

Discoverer Portlets for Sharing 11i Order Management Data with Customers

By Eric Guether

Editor's Note: ORAtips contributor Eric Guether is at it again, sharing creative techniques, tips, and lessons learned for maximizing your Oracle® Order Management and Shipping data tracking and reporting process. Using Oracle Discoverer and Oracle Portal, Eric demonstrates his company's approach for building a public Website available to external customers to track actual shipments on shipping carrier's Websites. The approach is equally valid for 9i and 10g. As the author concludes, "The portlet functionality within Oracle Portal allows companies to leverage their investment in Discoverer to share 11i EBS data with parties outside of their organization."

Introduction

Do you support users who are frustrated by the frequent need to query Oracle Order Management (OM) and Shipping data in Discoverer, export that data to spreadsheets, and then send those spreadsheets to customers as email attachments? Or do your users export any Oracle E-Business Suite (EBS) 11i data from Discoverer to share with external parties?

This article explains why and how one Oracle customer (Opnext) leveraged its investment in Discoverer to share data with external parties through Web pages built from Oracle Portal. The scope of this article focuses on how Discoverer portlets can be used to link Oracle Portal to its existing Discoverer database workbooks. Procedures for installing Oracle Portal, Web Cache, or any other component of the Oracle Application Server (OracleAS) are out of scope.

The examples shown are from Discoverer portlets created from a 9i version of Portal and Discoverer. Yet, the same solution can be achieved from Portal 10gR2. The Lessons Learned section, in fact, addresses some of the relevant differences of Discoverer portlets between Portal 9i and 10gR2.

Discoverer portlets would be used on the Portal pages to provide Oracle EBS 11i Order Management data from Discoverer 9i worksheets to external customers.

Even if an organization never plans to implement Portal, current users of Discoverer will learn a tip on how to enable hyperlinks in Discoverer workbooks for tracking actual shipments on shipping carrier's Websites. These hyperlinks to FedEx, UPS, or DHL tracking sites, for example, can be enabled in minutes in any version of Discoverer without the need for the Drill Link to Internet URL functionality introduced in Discoverer Plus 10g!

Business Case

Opnext's initial user requirements were to grant Discoverer Desktop 9i access to external customers and sales representatives. Sales Operations staff at Opnext was burdened with a cumbersome process for providing customers with order and shipment data on a weekly basis. The process required the internal user to log into Discoverer Desktop, query open sales order and actual shipment data for a specific customer, export the data to Excel spreadsheets, and then email the spreadsheets to external customers.

By providing external customers with Discoverer Desktop access to Opnext's Oracle EBS 11i system, customers would be able to run real-time Discoverer queries without involvement from the Opnext Sales Operations staff. But this initial request was denied for several reasons: users at the external customers would need a Discoverer Desktop client installation and VPN access to Opnext's network. This would have placed a support burden on internal IT staff and potentially raised Discoverer Desktop licensing issues.

An alternate solution was proposed for a public Website built from Oracle Portal 9i. Discoverer portlets would be used on the Portal pages to provide Oracle EBS 11i Order Management data from Discoverer 9i worksheets to external customers. The portlet data would be pre-cached, so external customers would see data immediately on the Portal page without waiting for any Discoverer query to run. The cached data would be refreshed periodically, perhaps hourly or daily, by the Web

Cache component of the OracleAS. The Discoverer portlet would display the date/time of the cached data on the bottom of the Portal page through standard functionality.

Every customer would have a unique Portal ID and password. No client installation or VPN access would be required; the user would only need a browser and Internet access. The Portal solution would be compatible with the Internet Explorer, Firefox, and Netscape browsers. Figure 1 shows a diagram of the encrypted user access to the Portal from the Internet.

The registered address for the Portal, <https://portal.opnext.com/pls/portal>, would direct the user to a login page (see Figure 2).

Open Orders Tab

Upon login, the external user would be routed to one Portal page assigned as the default page for his or her Portal ID. This page would have three tabs, each containing a Discoverer portlet. The first tab would display the "Open Sales Orders" portlet containing open sales order lines for the customer (lines not yet ship confirmed). Columns in this portlet, as shown in Figure 3, include:

- Customer PO #
- Sales Order #
- SO Line #
- Product
- Customer Item #
- Quantity
- Price

Figure 3: Open Sales Order Discoverer Portal Page

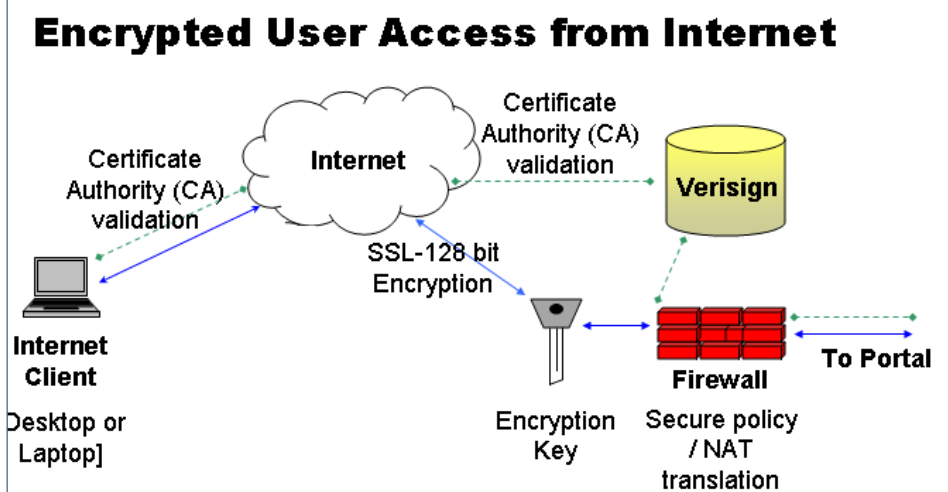


Figure 1: Encrypted User Access from Internet



Figure 2: Portal Page

| Customer | Enc User | Customer PO # | Sales Order # | SO Line # | Product | Customer Item # | Quantity | Price | Currency | Extended Value | Request Date |
|---------------------|------------------|---------------|---------------|-----------|-------------|-----------------|----------|----------|----------|----------------|--------------|
| Demo Customer, Inc. | Alma Inc. | C80580 | 9910909 | 1.1 | Laser | LZFA5579 | 100 | 32.09 | USD | 3,209.27 | 29-APR-2006 |
| Demo Customer, Inc. | Alma Inc. | C80580 | 9910950 | 1.1 | Laser | LZFA5579 | 100 | 32.09 | USD | 3,209.27 | 12-APR-2006 |
| Demo Customer, Inc. | Alma Inc. | C80580 | 9910982 | 1.1 | Laser | LZFA5579 | 100 | 32.09 | USD | 3,209.27 | 13-APR-2006 |
| Demo Customer, Inc. | Alma Inc. | C80580 | 9910983 | 1.1 | Laser | LZFA5579 | 100 | 32.09 | USD | 3,209.27 | 22-MAR-2006 |
| Demo Customer, Inc. | Alma Inc. | C80580 | 9910990 | 1.1 | Laser | LZFA5579 | 100 | 32.09 | USD | 3,209.27 | 22-MAR-2006 |
| Demo Customer, Inc. | Alma Inc. | F704880 | 9910987 | 1.1 | Laser | LZFA5579 | 100 | 32.09 | USD | 3,209.27 | 26-MAR-2006 |
| Demo Customer, Inc. | Alma Inc. | L105580 | 9910976 | 1.1 | Laser | LZFA5579 | 100 | 32.09 | USD | 3,209.27 | 06-APR-2006 |
| Demo Customer, Inc. | Alma Inc. | C040821 | 9910974 | 1.1 | Transmitter | TRM05559 | 150 | 295.46 | USD | 48,319.10 | 05-APR-2006 |
| Demo Customer, Inc. | Sure United Ltd. | C040821 | 9910209 | 1.1 | Transmitter | TRM05559 | 119 | 2,139.20 | JPY | 263,827.00 | 06-APR-2006 |
| Demo Customer, Inc. | Sure United Ltd. | C050524 | 9910295 | 1.1 | Receiver | RCV04890 | 113 | 4,862.30 | JPY | 518,569.00 | 16-MAR-2006 |
| Demo Customer, Inc. | XYZ Co. | C790025 | 99109035 | 1.1 | Transmitter | TRM05559 | 161 | 1,857.83 | USD | 299,776.40 | 03-MAR-2006 |
| Demo Customer, Inc. | XYZ Co. | C000074 | 99101998 | 1.1 | Laser | LZFA5579 | 100 | 32.70 | USD | 3,270.00 | 29-MAR-2006 |
| Demo Customer, Inc. | XYZ Co. | C790024 | 99109804 | 1.8 | Transmitter | TRM05559 | 161 | 1,857.83 | USD | 299,776.40 | 17-MAR-2006 |
| Demo Customer, Inc. | XYZ Co. | C790024 | 99109804 | 1.8 | Transmitter | TRM05559 | 161 | 1,857.83 | USD | 299,776.40 | 24-MAR-2006 |
| Demo Customer, Inc. | XYZ Co. | C790024 | 99109804 | 1.7 | Transmitter | TRM05559 | 161 | 1,857.83 | USD | 299,776.40 | 24-MAR-2006 |
| Demo Customer, Inc. | XYZ Co. | C790025 | 99109912 | 1.8 | Transmitter | TRM05559 | 148 | 1,857.83 | USD | 274,858.64 | 10-APR-2006 |
| Demo Customer, Inc. | XYZ Co. | C000079 | 99109990 | 1.1 | Transmitter | TRM05559 | 128 | 554.52 | USD | 71,020.66 | 11-MAR-2006 |
| | | | | | | | | 2,192 | | | |

The Oracle EBS 11i tables or views queried by this portlet's worksheet were:

- ONT.OE_ORDER_HEADERS_ALL
- ONT.OE_ORDER_LINES_ALL
- APPS.MTL_CUSTOM-ER_ITEM_XREFS_V

Current Month Shipments Tab

The second tab would display a "Current Month Shipments" portlet containing fulfilled shipments to the customer with a ship confirm date in the current month. Columns in this portlet, as shown in Figure 4, include:

- Customer PO #
- Sales Order #
- SO Line #
- Product
- Customer Item #
- Quantity
- Price
- Receivables Invoice #
- Ship Method Code
- Waybill #

The Receivables "Invoice #" column would initially show a NULL value until AutoInvoice had run to create a sales revenue invoice transaction for the shipment.

The Oracle EBS 11i tables queried by this portlet's worksheet were:

- WSH.WSH_NEW_DELIVERIES
- WSH.WSH_DELIVERY_DETAILS
- AR.RA_CUSTOMER_TRX_ALL

| Customer | End User | Customer PO # | Sales Order # | SO Line # | Product | Customer Item # | Quantity | Price | Currency | Extended Value | Shipment Date | Estimated Dock Date | Invoice # | Ship Method | Waybill # | Tracking Link |
|---------------------|-----------|---------------|---------------|-----------|---------|-----------------|----------|--------|----------|----------------|---------------|---------------------|-----------|-------------|--------------------|-----------------------|
| Demo Customer, Inc. | Arma Inc. | C034803 | 99109608 | 1.1 | Laser | L2946679 | 93 | 81.50 | USD | 3,296.00 | 09-MAR-2006 | 14-MAR-2006 | 8000021 | UPS | 16029622019 | Track |
| Demo Customer, Inc. | Arma Inc. | C034803 | 99109604 | 1.1 | Laser | L2946679 | 90 | 81.50 | USD | 3,894.00 | 09-MAR-2006 | 14-MAR-2006 | 8000021 | UPS | 16029622019 | Track |
| Demo Customer, Inc. | Arma Inc. | C029800 | 99107021 | 1.1 | Diode | D0271469 | 13 | 282.50 | USD | 2,262.00 | 09-MAR-2006 | 09-MAR-2006 | 8027988 | FEDEX | 734148989553 | Track |
| Demo Customer, Inc. | Arma Inc. | C034803 | 99107009 | 1.2 | Laser | L2946679 | 95 | 51.50 | USD | 1,751.00 | 07-MAR-2006 | 12-MAR-2006 | 8000020 | UPS | 16029622331 | Track |
| Demo Customer, Inc. | Arma Inc. | C034803 | 99107038 | 1.3 | Laser | L2946679 | 23 | 81.50 | USD | 721.00 | 09-MAR-2006 | 14-MAR-2006 | 8000021 | UPS | 16029622332 | Track |
| Demo Customer, Inc. | Arma Inc. | C029017 | 99109809 | 2.3 | Diode | D0271469 | 3 | 282.50 | USD | 665.00 | 09-MAR-2006 | 09-MAR-2006 | 8027988 | FEDEX | 734148989553 | Track |
| Demo Customer, Inc. | Arma Inc. | C029017 | 99109909 | 5.1 | Diode | D0271469 | 8 | 282.50 | USD | 1,130.00 | 09-MAR-2006 | 10-MAR-2006 | 8027779 | UPS | 629675480241373371 | Track |
| Demo Customer, Inc. | Arma Inc. | C029017 | 99109909 | 5.2 | Diode | D0271469 | 8 | 282.50 | USD | 1,130.00 | 09-MAR-2006 | 10-MAR-2006 | 8027779 | UPS | 629675480241373371 | Track |

Figure 4: Current Month Shipments Discover Portal Page

Prior Month Shipments Tab

The third tab would display a "Prior Month Shipments" portlet [Figure 5], which contains the same data as the "Current Month Shipments" portlet except that its records were shipments from the previous month.

Navigating between tabs would be quick, because it would not initiate any database queries; the data in each portlet was pre-cached.

Architecture

Opnext implemented a single-server architecture for its Oracle 9i Application Server. The OracleAS has three tiers as shown in Figure 6:

- Infrastructure tier
- Application Server middle tier
- Business Intelligence tier.

Web Cache was scheduled to refresh the Discoverer portlets every hour for high-volume customers and once every eight hours for other customers. Web Cache was config-

| Customer | End User | Customer PO # | Sales Order # | SO Line # | Product | Customer Item # | Quantity | Price | Currency | Extended Value | Shipment Date | Estimated Dock Date | Invoice # | Ship Method | Waybill # | Tracking Link |
|---------------------|-----------|---------------|---------------|-----------|-------------|-----------------|----------|-----------|----------|----------------|---------------|---------------------|-----------|-------------|--------------|-----------------------|
| Demo Customer, Inc. | Arma Inc. | C000576 | 99103964 | 1.2 | Transceiver | TRM00559 | 25 | 2,900.00 | USD | 46,400.00 | 15-FEB-2006 | 12-FEB-2006 | 8020884 | FEDEX | 900059484375 | Track |
| Demo Customer, Inc. | Arma Inc. | C000590 | 99109901 | 3.1 | Transceiver | TRM00559 | 19 | 16,950.00 | USD | 207,450.00 | 29-FEB-2006 | 02-MAR-2006 | 8027446 | FEDEX | 734148933026 | Track |
| Demo Customer, Inc. | Arma Inc. | C034803 | 99109911 | 1.1 | Laser | L2946679 | 82 | 81.50 | USD | 1,840.00 | 07-FEB-2006 | 12-FEB-2006 | 8000009 | UPS | 16029622216 | Track |
| Demo Customer, Inc. | Arma Inc. | C034803 | 99109912 | 1.1 | Laser | L2946679 | 84 | 81.50 | USD | 2,060.00 | 07-FEB-2006 | 12-FEB-2006 | 8000009 | UPS | 16029622216 | Track |
| Demo Customer, Inc. | Arma Inc. | C034803 | 99109914 | 1.1 | Laser | L2946679 | 84 | 81.50 | USD | 2,060.00 | 07-FEB-2006 | 12-FEB-2006 | 8000009 | UPS | 16029622216 | Track |
| Demo Customer, Inc. | Arma Inc. | C034803 | 99109951 | 1.1 | Laser | L2946679 | 77 | 81.50 | USD | 2,472.00 | 07-FEB-2006 | 12-FEB-2006 | 8000009 | UPS | 16029622216 | Track |
| Demo Customer, Inc. | Arma Inc. | C034803 | 99109953 | 1.1 | Laser | L2946679 | 103 | 81.50 | USD | 3,296.00 | 14-FEB-2006 | 18-FEB-2006 | 8000012 | UPS | 16029622046 | Track |
| Demo Customer, Inc. | Arma Inc. | C034803 | 99107038 | 1.1 | Laser | L2946679 | 82 | 81.50 | USD | 1,840.00 | 29-FEB-2006 | 05-MAR-2006 | 8000018 | UPS | 16029622288 | Track |

Figure 5: Prior Month Shipments Discoverer Portal Page

ured for HTTPS to secure the transmission of portlet data. Opnext purchased certificates from Verisign to secure connections with SSL at 128-bit encryption (shown in Figure 1).

Security Relationships

Limiting access to Discoverer data was critical, because external customers would be using the Portal to view sales data from the Oracle EBS 11i Order Management module. Portal users should only see order lines and shipments from sales to their company. Opnext was confident it could restrict access within the Portal pages, because the Discoverer portlets were linked to workbooks for the specific customer; its worksheets filtered records only for that customer through the use of a worksheet condition. Portal users could not modify a worksheet condition from a portlet.

But the need to provide customers with access to Discoverer Viewer 9i raised security concerns. Fortunately, Viewer 9i does not allow a user to modify conditions within a worksheet. But what security configuration would restrict Portal users from opening other workbooks in Viewer 9i?

Figure 7 summarizes the security relationships Opnext implemented to restrict Portal user access to other workbooks through Viewer. This is only one of many security relationships that can be implemented and not necessarily the most preferred, although Opnext has been quite pleased with its security.

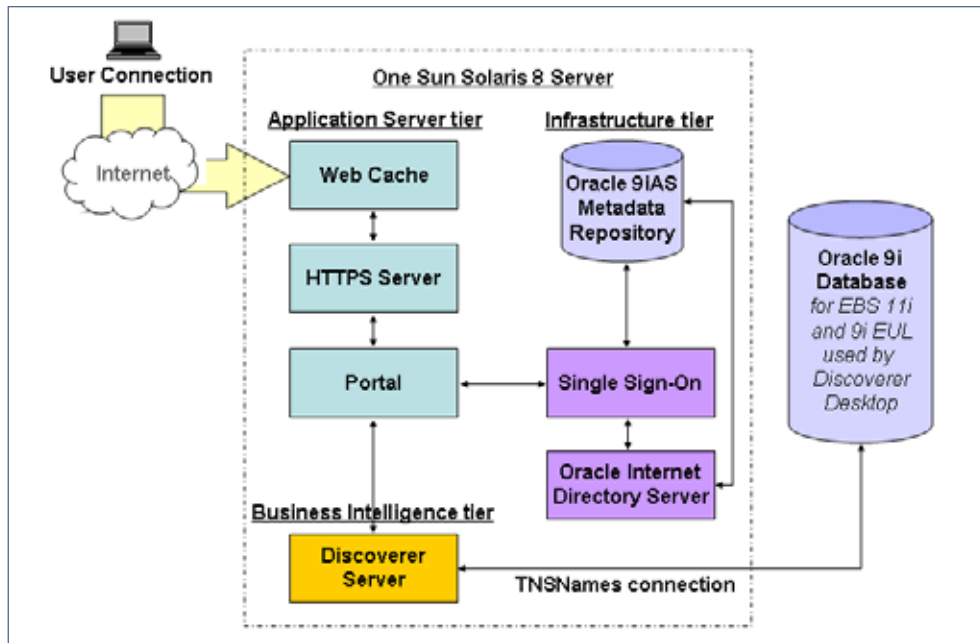


Figure 6: OracleAS Architecture

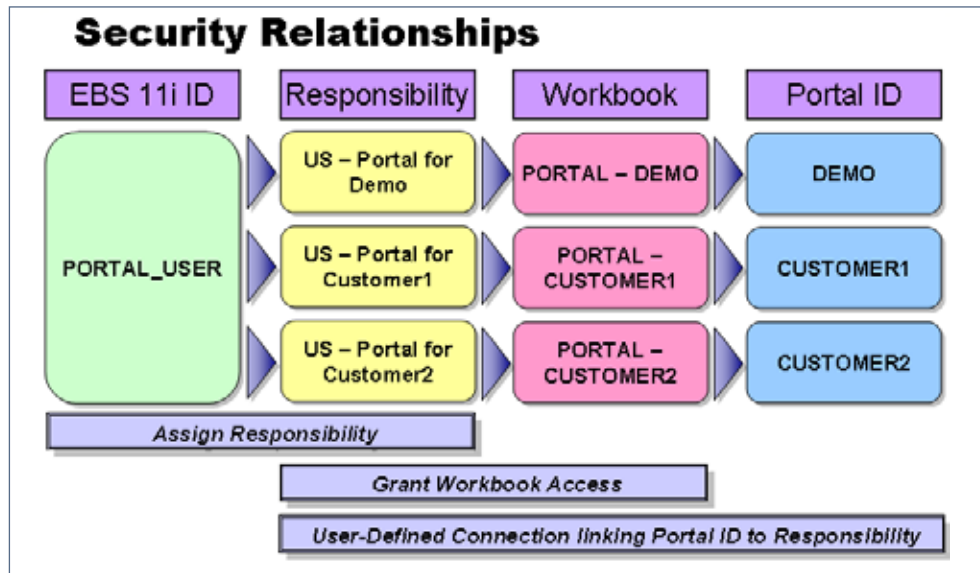


Figure 7: Portal Security Relationships

One Oracle EBS 11i user ID, PORTAL_USER, was created. The intention was that no one would ever know about or log into the Oracle EBS 11i system with this ID. Instead, the purpose for this ID was merely to grant access to Discoverer Desktop workbooks via its assigned responsibilities.

A unique responsibility was created each time Portal access was implemented for a different customer. A new responsibility, US - Portal for DEMO, for instance, was created when Portal access was set up for customer Demo [Figure 8] and then assigned to the PORTAL_USER Oracle EBS 11i ID [Figure 9]. This responsibility only has access to the "Preferences" menu so that no one

The screenshot shows the 'Responsibilities' configuration window. The 'Responsibility Name' is 'US - Portal for DEMO', the 'Application' is 'Self-Service Web Applications', and the 'Responsibility Key' is 'OPT_PORTAL_DEMO'. The 'Description' is 'Preferences Menu for Portal - DEMO'. The 'Effective Dates' are set from '09-MAR-2006'. Under 'Available From', 'Oracle Applications' is selected. The 'Menu' is 'Preferences'. The 'Data Group' is 'Standard' and the 'Application' is 'Self-Service Web Applications'. The 'Request Group' is empty. Below the configuration fields are tabs for 'Menu Exclusions', 'Excluded Items', and 'Securing Attributes'. The 'Menu Exclusions' tab is active, showing a table with columns for 'Type', 'Name', and 'Description'. The 'Type' dropdown is set to 'Function'.

Figure 8: Oracle Responsibility Configuration for US-Portal for Demo

The screenshot shows the 'Users' configuration window. The 'User Name' is 'PORTAL_USER'. The 'Person', 'Customer', and 'Supplier' fields are empty. The 'E-Mail' is 'portal@opnext.com'. The 'Password Expiration' is set to 'Days' with a value of '90'. The 'Effective Dates' are set from '03-MAR-2005'. Below the configuration fields are tabs for 'Direct Responsibilities', 'Indirect Responsibilities', and 'Securing Attributes'. The 'Direct Responsibilities' tab is active, showing a table with columns for 'Responsibility', 'Application', 'Security Group', and 'Effective Dates' (From and To).

| Responsibility | Application | Security Group | Effective Dates From | Effective Dates To |
|--------------------------------|-----------------------------|----------------|----------------------|--------------------|
| US - Portal for Hitachi Canada | Self-Service Web Applicatio | Standard | 01-MAR-2005 | |
| US - Portal for Alcatel | Self-Service Web Applicatio | Standard | 01-JUL-2005 | |
| US - Portal for DEMO | Self-Service Web Applicatio | Standard | 09-MAR-2006 | |

Figure 9: Oracle User Configuration and Assignment for Portal_User

would see Opnext data even if logged into Oracle EBS 11i with the PORTAL_USER ID.

Next, a workbook called PORTAL - DEMO was created in Discoverer Desktop and stored in the end user layer (EUL) of the Oracle EBS 11i database. This database workbook contained three worksheets – one worksheet for each of the three portlets: “Open Sales Orders”, “Current Month Shipments”, and “Prior Month Shipments”. Each worksheet used a condition to show only records for customer Demo. Then the Discoverer administrator granted access to the workbook by sharing it with the US – Portal for DEMO responsibility [Figure 10].

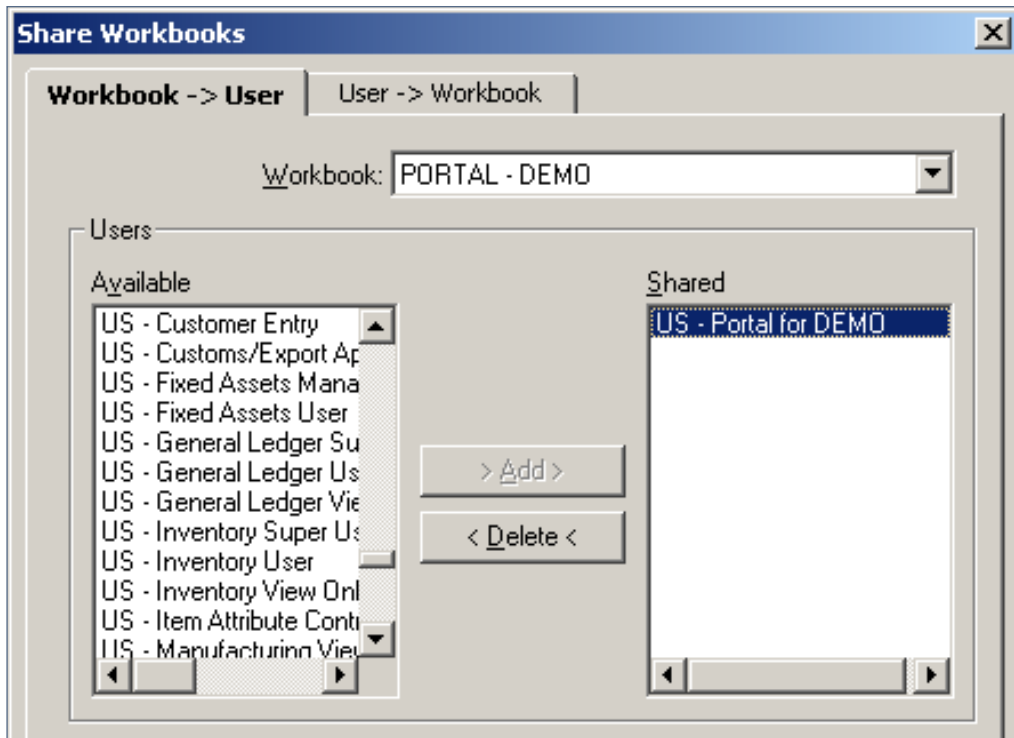


Figure 10: Share Discoverer Workbook Grant

Once the Portal administrator set up a new Portal ID, Demo, for this customer, a user-defined connection was created within Portal to link the Demo Portal ID to the US – Portal for DEMO responsibility assigned to the PORTAL_USER Oracle EBS 11i ID. Figure 11 shows this user-defined connection; its selected responsibility assignment is displayed as “portal_user:US – Portal for DEMO”

let on the Portal page. Prerequisites include:

- Creating a new Portal page for the customer’s Portal ID.

- Assigning the new page as the default page for the customer’s Portal ID.
- Creating a user-defined connection [Figure 11].

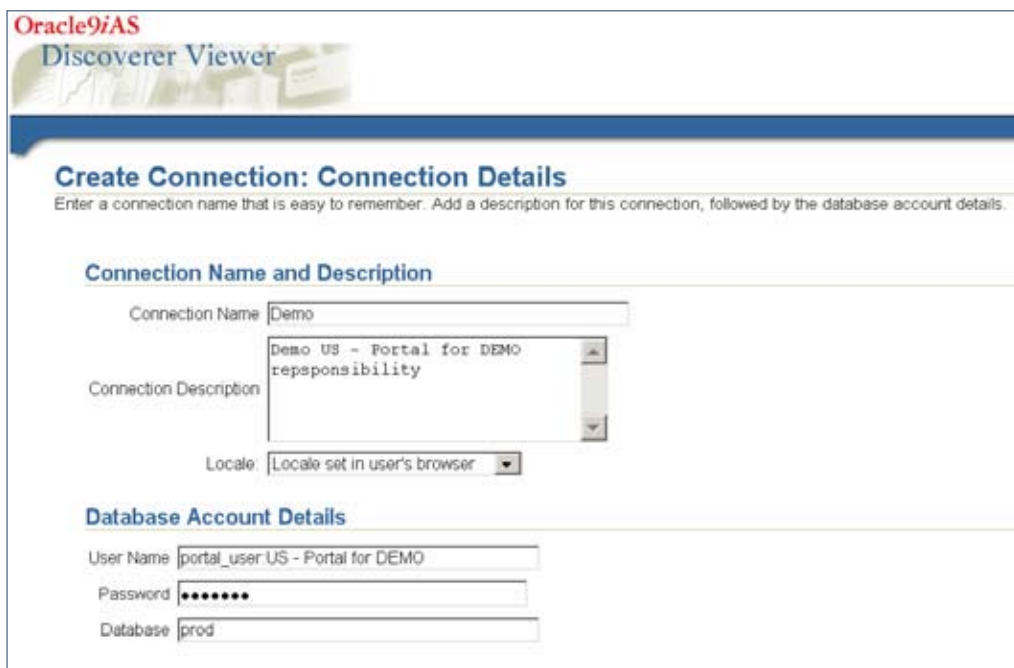


Figure 11: Oracle 9iAS Connection

Overview of Key Portlet Creation Steps

This section provides a brief overview of the key steps followed to create a Discoverer port-



Figure 12: New Portal Page

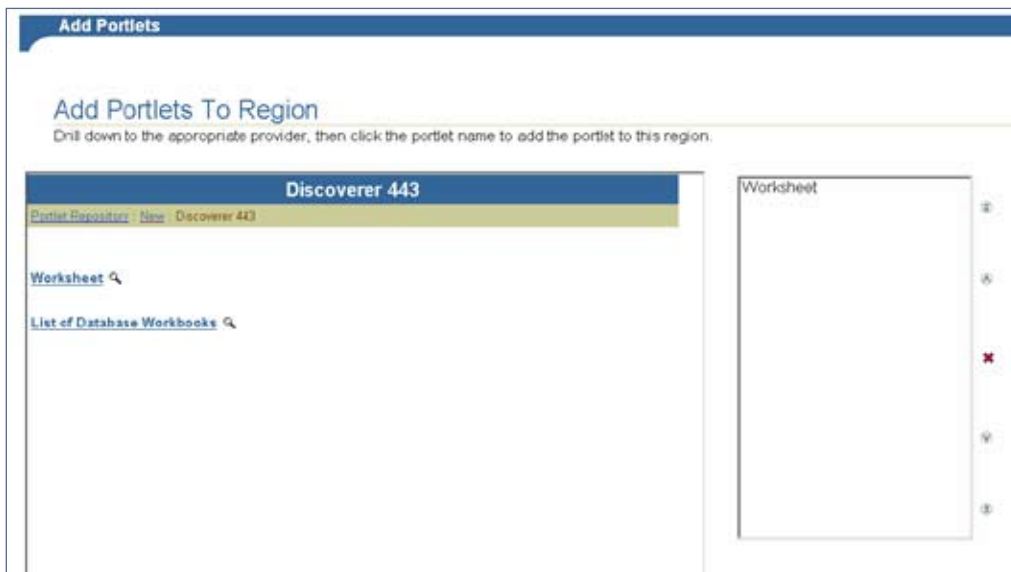


Figure 13: Add Portlets

First, the Portal administrator selected a region on the new Portal page [Figure 12] and added a Discoverer portlet (undefined worksheet) to the region [Figure 13].

Then the administrator chose a user-defined connection, "Demo",

stored in the Portal [Figure 14] and the Discoverer workbook [Figure 15] and worksheet [Figure 16] stored in the EUL within the Oracle EBS 11i database.

The refresh options for this portlet were set to once a day [Figure 17].

A portlet's refresh frequency can be chosen from a variety of intervals, including every hour, once every 8 hours, every 2 days, once a week, or monthly.

The screenshot shows a progress bar at the top with seven steps: Database Connection (selected), Workbook, Worksheet, Parameter Values, Portlet Settings, Refresh Options, and Review. Below the progress bar is the title 'Select Database Connections' and a sub-header 'Publisher'. The text explains that these are the connections used to select and display the worksheet, and that '*' indicates a Public Connection. A 'Publisher' section contains a dropdown menu for 'Publisher's Connection' with a 'View details' link. The dropdown is open, showing options: 'upgrade', 'Demo', 'Order Supe User Prod -- disabled *', and 'DISCODEMO *'. Below this is the 'Users Not Logged In' section with two radio buttons: 'No Connection (Do not display data)' (selected) and 'Use database connection' (with a '<Publisher's connection>' dropdown). The 'Users Logged In' section has a radio button for 'Use database connection' (with a '<Publisher's connection>' dropdown and a checked 'Allow users to change database connection' checkbox) and a radio button for 'Use user's database connection'.

Figure 14: Select Database Connections

The screenshot shows a progress bar at the top with seven steps: Database Connection, Workbook (selected), Worksheet, Parameter Values, Portlet Settings, Refresh Options, and Review. Below the progress bar is the title 'Select Workbook' and a sub-header 'Desktop: Edit Worksheet Portlet Defaults'. The text explains that a workbook must be selected from the drop list and that it must be openable from the following connection(s). A 'Logged In User's Connection' dropdown is set to '<User's Database Connection>'. Below it, a 'Workbook' dropdown is open, showing 'DISCOV PORTAL - DEMO' as the selected option. At the bottom right are buttons for 'Help', 'Cancel', 'Back', 'Step 2 of 7', and 'Next'.

Figure 15: Edit Portlets > Select Workbook

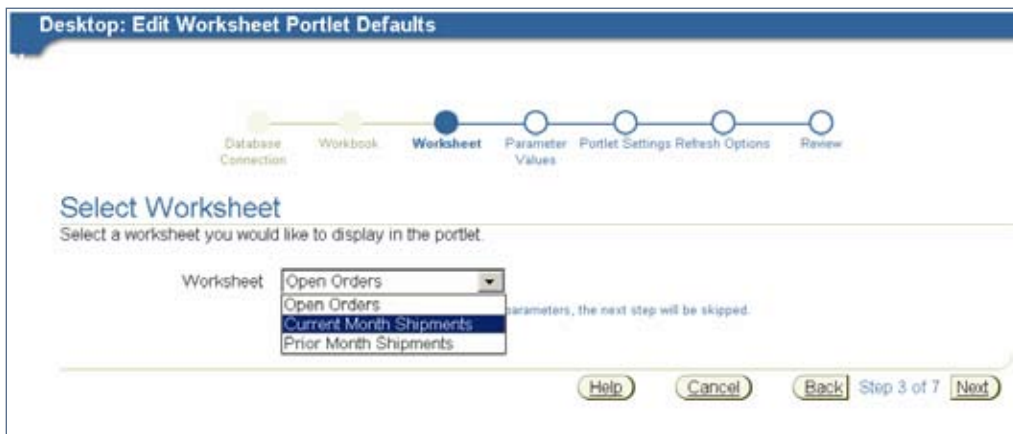


Figure 16: Edit Workbook > Select Worksheet

Issues

Issue # 1 – Export from Portal Page to Excel

One issue that arose during user testing was the inability to export data from the Portal page. While each Discoverer portlet displayed data nicely in a table, Portal did not provide any means for exporting the data. The browser's "Save As" functionality was inadequate. Highlighting the table and copy-and-pasting to Excel produced unexpected results.

So Opnext turned to the Web-based version of Discoverer – Discoverer Viewer – for its export functionality. Each Discoverer portlet has a View Worksheet link in the bottom-left corner as shown in Figure 18.

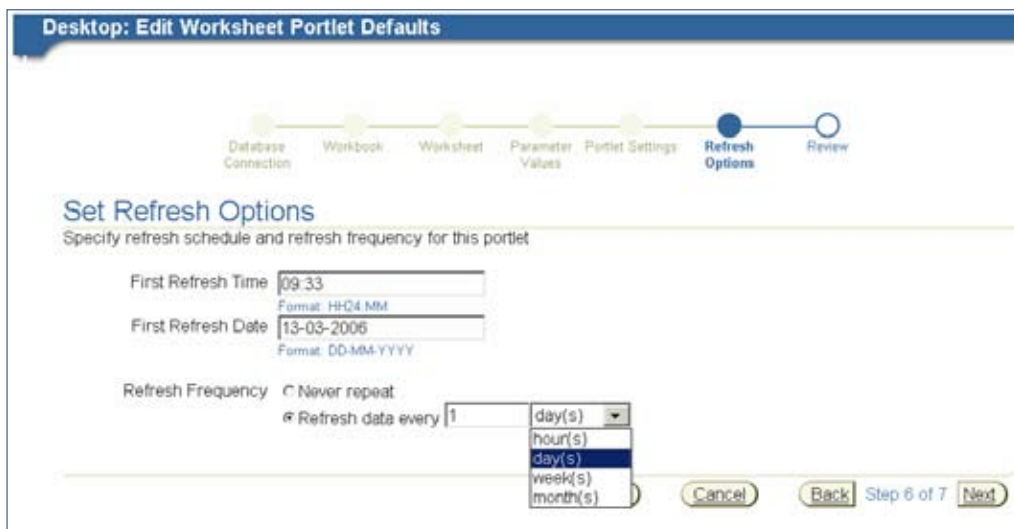


Figure 17: Edit Worksheet > Refresh Options

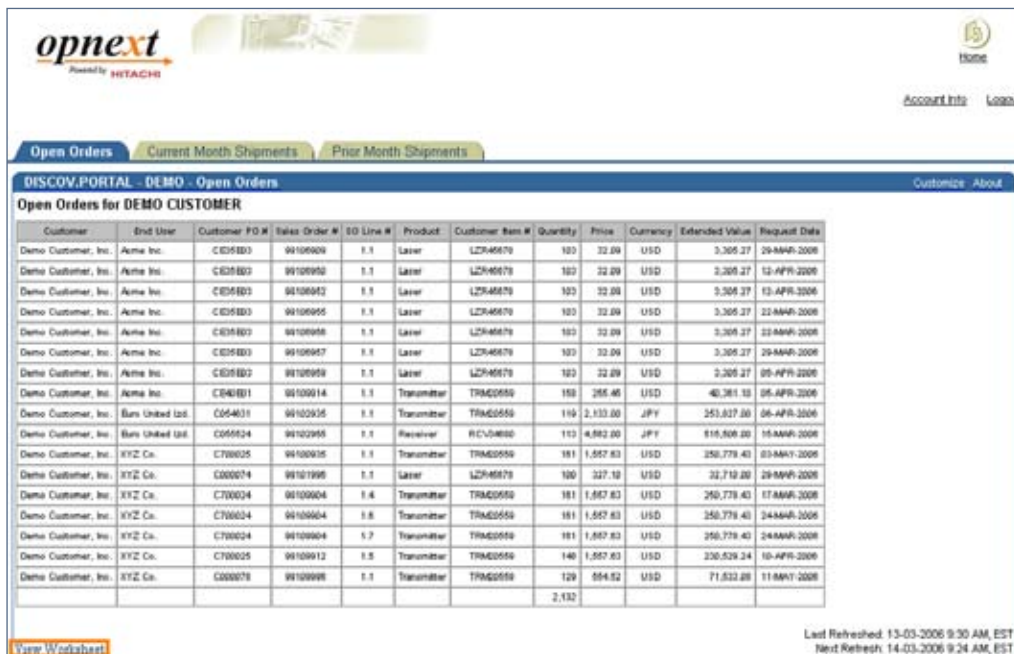


Figure 18: View Worksheet

Clicking this link routes the browser to Discoverer Viewer on the OracleAS, where the user can initiate a real-time query of the worksheet used by the portlet. Figure 19 shows the result set of the worksheet rerun in Viewer, which includes an Export Data link.

From the Export Data link, Viewer allows the user to export the result set to many file formats, including Excel, Lotus 1-2-3, HTML, comma-delimited, or Oracle Reports XML [Figure 20].

Once the user selects Excel as the format and clicks the Export Data button, Viewer opens up an Excel spreadsheet with the data from the Viewer worksheet [Figure 21].

Issue # 2 – Shipment Tracking Link

A new request was made during user testing for enhancements to the “Current Month Shipments” and “Prior Month Shipments” portlets. The enhancements were to add a hyperlink to track actual shipments on the shipping carrier’s Website. The “Current Month Shipments” and “Prior Month Shipments” tabs included the FedEx, UPS, or DHL tracking number under

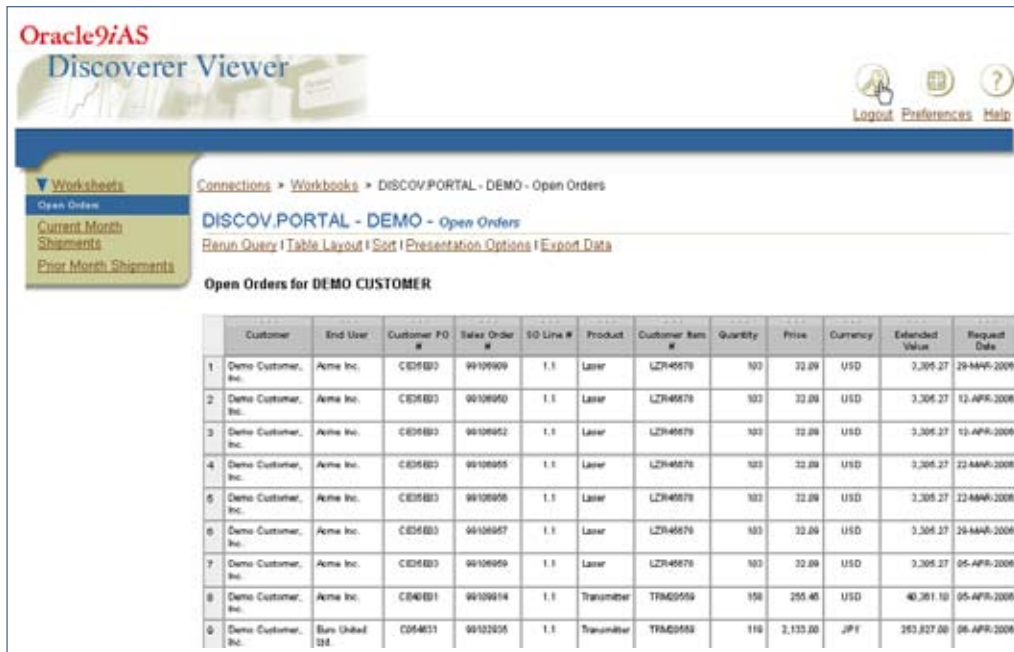


Figure 19: Discoverer Viewer and Export Data Link



Figure 20: Viewer Export Options

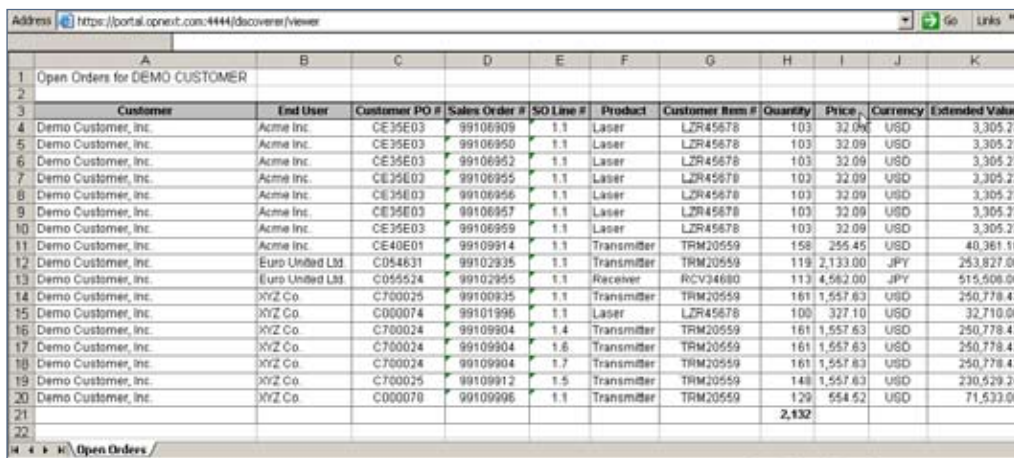


Figure 21: Viewer Worksheet Data in Excel

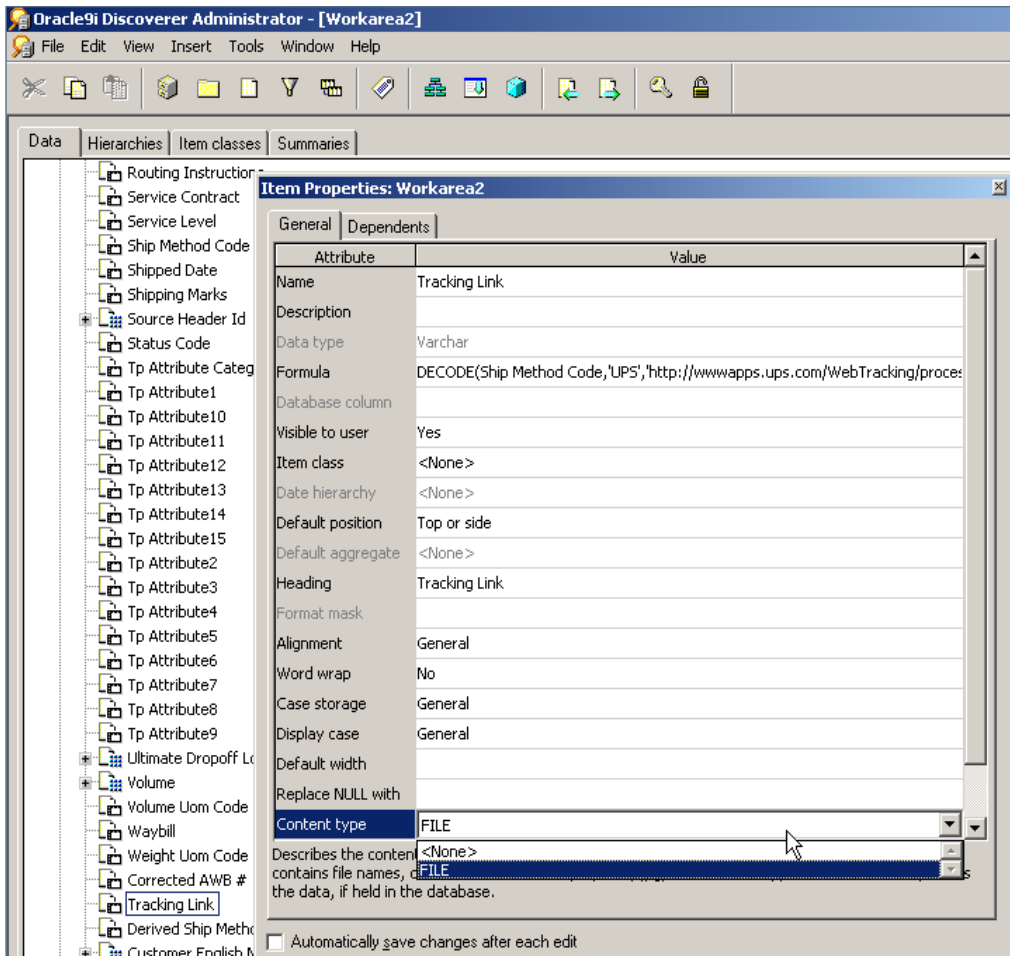


Figure 22: Item Properties

the “Waybill #” column. Users were copying tracking numbers from the Portal page and pasting them onto the shipping carrier’s Website – one tracking number at a time.

This request created a dilemma: How could a tracking link URL column be added to the cached result set of a Discoverer portlet? The solution to this dilemma was to create a hyperlink within the Discoverer Desktop 9i database workbook itself.

First, a new data item, “Tracking Link” was added in Discoverer Administrator [Figure 22]. The “Tracking Link” item’s value was a URL address to track the actual shipment based on its tracking number. The item’s content type was set to file,

which allowed the column value to act as an Internet hyperlink. The data type was set to VARCHAR. The item’s formula referenced the “Ship Method Code” item in a DECODE function to determine which external Web address to select; the formula also concatenated the tracking number from the “Way-

“Tracking Link” Item Formula

DECODE(Ship Method Code,

```
'UPS', 'http://wwwapps.ups.com/WebTracking/processInputRequest?HTMLVersion=5.0&sort_by=status&tracknums_displayed=5&TypeOfInquiryNumber=T&InquiryNumber1=||"Waybill"||' & AgreeToTermsAndConditions=yes&track.x=42&track.y=11',
'FEDEX', 'http://www.fedex.com/Tracking?tracknumbers=||"Waybill"||',
'DHL', 'http://track.dhl-usa.com/TrackByNbr.asp?ShipmentNumber=||"Waybill"||',
NULL)
```

Figure 23: Tracking Link Item Formula

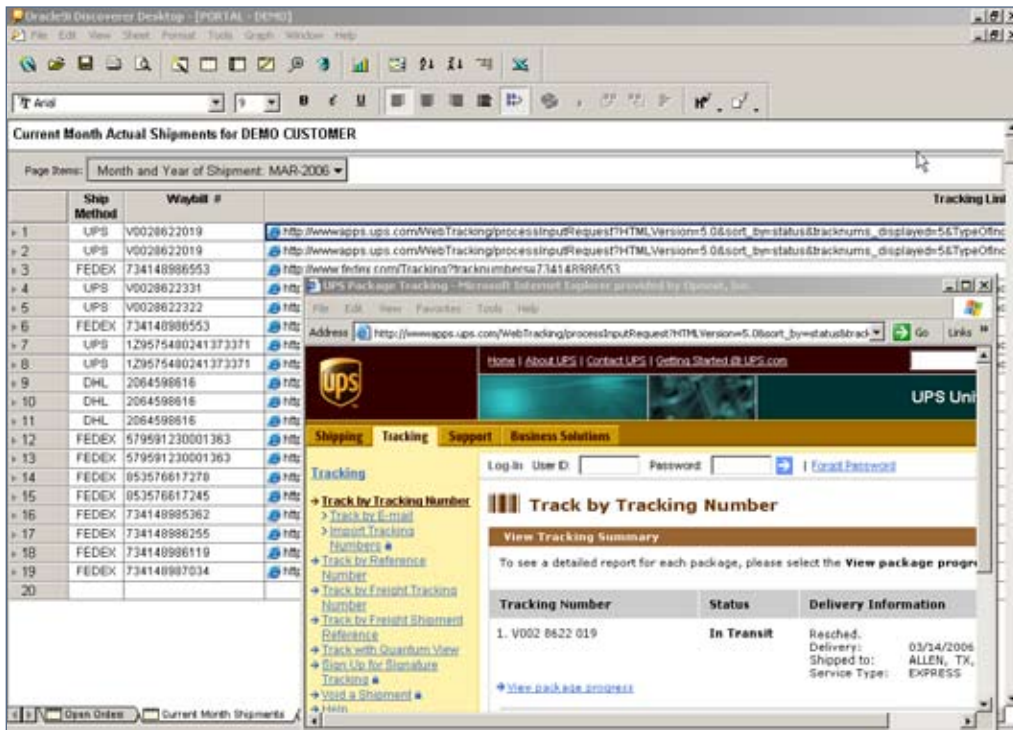


Figure 24: Tracking Link Worksheet

Next, the new “Tracking Link” data item was added to the Discoverer worksheet used by the portlet. Figure 24 shows the column for the “Tracking Link” item on the Desktop worksheet. The cells in this column are recognized as hyperlinks. Clicking on a cell opens a browser page to track the shipment on UPS’s Website.

When Portal 9i displayed the same “Tracking Link” column through the Discoverer portlet, the cells retained their hyperlink functionality. Clicking on the link for a FedEx shipment, for example, opened a page to FedEx’s Website [Figure 25].

This solution only worked with Discoverer 9i – Desktop, Viewer, and portlets in Portal

9i – as well as Desktop 10gR2 (10.1.2.1).

For Viewer 10gR2, the workbook needed to be opened in Discoverer Plus 10gR2 and a Drill Link to Internet URL needed to be added to the

“Tracking Link” column.

For more on Drill Link to Internet URL, refer to the Oracle Business Intelligence Discoverer Plus User’s Guide – 10g Release 2, Chapter 10, “How to create drill links to Internet URLs”.

The “Tracking Link” column does not retain its hyperlink functionality in Discoverer portlets on Portal 10gR2. Opnext has opened several service requests on MetaLink for a solution and is currently testing a 10gR2 patch provided by Oracle Development.

Issue # 3 – Server Resources

Opnext experienced an issue with Discoverer portlets because it had undersized the memory on the Application Server (AS) box. The symptom was that some Discoverer portlets could not refresh and would therefore only display an error message.

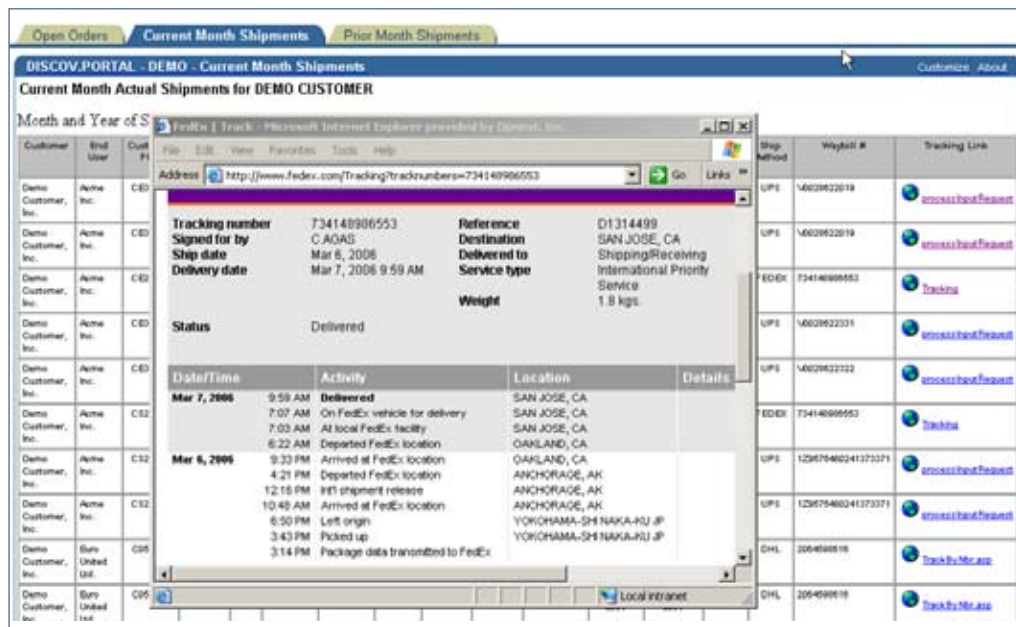


Figure 25: FedEx Shipment Information

This issue occurred when the Discoverer server within the OracleAS had insufficient memory to spawn additional session pools. The Discoverer server needs the session pools to refresh a portlet's cached data.

The short-term workaround to this issue was to change the refresh rate for most Discoverer portlets from hourly to once every 8 hours and limit the number of portlets. The obvious long-term solution was to migrate the OracleAS to a larger server with more memory.

The symptom was that some Discoverer portlets could not refresh and would therefore only display an error message.

Lessons Learned

Opnext learned to initiate testing of the firewall policies on the customer's network before issuing a new Portal ID to the external customer. The test was simply to have the customer attempt to log onto the Portal using the Demo Portal ID to determine if firewall policies on the customer's network allowed access to the SSL ports used by Opnext's Portal server. Some companies had firewall policies that blocked those ports.


Several relevant differences between Portal 9i & 10gR2 (10.1.2.1) were identified as Opnext prepared to migrate to Portal 10gR2:

- Handling of Failed Portlet Refreshes. In Portal 9i, if a portlet refresh fails, the portlet displayed an error message. Portal 10gR2 was enhanced to continue displaying the "old" cached data from the last successful refresh before the error occurred.
- Addition of the Next Link. Portal 9i lacked any next link for rows and columns in a Discoverer portlet table. If the result set returned 100 records, but the portlet was set to display only 25 rows, then the Portal user had no way to scroll down to see rows 26 to 100. Portal 10gR2 eliminated this problem with the addition of the "Next" link.
- Viewer Security Enhancement. Oracle added a security enhancement in 10gR2 to limit Discoverer Viewer access only to the workbook selected for the portlet. In 9i, if a Portal user clicked the "View Worksheet" link to rerun the portlet's worksheet in Viewer 9i, that Portal user could also open any workbook shared with the Oracle EBS responsibility selected in the user-defined connection.
- Drill Links. The "Drill Link to Internet URL" functionality, as referenced in a previous section, was added to Discoverer Plus 10gR2 to allow a worksheet column to be treated as an Internet hyperlink.

Conclusion

Discoverer portlets provide an efficient way to extend Oracle EBS 11i data from Oracle Discoverer worksheets to external customers. This portlet functionality within Oracle Portal allows companies to leverage their investment in Discoverer

to share data with parties outside of their organization.

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