

INTRODUCING “JAVA 8”

JDBC enhancements

JDBC Enhancements

- ❑ RIP ... JDBC-ODBC Bridge Driver

Oracle recommends using vendor provided JDBC driver.

- ❑ REF_CURSOR support for callable statement

- ❑ DriverAction interface

- ❑ Additions to SQL Types

- ❑ RowSet changes

REF_CURSOR

- ❑ Cursors, and in particular REF CURSORS, are handled differently in a way that they don't directly contain all of their data, but can be iterated (or “looped”) over.
- ❑ Also, a REF CURSOR is a weakly typed object, which means that the number and types of a REF CURSOR's columns cannot be known at SQL compile-time (or “parse-time”), but only when the SQL statement is executed.
- ❑ Nevertheless, a REF CURSOR can be returned from a stored procedure or from a stored function, and retrieved in JDBC like any other
- ❑ Newer JDBC API allows using REF_CURSOR in 'CallableStatement'

REF_CURSOR

- ❑ The REF_CURSOR data type is supported by several databases. To return a REF_CURSOR from a stored procedure, use the method `CallableStatement.registerOutParameter` and specify `Types.REF_CURSOR` as the data type to be returned.
- ❑ To retrieve the `ResultSet` instance representing the REF_CURSOR, invoke the method `CallableStatement.getObject`, and specify `ResultSet` as the data type to which to convert the returned object.
- ❑ The returned result set is a forward, read-only result set.

REF_CURSOR demo

```
CallableStatement cstmt =  
    conn.prepareCall("{callmySproc(?)}");  
cstmt.registerOutParameter(1, Types.REF_CURSOR);  
cstmt.executeQuery();  
ResultSet rs = cstmt.getObject(1, ResultSet.class);  
while(rs.next()){  
    System.out.println("Name="+ rs.getString(1));  
}
```

DriverAction interface

- ❑ An interface that must be implemented when a Driver wants to be notified by DriverManager.
- ❑ A DriverAction implementation is not intended to be used directly by applications.
- ❑ A JDBC Driver may choose to create its DriverAction implementation in a private class to avoid it being called directly.
- ❑ Has single method:
`deregister()`
 - Un-register driver by Driver Manager
- ❑ DriverManager has method : `deregisterDriver(Driver)`

Additions to SQL Types

- **java.sql.SQLType**

This interface is used to create an object that identifies a generic SQL type, called JDBC type or a vendor specific data type

- **java.sql.JDBCType**

This enum identifies generic SQL Types, called JDBC Types. Use JDBCType in place of the constants defined in Types.java.

- **Add support for large update counts**

JDBC methods returned only int value for the update count. As datasets continue to grow, this caused problems. Thus methods have been added to the [Statement](#) class that return a long value for the update count. These methods should be used when the returned row count exceeds the constant Integer.MAX_VALUE.

RowSet changes

- BaseRowSet now supports Event Notifications, getters and setters, Streams
- possible events are:
 - ▣ the cursor moves
 - ▣ individual row is changed
 - ▣ entire rowset changes