

Open Data Access (ODA) Framework Migration to Data Tools Platform (DTP) – Project Features Specification

BPS #30

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Abstract

The Eclipse BIRT Open Data Access (ODA) framework is part of the Eclipse Data Tools Platform (DTP) top-level project going forward. We need to move the ODA framework from the BIRT areas of Eclipse to DTP. This document describes the features and intended scope of support in the planned DTP ODA framework.

Document Revisions

Version	Date	Primary Author(s)	Description of Changes
Draft 1.1	8/15/2005	Linda Chan	Incorporated initial review feedback
Draft 1.0	8/8/2005	Linda Chan	Initial Draft

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1. Introduction

The Open Data Access (ODA) component is an open and flexible data access framework that allows applications to access data from both standard and custom data sources. It enables data connectivity between data consumers and data source providers through published run-time and design-time interfaces. In addition, the framework also includes an ODA driver management package that helps an ODA consumer application to manage diverse capabilities and behavior of individual ODA data drivers.

A data provider's run-time driver is created by implementing the ODA run-time interfaces. The run-time interfaces include support for establishing a connection, accessing meta-data, and executing queries to retrieve data. A driver can define internal data source connection profiles and/or work with the DTP Connection Management Framework's Connection Profiles extensions. Once developed, the driver can be registered through an extension point with individual ODA consumer applications to enable data connectivity. The framework also provides design-time interfaces to integrate optional custom query builders within an application designer tool.

The ODA framework is thus categorized as three separate components:

- ODA run-time interfaces
- ODA run-time consumer helper
- ODA design-time interfaces

These ODA components in Eclipse BIRT are part of the Eclipse Data Tools Platform (DTP)'s Connectivity sub-project going forward. Their migration will be done in separate stages. The migration and scope of each component is described in details in the next sections.

For the description on the ODA data source extension point and public API, see the related reference documentation and Javadoc. Additional documentation will be provided when available.

1.1 Supported Platform Versions

The DTP ODA framework supports the following platform environment:

- Eclipse 3.1 or above
- JRE/JDK 1.4 or above

1.2 Re-naming of ODA Packages

The DTP ODA framework is part of the DTP Connectivity project. Its packages' name space is:

```
org.eclipse.datatools.connectivity.oda
```

The BIRT ODA packages is thus renamed from its current namespace under:

```
org.eclipse.birt.data.oda
```

1.2.1 New Version

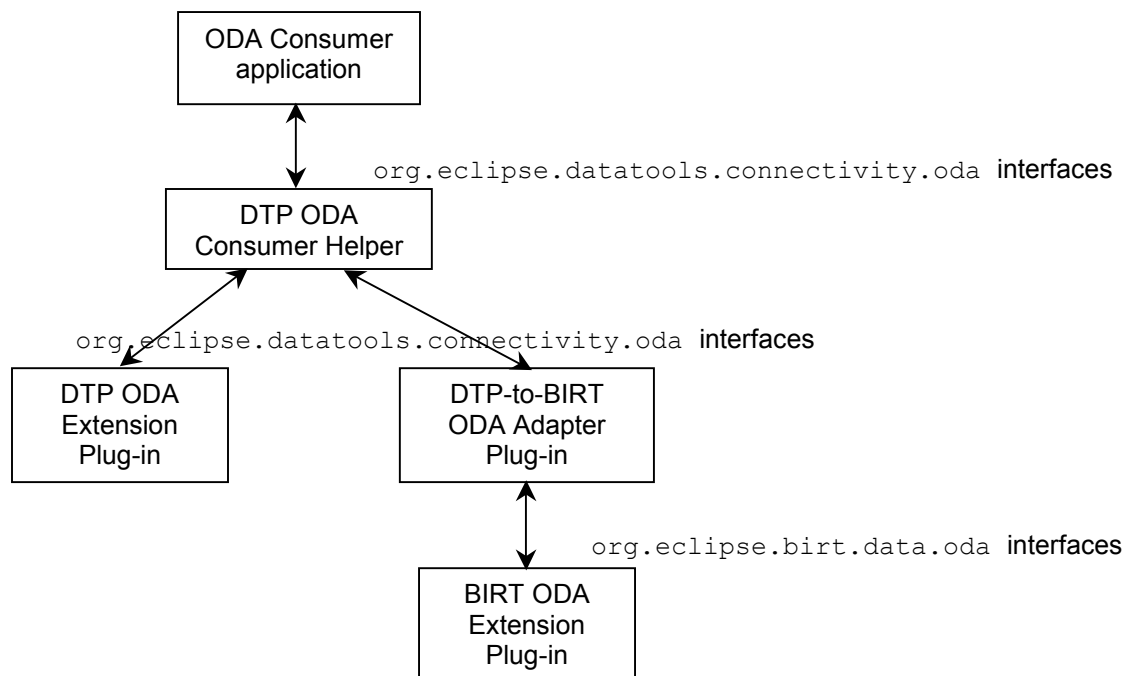
The most recently released ODA framework is version 2.0.1. Its API and implementation are now frozen. Any enhancements to ODA will be applied to the ODA framework migrated to DTP. The ODA version in DTP would thus start from version 3.0.

1.2.2 Support of BIRT ODA Drivers

All ODA consumer applications are expected to upgrade and adopt the DTP ODA framework and namespace, in lieu of the BIRT ODA namespace.

A plug-in adapter will be provided for BIRT ODA drivers that implement the BIRT ODA 2.0.x interfaces. This would allow a DTP ODA consumer application to consume existing BIRT ODA data providers without any source code or binary build changes. However, if an ODA data provider wants to implement any of the enhancements added to ODA version 3.0 or later, its implementation must migrate and adopt the DTP ODA interfaces.

The following diagram illustrates how the DTP-to-BIRT ODA adapter would be applied for consumption of a BIRT ODA data provider's run-time driver.




2. ODA Run-time Interfaces

The ODA run-time plug-in includes the ODA run-time public API and utility packages for use by both ODA data providers and consumers. They are packaged into a single jar file – `oda.jar`.

An ODA run-time data provider, deployed as an ODA data source extension plug-in, would require and depend on the ODA plug-in, and would load its run-time interfaces' jar file – `oda.jar`.

The `oda` utility package is dependent on the `org.eclipse.birt.core` package for plug-in platform service in both client and server-side deployment. This is to enable an ODA consumer application server to consume an ODA run-time driver, when deployed in a server platform.

 *It is an open issue on whether such server-side deployment capability will be provided by other framework, such as OSGi, and would thus no longer need to depend on `birt.core`.*

In the case where such dependency is needed, the DTP ODA plug-in installation and source tree would include the `birt.core` released jar file as a library. The ODA framework needs to take care of locating the classes in the library, without causing conflict or dependency on the `birt.core` plug-in installation.

2.1 Enhancements in ODA 3.0

The enhancements proposed for the ODA run-time interfaces are listed below. See the corresponding BPS specification documents for details. More details will be provided when available. The community is encouraged to provide input.

- Additional Data Types Support: CLOB and BLOB – [Bugzilla #95793](#) and [BPS#3](#)
<http://www.eclipse.org/birt/wiki/index.php?n=BPS.BPS3>
https://bugs.eclipse.org/bugs/show_bug.cgi?id=95793
- Support of DTP Connection Profiles – Bugzilla #??
Scope and design are pending availability of DTP connection profiles spec and source.
- Support “structList” type in the Property of ODA extension point – [Bugzilla #99877](#)
https://bugs.eclipse.org/bugs/show_bug.cgi?id=99877
- Support of Progress Monitor in the IConnection interface – [Bugzilla #87047](#)
https://bugs.eclipse.org/bugs/show_bug.cgi?id=87047

3. ODA Run-time Consumer Helper

The helper package assists any ODA consumer application to manage the diverse capabilities and behavior of individual ODA data provider's run-time driver(s). It encapsulates the application logic to manage the interaction between an ODA consumer and the ODA data providers.

The helper package classes implement the same ODA run-time interfaces as an ODA data provider. Each helper class is a wrapper to the underlying ODA driver's implementation of the corresponding interface. It adds application logic as appropriate and forwards an ODA interface call to the underlying driver's implementation.

3.1 Migration to DTP

In BIRT 1.0.x, the ODA run-time consumer helper package is embedded in the BIRT Data Engine component. The package will be extracted and migrated into a DTP ODA package:

```
org.eclipse.datatools.connectivity.oda.consumer.helper
```

The helper package will be enhanced to implement the latest DTP ODA run-time interfaces. Each helper class would be a wrapper to the underlying DTP ODA run-time driver object.


This helper component is intended for use by an ODA consumer application, such as the BIRT Data Engine. Since an ODA data provider does not use the consumer helper package at run-time, the component is packaged into a separate jar file – `odaconsumer-helper.jar`. It is dependent on the ODA interfaces packaged in the `oda.jar` file.

4. ODA Design-time Interfaces

The ODA component is part of the Eclipse Data Tools Project (DTP) going forward – this includes the runtime as well as the ODA UI extension point. In BIRT 1.0.x, the optional ODA UI extension point has tight coupling with other BIRT components, which makes it difficult to use outside of the context of BIRT.

In order to be a component of the DTP project, the ODA UI extension point and its implementation need to be reviewed and updated to remove dependencies on other areas of BIRT.

4.1 Migration to DTP

 *Details will be provided when available. The community is encouraged to provide input.*