



COLLABORATE 15

TECHNOLOGY AND APPLICATIONS FORUM
FOR THE ORACLE COMMUNITY

Migrate your Discover Reports to Oracle APEX

Session ID#: 10305

Thu 4/16/2015, 9:45-10:45, South Seas I

Prepared by:
John Peters
Independent Consultant
JRPJR, Inc
john.peters@jrpjr.com

Revision 3.1



APRIL 12-16, 2015
MANDALAY BAY
RESORT & CASINO

#C15LV

REMINDER

Check in on the
COLLABORATE mobile app

About the Presenter

- John Peters, JRPJR, Inc
 - Independent Consultant based in the San Francisco Bay Area
 - Worked with Oracle EBS since 1993
 - OAUG Workflow SIG Coordinator
 - Founding board member of the Northern California OAUG GEO
 - Presented many papers at many conferences:
<http://jrpjr.com> (paper archives)
 - john.peters@jrpjr.com

- Primarily Technology Focus
 - DBA/System Administration
 - Extension/Customization Design and Development





Connection Point[®]
ONLINE SEMINAR

OAUG Connection Point[®] AppsTech Online JULY 28-30, 2015

If you are a technologist that supports the Oracle E-Business Suite, you won't want to miss this three-day, online seminar designed exclusively for you.

Members of the OAUG receive access to all 18 sessions for \$195 (non-member rate: \$260).



SIGN UP TODAY!

Who should attend?

- Database Administrators
- System Administrators
- E-Business Suite Developers
- Middleware Technologists supporting Oracle E-Business Suite

Topics Include:

- Applications Strategy and Service
- Applications Development
- Business Intelligence/BI Analytics
- Database
- Middleware
- Upgrade
- System Management

Register now at cp.oaug.org



COLLABORATE 15
TECHNOLOGY AND APPLICATIONS FORUM
FOR THE ORACLE COMMUNITY

Agenda

- Quick overview of Discoverer and APEX
 - Comparison of Discoverer and APEX
 - APEX Demo
 - APEX Infrastructure
 - Steps to move a Discoverer Report to APEX
 - 2nd APEX Demo
 - Questions and Answers
-
- This is revision 1.0 of this presentation. Always check my web site for the most recent revision <http://jrpjr.com>, look under Paper Archives



Oracle Discoverer

This is a subtitle or bulleted list



COLLABORATE 15

TECHNOLOGY AND APPLICATIONS FORUM
FOR THE ORACLE COMMUNITY

Discover Features

- Current product name
 - Oracle's Business Intelligence Discoverer
- Reporting and Data Analysis
- Web Publishing
- Ad Hoc Query tool
- Export results to other tools like Excel



Discover Statement of Direction

- Oracle Business Intelligence Discoverer has been non-strategic since 2006...
- Oracle's Support Policy

Product	Version	GA Date	Premier Support Ends	Extended Support Ends	Sustaining Support Ends
Discoverer 11gR1	11.1.1.x	Jun 2009	Jun 2014	** Jun 2017	Indefinite

** Oracle has waived the Extended Support fee for Discoverer for the first year.

- Upgrade to the latest Discoverer 11g releases

Protect the investment you have in your existing Discoverer technology by upgrading to the latest release ensuring the best possible support. However, no new features or enhancements will be made to Discoverer beyond 11.1.1.7.0.



What are your options

Oracle's Recommended Direction

- Oracle E-Business Suite Customers
 - Oracle Business Intelligence Applications for Oracle EBS
- General Discoverer Customers
 - Oracle Business Intelligence Foundation Suite

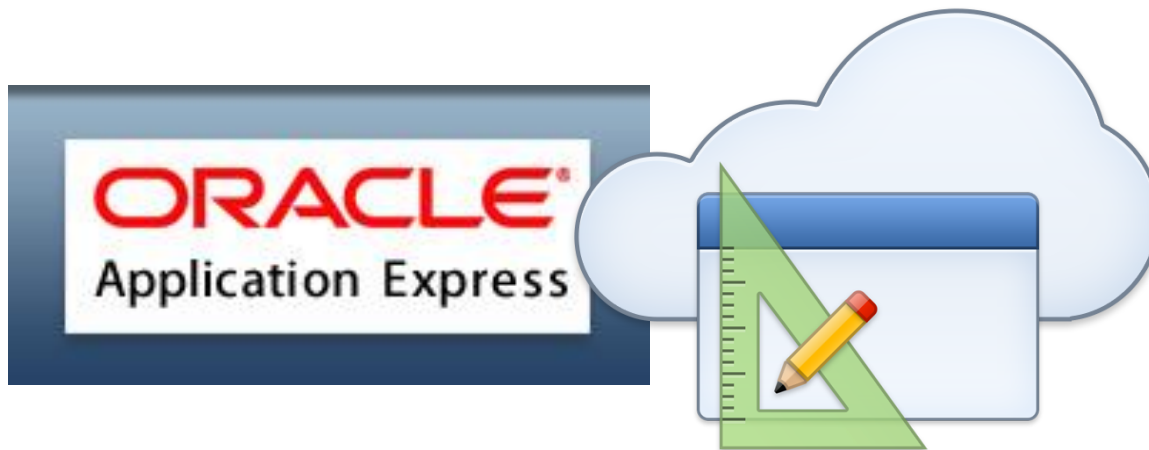
March 2014, Oracle Business Intelligence Discoverer Statement of Direction



COLLABORATE 15
TECHNOLOGY AND APPLICATIONS FORUM
FOR THE ORACLE COMMUNITY

There is another option

- Oracle Applications Express
- Commonly referred to as APEX



Oracle Applications Express



COLLABORATE 15

TECHNOLOGY AND APPLICATIONS FORUM
FOR THE ORACLE COMMUNITY

APEX Capabilities

- APEX can be used for:
 - Reporting
 - Charting
 - PDF Generation
 - Data Entry Forms
- It is a general purpose rapid development environment
- It is meant for building smaller applications rapidly
 - Pages limited to 200 items
- You must have an Oracle DB to run Applications Express
- You must have connectivity from the browser to the Oracle DB, no disconnected operation
- Has a large developer base, reference materials and example applications to use as a starting point



Search	Go	New Customer		
Customer Name	Address	City	State	Zip Code
Quiles, John	4500 Avulsion Drive	Berling	VA	23166
Hartfield, William	9000 North Terminal Parkway	Atlanta	GA	30320
Logan, Edward	1 Harborside Drive	East Boston	MA	02128
Olson, Edward	10000 West O'Hare	Chicago	IL	60656
Lakshya, Firoze	Hanger Center, Third Floor	Fishtown	NY	11371
Larson, Alan	10701 Lambert International Blvd	St. Louis	MO	63145
Grady, Eugene	Schoephauser Road	Windsor Locks	CT	06096

The screenshot shows an 'Add/Modify Products' form. It includes fields for 'Product Name' (Bluetooth Headset), 'Product Description' (Hands-Free without the wires), 'Category' (Phones), 'Product Available' (radio buttons for Y and N), and 'List Price' (\$40.00). Buttons for 'Cancel', 'Delete', and 'Apply Changes' are also visible.



History of Application Express

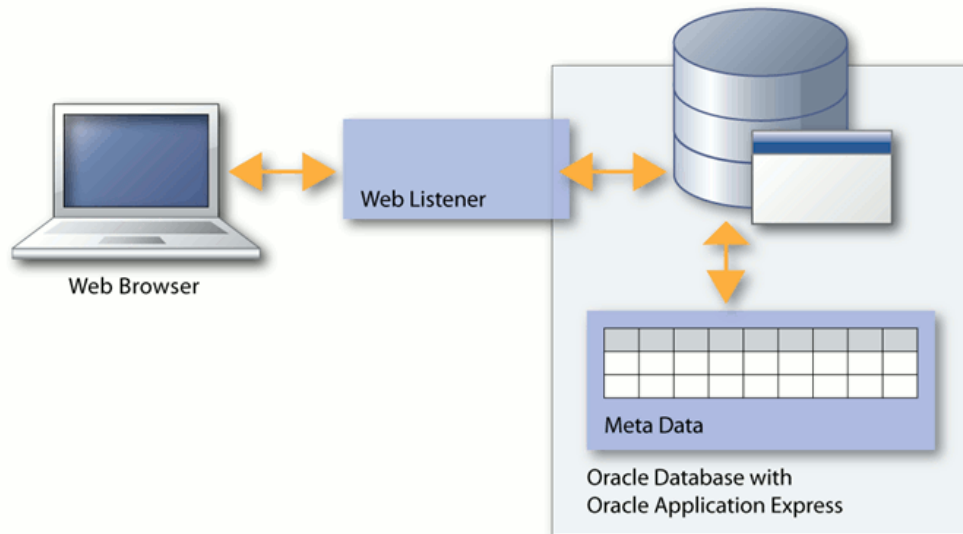
- 2004 - Started out as HTML DB in 2004
- 2006 - Name changed to Application Express 2.1 in 2006
- Continual enhancements and improvements
- 2012 - Application Express 4.2 released in 2012
 - Current Release
- 2014 – Application Express 5.0 announced
- 2015 – Application Express 5.1 planned

<http://www.oracle.com/technetwork/developer-tools/apex/overview/index.html>



Architecture

- APEX resides in your DB
- In fact as of Oracle DB 12c it will be installed by default
- 2 Tier Architecture
 - Oracle DB
 - Web Listener
 - Web Browser
- You develop in a web browser
- Your users use your application in web browser



Supports Mobile Devices

- There are APEX Themes to support mobile devices
- This supports mobile concepts:
 - Gestures like Swipe, Tap, Pinch, etc.
 - List of Values displays
 - Calendar Functionality
- Adjustments to screen dimensions and orientation
- Same Themes work well for Phones, Tablets and Desktops
- Develop once and deploy to devices as required



APEX Deployment Options

- Install On Premise or Multi-tenant “Private” Cloud
 - Sits in your Oracle Database
 - We will concentrate on this one since we want to report against data in your current Oracle Database

- Public Cloud Subscription
 - Oracle Database Cloud Service
 - Amazon EC2 / RDS
 - Hosting partners
 - Useful for stand alone application development

- You must have an Oracle Database



APEX Installation Details

- Please look at MOS Note 1306563.1:
Extending Oracle E-Business Suite Release 12.1.3 and Above Using Oracle Application Express (APEX)
 - The white paper has been rev'ed as of Mar-2015, ver 2.01
 - Use this as your starting point for any installation
 - There are two patches for the EBS environment

- In addition the following are good references:
 - MOS 373604.1, How to Integrate APEX with Oracle eBusiness Suite and Set Up Authentication



APEX Development

- Development is done in an APEX Workspace and Application
- You can migrate Applications between DB instances
- APEX is a rapid development tool
- Templated, Wizard based development
- Many sample applications available to get you started
- Expose your EBS objects as Views with select grants
- Can be reports, but you can also do updates using EBS APIs



Best of all Oracle Applications Express is **FREE**

As long as you have a database license that allows for development work.
A non-runtime only license.

Check with you Oracle Sales Rep if you are unsure of your database licensing.



Discoverer and APEX Comparisons



Differences Between Discoverer and APEX

Custom Columns, Sorts, Filters

- Both Discoverer and APEX support end user:
 - Custom Column Layouts
 - Custom Sorts
 - Custom Filters

- In fact APEX excels at custom filters because it has “contains” operators that look across all of the columns of data

- In APEX users can save these personal preferences



Differences Between Discoverer and APEX

Export Options

- Both Discoverer and APEX support the exporting of data to delimited files or Excel files.
- You can even send data from APEX to “print” through an XSL-FO template and generate a PDF file.
- In fact APEX goes one step better you can even import data from Excel into custom tables using an APEX data entry form, more on that later.

<https://www.youtube.com/watch?v=g0KXfQ5iJ2Y>



Differences Between Discoverer and APEX

Ad Hoc Queries

- Discover is an end user ad hoc query tool
- You can write a query and join tables together

- APEX does not allow the user to write an ad hoc query
- Tables must be joined together in advance in a view

- In my experience, ad hoc queries are what gets most users in trouble due to:
 - Incorrect join keys
 - NVL column cases
 - Outer joins



No Ad Hoc Queries

- A developer will need to create a view that can be used in an interactive report template. This will give you a well written, fast performing, and correct representation of the data. In addition, it will be locked down and can be controlled through release cycles.
- Include the sets of columns that would make the report usable to the widest audience in your base view.
- Allow the end users to personalize the column layout to be what they want.
- Allow the end users to add filters as necessary.



Browser Based

- Since the APEX Tool is browser based you are at the mercy of how the browser renders the given web pages.
- Choose a standard browser for deployment.
- Develop and test using that standard browser.



APEX Demo



COLLABORATE 15

TECHNOLOGY AND APPLICATIONS FORUM
FOR THE ORACLE COMMUNITY

APEX Infrastructure



COLLABORATE 15

TECHNOLOGY AND APPLICATIONS FORUM
FOR THE ORACLE COMMUNITY

APEX Do's and Don't's

■ Do

- Create a new EBS DB User(XXAPEX) and register that schema in EBS. For R12.2 this schema will be EBR enabled.
- Your Views will be held in the APPS schema and will be EBR enabled for R12.2.
- Your 'XXAPEX' user will be granted select permissions on Views into the EBS Data.
- PL/SQL will be stored in the APPS schema and execute grants will be done to the 'XXAPEX' user

■ Don't

- Allow APEX to directly access the APPS schema
 - Update any EBS tables directly, use EBS Open I/F tables or PL/SQL API's to update EBS data
- Note 1306563.1 is very specific on these points



APEX is Just a Tool

You will need to build your own framework to support:

- Authentication
 - Verifying who a user is when they login to your APEX Application

- Authorization
 - Determining what that specific user is able to see and do in your APEX Application

- Navigation
 - Display the menu of APEX pages for the user to move around



Authentication

- You can use EBS Userids and Passwords

- Note 1306563.1: Extending Oracle E-Business Suite Release 12.1.3 and Above Using Oracle Application Express (APEX)

This uses:

```
fnd_user_pkg.validatelogin(p_username, p_password);
```

- I use the following

```
FUNCTION IS_VALID_EBS_USER (p_username IN VARCHAR2,  
                             p_password IN VARCHAR2  
                             )  
    RETURN BOOLEAN  
IS  
BEGIN  
    IF FND_WEB_SEC.VALIDATE_LOGIN(p_username, p_password) = 'Y' THEN  
        RETURN TRUE;  
    ELSE  
        RETURN FALSE;  
    END IF;  
END IS_VALID_EBS_USER;
```

- You can also use SSO



Authorization

- I use Oracle EBS Responsibilities to identify what APEX pages the user is authorized to use
- I have a generic Authorization PL/SQL Function:

```
FUNCTION AUTH_SCHEME_CHECK(p_form_function VARCHAR2)
    RETURN BOOLEAN;
```

This calls:

```
fnd_global.APPS_INITIALIZE
```

And Ultimately:

```
fnd_function.TEST(p_function_name)
```

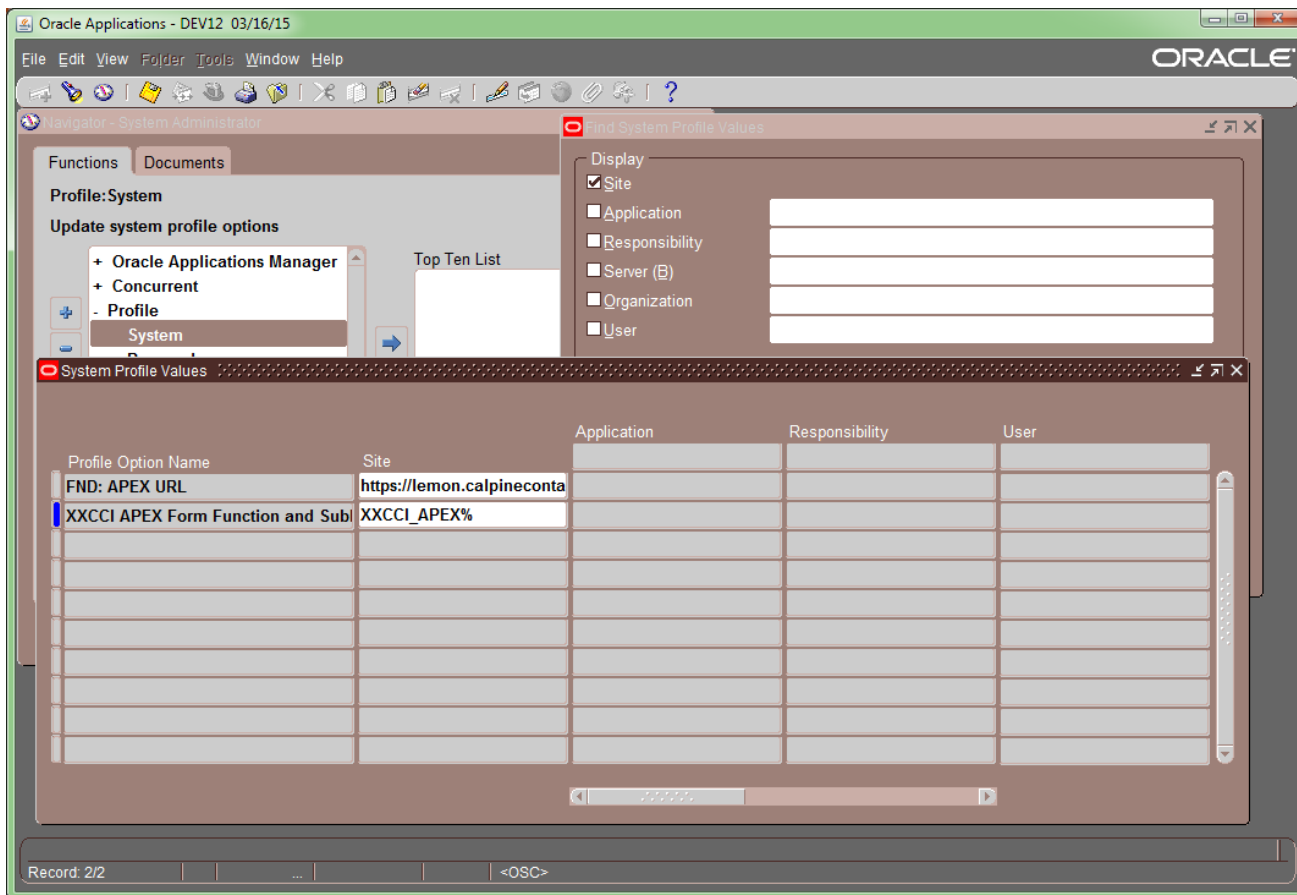
- I then have create an APEX Authorization Scheme for each Form Function (APEX Page)

```
XXCCI_APEX_SECURITY_PKG.AUTH_SCHEME_CHECK('XXCCI_APEX_INV_ONHAND_VAL')
```



Navigation

- I use Oracle EBS Menus and Form Functions to filter and present the APEX pages in an APEX menu to the user
- I use a custom Profile Option to identify the prefix for both APEX Form Functions and Menu/SubMenus



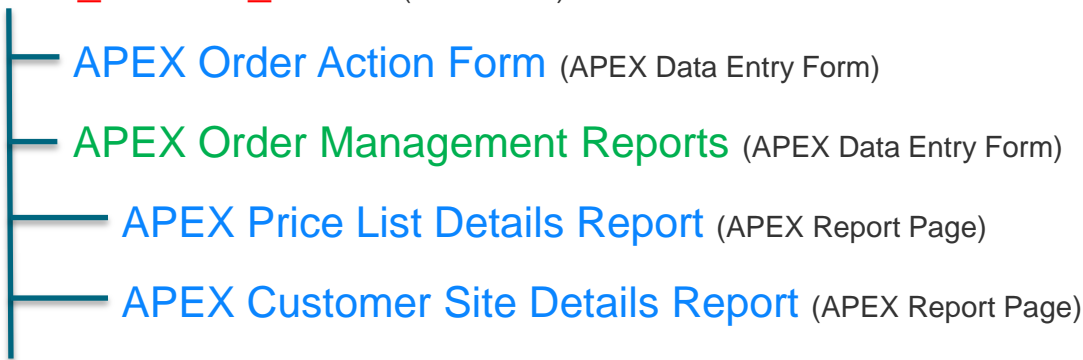
The screenshot shows the Oracle Applications System Profile Values window. The window title is "Oracle Applications - DEV12 03/16/15". The main window has a menu bar (File, Edit, View, Folder, Tools, Window, Help) and a toolbar. The "Find System Profile Values" window is open, showing a "Display" section with checkboxes for Site, Application, Responsibility, Server (B), Organization, and User. The "System Profile Values" window is open, showing a table with columns: Profile Option Name, Site, Application, Responsibility, and User. The table contains two rows of data.

Profile Option Name	Site	Application	Responsibility	User
FND: APEX URL	https://lemon.calpineconta			
XXCCI APEX Form Function and Sub	XXCCI_APEX%			

Navigation

- This chain of APEX Form Functions and Menu/SubMenus must be unbroken from the top menu down to the lowest APEX page
- All you have to do to add a page to the APEX Menu is:
 - Follow the form function naming convention
 - Put the form function in a menu following the menu naming convention that is contiguous from the main menu to the leaf pages

ONT_SUPER_USER (main menu)



My “seeded” Infrastructure

- I would like to work with Oracle to get this seeded infrastructure or something similar rolled up into an “EBS APEX Starter Application”
- Contact me if you need this in the mean time



Steps to move a Discoverer Report to APEX



9 Steps to Migrate From Discover to APEX

1. Extract Discover Query
2. Create a DB View to Hold Query
3. Grant Select and Create Synonym for View
4. Create Views for LOV's for Non-Interactive Reports (optional)
5. Create APEX Page to Query View
6. Add APEX Security to Page
7. Create EBS Form Function for APEX Page
8. Add EBS Form Function to EBS Menu
9. Test

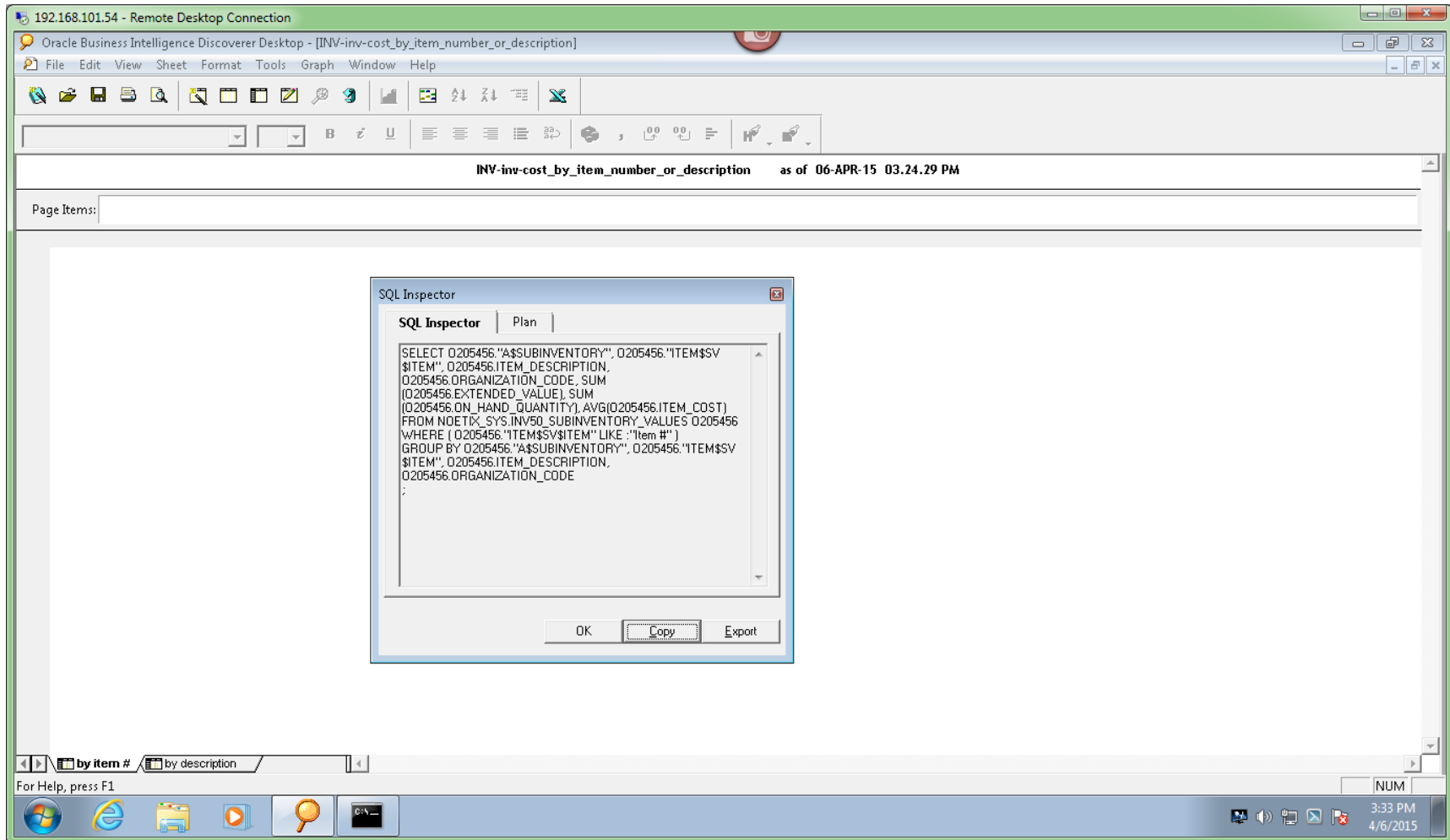
Once you have the base infrastructure in place and are proficient this should take about 15 minutes to complete.



1) Extract Discoverer Query

- View : SQL Inspector

You can then copy your query out to the clipboard



The screenshot shows a remote desktop connection to an Oracle Business Intelligence Discoverer Desktop. The main window displays a report titled "INV-inv-cost_by_item_number_or_description" as of 06-APR-15 03.24.29 PM. A "SQL Inspector" dialog box is open, showing the following SQL query:

```
SELECT O205456."A$SUBINVENTORY", O205456."ITEM$SV
$ITEM", O205456.ITEM_DESCRIPTION,
O205456.ORGANIZATION_CODE, SUM
(O205456.EXTENDED_VALUE), SUM
(O205456.ON_HAND_QUANTITY), AVG(O205456.ITEM_COST)
FROM NOETIX_SYS.INV50_SUBINVENTORY_VALUES O205456
WHERE ( O205456."ITEM$SV$ITEM" LIKE :Item # )
GROUP BY O205456."A$SUBINVENTORY", O205456."ITEM$SV
$ITEM", O205456.ITEM_DESCRIPTION,
O205456.ORGANIZATION_CODE
;
```

The dialog box has "OK", "Copy", and "Export" buttons. The main window also shows a "Page Items:" section and a status bar at the bottom with the text "For Help, press F1" and system icons.

2) Create a DB View to Hold Query

- In this example the Discover report was using Noetix Views, so we already have a base view.

```
select i."A$SUBINVENTORY",
       i."ITEM$SV$ITEM",
       i.ITEM_DESCRIPTION,
       i.ORGANIZATION_CODE,
       SUM(i.EXTENDED_VALUE),
       SUM(i.ON_HAND_QUANTITY),
       AVG(i.ITEM_COST)
  from NOETIX_SYS.INV50_SUBINVENTORY_VALUES i
 where (i."ITEM$SV$ITEM" like '10101%')
 group by i."A$SUBINVENTORY",
          i."ITEM$SV$ITEM",
          i.ITEM_DESCRIPTION,
          i.ORGANIZATION_CODE;
```

- In R12.2 Views used must be EBR enabled



3) Grant and Synonym to XX_APEX

- Grant Select to XX_APEX

```
grant select on noetix_sys.INV50_SUBINVENTORY_VALUES to  
XX_APEX;
```

- Create Synonym for XX_APEX

```
create or replace synonym xx_apex.INV50_SUBINVENTORY_VALUES  
for noetix_sys.INV50_SUBINVENTORY_VALUES;
```

- Depending upon how the view was created you may need to perform the grant different ways



4) Create Views for List of Values (optional)

- Depending upon the type of report you want to use you may need List of Values views for the users to select parameters from.
 - This is required for non-interactive reports
 - This is not required for interactive reports

```
create or replace view apps.XX_APEX_LOV_ITEMS_V as
select m.SEGMENT1 item_number,
       m.DESRIPTION item_description
  from MTL_PARAMETERS p,
       MTL_SYSTEM_ITEMS_B m
 where p.ORGANIZATION_ID = p.MASTER_ORGANIZATION_ID
       and m.ORGANIZATION_ID = p.ORGANIZATION_ID;
```

```
grant select on apps.XX_APEX_LOV_ITEMS_V to XX_APEX;
create or replace synonym xx_apex.XX_APEX_LOV_ITEMS_V for
apps.XX_APEX_LOV_ITEMS_V;
```



5.1) Create APEX Page to Query the DB View

■ Create Page

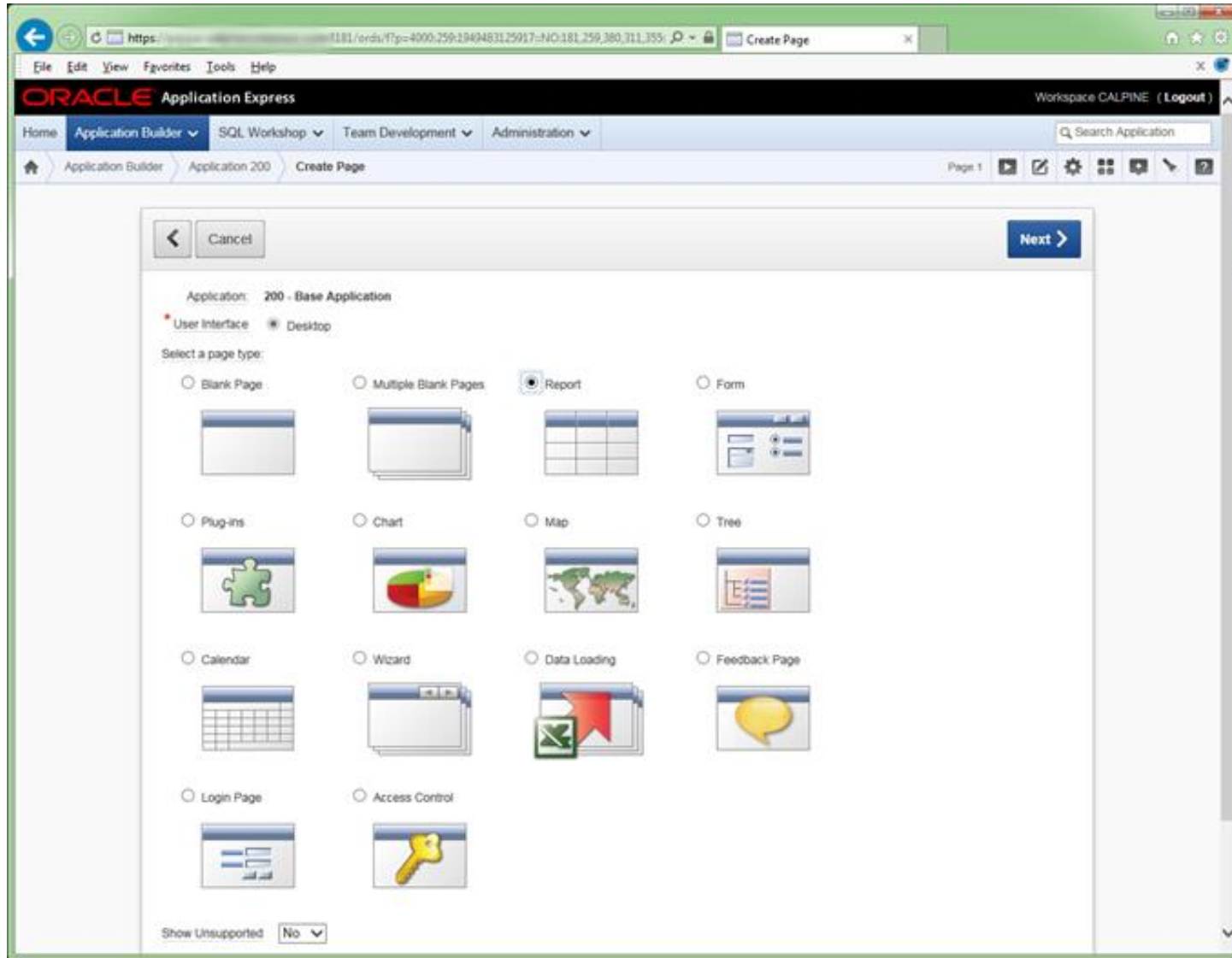
The screenshot shows the Oracle APEX Application Express interface. The browser address bar indicates the URL: https://1811/ords/f?p=4000:1:1949483125917::NO:RP:FB_FLOW_ID,F4000. The page title is "Application Builder". The workspace is "CALPINE (Logout)". The navigation menu includes "Home", "Application Builder", "SQL Workshop", "Team Development", and "Administration". The main workspace is titled "Application 200 - Base Application" and contains five icons: "Run Application", "Supporting Objects", "Shared Components", "Utilities", and "Export / Import". Below the icons is a search bar and a "Create Page" button. A table lists the existing pages in the application.

Page	Name	Updated	Updated By	Page Type	User Interface	Group	Lock	Run
0	Global Page - Desktop	3 months ago	jrampton	Global Page	Desktop	Unassigned		
1	Home	4 weeks ago	jpeters	Home	Desktop	Unassigned		
101	Login	7 weeks ago	jrampton	Login	Desktop	Unassigned		



5.2) Create APEX Page to Query the DB View

- Choose a Page Type



5.3) Create APEX Page to Query the DB View

- Choose a Report Type

The screenshot shows the Oracle APEX 'Create Page' wizard interface. The browser address bar displays the URL: `https://...:8181/ords/f?p=4000:4700:1949483125917::NO::`. The page title is 'Create Page'. The breadcrumb navigation shows 'Application Builder' > 'Application 200' > 'Create Page'. The main content area contains four radio button options for report types, each with a representative icon:

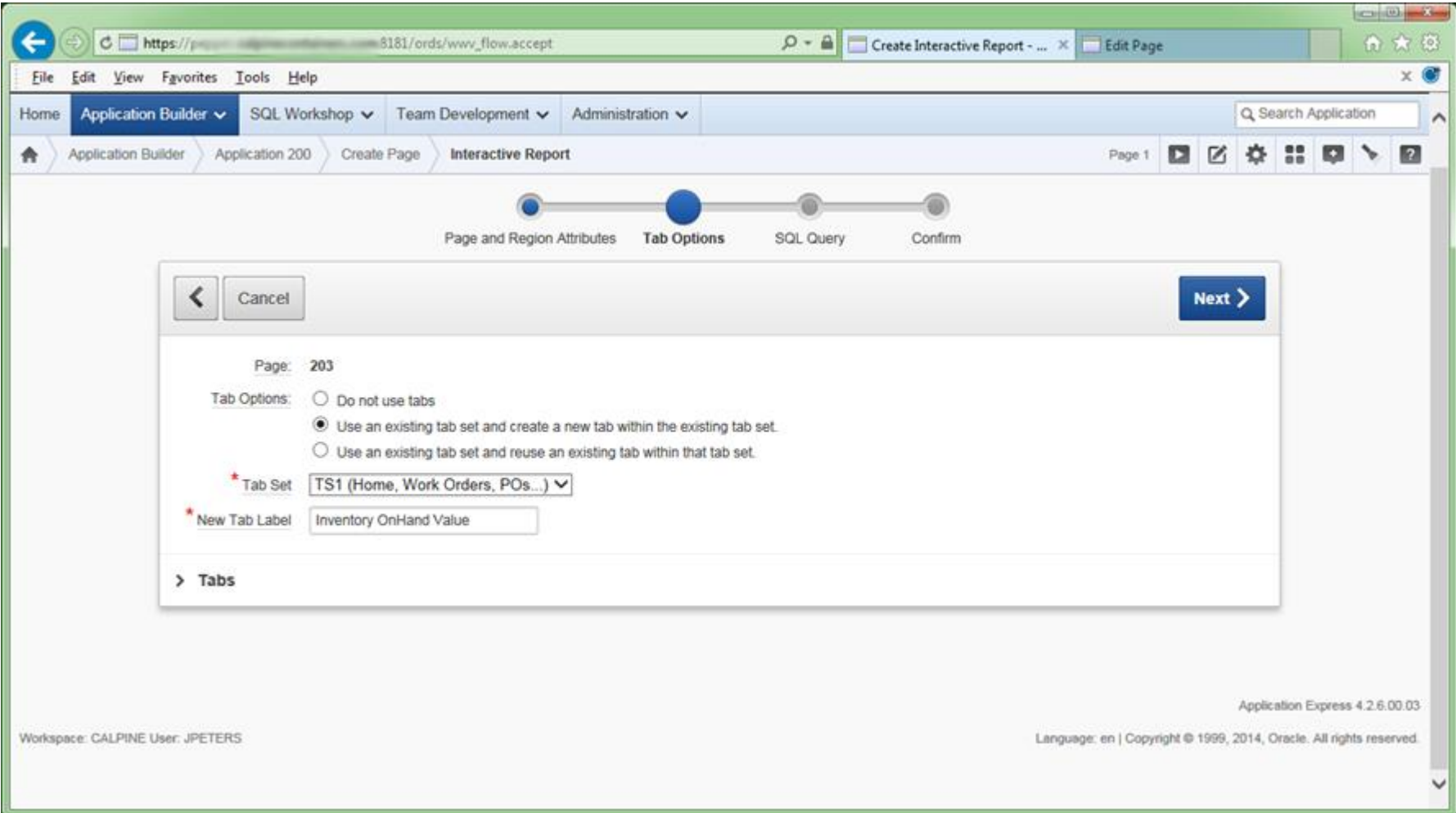
- Interactive Report: Icon shows a hand pointing at a table.
- Classic Report: Icon shows a simple table.
- Report on Web Service Result: Icon shows a table with a globe.
- Wizard Report: Icon shows a table with stars and a pencil.

Navigation buttons include 'Cancel' (left arrow) and 'Next' (right arrow). The footer of the wizard displays 'Application Express 4.2.6.00.03' and 'Language: en | Copyright © 1999, 2014, Oracle. All rights reserved.' The workspace information at the bottom left is 'Workspace: CALPINE User: JPETERS'.



5.4) Create APEX Page to Query the DB View

- Choose Page Region Attributes



The screenshot displays the Oracle APEX Application Builder interface. The browser address bar shows https://person.oracle.com:8181/ords/www_flow.accept. The application menu includes Home, Application Builder, SQL Workshop, Team Development, and Administration. The breadcrumb trail is Application Builder > Application 200 > Create Page > Interactive Report. The progress indicator shows four steps: Page and Region Attributes, Tab Options (active), SQL Query, and Confirm. The main content area shows the 'Tab Options' configuration:

- Page: 203
- Tab Options:
 - Do not use tabs
 - Use an existing tab set and create a new tab within the existing tab set.
 - Use an existing tab set and reuse an existing tab within that tab set.
- * Tab Set: TS1 (Home, Work Orders, POs...)
- * New Tab Label: Inventory OnHand Value

At the bottom, there is a 'Tabs' section with a right-pointing arrow. The footer contains 'Workspace: CALPINE User: JPETERS' on the left, 'Application Express 4.2.6.00.03' and 'Language: en | Copyright © 1999, 2014, Oracle. All rights reserved.' on the right.



5.5) Create APEX Page to Query the DB View

- Choose Tab Options

The screenshot shows the Oracle APEX Interactive Report wizard in a web browser. The browser address bar shows the URL https://people.oracle.com/8181/ords/www_flow.accept. The browser tabs include "Create Interactive Report - ..." and "Edit Page". The application menu includes "Home", "Application Builder", "SQL Workshop", "Team Development", and "Administration". The breadcrumb trail shows "Application Builder" > "Application 200" > "Create Page" > "Interactive Report". The wizard progress bar shows four steps: "Page and Region Attributes", "Tab Options", "SQL Query", and "Confirm". The "Tab Options" step is currently active.

The "Tab Options" dialog box contains the following settings:

- Page: 203
- Tab Options:
 - Do not use tabs
 - Use an existing tab set and create a new tab within the existing tab set.
 - Use an existing tab set and reuse an existing tab within that tab set.
- * Tab Set: TS1 (Home, Work Orders, POs...)
- * New Tab Label: Inventory OnHand Value

At the bottom of the dialog, there is a "Next" button and a "Cancel" button. A "Tabs" section is partially visible at the bottom left of the dialog.

At the bottom of the browser window, the text "Workspace: CALPINE User: JPETERS" is visible on the left, and "Application Express 4.2.6.00.03" and "Language: en | Copyright © 1999, 2014, Oracle. All rights reserved." are visible on the right.



5.6) Create APEX Page to Query the DB View

■ Enter SQL Query

The screenshot shows the Oracle APEX interface for creating an interactive report. The breadcrumb trail is: Application Builder > Application 200 > Create Page > Interactive Report. The progress bar indicates the current step is 'SQL Query'. A dialog box titled 'Enter a SQL SELECT statement' is open, containing the following SQL query:

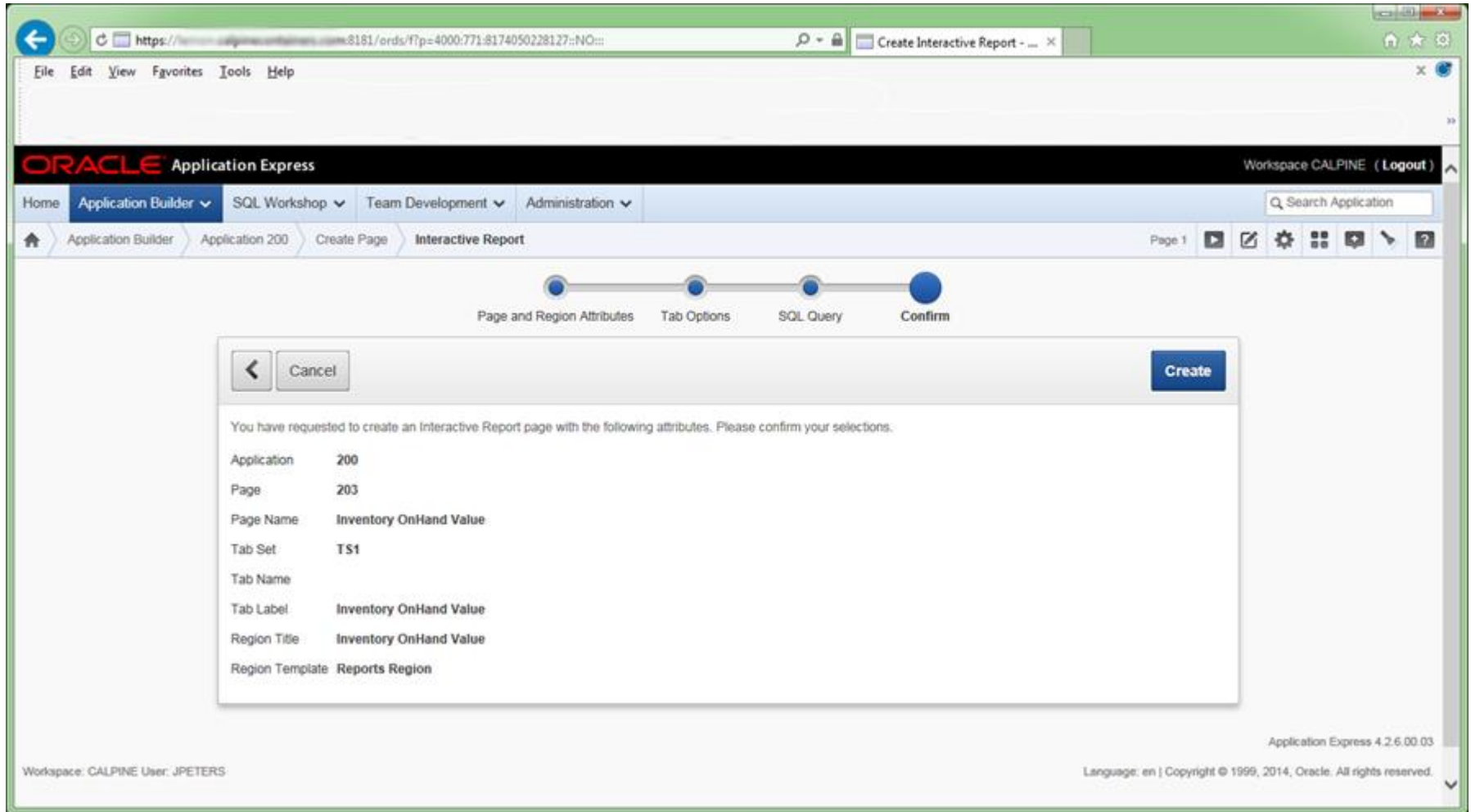
```
select i."ASSUBINVENTORY",
       i."ITEMSSVSITEM",
       i.ITEM_DESCRIPTION,
       i.ORGANIZATION_CODE,
       SUM(i.EXTENDED_VALUE),
       SUM(i.ON_HAND_QUANTITY),
       AVG(i.ITEM_COST)
from   xx_apex.INV50_SUBINVENTORY_VALUES i
where  (i."ITEMSSVSITEM" like '10101X')
group by i."ASSUBINVENTORY",
         i."ITEMSSVSITEM",
         i.ITEM_DESCRIPTION
```

Below the query editor, there are options for 'Query Builder', 'Link to Single Row View' (set to 'No'), 'Uniquely Identify Rows by' (set to 'ROWID'), and an empty 'Unique Column' field. A 'Next' button is visible in the top right of the dialog.



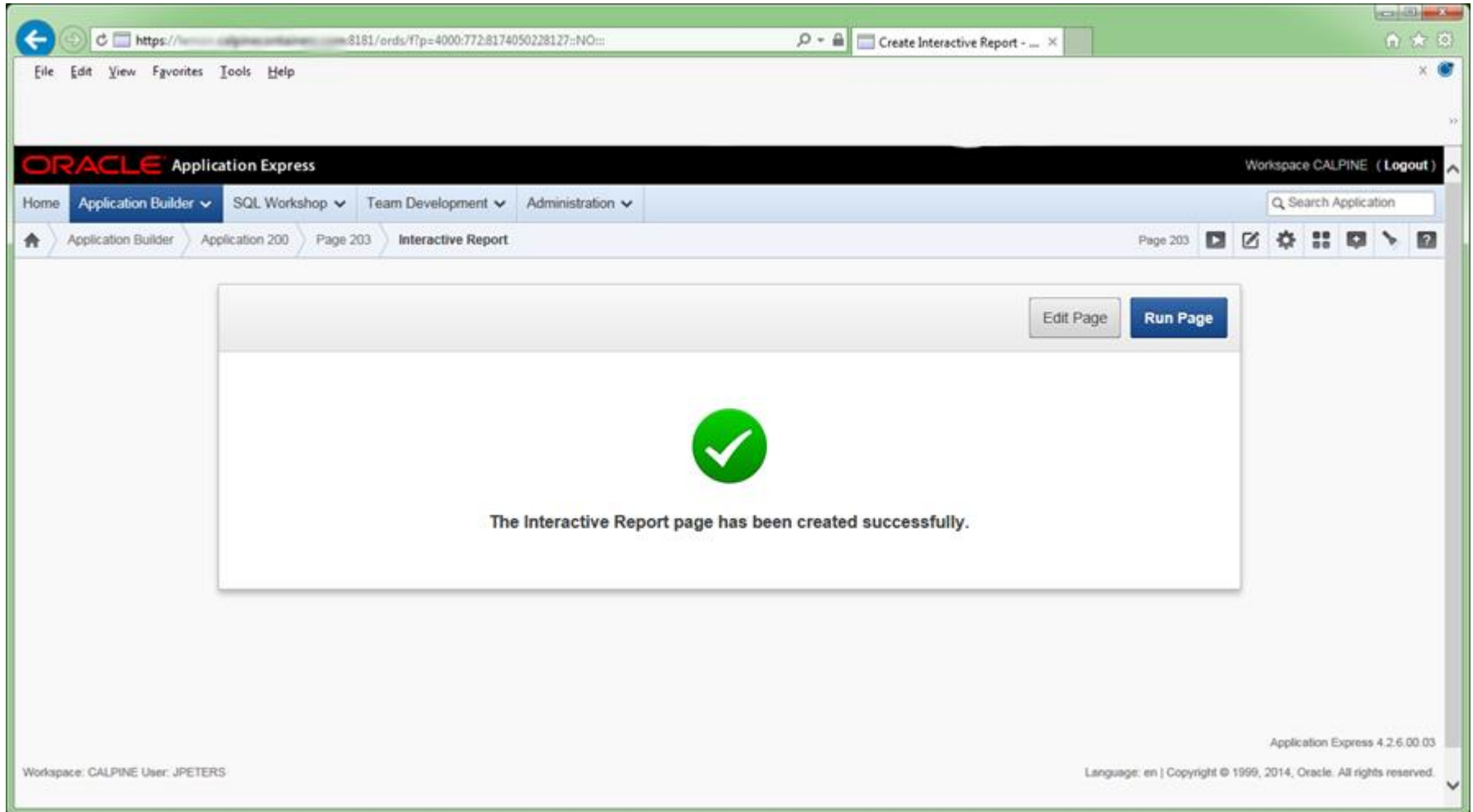
5.6) Create APEX Page to Query the DB View

■ Confirm Page Creation



5.7) Create APEX Page to Query the DB View

■ Run Page



The screenshot displays the Oracle APEX Application Express interface. The browser address bar shows a URL starting with 'https://...:8181/ords/f?p=4000:772:8174050228127::NO...'. The page title is 'Create Interactive Report - ...'. The Oracle Application Express header includes the 'ORACLE Application Express' logo, the user's workspace 'Workspace CALPINE (Logout)', and navigation tabs for 'Home', 'Application Builder', 'SQL Workshop', 'Team Development', and 'Administration'. The breadcrumb trail indicates the current location: 'Application Builder > Application 200 > Page 203 > Interactive Report'. In the top right corner, there are icons for 'Page 203', a play button, a pencil, a gear, a grid, a mail icon, and a help icon. The main content area features a large green checkmark icon and the text 'The Interactive Report page has been created successfully.' Above this message are two buttons: 'Edit Page' and 'Run Page'. The footer of the page shows 'Workspace: CALPINE User: JPETERS' on the left, 'Application Express 4.2.6.00.03' on the right, and 'Language: en | Copyright © 1999, 2014, Oracle. All rights reserved.' at the bottom right.



5.8) Create APEX Page to Query the DB View

- We have a report

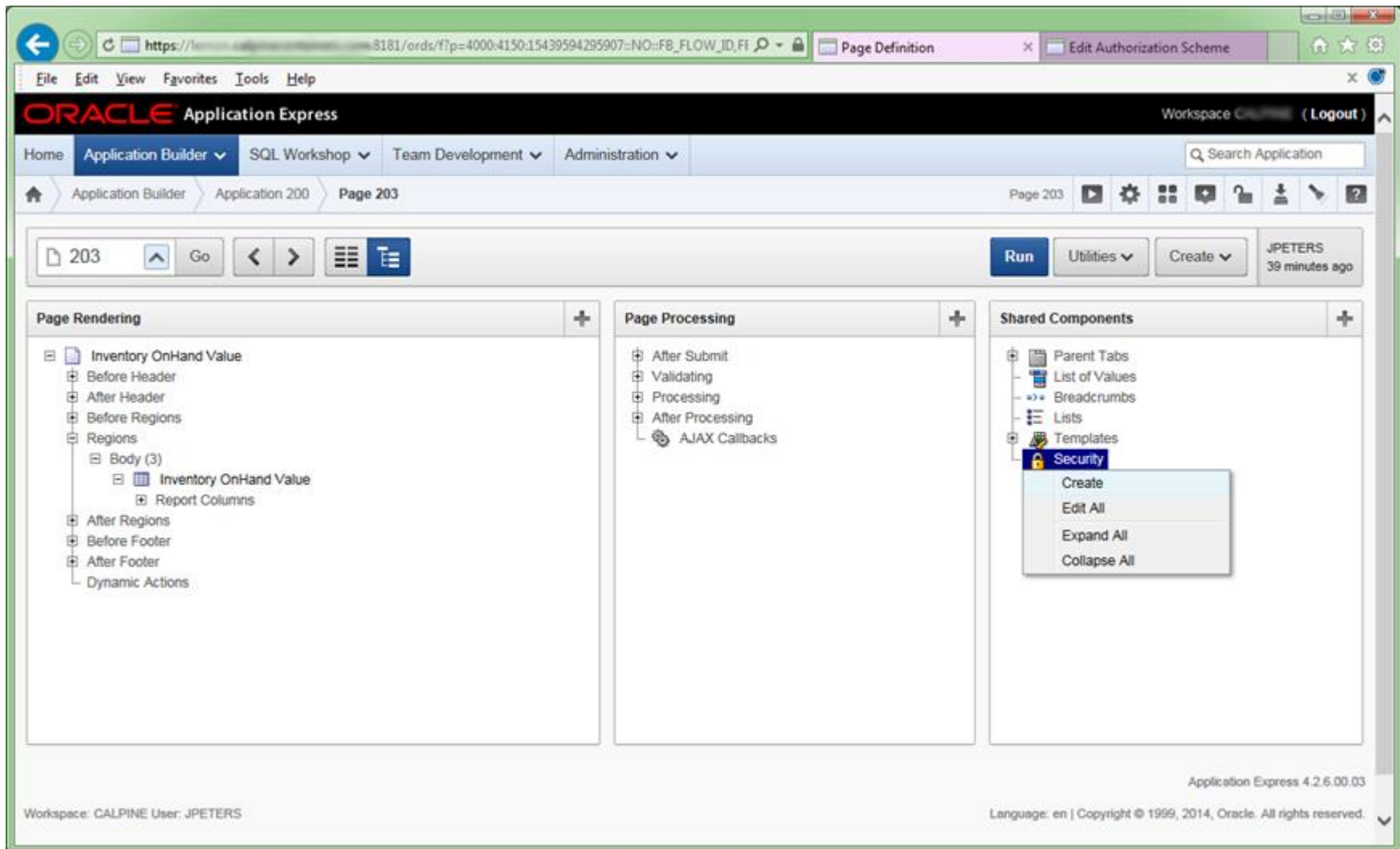
The screenshot shows a web browser window displaying an Oracle APEX application. The page title is 'Inventory OnHand Value'. The browser address bar shows a URL starting with 'https://...'. The application header includes 'Calpine', 'APEX Order Action Form', and 'APEX Order Management Reports'. The user is identified as 'JPETERS' and 'Order Management Super User - CCI DIN'. Below the header, there is a search bar with a 'Go' button and an 'Actions' button. The main content area displays a table with the following data:

ASSubinventory	Item\$Sv\$Item	Item Description	Organization Code	Round(Sum(LExtended Value),0)	Sum(LOn Hand Quantity)	Round(Avg(LItem Cost),5)
STOCK	101006	1 1/9 BUSHEL KRAFT	ESC	10071	14339	1.00289
STOCK	101006	1 1/9 BUSHEL KRAFT	LAM	4721	4340	1.08
STOCK	101006	1 1/9 BUSHEL KRAFT	NOG	20823	31150	1.15
STOCK	101006	1 1/9 BUSHEL KRAFT	OXN	1728	1585	1.09
STOCK	101006	1 1/9 BUSHEL KRAFT	THR	20245	20245	1
STOCK	101012	12 X 20, TAMAJ STRAWBERRY TRAY, KD MATERIAL	OXN	9712	11012	1.0000
STOCK	101020	CUCUMBER 24 POUND SENIOR	NOG	31488	33280	0.9455
STOCK	101021	CUCUMBER 24 POUND JUMBO	NOG	17286	25120	1.7
STOCK	101022	CUCUMBER 36s 6/10	NOG	21277	25330	0.84
STOCK	101023	BELLPEPPER GENERIC 15 POUND	NOG	13298	12760	1.05
STOCK	101023	BELLPEPPER GENERIC 15 POUND	THR	393	399	0.98
STOCK	101026	STOCK CABBAGE/LETTUCE	ELC	2226	1773	1.25
STOCK	101026	STOCK CABBAGE/LETTUCE	LAM	8127	3600	1.0075
STOCK	101030	25LB Citrus 1/2 Bushel Export Bottom	DIN	1363	1767	0.433



6.1) Edit APEX Page to Add Security

- Right mouse button Create



6.2) Edit APEX Page to Add Security

- From Scratch, but you can Copy Existing for the next one

The screenshot shows the Oracle APEX Application Express interface. The browser address bar displays a URL starting with 'https://'. The page title is 'ORACLE Application Express'. The navigation menu includes 'Home', 'Application Builder', 'SQL Workshop', 'Team Development', and 'Administration'. The breadcrumb trail is 'Application Builder > Application 200 > Shared Components > Authorization Schemes > Create'. The 'Create' step is active, and a slider indicates the 'Creation Method' is selected. The dialog box contains the following text:

Specify how you want to create your authorization scheme. You can create an authorization scheme from scratch or copy it from another application. If you copy an authorization scheme, you can modify later.

Create Authorization Scheme:

- From Scratch
- As a Copy of an Existing Authorization Scheme

The dialog box has 'Cancel' and 'Next >' buttons. The footer of the page shows 'Workspace: CALPINE User: JPETERS', 'Application Express 4.2.6.00.03', and 'Language: en | Copyright © 1999, 2014, Oracle. All rights reserved.'



6.3) Edit APEX Page to Add Security

- The Name is the EBS Form Function Name I am going to create in step 7 below

The screenshot displays the Oracle APEX interface for creating an authorization scheme. The browser address bar shows the URL `https://...:8181/ords/www_flow.accept`. The page title is "Create Authorization Scheme". The navigation menu includes "Home", "Application Builder", "SQL Workshop", "Team Development", and "Administration". The breadcrumb trail is "Application Builder > Application 200 > Shared Components > Authorization Schemes > Create". The "Details" tab is selected, and the "Create Authorization Scheme" button is prominent. The form fields are as follows:

Field	Value
Application	200 Base Application
Name	XXCCI_APEX_INV_ONHAND_VAL
Scheme Type	PL/SQL Function Returning Boolean



6.4) Edit APEX Page to Add Security

- I call my custom Authorization check routine, just paste in the EBS Form Function Name.

Authorization Scheme

* Scheme Type: PL/SQL Function Returning Boolean

* PL/SQL Function Body:

```
return apps.XXCCI_APEX_SECURITY_PKG.auth_scheme_check ('XXCCI_APEX_INV_ONHAND_VAL');
```

* Identify error message displayed when scheme violated:

You do not have the proper EBS responsibility to view this page.

Evaluation Point

Validate authorization scheme:

Once per page view

Once per session

Comments

Comments:

You do not have the proper EBS responsibility to view this page.



6.5) Edit APEX Page to Add Security

- Edit Page again to link Security to it.

The screenshot displays the Oracle APEX Application Builder interface for editing Page 203. The browser address bar shows the URL: `https://www.oracle.com/apex/.../ords/f?p=4000:4150:15439594295907::NO::`. The page title is "Page Definition".

The interface includes a navigation menu with options: Home, Application Builder (selected), SQL Workshop, Team Development, and Administration. A search bar is present with the text "Search Application".

The breadcrumb trail shows: Application Builder > Application 200 > Page 203. The page number "Page 203" is also displayed in the top right corner.

The main editing area is divided into three panels:

- Page Rendering:** Shows a tree view of the page structure. The "Inventory OnHand Value" region is selected and highlighted in blue. The tree includes: Before Header, After Header, Before Regions, Regions (containing Body (3) with Inventory OnHand Value and Report Columns), After Regions, Before Footer, After Footer, and Dynamic Actions.
- Page Processing:** Lists the following processing steps: After Submit, Validating, Processing, After Processing, and AJAX Callbacks.
- Shared Components:** Lists the following components: Parent Tabs, List of Values, Breadcrumbs, Lists, Templates, and Security.

At the top right of the editing area, there are buttons for "Run", "Utilities", and "Create". The user name "JPETERS" and the time "53 minutes ago" are also visible.



6.6) Edit APEX Page to Add Security

- Add your Authorization Scheme and Authentication

The screenshot shows the Oracle APEX Application Express interface. The browser address bar displays the URL: <https://www.oracle.com/.../8181/ords/f?p=4000:4301:15439594295907:::RP,4>. The page title is "Edit Page". The Oracle Application Express logo is visible at the top left, and the workspace name "Workspace ORAPEX (Logout)" is at the top right. The navigation menu includes "Home", "Application Builder", "SQL Workshop", "Team Development", and "Administration". The breadcrumb trail shows "Application Builder > Application 200 > Page 203 > Edit Page". The "Page 203" tab is active. The "Page Attributes" section shows "Page Attributes: 9 of 12" and buttons for "Cancel", "Delete", "Apply Changes", and navigation arrows. The "Security" tab is selected, showing the following configuration:

Property	Value
Authorization Scheme	XXCCI_APEX_INV_ONHAND_VAL
Authentication	Page Requires Authentication
Deep Linking	Application Default
Page Access Protection	Unrestricted
Form Auto Complete	On
Browser Cache	Application Default

At the bottom of the page, it says "Created: 65 minutes ago - JPETERS" and "Updated: 55 minutes ago - JPETERS". The version number "Application Express 4.2.6.00.03" is visible in the bottom right corner.



6.8) Edit APEX Page to Add Security

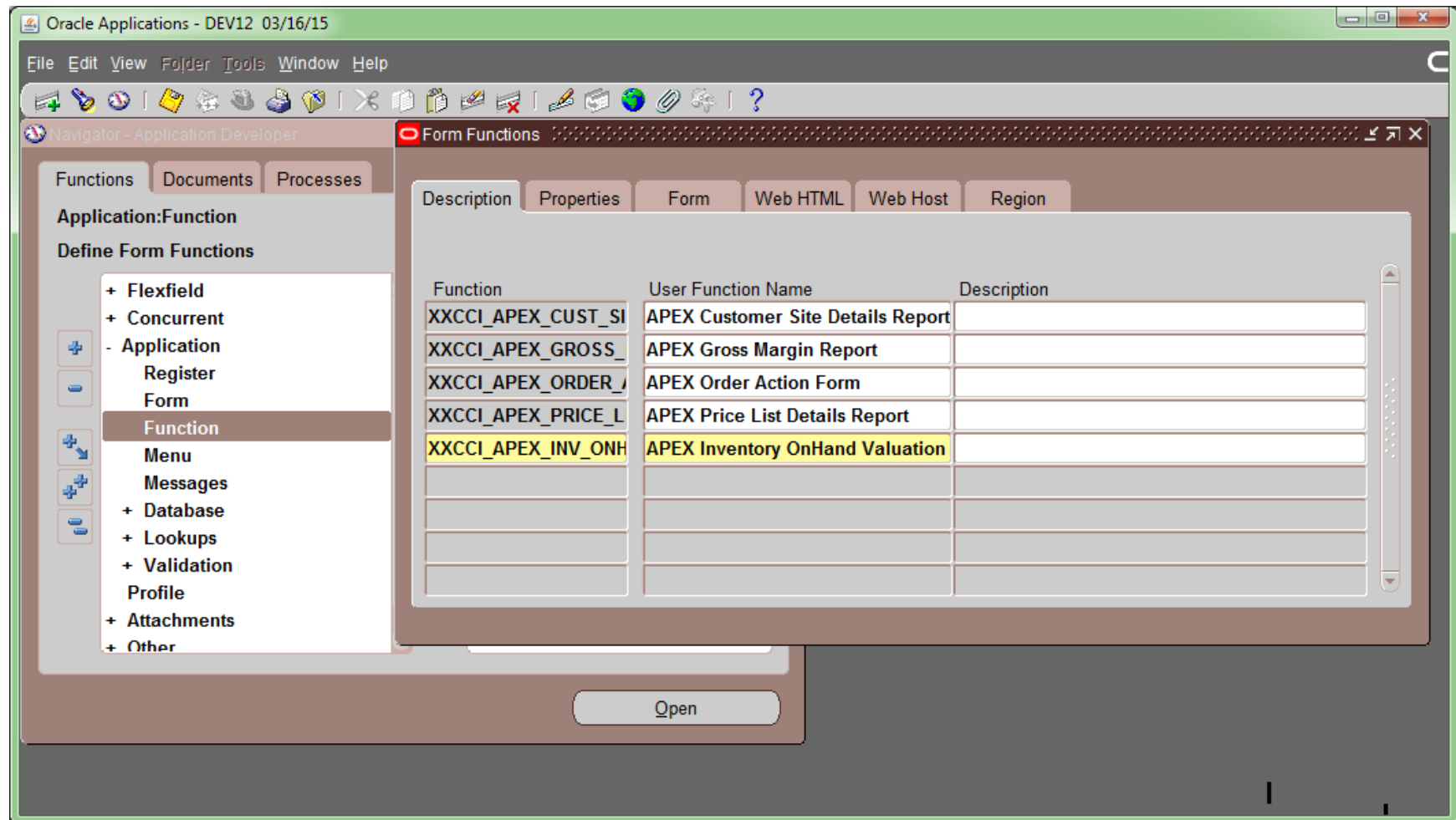
- Verify Security

The screenshot displays the Oracle APEX Application Builder interface for editing Page 203. The top navigation bar includes 'Application Builder', 'SQL Workshop', and 'Administration' menus. A central toolbar contains 'Run', 'Utilities', and 'Create' buttons. The main workspace is divided into three panels: 'Page Rendering' (showing a tree view of the page structure including 'Inventory OnHand Value'), 'Page Processing' (showing events like 'After Submit', 'Validating', 'Processing', 'After Processing', and 'AJAX Callbacks'), and 'Shared Components' (showing a tree view of components including 'Security' with a sub-item 'XXCCI_APEX_INV_ONHAND_VAL' highlighted by a red box). A green notification banner at the top indicates 'Page 203 processed.'



7.1) Create EBS Form Function for APEX Page

- Follow a logical naming convention, for my infrastructure the “XXCCI_APEX” prefix is essential for displaying on menus



Oracle Applications - DEV12 03/16/15

File Edit View Folder Tools Window Help

Navigator - Application Developer

Form Functions

Functions Documents Processes

Application:Function

Define Form Functions

- + Flexfield
- + Concurrent
- Application
 - Register
 - Form
 - Function
 - Menu
 - Messages
- + Database
- + Lookups
- + Validation
- Profile
- + Attachments
- + Other

Function	User Function Name	Description
XXCCI_APEX_CUST_SI	APEX Customer Site Details Report	
XXCCI_APEX_GROSS_	APEX Gross Margin Report	
XXCCI_APEX_ORDER_	APEX Order Action Form	
XXCCI_APEX_PRICE_L	APEX Price List Details Report	
XXCCI_APEX_INV_ONH	APEX Inventory OnHand Valuation	

Open

7.2) Create EBS Form Function for APEX Page

- These pages are all of type SSWA jsp function

Oracle Applications - DEV12 03/16/15

File Edit View Folder Tools Window Help

Navigator - Application Developer

Form Functions

Functions Documents Processes

Application:Function

Define Form Functions

- + Flexfield
- + Concurrent
- Application
 - Register
 - Form
 - Function**
 - Menu
 - Messages
- + Database
- + Lookups
- + Validation
- Profile
- + Attachments
- + Other

Function	Type	Maintenance Mode Support	Context Dependence
XXCCI_APEX_CUST_SI	SSWA jsp functi	None	Responsibility
XXCCI_APEX_GROSS_	SSWA jsp functi	None	Responsibility
XXCCI_APEX_ORDER_	SSWA jsp functi	None	Responsibility
XXCCI_APEX_PRICE_L	SSWA jsp functi	None	Responsibility
XXCCI_APEX_INV_ONH	SSWA jsp fun ...	None	Responsibility

Open

Record: 5/5 | ... | List of Valu... | <OSC>



7.3) Create EBS Form Function for APEX Page

- HTML Call: GWY.jsp?targetAppType=APEX&p=200:203
 - P=200 is the APEX Application ID
 - 203 is the APEX Page Number

Oracle Applications - DEV12 03/16/15

File Edit View Folder Tools Window Help

ORACLE

Navigator - Application Developer

Form Functions

Functions Documents Processes

Application:Function

Define Form Functions

- + Flexfield
- + Concurrent
- Application
 - Register
 - Form
 - Function
 - Menu
 - Messages
- + Database
- + Lookups
- + Validation
- Profile
- + Attachments
- + Other

Function	HTML Call	MDS Reference Path
XXCCI_APEX_CUST_SI	GWY.jsp?targetAppType=APEX&p=200:200	
XXCCI_APEX_GROSS_	GWY.jsp?targetAppType=APEX&p=200:202	
XXCCI_APEX_ORDER_	GWY.jsp?targetAppType=APEX&p=200:300	
XXCCI_APEX_PRICE_L	GWY.jsp?targetAppType=APEX&p=200:201	
XXCCI_APEX_INV_ONH	GWY.jsp?targetAppType=APEX&p=200:203	

Open

Record: 5/5

<OSC>

FOR THE ORACLE COMMUNITY

8) Add the EBS Form Function to an EBS Menu

- Remember that with my infrastructure APEX menus must be continuous from the top menu down to the form.

Oracle Applications - DEV12 03/16/15

File Edit View Folder Tools Window Help

ORACLE

Navigator - Application Developer

Menus

Menu: XXCCI_APEX_OM_REPORTS

User Menu Name: APEX Order Management Reports

Menu Type: Standard

Description:

Seq	Prompt	Submenu	Function	Description	Grant
10	APEX Price List		APEX Price List Details		<input checked="" type="checkbox"/>
20	APEX Customer		APEX Customer Site De		<input checked="" type="checkbox"/>
30	APEX Gross Mar		APEX Gross Margin Rep		<input checked="" type="checkbox"/>
40	APEX Inventory		APEX Inventory OnHand		<input checked="" type="checkbox"/>
					<input type="checkbox"/>
					<input type="checkbox"/>
					<input type="checkbox"/>
					<input type="checkbox"/>
					<input type="checkbox"/>
					<input type="checkbox"/>
					<input type="checkbox"/>
					<input type="checkbox"/>

Editor

APEX Inventory OnHand Valuation

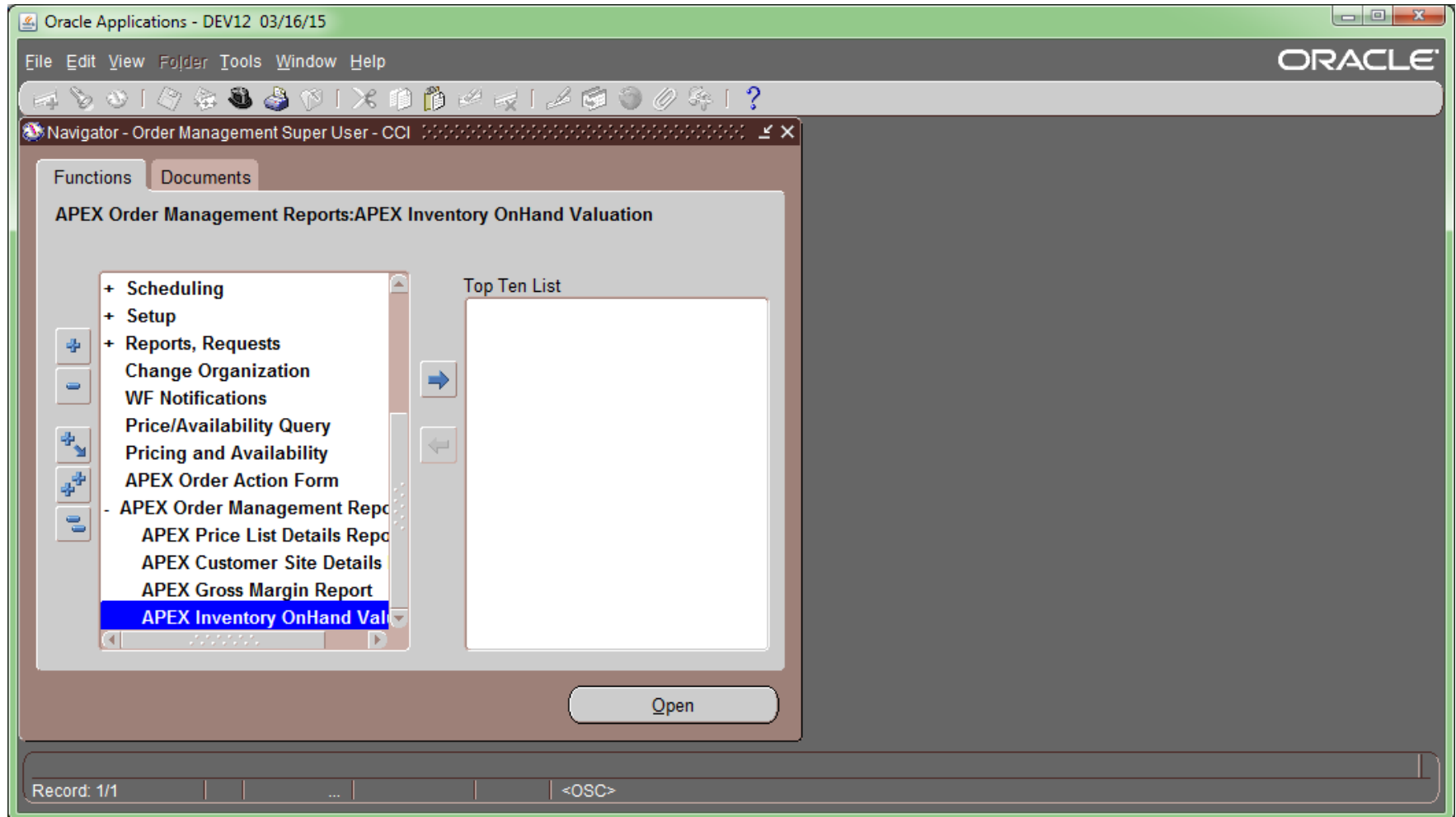
OK Cancel Search

Record: 4/4 ... List of Valu... <OSC>



9.1) Test

- We can now see the Report in the EBS Navigator.



9.2) Test

- We can now see the Report in the APEX Navigator.

The screenshot displays a web browser window with the URL `https://lemon.calpinecontainers.com:8181/ords/f?p=200:1:426247989015::NO::P11`. The browser's address bar shows the page title "Home". The application interface has a blue header with the text "Calpine" and navigation links for "APEX Order Action Form" and "APEX Order Management Reports". The user is identified as "JPETERS". Below the header, the page title is "Order Management Super User - CCI" and the user role is "DIN". The main content area is titled "Menu Options" and contains a list of reports:

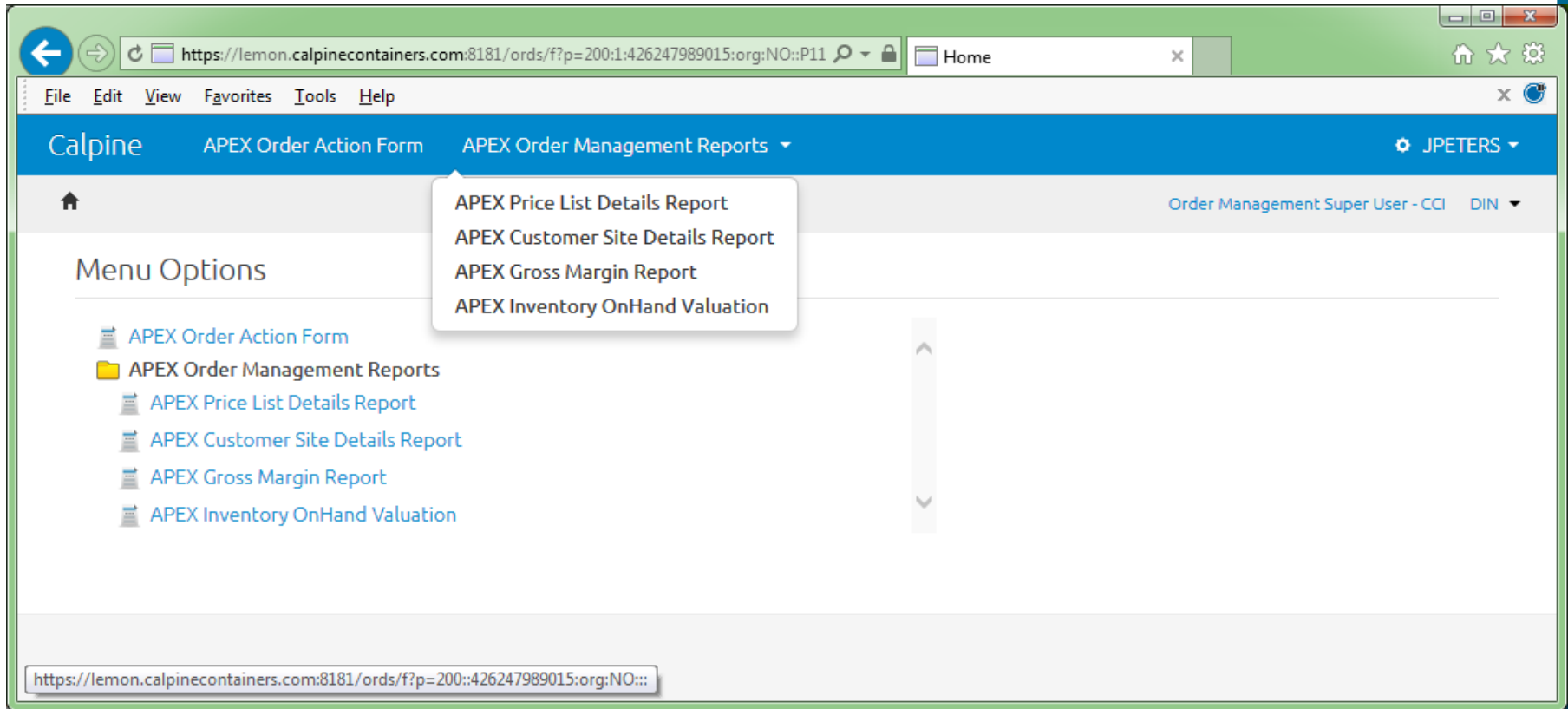
- APEX Order Action Form
- APEX Order Management Reports
 - APEX Price List Details Report
 - APEX Customer Site Details Report
 - APEX Gross Margin Report
 - APEX Inventory OnHand Valuation

The URL in the address bar at the bottom of the browser window is `https://lemon.calpinecontainers.com:8181/ords/f?p=200:203:426247989015::NO:203,RP`.



9.3) Test

- We can now see the Report in the APEX Menu Bar.



The screenshot displays a web browser window with the URL `https://lemon.calpinecontainers.com:8181/ords/f?p=200:1:426247989015:org:NO::P11`. The browser's address bar shows the page title "Home". The application interface features a blue header bar with the text "Calpine" on the left, "APEX Order Action Form" and "APEX Order Management Reports" in the center, and "JPETERS" on the right. Below the header, a grey bar contains a home icon, a user profile icon, and the text "Order Management Super User - CCI" and "DIN". The main content area is titled "Menu Options" and contains a list of menu items: "APEX Order Action Form", "APEX Order Management Reports" (a folder icon), "APEX Price List Details Report", "APEX Customer Site Details Report", "APEX Gross Margin Report", and "APEX Inventory OnHand Valuation". A dropdown menu is open over the "APEX Order Management Reports" folder, listing the same four report items: "APEX Price List Details Report", "APEX Customer Site Details Report", "APEX Gross Margin Report", and "APEX Inventory OnHand Valuation". The browser's status bar at the bottom shows the URL `https://lemon.calpinecontainers.com:8181/ords/f?p=200::426247989015:org:NO::`.



9.4) Test

- Clicking on either brings up the interactive report.

Inventory OnHand Value

A\$Subinventory	Item\$Sv\$Item	Item Description	Organization Code	Round(Sum(I.Extended Value),0)	Sum(I.On Hand Quantity)	Round(Avg(I.Item Cost),5)
STOCK	101006	1 1/9 BUSHEL KRAFT	ESC	15571	14339	1.08589
STOCK	101006	1 1/9 BUSHEL KRAFT	LAM	4731	4340	1.09
STOCK	101006	1 1/9 BUSHEL KRAFT	NOG	35823	31150	1.15
STOCK	101006	1 1/9 BUSHEL KRAFT	OXN	1728	1585	1.09
STOCK	101006	1 1/9 BUSHEL KRAFT	THR	20245	20245	1



2nd APEX Demo



COLLABORATE 15

TECHNOLOGY AND APPLICATIONS FORUM
FOR THE ORACLE COMMUNITY

How easy was that

- Again once you have:
 - APEX Installed in your instance (about 4-8 hours)
 - Your Infrastructure in place (about 8-12 hours)
- You can convert any query into an APEX Interactive Report Page and have it integrated into EBS and your APEX Menus in about 15-30 minutes
- In this example I used Discover as the source of the query
- It could have been Oracle Reports, a Trace File or other custom SQL you have developed as the source



Questions and Answers



Thank You For Attending

John Peters, JRPJR, Inc
john.peters@jrpjr.com

This presentation is posted on my web site along with many others I have done over the years:
<http://jrpjr.com/>

Click on Paper Archives on the right hand side, then:
Collaborate15 – Discoverer to APEX



Questions? Comments?



Please complete the session evaluation

We appreciate your feedback and insight

You may complete the session evaluation either on paper or online via the mobile app



COLLABORATE 15

TECHNOLOGY AND APPLICATIONS FORUM
FOR THE ORACLE COMMUNITY