

Oracle Applications Release 10.7 Patching Methodology

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Last Updated: 16 October, 1998

Overview

This paper is meant to provide a methodology to aid in the application and administration of patches in an Oracle Applications environment. It does not attempt to document the patch utilities, which can be found in the various Oracle Applications installation manuals, but rather a methodology to manage patching.

Oracle Applications requires many patches to be installed in order to function properly. Patches are typically considered to be of two types, bug patches or release updates, and typically have a client component (e.g. SmartClient or NCA patch) and a server component (e.g. Oracle Applications product files and database). Patches are obtained from Oracle's World Wide Customer Support (WWS) organization through email, ftp, or mail (e.g. tape or CD). Server patches are installed using the Oracle Applications AutoPatch Utility (e.g. adpatch), and client patches are installed either with a special Oracle Applications SmartClient utility called "otto.exe", or for NCA with the adpatch utility. This document will outline the administrative issues of creating and maintaining an Oracle Applications patching methodology. For a complete reference on the AutoPatch utility see the Oracle Applications Installation Manual, for instructions on using the otto utility see the readme file supplied with each SmartClient client patch, and for NCA patching instructions see the NCA Supplement Installation Manual.

Patching

Patch Architecture

There are two levels of patches in Oracle Applications. There are bug level patches which typically affect a single Oracle Applications product and there are major product level patches that affect an entire Oracle Applications product group. An example of a bug level patch might be one that fixes an error in an Oracle Payables form, and examples of major product level patches would include the 10.6.1 upgrade patch, the Reports 2.5 Interoperability patch, and the SmartClient server updates patch.

Patches are typically distributed in a compressed format which will vary by platform. In a UNIX environment patches are usually distributed as compressed tar files and in the Windows

environment they are usually distributed as self-extracting executables.

Patch Administration

The following section will address the administrative issues associated with installing, testing, and coordinating patch application in an Oracle Applications environment.

Patch Testing

Once a patch has been identified and obtained from Oracle WWS it will need to be installed and tested in a suitable "test" environment. After the patch has been installed and testing shows that it functions correctly it can then be installed into the production environment. It is important to note that testing should identify that the patch fixes the problem at hand and that it does not introduce any obvious "side effects".

Record Keeping

A record should be kept of the patch's status as it is applied to each environment. Ideally this record will identify the TAR associated with the patch, the dates and environments it has been applied to, and the testing status. Relying on the Oracle Applications product file directory and the install logs are a difficult and error prone method of record keeping. A sample format is included in Appendix A.

Installation Coordination

In order to install an Oracle Applications bug level patch the concurrent manager processes must be shut down. This allows for possible relinking of Oracle Applications product files executables.

To install an Oracle Applications major product level patch all users must be logged off the system and the concurrent manager processes must be shut down.

For customers that have implemented the SmartClient or NCA architecture some patches will contain both a client component (e.g. SmartClient or NCA patch) and a server component (e.g. Oracle Applications product files and database). These two components are dependent on each other and their application must be coordinated in order to avoid client side errors. In addition, for SmartClient or NCA installations multiple environments (e.g. \apps10 or \appsnc directories) may need to be maintained in order to coordinate the access to different systems based on patches applied.

Obtaining Patches

Patches should generally be obtained from Oracle's World Wide Support in response to a TAR. However, Oracle creates SmartClient and NCA "megapatches", cumulative client and server patches bundled for each application, and places them on the Oracle ftp site: *oracle-ftp.us.oracle.com*. These patches can be obtained and applied proactively to help reduce the

number of bug level patches called in to Oracle support.

Server Patch Application

Server patch application involves applying the server patch to the Oracle Applications product files (e.g. \$APPL_TOP). Server patches may include several pre-requisite patches and comprise a product file component and an optional database component. One or more driver files control this behavior with patch.drv being the default product file driver and dbxxxxxx.drv, where xxxxxx is the patch number, being the database driver file naming convention.

All server patches are applied with the adpatch utility and come with readme.txt files that may include special instructions.

Note: It is critical that these special instructions be followed.

See the Oracle Applications Installation Guide for more details on the adpatch utility and its function.

Patch Distribution

Server patches are usually distributed as compressed tar files in a UNIX environment and self-extracting zip files for NT. For UNIX they typically have the naming format of <patch number_<rel numbert.Z where patch number is the patch number, rel number is the Oracle Applications release number, t is for tar format, and Z is for compressed format. An example would be 609584_1070t.Z. The following commands at the UNIX prompt will uncompress the file and untar it into a directory with the name 609584:

```
uncompress 609584_1070t.Z
tar xvf 609584_1070t
```

For NT the patch is usually supplied with the naming format of <patch number.exe and is uncompressed by executing it.

Application Bug Patches

Application Patch Directories

Patches should be loaded and run from "patch" directories located in the appropriate application's TOP directory (e.g. \$GL_TOP/patch). The problem with locating all patches in one global area is that it is very difficult to determine/segregate patches by application.

The "patch" directory may exist if server patches have already been applied. In general, we recommend not distinguishing between Oracle Applications bug patches and SmartClient bug level server patches. However, SmartClient major product level patches are loaded into a "patchsc" directory by adpatch, and we leave to the discretion of the individual site as to whether to use this directory to further segregate Oracle Applications bug patches from SmartClient bug

level server patches.

Individual Patch Directories

Each patch will be placed in its own directory when it is untar'd. If the patch is being obtained due to an Oracle TAR request, as opposed to the UNIX tar utility, then from an administrative viewpoint it is advantageous to locate each of these patch directories under a parent directory with the tar number as its name. An example would be tar10563947_6 for TAR 10563947_6. This has two benefits. The first is to help track the patches back to TARs. Oracle WWS tracks customer issues by TAR number and not by patch numbers, and by identifying patches with their TAR number it makes it easier to find the patches associated with specific TARs. The second benefit is that some TARs involve multiple patches and it makes it more intuitive to associate multiple patches together for a single problem fix.

Log File Naming

When patches are applied, the patch.driv log files should be named with the main patch number (e.g. usually the directory name. For database driver files (e.g. dbxxxxxx.driv) the log file should be named with db following the number of the driver file.

Examples:

362299.log ← patch.driv

362299db.log ← db362299.driv

In the case where the applications product files are being shared by more than one product group an appropriate product group identifier should be prefaced to each log created.

Example:

oadev_362299.log

Note: On NT the log file name is limited to eight characters since adpatch runs in a command prompt window.

Major Product Patches

Patch Directories

Major product level patches should be loaded in separate directories located in the \$APPL_TOP directory.

Examples:

\$APPL_TOP/patch1061

\$APPL_TOP/patchr25

\$APPL_TOP/patchSC

Log File Naming

Log files should usually be named with the name of the driver file being run. Because many of the major patches have multiple driver files associated with them this helps identify which driver files were run.

Readme Files

All patches are supplied with readme.txt files. The key section of these files is the "Special Instructions" section. This section should be scanned and the directions followed as appropriate.

Note: It is critical that these special instructions be followed.

Client Patch Application

SmartClient

Client patch application involves applying the client patch to the SmartClient product directory (e.g. typically C:\APPS10). If a network installation is being maintained then the patch needs to be applied only once to each network directory. It is recommended that patches to network installations be performed directly on the network server in order to reduce the network traffic incurred by uncompressing the patch and then copying the files back to the SmartClient product directory.

Client patches are installed with a special Oracle Applications SmartClient utility called "otto.exe". This utility expects that the SmartClient environment is set correctly and will install the patch files based on these settings.

The following is the generic instructions from a patch readme file:

```
INSTRUCTIONS FOR UNARCHIVING THIS PATCH:
```

```
-----
```

```
To unarchive the patch, double-click the 605486.exe file.
```

```
The file size of 605486.exe should be 13660069 bytes.
```

```
INSTRUCTIONS FOR APPLYING THIS PATCH:
```

```
-----
```

```
A 16-bit Windows program, called otto.exe, has been delivered with this patch to allow you to easily install the patched files to your 10SC client PC.
```

```
NOTE: While otto.exe is fully functional as a patching mechanism, it is a Beta program at this time. Due to frequent updates to this mechanism, you should always run the version of otto.exe that is bundled with your
```

patch.

On your client PC, you must have Oracle Applications Production 16 installed, and your current Oracle Home set to your Production 16 Oracle Home. These instructions assume that you have unloaded, unzipped, or untar'ed your patch on drive X:.

1. Information about this patch is documented below. Please review all information before applying this patch.

2. From your client PC, run X:/p<bugnumber/otto.exe.

3. Click the Browse button, and navigate to X:/p<bugnumber/<bugnumber/b<bugnumber.drv.

4. Click the Apply Patch button.

At this point, the patched files are copied from the patch area to the appropriate location on your PC. If the file exists previously on your PC,

then a backup copy will be made in the \BAK directory of the destination path. For example, if the file is located in %FND_TOP%\FORMS\US, then before the patched file is copied to your PC, a backup copy will be made in %FND_TOP%\FORMS\US\BAK.

The log file for this patch session will be located in %APPLPTCH%\b<bugnumber.log. You may click the

View Log button to review the log file.

Patch Directories

Due to the nature of the patch process a single patch directory is usually sufficient. It is recommended that specific TAR directories be created and that the corresponding exe files be placed in these directories.

Log File Naming

Log files are named by default with the associated patch number and placed in the APPL_TOP\install\log directory (e.g. c:\apps10\install\log).

Patch Work Directory

It is recommended that the uncompressed patch files be placed in a temporary directory (e.g. C:\TEMP) as these files are not needed after the patch has been run.

NCA

NCA patches are applied with the adpatch utility, and should follow the server patch application methodology for patch location, directory naming, and log file naming. We have also discovered that it is critical that all users are logged out of the NCA application server when patches are applied. We recommend stopping the Forms Server and the Web Application Server to achieve this.

Specific Instructions (see Appendix C, NCA Supplement Installation Manual):

You run AutoPatch from the patch directory, which is the directory where you unloaded the AutoPatch files.

Start AutoPatch with this command:

```
C:\adpatch
```

You can exit AutoPatch by entering No or Abort at any prompt. You can then restart AutoPatch from the beginning or from where the session ended.

Log File Checking:

After AutoPatch runs to completion, search for the words Error, error, ERROR, Warning, warning, and WARNING in the AutoPatch log files even if AutoPatch appeared to encounter no errors. Some warnings are diagnostic messages that do not indicate an error and can be ignored. Contact Oracle Support Services if you do not understand the meaning of an error message.

There are several AutoPatch log files, each of which records certain types of update action. If AutoPatch does not perform a certain type of action, it does not generate the log file that records that type of action. The directory #APPL_TOP#\install\log may therefore contain only some of the following AutoPatch log files:

```
Main log file (default name of adpatch.log)
admvcde.log (for moving updated files to product directories)
adrepgen.log (for Oracle Reports report generation)
adfrmgen.log (for Oracle Forms form generation)
adwork*.log (for database operations run in parallel mode)
```

ORACLE Error Messages

The following ORACLE error messages indicate acceptable problems that may occur in your main log file (default name adpatch.log):

```
ORA-00942: table or view does not exist
ORA-00955: name is already used by an existing object
ORA-01418: specified index does not exist
ORA-01430: column being added already exists in table
ORA-01434: private synonym to be dropped does not exist
```

WARNING: The log files and the restart files (adpprod.*) record the passwords to your Oracle Applications products. Restrict access to these files or delete them after a successful update.

Additional Information: "Set Up AutoInstall Environment" in Chapter 3 of the Oracle Applications Release 10.7 Installation Manual.

```
ORA-01442: column to be modified to NOT NULL is already NOT NULL
ORA-01451: column to be modified to NULL cannot be modified to NULL
ORA-04043: object POP_CMERGE does not exist
ORA-04080: trigger 'BOMTBICD' does not exist
```

Form Generation Errors and Warnings

While using adadmin or AutoPatch to generate Form files, you may encounter messages similar to the following:

```
Error: APP-00931 Program exited with status 3
ERROR or WARNING generating form \forms\US\XYZ.fmx from input file
C:\appsnc\au\1.0\forms\US\XYZ.fmb
```

If this occurs, you need look in the log file (#AU_TOP#/forms/<lang/form_name.err) that was created when generating the form to determine if there was an error that needs to be addressed or if it was an ignorable warning.

If the log file does not exist, it is likely the error was due to a loss in the database connection. If this occurs, you can generate the form by rerunning the f45gen32.exe command that is displayed in the adadmin or AutoPatch log file.

Certain warnings are acceptable and occur while generating many of the Applications Forms. This is due to complex coding in the forms that is not common. The Forms Generator displays a warning message so that developers can verify that the complex coding was intentional. Following is the current list of warnings which will occur when generating Applications forms. These errors may be safely ignored:

```
FRM-30188: Warning! no default value given and other values are not allowed.
FRM-30351: Warning! No list elements defined for list item.
FRM-30370: Warning! (SCHEDULED.SCHEDULED_DCI) Relation's detail block is a
control block.
FRM-30371: Warning! (CTL_ASGL.CTL_ASGL_PAAV3) Relation's master block is a
control block.
```

Remove Obsolete Files

After you update all product groups successfully, you can delete the backup copies of files (files that have .bak as their filename suffix) from the product directory trees to recover disk space. You should check for customized files before deleting these backups. If these backups contain customizations, you may want to reapply them before you delete the backup copies. Additional Information: Recovering Disk Space in Appendix A of the Oracle Applications Release 10.7 Installation Manual.

The file applptch.txt in the #APPL_TOP# directory contains information about files that have changed.

Additional Information: "Patch Driver File" in this chapter.

Patch Installation Checklist

Server Patch

1. Obtain patch from Oracle WWS.
2. Copy patch into appropriate patch directory.
3. Uncompress and untar patch.
4. Check readme.txt file.
5. If bug level patch then shutdown concurrent managers.
6. If major product level patch then have users log off the system and shutdown the concurrent managers.
7. Run adpatch, specify appropriate log file and run appropriate driver files.
8. Check log files for errors.
9. Perform any special instructions.

Client Patch

1. Obtain patch from Oracle WWS.
2. Copy patch into the appropriate patch directory.
3. Execute the patch file to uncompress it. Recommend placing the uncompressed files in a temporary directory.
4. Check the readme.txt file.
5. Coordinate the patch application with the application of the server patch.

SmartClient:

1. Verify that the oracle environment (e.g. oracle.ini file) is pointing to the correct APPL_TOP location.
2. Run the "otto.exe" executable and select the appropriate driver file(s).
3. Check the log file for errors.

NCA:

1. Stop the Web Application Server and the Forms Server.
2. Verify that the oracle environment is set correctly (e.g. APPL_CONFIG and APPL_TOP are set correctly).

3. Run the adpatch utility from the patch directory and select the appropriate driver file(s).
4. Check the log file for errors.
5. Start the Web Application Server and the Forms Server.

