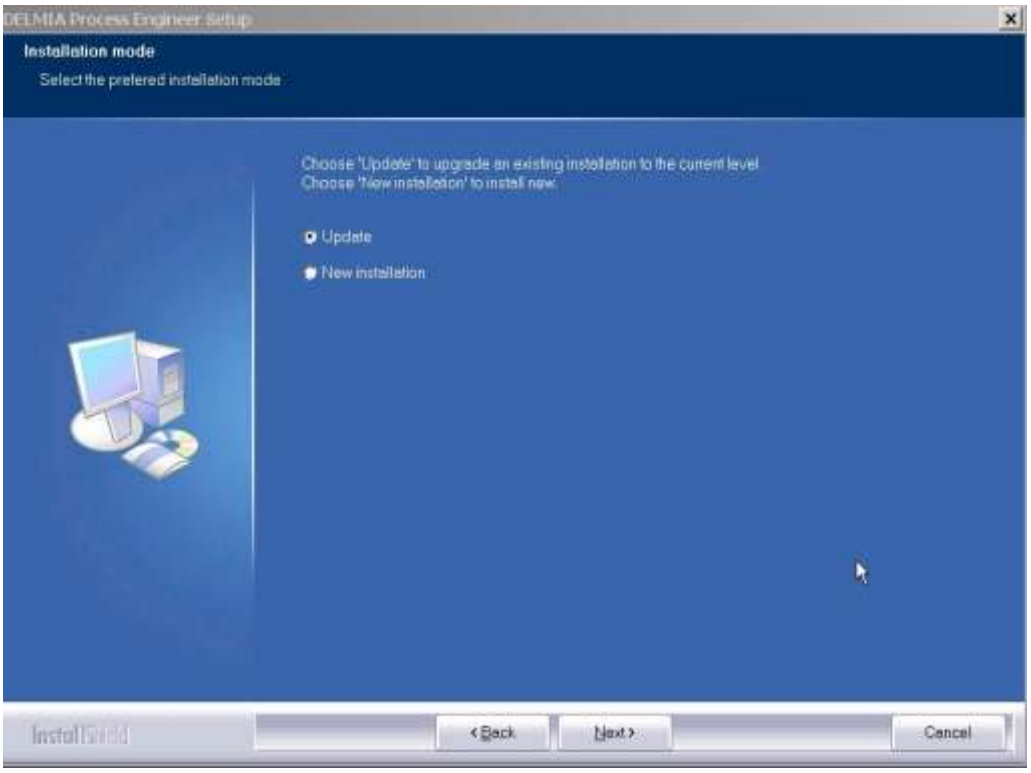


Figure 3: Update-Option in the Setup

Several actions are called up automatically that are necessary and sensible for the upgrade of the database after all of the PPRServer files have been installed.

These actions include the following individual steps:

- DBAnalyser (*Please refer to the* Administration Manual/DBAnalyser Manual) for clearing up defective references in the database.
- ep5DBupgrader for the syntactic and semantic upgrade of the database.

- CreateFunctionRights in order to create the necessary database objects for administering function permissions in the database.
- Import of the current ergoplan.ini into the configuration database
- Import of new PlanTypeSets into the configuration database
- DBAnalyser in order to eliminate newly created defective references

During this process, which can take several hours with large data sets, the executing database administrator can not influence the process.

Note

Please note that this upgrade is executed only once for every ORACLE database.

This means that in expansive environments with several PPR Clients that access an ORACLE database via multiple PPR Servers there must be a computer on which a PPR Client is installed, followed by an update installation of the PPR Server.

Then the database is upgraded so that only the setup must be carried out in the 'new installation' mode on all other PPR server computers, which is followed by the remaining PPR Client installations.

The upgrade of prototypes is not supported.

6. Manual Activation of the Upgrade

Caution

Be sure to back up the database beforehand by exporting it!

In large systems it is often more sensible to start the database upgrade independently of the execution of the installation setup.

- In this case the PPRServer setups are executed in the **'new installation'** mode first on all PPRServer machines.
- Then the PPR-Client setup is executed on all PPR-Client machines.

The software is now updated, but the database has still not been changed and the system is therefore not yet capable of running. Therefore a (**one-time**) manual activation of the database upgraders is necessary.

This must be executed on a computer with an installed PPR Server and PPR Client, since operations and information from both software components are required for the upgrade.
The manual upgrade is activated via the database assistants.

This is started either

- By the calling up of the file ***dbassistant.exe*** in the folder '...**PPRServer\Program\bin'** or
- Via the start menu **Programme/DELMIA/Tools/DBAssistant-Tools** .

➢ Then a dialog (Figure 4) appears in which you select the option 'Upgrade' in the category 'Upgrade Databases'.

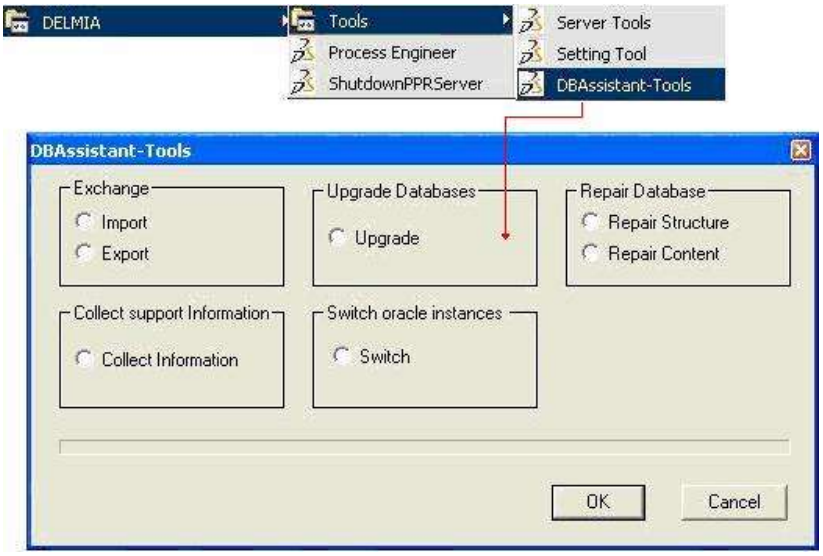


Figure 4: Start the dialog DBAssistant tools

After confirming with **OK** another dialog appears in which different connection data are entered (*Please refer to the* Figure 5).

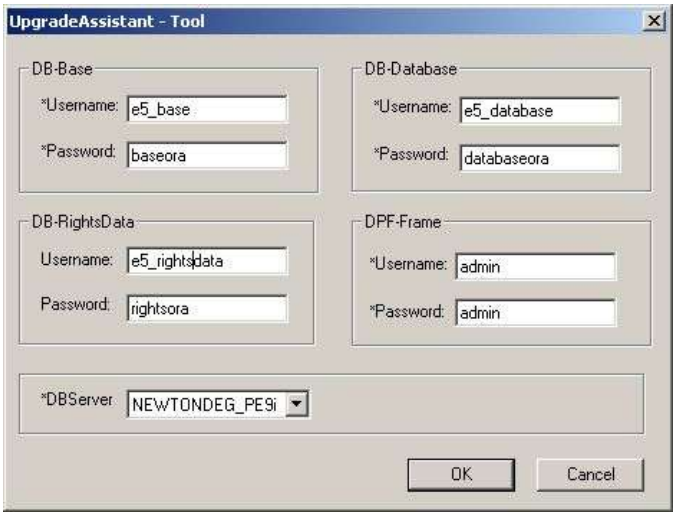


Figure 5: Dialog UpgradeAssistant - Tools

- **Categories DB-Base/DB-Database/DB-RightsData**
  Enter the login data of the various initial databases in these input fields. The rights database no longer exists as of and including release PE 5.12. If the initial release is PE 5.12 or newer, nothing needs to be entered in this input field.(*Please refer to the* Figure 5).

- **Category *DBServer**
  Since the ORACLE database can be located on any computer of the network, the computer name on which the ORACLE database is located must be specified.

- **Category DPF-Frame**
  For a correct database upgrade not only is the upgrader called up, but also the configuration data are imported by means of DPF-Frame. For this reason the code word and the password of the administrators must be entered.

Since the dictionaries were overwritten upon a new installation of the PPRServer, the dictionaries of the original database versions must be selected with the button **Browse**.

7. Solving Problems

Since very complex operations and complicated changes to the database and its structure are made during a database upgrade, there is a high potential for possible errors. Many of these errors can be found and rectified quickly by carefully reading the log files.

The following sections will therefore discuss the setup of the log files and the interpretation of the data they contain in detail.

In the Appendix you can find an example log file for an upgrade of a PE 5.11 database to PE 5.14 (DB 17 --> DB 20).

7.1 Setup of the Log File ep5DBupgrade.exe_1_xxx.log

7.1.1 Acquisition of the Database Information

As described previously in section 4.2, the first action of the control program is to establish the current database version and to derive the actions that need to be carried out.

The necessary working steps are logged in lines 13-77:

- Acquisition of connection data
- Evaluation of common line parameters
- Opening of the databases
- Reading of the version information

This is also where the most common error occurs: the database could not be opened for the analysis of the version since the existing FastObjects 'Dictionaries' is not compatible with the existing database.

- This can happen when the upgrade is not activated from the server setup but is manually started, and someone forgets to take care of the correct Dictionaries.

Other major causes of errors include incorrect settings in the registration editor or incorrect entries in the file **poet.cfg**.

Close examination of the 'Database Information Summary' (lines 68-74) reveals whether e.g. connection data for the incorrect database was found or whether a database is ignored for the upgrade, and the corresponding entries are missing in the registration editor in the acquisition of the connection information.

7.1.2 Syntactic Upgrade

In the next step the first syntactic upgrade actions are executed (lines 87-103, upgrading database dictionaries and structure). Especially the upgrade of the Dictionaries (lines 91-94) is a common but easy to handle reason for errors.

- In this step only the new Dictionary files are copied to the position later accessed by the PPR Server. As a rule there are already Dictionary files

there which are then overwritten. In rare cases they are write-protected, which leads to an error in the copying. This problem can be easily rectified by removing the write protection of the old Dictionary files.

The ORACLE Changefiles (lines 97-102) are executed after the upgrade of the Dictionaries.

- Any errors which occur here indicate sever inconsistencies in the upgraded database. In this case you should contact DELMIA Support in order to find out how a damaged database can be repaired.

7.1.3 Semantic Upgrade

The last working step in upgrading a version level is the execution of the semantic upgrade of additional SQL scripts and the programmed actions in the DLLs. All of these actions are logged in the corresponding log file (lines 105-110).

The most likely cause of any errors that may arise is an inconsistency of the database content. These are usually not severe problems; however because of the complexity of the upgrader and the different workflows of the DPE user, an individual analysis of the error is necessary.

7.1.4 Runtime Evaluation

At the end of the log file you find a large block (lines 219-546) with statistical evaluations on the runtime of the individual upgrade actions. This (largest) block is for information purposes only and it does not contain any information about possible errors in the upgrade.

7.2 Setup of the DLL Log Files

The various DLL log files contain only a listing of the executed SQL scripts for the semantic upgrade and the executed actions of the programmed semantic upgrade steps. If any errors occur here, only the position of the error occurrence is of any essential interest. Therefore, the structure of these log files is not discussed here.

7.3 Procedures when Errors Occur

If an error occurs during the upgrade and it could not be rectified, the following information and files are required by DELMIA Support for error analysis:

- Screenshots of error messages
- All log files in the folder ...**\PPRServer\log**
- Initial and objective releases must be known (date of the setup)
- Use ORACLE version (e.g. ORACLE 9i)
- Alert.log from ORACLE
- If possible, dumps of the initial version and the converted database.

Appendix

Example of a ep5DBUpgrade.exe log file

```
001
**********************************************************************
**********************************

002
**********************************************************************
**********************************

003  Log output of
e:\Programme\DELMIA\PPRServer\log\ep5DBupgrade.exe_1_3992.log

004  start: Wednesday, September 15, 2004 ; 10:58:38

005  ------------------------------------------------------------------
----------------------------------------

006

007  10:58:38: Start log output:

008            For File:
e:\Programme\DELMIA\PPRServer\epupdater\ep5DBupgrade.exe

009            Version:      2.14.0

010            Compile Date: Sep  2 2004

011            Compile Time: 10:32:07

012

013  10:58:38: Getting Information about available databases...

014

015  10:58:38: Initializing database access...

016

017                getting ep5 registry settings for <database>...

018                --> m_strConfigFile for <database> is
<E:\Programme\DELMIA\PPRServer\DB\poet.cfg>

019                --> m_strServerPoet for <database> is
<oracle_BIBLISDEG_O9ie>

020                --> m_strName for <database> is <data-
base_ora_BIBLISDEG_O9ie>
```

```
021                --> m_strUsername for <database> is <e5_database>
022                --> m_strPassword for <database> is <databaseora>
023
024                getting poet.cfg contents for <database>...
025                --> m_strDictPath for <database> is
<E:\Programme\DELMIA\PPRServer\DB\dict>
026                --> m_strPath for <database> is <e5_database>
027                --> Database is an Oracle database!
028
029                getting ep5 registry settings for <base>...
030                --> m_strConfigFile for <base> is
<E:\Programme\DELMIA\PPRServer\DB\poet.cfg>
031                --> m_strServerPoet for <base> is
<oracle_BIBLISDEG_O9ie>
032                --> m_strName for <base> is
<base_ora_BIBLISDEG_O9ie>
033                --> m_strUsername for <base> is <e5_base>
034                --> m_strPassword for <base> is <baseora>
035
036                getting poet.cfg contents for <base>...
037                --> m_strDictPath for <base> is
<E:\Programme\DELMIA\PPRServer\DB\configdict>
038                --> m_strPath for <base> is <e5_base>
039                --> Database is an Oracle database!
040
041                getting ep5 registry settings for <rightsdata>...
042                --> m_strConfigFile for <rightsdata> is
<E:\Programme\DELMIA\PPRServer\DB\poet.cfg>
043                --> m_strServerPoet for <rightsdata> is
<oracle_BIBLISDEG_O9ie>
044                --> m_strName for <rightsdata> is <rightsda-
ta_ora_BIBLISDEG_O9ie>
045                --> m_strUsername for <rightsdata> is
<e5_rightsdata>
046                --> m_strPassword for <rightsdata> is <rightsora>
047
048                getting poet.cfg contents for <rightsdata>...
049                --> m_strDictPath for <rightsdata> is
<E:\Programme\DELMIA\PPRServer\DB\rightsdict>
```

```
050                --> m_strPath for <rightsdata> is <e5_rightsdata>

051                --> Database is an Oracle database!

052

053  10:58:38: Parsing command line arguments...

054                -> command line option <General Settings: The new re-
lease string after upgrade> is set to <PE 5.14>!

055                -> command line option <General Settings: Quiet Mode>
is set to <true>!

056                ...ready

057

058  10:58:38: Getting database version(s)...

059                Open <database>......ok!

060  10:58:41:     Trying to get the actual version of <data-
base>......found <17>!

061                Open <base>......ok!

062  10:58:42:     Trying to get the actual version of <base>......found
<17>!

063                Open <rightsdata>......ok!

064  10:58:42:     Trying to get the actual version of <rightsda-
ta>......found <17>!

065

066            Database information summary:

067

068   /-----------------------------------------------------------------
-------------------------------------------------------------------\

069   |Database                       |Server
|Username/Password      |Nr.|Version String          |Version Info
|

070   |-------------------------------|---------------------|-------------
---------|---|------------------------|--------------------------|

071   |database_ora_BIBLISDEG_O9ie
|oracle_BIBLISDEG_O9ie|e5_database/databaseora| 17|the ep5 database for
R11|PE 5.11 (2002-04-14 15:30)|

072   |base_ora_BIBLISDEG_O9ie
|oracle_BIBLISDEG_O9ie|e5_base/baseora        | 17|the ep5 database for
R11|PE 5.11 (2002-04-14 15:30)|

073
|rightsdata_ora_BIBLISDEG_O9ie|oracle_BIBLISDEG_O9ie|e5_rightsdata/rights
ora| 17|the ep5 database for R11|PE 5.11 (2002-04-14 15:30)|

074   \-----------------------------------------------------------------
-------------------------------------------------------------------/

075

076  10:58:42: Checking action to perform...

077  10:58:42: Press 'Update' to start the database update!

078

079
```

```
080

081             ////////////////////////////

082             ****************************

083  10:58:42: Upgrading database 17->18...

084             ****************************

085             \\\\\\\\\\\\\\\\\\\\\\\\\\\\

086

087  10:58:42: Upgrading the database dictionaries and structure...

088

089  10:58:42:     Closing databases......ok!

090

091  10:58:43:     Upgrading the dictionaries...

092                Upgrade dictionary at
<E:\Programme\DELMIA\PPRServer\DB\dict> for <database>......done!

093                Upgrade dictionary at
<E:\Programme\DELMIA\PPRServer\DB\configdict> for <base>......done!

094                Upgrade dictionary at
<E:\Programme\DELMIA\PPRServer\DB\rightsdict> for <rightsdata>......done!

095                ...new dictionaries copied without errors!

096

097  10:58:43:     Upgrading the structure...

098  10:58:43:     Executing oracle change-file for <database>...

099
e:\Programme\DELMIA\PPRServer\epupdater\update_ora_database.bat
e5_database/databaseora@BIBLISDEG_O9ie
e:\Programme\DELMIA\PPRServer\epupdater\dict_17_18
e:\Programme\DELMIA\PPRServer\log e5_base/baseora@BIBLISDEG_O9ie...done!

100  11:00:49:     Executing oracle change-file for <base>...

101
e:\Programme\DELMIA\PPRServer\epupdater\update_ora_base.bat
e5_base/baseora@BIBLISDEG_O9ie
e:\Programme\DELMIA\PPRServer\epupdater\configdict_17_18
e:\Programme\DELMIA\PPRServer\log e5_base/baseora@BIBLISDEG_O9ie...done!

102                ...the database structure is updated without errors!

103  11:00:56: ...the upgrade of database dictionaries and structure has
completed without errors!

104

105  11:00:56: Upgrading the database objects...

106
****************************************************************************
****************************

107  11:00:56: Output continues in file
<ep5DBupgrade_17_18.dll_1_3992.log>...
```

```
108  11:01:29: ... output to <ep5DBupgrade_17_18.dll_1_3992.log> com-
pleted!
109
**********************************************************************
****************************
110  11:01:29: ...the upgrade of database objects has completed without
errors!
111
112  11:01:29: The upgrade of database step 17->18 has completed suc-
cessfully!
113
114  11:01:29: Getting database version(s)...
115  11:01:29:     Trying to get the actual version of <data-
base>......found <18>!
116  11:01:29:     Trying to get the actual version of <base>......found
<18>!
117                Close <rightsdata>......ok!
118
119
120
121            ////////////////////////////
122            **************************
123  11:01:29: Upgrading database 18->19...
124            **************************
125            \\\\\\\\\\\\\\\\\\\\\\\\\\\\
126
127  11:01:29: Upgrading the database dictionaries and structure...
128
129  11:01:29:     Closing databases......ok!
130
131  11:01:29:     Upgrading the dictionaries...
132                Upgrade dictionary at
<E:\Programme\DELMIA\PPRServer\DB\dict> for <database>......done!
133                Upgrade dictionary at
<E:\Programme\DELMIA\PPRServer\DB\configdict> for <base>......done!
134                ...new dictionaries copied without errors!
135
136  11:01:30:     Upgrading the structure...
```

```
137  11:01:30:     Executing oracle change-file for <database>...
138
e:\Programme\DELMIA\PPRServer\epupdater\update_ora_database.bat
e5_database/databaseora@BIBLISDEG_O9ie
e:\Programme\DELMIA\PPRServer\epupdater\dict_18_19
e:\Programme\DELMIA\PPRServer\log e5_base/baseora@BIBLISDEG_O9ie...done!
139  11:03:27:     Executing oracle change-file for <base>...
140
e:\Programme\DELMIA\PPRServer\epupdater\update_ora_base.bat
e5_base/baseora@BIBLISDEG_O9ie
e:\Programme\DELMIA\PPRServer\epupdater\configdict_18_19
e:\Programme\DELMIA\PPRServer\log e5_base/baseora@BIBLISDEG_O9ie...done!
141                ...the database structure is updated without errors!
142  11:03:32: ...the upgrade of database dictionaries and structure has
completed without errors!
143
144  11:03:32: Upgrading the database objects...
145
**************************************************************************
****************************
146  11:03:32: Output continues in file
<ep5DBupgrade_18_19.dll_1_3992.log>...
147  11:03:46: ... output to <ep5DBupgrade_18_19.dll_1_3992.log> com-
pleted!
148
**************************************************************************
****************************
149  11:03:46: ...the upgrade of database objects has completed without
errors!
150
151  11:03:46: The upgrade of database step 18->19 has completed success-
fully!
152
153  11:03:46: Getting database version(s)...
154  11:03:46:     Trying to get the actual version of <data-
base>......found <19>!
155  11:03:46:     Trying to get the actual version of <base>......found
<19>!
156
157
158
159            ////////////////////////////
160            **************************
161  11:03:46: Upgrading database 19->20...
162            **************************
163            \\\\\\\\\\\\\\\\\\\\\\\\\\\\
164
```

```
165  11:03:46: Upgrading the database dictionaries and structure...
166
167  11:03:46:     Closing databases......ok!
168
169  11:03:46:     Upgrading the dictionaries...
170                Upgrade dictionary at
<E:\Programme\DELMIA\PPRServer\DB\dict> for <database>......done!
171                Upgrade dictionary at
<E:\Programme\DELMIA\PPRServer\DB\configdict> for <base>......done!
172                ...new dictionaries copied without errors!
173
174  11:03:47:     Upgrading the structure...
175  11:03:47:     Executing oracle change-file for <database>...
176
e:\Programme\DELMIA\PPRServer\epupdater\update_ora_database.bat
e5_database/databaseora@BIBLISDEG_O9ie
e:\Programme\DELMIA\PPRServer\epupdater\dict_19_20
e:\Programme\DELMIA\PPRServer\log
e5_base/baseora@BIBLISDEG_O9ie...done!
177  11:06:12:     Executing oracle change-file for <base>...
178
e:\Programme\DELMIA\PPRServer\epupdater\update_ora_base.bat
e5_base/baseora@BIBLISDEG_O9ie
e:\Programme\DELMIA\PPRServer\epupdater\configdict_19_20
e:\Programme\DELMIA\PPRServer\log
e5_base/baseora@BIBLISDEG_O9ie...done!
179                ...the database structure is updated without er-
rors!
180  11:06:18: ...the upgrade of database dictionaries and structure
has completed without errors!
181
182  11:06:18: Upgrading the database objects...
183
**********************************************************************
**********************************
184  11:06:18: Output continues in file
<ep5DBupgrade_19_20.dll_1_3992.log>...
185  11:06:53: ... output to <ep5DBupgrade_19_20.dll_1_3992.log>
completed!
186
**********************************************************************
**********************************
187  11:06:53: ...the upgrade of database objects has completed
without errors!
188
189  11:06:53: The upgrade of database step 19->20 has completed
successfully!
190
191  11:06:53: Getting database version(s)...
192  11:06:53:     Trying to get the actual version of <data-
base>......found <20>!
```

```
193  11:06:53:     Trying to get the actual version of
<base>......found <20>!

194  11:06:53: Trying to write new version info into the databases...

195

196            Trying to write the new version info <PE 5.14> to Data-
base <database_ora_BIBLISDEG_O9ie>...

197            ... new version info was written successfully!

198

199            Trying to write the new version info <PE 5.14> to Data-
base <base_ora_BIBLISDEG_O9ie>...

200            ... new version info was written successfully!

201            ... new version info was written successfully!

202

203            Database information summary:

204

205   /-----------------------------------------------------------------
-------------------------------------------------\

206   |Database                    |Server
|Username/Password      |Nr.|Version String          |Version Info|

207   |----------------------------|--------------------|-------------
----------|---|-----------------------|------------|

208
|database_ora_BIBLISDEG_O9ie|oracle_BIBLISDEG_O9ie|e5_database/databas
eora| 20|the ep5 database for R14|PE 5.14     |

209   |base_ora_BIBLISDEG_O9ie
|oracle_BIBLISDEG_O9ie|e5_base/baseora        | 20|the ep5 database
for R14|PE 5.14     |

210   \-----------------------------------------------------------------
-------------------------------------------------/

211

212            Closing all databases...

213            Close Databases:

214            Close <database>......ok!

215            Close <base>......ok!

216            ...ready

217            ------ Upgrade completed successfully! ------

218

219
*********************************************************************
*********************************************

220            *
*

221            *                        Total running time for 'The
DBUpgrade Application': 08:15.25 minutes                        *

222            *
*

223
*********************************************************************
*********************************************
```

```
224             *
********************************************************************************
************************************ *

225             * * (0) Relation between database version update(s) and
additional framework operations:                                  * *

226             * *
* *

227             * * The DBUpgrade Application:
* *

228             * * Upgrading DB version <17> (1):
02:46.62 minutes ( 33.6%) * *

229             * * Upgrading DB version <18> (2):
02:16.94 minutes ( 27.6%) * *

230             * * Upgrading DB version <19> (3):
03:07.53 minutes ( 37.9%) * *

231             * * Additional operations:
04.17 seconds (  0.8%) * *

232             * * ------------------------------------------------------
------------------------------------------------------ * *

233             * * Total running time:
08:15.25 minutes (100.0%) * *

234             * *
* *

235             * * Summaries for 'The DBUpgrade Application':
* *

236             * * ----------------------------------------
* *

237             * *
* *

238             * * Relation between updates of several databases of all
versions:                                                 * *

239             * *
* *

240             * * Upgrade <database>:
07:04.67 minutes ( 85.7%) * *

241             * * Upgrade <base>:
37.06 seconds (  7.5%) * *

242             * * Upgrade <rightsdata>:
14.18 seconds (  2.9%) * *

243             * * Additional operations:
19.34 seconds (  3.9%) * *

244             * * ------------------------------------------------------
------------------------------------------------------ * *

245             * * Total running time:
08:15.25 minutes (100.0%) * *

246             * *
* *

247             * * Relation between structure and object updates of all
versions:                                                 * *

248             * *
* *

249             * * Upgrade <structure>:
06:48.93 minutes ( 82.6%) * *
```

```
250             * * Upgrade <object>:
01:06.98 minutes ( 13.5%) * *

251             * * Additional operations:
19.34 seconds (  3.9%) * *

252             * * ------------------------------------------------------------
------------------------------------------------- * *

253             * * Total running time:
08:15.25 minutes (100.0%) * *

254             * *
* *

255             * * Relation between SQL and internal operations for all ob-
ject updates:                                                 * *

256             * *
* *

257             * * Upgrade <SQL>:
25.26 seconds (  5.1%) * *

258             * * Upgrade <internal>:
41.72 seconds (  8.4%) * *

259             * * Additional operations:
07:08.27 minutes ( 86.5%) * *

260             * * ------------------------------------------------------------
------------------------------------------------- * *

261             * * Total running time:
08:15.25 minutes (100.0%) * *

262             *
********************************************************************************
********************************** *

263             *
*

264             *
********************************************************************************
********************************** *

265             * * (1) Relation between structure and object update for ver-
sion <17>:                                                    * *

266             * *
* *

267             * * Upgrading DB version <17>:
* *

268             * * Upgrading structure (1.1):
02:13.75 minutes ( 80.3%) * *

269             * * Upgrading objects (1.2):
32.83 seconds ( 19.7%) * *

270             * * Additional operations:
00.05 seconds (  0.0%) * *

271             * * ------------------------------------------------------------
------------------------------------------------- * *

272             * * Total running time:
02:46.62 minutes (100.0%) * *

273             * *
* *

274             * * Summaries for 'Upgrading DB version <17>':
* *

275             * * ----------------------------------------
* *
```

```
276             * *
* *

277             * * Relation between updates of several databases of version
<17>:                                                   * *

278             * *
* *

279             * * Upgrade <database>:
02:15.57 minutes ( 81.4%) * *

280             * * Upgrade <base>:
11.94 seconds (  7.2%) * *

281             * * Upgrade <rightsdata>:
14.18 seconds (  8.5%) * *

282             * * Additional operations:
04.93 seconds (  3.0%) * *

283             * * ------------------------------------------------------
------------------------------------------------- * *

284             * * Total running time:
02:46.62 minutes (100.0%) * *

285             * *
* *

286             * * Relation between structure and object updates of version
<17>:                                                   * *

287             * *
* *

288             * * Upgrade <structure>:
02:13.35 minutes ( 80.0%) * *

289             * * Upgrade <object>:
28.33 seconds ( 17.0%) * *

290             * * Additional operations:
04.93 seconds (  3.0%) * *

291             * * ------------------------------------------------------
------------------------------------------------- * *

292             * * Total running time:
02:46.62 minutes (100.0%) * *

293             * *
* *

294             * * Relation between SQL and internal operations for all ob-
ject updates in version <17>:                             * *

295             * *
* *

296             * * Upgrade <SQL>:
05.97 seconds (  3.6%) * *

297             * * Upgrade <internal>:
22.36 seconds ( 13.4%) * *

298             * * Additional operations:
02:18.29 minutes ( 83.0%) * *

299             * * ------------------------------------------------------
------------------------------------------------- * *

300             * * Total running time:
02:46.62 minutes (100.0%) * *

301             * *
* *

302             * * (2) Relation between structure and object update for
version <18>:                                           * *
```

```
303             * *
* *

304             * * Upgrading DB version <18>:
* *

305             * * Upgrading structure (2.1):
02:03.60 minutes ( 90.3%) * *

306             * * Upgrading objects (2.2):
13.32 seconds (  9.7%) * *

307             * * Additional operations:
00.02 seconds (  0.0%) * *

308             * * ----------------------------------------------------
---------------------------------------------------------- * *

309             * * Total running time:
02:16.94 minutes (100.0%) * *

310             * *
* *

311             * * Summaries for 'Upgrading DB version <18>':
* *

312             * * ----------------------------------------
* *

313             * *
* *

314             * * Relation between updates of several databases of
version <18>:                                                    * *

315             * *
* *

316             * * Upgrade <database>:
02:05.88 minutes ( 91.9%) * *

317             * * Upgrade <base>:
06.47 seconds (  4.7%) * *

318             * * Additional operations:
04.59 seconds (  3.3%) * *

319             * * ----------------------------------------------------
---------------------------------------------------------- * *

320             * * Total running time:
02:16.94 minutes (100.0%) * *

321             * *
* *

322             * * Relation between structure and object updates of
version <18>:                                                    * *

323             * *
* *

324             * * Upgrade <structure>:
02:03.21 minutes ( 90.0%) * *

325             * * Upgrade <object>:
09.14 seconds (  6.7%) * *

326             * * Additional operations:
04.59 seconds (  3.3%) * *

327             * * ----------------------------------------------------
---------------------------------------------------------- * *

328             * * Total running time:
02:16.94 minutes (100.0%) * *

329             * *
* *
```

```
330             * * Relation between SQL and internal operations for
all object updates in version <18>:                                 * *
331             * *
* *
332             * * Upgrade <SQL>:
03.28 seconds (  2.4%) * *
333             * * Upgrade <internal>:
05.86 seconds (  4.3%) * *
334             * * Additional operations:
02:07.79 minutes ( 93.3%) * *
335             * * ------------------------------------------------
---------------------------------------------------------- * *
336             * * Total running time:
02:16.94 minutes (100.0%) * *
337             * *
* *
338             * * (3) Relation between structure and object update
for version <19>:                                                   * *
339     * *
* *
340             * * Upgrading DB version <19>:
* *
341             * * Upgrading structure (3.1):
02:32.75 minutes ( 81.5%) * *
342             * * Upgrading objects (3.2):
34.76 seconds ( 18.5%) * *
343             * * Additional operations:
00.02 seconds (  0.0%) * *
344             * * ------------------------------------------------
---------------------------------------------------------- * *
345             * * Total running time:
03:07.53 minutes (100.0%) * *
346             * *
* *
347             * * Summaries for 'Upgrading DB version <19>':
* *
348             * * ----------------------------------------
* *
349             * *
* *
350             * * Relation between updates of several databases of
version <19>:                                                       * *
351             * *
* *
352             * * Upgrade <database>:
02:43.22 minutes ( 87.0%) * *
353             * * Upgrade <base>:
18.66 seconds (  9.9%) * *
354             * * Additional operations:
05.65 seconds (  3.0%) * *
355             * * ------------------------------------------------
---------------------------------------------------------- * *
356             * * Total running time:
03:07.53 minutes (100.0%) * *
* *
```

```
357             * *
* *
358             * * Relation between structure and object updates of ver-
sion <19>:                                                    * *
359             * *
* *
360             * * Upgrade <structure>:
02:32.37 minutes ( 81.3%) * *
361             * * Upgrade <object>:
29.51 seconds ( 15.7%) * *
362             * * Additional operations:
05.65 seconds (  3.0%) * *
363             * * ------------------------------------------------------
------------------------------------------------------ * *
364             * * Total running time:
03:07.53 minutes (100.0%) * *
365             * *
* *
366             * * Relation between SQL and internal operations for all
object updates in version <19>:
367             * *
* *
368             * * Upgrade <SQL>:
369             * * Upgrade <internal>:
13.50 seconds (  7.2%) * *
370             * * Additional operations:
02:38.02 minutes ( 84.3%) * *
371             * * ------------------------------------------------------
------------------------------------------------------ * *
372             * * Total running time:
03:07.53 minutes (100.0%) * *
373             *
**************************************************************************
**************************************** *
374             *
*
375             *
**************************************************************************
**************************************** *
376             * * (1.1) Relation between several structure upgrades of
version <17>:                                                 * *
377             * *
* *
378             * * Upgrading structure:
* *
379             * * Upgrading structure of <database>:
02:06.63 minutes ( 94.7%) * *
380             * * Upgrading structure of <base>:
06.72 seconds (  5.0%) * *
381             * * Upgrading structure of <rightsdata>:
00.00 seconds (  0.0%) * *
382             * * Additional operations:
00.39 seconds (  0.3%) * *
383             * * ------------------------------------------------------
------------------------------------------------------ * *
```

```
384             * * Total running time:
02:13.75 minutes (100.0%) * *
385             * *
* *
386             * * (1.2) Relation between several object upgrade
operations for <17>:                                            *
*
387             * *
* *
388             * * Upgrading objects:
* *
389             * * Upgrading objects of <database> (1.2.1):
12.24 seconds ( 37.3%) * *
390             * * Upgrading objects of <base> (1.2.2):
06.30 seconds ( 19.2%) * *
391             * * Upgrading objects of <rightsdata> (1.2.3):
14.22 seconds ( 43.3%) * *
392             * * Additional operations:
00.08 seconds (  0.2%) * *
393             * * ------------------------------------------------
------------------------------------------------------------ * *
394             * * Total running time:
32.83 seconds (100.0%) * *
395             * *
* *
396             * * (2.1) Relation between several structure up-
grades of version <18>:
* *
397             * *
* *
398             * * Upgrading structure:
* *
399             * * Upgrading structure of <database>:
01:57.80 minutes ( 95.3%) * *
400             * * Upgrading structure of <base>:
05.40 seconds (  4.4%) * *
401             * * Additional operations:
00.39 seconds (  0.3%) * *
402             * * ------------------------------------------------
------------------------------------------------------------ * *
403             * * Total running time:
02:03.60 minutes (100.0%) * *
404             * *
* *
405             * * (2.2) Relation between several object upgrade
operations for <18>:                                            *
*
406             * *
* *
407             * * Upgrading objects:
* *
408             * * Upgrading objects of <database> (2.2.1):
11.70 seconds ( 87.9%) * *
409             * * Upgrading objects of <base> (2.2.2):
01.55 seconds ( 11.7%) * *
* *
```

```
410             * * Additional operations:
00.06 seconds (  0.5%) * *
411             * * ------------------------------------------------------------
------------------------------------------------- * *
412             * * Total running time:
13.32 seconds (100.0%) * *
413             * *
* *
414             * * (3.1) Relation between several structure upgrades of ver-
sion <19>:                                                * *
415             * *
* *
416             * * Upgrading structure:
* *
417             * * Upgrading structure of <database>:
02:26.26 minutes ( 95.8%) * *
418             * * Upgrading structure of <base>:
06.11 seconds (  4.0%) * *
419             * * Additional operations:
00.38 seconds (  0.2%) * *
420             * * ------------------------------------------------------------
------------------------------------------------- * *
421             * * Total running time:
02:32.75 minutes (100.0%) * *
422             * *
* *
423             * * (3.2) Relation between several object upgrade operations
for <19>:
424             * *
* *
425             * * Upgrading objects:
426             * * Upgrading objects of <database> (3.2.1):
21.61 seconds ( 62.2%) * *
427             * * Upgrading objects of <base> (3.2.2):
13.05 seconds ( 37.5%) * *
428             * * Additional operations:
00.11 seconds (  0.3%) * *
429             * * ------------------------------------------------------------
------------------------------------------------- * *
430             * * Total running time:
34.76 seconds (100.0%) * *
431             *
*********************************************************************
* *
432             *
*
433             *
*********************************************************************
* *
434             * * (1.2.1) Relation between several upgrade operations for
<database> of version <17>:                               * *
435             * *
* *
436             * * Upgrading objects of <database>:                     *
```

```
437            * * Executing <_pre_step_change_blobtype_XDOScript.sql>:
                       00.52 seconds (  4.2%) * *
 438             * * Executing
<_pre_step_change_blobtype_XDOScriptVariable.sql>:
01.48 seconds ( 12.1%) * *
439            * * Executing
<_pre_step_change_blobtype_XDOVBAProject.sql>:
00.46 seconds (  3.7%) * *
440            * * Executing
<_pre_step_change_blobtype_XDOPrintForm.sql>:
00.71 seconds (  5.8%) * *
441            * * Executing <_pre_step_change_blobtype_XBlob.sql>:
00.42 seconds (  3.5%) * *
442            * * Executing
<_pre_step_change_blobtype_optionregistry.sql>:
00.69 seconds (  5.6%) * *
443            * * Executing
<_pre_step_delete_xdocompfunctiongroup.sql>:
00.30 seconds (  2.4%) * *
444            * * Switch set to backpointer in <XDOErgoPlanTypeSet>:
02.73 seconds ( 22.3%) * *
445            * * Switch set to backpointer in <XDOCoderule>:
00.34 seconds (  2.8%) * *
446            * * Performing <Update_ExposedLinks_XDOBlob>:
00.16 seconds (  1.3%) * *
447            * * Performing <Up-
date_ExposedLinks_XDOSimulationWorkcell1>:
00.02 seconds (  0.1%) * *
448            * * Performing <Update_XBlob>:
00.00 seconds (  0.0%) * *
449            * * Performing <Update_RelationShipErgoSysElem>:
01.12 seconds (  9.1%) * *
450            * * Performing <Update_XDOSDMObjectStorageItem>:
00.00 seconds (  0.0%) * *
451            * * Additional operations:
03.30 seconds ( 27.0%) * *
452            * * ------------------------------------------------------
---------------------------------------------------- * *
453            * * Total running time:
12.24 seconds (100.0%) * *
454            * *
* *
455            * * (1.2.2) Relation between several upgrade operations
for <base> of version <17>:                                  * *
456            * *
* *
457            * * Upgrading objects of <base>:
* *
458            * * Executing
<_pre_step_change_blobtype_XPtConfiguration.sql>:
00.46 seconds (  7.2%) * *
459            * * Executing
<_pre_step_change_blobtype_XPtPrintForm.sql>:
00.56 seconds (  9.0%) * *
```

```
460            * * Executing
<_pre_step_change_blobtype_optionregistry.sql>:

00.38 seconds (  6.0%) * *

00.03 seconds (  0.2%) * *

461            * * Performing <Update_ParentChildInheritEff>:
03.82 seconds ( 60.6%) * *

462            * * Additional operations:

01.09 seconds ( 17.2%) * *

463            * * ------------------------------------------------ * *

464            * * Total running time:
06.30 seconds (100.0%) * *

465            * *                                                 * *

466            * * (1.2.3) Relation between several upgrade operations for
<rightsdata> of version <17>:                                    * *

467            * *                                                   * *

468            * * Upgrading objects of <rightsdata>:                * *

469         * * Integrate rights from <rightsdata> to <database>:
14.18 seconds ( 99.8%) * *

470            * * Additional operations:

471            * * ------------------------------------------------ * *

472            * * Total running time:

14.22 seconds (100.0%) * *

473            * *

* *

474            * * (2.2.1) Relation between several upgrade operations for
<database> of version <18>:

* *

475            * *                                                     * *

476            * * Upgrading objects of <database>:                  * *

477            * * Executing <_pre_step_change_blobtype_XDOScript.sql>:
00.31 seconds (  2.7%) * *

478            * * Executing
<_pre_step_change_blobtype_XDOScriptVariable.sql>:
00.30 seconds (  2.6%) * *

479            * * Executing <_pre_step_change_blobtype_XDOVBAProject.sql>:
00.31 seconds (  2.7%) * *

480            * * Executing <_pre_step_change_blobtype_XDOPrintForm.sql>:
00.31 seconds (  2.7%) * *

481            * * Executing <_pre_step_change_blobtype_XBlob.sql>:
00.30 seconds (  2.6%) * *

482            * * Executing
<_pre_step_change_blobtype_optionregistry.sql>:
00.68 seconds (  5.8%) * *

483            * * Performing <Up-
date_RelationshipReplaceOwnerErgoComponent>:
01.82 seconds ( 15.6%) * *

484            * * Switching <MUFunctionName> to lower:
00.10 seconds (  0.8%) * *

485            * * Performing <Update_XDOErgoPlanType>:
03.94 seconds ( 33.7%) * *
```

```
486             * * Additional operations:
03.63 seconds ( 31.0%) * *

487             * * ------------------------------------------------
---- * *

488             * * Total running time:
11.70 seconds (100.0%) * *

489             * *
* *

490             * * (2.2.2) Relation between several upgrade opera-
tions for <base> of version <18>:                                  *
*

491             * *
* *

492             * * Upgrading objects of <base>:
* *

493             * * Executing
<_pre_step_change_blobtype_XPtConfiguration.sql>:
00.33 seconds ( 21.2%) * *

494             * * Executing
<_pre_step_change_blobtype_XPtPrintForm.sql>:
00.30 seconds ( 19.2%) * *

495             * * Executing
<_pre_step_change_blobtype_optionregistry.sql>:
00.44 seconds ( 28.3%) * *

496             * * Additional operations:
00.49 seconds ( 31.3%) * *

497             * * ------------------------------------------------
* *

498             * * Total running time:
01.55 seconds (100.0%) * *

499             * *
* *

500             * * (3.2.1) Relation between several upgrade opera-
tions for <database> of version <19>:                              *
*

501             * *
* *

502             * * Upgrading objects of <database>:                  *
*

503             * * Executing
<_pre_step_change_blobtype_XDOScript.sql>:
00.30 seconds (  1.4%) * *

504             * * Executing
<_pre_step_change_blobtype_XDOScriptVariable.sql>:
00.30 seconds (  1.4%) * *

505             * * Executing
<_pre_step_change_blobtype_XDOVBAProject.sql>:
00.33 seconds (  1.5%) * *

506             * * Executing
<_pre_step_change_blobtype_XDOPrintForm.sql>:
00.46 seconds (  2.1%) * *

507             * * Executing <_pre_step_change_blobtype_XBlob.sql>:
00.31 seconds (  1.5%) * *

508             * * Executing
<_pre_step_change_blobtype_XBlobValue.sql>:
00.53 seconds (  2.5%) * *
```

```
509            * * Executing
<_pre_step_change_blobtype_optionregistry.sql>:
00.60 seconds (  2.8%) * *

510            * * Executing <_pre_step_clean_up_XDOAttributeValue.sql>:
00.88 seconds (  4.1%) * *

511            * * Executing <_pre_step_eleminate_XDOBom.sql>:
01.54 seconds (  7.1%) * *

512            * * Executing <_pre_step_compile_invalid_views.sql>:
05.30 seconds ( 24.5%) * *

513            * * Executing <_pre_step_update_xdodefaultimpl.sql>:
03.39 seconds ( 15.7%) * *

514            * * Performing <Update_XDOScriptAction>:
00.01 seconds (  0.1%) * *

515            * * Setting <m_bMaxCar> in <XDOErgoCompProcessDefault> to
<true>:                           01.32 seconds (  6.1%) * *

516               * * Setting <m_bExposedLinksUpdated> in <XDOBlob> to
<true>:                                 00.06 seconds (  0.3%) * *

517            * * Setting <m_bExposedLinksUpdated> in <XDOSimulation-
Workcell> to <true>:                  00.02 seconds (  0.1%) * *

518            * * Setting <m_strKey> in <XDOAttributeValue> to lower:
00.03 seconds (  0.1%) * *

519            * * In <XBlobValue> move <m_blob> to <m_data>:
00.00 seconds (  0.0%) * *

520            * * Copy attributes in <XDOErgoCompPlantStation>:
00.49 seconds (  2.2%) * *

521            * * Update 'Manufacturing Assembly' objects in <XDOErgoP-
lanType>:                           00.02 seconds (  0.1%) * *

522            * * Create new welding points and plantypes:
01.10 seconds (  5.1%) * *

523            * * Additional operations:
04.64 seconds ( 21.5%) * *

524            * * ------------------------------------------- * *

525            * * Total running time:
21.61 seconds (100.0%) * *

526   *
* *

527            * * (3.2.2) Relation between several upgrade operations
for <base> of version <19>:                                  * *

528            * *
* *

529            * * Upgrading objects of <base>:
* *

530            * * Executing
<_pre_step_change_blobtype_XPtConfiguration.sql>:
01.11 seconds (  8.5%) * *

531            * * Executing
<_pre_step_change_blobtype_XPtPrintForm.sql>:
00.31 seconds (  2.4%) * *

532            * * Executing
<_pre_step_change_blobtype_optionregistry.sql>:
00.36 seconds (  2.8%) * *

533            * * Executing <_pre_step_compile_invalid_views.sql>:
00.30 seconds (  2.3%) * *
```

```
534            * * Finding <XPtAttributes> with 'InAVSet=true':
08.91 seconds ( 68.3%) * *
535            * * Setting <m_attributeName> in <XPtAttribute> to lower:
01.55 seconds ( 11.9%) * *
536            * * Additional operations:
00.50 seconds (  3.8%) * *
537            * * ------------------------------------------------------
------------------------------------------------------ * *
538            * * Total running time:
13.05 seconds (100.0%) * *
539            * ******************************************************
*
540            *                                                      *
541            * ********************************************** *
542            * ********************************************** *
543            ******************************************************
544  ************************************
545  finish: Wednesday, September 15, 2004 ; 11:06:59
546  ------------------------------------------------------------------------
-------------------------------------
547
548
```

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