

Building Portlets Using Oracle *interMedia*

As a portal developer, you understand the challenge of building an attractive, easy-to-use portal that can present dynamic data of any kind in its “freshest” state to meet user needs. By using Oracle Portal, you can take advantage of the Portal Framework to create a useful and appealing enterprise portal. A key feature of the framework is portlets which provide a convenient way to access any type of data, including rich content such as images, audio, video, location, and time-based information. By using Oracle *interMedia*, you can store, retrieve, and manipulate this rich content within Oracle8i - it’s treated in the **same** fashion as traditional relational data and uses the **same** Oracle interfaces, utilities, and tools. Now with Release 3.0, by using the standard Oracle Portal interfaces and components, you can easily and transparently incorporate *interMedia* rich content into portlets.

A Brief Introduction to Oracle *interMedia*

Based on the object-relational extensions of Oracle8i, *interMedia* uses object types, similar to Java or C++ classes, to describe multimedia data. The *interMedia* object types shown in Figure 1 are created automatically at database installation time, making it easy for you to get started. These object types are ORDAUDIO, ORDIMAGE, and ORDVIDEO, describing digitized audio, image, and video data respectively, and they include the requisite attributes and methods. Attributes include media data -- the actual audio, image, or video -- and metadata -- information about the data such as object length, compression type, or format. Methods are procedures that can be performed on the object such as store, deliver, compress, etc.

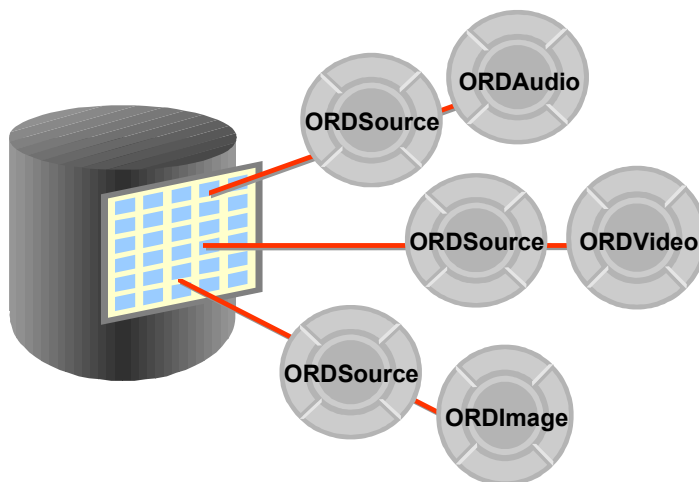


Figure 1

interMedia lets you insert, store, and retrieve audio, image, and video columns or objects to either new or existing tables located anywhere in the database in any schema. Oracle8i’s large object (LOB) types handle the storage demands of these complex datatypes to optimize space utilization and provide efficient access to rich content.

An important point to remember is the metadata for image, audio, and video **always** remains within the database under transactional control --but the data, the bits themselves, that makes up an image or video clip can reside in several places including:

- Binary large objects (BLOBs) stored locally in Oracle8i and containing audio, image, or video data
- File-based large objects, or BFILES, stored locally in operating system-specific file systems and containing audio, image, or video data
- URLs containing audio, image, or video data stored on any HTTP server.
- Streaming audio or video data retrieved via specialized media streaming servers, such as RealNetworks.

- Any user-defined sources on other specialty servers.

These alternatives provide considerable flexibility, with concurrent tradeoffs in security and manageability. **IN ALL CASES** no matter where the ‘bits’ are actually stored, a database client can get the metadata and the media content -- the ‘bits’ -- through the database connection.

Oracle Portal/*interMedia* Integration

Key objectives to this integration is transparency and ease of use, so we looked for the intersection points of Oracle Portal and *interMedia*. Oracle Portal has components which give you, as the developer, a declarative way to create objects that capture, act upon and display data from an Oracle table/view. These Oracle Portal components can be connected together to create web applications that can be applied directly to enterprise databases. In short, simple, yet powerful representations of all types of data can be easily built via these components and then displayed within a portlet. And as we mentioned earlier, *interMedia* objects, including source location information, are stored in Oracle tables so that they can be included in the types of data available to Oracle Portal components.

Two components that are predefined for you are forms and reports. Oracle Portal contains wizards to help you easily create a form to interface with the data in one or more database tables and views. The Portal form component builds an appealing web interface that lets users interact with data -- they can add, query, update, and delete information stored in Oracle8i. Rich content already stored in tables in the database can be easily downloaded or made available in the portal framework by building a form on tables containing *interMedia* objects.

Creating a form on a table with *interMedia*-based columns is the same as creating a form on any relational table. Using the Oracle Forms Wizard, you can build either a single or a master-detail form containing *interMedia* object types. For example, you can create a form to return images stored as *interMedia* images or that have the capability to upload images from a web browser directly into a database column designated for ORDIMAGE. You can also upload images, audio and video clips from your desktop directly into any table in your database via an Oracle Portal form.

The advantage of uploading rich content into *interMedia*-based columns over uploading content into BLOB columns is that the data is automatically parsed to extract several attributes such as MIME-type, length, and any user-defined metadata that might be included in the original media file. Once it is extracted, this information can then be indexed searched and queried as if it were traditional data.

The Oracle Portal Report component is used to display dynamic data in a columnar report format via a web interface. A report is created by one of these wizards:

- Reports From Query Wizard guides you through all the steps for creating a report, including creating the SQL query that selects the data displayed in the report.
- Query By Example Report (QBE) lets you create a report for querying, inserting, updating, and deleting data from the table or view on the report is based. Note that currently you can only view *interMedia* data—you cannot upload or modify it using QBE Report. In the QBE report build wizard, you choose which data to display in the report. Or, you can allow end users to make their own queries in the QBE report’s customization form.

Reports built with either of these wizards can now display information stored as a an *interMedia* object type and when needed, buttons are provided to play back audio or video data. Reports containing these objects can also be used as portlets.

Figure 2 illustrates the process of incorporating *interMedia* rich content into Oracle Portal’s forms and reports components. Please note that before building a form or report on *interMedia*-based tables, you have to check that you have a table with columns for the *interMedia* types of ORDIMAGE, ORDAUDIO, or

ORDVIDEO that can be used to upload rich content. This is done outside Oracle Portal and may require help from your DBA. With or without *interMedia* objects, the same Oracle Portal wizards are used to create these components. The Portal Framework is then leveraged to publish these as portlets.

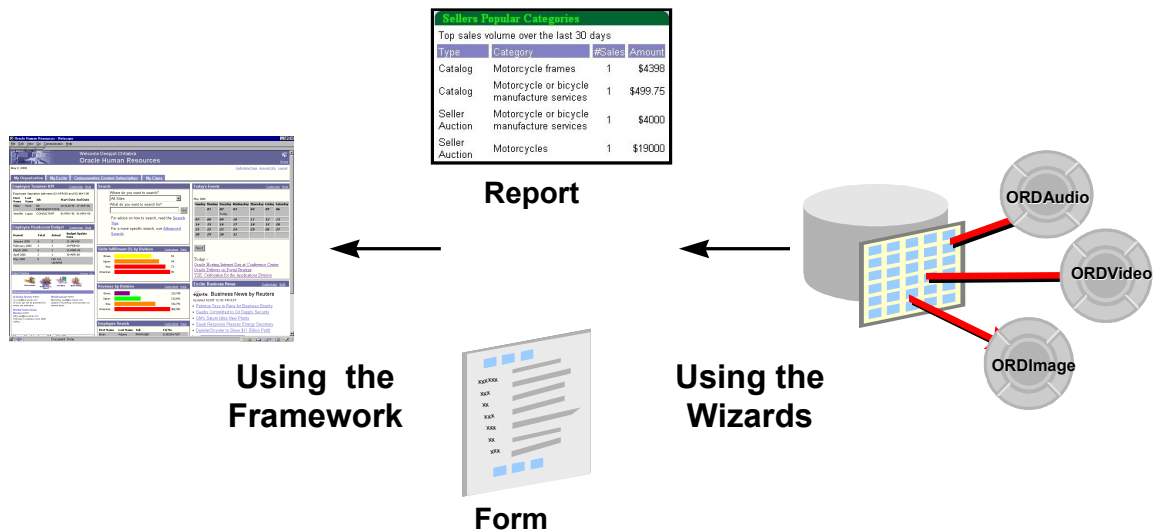


Figure 2

Oracle Portal Forms Example with *interMedia*

Follow these steps to build an Oracle Portal form that contains rich content: -- note that they are the same as any other form.

On the Oracle Portal Home page, click on the shortcut bar.

Click the “Applications” tab in the Oracle Portal Navigator.

The names of all applications which you can access are listed in the “Name” column. Click the name of the application that will contain the new component.

Beside “Create New”, click the component type you want to build - in this case, click the “Form” link.

Choose the type of form to be created: Form based on table or view.

In the form wizard, Enter the appropriate information requested on each page then click “Next” to proceed to the next wizard page (see Figure 3).

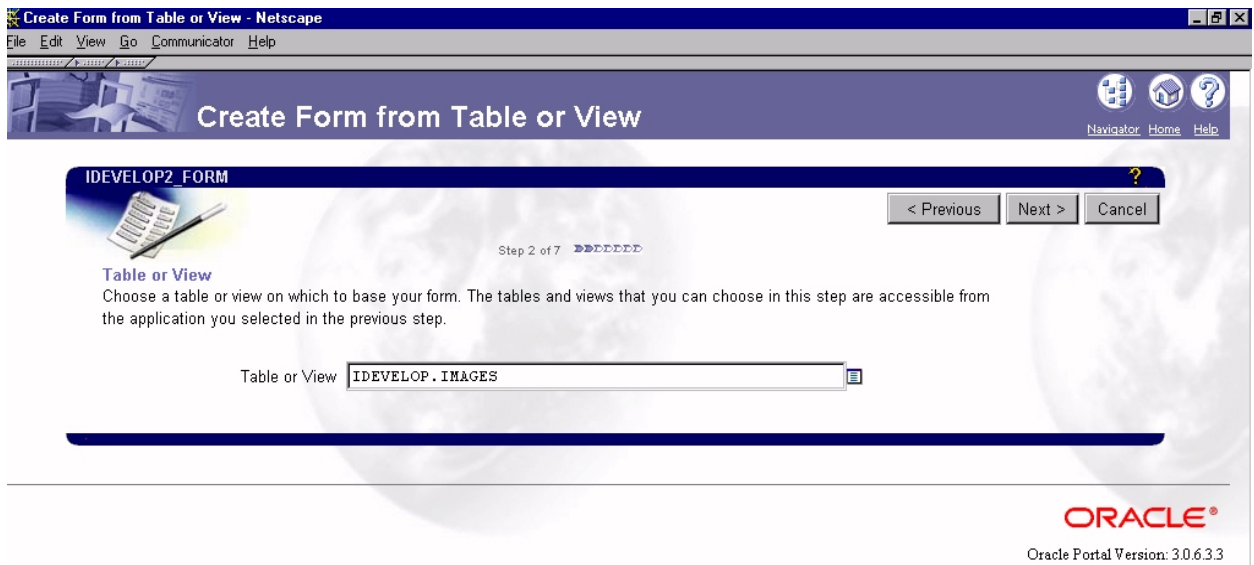


Figure 3

On Step 4 of 7, click the name of the *interMedia*-based column from the left frame (see Figure 4). In the right frame for the Item Type list, choose the File Upload (*interMedia*) option. Click “Finish” when you are done.

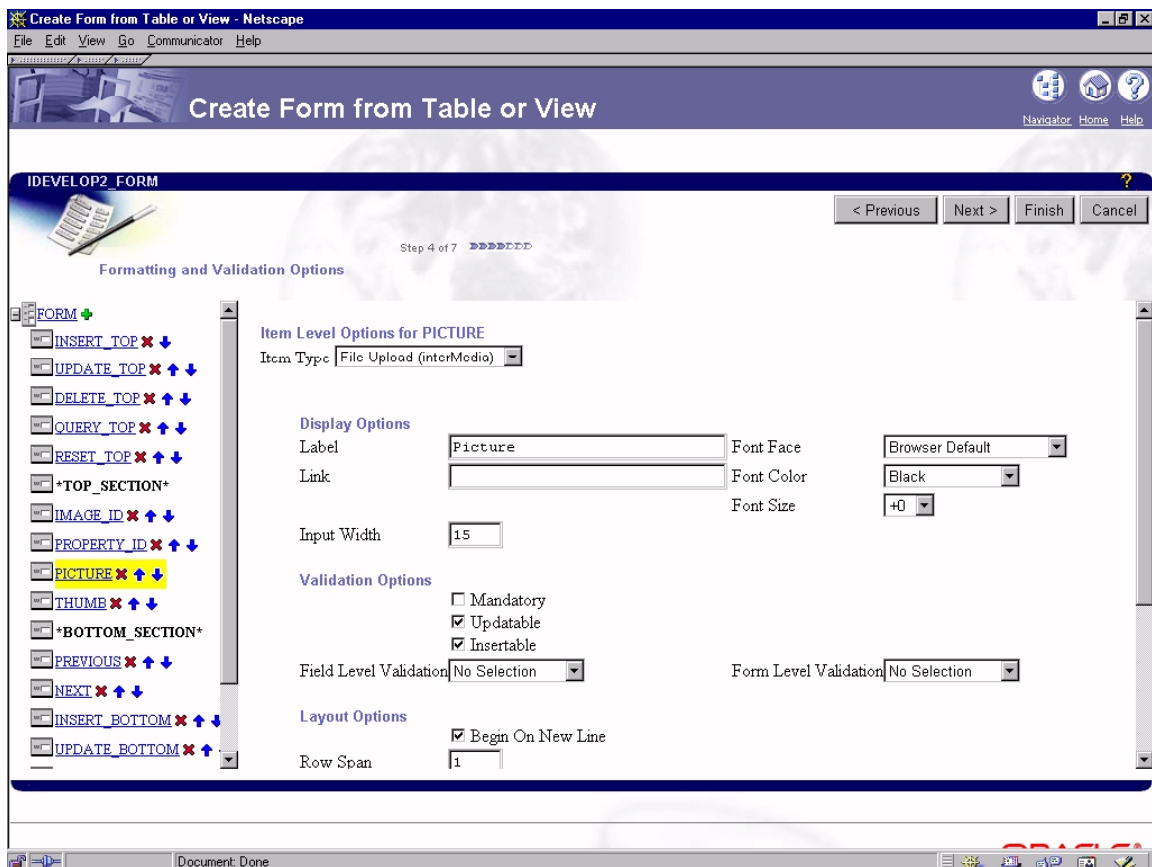


Figure 4

Select the “Publish To Portal” check box which appears on the form wizard’s Access tab to make the form available to Oracle Portal so that other application providers can use it. If you don’t see the “Publish to Portal” option, check to see that the application is exposed as a provider which is set from the application’s Access tab. The Oracle Portal online Help gives you specific instructions under the topic “Making an application a portlet provider”.

Oracle Portal Reports Example with *interMedia*

Follow these steps to build an Oracle Portal report that contains rich content:

On the Oracle Portal Home page, click on the shortcut bar.

Click the “Applications” tab in the Oracle Portal Navigator.

The names of all applications which you can access are listed in the “Name” column. Click the name of the application that will contain the new component.

Beside “Create New”, click the component type you want to build - in this case, click the “Report” link.

Choose the Reports From Query Wizard as the type of report you want to create - in this case, a Query By Example (QBE) Report. In the report wizard, enter the appropriate information requested on each page (see figure 5)

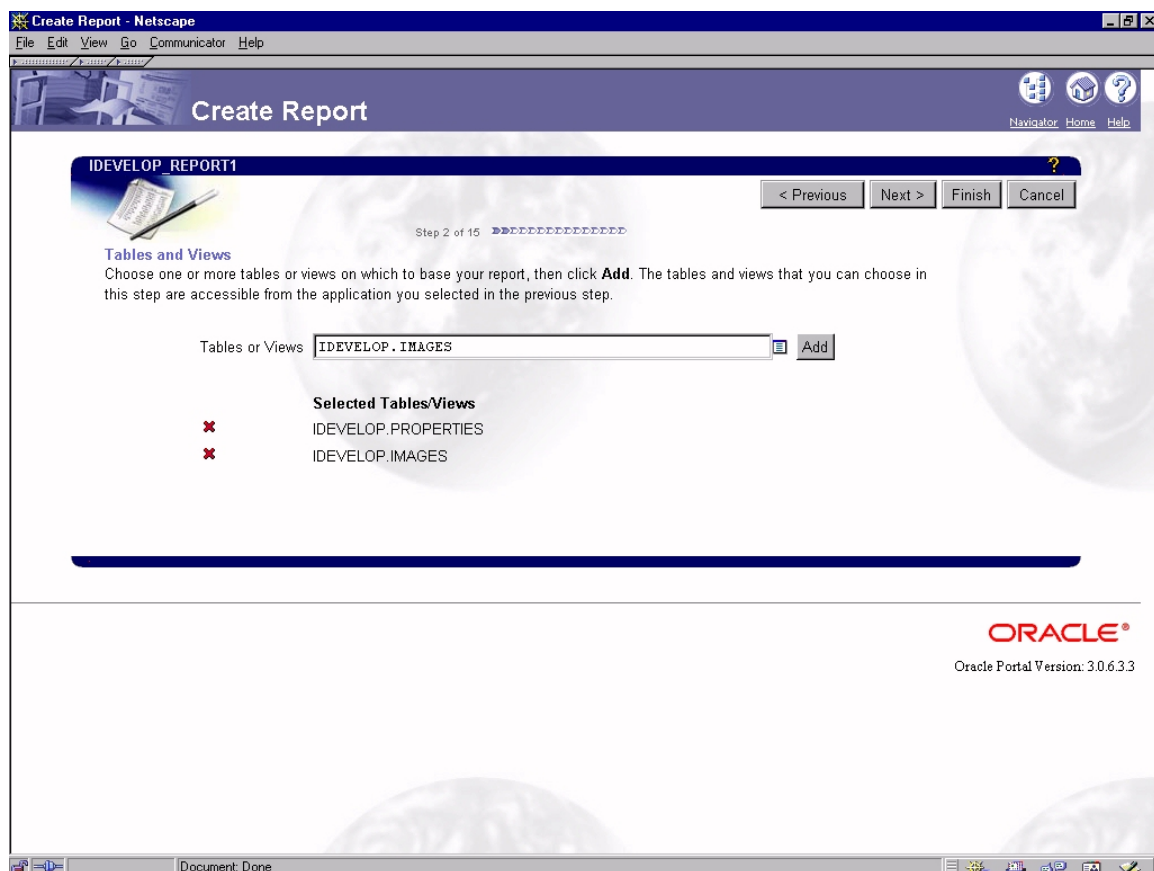


Figure 5

When building your report with the Oracle Portal report wizards, by default, the *interMedia* rich content is represented by icons that the user can click to view the actual content. However, if you want to embed the

content in the Oracle Report page, make sure that you select the "Embed *interMedia* Rich Content in the check box. This option is located below the "Display Options" section in the Report Wizard, Step 9 of 15 (see Figure 6).

Create Report

IDEVELOP_REPORT1

Step 9 of 15

Display Options
Choose options that control the appearance of the report.

Common Options
Choose common options that affect the appearance of the report displayed in portlet mode and in a full Web page.

☐ Show Total Row Count Show NULL Values as

☒ Embed *interMedia* rich content in the report

Expire After (minutes)

Default Format

Figure 6

Click "Finish" when you are done. When the user clicks the icon representing the audio, video, or photo object, the actual rich content is displayed.

Select the "Publish To Portal" check box which appears on the report wizard's Access tab to make the form available to Oracle Portal so that other application providers can use it. If you don't see the "Publish to Portal" option, check to see that the application is exposed as a provider which is set from the application's Access tab. The Oracle Portal online Help gives you specific instructions under the topic "Making an application a portlet provider".