ORACLE

The 10 principles of Security in Modern Cloud Applications

Nigel King Fusion Functional Architecture May 22 2014

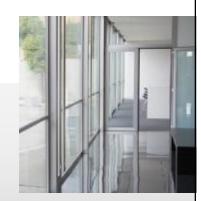


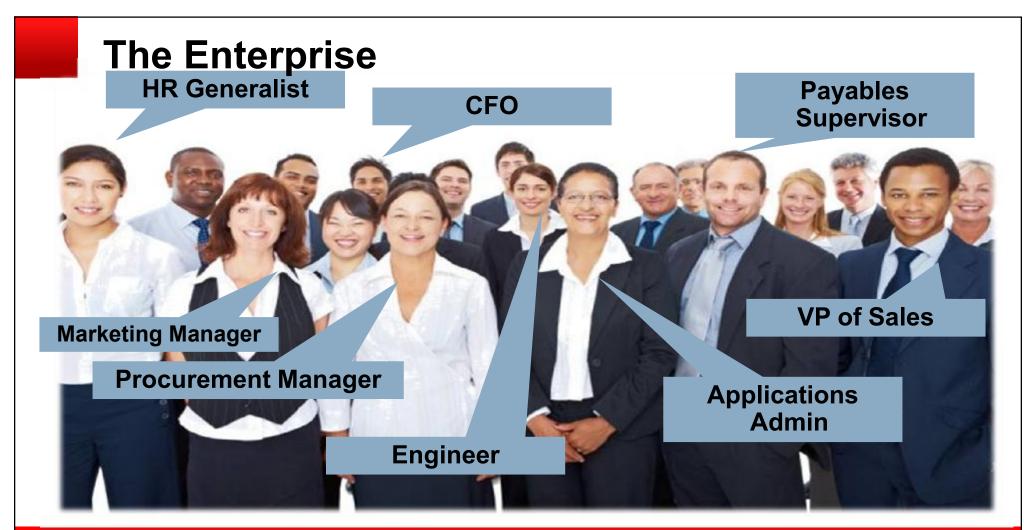
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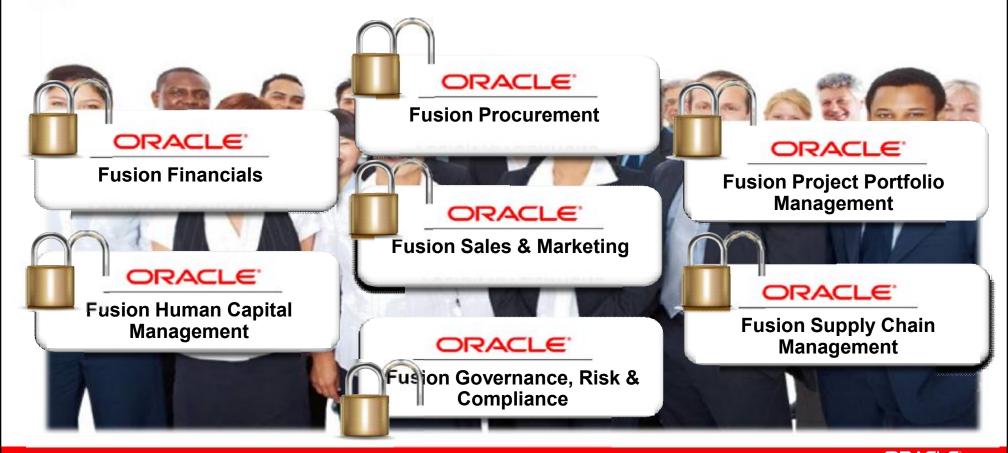
Program Agenda

- § Security in Fusion Applications
- § The 10 Principles
- § Demonstration: Hire an Employee
- § Q&A





Functional Footprint – Role Based Access Control



Functional Footprint – Role Based Access Control



- Buyer
- Category Manager
 Prod Note RNAder USERS
- **Procurement Contracts Administrator**
- **Procurement Catalog Administrator**
- **Procurement Applications** Administrator
- **Supplier Administrator**
- **Sourcing Project Collaborator**

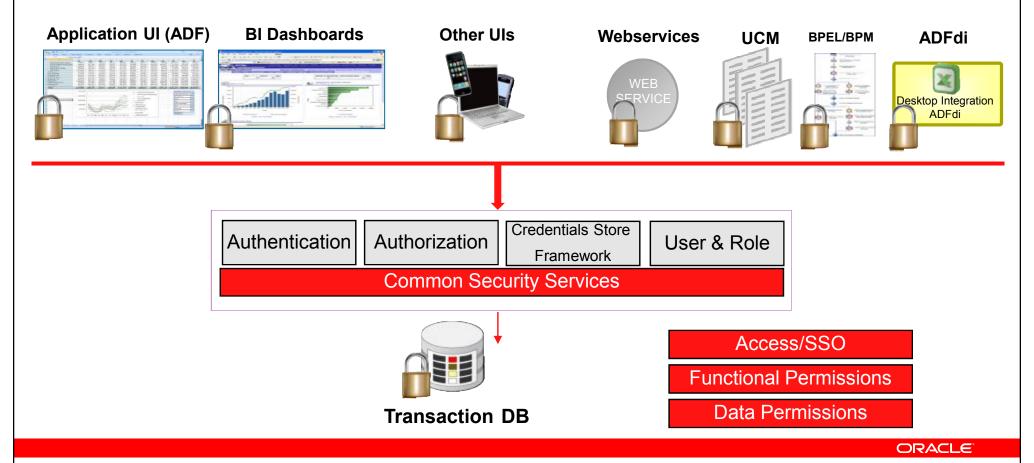
- Supplier Bidder
- Supplier Accounts Receivable Specialist
- Supplier Customer Service EXTERNAL USERS
- Supplier Demand Planner
- **Supplier Sales Representative**
- Supplier Self Service Administrator
- Supplier Self Service Clerk

190 Seeded Job Roles across over 83 Applications

The Foundation – Fusion Middleware



Common Security Services





Seamless Transition to IDM





- Faster On boarding
- SSO
- Management Approval Workflows
- •Easier Regulatory Compliance

BENEFITS OF FUSION SECURITY



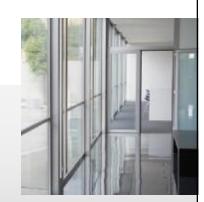
ADMINISTRATIVE COSTS

- Secure Out of The Box
- Across Tools
- Across the Info Lifecycle
- SOD

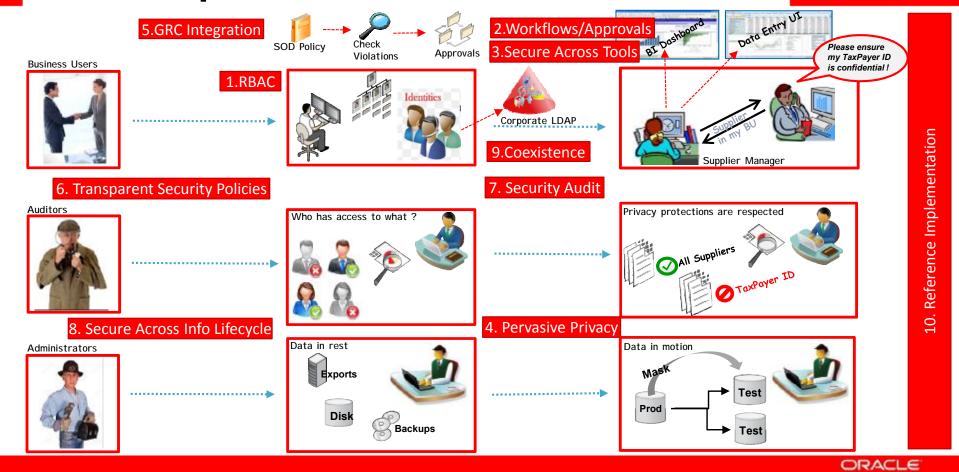
- •Role Provisioning
- Transparent Policies
- Standards Based

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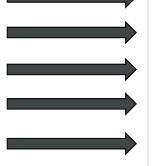


10 Principles



- Role Based Access
- 2. Account and Role Provisioning Events & Workflows
- 3. Enforcement Across Tools and Transformations
- 4. Pervasive Privacy Protections
- 5. Integration with Governance Risk and Compliance
- 6. Transparent Security Policies
- Complete Audit of Security Changes
- 8. Secure Across the Information Lifecycle
- 9. Co-existing with your current Security Infrastructure
- 10. Comprehensive Extensible Reference Implementation

Job Role
Data Role
Duty Role
Entitlement
Permission



E-Business Suite

Top Level Menu Responsibility Sub Menu Form Function

Executable

PeopleSoft

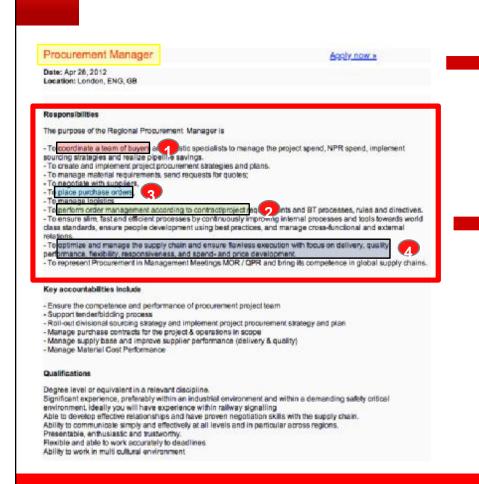
Top Level Menu

Employee ID + Role

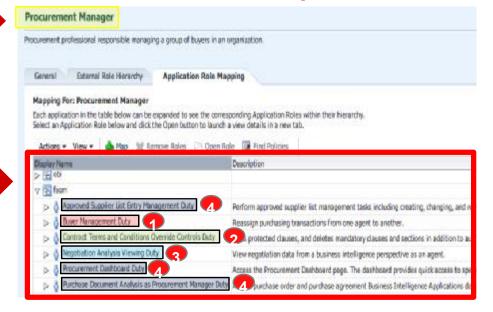
Role(s)

Permission Lists

Executable



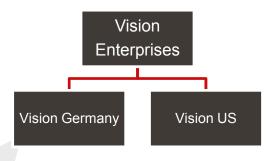
A Role is a Job Description



A Duty is what you do in that Role.

Once a New Employee is inducted, You grant them a Role

Employee Joins As **Purchasing Manager of Vision Germany**



Roles not tied to Job but to Employee, such as

- Employee (ERs)
- Purchase Requisitioner

We call these roles: **Abstract Roles**





Employee is Granted

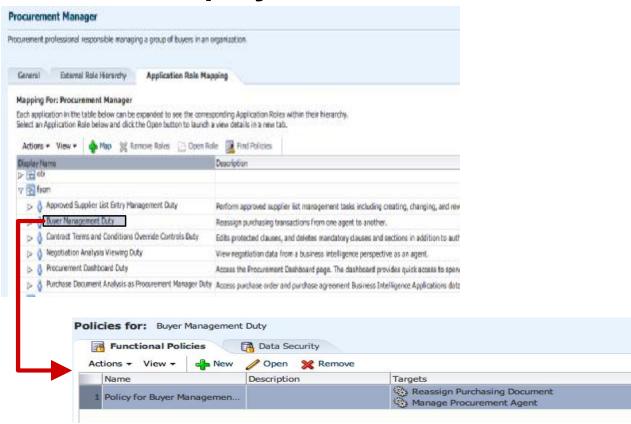
the Purchasing Manager Role with Data Secured by Vision Germany. We call these roles: Data Roles

What can the new Employee Do and View?

Based on their Role assignment the Employee has duties.

Each of these duties provides access to functionality in Fusion Apps.

This Access to Functionality is what we call Entitlements



Now the New Employee Starts Using the System

A Data Security

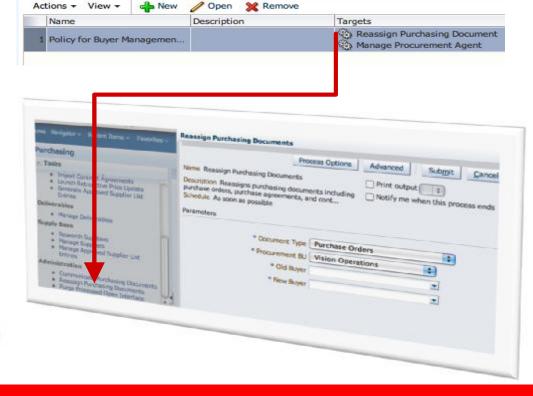
Policies for: Buyer Management Duty

Functional Policies

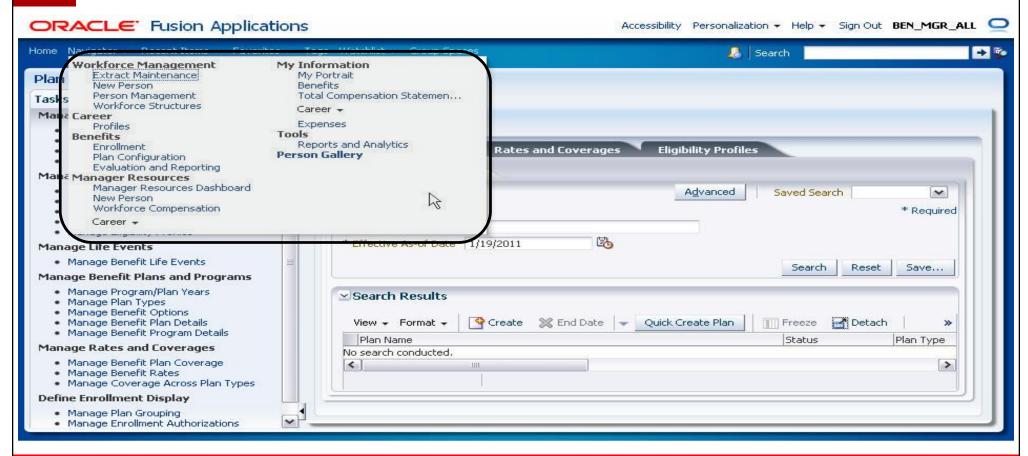
Actions → View →

When the Employee starts using Fusion Apps She will be able to access the Menu Tasks she is entitled to.

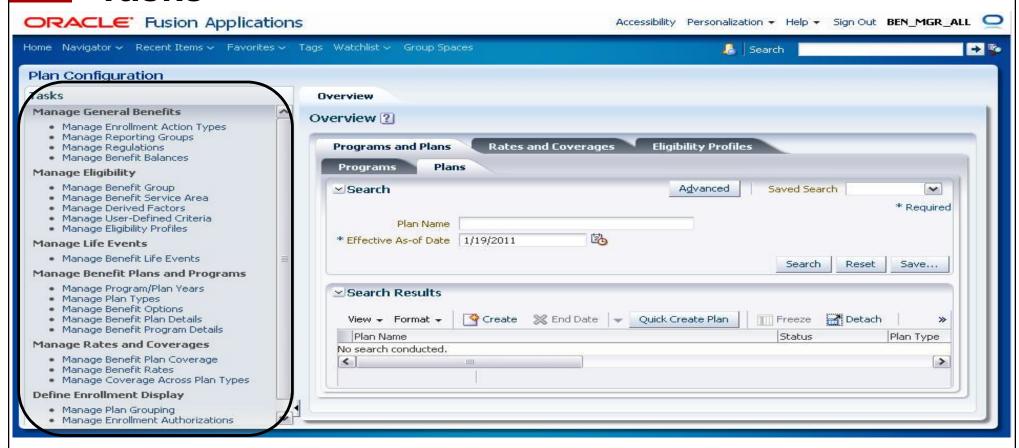




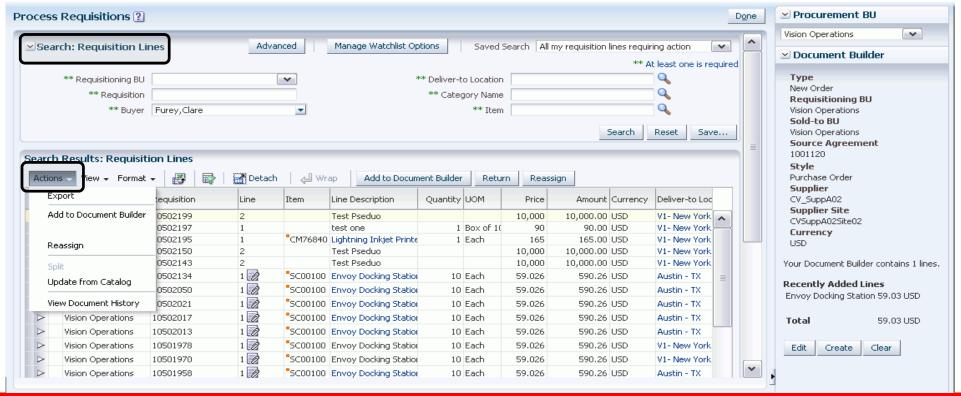
Menu Items



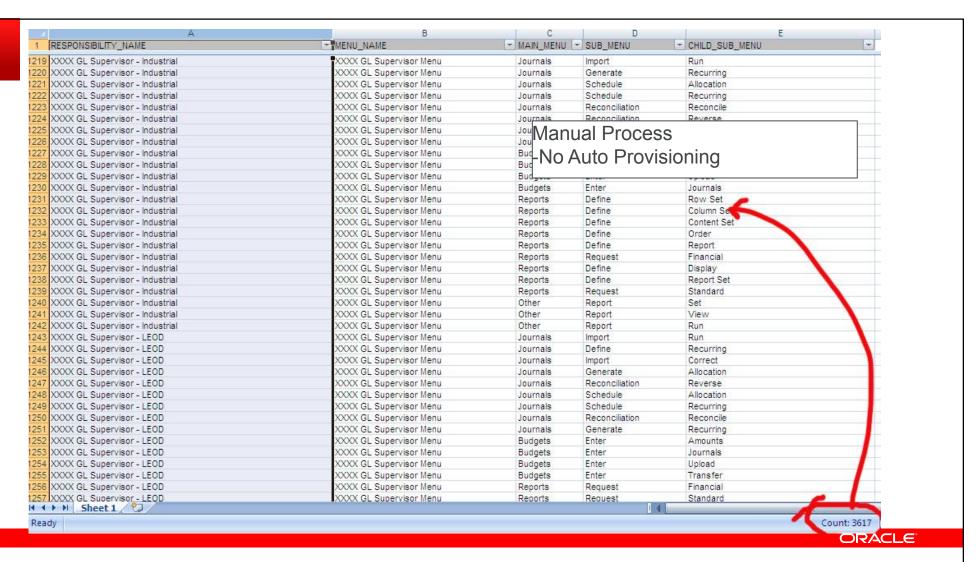
Tasks



Buttons, Regions and Actions



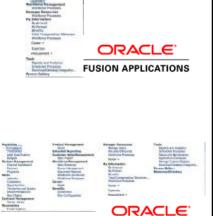
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Account and Role Provisioning Events & Workflows







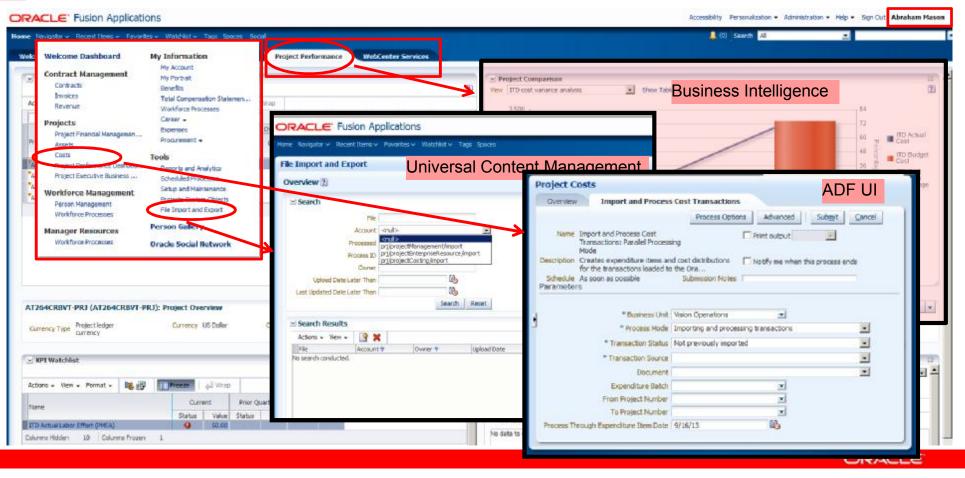


FUSION APPLICATIONS

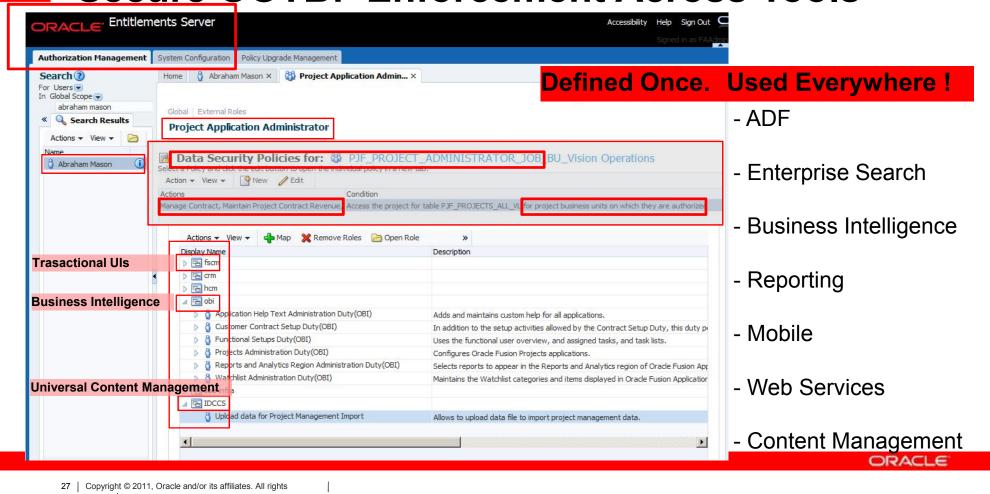
Secure Out of the Box

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Secure OOTB: Enforcement Across Tools



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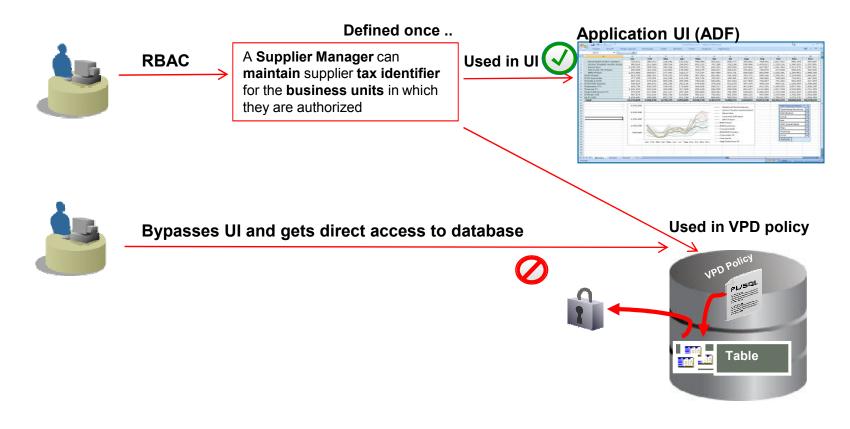
Secure OOTB: Pervasive Privacy Protections

- Fusion Applications protect personally identifiable information (PII)
- PII = any piece of information which can potentially be used to uniquely identify, contact, or locate a single person.
 - Social Security Number (SSN)
 - Driver's license number
 - State or National Identifier (Identification Card number)
 - Passport Number
 - Account number, credit card number (CCN) or debit card number
 - Home or Physical address (e.g street address)
 - Fmail address
 - Telephone number





Secure OOTB: Pervasive Privacy Protections

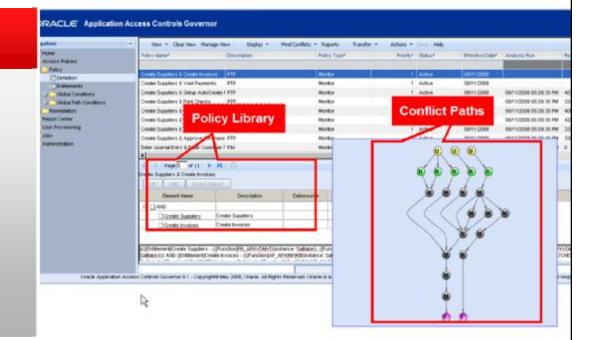


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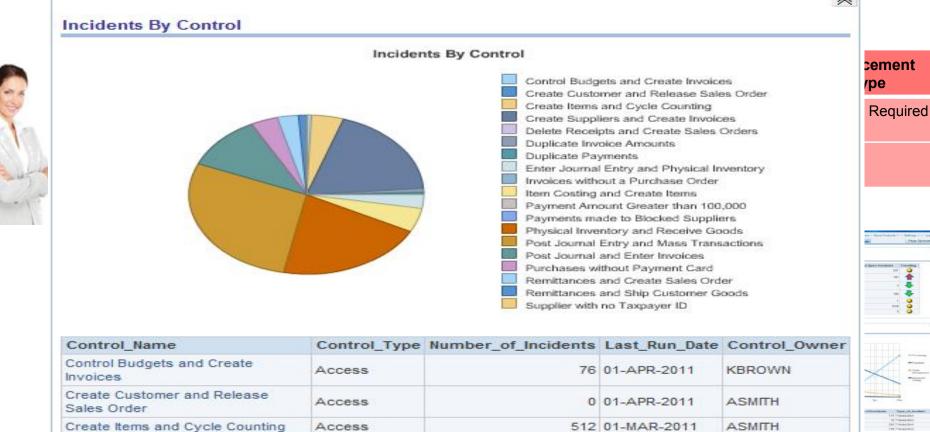
Manage Access & Segregation of Duties

Solution

- § Preventive AND Detective Access Controls
- § Simulation for Role Design
- § Preventive Provisioning
- § Pre-built Content and Reports



Preventive Provisioning



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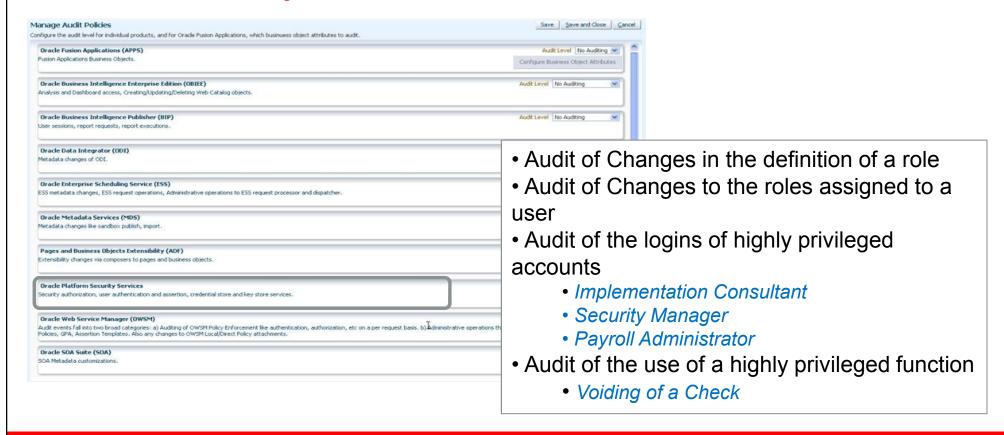
Transparent Security Policies



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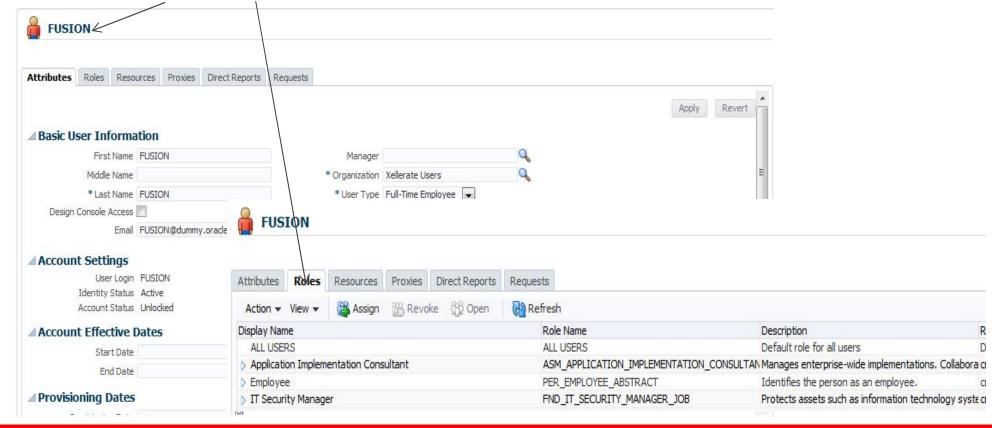
Audit of Security Changes

Who made what changes, and when



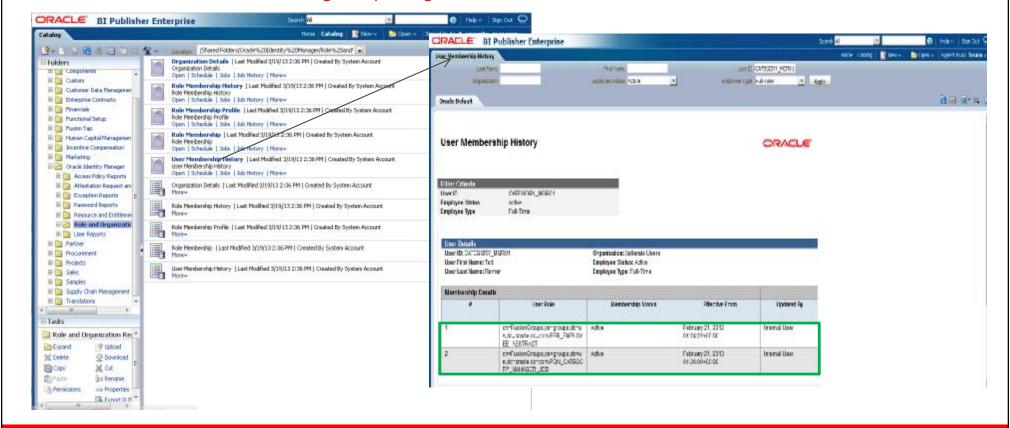
IT Audit - Security

Show User and Roles from Oracle Identity Manager (OIM)



IT Audit - Security

Show User and Role Change Reporting



Fusion Applications Security

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Secure OOTB: Secure Across Info Lifecycle

 Sensitive data in file system and backups (data-atrest) protected using Transparent Data Encryption

 Sensitive data in cloned, non-production databases protected using Oracle Data Masking

 Sensitive data protected from database administrators and other privileged users using Oracle Database Vault



Secure OOTB: Secure Across Info Lifecycle

Protect Data
in Motion with
Network
Encryption using
Advanced Security
Option

Protect Data from View and Alteration as well as Insider Threat using Database Vault

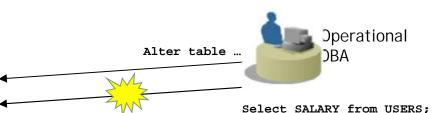
Database Vault	Operational DBA	Data DBA / Manager
Select SALARY from users;	Х	ü
Alter system. Alter table	ü	Х

* Example roles and privs



0

nt



Sensitive Data in cloned instance protected by *Data Masking*

Protect User and Sensitive Data at Rest by Encrypting Database Columns using

Transparent Data Encryption

LNAME	SSN	SALARY
KING	A0d \$6b) c	(_f @e M
SCOTI	AOdubLvo	Gf &@eP
SMITH	%5 #R0B-!9(D\$Kf Xa

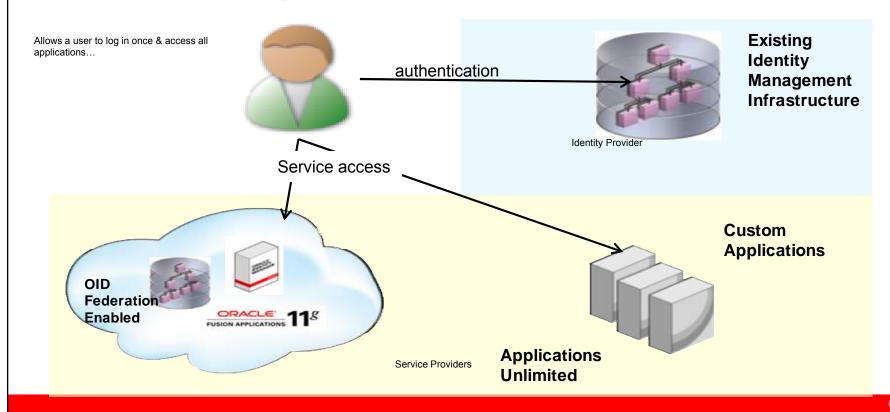


LNAME	SSN	SALARY
KING	111-11-1111	\$99,000
SCOTI	222-22-2222	\$888,000
SMITH	333-33-3333	\$77,000

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Secure OOTB: Co-existing with your current Security Infrastructure



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Secure OOTB: Reference Implementation



FUSION APPLICATIONS



OOTB

- ü roles you will recognize as jobs
 - ü hierarchy of duties
- **ü** data security policies
 - **ü** SOD Policies
- **ü** Provisioning Events

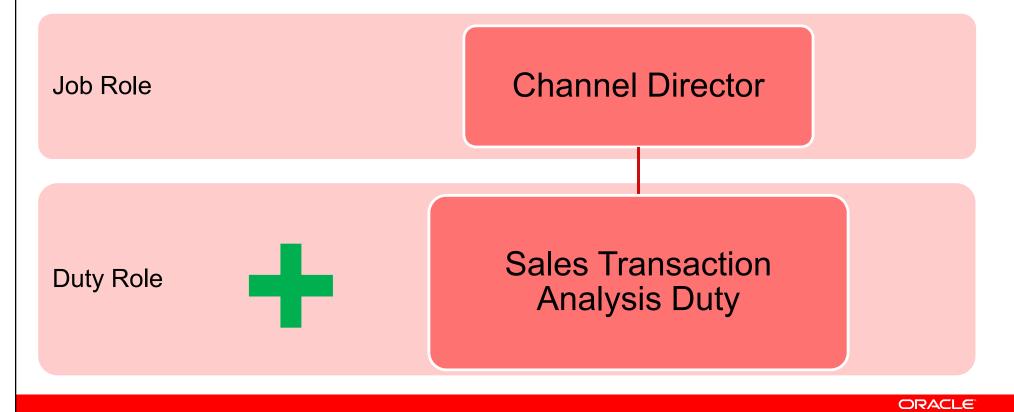
APM to extend

- Authorization Policy Manager
 - ü new jobs
 - **ü** new duties



"What if I want to expand what reports the channel directors can see?"

Add a Duty Role





"Most business groups have their sales reps do forecasting, but I know of one where the sales managers do that, not the sales reps. What should I do?"

Remove a Duty Role

Job Role

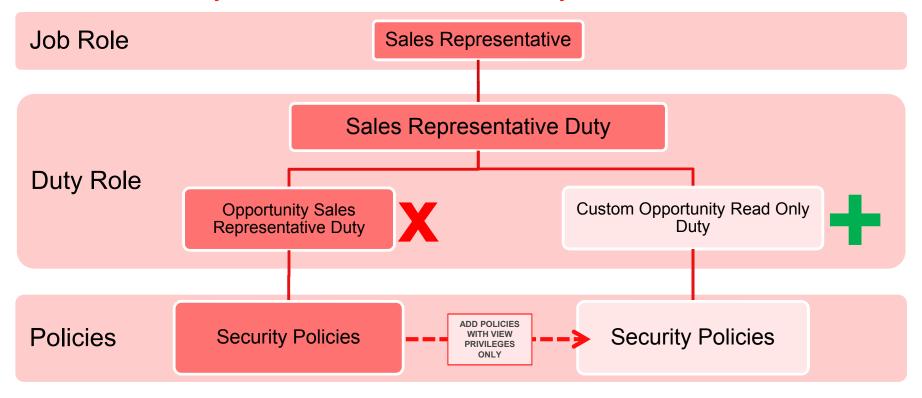
Sales Representative

Duty Role



Sales Forecasting Duty

Remove Duty Role and Add Custom Duty Role



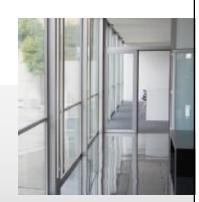
Customization Considerations

Customization	Ease of Use Rank (1 = easiest)
New Job role with Existing Duty role	1
New Job with New Duty role	2
New Policy with Existing Privilege	3
New Data Policy with Existing Condition	3
New Privilege for custom objects	4
New Condition	4 – 7 (For Advanced Implementers)

§ Custom Objects can be secured with an easy to use wizard and standard data security privileges. When custom objects appear in APM, the associated data security can be further customized.

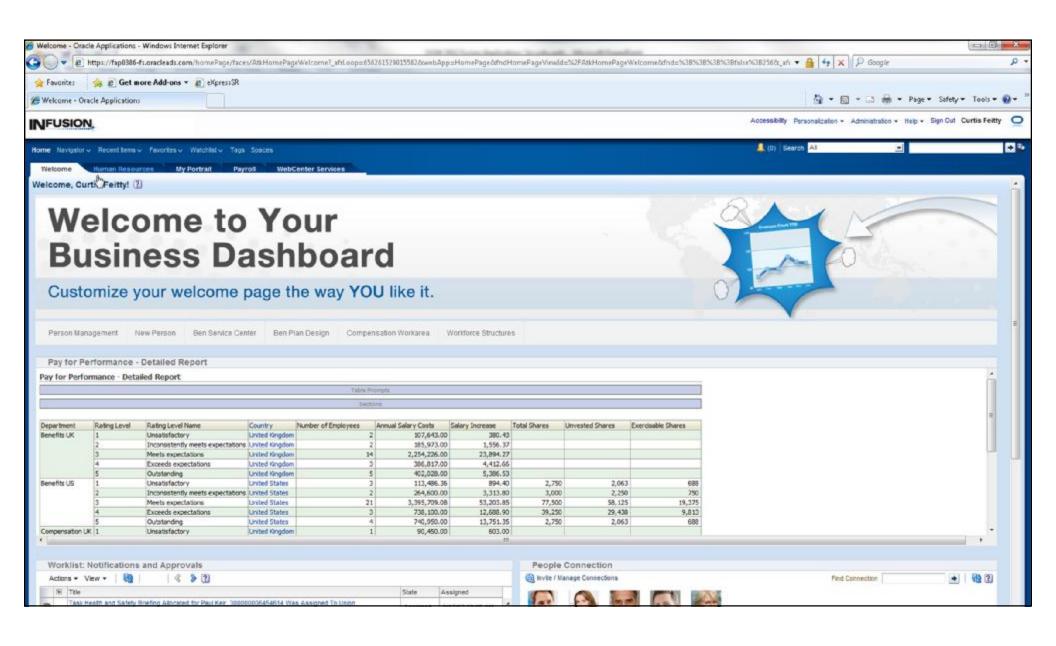
Program Agenda

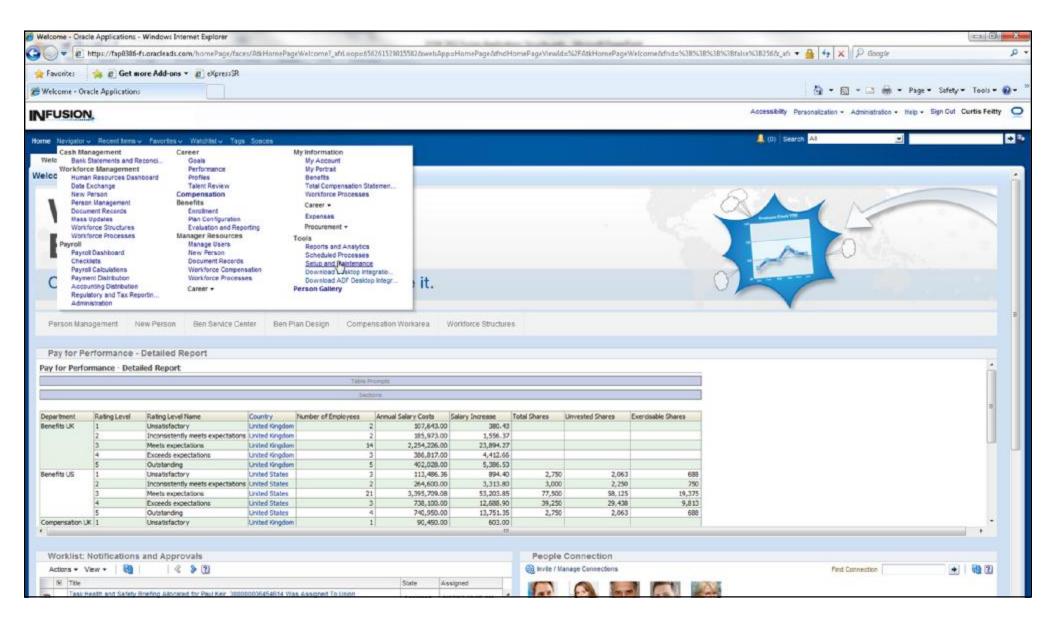
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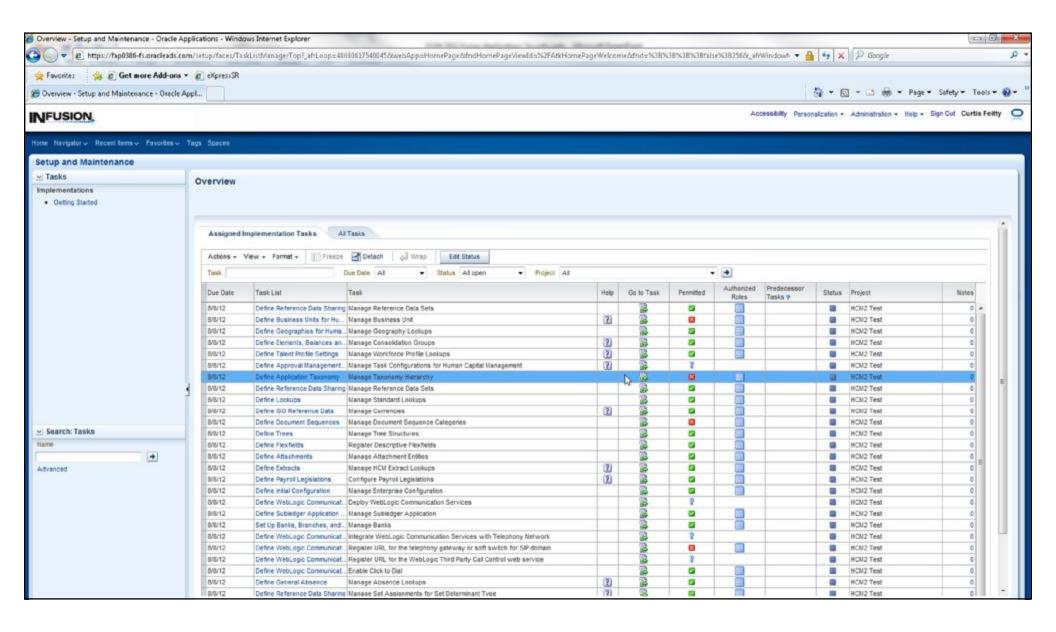


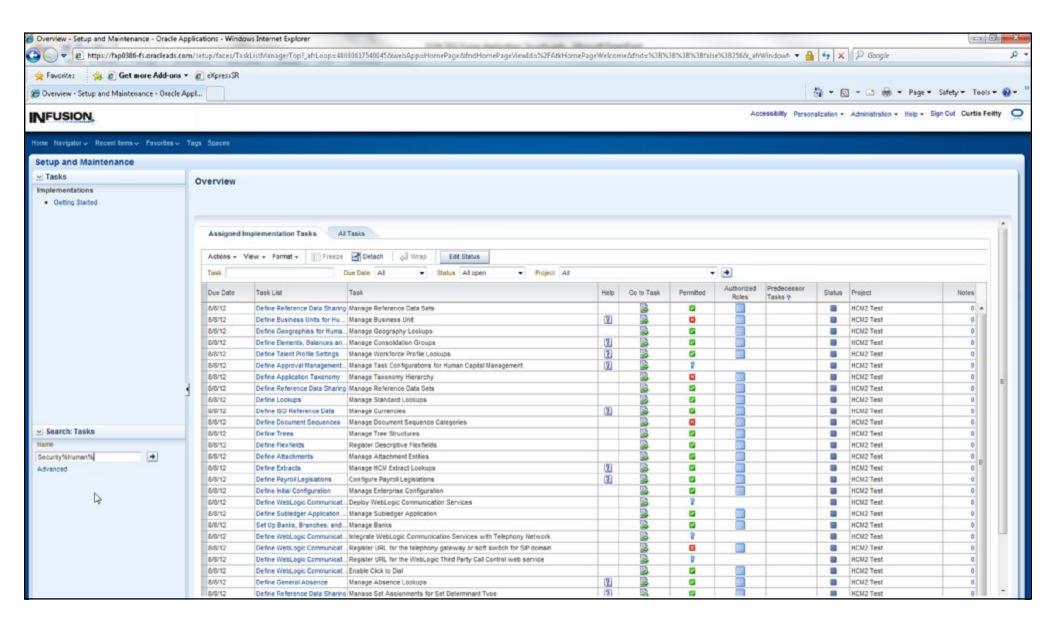
Security Flow

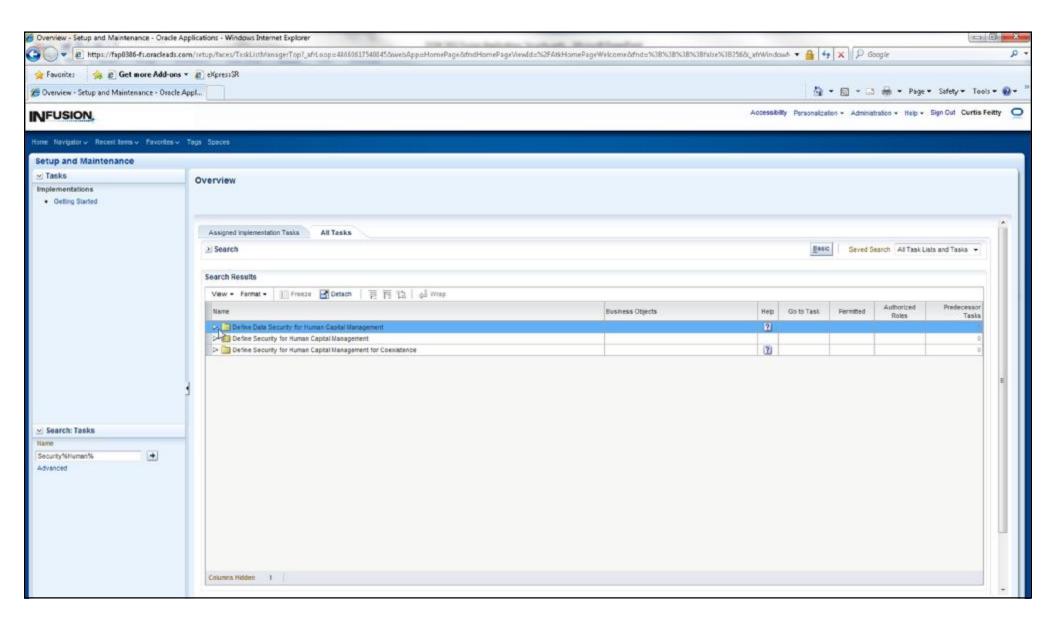
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- § Create data role
- § Create role provisioning rule
- § Create employee

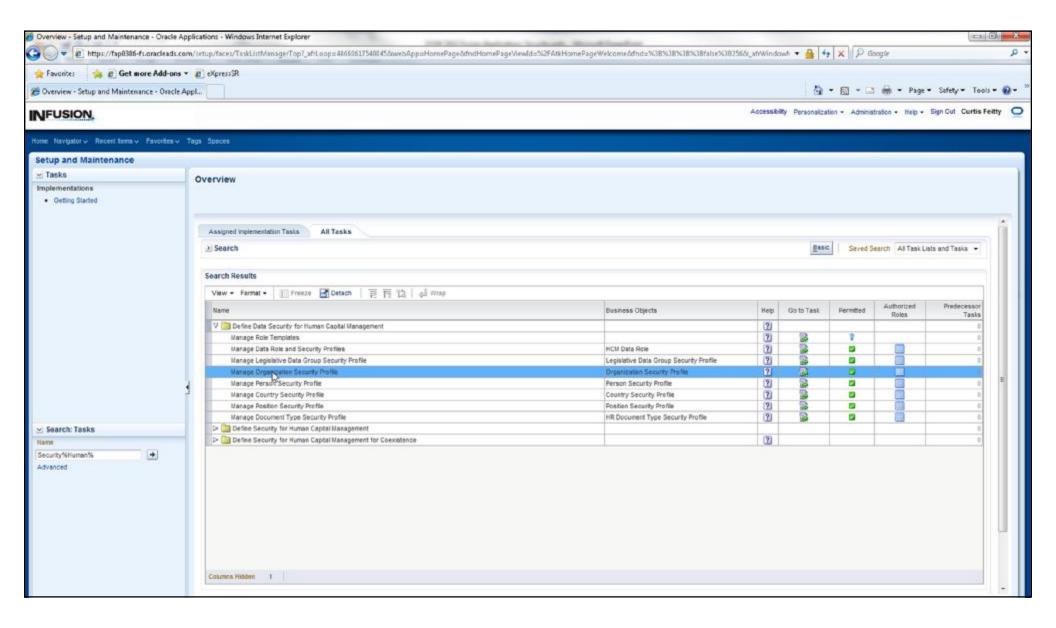


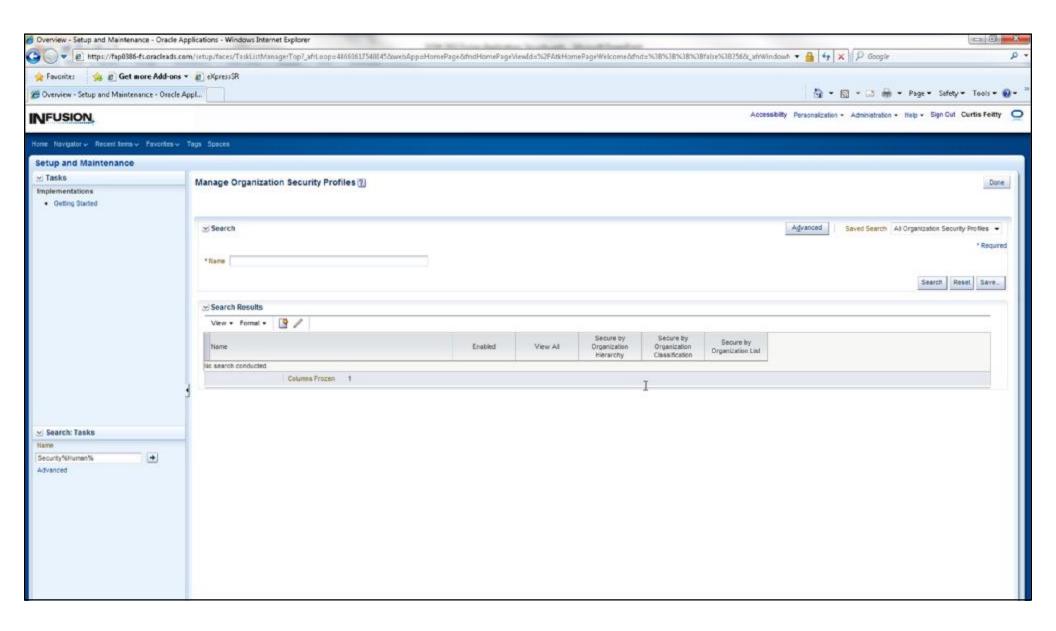


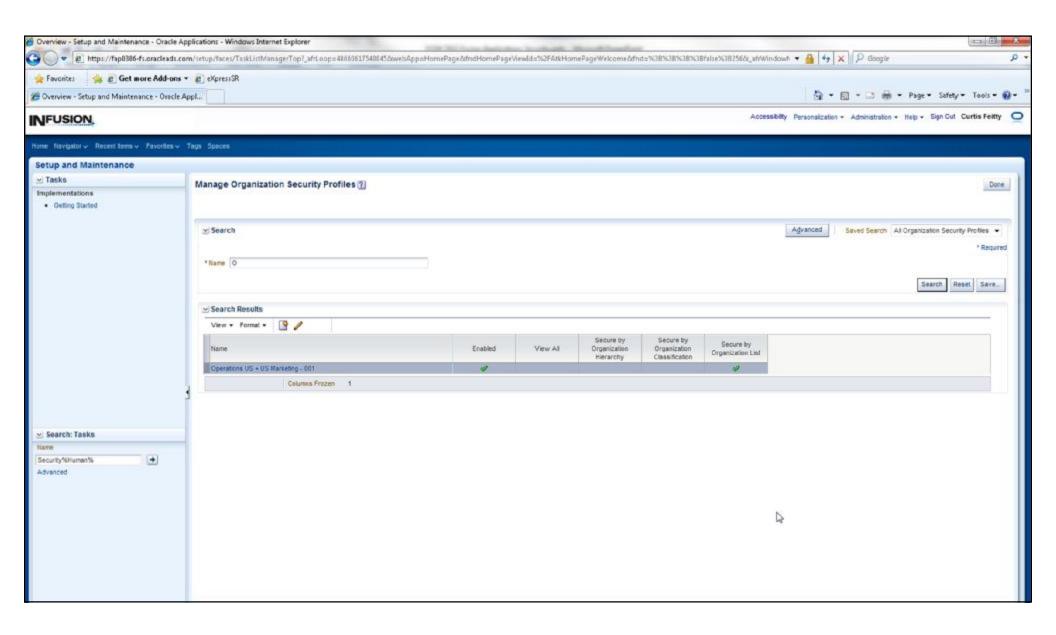


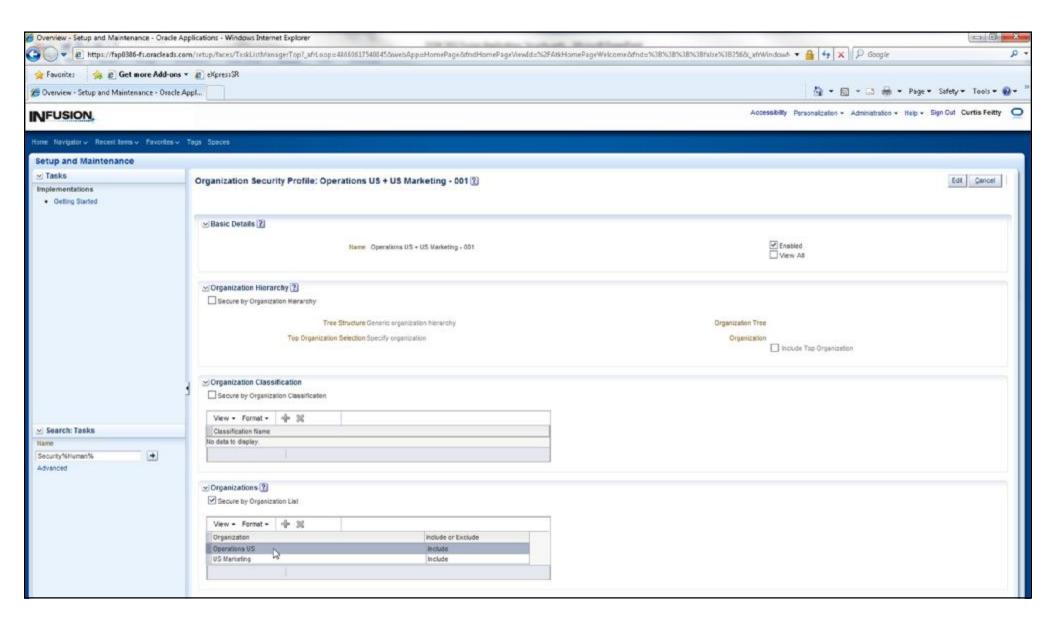






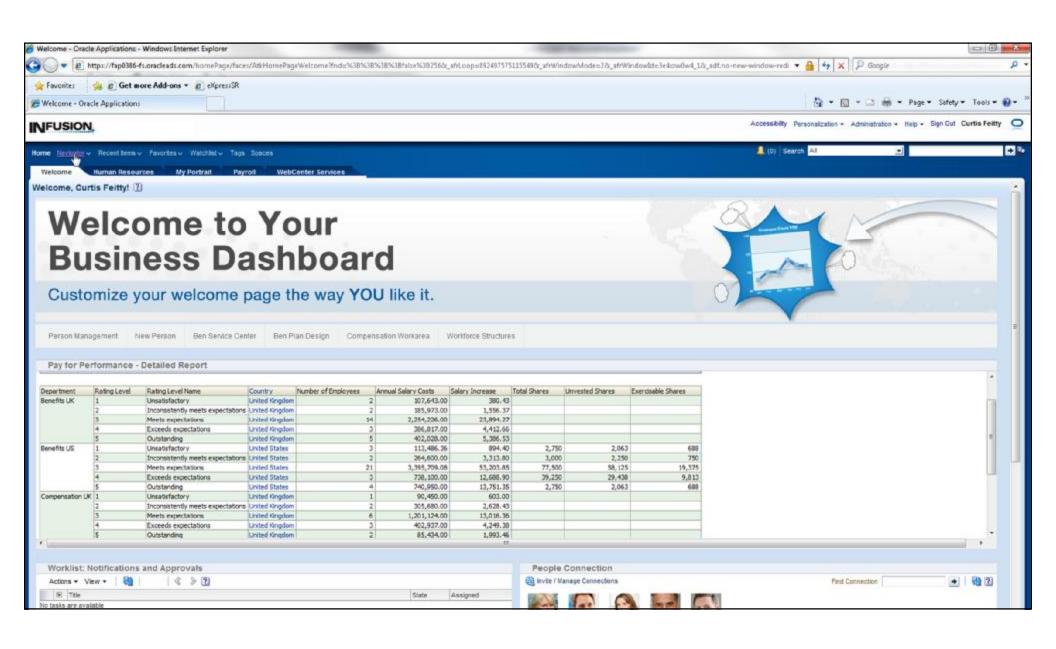


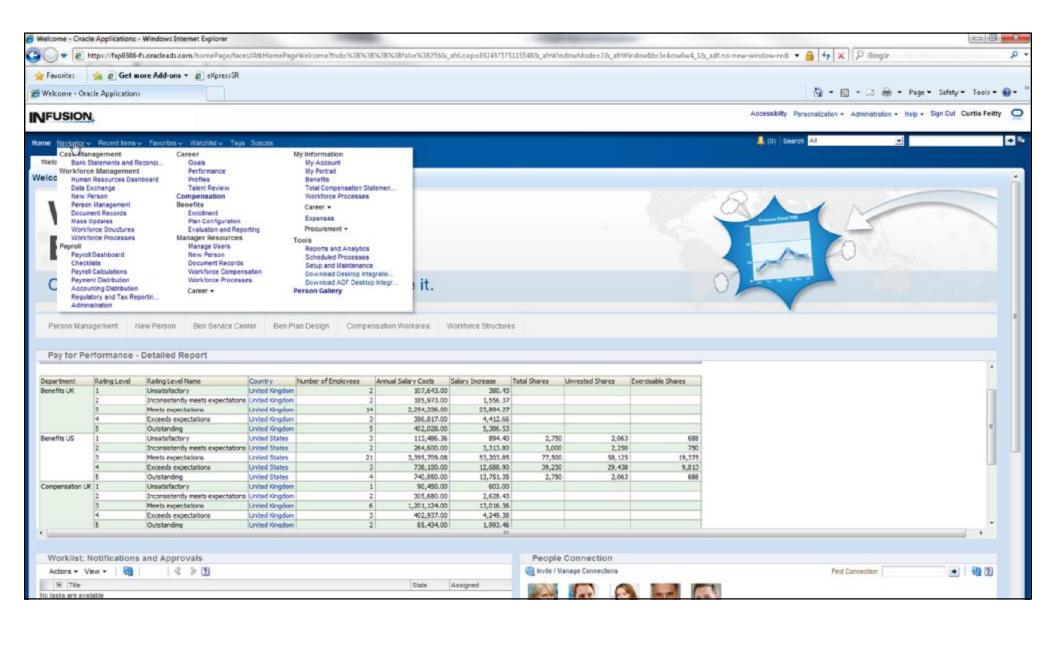


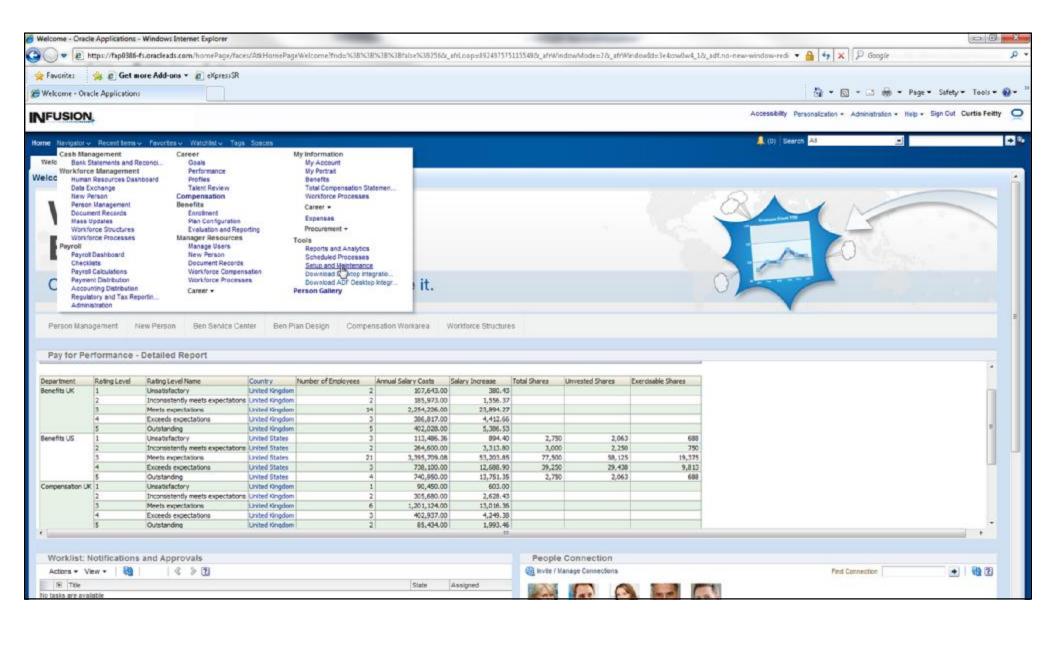


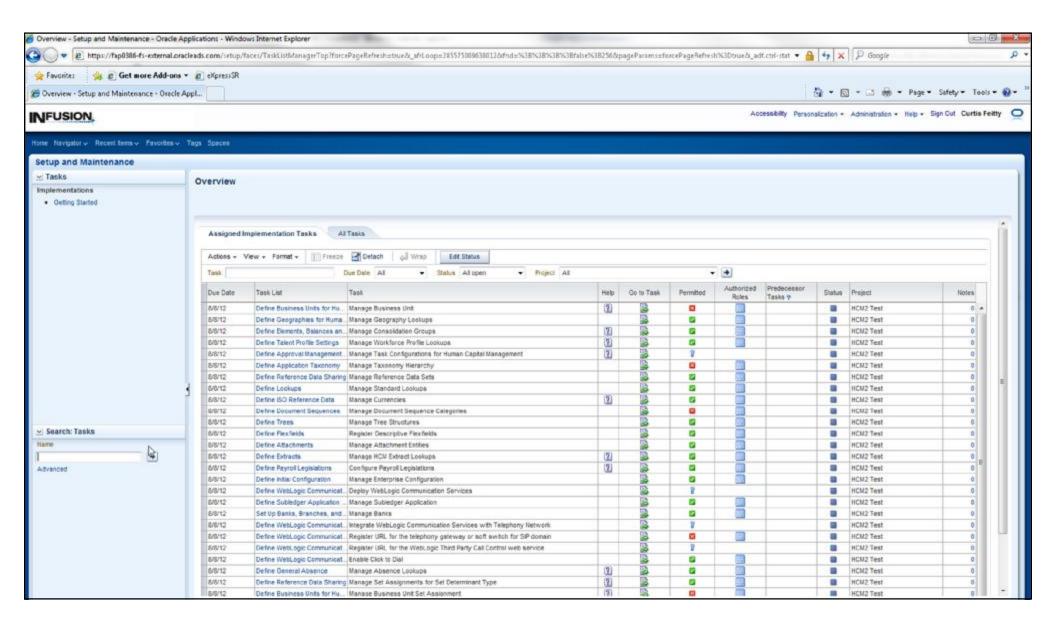
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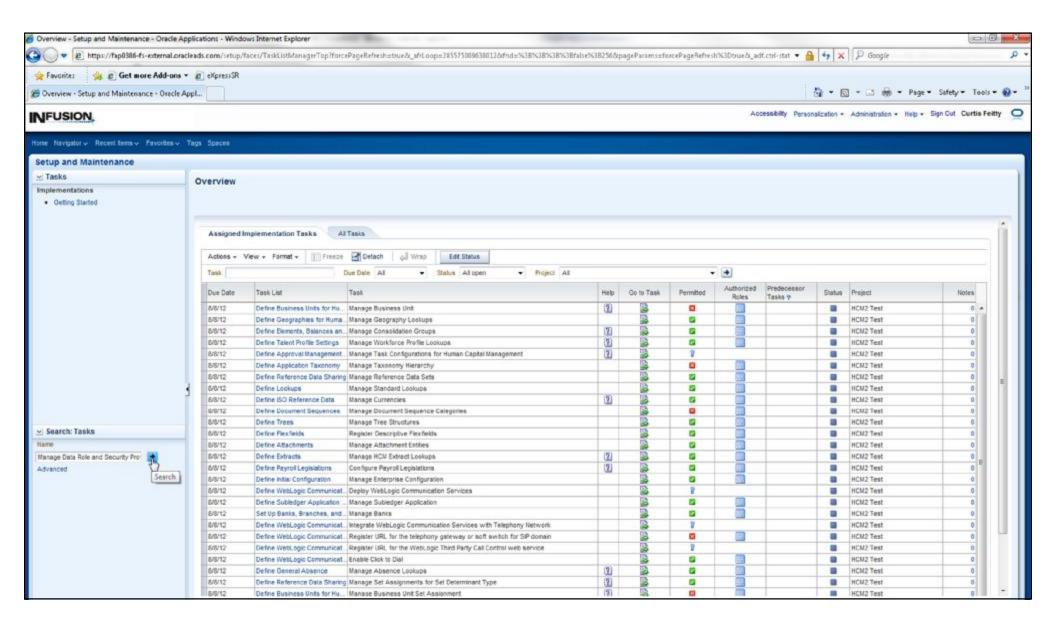
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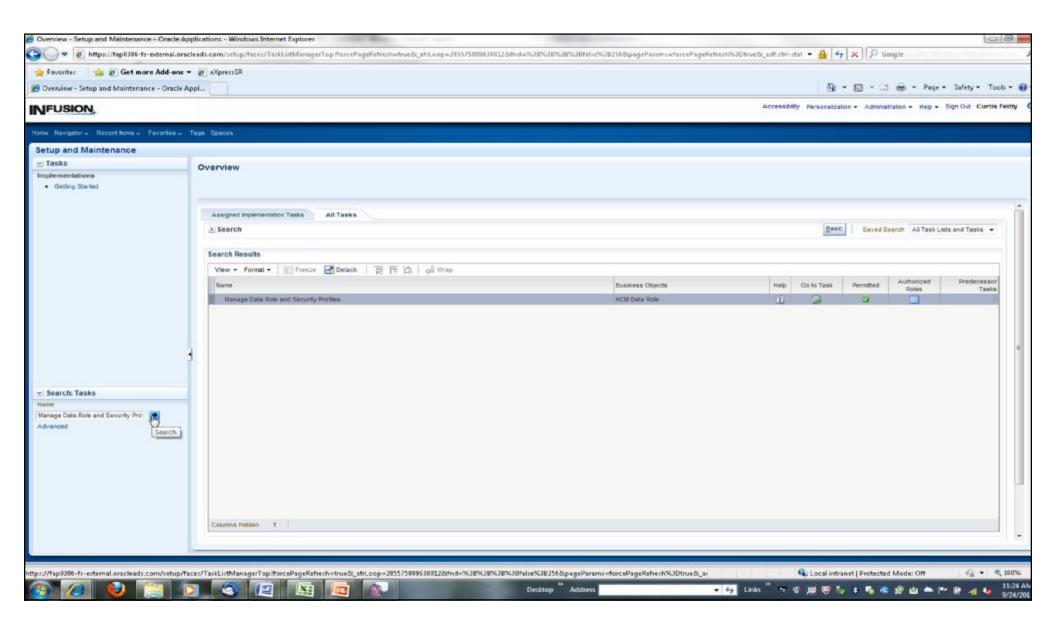


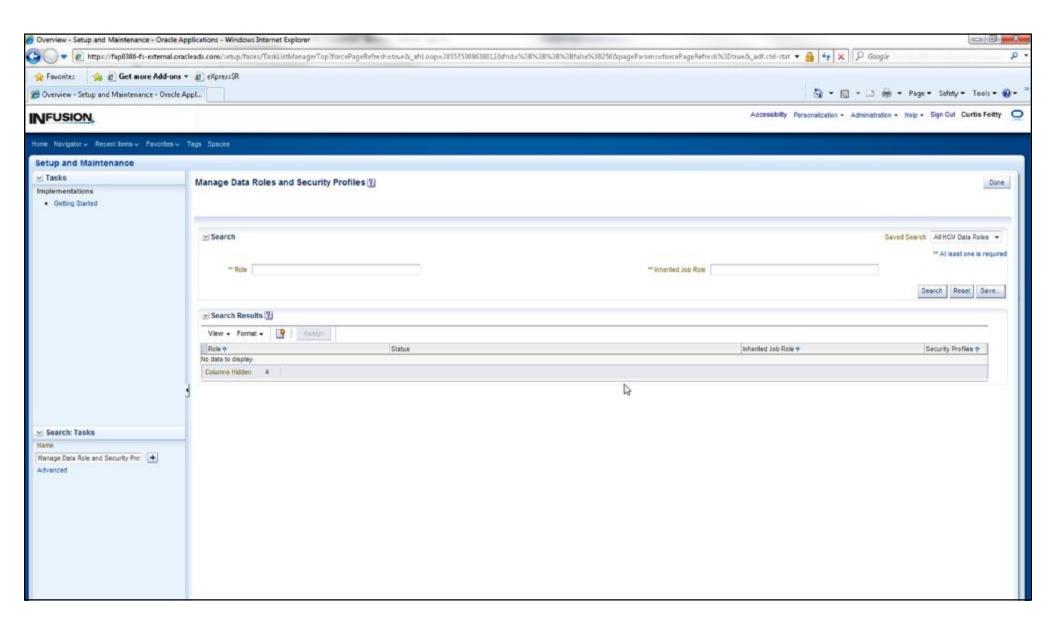


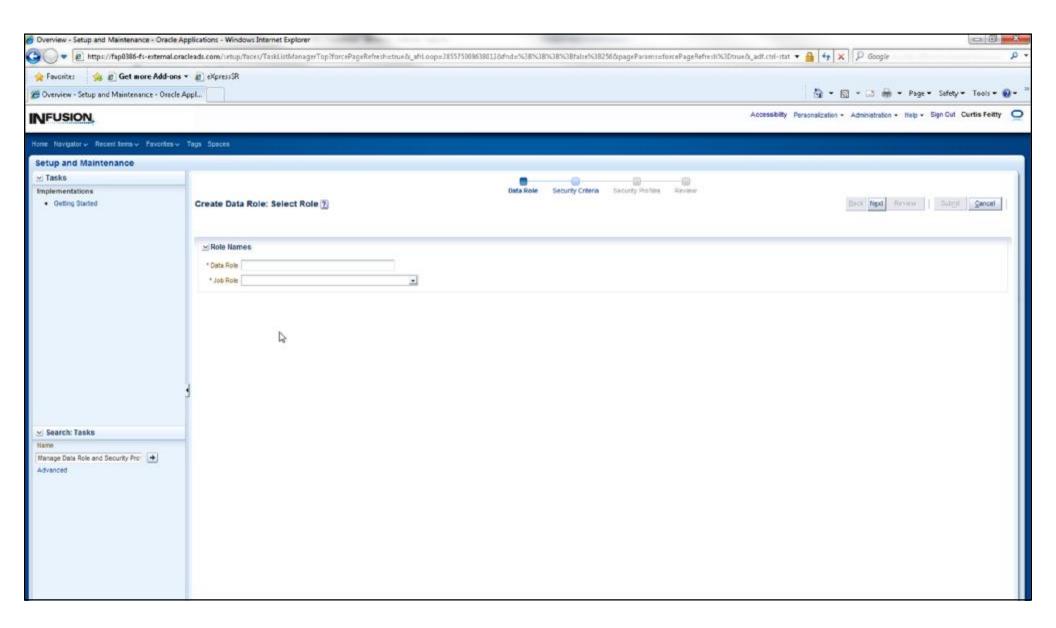


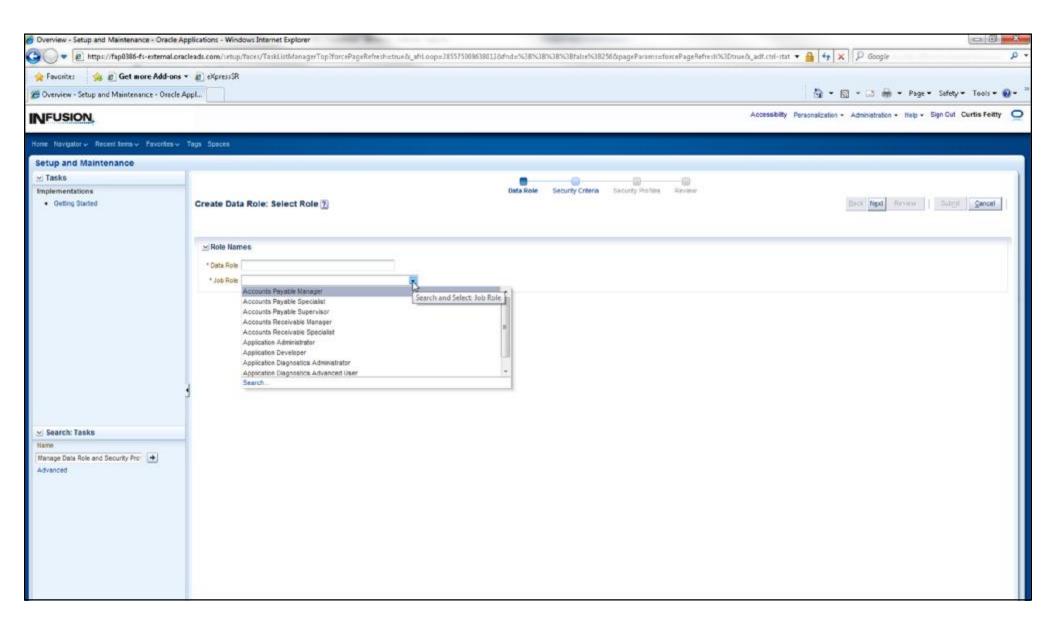


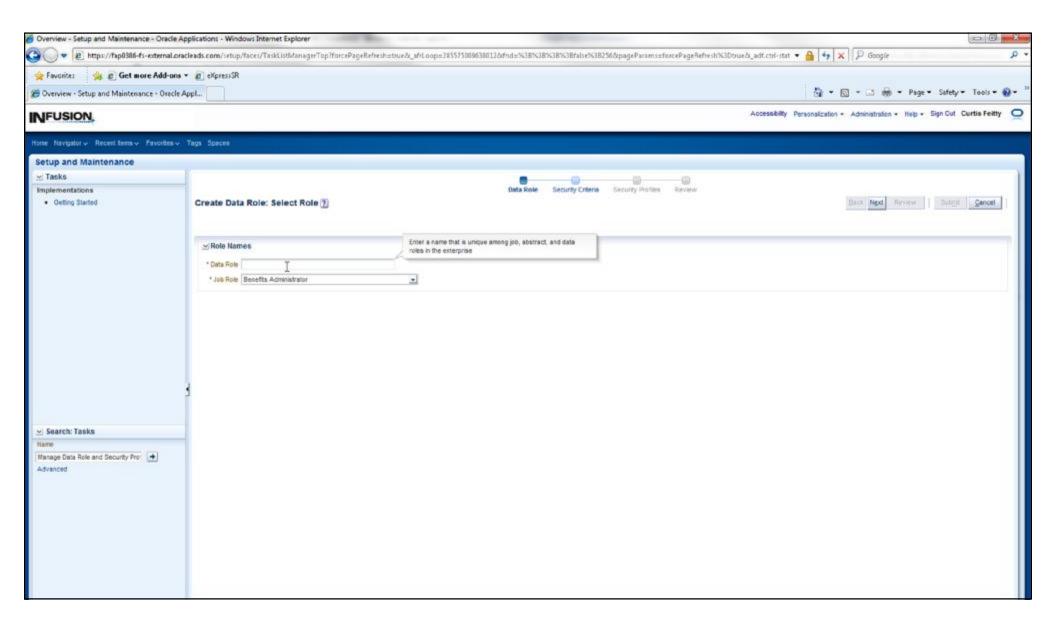


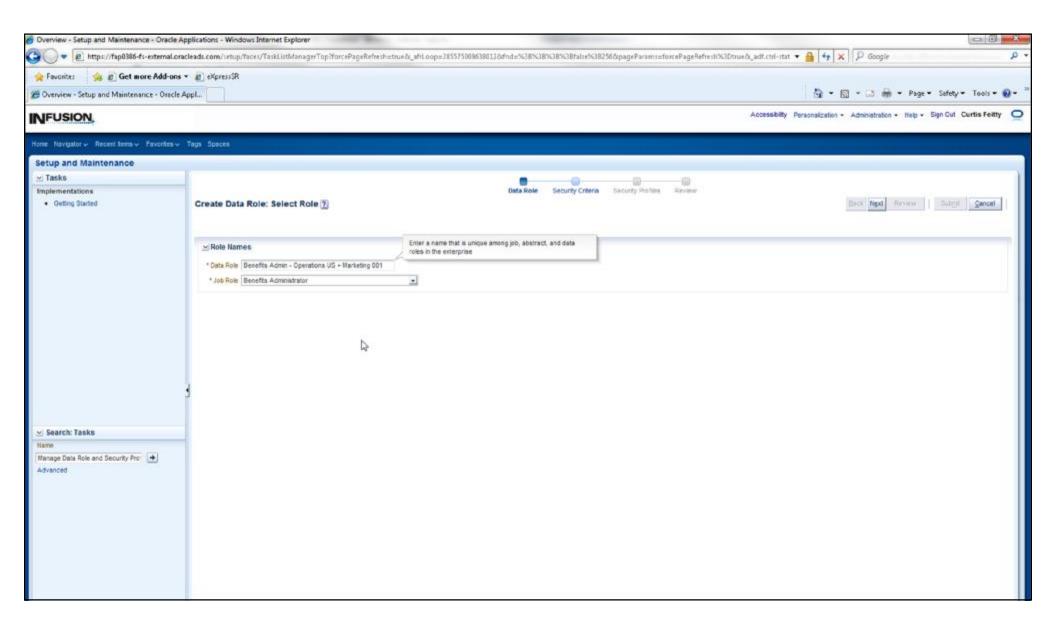


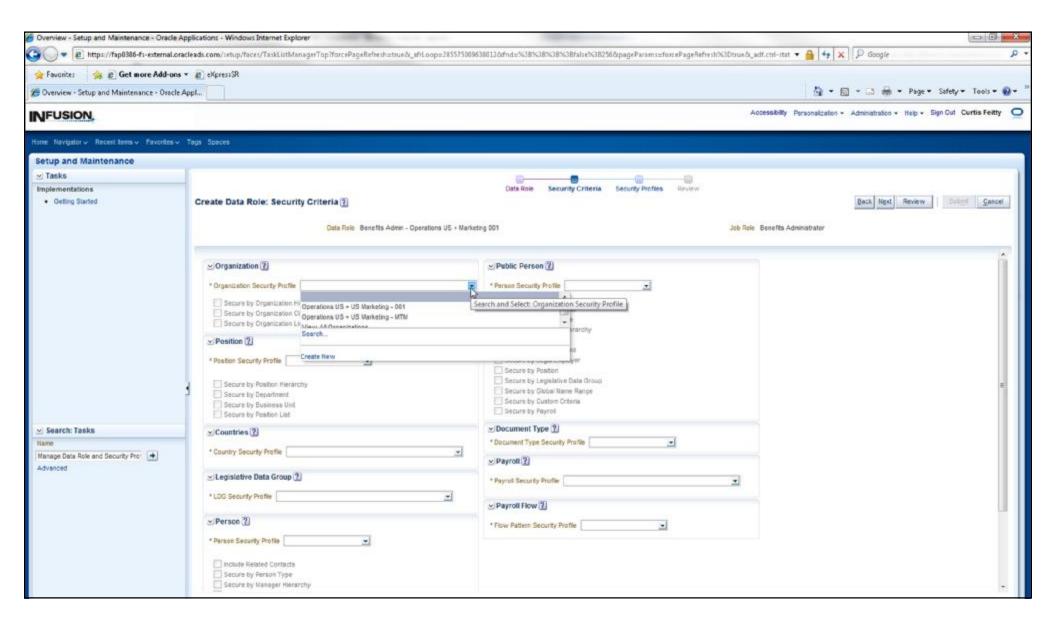


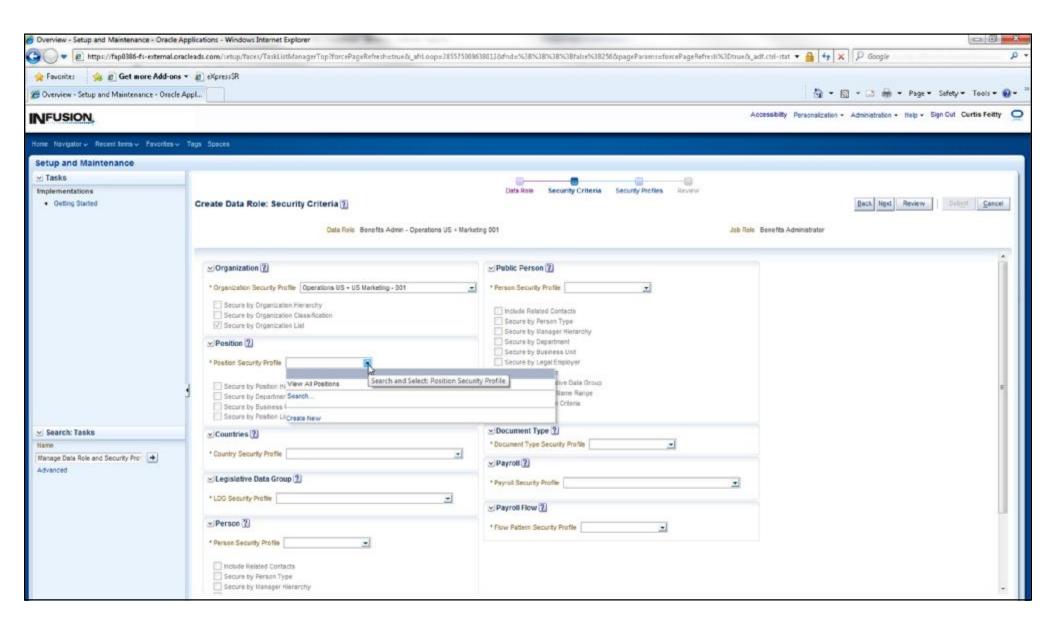


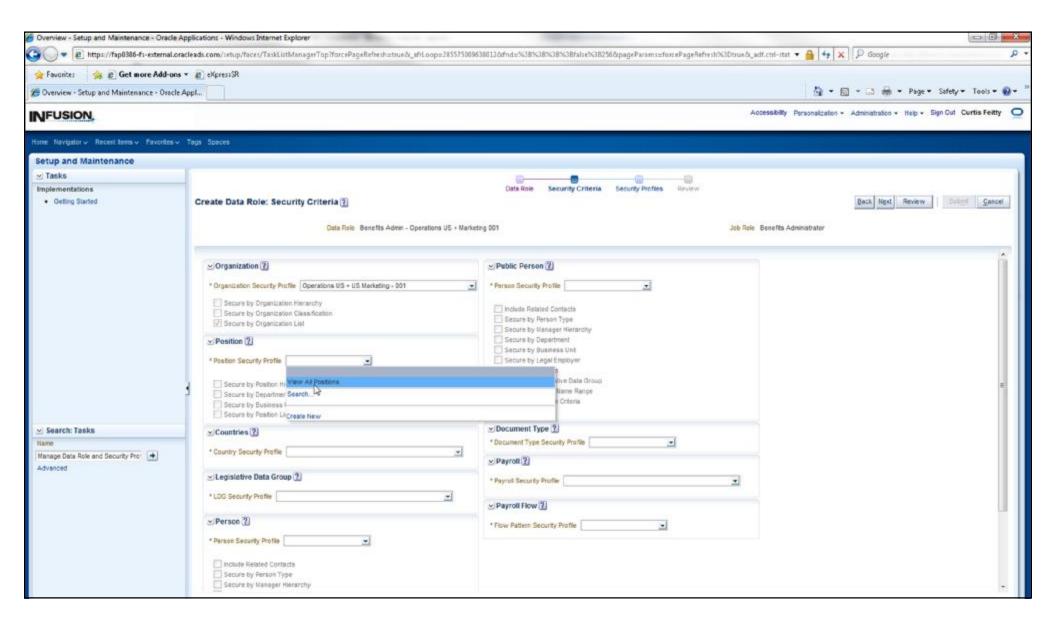


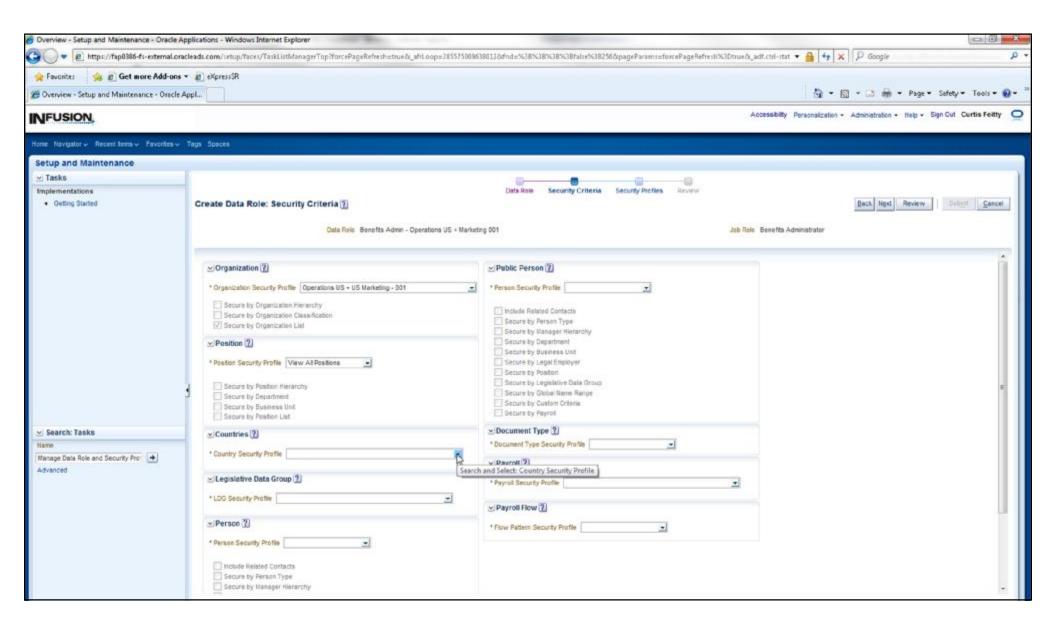


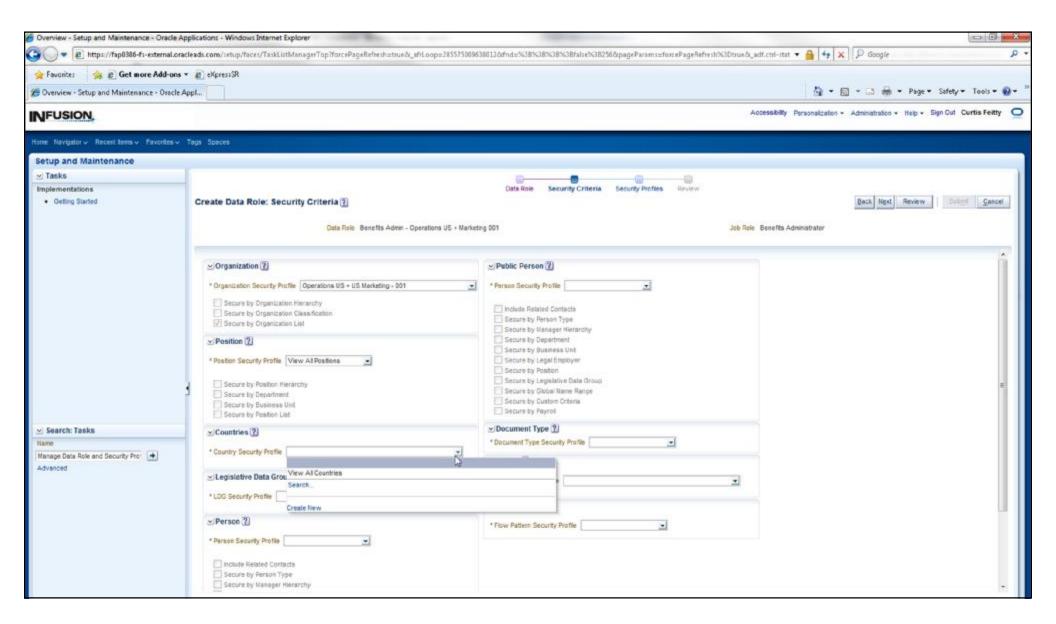


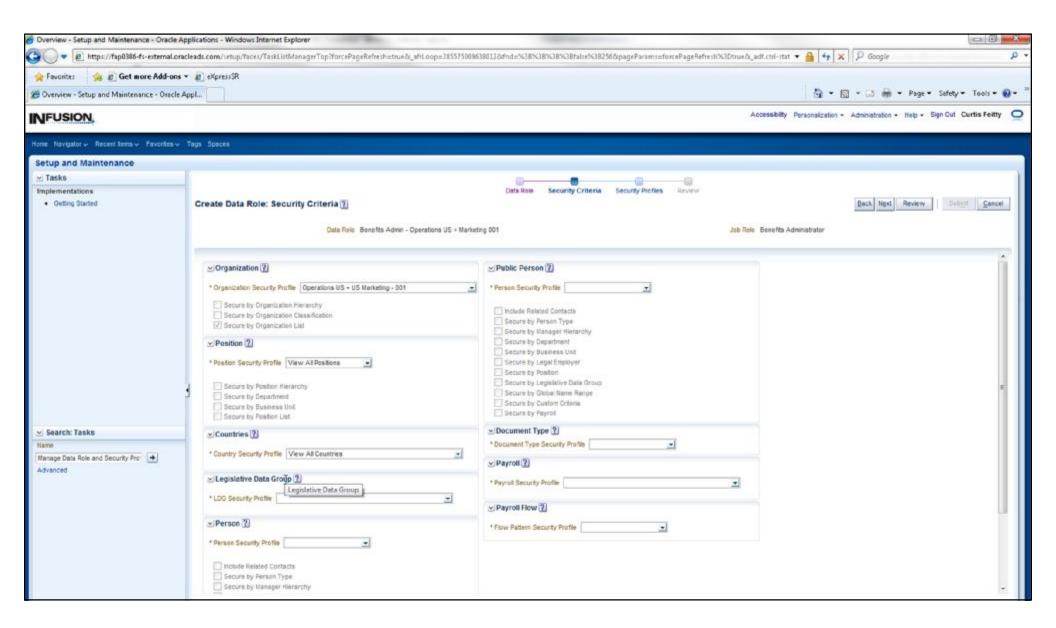


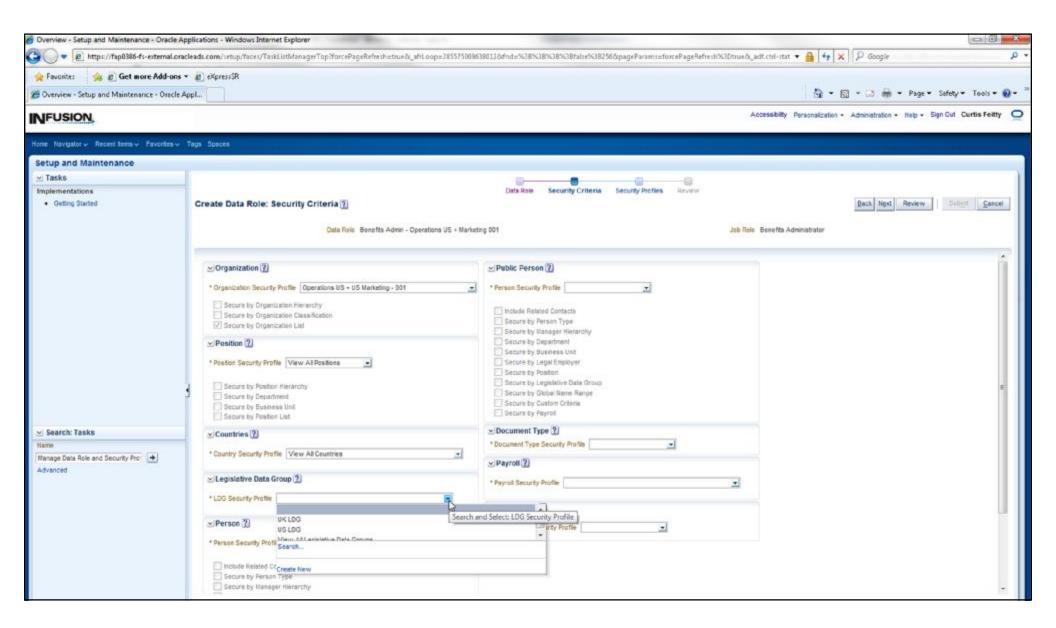


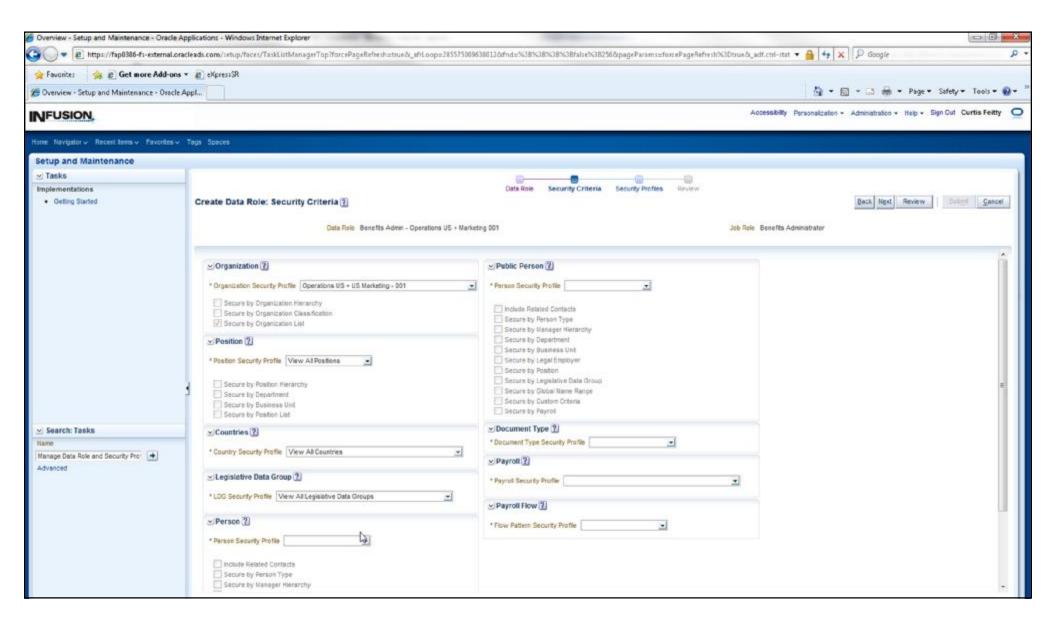


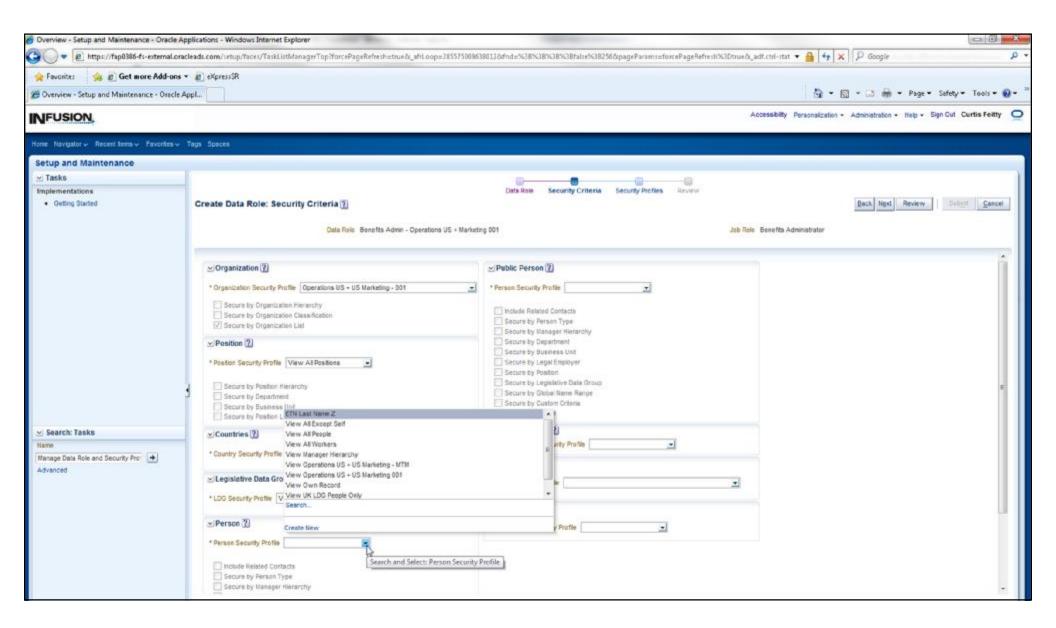


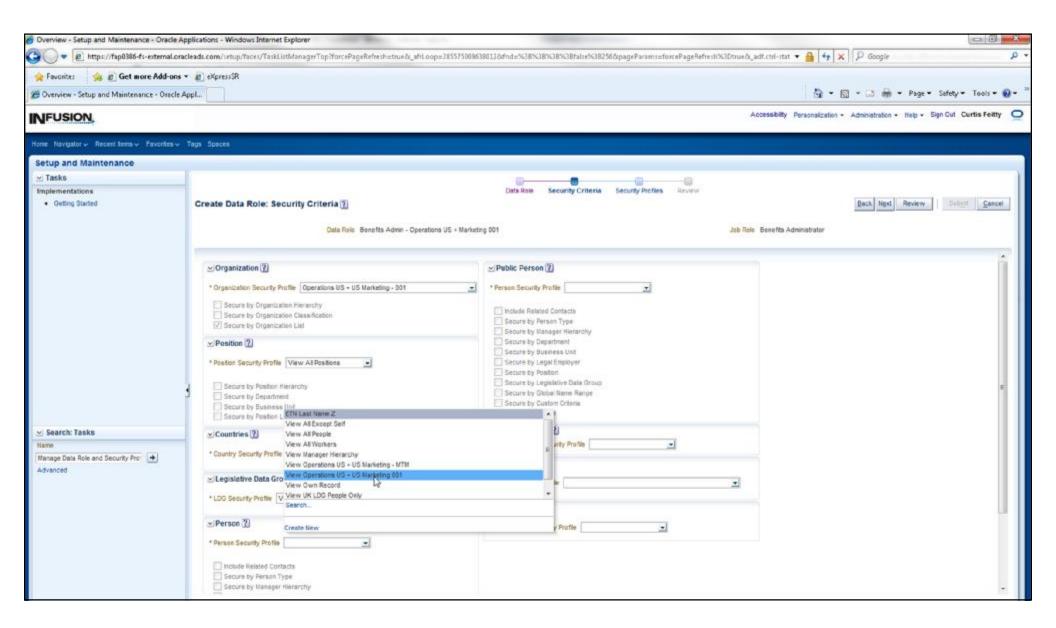


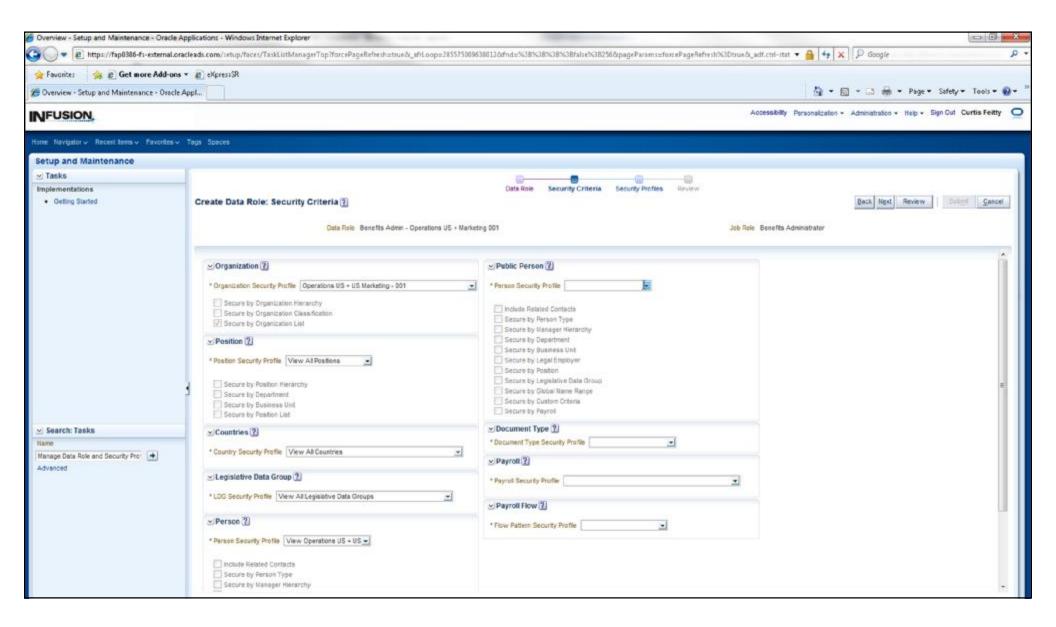


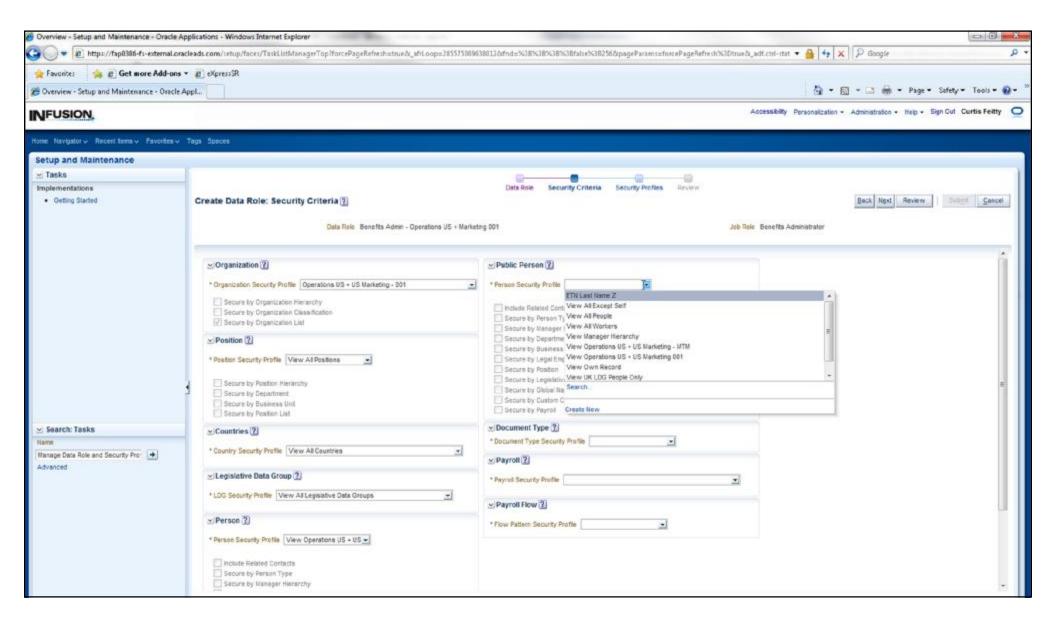


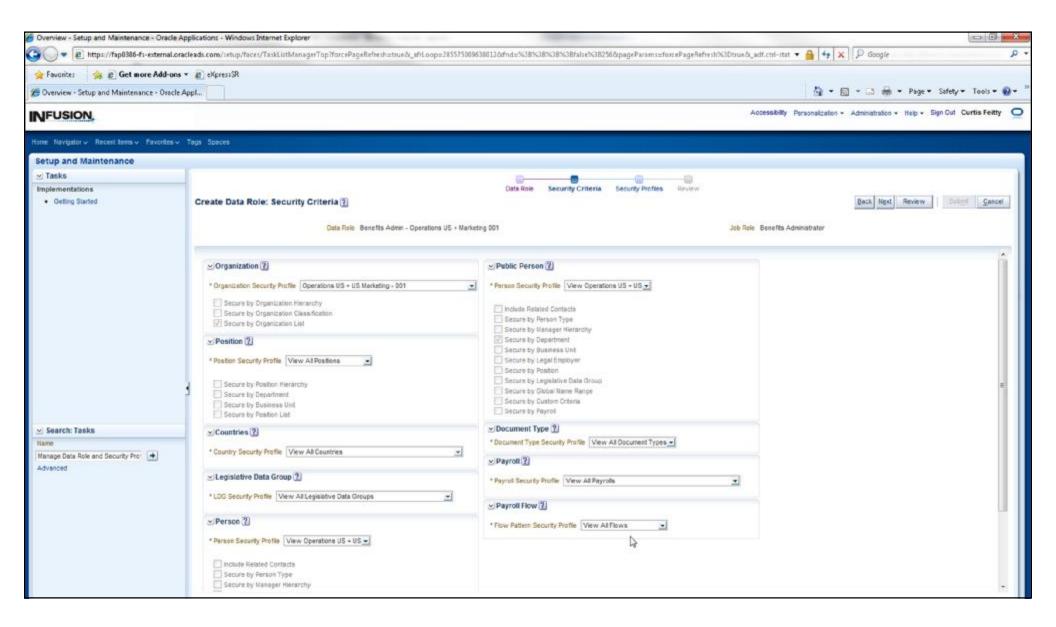


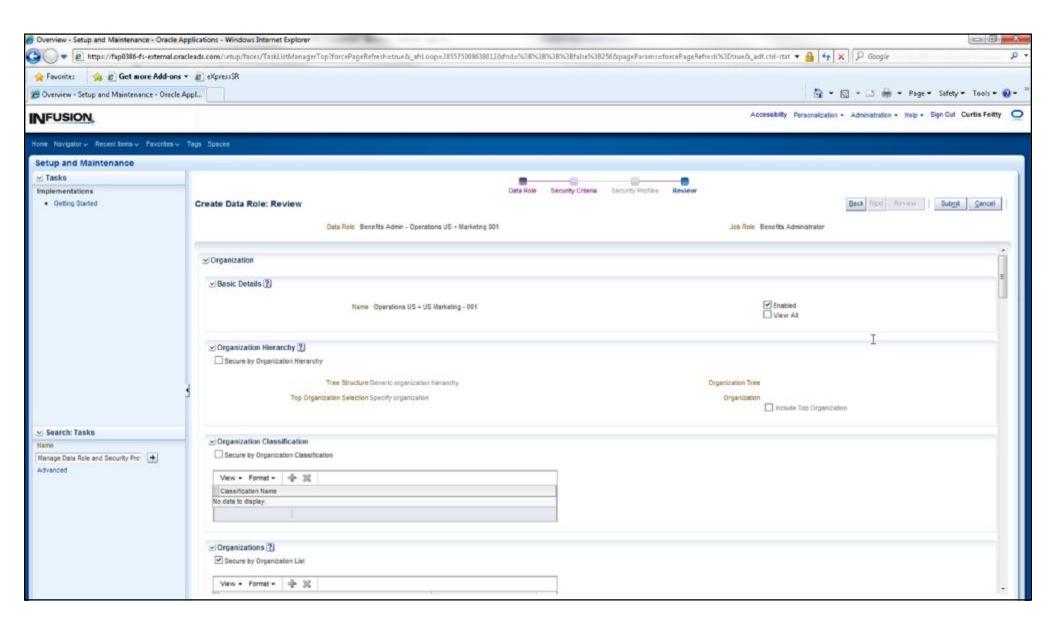


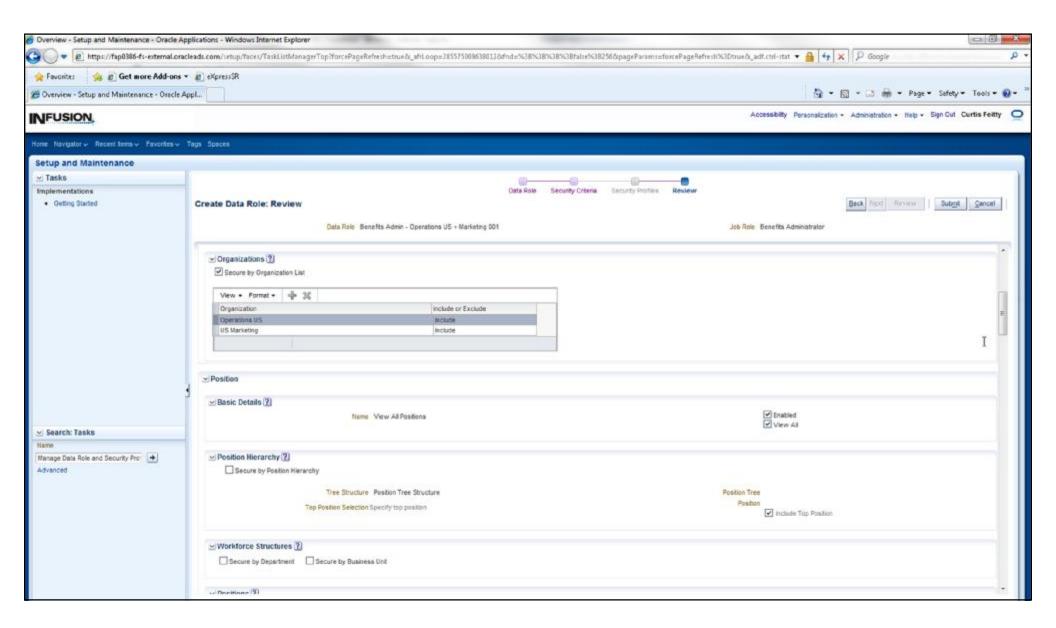






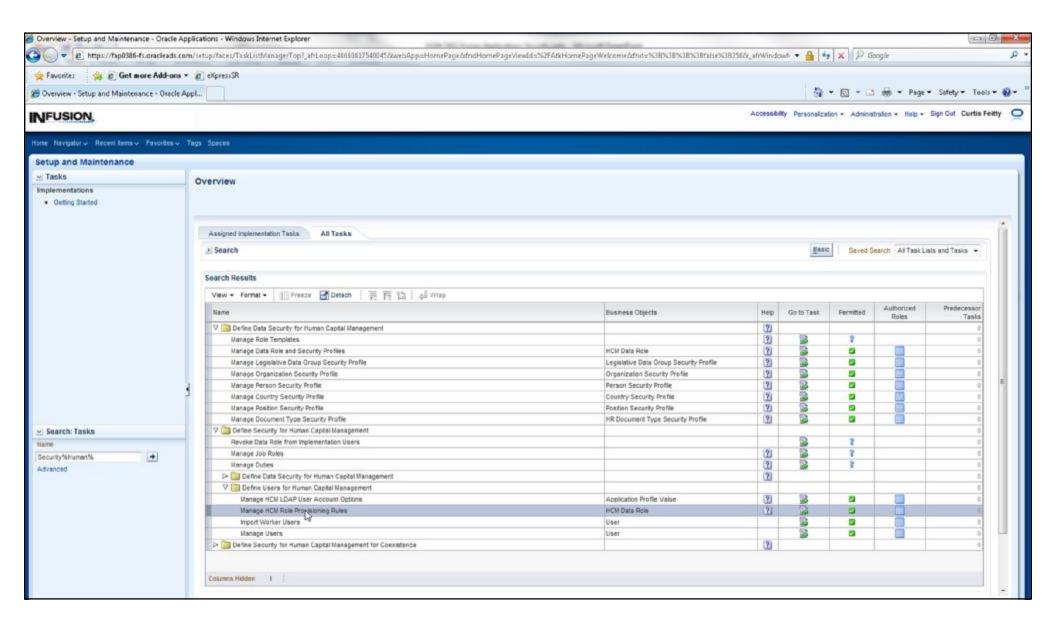


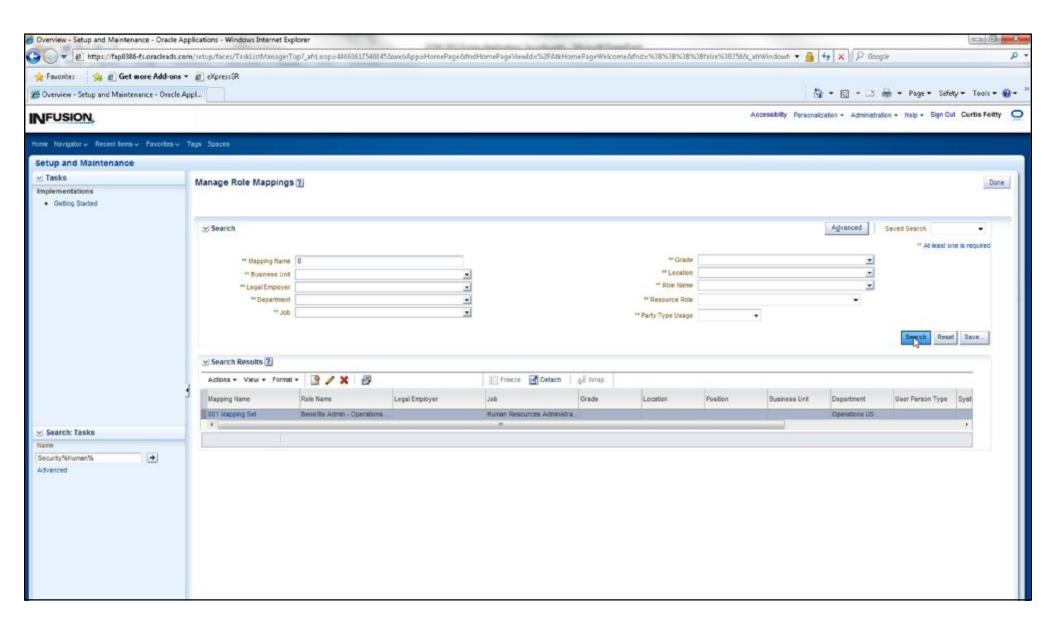


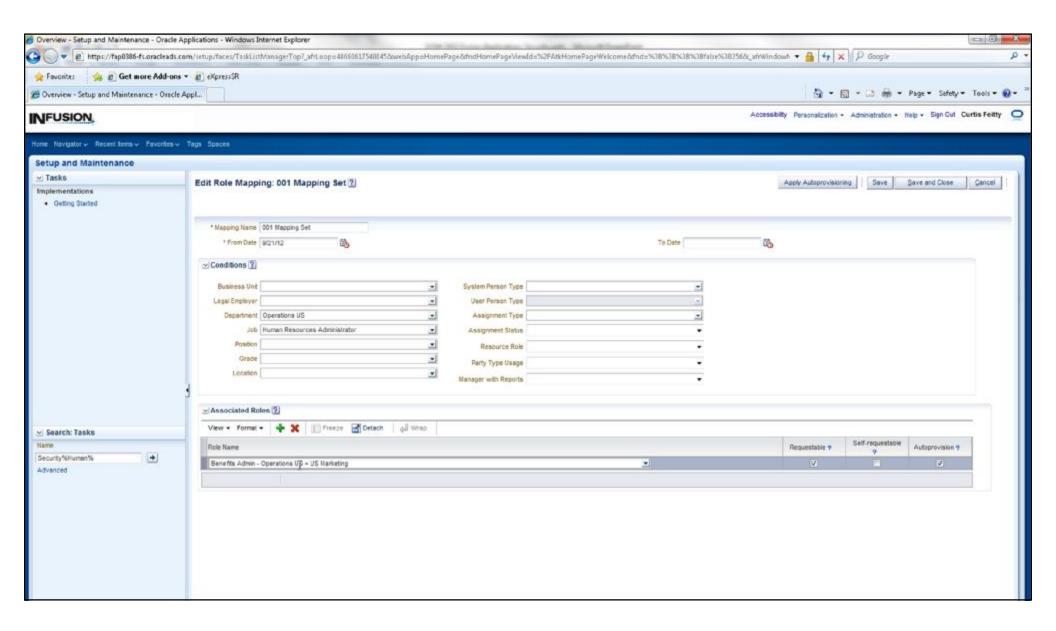


Security Flow

- § Set up security profile
- § Create data role
- § Create role provisioning rule
- § Create Employee



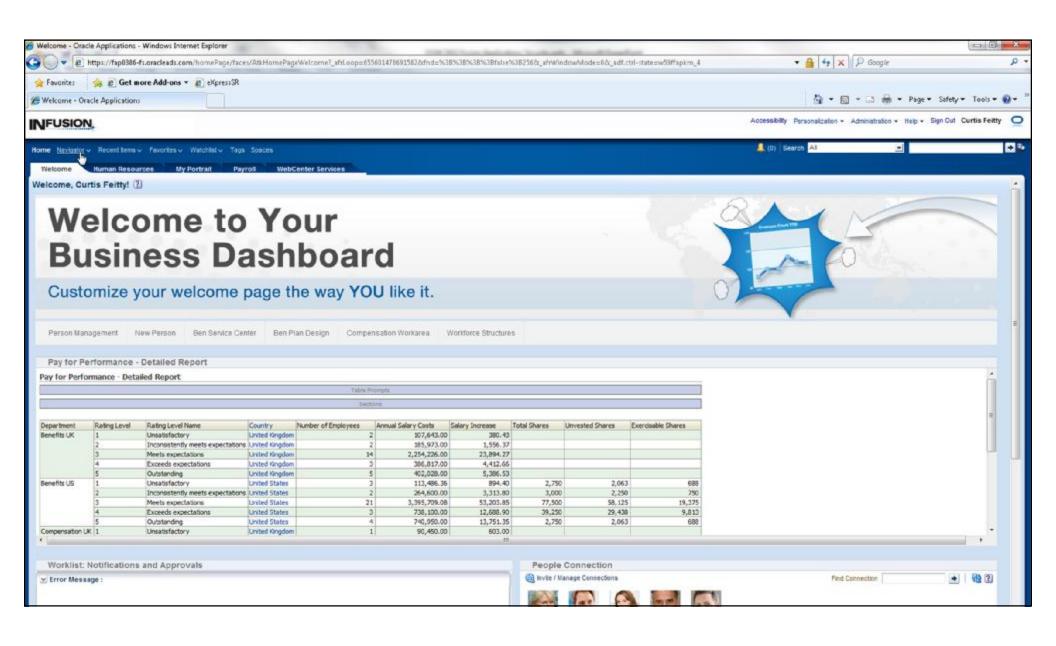


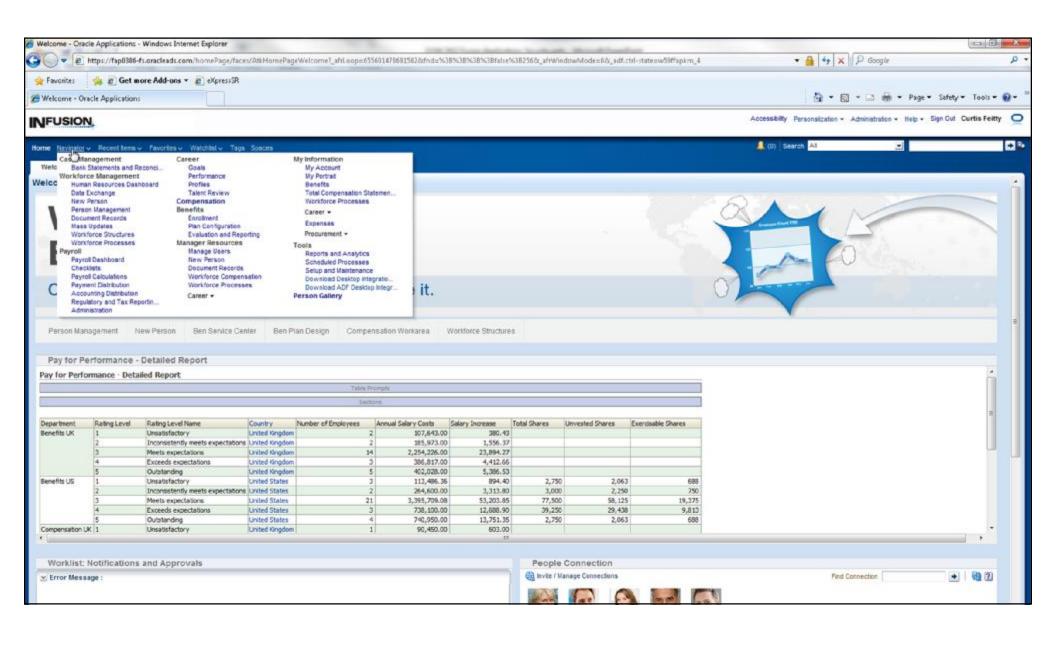


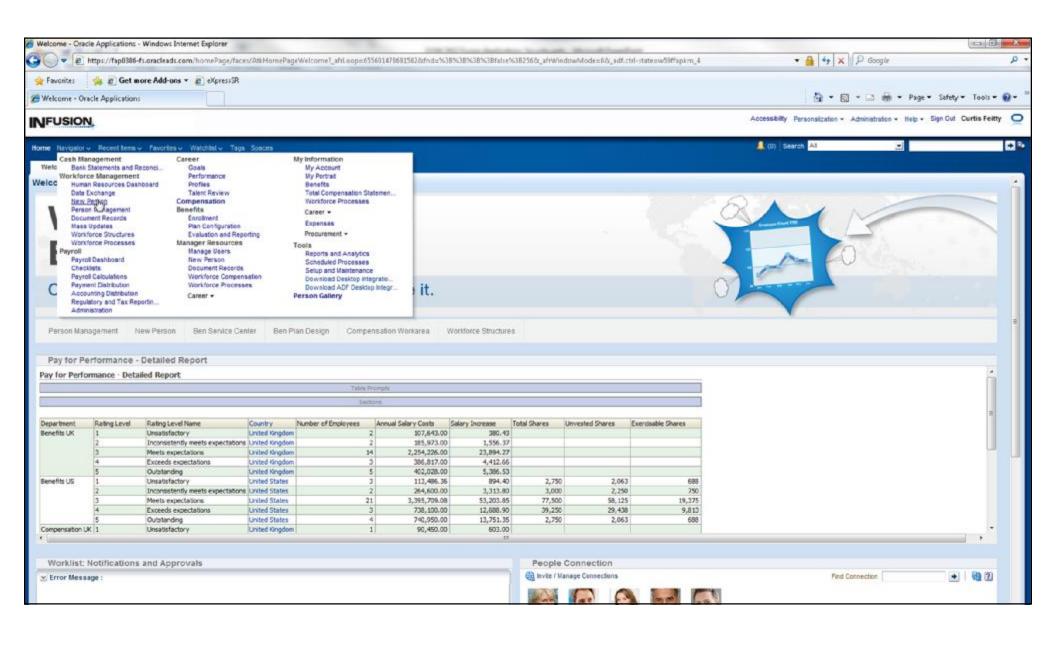
Security Flow

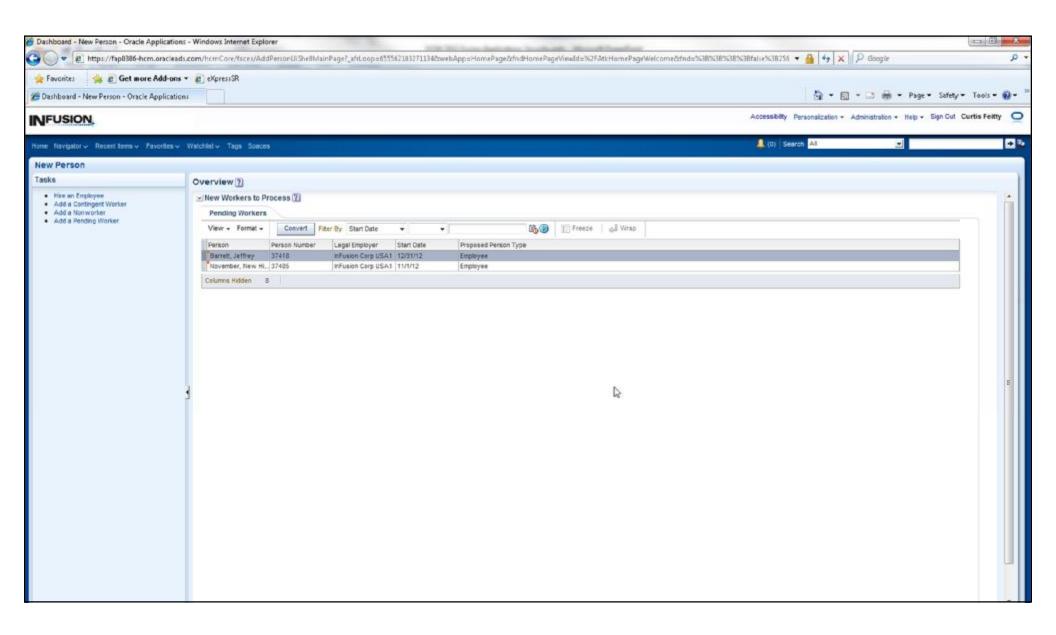
- § Set up security profile
- § Create data role
- § Create role provisioning rule
- § Create Employee

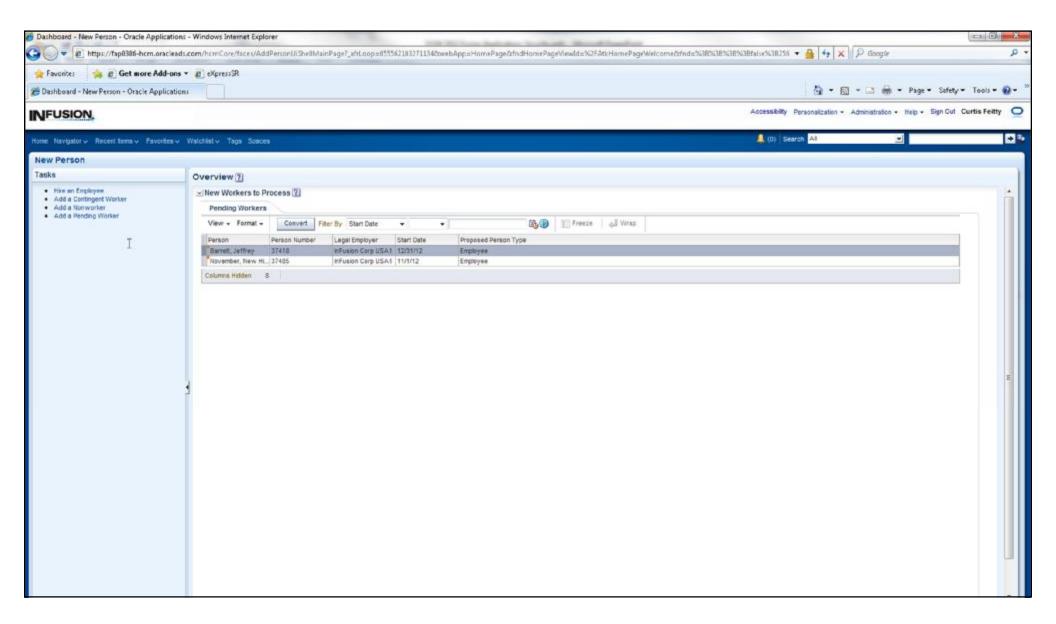


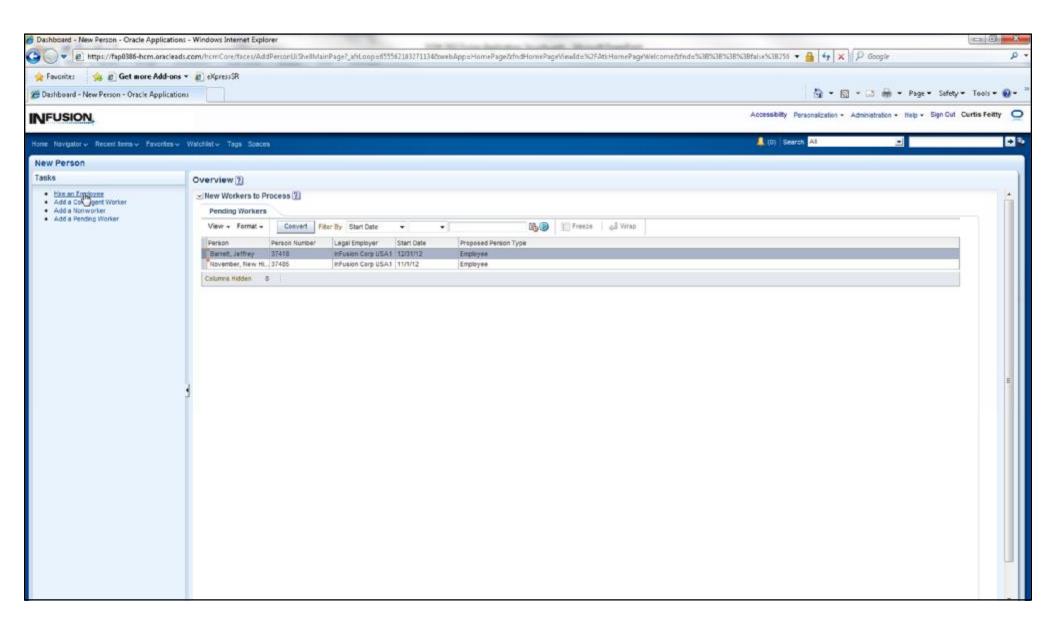


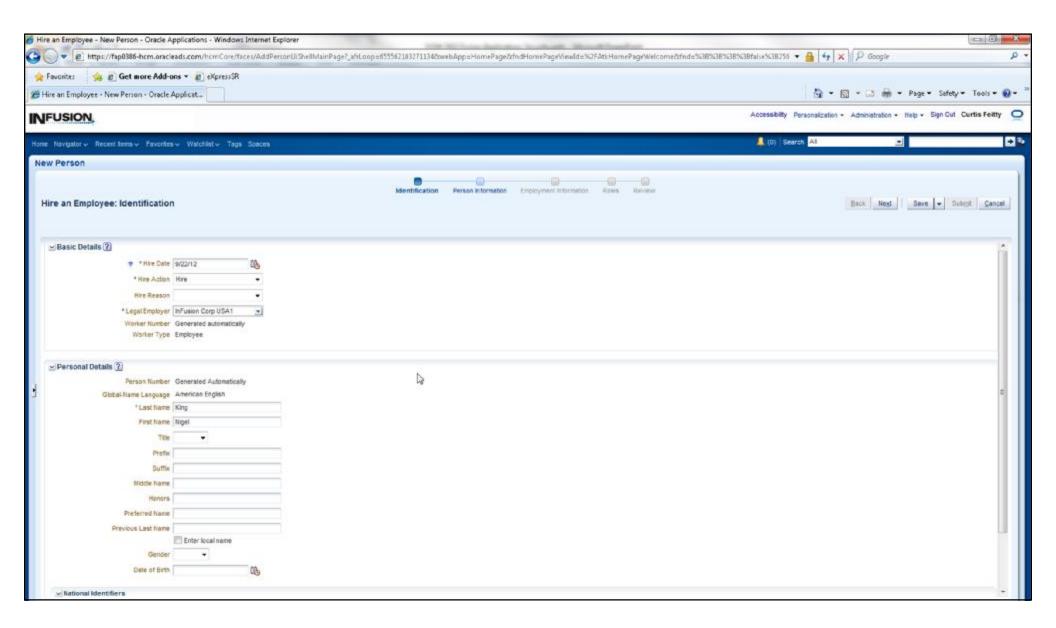


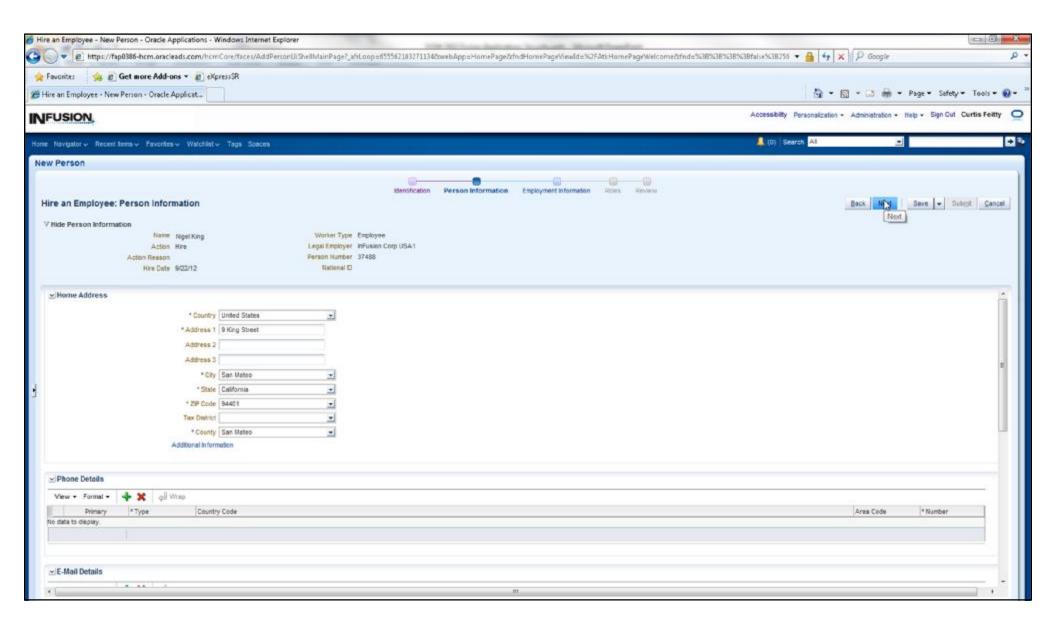


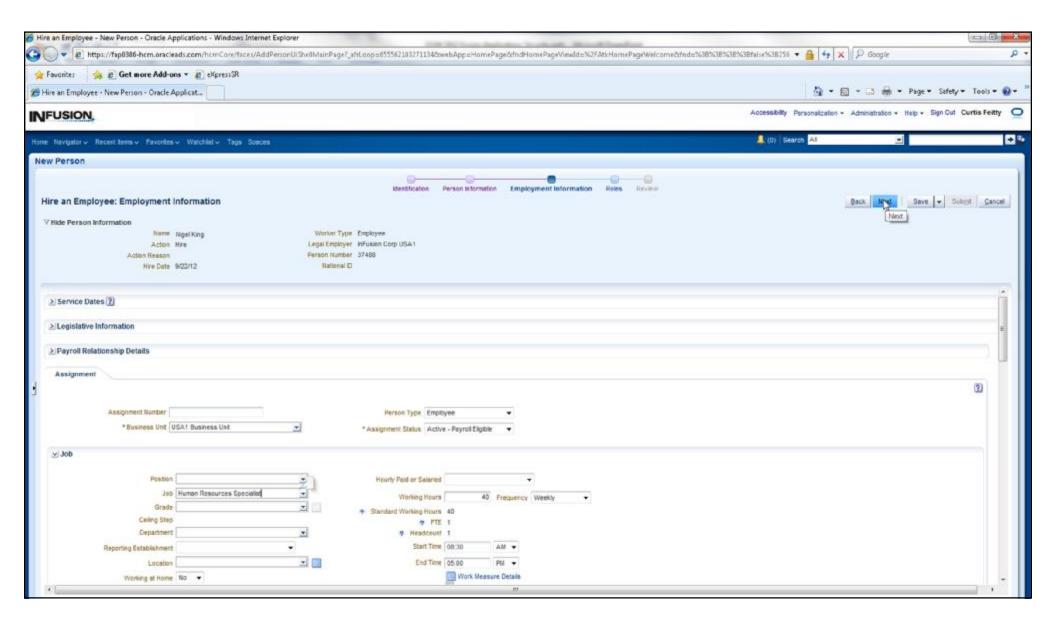


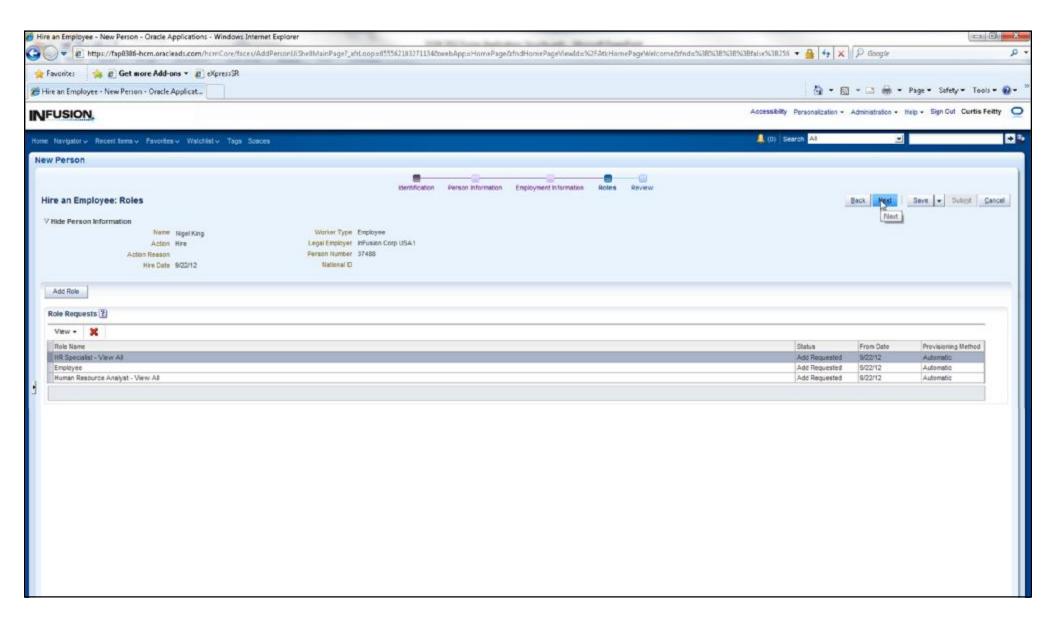


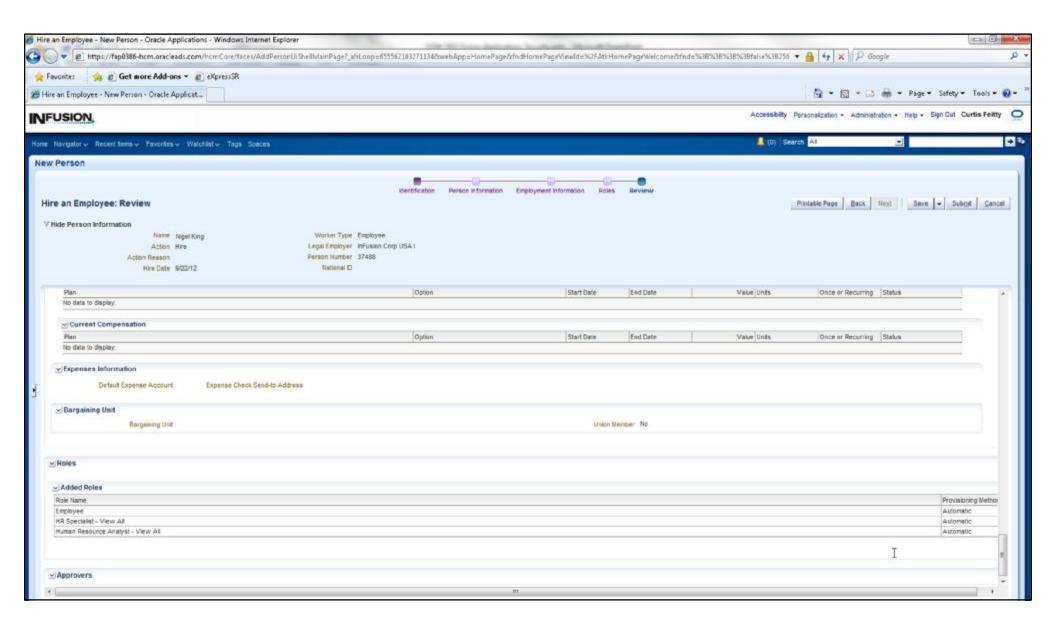














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