TB—0390
ORACLE DAYLIGHT SAVING TIME PATCHES

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Section/Group: Database Administration
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Due to the upcoming changes to the start and end dates of Daylight Saving Time (DST) in the United States, Oracle has issued patches to update the time zone tables that are used in conjunction with time zone data types and functions. Because of the way Oracle Database stores this data internally, the changes to DST transition rules may affect existing data and applications that use time zone data types and functions.

Time zone functionality was introduced in Oracle 9. The version of the time zone tables implemented varies depending on the Oracle software version. Time zone tables are implemented in the database server software and the Oracle client software. **The time zone tables are not used to support basic date or timestamp functionality.** The TIMESTAMP WITH LOCAL TIME ZONE (TSLTZ) and TIMESTAMP WITH TIME ZONE (TSTZ) data types and the TZ_OFFSET function use the time zone tables to derive time zone information. When users enter timestamps with a time zone, the Oracle Database converts the data to UTC, based on the transition rules in the time zone file. When data is retrieved, the reverse conversion from UTC takes place.

For example: When the Version 2 transition rules were in effect, the value—

TIMESTAMP '2007-11-02 12:00:00 America/Los_Angeles'

—was stored as UTC value '2007-11-02 20:00:00' (plus the original time zone ID for America/Los_Angeles'), because the time in Los Angeles was UTC -8 hours (PST). Under the Version 3 transition rules, the offset for this day is -7 hours (PDT), because the Daylight Saving Time will end on a different date (November 4, 2007) for this time zone. When users now retrieve the same timestamp a different offset is used to recalculate the UTC time into the America/Los_Angeles time, and they receive—

TIMESTAMP '2007-11-02 13:00:00 America/Los_Angeles'.

So there is a one-hour difference compared to the original data.

The DTS Enterprise Solutions Database Group is planning to implement the database server patches that update the time zone tables prior to the DST start date, March 11, 2007. The dates for the implementation will be announced via the DTS Change Schedule. **Oracle client software, Versions 9.x and 10.x, will need to be updated only if the TIMESTAMP WITH TIME ZONE or TIMESTAMP WITH LOCAL TIME ZONE data types are referenced from the client.**

Please send an e-mail to dbase@utah.gov as soon as possible if your application is using the time zone data types or functions. The DTS Enterprise Solutions Database Group will work with affected customers to coordinate the testing and implementation of the database and client updates.