

Oracle® Pedigree and Serialization Manager

Security Guide

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Oracle Pedigree and Serialization Manager Security Guide, Release 2.2

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Oracle Pedigree and Serialization Manager Security Guide, Release 2.2

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- Are the implementation steps correct and complete?
- Did you understand the context of the procedures?
- Did you find any errors in the information?
- Does the structure of the information help you with your tasks?
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Preface

Intended Audience

Welcome to Release 2.2 of the *Oracle Pedigree and Serialization Manager Security Guide*. See Related Information Sources on page viii for more Oracle Applications product information.

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Structure

1 Overview

This section gives an overview of the product and explains the general principles of application security.

2 Secure Installation and Configuration

3 Security Features

A References

B Examples of Global Policy Attachments

Related Information Sources

- *Oracle Pedigree and Serialization Manager Process Guide*
- *Oracle Pedigree and Serialization Manager Installation Guide*
- *Oracle Serialization and Tracking Process Integration Pack for Oracle Pedigree and Serialization Manager and Oracle E-Business Suite Guide*

Do Not Use Database Tools to Modify Oracle E-Business Suite Data

Oracle STRONGLY RECOMMENDS that you never use SQL*Plus, Oracle Data Browser, database triggers, or any other tool to modify Oracle E-Business Suite data unless otherwise instructed.

Oracle provides powerful tools you can use to create, store, change, retrieve, and maintain information in an Oracle database. But if you use Oracle tools such as SQL*Plus to modify Oracle E-Business Suite data, you risk destroying the integrity of your data and you lose the ability to audit changes to your data.

Because Oracle E-Business Suite tables are interrelated, any change you make using an Oracle E-Business Suite form can update many tables at once. But when you modify Oracle E-Business Suite data using anything other than Oracle E-Business Suite, you may change a row in one table without making corresponding changes in related tables. If your tables get out of synchronization with each other, you risk retrieving erroneous information and you risk unpredictable results throughout Oracle E-Business Suite.

When you use Oracle E-Business Suite to modify your data, Oracle Applications automatically checks that your changes are valid. Oracle Applications also keeps track of who changes information. If you enter information into database tables using database tools, you may store invalid information. You also lose the ability to track who has changed your information because SQL*Plus and other database tools do not keep a record of changes.

Overview

This section gives an overview of the product and explains the general principles of application security.

This chapter covers the following topics:

- Product Overview
- General Security Principles

Product Overview

Oracle Pedigree and Serialization Manager (OPSM) is an application that enables companies to manage serialization of products and share serialized product data across the supply chain. OPSM can integrate with your existing manufacturing, shipping, and receiving transactional systems, Oracle E-Business Suite (EBS), or it can operate as a standalone application. OPSM can support multiple transactional or EBS systems integrated to a single instance of OPSM. The multiple transactional or EBS systems may be multiple instances managed within your company or systems managed by your manufacturing and logistics partners.

For more information on OPSM, see the *Oracle Pedigree and Serialization Manager Process Guide*.

For more information on the integration between OPSM and EBS, see the *Oracle Serialization and Tracking Integration Pack for Oracle Pedigree and Serialization Manager and Oracle E-Business Suite 3.1 - Implementation Guide*.

General Security Principles

The following principles are fundamental to using any application securely.

Keep Software Up To Date

One of the principles of good security practice is to keep all software versions and

patches up to date.

Restrict Network Access to Critical Services

Keep both the application middle-tier and the database behind a firewall. In addition, place a firewall between the middle-tier and the database. The firewalls provide assurance that access to these systems is restricted to a known network route, which can be monitored and restricted, if necessary. As an alternative, a firewall router substitutes for multiple, independent firewalls.

If firewalls cannot be used, be certain to configure the TNS Listener Valid Node Checking feature which restricts access based upon IP address. Restricting database access by IP address often causes application client/server programs to fail for DHCP clients. To resolve this, consider using static IP addresses, a software/hardware VPN or Windows Terminal Services or its equivalent.

Follow the Principle of Least Privilege

The principle of least privilege states that users should be given the least amount of privilege to perform their jobs. Over ambitious granting of responsibilities, roles, grants, etc., especially early on in an organization's life cycle when people are few and work needs to be done quickly, often leaves a system wide open for abuse. User privileges should be reviewed periodically to determine relevance to current job responsibilities.

Monitor System Activity

System security stands on three legs: good security protocols, proper system configuration, and system monitoring. Auditing and reviewing audit records address this third requirement. Each component within a system has some degree of monitoring capability.

Oracle Pedigree and Serialization Manager (OPSM) provides auditing capabilities. Using OPSM you can audit the changes or activity that occur to data in the OPSM database.

For more information on auditing, see the *Oracle Pedigree and Serialization Manager Process Guide*.

Keep Up To Date on Latest Security Information

Oracle continually improves its software and documentation.

Secure Installation and Configuration

This chapter covers the following topics:

- Installation Overview
- Installing Base Components
- Installing Oracle Pedigree and Serialization Manager
- Post Installation Configuration
- Creating Users and Groups
- Securing Services Using Oracle Web Service Manager
- Setting Up Global Policy Attachments
- Setting Up Direct Policy Attachments
- Setting Up Policies with Different Credentials
- Setting Up Global Policy Attachments for Composites
- Verifying Policy Attachments
- Setting Up Keys and Passwords for Digital Signature (Optional)

Installation Overview

This section outlines the planning process for a secure installation and describes several recommended deployment topologies for the systems.

Understand Your Environment

To better understand your security needs, ask yourself the following questions:

Which resources am I protecting?

Many resources in the production environment can be protected, including information in databases accessed by WebLogic Server and the availability, performance,

applications, and the integrity of the Web site. Consider the resources you want to protect when deciding the level of security you must provide.

From whom am I protecting the resources?

For most Web sites, resources must be protected from everyone on the Internet. But should the Web site be protected from the employees on the intranet in your enterprise? Should your employees have access to all resources within the WebLogic Server environment? Should the system administrators have access to all WebLogic resources? Should the system administrators be able to access all data? You might consider giving access to highly confidential data or strategic resources to only a few well trusted system administrators. Perhaps it would be best to allow no system administrators access to the data or resources.

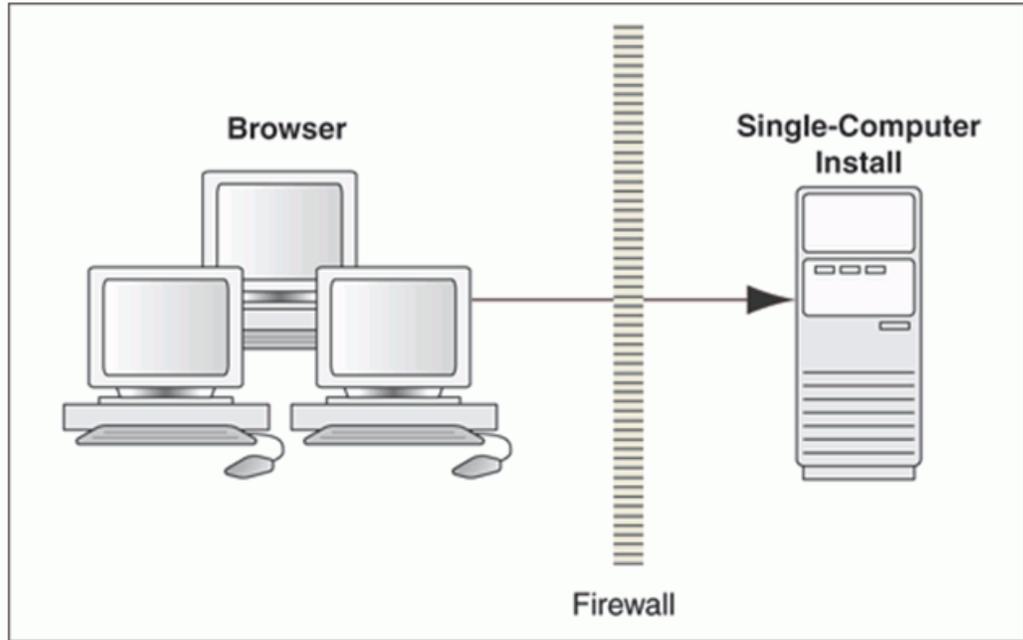
What will happen if the protections on strategic resources fail?

In some cases, a fault in your security scheme is easily detected and considered nothing more than an inconvenience. In other cases, a fault might cause great damage to companies or individual clients that use the Web site. Understanding the security ramifications of each resource will help you protect it properly.

Recommended Deployment Topologies

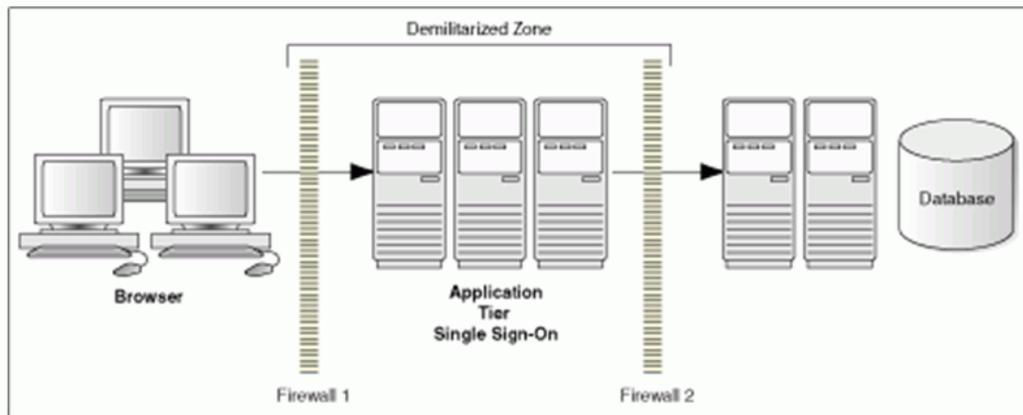
This section describes recommended architectures for deploying Oracle Pedigree and Serialization Manager to secure Internet access.

Single Computer Deployment Architecture



The simplest deployment architecture is shown in the diagram. This single-computer deployment may be cost effective for small organizations; however it cannot provide high availability because all components are stored on the same computer.

Traditional DMZ View



The general architectural recommendation is to use the well-known and generally accepted Internet-Firewall-DMZ-Firewall-Intranet architecture shown in the diagram.

Note: The term demilitarized zone (DMZ) refers to a server that is

isolated by firewalls from both the Internet and the intranet, thus forming a buffer between the two.

Firewalls separating DMZ zones provide two essential functions:

- Blocking any traffic types that are known to be illegal.
- Providing intrusion containment, should successful intrusions take over processes or processors.

The following components can be installed in the same machine or different machines:

- Optional Business Intelligence (BI) Publisher server (needed only for printing pedigrees).
- A separate web server or the built-in web server in WebLogic Server.
- WebLogic Admin server and multiple managed servers. The OPSM application can be deployed on the Admin Server itself and a Service-Oriented Architecture (SOA) server is needed for the SOA components. Or a separate managed server can be used for the OPSM application and the Admin Server can be used for only administrative purposes. Servers can be part of a cluster for failover and reliability reasons. Servers deployed in different machines can be controlled by configuring a node manager.

For more information regarding the WebLogic Server setup, please refer to the WebLogic Server section in the Oracle Fusion Middleware Documentation Library for 11.1.1.7 [http://docs.oracle.com/cd/E28280_01/index.htm].

Installing Base Components

Installing Operating System

You should harden the Operating System (OS) as much as possible, according to the OS vendor's own security guidelines. The application's needs in terms of ports used, OS users needed and user privileges needed are fairly light, and all should be easily accommodated.

In keeping with the principal of minimizing your attack surface, unnecessary services should not be installed on the machines being used for the application. Services such as DNS, SMTP, non-application web servers, and the like should not be installed unless absolutely necessary. For example, OPSM has an email notification feature that can be disabled in the System Parameters page. In that case, SMTP need not be installed.

Installing WebLogic Server

Oracle WebLogic Server should be installed and hardened as per the instructions in its own Security Guide. It would not be a good idea from a security perspective to run another application inside of the same WebLogic instance, as a security breach in one application could be exploited into breaches of other applications.

For more information regarding WebLogic Server security, please refer to the WebLogic Security section in the WebLogic Server section in the Oracle Fusion Middleware Documentation Library for 11.1.1.7 [http://docs.oracle.com/cd/E28280_01/index.htm].

Installing Oracle Database

The Oracle Database should be installed and hardened as per its Security Guide.

Lock and expire default user accounts.

The Oracle Database installs with many default (preset) database server user accounts. Upon the successful creation of a database server instance, the Database Configuration Assistant automatically locks and expires most default database user accounts.

Note: If you use Oracle Universal Installer or Database Configuration Assistant, then they will prompt for new SYS and SYSTEM passwords, and will not accept the defaults "change_on_install" or "manager", respectively.

Once the database is installed, lock SYS and SYSTEM as well, and use AS SYSDBA for administrator access. Specify administrative passwords individually.

This account (AS SYSDBA) tracks the operating system user name, maintaining accountability. If you only need access for database startup and shutdown, then use AS SYSOPER instead. SYSOPER has fewer administrative privileges than SYS, but enough to perform basic operations such as startup, shutdown, mount, backup, archive, and recover.

Change default user passwords.

Security is most easily broken when a default database server user account still has a default password even after installation. The following steps fix this:

Change the default passwords of administrative users immediately after installing the database server.

In any Oracle environment (production or test), assign strong, secure passwords to the SYS and SYSTEM user accounts immediately upon successful installation of the database server. Under no circumstances should the passwords for SYS and SYSTEM retain their default values. Similarly, for production environments do not use default passwords for any administrative accounts, including SYSMAN and DBSNMP.

Enforce password management.

Apply basic password management rules, such as password length, history, and complexity, to all user passwords.

Enable data dictionary protection.

Implement data dictionary protection to prevent users who have the ANY system privilege from using it on the data dictionary. Oracle Database sets the O7_DICTIONARY_ACCESSIBILITY to FALSE. This setting prevents using the ANY system privilege on the data dictionary, except for authorized users making DBA-privileged connections (for example CONNECT/AS SYSDBA).

For more information regarding Database security, please refer to the Database Security section in the WebLogic Server section in the Oracle Fusion Middleware Documentation Library for 11.1.1.7 [http://docs.oracle.com/cd/E28280_01/index.htm].

Installing Oracle SOA Suite 11g

Oracle Web Services Manager (OWSM) is a comprehensive and easy-to-use solution for policy management and security of service infrastructure. It provides visibility and control of the policies through a centralized administration interface offered by Oracle Enterprise Manager. To secure the service infrastructure (for example, web services, SOA composites, and so on) offered by the Oracle Pedigree and Serialization Manager product, it is highly recommended that you use OWSM.

Installing Business Intelligence Publisher

Installing the BI Publisher server is optional and needed only for printing pedigrees.

For more information regarding security for the BI Publisher, please refer to the Oracle® Fusion Middleware Security Guide for Oracle Business Intelligence Enterprise Edition 11g Release 1 (11.1.1) [http://docs.oracle.com/cd/E21764_01/bi.1111/e10543/toc.htm].

For more information regarding Oracle Fusion Middleware security, please refer to the WebLogic Server section in the Oracle Fusion Middleware Documentation Library for 11.1.1.7 [http://docs.oracle.com/cd/E28280_01/index.htm].

Installing Oracle Pedigree and Serialization Manager

For the installation steps, please refer to the *Oracle Pedigree and Serialization Manager Installation Guide*. The security aspects during installation are highlighted here:

Installing Oracle Pedigree and Serialization Manager chapter, Installation Tasks section, Step 3.

The install script attempts to start the Admin Server. It tests in a loop if the server is up before it continues. If you installed your WebLogic Server in Production Mode, the

Admin Server requires a userid and password to start which the script does not set for security reasons. In this case, you must start a new terminal window to start the Admin Server. After the script detects the server has started, it will continue.

Post Installation Configuration

After running `newInstall_step1_fepasSchema_createUsers.sql` during installation, the database schema user/owners will be created locked and password expired. Once the script has run successfully, please be sure to edit the PAS and PASJMS owners to unlock them and set a new password.

Creating Users and Groups

You can manage users and groups for Oracle Pedigree and Serialization Manager (OPSM).

Follow this procedure to create new users and Enterprise groups in Embedded LDAP:

To Create Users and Enterprise Groups in Embedded LDAP:

1. Navigate to the WebLogic Server Administration Console:
`http://<HostName>:<portno>/console` or `https://<HostName>:<sslportno>/console`, if SSL is enabled
2. Click the Security Realms link.
The Summary of Security Realms page appears.
3. Click the myrealm link in the Summary of Security Realms region.
The Settings for myrealm page appears.
4. Select the Users and Groups tab.
A list of existing users is displayed.
5. Click the New button.
The Create a New User page appears.
6. Enter a name, description, and password for the user.

Note: The name is what the user will enter when they login, and the description is how the user is displayed in the lists of values.

Tip: Use an LDAP browser (such as JExplorer LDAP) to add an e-

mail address to the user definition. This is the e-mail address that is used when sending notifications.

7. Click the OK button.
8. Click the username link in the table that you just created.
9. Select the Groups tab.
10. Assign one or more job roles to the user.
11. Click the Save button.
12. Enterprise groups map to job, abstract, and data roles. To create an enterprise group, navigate back to the Users and Groups tab and select the Groups tab.
The Settings for myrealm page appears displaying all existing groups.
13. Click the New button.
The Create a New Group page is displayed.
14. Enter the group details and leave everything else as the default.
Note: You must suffix Enterprise group names with "_Job".
15. Click the OK button when finished.

Securing Services Using Oracle Web Service Manager

Securing Services Explained

Oracle Web Services Manager (OWSM) is a comprehensive and easy-to-use solution for policy management and security of service infrastructure. It provides visibility and control of the policies through a centralized administration interface offered by Oracle Enterprise Manager. To secure the service infrastructure (for example, web services, SOA composites, and so on) offered by the Oracle Pedigree and Serialization Manager product, it is highly recommended that you use OWSM.

Important: The policies mentioned below are "access control" service policies. As a result, they only enforce who is authorized to invoke the service. The connection between the client and the WebLogic Service is *not* secure, and the SOAP message is in plain text. Where appropriate, it

is highly recommended that services are further hardened to utilize more secure "transport-level" or "message-level" policies as described in the *Security and Administrator's Guide for Web Services* documentation.

Setting Up a Credential Store and Key

The following steps provide instructions on how to set up a credential store used to store credentials used by the identity switching policies described below.

To Create a Credential Store and Key

Follow this procedure to create a credential store and related key for use when securing Oracle Pedigree and Serialization Manager services:

1. Navigate to the Oracle Enterprise Manager URL:
`http://<HostName>:<portno>/em`
2. On the Enterprise Manager Control page, expand the WebLogic Domain node under the navigation tree and select your domain (for example, `base_domain`).
3. Select WebLogic Domain, Security, and Credentials to navigate to the credential store setup page.
4. Using the Create Map button, create the following new map name:
 - `oracle.wsm.security`
5. Select the newly created map, and use the Create Key button to create a new key. Provide the following values:
 - Key: <any user chosen value> (for example, `basic.credentials`, `opsm.credentials`, and so on)
 - Type: Password
 - User Name: <valid user name>
 - Password: <valid password>
 - Confirm Password: <re-enter valid password>

Important: It may be necessary to create multiple credential store keys to store different users. Please refer to Security Model, page 3-1 for more details.

Important: In addition to providing functional security for the application, the system also provides equivalent functional security for web services. As such, it may be necessary to create multiple credential store keys to store different users. For example, you may want to create a credential store key of "opsm.lotsynch.credentials" to store the user that is authorized to invoke services related to management of lots. In addition, you may want to create an additional credential store key of "opsm.transactions.credentials" to store the user that is authorized to invoke services related to creation of shipment and/or return transactions. Similarly, you may want to create an additional credential store key of "opsm.captureepcis.credentials" to store the user that is authorized to invoke services related to capture of EPCIS documents. These credential store keys can then be referenced on the security policies as described in the Setting Up Policies With Different Credentials, page 2-12 section.

Setting Up Global Policy Attachments

The following steps provide instructions on how to set up global policy attachments that apply to the Oracle Pedigree and Serialization Manager services.

Important: The policies mentioned below are "access control" service policies. As a result, they only enforce who is authorized to invoke the service. The connection between the client and the WebLogic Service is *not* secure, and the SOAP message is in plain text. Where appropriate, it is highly recommended that services are further hardened to utilize more secure "transport-level" or "message-level" policies as described in the *Security and Administrator's Guide for Web Services* documentation.

For examples of global policy attachments, see Appendix B - Examples of Global Policy Attachments, page B-1.

To Create Global Policy Attachments:

Follow this procedure to create global policy attachments (for example, policy sets) for use when securing Oracle Pedigree and Serialization Manager services:

1. Navigate to the Oracle Enterprise Manager URL:
http://<HostName>:<portno>/em or https://<HostName>:<sslportno>/em, if SSL is enabled
2. On the Enterprise Manager Control page, expand the WebLogic Domain node under the navigation tree and select your domain (for example, base_domain).

3. Select WebLogic Domain, Web Services, and Policy Sets to set up global policy attachments.
4. Using the Create button, add new policy sets for each of the following resources:
 - SOA Reference
 - SOA Service
 - Web Service Client
 - Web Service Connection
 - Web Service Endpoint
 - Asynchronous Callback Client

When it is necessary to select the service policy, please utilize the "oracle/wss_saml_or_username_token_service_policy" policy.

When it is necessary to select the client policy, please utilize the "oracle/wss10_saml_token_client_policy" policy.

Note: Be sure to provide the appropriate resource scope (for example, domain name, server instance name, application name, soa composite name, and so on) to control the scope of resources for the policy set.

For more information, see the *Oracle Fusion Middleware Security and Administrator's Guide for Web Services*, "Creating and Managing Policy Sets".

Important: Remember to enable the policy set for the security policies to be applied when running the Oracle Pedigree and Serialization Manager services.

Setting Up Direct Policy Attachments

For EPCIS Capture and Query web services, directly attach the policies as described below:

To Set Up Direct Policy Attachments:

1. Navigate to the Oracle Enterprise Manager URL:
`http://<HostName>:<portno>/em` or `https://<HostName>:<sslportno>/em`, if SSL is

enabled

2. On the Enterprise Manager Control page, expand the WebLogic Domain node under the navigation tree and select your domain (for example, base_domain).
3. Select WebLogic Domain, Web Services, and Policies.
4. Select **oracle/wss_saml_or_username_token_service_policy** and click the Create Like button.
5. In the Create Policy page, add an assertion with **"oracle/binding_permission_authorization_template"**.
6. In the Settings tab, enter:
 - Action Pattern as *
 - Permission Check Class as oracle.wsm.security.WSFunctionPermission
 - Resource Pattern as urn:epcglobal:epcis:wSDL:1/EPCglobalEPCISService
7. Click the Save button.
8. Click PasEpcServices under Application Deployments and then select Application Deployments, Web Services.
9. Click EPCglobalEPCISServicePort
10. Directly attach the policy created above and click OK.

EPCIS Capture Web Service:

For Capture follow the steps similar to above with the exception of:

1. In step 6, enter Resource Pattern as `http://xmlns.oracle.com/epcis/CaptureService` and continue
2. In step 8, click on capturePort and continue

Setting Up Policies with Different Credentials

In the Setting Up Global Policy Attachments For Composites, page 2-13 section below, you will be using policies that utilize identity switching. By default, these security polices utilize the "basic.credentials" credential store key when looking for the appropriate user credentials. If you did not utilize "basic.credentials" as your credential store key, or you set up multiple credential store keys due to functional security requirements, you will need to copy the existing default web service policy to modify

the value being used as the credential store key. The following steps provide instructions on how to set up basic security policies that use different credential store keys:

To Create Policies Using Different Credentials:

Important: The following steps are only required if you are not using "basic.credentials" as your credential store key.

Follow this procedure to create a copy of the existing Oracle Web Service Manager policies for use when securing Oracle Pedigree and Serialization Manager services:

1. Navigate to the Oracle Enterprise Manager URL:
http://<HostName>:<portno>/em or https://<HostName>:<sslportno>/em, if SSL is enabled
2. On the Enterprise Manager Control page, expand the WebLogic Domain node under the navigation tree and select your domain (for example, base_domain).
3. Select WebLogic Domain, Web Services, and Policies to navigate to the available web service policies.
4. Select the following web service policy then click the Create Like button:
 - oracle/wss_username_token_client_policy

Note: The filters on the web service policies page may need to be modified to be able to view the client policies.
5. On the Configurations tab, edit the property set for the csf-key and enter the value of the key you specified in step 5 of the Setting Up a Credential Store and Key, page 2-9 section.
6. Repeat steps 4 and 5 for each credential store key you set up in step 5 of the Setting Up a Credential Store and Key, page 2-9 section.

Setting Up Global Policy Attachments for Composites

The following steps provide instructions on how to set up global policy attachments that apply specifically to the Oracle Pedigree and Serialization Manager SOA composites used by integrations:

To Create Global Policy Attachments for Composites:

Separate global policies are required for the SOA composites that are used by

integrations. Specifically, they are used to override the default global policy attachment that uses identity propagation, to instead use a policy that uses identity switching.

Follow this procedure to create global policy attachments for web service references used within the PasCreateTransactionsComposite, PasLotSynchronizationComposite, and PasCaptureEpcisDocComposite SOA composites:

1. Navigate to the Oracle Enterprise Manager URL:
http://<HostName>:<portno>/em or https://<HostName>:<sslportno>/em, if SSL is enabled
2. On the Enterprise Manager Control page, expand the WebLogic Domain node under the navigation tree and select your domain (for example, base_domain).
3. Select WebLogic Domain, Web Services, and Policy Sets to set up global policy attachments.
4. Using the Create button, add a new policy set for the following resource:
 - SOA Reference
5. Enter a name and optionally a description for this policy set, then click the Next button to continue.

Tip: Use either the name or the description, to identify that this policy set is used specifically for SOA references within the PasCreateTransactionsComposite.
6. Provide appropriate resource scope values for Domain Name and Server Instance Name. In addition, enter **PasCreateTransactionsComposite** for the SOA Composite Name. Click the Next button to continue.
7. Attach the following web service policy then click the Next button to continue:
 - oracle/wss_username_token_client_policy

Important: If you created a copy of the above policy as described in the Setting Up Policies With Different Credentials, page 2-12 section, be sure to attach that policy instead.
8. Validate the policy set, then click the Save button.
9. Using the Create button, add a new policy set for the following resource:
 - SOA Reference

10. Enter a name and optionally a description for this policy set, then click the Next button to continue.

Tip: Use either the name, or the description, to identify that this policy set is used specifically for SOA references within the PasLotSynchronizationComposite.

11. Provide appropriate resource scope values for Domain Name and Server Instance Name. In addition, enter **PasLotSynchronizationComposite** for the SOA Composite Name. Click the Next button to continue.

12. Attach the following web service policy then click the Next button to continue:

- oracle/wss_username_token_client_policy

Important: If you created a copy of the above policy as described in the Setting Up Policies With Different Credentials, page 2-12 section, be sure to attach that policy instead.

13. Validate the policy set, then click the Save button.

14. Using the Create button, add a new policy set for the following resource:

- SOA Reference

15. Enter a name and optionally a description for this policy set, then click the Next button to continue.

Tip: Use either the name, or the description, to identify that this policy set is used specifically for SOA references within the PasCaptureEpcisDocComposite.

16. Provide appropriate resource scope values for Domain Name and Server Instance Name. In addition, enter **PasCaptureEpcisDocComposite** for the SOA Composite Name. Click the Next button to continue.

17. Attach the following web service policy then click the Next button to continue:

- oracle/wss_username_token_client_policy

Important: If you created a copy of the above policy as described in the Setting Up Policies With Different Credentials, page 2-12 section, be sure to attach that policy instead.

18. Validate the policy set, then click the Save button.

Verifying Policy Attachments

The following steps provide instructions on how to verify policy attachments to ensure the appropriate Oracle Pedigree and Serialization Manager (OPSM) web services are secured.

To Verify Policy Attachments:

Use this procedure to verify policy attachments for all services and clients used by the OPSM product:

1. Start a WLST session to run custom web services WLST commands.

Note: Review the "Accessing the Web Services Custom WLST Commands" section in the *Security and Administrator's Guide for Web Services* for instructions.

2. Verify service policies are attached and the endpoint is secure by running the following WLST command:

- `listWebServices(None,None,true)`

Note: Use this table to verify the services used within the OPSM product.

Service/Composite	Reference	Service Policy
PasTransmitSerialsViaFileComposite	transmitserialsviafile_client_ep	oracle/wss_saml_or_username_token_service_policy
PasTransmitSerialsViaWebComposite	transmitserialsviaweb_client_ep	oracle/wss_saml_or_username_token_service_policy
PasSerialsService_SerialsService	LotsServiceAMService	oracle/wss_saml_or_username_token_service_policy
PasSerialsService_SerialsService	PackagingServiceAMService	oracle/wss_saml_or_username_token_service_policy

Service/Composite	Reference	Service Policy
PasTransactionsService_TransactionsService	SerialsServiceAMService	oracle/wss_saml_or_username_token_service_policy
PasTransactionsService_TransactionsService	SerialGenerationRequestProcessServiceAMService	oracle/wss_saml_or_username_token_service_policy
PasTransactionsService_TransactionsService	JobInstanceServiceAMService	oracle/wss_saml_or_username_token_service_policy
PasTransactionsService_TransactionsService	TransactionsProcessingServiceAMService	oracle/wss_saml_or_username_token_service_policy
PasTransactionsService_TransactionsService	SerialGenRequestServiceAMService	oracle/wss_saml_or_username_token_service_policy
PasTransactionsService_TransactionsService	TransactionsServiceAMService	oracle/wss_saml_or_username_token_service_policy
PasSetupService_SetupService	ProductServiceAMService	oracle/wss_saml_or_username_token_service_policy
PasEpcService	CaptureService	oracle/wss_saml_or_username_token_service_policy
PasEpcService	QueryService	oracle/wss_saml_or_username_token_service_policy

3. Verify client policies are attached and the endpoint is secure by running the following WLST command:

- listWebServiceClients(None,None,true)

Note: Use this table to verify the clients used within the OPSM product.

Service/Composite	Reference	Client Policy
PasTransmitSerialsViaWebComposite	ExampleWebService	oracle/wss10_saml_token_client_policy

Service/Composite	Reference	Client Policy
PasTransactionsComposite	TransmitViaWeb	oracle/wss10_saml_token_client_policy
PasTransactionsComposite	TransmitViaFile	oracle/wss10_saml_token_client_policy
PasLotSynchronizationComposite	MergeLotWebService	Client policy you attached in step 12 of the Setting Up Global Policy Attachments for Composites, page 2-13 section.
PasLotSynchronizationComposite	JobInstanceServiceAMService	Client policy you attached in step 12 of the Setting Up Global Policy Attachments for Composites, page 2-13 section.
PasSerialGenRequestComposite	SerialGenRequestWebService	oracle/wss10_saml_token_client_policy
PasCreateTransactionsComposite	CreateTransactionWebService	Client policy you attached in step 7 of the Setting Up Global Policy Attachments for Composites, page 2-13 section.
PasCreateTransactionsComposite	CreateJobInstanceWebService	Client policy you attached in step 7 of the Setting Up Global Policy Attachments for Composites, page 2-13 section.
PasTransactionsComposite	TransactionWebServices	oracle/wss10_saml_token_client_policy
PasSerialsService_SerialsService	LotsServiceAMServiceImpl/_oracleAsyncResponseClient	oracle/wss10_saml_token_client_policy
PasSerialsService_SerialsService	PackagingServiceAMServiceImpl/_oracleAsyncResponseClient	oracle/wss10_saml_token_client_policy

Service/Composite	Reference	Client Policy
PasTransactionsService_Tra nsactionsService	SerialsServiceAMServiceIm pl/_oracleAsyncResponseCli ent	oracle/wss10_saml_token_cli ent_policy
PasTransactionsService_Tra nsactionsService	TransactionsProcessingServi ceAMServiceImpl/_oracleAs yncResponseClient	oracle/wss10_saml_token_cli ent_policy
PasTransactionsService_Tra nsactionsService	JobInstanceServiceAMServic eImpl/_oracleAsyncRespons eClient	oracle/wss10_saml_token_cli ent_policy
PasTransactionsService_Tra nsactionsService	SerialGenerationRequestPro cessServiceAMServiceImpl/ _oracleAsyncResponseClien t	oracle/wss10_saml_token_cli ent_policy
PasTransactionsService_Tra nsactionsService	TransactionsServiceAMServ iceImpl/_oracleAsyncRespo nseClient	oracle/wss10_saml_token_cli ent_policy
PasTransactionsService_Tra nsactionsService	SerialGenRequestServiceAM ServiceImpl/_oracleAsyncRe sponseClient	oracle/wss10_saml_token_cli ent_policy
PasCaptureEpcisDocCompo site	CaptureService	Client policy you attached in step 17 of the Setting Up Global Policy Attachments for Composites, page 2-13 section.
PasSetupService_SetupServi ce	ProductServiceAMServiceI mpl/_oracleAsyncResponse Client	oracle/wss10_saml_token_cli ent_policy
PasEpcService	EPCISServicePortTypeImpl/ _oracleAsyncResponseClien t	oracle/wss10_saml_token_cli ent_policy
PasEpcService	CapturePortImpl/_oracleAs yncResponseClient	oracle/wss10_saml_token_cli ent_policy

Setting Up Keys and Passwords for Digital Signature (Optional)

The following steps are only needed if you want to digitally sign a Pedigree:

- Set up keystore and keys.

Create a file-based keystore containing keys having aliases the same as Oracle Pedigree and Serialization Manager (OPSM) user names of users who would be using those respective keys. OPSM has been certified with JKS and PKCS12 keystores, however other keystore types may also work.

- Set up keystore and key passwords in OPSM.

Keystore and key passwords should be stored in the table `PAS_S_KEYSTORE_CONFIG` so that the same can be retrieved and used for digitally signing a Pedigree.

Note: The definition for the `PAS_S_KEYSTORE_CONFIG` table includes `AFTER INSERT` and `AFTER UPDATE` triggers that are used to encrypt the password stored in the `USER_CERTIFICATE_PASSWORD` column. Because these triggers are used, the password should always be set in the column in plain text.

Note: The OPSM application does not provide a page to enable you to maintain the keystore password configuration table. Any changes to this table must be made directly in the database.

Security Features

This chapter covers the following topics:

- Security Model
- Securing Oracle Pedigree and Serialization Manager

Security Model

Oracle Pedigree and Serialization Manager (OPSM) leverages the Oracle Fusion Middleware Security features to offer:

- Authentication - ensuring that only authorized individuals get access to the system and data.
- Authorization - access control to system privileges and data. This builds on authentication to ensure that individuals only get appropriate access.

OPSM can be configured to use Secure Sockets Layer (SSL), a security protocol that allows a client program (for example, web browser) to talk to a server program (for example, web server) over an encrypted link. Oracle Web Services Manager security policies also provides additional security for web services.

Securing Oracle Pedigree and Serialization Manager

Security Explained

Oracle Pedigree and Serialization Manager (OPSM) provides functional security. Functional security is a statement of what you can do. It typically mirrors what you would see on a job description. For example, a Supply Chain Application Administrator is responsible for creating and maintaining the system setup for OPSM such as, definitions of locations, serial types, serial destinations, and system parameters.

Database Users

The following table lists all of the default Oracle Database users that OPSPM creates during install and are required for the application to work correctly.

Database User ID	Roles and System Privileges
FUSION_ATGLITE	GRANT "RESOURCE" TO FUSION_ATGLITE GRANT "CONNECT" TO FUSION_ATGLITE GRANT "CTXAPP" TO FUSION_ATGLITE GRANT "JAVAUSERPRIV" TO FUSION_ATGLITE GRANT "AQ_USER_ROLE" TO FUSION_ATGLITE ALTER USER "FUSION_ATGLITE" DEFAULT ROLE ALL GRANT CREATE SYNONYM TO FUSION_ATGLITE GRANT ALTER ANY MATERIALIZED VIEW TO FUSION_ATGLITE GRANT ALTER SESSION TO FUSION_ATGLITE GRANT ANALYZE ANY TO FUSION_ATGLITE GRANT CHANGE NOTIFICATION TO FUSION_ATGLITE GRANT CREATE ANY CONTEXT TO FUSION_ATGLITE GRANT CREATE ANY DIRECTORY TO FUSION_ATGLITE GRANT CREATE ANY JOB TO FUSION_ATGLITE GRANT CREATE DATABASE LINK TO FUSION_ATGLITE GRANT CREATE EXTERNAL JOB TO FUSION_ATGLITE GRANT CREATE JOB TO FUSION_ATGLITE GRANT CREATE MATERIALIZED VIEW TO FUSION_ATGLITE GRANT CREATE MINING MODEL TO FUSION_ATGLITE

Database User ID**Roles and System Privileges**

GRANT CREATE PROCEDURE TO
FUSION_ATGLITE

GRANT CREATE PUBLIC DATABASE LINK
TO FUSION_ATGLITE

GRANT CREATE PUBLIC SYNONYM TO
FUSION_ATGLITE

GRANT CREATE SEQUENCE TO
FUSION_ATGLITE

GRANT CREATE SESSION TO
FUSION_ATGLITE

GRANT CREATE SYNONYM TO
FUSION_ATGLITE

GRANT CREATE TABLE TO
FUSION_ATGLITE

GRANT CREATE TRIGGER TO
FUSION_ATGLITE

GRANT CREATE TYPE TO
FUSION_ATGLITE

GRANT CREATE VIEW TO
FUSION_ATGLITE

GRANT DROP ANY CONTEXT TO
FUSION_ATGLITE

GRANT DROP ANY DIRECTORY TO
FUSION_ATGLITE

GRANT DROP PUBLIC SYNONYM TO
FUSION_ATGLITE

GRANT UNLIMITED TABLESPACE TO
FUSION_ATGLITE

Database User ID	Roles and System Privileges
PAS	GRANT RESOURCE TO PAS GRANT CONNECT TO PAS GRANT CHANGE NOTIFICATION TO PAS GRANT CREATE VIEW TO PAS GRANT UNLIMITED TABLESPACE TO PAS GRANT CREATE MATERIALIZED VIEW TO PAS GRANT EXECUTE ON DBMS_CCRYPTO TO PAS GRANT EXECUTE ON UTL_SMTP TO PAS GRANT CREATE JOB TO PAS GRANT CREATE ANY DIRECTORY TO PAS GRANT CREATE TABLE TO PAS GRANT CREATE SYNONYM TO PAS GRANT CREATE DATABASE LINK TO PAS
PASJMS	GRANT RESOURCE TO PASJMS GRANT CONNECT TO PASJMS GRANT UNLIMITED TABLESPACE TO PASJMS

Jobs, Duties, and Application Roles Explained

A job is the actual job description such as, what you would view on a job board. Duties are the tasks that the job owner performs. Application roles are collections of duties that job owners perform. Only application roles may be the beneficiary of a permission grant. For example:

- Job: Individual responsible for supply chain application administration. Collaborates with supply chain application users to maintain consistent application setup, rules, and access.
- Duties: Manage Pedigree and Serialization System Setup, Serial Destinations, and Product Synchronization.

- Job Role: Supply Chain Application Administrator.

Roles Explained

All users are assigned specific roles that allow them to perform only those tasks that are appropriate to their job. This provides security as only users that are assigned certain roles are allowed to perform certain tasks and to access certain data. Administrators can create roles and users as needed.

Note: All job roles must be suffixed with "_Job", for example, Supply_Chain_Application_Administrator_Job

Each Job Role has Duty roles that are associated to it; each Duty Role has Privileges associated with it. Access to functionality is determined by the Duty Role and Privilege. For example:

Job Role	Duty Role	Privilege
Inventory Control Manager	Manage Product Lot for Pedigree and Serialization Duty	<ul style="list-style-type: none"> • Create Product Lot for Pedigree and Serialization • Delete Product Lot for Pedigree and Serialization • Edit Product Lot for Pedigree and Serialization
Product Data Steward	Manage Product for Pedigree and Serialization Duty	<ul style="list-style-type: none"> • Create Product for Pedigree and Serialization • Delete Product for Pedigree and Serialization • Edit Product for Pedigree and Serialization

Summary of Seeded Roles

The following roles are seeded in Oracle Pedigree and Serialization Manager (OPSM):

Note: Administrators can view the job role code when they create users in LDAP.

- **Application Implementation Consultant**

- Industry Description: Individual responsible for enterprise-wide implementation of applications. Collaborates with specific application administrators to implement consistent enterprise application setup, architecture, information, rules, and access. This role has access to all setup tasks across products. It inherits all family level setups administrator job roles.
- Job Role Code:
ASM_APPLICATION_IMPLEMENTATION_CONSULTANT_JOB

Duty Roles:

This Duty Role...	Has Access to this Functionality (Privilege)
Manage Audit History for Pedigree and Serialization Duty	View Audit History for Pedigree and Serialization
Manage Audit Setup for Pedigree and Serialization Duty	Edit Audit Setup for Pedigree and Serialization

This Duty Role...	Has Access to this Functionality (Privilege)
Manage EPCIS System Setup for Pedigree and Serialization Manager Duty	<ul style="list-style-type: none"> • Edit EPCIS Preferences for Pedigree and Serialization Manager • View EPCIS Preferences for Pedigree and Serialization Manager • Create EPCIS Users for Pedigree and Serialization Manager • Edit EPCIS Users for Pedigree and Serialization Manager • Delete EPCIS Users for Pedigree and Serialization Manager • View EPCIS Users for Pedigree and Serialization Manager • Create EPCIS Policies for Pedigree and Serialization Manager • Edit EPCIS Policies for Pedigree and Serialization Manager • Delete EPCIS Policies for Pedigree and Serialization Manager • View EPCIS Policies for Pedigree and Serialization Manager • Associate Users to EPCIS Policies • Disassociate Users from EPCIS Policies

This Duty Role...	Has Access to this Functionality (Privilege)
Manage Location for Pedigree and Serialization Duty	<ul style="list-style-type: none"> • Create Location for Pedigree and Serialization • Create Location Contact for Pedigree and Serialization • Delete Location for Pedigree and Serialization • Delete Location Contact for Pedigree and Serialization • Edit Location for Pedigree and Serialization • Edit Location Contact for Pedigree and Serialization • View Location Contact for Pedigree and Serialization
Manage Location Group for Pedigree and Serialization Manager Duty	<ul style="list-style-type: none"> • Create Location Group for Pedigree and Serialization • Edit Location Group for Pedigree and Serialization • Delete Location Group for Pedigree and Serialization

This Duty Role...	Has Access to this Functionality (Privilege)
Manage Pedigree and Serialization System Setup Duty	<ul style="list-style-type: none"> • Create Location Group for Pedigree and Serialization • Create Serial Type Group for Pedigree and Serialization • Delete Location Group for Pedigree and Serialization • Delete Serial Type for Pedigree and Serialization • Delete Serial Type Group for Pedigree and Serialization • Edit Location Group for Pedigree and Serialization • Edit Lookup for Pedigree and Serialization • Edit Serial Type for Pedigree and Serialization • Edit Serial Type Group for Pedigree and Serialization • Edit System Parameter for Pedigree and Serialization
Manage Product for Pedigree and Serialization Duty	<ul style="list-style-type: none"> • Create Product For Pedigree and Serialization • Delete Product For Pedigree and Serialization • Edit Product For Pedigree and Serialization

This Duty Role...	Has Access to this Functionality (Privilege)
Manage Serial Destination for Pedigree and Serialization Duty	<ul style="list-style-type: none"> • Create Serial Destination for Pedigree and Serialization • Delete Serial Destination for Pedigree and Serialization • Edit Serial Destination for Pedigree and Serialization • View Serial Destination for Pedigree and Serialization
Manage Users for Pedigree and Serialization Duty	<ul style="list-style-type: none"> • Create User For Pedigree and Serialization • Delete User For Pedigree and Serialization • Edit User For Pedigree and Serialization • View User For Pedigree and Serialization
Synchronize Product for Pedigree and Serialization Duty	<ul style="list-style-type: none"> • Perform Product Synchronization for Pedigree and Serialization • Perform Product Synchronization for Pedigree and Serialization via Web Service
Synchronize Product Lot for Pedigree and Serialization Duty	Perform Product Lot Synchronization for Pedigree and Serialization
Synchronize Product for Web Service for Pedigree and Serialization Duty	Perform Product Synchronization for Pedigree and Serialization for Web Service
View Dashboard Work Area for Pedigree and Serialization Duty	View Dashboard Work Area for Pedigree and Serialization

This Duty Role...	Has Access to this Functionality (Privilege)
View Location Contact for Pedigree and Serialization Duty	View Location Contact for Pedigree and Serialization
View Serials Work Area for Pedigree and Serialization Duty	View Serials Work Area for Pedigree and Serialization
View System Setup Work Area for Pedigree and Serialization Duty	View System Setup Work Area for Pedigree and Serialization
View Transactions Work Area for Pedigree and Serialization Duty	View Transactions Work Area for Pedigree and Serialization
View Web Service Exceptions for Pedigree and Serialization Duty	View Web Service Exceptions for Pedigree and Serialization

- **Compliance Business Analyst**

- Industry Description: Individual responsible for reviewing compliance programs such as, Sarbanes-Oxley (SOX), enterprise risk management (ERM), operational risk, incident management, and so on, and analyzing performance evidence to determine an organization's compliance with legislative or industry mandates as well as internal policies.
- Job Role Code: **EDR_COMPLIANCE_BUSINESS_ANALYST_JOB**

Duty Roles:

This Duty Role...	Has Access to this Functionality (Privilege)
Capture Events for Pedigree and Serialization Manager Duty	Capture Events for Pedigree and Serialization Manager
Create Job Instance Web Service for Pedigree and Serialization Duty	Create Job Instance Web Service for Pedigree and Serialization
Create Serial Generation Request Web Service for Pedigree and Serialization Duty	Create Serial Generation Request Web Service for Pedigree and Serialization

This Duty Role...	Has Access to this Functionality (Privilege)
Create Transaction Web Service for Pedigree and Serialization Duty	<ul style="list-style-type: none"> • Create Transaction for Pedigree and Serialization via Web Service • Create Transaction Web Service for Pedigree and Serialization
EPCIS Capture for Pedigree and Serialization Manager Duty	EPCIS Capture for Pedigree and Serialization Manager
EPCIS Query for Pedigree and Serialization Manager Duty	EPCIS Query for Pedigree and Serialization Manager
Generate Serial Transaction for Pedigree and Serialization Duty	<ul style="list-style-type: none"> • Add Serial Generation Transaction for Pedigree and Serialization • Create Package for Pedigree and Serialization for Pedigree and Serialization • Create Serial Generation Request for Pedigree and Serialization • Delete Serial Generation Request for Pedigree and Serialization • Submit Serial Generation Request for Pedigree and Serialization • View Product Transaction for Pedigree and Serialization
Generate Serial Transaction Web Service Duty for Pedigree and Serialization	<ul style="list-style-type: none"> • Create Serial Generation Request Web Service for Pedigree and Serialization • View Product Transaction for Pedigree and Serialization

This Duty Role...	Has Access to this Functionality (Privilege)
Import Serial Transaction Exception for Pedigree and Serialization Duty	<ul style="list-style-type: none"> • Clear Serial Import Exception for Pedigree and Serialization • View Product Transaction for Pedigree and Serialization
Import Serial Transaction for Pedigree and Serialization Duty	<ul style="list-style-type: none"> • Add Serial Import Transaction for Pedigree and Serialization • Reprocess Serial Import Transaction for Pedigree and Serialization • View Product Transaction for Pedigree and Serialization
Manage Audit History for Pedigree and Serialization Duty	View Audit History for Pedigree and Serialization
Manage Edit Serial Exception for Pedigree and Serialization Duty	<ul style="list-style-type: none"> • Clear Edit Serial Exception for Pedigree and Serialization • Edit Serial Edit Transaction for Pedigree and Serialization • View Product Transaction for Pedigree and Serialization

This Duty Role...	Has Access to this Functionality (Privilege)
Manage Location for Pedigree and Serialization Duty	<ul style="list-style-type: none"> • Create Location for Pedigree and Serialization • Create Location Contact for Pedigree and Serialization • Delete Location for Pedigree and Serialization • Delete Location Contact for Pedigree and Serialization • Edit Location for Pedigree and Serialization • Edit Location Contact for Pedigree and Serialization • View Location Contact for Pedigree and Serialization
Manage Location Group for Pedigree and Serialization Manager Duty	<ul style="list-style-type: none"> • Create Location Group for Pedigree and Serialization • Edit Location Group for Pedigree and Serialization • Delete Location Group for Pedigree and Serialization
Manage Packaging Hierarchy for Pedigree and Serialization Duty	<ul style="list-style-type: none"> • Create Package for Pedigree and Serialization • Delete Package for Pedigree and Serialization • Edit Package for Pedigree and Serialization • Edit Packaging Hierarchy for Pedigree and Serialization

This Duty Role...	Has Access to this Functionality (Privilege)
Manage Packaging Hierarchy Web Service for Pedigree and Serialization Duty	<ul style="list-style-type: none"> • Pack Package Web Service for Pedigree and Serialization • Unpack Package Web Service for Pedigree and Serialization
Manage Product Return Exception for Pedigree and Serialization Duty	<ul style="list-style-type: none"> • Clear Product Return Exception for Pedigree and Serialization • Edit Product Return Exception for Pedigree and Serialization • View Product Transaction for Pedigree and Serialization
Manage Product Return Transaction for Pedigree and Serialization Duty	<ul style="list-style-type: none"> • Add Product Return Transaction for Pedigree and Serialization • Reprocess Product Return Transaction for Pedigree and Serialization • View Product Transaction for Pedigree and Serialization
Manage Product Shipment Exception for Pedigree and Serialization Duty	<ul style="list-style-type: none"> • Clear Product Shipment Exception for Pedigree and Serialization • Edit Product Shipment Exception for Pedigree and Serialization • View Product Transaction for Pedigree and Serialization

This Duty Role...	Has Access to this Functionality (Privilege)
Manage Product Shipment Transaction for Pedigree and Serialization Duty	<ul style="list-style-type: none"> • Add Product Shipment Transaction for Pedigree and Serialization • Create Pedigree for Pedigree and Serialization • Print Pedigree for Pedigree and Serialization • Reprocess Product Shipment Transaction for Pedigree and Serialization • View Product Transaction for Pedigree and Serialization
Manage Receipt Transaction for Pedigree and Serialization Duty	Add Receipt Transaction for Pedigree and Serialization
Manage Serial Destination for Pedigree and Serialization Duty	<ul style="list-style-type: none"> • Create Serial Destination for Pedigree and Serialization • Delete Serial Destination for Pedigree and Serialization • Edit Serial Destination for Pedigree and Serialization • View Serial Destination for Pedigree and Serialization
Manage Serial Edit Transaction for Pedigree and Serialization Duty	<ul style="list-style-type: none"> • Add Serial Edit Transaction for Pedigree and Serialization • Reprocess Serial Edit Transaction for Pedigree and Serialization • View Product Transaction for Pedigree and Serialization

This Duty Role...	Has Access to this Functionality (Privilege)
Manage Serial for Pedigree and Serialization Duty	<ul style="list-style-type: none"> • Create Package for Pedigree and Serialization • Edit Package for Pedigree and Serialization • Edit Serial for Pedigree and Serialization • Perform Serial Commission for Pedigree and Serialization • Perform Serial Decommission for Pedigree and Serialization • Reprocess editSerialStatusAndUsage Transactions for Pedigree and Serialization
Manage Serial Range for Pedigree and Serialization Duty	<ul style="list-style-type: none"> • Create Serial Range for Pedigree and Serialization • Delete Serial Range for Pedigree and Serialization • Edit Serial Range for Pedigree and Serialization • View Serial Range for Pedigree and Serialization
Manage Serial Transmission Exception for Pedigree and Serialization Duty	<ul style="list-style-type: none"> • Clear Serial Transmission Exception for Pedigree and Serialization • View Product Transaction for Pedigree and Serialization

This Duty Role...	Has Access to this Functionality (Privilege)
Manage Serial Transmission Transaction for Pedigree and Serialization Duty	<ul style="list-style-type: none"> • Add Serial Transmission Transaction for Pedigree and Serialization • View Product Transaction for Pedigree and Serialization
Manage Serial Transmission Transaction Web Service for Pedigree and Serialization Duty	Transmit Serials Web Service for Pedigree and Serialization Manager
Manage Serial Web Service for Pedigree and Serialization Duty	<ul style="list-style-type: none"> • Edit Serial by Label Web Service for Pedigree and Serialization • Edit Serial by List Web Service for Pedigree and Serialization • Edit Serial by Primary Document Web Service for Pedigree and Serialization
Manage Users for Pedigree and Serialization Duty	<ul style="list-style-type: none"> • Create User for Pedigree and Serialization • Delete User for Pedigree and Serialization • Edit User for Pedigree and Serialization • View User for Pedigree and Serialization
Process Serial Generation Request Web Service for Pedigree and Serialization Duty	Process Serial Generation Request Web Service for Pedigree and Serialization
Process Transaction Web Service for Pedigree and Serialization Duty	Process Transaction Web Service for Pedigree and Serialization
Query Events for Pedigree and Serialization Manager Duty	Query Events for Pedigree and Serialization Manager

This Duty Role...	Has Access to this Functionality (Privilege)
Recommission Serial for Pedigree and Serialization Duty	Perform Serial Recommission for Pedigree and Serialization
View Dashboard Work Area for Pedigree and Serialization Duty	View Dashboard Work Area for Pedigree and Serialization
View Packaging Hierarchy Work Area for Pedigree and Serialization Duty	View Packaging Hierarchy Work Area for Pedigree and Serialization
View Serials Work Area for Pedigree and Serialization Duty	View Serials Work Area for Pedigree and Serialization
View System Setup Work Area for Pedigree and Serialization Duty	View System Setup Work Area for Pedigree and Serialization
View Transactions Work Area for Pedigree and Serialization Duty	View Transactions Work Area for Pedigree and Serialization
Work Order Serialization for Pedigree and Serialization Duty	<ul style="list-style-type: none"> • Add Serial Generation Transaction for Pedigree and Serialization Manager • Create Package for Pedigree and Serialization Manager • Create Serial Generation Request for Pedigree and Serialization Manager • Delete Serial Generation Request for Pedigree and Serialization Manager • Perform Work Order Serialization for Pedigree and Serialization Manager • Submit Serial Generation Request for Pedigree and Serialization Manager • View Product Transaction for Pedigree and Serialization Manager

- **Inventory Control Manager**

- Industry Description: Individual responsible for overseeing the process whereby the company knows where everything is located at all times and efficiently moves inventory from one station to another as needed.
- Job Role Code: **INV_INVENTORY_CONTROL_MANAGER_JOB**

Duty Roles:

This Duty Role...	Has Access to this Functionality (Privilege)
Manage Product Lot for Pedigree and Serialization Duty	<ul style="list-style-type: none"> • Create Product Lot for Pedigree and Serialization • Delete Product Lot for Pedigree and Serialization • Edit Product Lot for Pedigree and Serialization
Merge Product Lot Web Service for Pedigree and Serialization Duty	Merge Product Lot Web Service for Pedigree and Serialization
View Dashboard Work Area for Pedigree and Serialization Duty	View Dashboard Work Area for Pedigree and Serialization
View Product Lot Work Area for Pedigree and Serialization	View Product Lot Work Area for Pedigree and Serialization
View Serials Work Area for Pedigree and Serialization Duty	View Serials Work Area for Pedigree and Serialization

- **Location Security Administrator**
 - Industry Description: Individual responsible for setting up the location access to all users.
 - Job Role Code: **DSM_LOCATION_SECURITY_ADMINISTRATOR_JOB**

Duty Roles:

This Duty Role...	Has Access to this Functionality (Privilege)
Manage Data Security Setup for Pedigree and Serialization Duty	<ul style="list-style-type: none"> • Create Data Security Setup Record for Pedigree and Serialization • Delete Data Security Setup Record for Pedigree and Serialization • Edit Data Security Setup Record for Pedigree and Serialization • View Data Security Setup Record for Pedigree and Serialization
Manage Role for Pedigree and Serialization Duty	<ul style="list-style-type: none"> • Create Role for Pedigree and Serialization • Delete Role for Pedigree and Serialization • Edit Role for Pedigree and Serialization • View Role for Pedigree and Serialization
Manage User Groups for Pedigree and Serialization Duty	<ul style="list-style-type: none"> • Create User Group for Pedigree and Serialization • Delete User Group for Pedigree and Serialization • Edit User Group for Pedigree and Serialization • View User Group for Pedigree and Serialization

This Duty Role...	Has Access to this Functionality (Privilege)
Manage Users for Pedigree and Serialization Duty	<ul style="list-style-type: none"> • Create User for Pedigree and Serialization • Delete User for Pedigree and Serialization • Edit User for Pedigree and Serialization • View User for Pedigree and Serialization
View Dashboard Work Area for Pedigree and Serialization Duty	View Dashboard Work Area for Pedigree and Serialization

- **Product Data Steward**

- Industry Description: Individual responsible for managing and maintaining product data quality and integrity.
- Job Role Code: **EGI_PRODUCT_DATA_STEWARD_JOB**

Duty Roles:

This Duty Role...	Has Access to this Functionality (Privilege)
Manage Product for Pedigree and Serialization Duty	<ul style="list-style-type: none"> • Create Product for Pedigree and Serialization • Edit Product for Pedigree and Serialization • Delete Product for Pedigree and Serialization
View Dashboard Work Area for Pedigree and Serialization Duty	View Dashboard Work Area for Pedigree and Serialization

This Duty Role...	Has Access to this Functionality (Privilege)
View System Setup Work Area for Pedigree and Serialization Duty	View System Setup Work Area for Pedigree and Serialization

- **Production Manager**

- Industry Description: Individual responsible for directing production operations and processes for a plant, division, or company, including production scheduling, staffing, equipment, quality control, inventory control, and the coordination of production activities with those of other departments; measures progress by established standards of performance.
- Job Role Code: **WIP_PRODUCTION_MANAGER_JOB**

Duty Roles:

This Duty Role...	Has Access to this Functionality (Privilege)
Create Serial Generation Request Web Service for Pedigree and Serialization Duty	Create Serial Generation Request Web Service for Pedigree and Serialization
Create Transaction Web Service for Pedigree and Serialization Duty	Create Transaction Web Service for Pedigree and Serialization

This Duty Role...	Has Access to this Functionality (Privilege)
Generate Serial Transaction for Pedigree and Serialization Duty	<ul style="list-style-type: none"> • Add Serial Generation Transaction for Pedigree and Serialization • Create Package for Pedigree and Serialization • Create Serial Generation Request for Pedigree and Serialization • Delete Serial Generation Request for Pedigree and Serialization • Submit Serial Generation Request for Pedigree and Serialization • View Product Transaction for Pedigree and Serialization
Import Serial Transaction Exception for Pedigree and Serialization Duty	<ul style="list-style-type: none"> • Clear Serial Import Exception for Pedigree and Serialization • View Product Transaction for Pedigree and Serialization
Import Serial Transaction for Pedigree and Serialization Duty	<ul style="list-style-type: none"> • Add Serial Import Transaction for Pedigree and Serialization • Reprocess Serial Import Transaction for Pedigree and Serialization • View Product Transaction for Pedigree and Serialization

This Duty Role...	Has Access to this Functionality (Privilege)
Manage Packaging Hierarchy for Pedigree and Serialization Duty	<ul style="list-style-type: none"> • Create Package for Pedigree and Serialization • Delete Package for Pedigree and Serialization • Edit Package for Pedigree and Serialization • Edit Packaging Hierarchy for Pedigree and Serialization
Manage Packaging Hierarchy Web Service for Pedigree and Serialization Duty	<ul style="list-style-type: none"> • Pack Package Web Service for Pedigree and Serialization • Unpack Package Web Service for Pedigree and Serialization
Manage Serial for Pedigree and Serialization Duty	<ul style="list-style-type: none"> • Create Package for Pedigree and Serialization • Edit Package for Pedigree and Serialization • Edit Serial for Pedigree and Serialization • Perform Serial Commission for Pedigree and Serialization • Perform Serial Decommission for Pedigree and Serialization • Reprocess editSerialStatusAndUsage Transactions for Pedigree and Serialization

This Duty Role...	Has Access to this Functionality (Privilege)
Manage Serial Transmission Exception for Pedigree and Serialization Duty	<ul style="list-style-type: none"> • Clear Serial Transmission Exception for Pedigree and Serialization • View Product Transaction for Pedigree and Serialization
Manage Serial Transmission Transaction for Pedigree and Serialization Duty	<ul style="list-style-type: none"> • Add Serial Transmission Transaction for Pedigree and Serialization • View Product Transaction for Pedigree and Serialization
Manage Serial Web Service for Pedigree and Serialization Duty	<ul style="list-style-type: none"> • Edit Serial by Label Web Service for Pedigree and Serialization • Edit Serial by List Web Service for Pedigree and Serialization • Edit Serial by Primary Document Web Service for Pedigree and Serialization
Process Serial Generation Request Web Service for Pedigree and Serialization Duty	Process Serial Generation Request Web Service for Pedigree and Serialization
Process Transaction via Web Service for Pedigree and Serialization Duty	Process Transaction via Web Service for Pedigree and Serialization
View Dashboard Work Area for Pedigree and Serialization Duty	View Dashboard Work Area for Pedigree and Serialization
View Packaging Work Area for Pedigree and Serialization Duty	View Packaging Work Area for Pedigree and Serialization
View Serial Destination for Pedigree and Serialization Duty	View Serial Destination for Pedigree and Serialization
View Serial Range for Pedigree and Serialization Duty	View Serial Range for Pedigree and Serialization

This Duty Role...	Has Access to this Functionality (Privilege)
View Serial Work Area for Pedigree and Serialization Duty	View Serial Work Area for Pedigree and Serialization
View System Setup Work Area for Pedigree and Serialization Duty	View System Setup Work Area for Pedigree and Serialization
View Transactions Work Area for Pedigree and Serialization Duty	View Transactions Work Area for Pedigree and Serialization
Work Order Serialization for Pedigree and Serialization Duty	<ul style="list-style-type: none"> • Add Serial Generation Transaction for Pedigree and Serialization Manager • Create Package for Pedigree and Serialization Manager • Create Serial Generation Request for Pedigree and Serialization Manager • Delete Serial Generation Request for Pedigree and Serialization Manager • Perform Work Order Serialization for Pedigree and Serialization Manager • Submit Serial Generation Request for Pedigree and Serialization Manager • View Product Transaction for Pedigree and Serialization Manager

- **Production Worker**
 - Industry Description: A worker directly engaged in production, including fabrication, machining, assembly, finishing, and related activities.
 - Job Role Code: **WIP_PRODUCTION_WORKER_JOB**

Duty Roles:

This Duty Role...	Has Access to this Functionality (Privilege)
Create Serial Generation Request Web Service for Pedigree and Serialization Duty	Create Serial Generation Request Web Service for Pedigree and Serialization
Generate Serial Transaction for Pedigree and Serialization Duty	<ul style="list-style-type: none"> • Add Serial Generation Transaction for Pedigree and Serialization • Create Package for Pedigree and Serialization • Create Serial Generation Request for Pedigree and Serialization • Delete Serial Generation Request for Pedigree and Serialization • Submit Serial Generation Request for Pedigree and Serialization • View Product Transaction for Pedigree and Serialization
Manage Edit Serial Exception for Pedigree and Serialization Duty	<ul style="list-style-type: none"> • Clear Edit Serial Exception for Pedigree and Serialization • Edit Serial Edit Transaction for Pedigree and Serialization • View Product Transaction for Pedigree and Serialization
Manage Packaging Hierarchy for Pedigree and Serialization Duty	<ul style="list-style-type: none"> • Create Package for Pedigree and Serialization • Delete Package for Pedigree and Serialization • Edit Package for Pedigree and Serialization • Edit Packaging Hierarchy for Pedigree and Serialization

This Duty Role...	Has Access to this Functionality (Privilege)
Manage Packaging Hierarchy Web Service for Pedigree and Serialization Duty	<ul style="list-style-type: none"> • Pack Package Web Service for Pedigree and Serialization • Unpack Package Web Service for Pedigree and Serialization
Manage Serial Edit Transaction for Pedigree and Serialization Duty	<ul style="list-style-type: none"> • Add Serial Edit Transaction for Pedigree and Serialization • Reprocess Serial Edit Transaction for Pedigree and Serialization • View Product Transaction for Pedigree and Serialization
Manage Serial for Pedigree and Serialization Duty	<ul style="list-style-type: none"> • Create Package for Pedigree and Serialization • Edit Package for Pedigree and Serialization • Edit Serial for Pedigree and Serialization • Perform Serial Commission for Pedigree and Serialization • Perform Serial Decommission for Pedigree and Serialization • Reprocess editSerialStatusAndUsage Transactions for Pedigree and Serialization

This Duty Role...	Has Access to this Functionality (Privilege)
Manage Serial Web Service for Pedigree and Serialization Duty	<ul style="list-style-type: none"> • Edit Serial by Label Web Service for Pedigree and Serialization • Edit Serial by List Web Service for Pedigree and Serialization • Edit Serial by Primary Document Web Service for Pedigree and Serialization
Process Serial Generation Request Web Service for Pedigree and Serialization Duty	Process Serial Generation Request Web Service for Pedigree and Serialization
View Dashboard Work Area for Pedigree and Serialization Duty	View Dashboard Work Area for Pedigree and Serialization
View Packaging Work Area for Pedigree and Serialization Duty	View Packaging Work Area for Pedigree and Serialization
View Serial Work Area for Pedigree and Serialization Duty	View Serial Work Area for Pedigree and Serialization
View System Setup Work Area for Pedigree and Serialization Duty	View System Setup Work Area for Pedigree and Serialization
View Transactions Work Area for Pedigree and Serialization Duty	View Transactions Work Area for Pedigree and Serialization

- **Receiving Agent**
 - Industry Description: Individual responsible for material control of all products delivered to the business from suppliers.
 - Job Role Code: **RCV_RECEIVING_AGENT_JOB**

Duty Roles:

This Duty Role...	Has Access to this Functionality (Privilege)
Create Transaction Web Service for Pedigree and Serialization Duty	Create Transaction Web Service for Pedigree and Serialization
Manage Product Return Transaction for Pedigree and Serialization Duty	<ul style="list-style-type: none"> • Add Product Return Transaction for Pedigree and Serialization • Reprocess Product Return Transaction for Pedigree and Serialization • View Product Transaction for Pedigree and Serialization
Manage Receipt Transaction for Pedigree and Serialization Duty	Add Receipt Transaction for Pedigree and Serialization
Manage Serial Transmission Transaction for Pedigree and Serialization Duty	<ul style="list-style-type: none"> • Add Serial Transmission Transaction for Pedigree and Serialization • View Product Transaction for Pedigree and Serialization
Process Transaction via Web Service for Pedigree and Serialization Duty	Process Transaction via Web Service for Pedigree and Serialization
View Dashboard Work Area for Pedigree and Serialization Duty	View Dashboard Work Area for Pedigree and Serialization
View Transactions Work Area for Pedigree and Serialization Duty	View Transactions Work Area for Pedigree and Serialization

- **Receiving and Inspection Manager**
 - Industry Description: Individual responsible for the receipt and inspection of incoming materials, parts or products; obtains, verifies and submits receiving documents and information for matching against invoices; controls assets and inventory until delivered to and accepted by procuring parties; arranges for return of refused receipts; plans, organizes and coordinates the receiving department.
 - Job Role Code: **RCV_RECEIVING_AND_INSPECTION_MANAGER_JOB**

Duty Roles:

This Duty Role...	Has Access to this Functionality (Privilege)
Create Transaction Web Service for Pedigree and Serialization Duty	Create Transaction Web Service for Pedigree and Serialization
Manage Product Return Exception for Pedigree and Serialization Duty	<ul style="list-style-type: none">• Clear Product Return Exception for Pedigree and Serialization• Edit Product Return Transaction for Pedigree and Serialization• View Product Transaction for Pedigree and Serialization
Manage Product Return Transaction for Pedigree and Serialization Duty	<ul style="list-style-type: none">• Add Product Return Transaction for Pedigree and Serialization• Reprocess Product Return Transaction for Pedigree and Serialization• View Product Transaction for Pedigree and Serialization
Manage Receipt Transaction for Pedigree and Serialization Duty	Add Receipt Transaction for Pedigree and Serialization
Manage Serial Transmission Exception for Pedigree and Serialization Duty	<ul style="list-style-type: none">• Clear Serial Transmission Exception for Pedigree and Serialization• View Product Transaction for Pedigree and Serialization
Manage Serial Transmission Transaction for Pedigree and Serialization Duty	<ul style="list-style-type: none">• Add Serial Transmission Transaction for Pedigree and Serialization• View Product Transaction for Pedigree and Serialization
Process Transaction via Web Service for Pedigree and Serialization Duty	Process Transaction via Web Service for Pedigree and Serialization

This Duty Role...	Has Access to this Functionality (Privilege)
View Dashboard Work Area for Pedigree and Serialization Duty	View Dashboard Work Area for Pedigree and Serialization
View Serial Destination for Pedigree and Serialization Duty	View Serial Destination for Pedigree and Serialization
View System Setup Work Area for Pedigree and Serialization Duty	View System Setup Work Area for Pedigree and Serialization
View Transactions Work Area for Pedigree and Serialization Duty	View Transactions Work Area for Pedigree and Serialization

- **Shipping Agent**

- Industry Description: Individual responsible for material control of all products delivered to the business from suppliers.
- Job Role Code: **WSH_SHIPPING_AGENT_JOB**

Duty Roles:

This Duty Role...	Has Access to this Functionality (Privilege)
Create Transaction Web Service for Pedigree and Serialization Duty	Create Transaction Web Service for Pedigree and Serialization

This Duty Role...	Has Access to this Functionality (Privilege)
Manage Product Shipment Transaction for Pedigree and Serialization Duty	<ul style="list-style-type: none"> • Add Product Shipment Transaction for Pedigree and Serialization • Create Pedigree for Pedigree and Serialization • Print Pedigree for Pedigree and Serialization • Reprocess Product Shipment Transaction for Pedigree and Serialization • View Product Transaction for Pedigree and Serialization
Manage Serial Transmission Transaction for Pedigree and Serialization Duty	<ul style="list-style-type: none"> • Add Serial Transmission Transaction for Pedigree and Serialization • View Product Transaction for Pedigree and Serialization
Process Transaction via Web Service for Pedigree and Serialization Duty	Process Transaction via Web Service for Pedigree and Serialization
View Dashboard Work Area for Pedigree and Serialization Duty	View Dashboard Work Area for Pedigree and Serialization
View Transactions Work Area for Pedigree and Serialization Duty	View Transactions Work Area for Pedigree and Serialization

- **Shipping Manager**

- Industry Description: Individual responsible for the shipment of outgoing materials, parts or products; ensures order accuracy and improves production standards; oversees stock placement, warehouse space utilization, and changes that effect loading time; ensures warehouse drawings and floor plan layouts are maintained and updated as changes occur; manages safety programs for all operations in accordance with applicable safety and OSHA regulations; develops, submits, and controls annual shipping budget; monitors and controls operator staffing and workload; reviews all customer loading requirements and

ensures compliance; investigates and responds to customer complaints.

- Job Role Code: **WSH_SHIPPING_MANAGER_JOB**

Duty Roles:

This Duty Role...	Has Access to this Functionality (Privilege)
Create Transaction Web Service for Pedigree and Serialization Duty	Create Transaction Web Service for Pedigree and Serialization
Digitally Sign Shipments Duty	Digitally Sign Shipments
Manage Product Shipment Exception for Pedigree and Serialization Duty	<ul style="list-style-type: none"> • Clear Product Shipment Exception for Pedigree and Serialization • Edit Product Shipment Transaction for Pedigree and Serialization • View Product Transaction for Pedigree and Serialization
Manage Product Shipment Transaction for Pedigree and Serialization Duty	<ul style="list-style-type: none"> • Add Product Shipment Transaction for Pedigree and Serialization • Create Pedigree for Pedigree and Serialization • Print Pedigree for Pedigree and Serialization • Reprocess Product Shipment Transaction for Pedigree and Serialization • View Product Transaction for Pedigree and Serialization
Manage Serial Transmission Exception for Pedigree and Serialization Duty	<ul style="list-style-type: none"> • Clear Serial Transmission Exception for Pedigree and Serialization • View Product Transaction for Pedigree and Serialization

This Duty Role...	Has Access to this Functionality (Privilege)
Manage Serial Transmission Transaction for Pedigree and Serialization Duty	<ul style="list-style-type: none"> Add Serial Transmission Transaction for Pedigree and Serialization View Product Transaction for Pedigree and Serialization
Process Transaction via Web Service for Pedigree and Serialization Duty	Process Transaction via Web Service for Pedigree and Serialization
View Dashboard Work Area for Pedigree and Serialization Duty	View Dashboard Work Area for Pedigree and Serialization
View Packaging Hierarchy Work Area for Pedigree and Serialization Duty	View Packaging Hierarchy Work Area for Pedigree and Serialization
View Serial Destination for Pedigree and Serialization Duty	View Serial Destination for Pedigree and Serialization
View System Setup Work Area for Pedigree and Serialization Duty	View System Setup Work Area for Pedigree and Serialization
View Transactions Work Area for Pedigree and Serialization Duty	View Transactions Work Area for Pedigree and Serialization

- **Supply Chain Application Administrator**

- Industry Description: Individual responsible for the performance of recurring operational tasks related to the support of an enterprise infrastructure.

- Job Role Code:
RCS_SUPPLY_CHAIN_APPLICATION_ADMINISTRATOR_JOB

Duty Roles:

This Duty Role...	Has Access to this Functionality (Privilege)
Manage Audit History for Pedigree and Serialization Duty	View Audit History for Pedigree and Serialization

This Duty Role...	Has Access to this Functionality (Privilege)
Manage Audit Setup for Pedigree and Serialization Duty	Edit Audit Setup for Pedigree and Serialization
Manage EPCIS System Setup Duty	<ul style="list-style-type: none"> • Create EPCIS Policies • Create EPCIS Preferences • Edit EPCIS Policies • Edit EPCIS Preferences • Edit EPCIS Users • Delete EPCIS Policies • Delete EPCIS Users • View EPCIS Policies • View EPCIS Preferences • View EPCIS Users

This Duty Role...	Has Access to this Functionality (Privilege)
Manage Location for Pedigree and Serialization Duty	<ul style="list-style-type: none"> • Create Location for Pedigree and Serialization • Create Location Contact for Pedigree and Serialization • Delete Location for Pedigree and Serialization • Delete Location Contact for Pedigree and Serialization • Edit Location for Pedigree and Serialization • Edit Location Contact for Pedigree and Serialization • View Location Contact for Pedigree and Serialization
Manage Location Group for Pedigree and Serialization Manager Duty	<ul style="list-style-type: none"> • Create Location Group for Pedigree and Serialization • Edit Location Group for Pedigree and Serialization • Delete Location Group for Pedigree and Serialization

This Duty Role...	Has Access to this Functionality (Privilege)
Manage Pedigree and Serialization System Setup Duty	<ul style="list-style-type: none"> • Create Location Group for Pedigree and Serialization • Create Serial Type Group for Pedigree and Serialization • Delete Location Group for Pedigree and Serialization • Delete Serial Type for Pedigree and Serialization • Delete Serial Type Group for Pedigree and Serialization • Edit Location Group for Pedigree and Serialization • Edit Lookup for Pedigree and Serialization • Edit Pedigree and Serialization System Parameter • Edit Serial Type for Pedigree and Serialization • Edit Serial Type Group for Pedigree and Serialization
Manage Serial Destination for Pedigree and Serialization Duty	<ul style="list-style-type: none"> • Create Serial Destination for Pedigree and Serialization • Delete Serial Destination for Pedigree and Serialization • Edit Serial Destination for Pedigree and Serialization • View Serial Destination for Pedigree and Serialization

This Duty Role...	Has Access to this Functionality (Privilege)
Manage Users for Pedigree and Serialization Duty	<ul style="list-style-type: none"> • Create User for Pedigree and Serialization • Delete User for Pedigree and Serialization • Edit User for Pedigree and Serialization • View User for Pedigree and Serialization
Synchronize Product for Pedigree and Serialization Duty	<ul style="list-style-type: none"> • Perform Product Synchronization for Pedigree and Serialization • Perform Product Synchronization for Pedigree and Serialization via Web Service
Synchronize Product Lot for Pedigree and Serialization Duty	Perform Product Lot Synchronization for Pedigree and Serialization
Synchronize Product via Web Service for Pedigree and Serialization Duty	Perform Product Synchronization for Pedigree and Serialization via Web Service
View Dashboard Work Area for Pedigree and Serialization Duty	View Dashboard Work Area for Pedigree and Serialization
View Serials Work Area for Pedigree and Serialization Duty	View Serials Work Area for Pedigree and Serialization
View System Setup Work Area for Pedigree and Serialization Duty	View System Setup Work Area for Pedigree and Serialization
View Web Service Exceptions for Pedigree and Serialization Duty	View Web Service Exceptions for Pedigree and Serialization

- **Warehouse Manager**

- Industry Description: Manages the supply and demand for products in the warehouse and ensures the smooth flow of product through the fulfillment

cycle. This user could benefit from information from the system to be alerted when demand is "stuck" and not moving because of a) short supply or b) inefficiencies in the pick, pack, and shipping process. This users also has a forecasted or target shipment revenue to attain, and needs to be alerted when this target is in danger of not being met so that corrective action can be taken. Ultimately, this individual helps create customer satisfaction by ensuring smooth operation of the supply chain.

- Job Role Code: **INV_WAREHOUSE_MANAGER_JOB**

Duty Roles:

This Duty Role...	Has Access to this Functionality (Privilege)
Manage Edit Serial Exception for Pedigree and Serialization Duty	<ul style="list-style-type: none"> • Clear Edit Serial Exception for Pedigree and Serialization • Edit Serial Edit Transaction for Pedigree and Serialization • View Product Transaction for Pedigree and Serialization
Manage Packaging Hierarchy for Pedigree and Serialization Duty	<ul style="list-style-type: none"> • Create Package for Pedigree and Serialization • Delete Package for Pedigree and Serialization • Edit Package for Pedigree and Serialization • Edit Packaging Hierarchy for Pedigree and Serialization
Manage Packaging Hierarchy Web Service for Pedigree and Serialization Duty	<ul style="list-style-type: none"> • Pack Package Web Service for Pedigree and Serialization • Unpack Package Web Service for Pedigree and Serialization

This Duty Role...	Has Access to this Functionality (Privilege)
Manage Serial Edit Transaction for Pedigree and Serialization Duty	<ul style="list-style-type: none"> • Add Serial Edit Transaction for Pedigree and Serialization • Reprocess Serial Edit Transaction for Pedigree and Serialization • View Product Transaction for Pedigree and Serialization
Manage Serial for Pedigree and Serialization Duty	<ul style="list-style-type: none"> • Create Package for Pedigree and Serialization • Edit Package for Pedigree and Serialization • Edit Serial for Pedigree and Serialization • Perform Serial Commission for Pedigree and Serialization • Perform Serial Decommission for Pedigree and Serialization • Reprocess editSerialStatusAndUsage Transactions for Pedigree and Serialization
Manage Serial Web Service for Pedigree and Serialization Duty	<ul style="list-style-type: none"> • Edit Serial by Label Web Service for Pedigree and Serialization • Edit Serial by List Web Service for Pedigree and Serialization • Edit Serial by Primary Document Web Service for Pedigree and Serialization
View Dashboard Work Area for Pedigree and Serialization Duty	View Dashboard Work Area for Pedigree and Serialization

This Duty Role...	Has Access to this Functionality (Privilege)
View Packaging Work Area for Pedigree and Serialization Duty	View Packaging Work Area for Pedigree and Serialization
View Serials Work Area for Pedigree and Serialization Duty	View Serials Work Area for Pedigree and Serialization

- **Warehouse Operator**

- Industry Description: Move material within the warehouse including putting material away to stock, cross docking, picking material, consolidating picked material, labeling product or packages, replenishing, cycle counting, and performing physical inventories. Moving the material may require heavy lifting and equipment to handle the material such as, forklifts.
- Job Role Code: **INV_WAREHOUSE_OPERATOR_JOB**

Duty Roles:

This Duty Role...	Has Access to this Functionality (Privilege)
Manage Packaging Hierarchy for Pedigree and Serialization Duty	<ul style="list-style-type: none"> • Create Package for Pedigree and Serialization • Delete Package for Pedigree and Serialization • Edit Package for Pedigree and Serialization • Edit Packaging Hierarchy for Pedigree and Serialization
Manage Packaging Hierarchy Web Service for Pedigree and Serialization Duty	<ul style="list-style-type: none"> • Pack Package Web Service for Pedigree and Serialization • Unpack Package Web Service for Pedigree and Serialization

This Duty Role...	Has Access to this Functionality (Privilege)
View Dashboard Work Area for Pedigree and Serialization Duty	View Dashboard Work Area for Pedigree and Serialization
View Packaging Work Area for Pedigree and Serialization Duty	View Packaging Work Area for Pedigree and Serialization

References

This appendix covers the following topics:

- References

References

Oracle Database Online Documentation 11g Release 2 [https://docs.oracle.com/cd/E11882_01/nav/portal_25.htm]

Fusion Middleware Security and Administrator's Guide for Web Services [http://docs.oracle.com/cd/E28280_01/web.1111/b32511/toc.htm]

Secure Configuration Guide for Oracle E-Business Suite Release 12 (PDF) [https://support.oracle.com/epmos/faces/DocumentDisplay?_adf.ctrl-state=15g23m29av_4&_afLoop=142953764095524]

Oracle Database Online Documentation 11g Release 2 (11.2) - Database Security Guide [http://docs.oracle.com/cd/E11882_01/network.112/e36292/toc.htm]

Oracle® Fusion Middleware Securing a Production Environment for Oracle WebLogic Server 11g Release 1 (10.3.1) [http://docs.oracle.com/cd/E12839_01/web.1111/e13705/toc.htm]

Oracle Fusion Middleware Online Documentation Library 11g Release 1 (11.1.1.7) - Security for Oracle Fusion Middleware [http://docs.oracle.com/cd/E28280_01/nav/secure.htm]

Examples of Global Policy Attachments

This appendix covers the following topics:

- Examples of Global Policy Attachments

Examples of Global Policy Attachments

The following page shots illustrate examples of global policy attachments:

View Policy Set page - opsm_soa_reference Policy Set

The screenshot shows the Oracle Enterprise Manager 11g Fusion Applications Control interface. The main content area displays the 'View Policy Set' page for the 'opsm_soa_reference' policy set. The page is organized into several sections:

- General Information:**
 - Name: opsm-soa-reference
 - Version Number: 2
 - Enabled:
 - Last Updated: Jun 24, 2013 6:16:13 PM
 - Type of Resource: SOA Reference
 - Updated by: weblogic
 - Description: Global policy attachments for SOA Reference resources.
- Scope of Resources:**
 - Scope: Pattern
 - Domain Name: wls_app4778
 - Server Instance Name: soa_server1
- Constraint:**
 - Constraint Expression: None
- Policy References:**

Name	Category	Enabled	Description	View Detail
oraclejms10_sasl_token_client_policy	Security	<input checked="" type="checkbox"/>	The policy includes SASL ...	bd

View Policy Set page - opsm-soa-reference-PasCaptureEpcisDocComposite Policy Set

ORACLE Enterprise Manager 11g Fusion Middleware Control Setup Help Log Out

Farm Topology Logged in as weblogic
Page Refreshed Jan 27, 2015 2:20:18 PM PST

base_domain @ WebLogic Domain

Policy Sets > View Policy Set Return To Policy Sets

View Policy Set

General Information

Name	opsm-soa-reference-PasCaptureEpcisDocComposite	Version Number	1
Enabled	<input checked="" type="checkbox"/>	Last Updated	Jan 27, 2015 1:42:36 PM
Type of	SOA Reference	Updated By	weblogic
Resources			
Description	...		

Scope of Resources

Scope	Pattern
Domain Name	base_domain
Server Instance Name	soa_server1
SOA Composite Name	base_domain

Constraint

Constraint Expression: None

Policy References

Name	Category	Enabled	Description	View Detail
oracle/wss_username_token_client_policy	Security	<input checked="" type="checkbox"/>	This policy includes crede...	bd

View Policy Set page - opsm-soa-reference-PasCreateTransactionsComposite Policy Set

ORACLE Enterprise Manager 11g Fusion Applications Control Setup Help Log Out

Farm Topology Logged in as weblogic
Page Refreshed Oct 3, 2013 4:05:25 PM PDT

wls_app4778 @ WebLogic Domain

Policy Sets > View Policy Set Return To Policy Sets

View Policy Set

General Information

Name	opsm-soa-reference-PasCreateTransactionsComposite	Version Number	2
Enabled	<input checked="" type="checkbox"/>	Last Updated	Jun 24, 2013 6:16:14 PM
Type of	SOA Reference	Updated By	weblogic
Resources	Global policy attachments for SOA Reference resources.		
Description	...		

Scope of Resources

Scope	Pattern
Domain Name	wls_app4778
Server Instance Name	soa_server1
SOA Composite Name	PasCreateTransactionsComposite

Constraint

Constraint Expression: None

Policy References

Name	Category	Enabled	Description	View Detail
oracle/wss_username_token_client_policy	Security	<input checked="" type="checkbox"/>	This policy includes crede...	bd

View Policy Set page - opsm-soa-reference-PasLotSynchronizationComposite Policy Set

ORACLE Enterprise Manager 11g Fusion Middleware Control Setup Help Log Out

Farm Topology Logged in as weblogic
Page Refreshed Jan 27, 2015 2:22:10 PM PST

- ▼ Farm_base_domain
- ▶ Application Deployments
- ▶ SOA
- ▼ WebLogic Domain
- ▶ base_domain
- ▶ Metadata Repositories
- ▶ User Messaging Service

base_domain

WebLogic Domain

Policy Sets > View Policy Set [Return To Policy Sets](#)

View Policy Set

General Information

Name	opsm-soa-reference-PasLotSynchronizationComposite	Version Number	1
Enabled	<input checked="" type="checkbox"/>	Last Updated	Oct 28, 2014 12:16:58 PM
Type of Resources	SOA Reference	Updated By	weblogic
Description	...		

Scope of Resources

Scope	Pattern
Domain Name	base_domain
Server Instance Name	soa_server1
SOA Composite Name	PasLotSynchronizationComposite

Constraint

Constraint Expression: None

Policy References

Name	Category	Enabled	Description	View Detail
oracle/ivse_username_token_client_policy	Security	<input checked="" type="checkbox"/>	This policy includes creden...	

View Policy Set page - opsm-soa-service Policy Set

ORACLE Enterprise Manager 11g Fusion Middleware Control Setup Help Log Out

Farm Topology Logged in as weblogic
Page Refreshed Jan 27, 2015 2:22:43 PM PST

- ▼ Farm_base_domain
 - ▶ Application Deployments
 - ▶ SOA
 - ▼ WebLogic Domain
 - ▶ base_domain
 - ▶ Metadata Repositories
 - ▶ User Messaging Service

base_domain

WebLogic Domain

Policy Sets > View Policy Set [Return To Policy Sets](#)

View Policy Set

General Information

Name: opsm-soa-service	Version Number: 1
Enabled: <input checked="" type="checkbox"/>	Last Updated: Oct 28, 2014 12:18:25 PM
Type of Resource: SOA Service	Updated By: weblogic
Description:	

Scope of Resources

Scope	Pattern
Domain Name	base_domain
Server Instance Name	soa_server1

Constraint

Constraint Expression: None

Policy References

Name	Category	Enabled	Description	View Detail
oracle/ivse_saml_or_username_token_service_policy	Security	<input checked="" type="checkbox"/>	This policy authenticates ...	View Detail

View Policy Set page - opsm-ws-async-callback Policy Set

ORACLE Enterprise Manager 11g Fusion Middleware Control Setup Help Log Out

Farm Topology Logged in as weblogic
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- ▼ Farm_base_domain
- ▶ Application Deployments
- ▶ SOA
- ▼ WebLogic Domain
- ▶ base_domain
- ▶ Metadata Repositories
- ▶ User Messaging Service

base_domain

WebLogic Domain

Policy Sets > View Policy Set [Return To Policy Sets](#)

View Policy Set

General Information

Name: opsm-ws-async-callback	Version Number: 1
Enabled: <input checked="" type="checkbox"/>	Last Updated: Oct 28, 2014 12:20:10 PM
Type of Resources: Asynchronous Callback Client	Updated By: weblogic
Description: ...	

Scope of Resources

Scope	Pattern
Domain Name	base_domain
Server Instance Name	soa_server1

Constraint

Constraint Expression: None

Policy References

Name	Category	Enabled	Description	View Detail
oracle/wse10_saml_token_client_policy	Security	<input checked="" type="checkbox"/>	This policy includes SAML ...	

View Policy Set page - opsm-ws-client Policy Set

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- ▼ Farm_base_domain
 - ▶ Application Deployments
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 - ▶ base_domain
 - ▶ Metadata Repositories
 - ▶ User Messaging Service

base_domain WebLogic Domain

Policy Sets > View Policy Set [Return To Policy Sets](#)

View Policy Set

General Information

Name: opsm-ws-client	Version Number: 1
Enabled: <input checked="" type="checkbox"/>	Last Updated: Oct 28, 2014 12:21:09 PM
Type of Resource: Web Service Client	Updated By: weblogic
Description:	

Scope of Resources

Scope	Pattern
Domain Name	base_domain
Server Instance Name	soa_server1

Constraint

Constraint Expression: None

Policy References

Name	Category	Enabled	Description	View Detail
oracle/wse10_saml_token_client_policy	Security	<input checked="" type="checkbox"/>	This policy includes SAML ...	

View Policy Set page - opsm-ws-connection Policy Set

ORACLE Enterprise Manager 11g Fusion Middleware Control Setup Help Log Out

Farm Topology Logged in as weblogic
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- ▼ Farm_base_domain
- ▶ Application Deployments
- ▶ SOA
- ▼ WebLogic Domain
- ▶ **base_domain**
- ▶ Metadata Repositories
- ▶ User Messaging Service

base_domain

WebLogic Domain

Policy Sets > View Policy Set [Return To Policy Sets](#)

View Policy Set

General Information

Name	opsm-ws-connection	Version Number	1
Enabled	<input checked="" type="checkbox"/>	Last Updated	Oct 28, 2014 12:21:59 PM
Type of Resources	Web Service Connection	Updated By	weblogic
Description	...		

Scope of Resources

Scope	Pattern
Domain Name	base_domain
Server Instance Name	soa_server1

Constraint

Constraint Expression: None

Policy References

Name	Category	Enabled	Description	View Detail
oracle/wse10_saml_token_client_policy	Security	<input checked="" type="checkbox"/>	This policy includes SAML ...	

View Policy Set page - opsm-ws-endpoint Policy Set

ORACLE Enterprise Manager 11g Fusion Middleware Control

Setup Help Log Out

Farm Topology

base_domain

WebLogic Domain

Policy Sets > View Policy Set

View Policy Set

Return To Policy Sets

General Information

Name: opsm-ws-endpoint

Enabled:

Type of: Web Service Endpoint

Resources

Description

Version Number: 1

Last Updated: Oct 28, 2014 12:23:12 PM

Updated By: weblogic

Scope of Resources

Scope	Pattern
Domain Name	base_domain
Server Instance Name	soa_server1

Constraint

Constraint Expression: None

Policy References

Name	Category	Enabled	Description	View Detail
oracle/ivse_saml_or_username_token_service_policy	Security	<input checked="" type="checkbox"/>	This policy authenticates ...	

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