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Subject: **Workarounds when Database time zone patches are not available for your patchset**

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Applies to:

Oracle Server - Enterprise Edition - Version: 9.0.1 to 10.2
Information in this document applies to any platform.

Purpose

Typically backports are provided for the latest patchset of a release. Depending on the circumstances you can sometimes also find backports for previous patchsets, depending on the platform you run on, but this is not guaranteed.

This bulletin will explain how you can still apply these patches manually, even if there is no backport for your specific patchset.

This bulletin was created as part of the USA DST 2007 documentation, but is applicable to any other Database time zone patches as well. For more information on the USA DST 2007 issues

please see Note 359145.1 and Note 397281.1

Scope and Application

This information is relevant for anybody wishing to apply time zone patches to the Oracle database, and who is running a patchset version for which these patches are not available.

Workarounds when Database time zone patches are not available for your patchset

Background

Oracle's time zone definitions are stored in 2 time zone files, timezone.dat and timezlrg.dat, in $ORACLE_HOME/oracore/zoneinfo. For more information on this please refer to the Timestamp FAQ in Note 340512.1.

Portability across patchsets, but *not* releases and platforms

The time zone files can be freely copied across patchset versions on the same platform, but they are unique on each platform and for each release. Therefore they should never be copied across platforms and/or across releases - but they can be copied to different patchset versions of the same release.

So for example:

- A set of 10.2.0.2 files should never be applied to a 10.1.0.5 release
- A set of 10.2.0.2 files for 'Linux 32 bit' should never be applied to a 10.2.0.2 Solaris installation.
- But this same set of 10.2.0.2 'Linux 32 bit' files *can* be copied to a 10.2.0.1 'Linux 32 bit' installation
- A set of 9.2.0.7 files can be used by any database between versions 9.2.0.1 and 9.2.0.8 on the same platform.
- But this same set of 9.2.0.7 files can *not* be used by a database version 10.1 or 10.2, or by 9.2.0.x on a different platform.

etc. etc.

Always try to use the official patch

Please note that before using this note you are advised to double check that the time zone patches are not available for your patchset. Applying the "correct" patch through opatch is always preferable to the manual method described in this note because opatch will not have registered the patch installation if it's done manually.

Never apply time zone patches on the database before running utltzuv2.sql

It is important that you never apply the new time zone files before using the correct utltzuv2.sql script (see Note 396670.1 for Oracle9 and Note 396671.1 for Oracle 10). This script scans your database for the use of the TIMESTAMP WITH TIME ZONE data affected by this patch. Make sure you have used this script before going ahead with patching the database.

Clients and middle-tier also need to be patched after the server has been patched

Before proceeding with patching the database make sure that you realize the impact this has on the client and middle tier setup. Clients that uses timestamps which are in the time frame affected by this change, will need the same patch. Clients and Servers do not have to be patched at the same time, but they will have to be in synch before timestamps in the affected times (and time zones) are used. This includes "real" clients, but also middle-tier applications which connect to the database. This is further documented in Note 396426.1

No official time zone patch for your patchset?

If there is no time zone patch for your patchset then you can use the following method to still apply the patch on your system:

First identify a patch that can be used to extract the new time zone files from:

- For non-Windows platforms find another one-off patch:

  Identify the time zone patch for a different patchset, but same release and platform. For example if you run 10.1.0.4 on 32- bit Linux and you are trying to find a patch for the USA DST 2007 issues (patch 4689959), you can find the correct patch for 10.1.0.5 on 32-bit Linux (see also table 2 in Note 359145.1 for a list of available 4689959 patches)

- For Windows find the correct patch-bundle

  Identify a Windows patch bundle that the time zone patch is part of, for a different patchset, but same release and platform. For example if you run 9.2.0.1 on 32-bit Windows and you are trying to find a patch for the USA DST 2007 issues (patch 4689959), you can use table 2 in Note 359145.1 to find that this is part of bundle 13 for 9.2.0.7 (patch number 5382965), and of bundle 2 for 9.2.0.8 (patch number 5639513) - either of these can be used.

- Or alternatively for all platforms find a patchset with the new time zone files:

  Identify a higher patchset for the same release and platform that this patch is part of. For example if you run 10.2.0.1 on Solaris 64 bit and you are trying to find a patch for the USA DST 2007 issues (patch 4689959), you can use table 2 in Note 359145.1 to find that this is part of the 10.2.0.3 patchset (patch number 5337014) which is available forNote 359145.1 to find that this is part of the 10.2.0.3 patchset (patch number 5337014) which is available for this platform. In the 10.2.0.3 patchset the time zone files are packaged into the Disk1\stage\Patches\oracle.oracore.rsf\10.2.0.3.0\1\DataFiles\filegroup2.26.1.jar file.

Then use this to apply the files manually in the following way:

1. Download the identified patch.
2. Unzip the patch, and locate the 3 files readme.txt, timezone.dat and timezlrg.dat in the "files/oracore/zoneinfo" directory of the uncompressed patch (or from the relevant .jar file of a patchset).

3. Backup your existing files in $ORACLE_HOME/oracore/zoneinfo - THIS CAN BE VITAL, DO NOT SKIP.
4. Copy the 3 files found in step 2 into the $ORACLE_HOME/oracore/zoneinfo directory
5. Restart the database (in case of installation on a database), or restart the client applications (in case of client install).

Take note that opatch will not have any knowledge that you have applied this patch when you use these manual steps, so make sure that you document this for yourself.
The time zone files will never be in conflict with any other patches, future time zone files patches will always supersede the older time zone patches, so the fact that optach does not know about this will not cause any patching problems.

No time zone patch for your release or platform

Note that the method described above will only work "across patchsets". If the time zone patch you require is not available for your release on your platform at all then there is no patch you can use. In this case please raise a Service Request with Oracle Support to request a backport against the highest available patchset version for your release (for example 9.2.0.8 if you run 9.2). If you use a lower patchset level, then use the above method to manually apply this patch after it becomes available. Whilst no patch is available please see Note 359138.1 for possible workarounds.

References

Bug 4689959 - DST RULE CHANGE IN US, NEED PATCHED TIMEZONE FILES
Note 340512.1 - Timestamps & time zones - Frequently Asked Questions
Note 357056.1 - Impact of changes to daylight saving time (DST) rules on the Oracle database
Note 359138.1 - Workarounds when updates to timezone files are not available
Note 359145.1 - Impact of 2007 USA daylight saving changes on the Oracle database
Note 396670.1 - Usage of utltzuv2.sql before updating time zone files in Oracle 9
Note 396671.1 - Usage of utltzuv2.sql before updating time zone files in Oracle 10
Note 397281.1 - USA 2007 Daylight Saving Time (DST) Compliance for Database and Fusion Middleware

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