Oracle® Fusion Middleware

Release Notes for Oracle TopLink

12*c* (12.2.1)

E67787-01

October 2015

This document details issues associated with Oracle TopLink. It includes the following topics:

- Section 1, "What's New in Oracle TopLink 12.2.1?"
- Section 2, "TopLink Grid Deprecated"
- Section 3, "TopLink Object-Relational Issues"
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1 What's New in Oracle TopLink 12.2.1?

The following features/enhancements are new in this release:

- Bean Validation support in MOXy

  This enhancement provides a means of Bean Validation (as per JSR303 and JSR349) into MOXy, the implementation of JAXB in EclipseLink.

- JSON-P support in MOXy

  Providing support for JSR-353 MOXy enables you to chose the JSON parser to be used based on your requirements (performance, memory, etc.). By default MOXy will use the default implementation from https://jsonp.java.net

  For more information, see: `https://wiki.eclipse.org/EclipseLink/DesignDocs/405161`

- JPA-RS Enhancements

  In this release, two additions to JPA RESTful services (Projection and Pagination) are included.

- `eclipselink.multitenant.strategy` property for multi-tenancy

  EclipseLink-specific property (eclipselink.multitenant.strategy) has been introduced to support environments which are handling multitenancy transparently themselves. The value of this property can be either 'external' (any multitenancy requirements are expected to be handled externally (by application) and ignored by TopLink), or the fully qualified name of a class implementing org.eclipse.persistence.descriptors.MultitenantPolicy interface.

  Usage of this option requires no @Multitenant entities defined, EntityManagerFactory is shared across tenants, its shared cache is disabled and no Entity defines its own schema.

2 TopLink Grid Deprecated

The TopLink Grid feature in Oracle TopLink 12.2.1 is deprecated.

3 TopLink Object-Relational Issues

This section contains information on the following issues:

- Section 3.1, "ERROR PARSING VALIDATION.XML - JAVA.UTIL.CONCURRENT.EXECUTIONEXCEPTION"
- Section 3.2, "Exalogic TuningAgent Profiler is not Set"
- Section 3.3, "Cannot set EclipseLink log level in WLS System MBean Browser"
- Section 3.4, "UnitOfWork.release() not Supported with External Transaction Control"
- Section 3.5, "Returning Policy for UPDATE with Optimistic Locking"
- Section 3.6, "JDBC Drivers returning Timestamps as Strings"

3.1 ERROR PARSING VALIDATION.XML - JAVA.UTIL.CONCURRENT.EXECUTIONEXCEPTION

Under some configurations, users may encounter a warning log message in the log file such as the one below. The log message is harmless and indicates TopLink's search for the `validation.xml` file (defined in the *JSR 303 Bean Validation specification*). TopLink is only able to read the `validation.xml` from the filesystem, not from archives of any kind.

```
[WARNING] [] [org.eclipse.persistence.jaxb.BeanValidationHelper] [tid: [STANDBY].ExecuteThread: '35' for
queue: 'weblogic.kernel.Default
(self-tuning)'] [ecid: 8ee5cff5-3f55-4f1b-a389-4328958b1ee9-0000003d,0] [APP:
webcenter] [partition-name: DOMAIN] [tenant-name: GLOBAL] Error parsing
validation.xml[[
java.util.concurrent.ExecutionException: java.lang.IllegalArgumentException:
URI scheme is not "file"
```

3.2 Exalogic TuningAgent Profiler is not Set

When using the TopLink Exalogic automated tuner, the `oracle.toplink.exalogic.tuning.TuningAgent` profiler is not enabled. The `TuningAgent` profiler has been disabled due to issues with stuck threads.

3.3 Cannot set EclipseLink log level in WLS System MBean Browser

Use Oracle Enterprise Manager to set the EclipseLink log level; do not use the WLS System MBean Browser to complete this action.

3.4 UnitOfWork.release() not Supported with External Transaction Control

A unit of work synchronized with a Java Transaction API (JTA) will throw an exception if it is released. If the current transaction requires its changes to not be persisted, the JTA transaction must be rolled back.

When in a container-demarcated transaction, call `setRollbackOnly()` on the EJB/session context:

```
@Stateless
public class MySessionBean
{    @Resource
    SessionContext sc;

    public void someMethod()
```

```
    {
        ...
        sc.setRollbackOnly();
    }
}
```

When in a bean-demarcated transaction then you call `rollback()` on the UserTransaction obtained from the EJB/session context:

```
@Stateless
@TransactionManagement(TransactionManagementType.BEAN)
public class MySessionBean implements SomeInterface
{
    @Resource
    SessionContext sc;

    public void someMethod()
    {
        sc.getUserTransaction().begin();
        ...
        sc.getUserTransaction().rollback();
    }
}
```

3.5 Returning Policy for UPDATE with Optimistic Locking

The returning policy, which allows values modified during `INSERT` and `UPDATE` to be returned and populated in cached objects, does not work in conjunction with numeric version optimistic locking for `UPDATE`. The value returned for all `UPDATE` operations is **1** and does not provide meaningful locking protection.

Do not use a returning policy for `UPDATE` in conjunction with numeric optimistic locking.

The use of returning policy for `INSERT` when using optimistic locking works correctly.

3.6 JDBC Drivers returning Timestamps as Strings

TopLink assumes that date and time information returned from the server will use `Timestamp`. If the JDBC driver returns a `String` for the current date, TopLink will throw an exception. This is the case when using a DB2 JDBC driver.

To work around this issue, consider using a driver that returns Timestamp (such as COM.ibm.db2.jdbc.app.DB2Driver) or change the policy to use local time instead of server time.

Another option is to use a query re-director on the ValueReadQuery used by the platform:

```
ValueReadQuery vrq = new ValueReadQuery(
    "SELECT to_char(sysdate, 'YYYY-MM-DD HH:MM:SS.SSSSS') FROM DUAL"
);
vrq.setRedirector(new TSQueryRedirector());
...
class TSQueryRedirector implements QueryRedirector
{
    public Object invokeQuery(DatabaseQuery query, Record arguments, Session session)
    {
        String value = (String)session.executeQuery(query);
        return ConversionManager.getDefaultManager().convertObject(
            value, java.sql.Timestamp.class
        );
    }
```

```
}
```

4 Allowing Zero Value Primary Keys

By default, EclipseLink interprets *zero* as *null* for primitive types that cannot be null (such as `int` and `long`) causing zero to be an invalid value for primary keys. You can modify this setting by using the `allow-zero-id` property in the `persistence.xml` file. Valid values are:

- **true** – EclipseLink interprets zero values as *zero*. This permits primary keys to use a value of zero.
- **false** (default) – EclipseLink interprets zero as *null*.

Refer the *EclipseLink User's Guide* at `http://wiki.eclipse.org/EclipseLink/UserGuide` for more information.

> **Warning:** Adding this configuration property is potentially dangerous, as configuring this particular setting through `persistence.xml` affects ALL applications running on the server

5 Managed Servers on Sybase with JCA Oracle Database Service

When using a JCA service with the Oracle Database adapter in a cluster to perform database operations on a Sybase database, the managed nodes in the cluster process the messages and may attempt to perform duplicate operations.

Because supported versions of Sybase do not support Oracle TopLink record locking, Sybase allows the duplicate operation attempts.

6 Logging Configuration with EclipseLink Using Container Managed JPA

By default, EclipseLink users in container managed JPA will use the Oracle WebLogic Server logging options to report all log messages generated by EclipseLink. Refer to "Configuring WebLogic Logging Services" in *Oracle® Fusion Middleware Configuring Log Files and Filtering Log Messages for Oracle WebLogic Server*.

To use the EclipseLink native logging configuration, add the following property to your `persistence.xml` file:

```
<property name="eclipselink.logging.logger" value="DefaultLogger"/>
```

7 Documentation Accessibility

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