# Installing Oracle E-Business Suite Integrated SOA Gateway, Release 12.2 (Doc ID 1311068.1)

Oracle E-Business Suite Integrated SOA Gateway (ISG) enables supported interface types published in Oracle Integration Repository. These interfaces can be transformed into SOAP and REST web services. This document enlists the setup tasks that must be performed to configure ISG on a fresh installation of Oracle E-Business Suite, as well as on an instance upgraded from an earlier release.

> **Note:** To provide high availability of Oracle E-Business Suite services, Oracle recommends configuring your Oracle E-Business Suite environment with multiple nodes.
>
> The configuration and setup tasks described in this document are also applicable to an Oracle E-Business Suite environment configured with multiple nodes.

> **Note:** The setup tasks described in this document guide you through ISG configuration for Oracle E-Business Suite On-Premises. For information on configuring ISG for Oracle E-Business Suite Release 12.2 on Oracle Cloud, see Document 2386478.1.

The most current version of this document can be obtained in My Oracle Support Knowledge Document 1311068.1.

There is a change record at the end of this document.

### Oracle E-Business Suite SOAP Services

In Oracle E-Business Suite Integrated SOA Gateway (ISG) Release 12.2, SOAP-based web services are deployed on Oracle SOA Suite running on Oracle WebLogic Server. The steps to configure SOAP services span across Oracle E-Business Suite as well as Oracle SOA Suite.

#### ISG Release 12.2 Certification Matrix

To enable Oracle E-Business Suite SOAP services, Oracle E-Business Suite Integrated SOA Gateway Release 12.2 has the following product dependencies:

ISG Release 12.2 Product Dependencies and Cer

| Oracle SOA Suite | | Oracle E-Business Suit (Oracle Applications / |
|---|---|---|
| Release 12c (12.2.1.x.x) | 12.2.1.3.0 | 12.2.1.3.0 |
| Release 12c (12.2.1.x.x) | 12.2.1.2.0 | 12.2.1.2.0 |
| Release 12c (12.2.1.x.x) | 12.2.1.1.0 | 12.2.1.1.0 |
| Release 12c (12.2.1.x.x) | 12.2.1.0.0 | 12.2.1.0.0 |
| Release 12c (12.1.3) | 12.1.3 | 12.1.3 |
| Release 11g | 11.1.1.9.0 | 11.1.1.9.0 |

To configure Oracle E-Business Suite SOAP services, refer to Section A: Configuring Oracle E-Business Suite SOAP Services for configuration and upgrade details.

> **Note:** Interface types enabled for SOAP services are PL/SQL, Concurrent Program, XML Gateway (Inbound), and Business Service Object.

### Oracle E-Business Suite REST Services

REST-based web services are deployed on an Oracle E-Business Suite application server. They do not depend on Oracle SOA Suite and Oracle E-Business Suite Adapter. Hence, the configuration steps for REST services are required to be performed only on Oracle E-Business Suite.

Setup steps for REST services are described in Part B: Configuring Oracle E-Business Suite REST Services.

> **Note:** Interface types enabled for REST services are PL/SQL, Java Bean Services, Application Module Services, Concurrent Program, and Open Interface Tables and Views.

**If both SOAP and REST services are used, configure your system by following the instructions described in both Part A and Part B.**

**For upgrading and cloning an existing Oracle E-Business Suite environment, refer to Part D.**

## Overview: High Level Configuration Flows

- **Part A: Configuring Oracle E-Business Suite SOAP Services**

  Section 1: Configuring Oracle E-Business Suite Integrated SOA Gateway for SOAP Services on a New Installation of Release 12.2.3 or Higher

  - Section 1.1: Setup Tasks on Oracle E-Business Suite Release 12.2.3 or Higher
  - Section 1.2: Configuration Steps on Oracle SOA Suite to Integrate with Oracle E-Business Suite

- **Part B: Configuring Oracle E-Business Suite REST Services**

  Section 2: Configuring Oracle E-Business Suite Integrated SOA Gateway for REST Services


- **Part C: Common Steps for SOAP and REST Services**

  This section provides details of common steps that are referred in earlier or above sections.

  - Section 3: Enabling ASADMIN User with the Integration Administrator Role
  - Section 4: Installing and Upgrading Oracle WebLogic Server and Oracle SOA Suite for SOAP Services
    - Section 4.1: Installing Oracle SOA Suite
    - Section 4.2: Upgrading Oracle SOA Suite 11g to Oracle SOA Suite 12c in an Existing Configuration
  - Section 5: Enabling TLS on Oracle SOA Suite
  - Section 6: Validating Oracle E-Business Suite Integrated SOA Gateway Setup for SOAP Services
    - Section 6.1: Validating SOAP Services Setup from the Integration Repository User Interface
    - Section 6.2: (Optional) Validating SOAP Services Setup Using Oracle E-Business Suite Integrated SOA Gateway Diagnostic Script
  - Section 7: Validating Oracle E-Business Suite Integrated SOA Gateway Setup for REST Services
    - Section 7.1: Validating REST Services Setup from the Integration Repository User Interface
    - Section 7.2: (Optional) Validating REST Services Setup Using Oracle E-Business Suite Integrated SOA Gateway Script
  - Section 8: Configuring Integration Repository Parser for Custom Interfaces
  - Section 9: Deploying Generic XML Gateway Services for SOAP Services
  - Section 10: File Logging for SOAP Services

- **Part D: Configuring Oracle E-Business Suite Integrated SOA Gateway for Upgrading and Cloning Scenarios**

  This section provides possible installation scenarios for configuring Oracle E-Business Suite SOAP and REST services.

  > **Note:** For information on upgrading Oracle SOA Suite 11g to Oracle SOA Suite 12c for Oracle E-Business Suite SOAP services, refer to Section 4.2: Upgrading Oracle SOA Suite 11g to Oracle SOA Suite 12c in an Existing Configuration.

  - Section 11: Configuring Oracle E-Business Suite Integrated SOA Gateway for SOAP Services on Release 12.2.x Upgraded From Oracle E-Business Suite Release 12.1.x
  - Section 12: Configuring Oracle E-Business Suite Integrated SOA Gateway on Release 12.2.x Cloned From an Existing 12.2.x Environment
  - Section 13: Configuring Oracle E-Business Suite Integrated SOA Gateway for REST Services on Release 12.2.x Upgraded From Oracle E-Business Suite Release 12.1.x

> **Note:** For more information about Oracle E-Business Suite Integrated SOA Gateway Release 12.2, see the following Knowledge Documents on My Oracle Support (formerly Oracle *MetaLink*):
>
> - 2563289.1: Oracle E-Business Suite Integrated SOA Gateway Release Notes for Release 12.2.9
> - 2289192.1: Oracle E-Business Suite Integrated SOA Gateway Release Notes for Release 12.2.7 and 12.2.8
> - 2172887.1: Oracle E-Business Suite Integrated SOA Gateway Release Notes for Release 12.2.6
> - 2059499.1: Oracle E-Business Suite Integrated SOA Gateway Release Notes for Release 12.2.5
> - 1908829.1: Oracle E-Business Suite Integrated SOA Gateway Release Notes for Release 12.2.4
> - 1603897.1: Oracle E-Business Suite Integrated SOA Gateway Release Notes for Release 12.2.3
> - 1317697.1: Oracle E-Business Suite Integrated SOA Gateway Troubleshooting Guide, Release 12.2
> - 1332262.1: Setting Up SAML Token Security for Oracle E-Business Suite Integrated SOA Gateway Release 12.2
>
> For information about Oracle E-Business Suite Integrated SOA Gateway Release 12.1, see My Oracle Support Knowledge Document 556540.1, *Installing Oracle E-Business Suite Integrated SOA Gateway, Release 12*.

> **Note:** For consistency with the naming convention being adopted by other Oracle products, Oracle E-Business Suite Integrated SOA Gateway consolidated p
>
> ```
> year_quarter_fortnight within a quarter
> ```
>
> For example, ISG Consolidated Patch for Release 12.2 (19_3_1) indicates the patch is released in the first fortnight of the third quarter in 2019.

## Part A: Configuring Oracle E-Business Suite SOAP Services

## Section 1: Configuring Oracle E-Business Suite Integrated SOA Gateway for SOAP Services on a New Installation of Release 12.2.3 or Higher

Perform the following tasks to configure Oracle E-Business Suite Integrated SOA Gateway for SOAP services on a new installation of Release 12.2.3 or higher:

**Prerequisites:**

Before you begin the configuration for Oracle E-Business Suite SOAP services, you must have the following tasks in place:

- Install and configure Oracle SOA Suite 11g or Oracle SOA Suite 12c on a separate Oracle WebLogic Server

  Refer to Section 4: Installing and Upgrading Oracle WebLogic Server and Oracle SOA Suite for SOAP Services.

- Prepare multi-node environments for Oracle E-Business Suite Integrated SOA Gateway, Oracle E-Business Suite, and Oracle SOA Suite

  *Preparing Oracle E-Business Suite Integrated SOA Gateway in a Multi-node Environment*

  To provide high availability of Oracle E-Business Suite services, Oracle E-Business Suite Integrated SOA Gateway recommends multiple nodes of an Oracle E-Business Suite environment and each node is configured with multiple nodes of Oracle SOA Suite.

  The following diagram represents the high level architecture for Oracle E-Business Suite Integrated SOA Gateway Release 12.2 in a multi-node environment. In this diagram, a hardware load balancer configuration with a single entry point in Oracle E-Business Suite to load balance the web application running on Oracle E-Business Suite application servers 1 and 2. In this configuration, all users access Oracle E-Business Suite application through a single URL. Similarly, a separate load balancer is configured for Oracle SOA Suite to load balance the web application running on Oracle SOA Suite application servers.
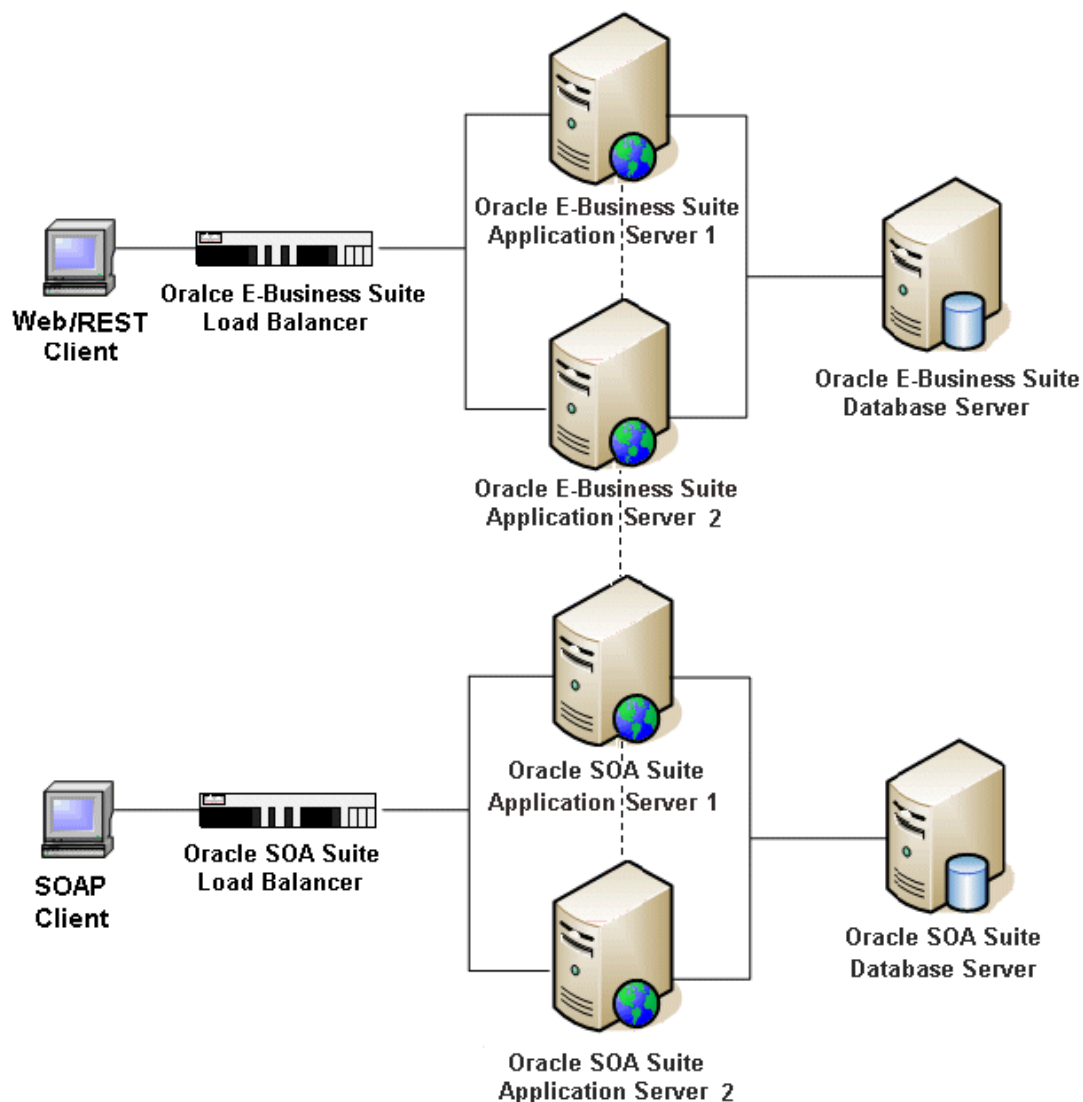


  *Preparing Oracle E-Business Suite in a Multi-node Environment*

  Oracle E-Business Suite environments can be scaled up to handle large numbers of concurrent users by load-balancing across multiple application middle tier servers. For information on configuring Oracle E-Business Suite Release 12.2 with multiple nodes, see *Using Load-Balancers with Oracle E-Business Suite Release 12.2*, My Oracle Support Knowledge Document 1375686.1.

  *Preparing Oracle SOA Suite in a Multi-node Environment*

  Oracle E-Business Suite Integrated SOA Gateway follows the reference topology mentioned in Section 2.1.1.1 MySOACompany Topology with Oracle Access Manager, *Oracle Fusion Middleware Enterprise Deployment Guide for Oracle SOA Suite*. Ensure to configure LDAP as policy store for the ISG-SOA Oracle WebLogic Server domain created while installing Oracle SOA Suite. Refer to Section 2.4 About LDAP as Credential and Policy Store, *Oracle Fusion Middleware Enterprise Deployment Guide for Oracle SOA Suite*. Refer to the flow chart illustrated in Figure 2-5, Section 2.6.1 Flow Chart of the Oracle SOA Enterprise Deployment Process, *Oracle Fusion Middleware Enterprise Deployment Guide for Oracle SOA Suite*. However, skip or ignore the steps for Oracle Business Activity Monitoring (BAM), Oracle Business Process Management (BPM), and Oracle Service Bus (OSB).

For more information on configuring Oracle SOA Suite, see the *Oracle Fusion Middleware Enterprise Deployment Guide for Oracle SOA Suite*.

- Enable TLS on Oracle SOA Suite

  ○ For Oracle SOA Suite with a single node configuration, follow the steps described in Section 5: Enabling TLS on Oracle SOA Suite for enabling TLS on Oracle SOA Suite administration server and managed servers.

  ○ For Oracle SOA Suite with multi-node configuration, follow the steps in Section 19.1.2 Enabling SSL Communication Between the Middle Tier and the Hardware Load Balancer, *Oracle Fusion Middleware Enterprise Deployment Guide for Oracle SOA Suite*.

  ○ Additionally, to enforce TLSv1.2 only on Oracle SOA Suite, add the following JVM option to the JAVA_OPTIONS settings in the setDomainEnv.sh file:

  ```
  JAVA_OPTIONS="${JAVA_OPTIONS} -Dweblogic.security.SSL.minimumProtocolVersion=TLSv1.2 -
  Dhttps.protocols=TLSv1.2 "
  export JAVA_OPTIONS
  ```

> **Note:** Ensure that your Oracle E-Business Suite instance is on the latest AD TXK Delta level. Refer to My Oracle Support Knowledge Document 1617461.1, *Applying the Latest AD and TXK Release Update Packs to Oracle E-Business Suite Release 12.2*.
>
> Apply the latest consolidated Patch 29832501:R12.OWF.C, ISG Consolidated Patch for Release 12.2 (19_3_1), to your instance if they are not already applied. This patch is required for your instance regardless of a single node or a multi-node environment. Please note that this patch has two prerequisite patches listed in the patch readme which require adop phase=fs_clone to be run after application.

Perform the setup tasks described in the following sections:

- Section 1.1: Setup Tasks on Oracle E-Business Suite Release 12.2.3 or Higher
- Section 1.2: Configuration Steps on Oracle SOA Suite to Integrate with Oracle E-Business Suite

**Section 1.1: Setup Tasks on Oracle E-Business Suite Release 12.2.3 or Higher**

Perform the following steps to configure Oracle E-Business Suite Integrated SOA Gateway on Oracle E-Business Suite Release 12.2.3 or higher:

1. Enable ASADMIN user with the Integration Administrator role (or the Integration Repository Administrator role in Release 12.2.3).

   Refer to Section 3: Enabling ASADMIN User with the Integration Administrator Role for details.

2. Execute the txkSoaConfigUtility.xml script using the following steps:

> **Note:** If your instance is configured with multiple nodes, perform this step on each Oracle E-Business Suite node of the multi-node environment.

   a. Source the run file system environment source <EBS_INSTALL_BASE>/EBSapps.env. Enter 'R' for the run file system.

   b. Run script <JAVA_TOP>/oracle/apps/fnd/txk/util/txkSoaConfigUtility.xml without giving any target.

   ```
   ant -f $JAVA_TOP/oracle/apps/fnd/txk/util/txkSoaConfigUtility.xml
   ```

   The following prompts appear:

   ○ Oracle WebLogic Server Administration Console URL (<HOST>:<PORT>).

     Provide the Oracle E-Business Suite WebLogic administration server's <HOST>:<PORT>. For example, host01.example.com:7001.

   ○ Oracle WebLogic Server Admin User Name : [weblogic]

     'weblogic' is the default Oracle WebLogic Server Admin user name.

   ○ Weblogic Password :

     Provide the associated password for above Oracle WebLogic Server Admin user name.

   ○ Password for user apps:

     'apps' is the default Oracle E-Business Suite database user name. Provide the associated password for the database user apps.

   ○ ASADMIN user name : [ASADMIN]

     'ASADMIN' is the default user name.

   ○ Password for user ASADMIN :

     Provide the same password for the user ASADMIN, which was set after unlocking ASADMIN user in Step 1 of this section.

   ○ SOA Server Hostname:

     Provide the Oracle SOA Suite server hostname in the format of <SOAHOST>:<DOMAIN>.

> **Note:** If your instance is configured with multiple SOA nodes, the SOA Server Hostname should be comma separated Oracle SOA Suite nodes. It could have values like soahost01.example.com, soahost02.example.com.

- External URL of SOA Suite SOA Managed Server :

  Provide the Oracle SOA Suite managed server URL in the format of `protocol://<MANAGED_SERVER_HOST>:<MANAGED_SERVER_PORT>`, for example `http://host01.example.com:8001`.

  > **Note:** If your instance is configured with multiple SOA nodes, provide SOA cluster URL.

- Internal URL of SOA Suite SOA Managed Server :

  Provide the Oracle SOA Suite managed server URL in the format of `protocol://<MANAGED_SERVER_HOST>:<MANAGED_SERVER_PORT>`, for example `http://host01.example.com:8001`.

  > **Note:** If your instance is configured with multiple SOA nodes, provide SOA cluster URL.

- External URL of SOA Suite Admin Server :

  Provide the Oracle SOA Suite administration server in the format of `protocol://<ADMIN_SERVER_HOST>:<ADMIN_SERVER_PORT>`, for example `http://host01.example.com:7001`.

  > **Note:** For Oracle SOA Suite configured with multiple nodes, if the Oracle SOA Suite WebLogic administration server is configured with virtual host, provide the virtual host and port of that administration server.

> **Note:** This script performs the following tasks:
>
> - Update the following context variables:
>   - s_soa_external_url
>   - s_soa_internal_url
>   - s_soa_admin_url
>
> - Run AutoConfig on application tier.
>
> - Update the following profile options:
>   - FND_SERVER_SEC
>   - FND_SERVER_IP_SEC
>   - FND_SQLNET_ACCESS
>   - FND_SERVER_DESKTOP_USER

3. Perform the following steps to verify that the values of the profile options are set as suggested in the following table:

   a. Log in to Oracle E-Business Suite as a user who has the Functional Administrator responsibility.

   b. Select the Core Services tab, and choose the Profiles subtab.

   c. Enter a desired profile option code and click **Go** to verify if the suggested profile value is shown as the search result.

Profile Options and Values

| Profile Option Name | Profile Option Code | Profile Value |
|---|---|---|
| FND: Validate User Type | FND_SERVER_SEC | Desktop On |
| FND: Validate IP address | FND_SERVER_IP_SEC | Desktop On |
| SQLNet Access | FND_SQLNET_ACCESS | ALLOW_REST  This is a reco |
| FND: Desktop Nodes allowed | FND_SERVER_DESKTOP_USER | *<comma sep*  Verify if SOA  Set this optio  Setting the no Oracle SOA S Business Sui  Please note t  For example,  The node_na |

4. Stop and restart the `oafm` and `oacore` Oracle E-Business Suite managed servers using the following commands:

   - To stop the `oafm` managed server:

```
admanagedsrvctl stop <oafm_MANAGED_SERVER_NAME>
```

- To stop the `oacore` managed server:

```
admanagedsrvctl stop <oacore_MANAGED_SERVER_NAME>
```

- To start the `oafm` managed server:

```
admanagedsrvctl start <oafm_MANAGED_SERVER_NAME>
```

- To start the `oacore` managed server:

```
admanagedsrvctl start <oacore_MANAGED_SERVER_NAME>
```

> **Note:** If your instance is configured with multiple nodes, execute the following commands on the Oracle E-Business Suite primary node to stop and restart the servers for all the Oracle E-Business Suite nodes:
> - Commands to stop the managed servers for all the Oracle E-Business Suite nodes:
>
> ```
> adstpall.sh <USERNAME>/<PASSWORD> -mode=allnodes
> ```
>
> - Commands to restart the managed servers for all the Oracle E-Business Suite nodes:
>
> ```
> adstrtal.sh <USERNAME>/<PASSWORD> -mode=allnodes
> ```

5. Verify that the current setup on Oracle E-Business Suite is correct by generating XSD's for a BSO service using the URL given below. The URL would prompt for username and password. Provide ASADMIN user name and password configured in step 1 and verify that a zipped file containing the XSD's is downloaded. This confirms a successful setup.

`(http://<HOST>:<PORT>/webservices/isgagent/?generatexsd=<BSO_CLASSID>)` or `(https://<HOST>:<PORT>/webservices/isgagent/?generatexsd=<BSO_CLASSID>)` for TLS enabled environment.

> **Tip:** To find a sample BSO class Id, use the following query on Oracle E-Business Suite database:
>
> ```
> select class_id from fnd_irep_classes where upper(irep_name) like '%EBIZHOMEPAGESERVICE%' and class_type='SERVICEBEAN';
> ```

6. Run or execute the following command from Oracle E-Business Suite to register the external server with the Oracle E-Business Suite instance and to generate a DBC file for trusting the external Oracle SOA Suite host:

```
ant -f $JAVA_TOP/oracle/apps/fnd/bpel/util/txk_integration_packager.xml -DIntegration=isg -DFMWNodeName=<SOAHOST.DOMAIN> -DFMWIpAddress=<SOA_SUITE_IP>
```

> **Tip:** To obtain the Oracle SOA Suite IP address for parameter `-DFMWIpAddress`, log on to Oracle SOA Suite from backend, and then execute the command `ping <SOAHOST>` to fetch the information.
>
> The `txk_integration_packager.xml` script updates the `fnd_nodes` table with the IP address of Oracle SOA Suite specified in the input parameter `-DFMWIpAddress` which can be verified using the following query:
>
> ```
> select node_name,server_address,server_id from fnd_nodes where node_name=UPPER('<SOAHOST.DOMAIN>');
> ```

This script will generate and package Desktop DBC file, `isg_contextfile.properties`, `TXKFMWGenericConfigUtility.class`, and `txkISGConfigurator.xml`, in a zip file "`EBS_BPEL_payload.zip`" located at `$INST_TOP/logs/appl/rgf/TXK/EBS_BPEL_payload.zip`.

> **Note:** If there are two machines for external Oracle SOA Suite, execute this command for each machine. For example,
>
> ```
> ant -f $JAVA_TOP/oracle/apps/fnd/bpel/util/txk_integration_packager.xml -DIntegration=isg -DFMWNodeName=<SOAHOST1.DOMAIN> -DFMWIpAddress=<HOST1_SOA_IP>
> ```
>
> ```
> ant -f $JAVA_TOP/oracle/apps/fnd/bpel/util/txk_integration_packager.xml -DIntegration=isg -DFMWNodeName=<SOAHOST2.DOMAIN> -DFMWIpAddress=<HOST2_SOA_IP>
> ```
>
> Each command will generate an `EBS_BPEL_payload.zip` file. The desktop DBC file in each `EBS_BPEL_payload.zip` will be copied to the respective machine as mentioned in step 7 of the Section 1.2: Configuration Steps on Oracle SOA Suite to Integrate with Oracle E-Business Suite.

7. Perform the following steps to restrict access to Oracle E-Business Suite database from external nodes.

a. Source the database tier environment file.

```
source $ORACLE_HOME/$SID_$HOSTNAME.env
```

b. Run the AutoConfig on the database tier.

```
sh $ORACLE_HOME/appsutil/scripts/$CONTEXT_NAME/adautocfg.sh
```

c. Stop the database listener using the following command:

```
$ORACLE_HOME/appsutil/scripts/$CONTEXT_NAME/addlnctl.sh stop $ORACLE_SID
```

d. Verify that `$TNS_ADMIN/sqlnet.ora` contains the following properties:

```
tcp.validnode_checking = yes

tcp.invited_nodes=(<SECURE_HOST_LIST_FROM_FND_NODES_TABLES>)

SQLNET.INBOUND_CONNECT_TIMEOUT = 60
```

`$TNS_ADMIN/sqlnet.ora` will be updated only if the profile option FND_SQLNET_ACCESS is set to ALLOW_RESTRICTED.

e. Start the database listener using the following command:

```
$ORACLE_HOME/appsutil/scripts/$CONTEXT_NAME/addlnctl.sh start $ORACLE_SID
```

8. (Optional) Enable file logging on Oracle E-Business Suite.

For more information about file logging, refer to Section 10: File Logging for SOAP Services.

9. Restart the `oafm` and `oacore` Oracle E- Business Suite managed servers if it is not already done as part of the process of enabling file logging as described in Section 10: File Logging for SOAP Services.

> **Note:** If your instance is configured with multiple nodes, perform this step on each Oracle E-Business Suite node of the multi-node environment.

10. Perform the following step on Oracle E-Business Suite 12.2 enabled for Online Patching to copy the SOAP configurations done above to the other file system:

> **Important:** If REST services are also used, complete the entire setup tasks for both SOAP and REST services before executing the `adop phase=fs_clone` command. For information on configuring REST services, refer to Section 2: Configuring Oracle E-Business Suite Integrated SOA Gateway for REST Services.

```
adop phase=fs_clone
```

> **Note:** Oracle E-Business Suite Integrated SOA Gateway would be configured on the other file system once the above command is run and the second file system will be active when a patch is applied using the following commands for Online Patching:
>
> 1. `adop phase=prepare`
> 2. `adop phase=apply`
> 3. `adop phase=cutover`
>
> During the cutover phase of online patching, Oracle E-Business Suite Integrated SOA Gateway services would be unavailable. Service invocation should resume once the cutover phase is complete.
>
> After the cutover, `isgagent.properties` on Oracle E-Business Suite is not synchronized between both file systems. File logging needs to be enabled again. For more information about file logging, refer to Section 10: File Logging for SOAP Services for details.
>
> **Additional Information:** Online Patching stores multiple application editions in the database, and has the provision of a dual application tier file system. At any given point in time, one of these file systems is active and designated as the 'run' file system (part of the running system) and the other as the 'patch' file system (either being patched or awaiting the start of the next patching cycle). Whichever is the current run file system appears to the user in exactly the same way as the single application tier file system did in Oracle E-Business Suite releases prior to Release 12.2.
>
> Please note that for a successful setup, either both the systems should be TLS enabled or none of them should be TLS enabled. For more information about Online Patching, see *Oracle E-Business Suite Release 12.2: Online Patching FAQ,* My Oracle Support Knowledge Document 1583902.1 and the *Oracle E-Business Suite Maintenance Guide*.

### Section 1.2: Configuration Steps on Oracle SOA Suite to Integrate with Oracle E-Business Suite

Perform the following setup steps on Oracle SOA Suite to integrate with Oracle E-Business Suite:

> **Note:** Follow steps 1, 2, 3a, and 3b mentioned below only if Oracle E-Business Suite is TLS (HTTPS) enabled. These steps may be required only if Oracle E-Business Suite is TLS enabled and the root CA certificate for Oracle E-Business Suite is not present in cacerts of Oracle SOA Suite. Step 3c should be performed, irrespective of whether Oracle E-Business Suite is TLS enabled or not.

1. Verify if the CA certificate to be imported from issuing authority is valid. Browse the secure EBS Login URL (`https://<HOST>:<PORT>/OA_HTML/AppsLogin`). Click on the Certificate Error icon. Ensure that there is no error message like "Invalid certificate". Invalid certificate might cause TLS handshake errors later in service generation. A valid self-signed certificate can be like:
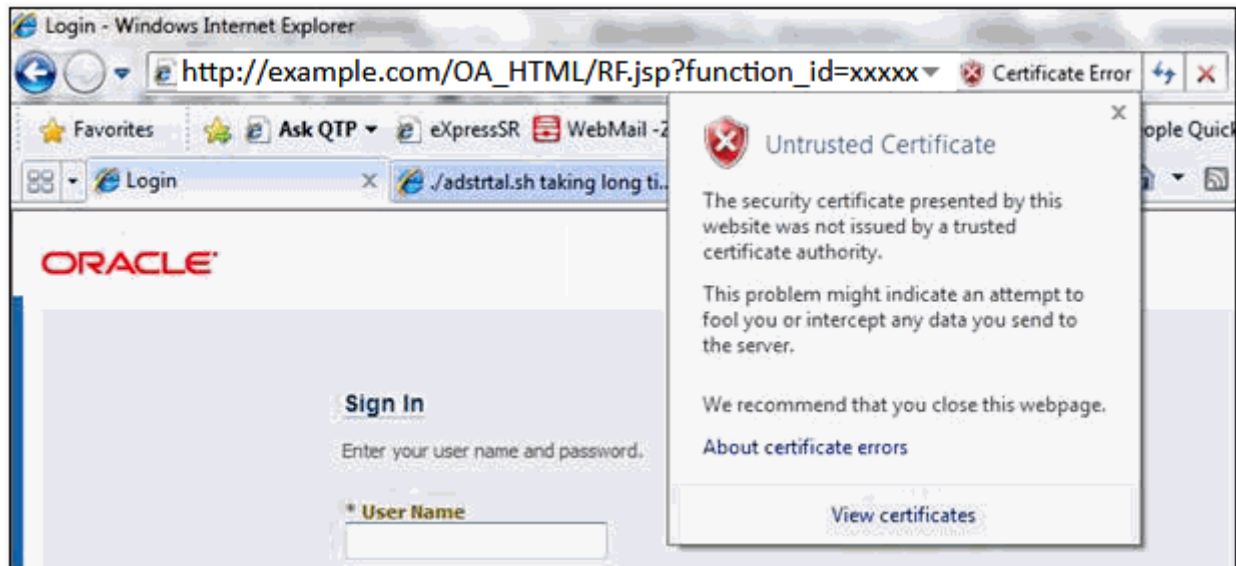
2. Import the CA certificate of the issuing authority from Oracle E-Business Suite into Oracle SOA Suite.

   Copy `{s_web_ssl_directory}/Apache/<certificate-name>.crt` from Oracle E-Business Suite to your Oracle SOA Suite server.

   > **Note:** Location of the CERTS directory is controlled using context variable `<s_web_ssl_directory>`.

   Use the following methods to locate which `jre` is being used by Oracle SOA Suite:

   - `source <DOMAIN_HOME>/bin/setDomainEnv.sh` (or `<DOMAIN_HOME>\bin\setDomainEnv.cmd` on Windows).
   - `echo $JAVA_HOME`: This will show which `jdk` is being used.
   - `<JRE_HOME>` environment variable might not be set, but `$JAVA_HOME/jre` could be used as `<JRE_HOME> location`.

   > **Note:** If your Oracle SOA Suite instance is configured with multiple nodes, `<DOMAIN_HOME>` should be that of Oracle SOA Suite administration and managed servers.
   >
   > **Tip:** If `$JAVA_HOME` is in the shared file system, you may perform this step once from the home directory of your Oracle SOA Suite administration or managed server.

   Navigate to the `<JRE_HOME>/lib/security` directory and import the Oracle E-Business Suite certificate into the default keystore (cacerts) using the following command:

   ```
   keytool -import -alias ApacheServer -file <path_of_certificate-name.crt> -trustcacerts -v -keystore cacerts -
   storepass <certificate_store_password>
   ```

   For example,

   ```
   keytool -import -alias ApacheServer -file /tmp/<certificate-name>.crt -trustcacerts -v -keystore ./cacerts -
   storepass password
   ```

   > **Note:** If the keytool command fails with keytool error, java.io.FileNotFoundException: cacerts (Permission denied), try the import with super user.

3. In the `setDomainEnv` script, perform the following tasks:

   > **Note:** If your Oracle SOA Suite instance is configured with multiple nodes, perform this step on the domain home directory of both the Oracle SOA Suite administration and managed servers.

   a. Set `JAVA_OPTIONS` with property for truststore:

      Note that `<JRE_HOME>` mentioned here indicates the same as described earlier in step 2 of this section.

      - In `setDomainEnv.sh` for Unix/Linux:

        ```
        JAVA_OPTIONS="${JAVA_OPTIONS} -Djavax.net.ssl.trustStore=<JRE_HOME>/lib/security/cacerts"
        export JAVA_OPTIONS
        ```

      - In `setDomainEnv.cmd` for Windows:

        ```
        set JAVA_OPTIONS=%JAVA_OPTIONS% -Djavax.net.ssl.trustStore=<JRE_HOME>\lib\security\cacerts
        ```

   b. Set `JAVA_OPTIONS` with property for JSSE (Oracle SOA Suite 11g only):
      - In `setDomainEnv.sh` for Unix/Linux:

```
JAVA_OPTIONS="${JAVA_OPTIONS} -Dweblogic.ssl.JSSEEnabled=true"
export JAVA_OPTIONS
```

- In `setDomainEnv.cmd` for Windows:

```
set JAVA_OPTIONS=%JAVA_OPTIONS% -Dweblogic.ssl.JSSEEnabled=true
```

   c. Search and set the `WLS_JDBC_REMOTE_ENABLED` property to enable exception handling (Oracle SOA Suite 11g only):
- In `setDomainEnv.sh` for Unix/Linux:

```
WLS_JDBC_REMOTE_ENABLED="-Dweblogic.jdbc.remoteEnabled=true"
```

- In `setDomainEnv.cmd` for Windows:

```
set WLS_JDBC_REMOTE_ENABLED=-Dweblogic.jdbc.remoteEnabled=true
```

4. Create a temporary folder (for example, `<TEMP>`) on the Oracle SOA Suite server. Please note that this folder can be created in any directory with **write permission** on the server.

> **Note:** For Oracle SOA Suite configured with multiple nodes, the `<TEMP>` folder should be created in the shared file system.

5. Create a folder called `<DBC>` on the Oracle SOA Suite server for the DBC file. This folder can be created in any directory with **write permission** on the server.

> **Note:** For Oracle SOA Suite configured with multiple nodes, the `<DBC>` folder should be created in the non-shared file system on each Oracle SOA Suite node. Use the same folder name `<DBC>` in the same directory path on all Oracle SOA Suite nodes.
>
> For example, if you create the `<DBC>` folder in the `/scratch/u01/` directory on the non-shared file system of the Oracle SOA Suite node1, then other Oracle SOA Suite nodes should also have `<DBC>` folder in the `/scratch/u01/` directory on their non-shared file system.

6. Copy the `EBS_BPEL_payload.zip` file created as part of the step 6 of Section 1.1 from Oracle E-Business Suite (`$INST_TOP/logs/appl/rgf/TXK/EBS_BPEL_payload.zip`) to the `<TEMP>` folder in the Oracle SOA Suite server. Unzip the `EBS_BPEL_payload.zip` file in the `<TEMP>` folder.

   Upon unzipping the file, the following folder hierarchy will be created in the `<TEMP>` folder:

   `<TEMP>/appsutil/<CONTEXT>/bpel/oracle/apps/fnd/txk/util`

   - Location of the DBC file: `<TEMP>/appsutil/<CONTEXT>/bpel`
   - Location of other files: `<TEMP>/appsutil/<CONTEXT>/bpel/oracle/apps/fnd/txk/util`

     The other files include `isg_contextfile.properties`, `TXKFMWGenericConfigUtility.class`, and `txkISGConfigurator.xml`.

> **Note:** For Oracle SOA Suite configured with multiple nodes, the `EBS_BPEL_payload.zip` file is generated for each Oracle SOA Suite node. This step may be performed using either one of the `EBS_BPEL_payload.zip` file.

7. Perform the following steps:
      a. Change directory to `<TEMP>/appsutil/<CONTEXT>/bpel`.

      b. Copy the DBC file `<SID>_<MACHINE1>.dbc` to the `<DBC>` folder.

      c. Change directory to `<DBC>`.

      d. Rename the DBC file `<SID>_<MACHINE1>.dbc` to `<SID>.dbc`.

> **Note:** For Oracle SOA Suite configured with multiple nodes, the DBC file should be copied to the `<DBC>` folder of each Oracle SOA Suite node. However, there is one-to-one mapping of the DBC file to the Oracle SOA Suite node. The `EBS_BPEL_payload.zip` file is generated for each Oracle SOA Suite node as mentioned in step 6 of Section 1.1. Ensure to extract and copy the DBC file from the respective `EBS_BPEL_payload.zip` file to the `<DBC>` folder in the corresponding Oracle SOA Suite node.
>
> For example, the `<SID>_<MACHINE1>.dbc` file should be copied to the `<DBC>` folder on Oracle SOA Suite machine1. It should also be renamed to `<SID>.dbc`. The `<SID>_<MACHINE2>.dbc` file should be copied and renamed to `<SID>.dbc` on Oracle SOA Suite machine2.

8. Change directory to `<TEMP>/appsutil/<CONTEXT>/bpel/oracle/apps/fnd/txk/util`.

9. Copy `txkISGConfigurator.xml` and `isg_contextfile.properties` to `<TEMP>/appsutil/<CONTEXT>/bpel`.

10. Update the context file `isg_contextfile.properties` from the `<TEMP>/appsutil/<CONTEXT>/bpel` directory as follows:

> **Note:** The following variables are used in the setups:
> - `SOA_ORACLE_HOME=<SOASUITE_SOAHOME_AS_DEFINED_IN_setDomainEnv_SCRIPT>`
>   For example, `SOA_ORACLE_HOME=D:\Oracle\SOASuitePS3\Oracle_SOA`
> - `WL_HOME=<WL_HOME_AS_DEFINED_IN_setDomainEnv_SCRIPT>`
>   For example, `WL_HOME= D:\Oracle\SOASuitePS3\wlserver_10.3`

Do not replace keyword `<DBSID>`. It would be replaced by the `txkISGConfigurator.xml` script.

```
#<DBSID>.ISG_FMW_VERSION=12C
<DBSID>.ISG_FMW_VERSION=12C
```

**Note:** The property `ISG_FMW_VERSION` is required if you use Oracle SOA Suite 12c.

```
#ISG_SOA_EXTERNAL_URL=<SOA_MANAGED_SERVER_URL>
ISG_SOA_EXTERNAL_URL=http://host01.example.com:8001

#ISG_SOA_INTERNAL_URL=<SOA_MANAGED_SERVER_URL>
ISG_SOA_INTERNAL_URL=http://host01.example.com:8001
```

**Note:** For Oracle SOA Suite configured with multiple nodes, provide the load balancer URL of the SOA managed server in the `ISG_SOA_EXTERNAL_URL` and `ISG_SOA_INTERNAL_URL` parameters.

```
#ISG_SOA_ADMIN_SERVER_URL=<SOA_ADMIN_SERVER_URL>
ISG_SOA_ADMIN_SERVER_URL=http://host01.example.com:7001

#ISG_SOA_ADMIN_USER=ASADMIN
ISG_SOA_ADMIN_USER=ASADMIN
```

Comment out or delete the line `ISG_SOA_ADMIN_USER_PASSWORD=<PASSWORD>`

```
#ISG_SOA_ORACLE_HOME=<SOA_ORACLE_HOME>
ISG_SOA_ORACLE_HOME=/u01/oracle/fmwhome/oracle_soa
```
(For Windows, provide absolute path with forward slash instead of back slash, for example `C:/fmwhome/oracle_soa`.)

```
# <DBSID>.ISG_TEMP_DIRECTORY_LOCATION = <TEMP_DIRECTORY_LOCATION_WITH_WRITE_PERMISSION>
<DBSID>.ISG_TEMP_DIRECTORY_LOCATION=<ABSOLUTE_PATH_TO_TEMP_FOLDER>/<TEMP_FOLDER_NAME>
```
(For Windows, provide absolute path with forward slash, instead of back slash. For example, `C:/temp`.) This location must have **write permission**.

```
# <DBSID>.ISG_EBS_EXTERNAL_URL=<PROTOCOL>://<HOST>:<PORT>
<DBSID>.ISG_EBS_EXTERNAL_URL=<PROTOCOL>://<HOST>:<PORT>

# <DBSID>.ISG_EBS_INTERNAL_URL=<PROTOCOL>://<HOST>:<PORT>
<DBSID>.ISG_EBS_INTERNAL_URL=<PROTOCOL>://<HOST>:<PORT>
```

**Note:** Both `ISG_EBS_EXTERNAL_URL` and `ISG_EBS_INTERNAL_URL` should be the same URL. Ensure that you can access the Applications Login page from the SOA server with this URL.

11. Download Patch 29832529 (ISG Application Patch for 12.2 (19_3_1) to the `<TEMP>/appsutil/<CONTEXT>/bpel` folder and unzip it to extract the following files in the `bpel` folder:

    - Patch 29832529/isgmjf.jar
    - Patch 29832529/fndext.jar
    - Patch 29832529/soamon.jar
    - Patch 29832529/isgserviceprovider.ear
    - Patch 29832529/prepackagedsars.zip

12. Perform the following steps to execute the `txkISGConfigurator.xml setup` script:

    **Note:** If your Oracle SOA Suite instance is configured with multiple nodes or in a cluster, you may have a separate domain home directory for Oracle SOA Suite administration and managed servers. Perform this step for each domain home directory of Oracle SOA Suite administration and managed servers.

    - First, execute script on the SOA node `n` (secondary nodes). When prompted, provide target type as "cluster", and select "No" when prompted to stop the WebLogic servers.
    - Then, execute script on the SOA node `1` (primary node). When prompted, provide target type as "cluster", and select "Yes" when prompted to stop the WebLogic servers.

    a. Change to Bash shell and source the following files:

    ```
    Source <WL_HOME>/server/bin/setWLSEnv.sh
    ```

    ```
    Source <DOMAIN_HOME>/bin/setDomainEnv.sh
    ```

    `<DOMAIN_HOME>` represents the ISG-SOA Domain home.

    b. Start Oracle SOA Suite administration and managed servers from the command prompt if they are not in running state prior to performing the next step. If Oracle SOA Suite is configured for multiple SOA nodes, ensure the SOA load balancer and node managers are up and running.

    c. Ensure that no changes are active on Oracle SOA Suite administration and managed servers before executing the `txkISGConfigurator.xml` script using the following command from the `<TEMP>/appsutil/<CONTEXT>/bpel` folder:

```
ant -f txkISGConfigurator.xml setup
```

The following prompts appear:

- `Enter Oracle WebLogic Server Administration Console URL (host:port) :`

  Provide the Oracle SOA Suite WebLogic administration server's `<HOST>:<PORT>`. For example, `host01.example.com:7001`.

  > **Note:** For Oracle SOA Suite configured with multiple nodes, if the Oracle SOA Suite WebLogic administration server is configured with virtual host, provide the virtual host and port of that administration server.

- `Enter Oracle WebLogic Server Admin User Name : [weblogic]`

  '`weblogic`' is the default Oracle WebLogic Server Admin user name.

- `Enter the password for user ${wlsuser} :`

  Provide the associated password for above Oracle WebLogic Server Admin user name.

- `Enter the absolute path to the DBC File :`

  Enter the path to the DBC file: `<DBC>/<SID>.dbc`

- `Enter the target type : ([server], cluster)`

  If Oracle SOA Suite is in a single node setup environment, press the [Enter] key for the default selection of `[server]`. Otherwise, enter `cluster` for Oracle SOA Suite in multi-node setup.

- `Enter the SOA Server Name : [soa_server1]`

  If `server` is selected as the target type, then `soa_server1` is shown. If `cluster` is selected as the target type, then `soa_cluster` is displayed instead.

  Provide the Oracle SOA Suite managed server name, such as `soa_server1`, or `soa_cluster`.

- `The script will forcefully stop the Oracle WebLogic Servers now. Do you want to proceed (yes/no)?`

  If Oracle SOA Suite is in a single node setup environment, enter `yes` to stop the server. If it is in a multi-node environment,

    - When the script is executed on a secondary node, enter `No`.
    - When the script is executed on the primary node, enter `yes` to stop the server.

  > **Note:** This `ant -f txkISGConfigurator.xml setup` command performs the following tasks:
  >
  > 1. Copy `isgmjf.jar` to ${WL_HOME}/server/lib/mbeantypes/isgmjf.jar.
  > 2. Copy `fndext.jar` to ${DOMAIN_HOME}/lib/fndext.jar.
  > 3. Create `isg.properties` and update it with required values.
  > 4. Update `setSOADomainEnv.sh` script to set the context file in the JAVA_OPTIONS.
  > 5. Copy `soamon.jar` to the `$ORACLE_SOA_HOME/soa/modules/oracle.soa.ext_11.1.1` directory. Rebuild `oracle.soa.ext.jar` by running `build.xml`.
  >
  > After running the `txkISGConfigurator.xml setup` command, `isg.properties` will have the following default values for optional scheduler properties:
  >
  > - `ISG_SCHEDULER_CONFIG_FILE = DEFAULT`
  > - `ISG_SCHEDULER_LOG_ENABLED = false`
  >
  >   To start the scheduler, `ISG_SCHEDULER_CONFIG_FILE` property needs to be set to `DEFAULT`. It indicates that the default scheduler configuration file will be used.
  >
  >   The value for property `ISG_SCHEDULER_LOG_ENABLED` is case sensitive. Value can be either "true" or "false". The property `ISG_SCHEDULER_LOG_ENABLED` needs to be set to 'true' only when you need scheduler logs to be written. It is written to a file "ISGScheduler.log" in the ISG temporary directory location.
  >
  > If the following error occurs while running the above command, then Oracle SOA Suite servers may not be stopped. Please stop the servers and try it again.
  >
  > "Unable to rename old file (%FMW_HOME%\Oracle_SOA1\soa\modules\oracle.soa.ext_11.1.1\oracle.soa.ext.jar) to temporary file."

13. Start Oracle SOA Suite administration and managed servers from the command prompt if they are not in running state prior to performing the next step. If Oracle SOA Suite is configured for multiple SOA nodes, ensure the SOA load balancer and node managers are up and running.

14. Ensure that no changes are active on Oracle SOA Suite administration and managed servers before executing the `txkISGConfigurator.xml` script using the following command from the `<TEMP>/appsutil/<CONTEXT>/bpel` folder:

```
Source <DOMAIN_HOME>/bin/setDomainEnv.sh
ant -f txkISGConfigurator.xml configure
```

> **Note:** If your instance is configured with multiple nodes, select the option for "Cluster" and provide the cluster name:

- ◦ Enter the target type : ([server], cluster)

  If Oracle SOA Suite is in a single node setup environment, press the [Enter] key for the default selection of `server`. Otherwise, enter `cluster` for Oracle SOA Suite in multi-node setup.

- ◦ Enter the SOA Server Name : [soa_cluster]

  Provide the Oracle SOA Suite managed server name or cluster name.

Perform this step by sourcing the domain home directory of the Oracle SOA Suite managed servers.

For a multi-node environment, this script should be executed on the SOA node **1** (primary node).

---

**Important:** Ensure that Oracle SOA Suite is running. This command performs the following tasks:

1. Create a DataSource with JNDI (Java Naming and Directory Interface) name as `jdbc/<SID>`.
2. Create connection factory (Outbound Connection factory) with name `eis/Apps/<SID>`.
3. Deploy the application `isgserviceprovider.ear`.
4. Update the security realm.
5. Create Map-Key credential for servlet authentication.

**Notes**: All configuration steps can be executed separately; however, Oracle recommends that use the above stated command (`ant -f txkISGConfigurator.xml configure`), instead of configuring each step separately as described below:

1. `ant -f txkISGConfigurator.xml createDataSource`
2. `ant -f txkISGConfigurator.xml deployApplication`
3. `ant -f txkISGConfigurator.xml updateSecurityRealms -DauthenticatorName=isgauth1`
4. `ant -f txkISGConfigurator.xml createOutboundConnections`
5. `ant -f txkISGConfigurator.xml createCredentials`

Please note that some execution errors may appear after successfully running the script. For examples, the errors below indicate that the intended configuration already exists when the script tries to create one. These errors can be safely ignored.

```
Command FAILED, Reason: JPS-01007: The credential with map oracle.wsm.security and key basic.credentials already
exists.

Command FAILED, Reason: Cannot add principal to application role.
```

---

15. (Optional) Enable file logging on Oracle SOA Suite.

    For more information about file logging, refer to Section 10: File Logging for SOAP Services.

16. If Oracle SOA Suite is installed on AIX, Solaris, or HP-UX Itanium platform, modify the setting of the `POST_CLASSPATH` variable in the `<DOMAIN_HOME>/bin/setDomainEnv.sh` file as follows:

```
if ["${POST_CLASSPATH}" != "" ]; then

        POST_CLASSPATH="${COMMON_COMPONENTS_HOME}/modules/oracle.jrf_11.1.1/jrf-
        client.jar${CLASSPATHSEP}${POST_CLASSPATH}"

        POST_CLASSPATH="${COMMON_COMPONENTS_HOME}/modules/oracle.jrf_11.1.1/jrf.jar${CLASSPATHSEP}${POST_CLASSPATH}"

        export POST_CLASSPATH

else

        POST_CLASSPATH="${COMMON_COMPONENTS_HOME}/modules/oracle.jrf_11.1.1/jrf-client.jar"

        POST_CLASSPATH="${COMMON_COMPONENTS_HOME}/modules/oracle.jrf_11.1.1/jrf.jar${CLASSPATHSEP}${POST_CLASSPATH}"

        export POST_CLASSPATH

fi
```

17. Stop and restart all Oracle SOA Suite administration and managed servers from the command prompt. If Oracle SOA Suite is configured for multiple SOA nodes, ensure the SOA load balancer and node managers are up and running.

After configuring Oracle E-Business Suite Integrated SOA Gateway Release 12.2.3 or higher, validate the setup by following steps described in Section 6: Validating Oracle E-Business Suite Integrated SOA Gateway Setup for SOAP Services.

## Part B: Configuring Oracle E-Business Suite REST Services

This section describes how to configure Oracle E-Business Suite REST services provided through Oracle E-Business Suite Integrated SOA Gateway.

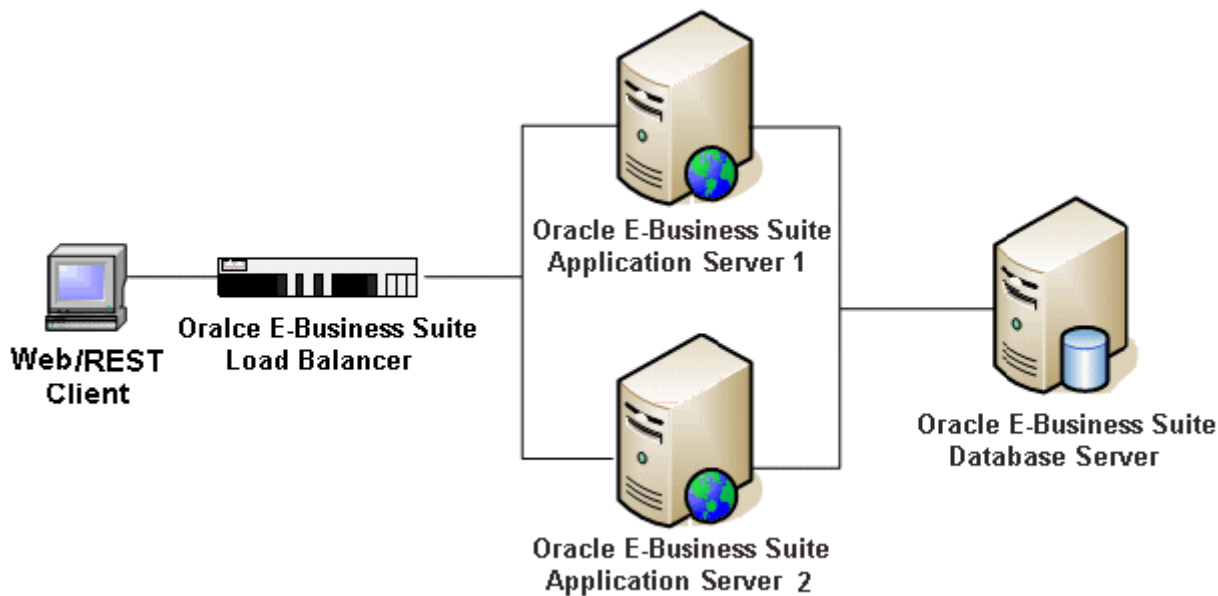- Section 2: Configuring Oracle E-Business Suite Integrated SOA Gateway for REST Services

## Section 2: Configuring Oracle E-Business Suite Integrated SOA Gateway for REST Services

**Preparation for Oracle E-Business Suite Integrated SOA Gateway REST Services in a Multi-node Environment**

To provide high availability of Oracle E-Business Suite REST services, Oracle E-Business Suite Integrated SOA Gateway recommends multiple nodes of an Oracle E-Business Suite environment.

The following diagram represents the high level architecture for Oracle E-Business Suite REST services in a multi-node environment. Similar to the multi-node environment for SOAP services, but without the requirement of Oracle SOA Suite, this diagram contains a hardware load balancer configuration with a single

entry point in Oracle E-Business Suite to load balance the web application running on Oracle E-Business Suite application servers 1 and 2. All users access Oracle E-Business Suite application through a single URL.



For information on configuring Oracle E-Business Suite Release 12.2 with multiple nodes, see *Using Load-Balancers with Oracle E-Business Suite Release 12.2*, My Oracle Support Knowledge Document 1375686.1.

> **Note:** Ensure that your Oracle E-Business Suite instance is on the latest AD TXK Delta level. Refer to My Oracle Support Knowledge Document 1617461.1, *Applying the Latest AD and TXK Release Update Packs to Oracle E-Business Suite Release 12.2*.
>
> Apply the consolidated Patch 29832501:R12.OWF.C, ISG Consolidated Patch for Release 12.2 (19_3_1), to your instance if it is not already applied. This patch is required for your instance regardless of a single node or a multi-node environment. Please note that this patch has two prerequisite patches listed in the patch readme which require `adop phase=fs_clone` to be run after the patch application.
>
> **Note:** REST services require Oracle Fusion Middleware Patch 17495356 on Oracle E-Business Suite Weblogic Server. This patch would be present on a 12.2.3 instance configured using My Oracle Support Knowledge Document 1594274.1, Oracle E-Business Suite Release 12.2: Consolidated List of Patches and Technology Bug Fixes.

Perform the following tasks to configure Oracle E-Business Suite Integrated SOA Gateway for REST services.

> **Note:** The first step in this section is not required if you have already performed the setup tasks for SOAP services described in Section A: Configuring Oracle E-Business Suite SOAP Services.

1. Enable ASADMIN user with the Integration Administrator role (or the Integration Repository Administrator role in Release 12.2.3).

   Refer to Section 3: Enabling ASADMIN User with the Integration Administrator Role for details.

2. Create a folder called `<ISG_TEMP>` in Oracle E-Business Suite. This folder should have **write permission**.

   > **Note:** If your Oracle E-Business Suite instance is configured with multiple nodes, the `<ISG_TEMP>` folder should be created on the shared file system. All Oracle E-Business Suite nodes should have access to this folder.

3. In the `$INST_TOP/soa/` folder, update `ISG_TEMP_DIRECTORY_LOCATION` property in the `isgagent.properties` file as follow:

   ```
   <SID>.ISG_TEMP_DIRECTORY_LOCATION=<ISG_TEMP>
   ```

   > **Note:** If your Oracle E-Business Suite instance is configured with multiple nodes, perform this step in the `$INST_TOP/soa/isgagent.properties` file on each Oracle E-Business Suite node.

4. Run the `txkISGConfigurator.xml` utility with "`ebsSetup`" argument. The script will stop and restart the servers.

   > **Note:** If your Oracle E-Business Suite instance is configured with multiple nodes, perform this step on the Oracle E-Business Suite primary node.

   For example,

   ```
   ant -f $JAVA_TOP/oracle/apps/fnd/txk/util/txkISGConfigurator.xml ebsSetup -DforceStop=yes
   ```

   The following prompts appear:

- Enter the password for user APPS:

  Provide the associated password for the user name APPS.

- Enter the ASADMIN user name : [ASADMIN]

  ASADMIN is the default Oracle E-Business Suite user name.

- Enter the password for user ASADMIN :

  Provide the associated password for the user name ASADMIN.

- The script will forcefully stop the Oracle WebLogic Server now. Do you want to proceed (yes/no)? (yes, no)

  Enter yes to stop the server. The script will stop the server and then restart the server.

> **Note:** The above script creates and deploys the data source "OAEADatasource" on Oracle E-Business Suite WebLogic Admin server and 'oafm_cluster1' server. It also creates the Authentication Provider "IsgAuthenticator" to be used by the REST services and stops the Weblogic Admin Server after accepting a confirmation from the user.
>
> Note that apart from ISG, the data source "OAEADatasource" is used by other Oracle E-Business Suite edge applications. You will have to size up the data source connection pool accordingly. If the data source "OAEADatasource" is already created, use the –DforceDataSourceExists=true option to replace the existing data source. To proceed the setup without re-creating or overwriting the data source, use the option –DignoreDataSourceExists=true.
>
> Use the option –DforceAuthenticationProviderExists=true to re-create the Authentication Provider.

5. Execute adop phase=fs_clone on Oracle E-Business Suite 12.2 enabled for Online Patching to copy the REST configurations done above to the other file system. Refer to step 10 described in Section 1.1: Setup Tasks on Oracle E-Business Suite Release 12.2.3 or Higher for details.

> **Important:** If SOAP services are also used, complete the entire setup tasks for both SOAP and REST services before executing the adop phase=fs_clone command. For information on configuring Oracle E-Business Suite SOAP services, refer to Section A: Configuring Oracle E-Business Suite SOAP Services.

After configuring Oracle E-Business Suite REST services, validate the setup by following steps described in Section 7: Validating Oracle E-Business Suite Integrated SOA Gateway Setup for REST Services.

## Part C: Common Steps for SOAP and REST Services

## Section 3: Enabling ASADMIN User with the Integration Administrator Role

Use the following steps to enable ASADMIN user with the Integration Administrator role (or the Integration Repository Administrator role in Oracle E-Business Suite Release 12.2.3 and earlier releases):

1. Log in to Oracle E-Business Suite as a SYSADMIN user and enter the associated password.

2. Expand the User Management responsibility from the main menu of the Oracle E-Business Suite Home Page.

3. Click the Users link to open the User Maintenance page.

4. Enter "ASADMIN" in the User Name field and click **Go** to retrieve the "ASADMIN" user.

5. Click the **Update** icon next to the "ASADMIN" user to open the Update User window.

6. Remove the Active To date field and click **Apply**.

7. Click **Reset Password** next to the "ASADMIN" user to open the Reset Password window. Make sure that the ASADMIN password is at least eight characters long.

   > **Note**: Before resetting the password, ensure that the MANUAL_PWD_RESET profile option is enabled.

8. Enter new password twice and click **Submit**.

   > **Important**: After you have completed the setup tasks for Oracle E-Business Suite Integrated SOA Gateway, do not change the "ASADMIN" user password. Otherwise, you would have to perform the setup tasks again.

9. In the Update User window, click **Assign Roles**.
   a. In the search window, select Code from the Search By drop-down list and enter "UMX|FND_IREP_ADMIN" in the value text box.
   b. Click **Select**.
   c. Enter a justification in the Justification field and click **Apply**. You will see a confirmation message indicating you have successfully assigned the role.

Return to your perspective section to continue your configuration.

Overview

## Section 4: Installing and Upgrading Oracle SOA Suite and Oracle WebLogic Server for SOAP Services

To configure Oracle E-Business Suite Integrated SOA Gateway for SOAP services, ensure you have Oracle SOA Suite, Oracle WebLogic Server, and Oracle Database in place. For the supported release versions of Oracle SOA Suite and Oracle WebLogic Server, refer to ISG Release 12.2 Certification Matrix.

This section includes the following topics:

- Section 4.1: Installing Oracle SOA Suite
- Section 4.2: Upgrading Oracle SOA Suite 11g to Oracle SOA Suite 12c in an Existing Configuration

## Section 4.1: Installing Oracle SOA Suite

Install Oracle WebLogic Server and Oracle SOA Suite using either one of the following options from Oracle Software Delivery Cloud (https://edelivery.oracle.com) or Oracle Technology Network (https://download.oracle.com).

For new installation of Oracle SOA Suite:

- For Oracle SOA Suite 12c and Oracle E-Business Suite Adapter 12c on Oracle WebLogic Server 12c

  Refer to Roadmap for Installing and Configuring the Standard Installation Topologies, as described in *Oracle Fusion Middleware Installing and Configuring Oracle SOA Suite and Business Process Management*.

  - Ensure to install Oracle WebLogic Server as part of the "Install Fusion Middleware Infrastructure" step. For more information, see *Oracle Fusion Middleware Installing and Configuring the Oracle Fusion Middleware Infrastructure*.

    For Oracle WebLogic Server installation, refer to *Oracle Fusion Middleware Installing and Configuring Oracle WebLogic Server and Coherence*.

  - Create and configure a new Oracle WebLogic Server domain for ISG-SOA, instead of extending an existing WebLogic domain.

- For Oracle SOA Suite 11g and Oracle Applications Adapter 11g on Oracle WebLogic Server 11g

  Refer to *Oracle Fusion Middleware Installation Guide for Oracle SOA Suite and Oracle Business Process Management Suite*. While following steps in Oracle SOA Suite Installation Roadmap, ensure to:

  - Install Oracle WebLogic Server as part of the "Install an Application Server" step.

    For Oracle WebLogic Server installation, refer to the *Oracle Fusion Middleware Installation Guide for Oracle WebLogic Server 10.3.6*.

  - Create and configure a new Oracle WebLogic Server domain for ISG-SOA, instead of extending an existing WebLogic domain.

For existing Oracle SOA Suite installation:

  - Follow the installation roadmap mentioned above for your Oracle SOA Suite version, but begin with the "Create a WebLogic domain" step for Oracle SOA Suite 12c or the "Create and configure your Oracle WebLogic Server Domain" step for Oracle SOA Suite 11g. Instead of extending an existing WebLogic domain, create and configure a new Oracle WebLogic Server domain for ISG-SOA.

## Section 4.2: Upgrading Oracle SOA Suite 11g to Oracle SOA Suite 12c in an Existing Configuration

If your Oracle E-Business Suite Integrated SOA Gateway is already configured with Oracle SOA Suite 11g (11.1.1.9.0) for SOAP-based services and if such Oracle SOA Suite needs to be upgraded to Oracle SOA Suite 12c (12.2.1.2), perform the following steps:

1. Perform the Oracle Fusion Middleware Pre-Upgrade Tasks, as described in *Oracle Fusion Middleware Upgrading SOA Suite and Business Process Management*.

   Additionally, ensure the following tasks are in place:

   a. Back up the `setDomainEnv.sh`, `setSOADomainEnv.sh`, and `config.xml` files.
   b. If you are using the file-based policy store, create and reassociate OPSS and Audit service to use the database-based or LDAP-based policy store as mentioned in Reassociating the OPSS Security Store, *Oracle Fusion Middleware Securing Applications with Oracle Platform Security Services.*
   c. Upgrade JDK certified for Oracle SOA Suite 12c. Ensure you uptake the latest policy files for encryption and decryption.

2. Perform the upgrade by following the instructions described in Upgrading SOA Suite and Business Process Management from 11*g*, *Oracle Fusion Middleware Upgrading SOA Suite and Business Process Management*.

   > **Note:** Before executing `reconfig.sh` to reconfigure the domain, ensure to remove the following text from `<DOMAIN_HOME>/config/config.xml`:
   >
   > ```
   > <sec:authentication-provider xmlns:orac="oracle.apps.fnd.isg" xsi:type="orac:isg-authenticatorType">
   >     <sec:name>ebssid_IsgAuthenticator</sec:name>
   >     <sec:control-flag>SUFFICIENT</sec:control-flag>
   >     <orac:ebs-connection-reference>jdbc/ebssid </orac:ebs-connection-reference>
   > </sec:authentication-provider>
   > ```

   For information about upgrading Oracle SOA Suite in a multi-node environment, see Upgrading a Clustered SOA Environment, *Oracle Fusion Middleware Upgrading SOA Suite and Business Process Management*.

   Additionally, ensure the following tasks are in place:

   a. Install 12c binaries on the SOA secondary nodes where only managed servers are running. Use the same path as used for installing 12c binaries on the primary node for this installation.
   b. Ensure to stop Oracle SOA Suite administration and managed servers as well as associated processes in the sequence, as described in Stopping Servers and Processes, *Oracle Fusion Middleware Upgrading SOA Suite and Business Process Management*.
   c. Perform a complete upgrade of 11g environment on the primary node by following the tasks listed in the upgrade roadmap table in Upgrading a Clustered Topology.
   d. After a successful upgrade, propagate the domain configuration of the primary node (for example, `SOAHOST1`) to a secondary node (for example, `SOAHOST2`).
      - On SOA Primary Node (`SOAHOST1`):
        - Step 1: Execute the `pack` command on the SOA primary node (See Executing the pack command on the server where the Admin Server and one of the Managed Servers is installed)

          ```
          cd /12c_ORACLE_HOME/oracle_common/common/bin
          ./pack.sh -domain=/11g_DOMAIN_HOME -template=domainupgradetemplate.jar -
          template_name=domainupgradetemplate -managed=true
          ```

- Step 2: Copy the template you just created from the previous step to the secondary node `SOAHOST2` (See Copying the template file created in the previous step to SOAHOST2)

```
scp domainupgradetemplate.jar company@SOAHOST2:12c_ORACLE_HOME/oracle_common/common/bin
```

- On SOA Secondary Node (`SOAHOST2`):
  - Step 3: Execute the `unpack` command on the SOA secondary node (See Executing the unpack Command from the 12c Oracle Home on SOAHOST2)

    Ensure to empty the contents of 11g_DOMAIN_HOME on the SOA secondary node. Back up your files if this is not already performed.

```
cd /12c_ORACLE_HOME/oracle_common/common/bin
./unpack.sh -template=domainupgradetemplate.jar - domain=11g_DOMAIN_HOME
```

    e. Perform validation checks to ensure domain structures are successfully created by following the instructions in Completing the following verification steps after the unpack.
    f. Start the Oracle SOA Suite administration and managed servers by performing the tasks as described in Starting the Admin Server and SOA Managed Servers.
    g. Remove Oracle Web Services Manager (OWSM) targets from SOA and OSB clusters by performing the tasks as described in Removing OWSM Targets from SOA and OSB Clusters.
    h. Rewire the OWSM Policy Manager components by following the instructions as described in Updating OWSM Cross-Component Wiring.

3. Perform the post-upgrade tasks by following the instructions in Performing Post Upgrade Tasks.

Additionally, ensure the following tasks are in place:

    a. Ensure that `setDomainEnv.sh` and `setSOADomainEnv.sh` have `SOA_ORACLE_HOME` set to `12C ORACLE_HOME`.

    b. Import Oracle E-Business Suite certificates to a new `jdk` truststore by following the instructions as described in step 2 of Section 1.2 in this document.

    c. Update `isg_contextfile.properties` from the `<TEMP>/appsutil/<CONTEXT>/bpel` directory by adding the following:

```
#<DBSID>.ISG_FMW_VERSION=12C
<DBSID>.ISG_FMW_VERSION=12C
```

Provide a new Oracle SOA Suite 12c Oracle Home for `ISG_SOA_ORACLE_HOME` as:

```
#ISG_SOA_ORACLE_HOME=<NEW_12C_SOA_ORACLE_HOME>
ISG_SOA_ORACLE_HOME=/u01/Oracle/Middleware12212/Oracle_Home/soa
```

(For Windows, provide an absolute path with forward slash instead of back slash, for example, `C:/fmwhome/oracle_soa`.)

    d. Perform the tasks as described in step 12 of Section 1.2 to execute the `txkISGConfigurator.xml setup` script.

> **Note:** If your Oracle SOA Suite instance is configured with multiple nodes or in a cluster, you may have a separate domain home directory for Oracle SOA Suite administration and managed servers. Perform this step for each domain home directory of Oracle SOA Suite administration and managed servers.
>
> - First, run `txkISGConfigurator.xml setup` on the SOA node `SOAHOST2` (secondary nodes). When prompted, provide target type as "cluster", and select "No" when prompted to stop the WebLogic servers.
> - Then, run `txkISGConfigurator.xml setup` on the SOA node `SOAHOST1` (primary node). When prompted, provide target type as "cluster", and select "Yes" when prompted to stop the WebLogic servers.

When changing to Bash shell in subtask "a" of step 12, use the following instructions to source the files instead:

```
Source <NEW_12C_WL_HOME>/server/bin/setWLSEnv.sh
```

```
Source <DOMAIN_HOME>/bin/setDomainEnv.sh
```

Note that `<NEW_12C_WL_HOME>` is the new Oracle SOA Suite 12c WebLogic Home; `<DOMAIN_HOME>` is the existing ISG-SOA Domain home.

    e. Start the Oracle SOA Suite administration and managed servers from the command prompt if they are not in running state prior to performing the next step.
    f. Ensure that no changes are active on the Oracle SOA Suite administration and managed servers before executing `txkISGConfigurator.xml updateSecurityRealms` using the following commands from the `<TEMP>/appsutil/<CONTEXT>/bpel` folder:

> **Note:** In a multi-node environment, this script should be executed on the SOA node `SOAHOST1` (primary node).

```
Source <NEW_12C_WL_HOME>/server/bin/setWLSEnv.sh
```

```
Source <DOMAIN_HOME>/bin/setDomainEnv.sh
```

```
ant -f txkISGConfigurator.xml updateSecurityRealms -DauthenticatorName=isgauth1
```

    g. Stop and restart all Oracle SOA Suite administration and managed servers from the command prompt. Ensure to source `setDomainEnv.sh` before starting the servers.

> **Note:** Follow the sequence mentioned in this section to stop the servers (step 2b) and restart the servers (step 2f) for a multi-node environment.

> If Oracle SOA Suite is configured with multiple nodes or in a cluster, ensure the load balancer and node manager are up.

4. After the upgrade, verify the setup for SOAP services as described in <u>Section 6</u>.

> **Note**: For troubleshooting information, refer to <u>Troubleshooting the Upgrade</u>.

<u>Overview</u>

## Section 5: Enabling TLS on Oracle SOA Suite

Perform the following steps to import a CA-issued SSL certificate to Oracle SOA Suite administration and managed servers.

1. Create a keystore for identity and Certificate Signing Request (CSR) through the following steps:
   a. Create a keystore for identity on Oracle SOA Suite.

   ```
   cd /u01/data/domains/SOA_domain/security
   ```

   ```
   keytool -genkey -alias mykey -keyalg RSA -sigalg SHA256withRSA -keysize 2048 -keystore soaidentity.jks -keypass
   password -storepass password -validity 3650 -dname "CN=<SOAHOST>,O=Oracle Corporation,L=Redwood
   City,ST=California,C=US"
   ```

   b. Create a CSR for the above keystore. For example, the following command creates a CSR in the file `server_oc.csr`:

   ```
   keytool -certreq -sigalg SHA256withRSA -alias myKey -keystore soaidentity.jks -file server_oc.csr
   ```

   c. Submit the CSR to CA.
   d. Copy the certificates received on Oracle SOA Suite.
   e. Import the certificates into the keystore through the following sequence:

   ```
   keytool -import -alias root -trustcacerts -file rootCA.pem -keystore soaidentity.jks -storepass password

   keytool -import -alias intermediate -trustcacerts -file interCA.pem -keystore soaidentity.jks -storepass password

   keytool -import -alias mykey -trustcacerts -file serverCert.crt -keystore soaidentity.jks -storepass password
   ```

2. Configure custom identity and custom trust using the following steps:

   a. Log in to Oracle WebLogic Server Administration Console.

      In the Administration Console, expand **Environment** and then select **Servers** from the Domain Structure. On the Servers page, click the name of the server <server_name_where_ssl_has_to_be_configured>. To configure the Oracle SOA Suite administration server, click the administration server name. To configure an Oracle SOA Suite managed server, click the managed server name.

      Select the **Configuration** tab, then the **General** subtab and then select the **SSL Listen Port Enabled** check box.

      You may use the default SSL Listen Port mentioned for the server.

   b. Select the **Keystores** subtab under the **Configuration** tab.

      1. Click the drop-down menu next to Keystores and select "Custom Identity and Custom Trust".

      2. Enter the following information:
         - In the **Identity** section, define attributes for the identity keystore:
           - Custom Identity Keystore: enter <LOCATION_OF_IDENTITY_KEYSTORE_THAT_YOU_HAVE_CREATED>. For example, /u01/data/domains/SOA_domain/security/soaidentity.jks.

             By default Oracle WebLogic Server will look for this keystore file in the domain_home location.

           - Custom Identity Keystore Type : jks
           - Custom Identity Keystore Passphrase: enter <your_storepass>, such as `password`.
         - In the **Trust** section, define attributes for the trust keystore:
           - Custom Trust Keystore: enter <LOCATION_OF_IDENTITY_KEYSTORE_THAT_YOU_HAVE_CREATED>. For example, /u01/data/domains/SOA_domain/security/soaidentity.jks.

             By default Oracle WebLogic Server will look for this keystore file in the domain_home location.

           - Custom Trust Keystore Type : jks
           - Custom Trust Keystore Passphrase: enter <your_storepass>.
         - Save the changes.

   c. Click the **SSL** subtab under the **Configuration** tab.

      Enter the following information:

         - Private Key Alias: Enter <your_certificate_alias>, such as `mykey`.
         - Private Key Passphrase: Enter <your_keypass>, such as `password`.
         - Save the changes.
         - Click the Advanced field, and set the "Hostname Verification:" to 'None' from the drop-down menu.

           Select the hostname verification as 'None' if the CN of the certificate is not the same as the hostname of the machine where Oracle WebLogic Server is installed.

   d. Verify your TLS configuration.
         - If you are configuring the Oracle SOA Suite administration server, access your Oracle WebLogic Server Administration Console over the following URL and verify the secure icon is present:

           ```
           https://<SOAHOST>:<SSL_PORT_FOR_ADMIN_SERVER>/console/
           ```

- If you are configuring Oracle SOA Suite managed servers, access the following URL in a web browser:

```
https://<SOAHOST>:<SSL_PORT_FOR_MANAGED_SERVER>/soa-infra/
```

Overview

## Section 6: Validating Oracle E-Business Suite Integrated SOA Gateway Setup for SOAP Services

To ensure the successful installation or upgrade to Release 12.2.x, the validation tests on Generate, Deploy, and Undeploy actions can be performed in the following ways:

- Section 6.1: Validating SOAP Services Setup from the Integration Repository User Interface
- Section 6.2: (Optional) Validating SOAP Services Setup Using Oracle E-Business Suite Integrated SOA Gateway Diagnostic Script

### Section 6.1: Validating SOAP Services Setup from the Integration Repository User Interface

After configuring Oracle E-Business Suite Integrated SOA Gateway for SOAP services, you need to validate the setup by performing the design-time activities from the Integration Repository user interface.

1. Log in to Oracle E-Business Suite Home Page through a user who has the FND_IREP_ADMIN role.

2. Select the Integrated SOA Gateway responsibility from the navigation menu and then select the Integration Repository link. Click the **Search** button.

3. Search an interface by entering an interface name (for example, enter "ECX:CBODI" in the Internal Name field) and click the **Go** button to execute the search. Click a desired name link (for example, "XML Gateway: Confirmation Message") from the search result table. The Interface Details page for the selected interface is displayed.

4. In the Web Service region (or the SOAP Web Service tab if the selected interface is a PL/SQL API), click the **Generate** button. The service should be generated for the selected interface without any error messages. The web service status would show "Generated".

5. Select the Username Token authentication type radio button and click the **Deploy** button. Service should be deployed without any errors. The service status should show Deployed with 'Active' state.

6. Click the **Undeploy** button to undeploy the deployed service.

If there are any errors appear, verify the configuration steps based on the error message. Apart from testing the functions from Integration Repository, these functions can be tested using command line tool. Refer to Managing SOAP Service Life Cycle Activities Using An Ant Script, *Oracle E-Business Suite Integrated SOA Gateway Implementation Guide.*

### Section 6.2: (Optional) Validating SOAP Services Setup Using Oracle E-Business Suite Integrated SOA Gateway Diagnostic Script

Oracle E-Business Suite Integrated SOA Gateway uses an Ant script `$JAVA_TOP/oracle/apps/fnd/isg/ant/isgDesigner.xml` to run the diagnostic tests through backend processing.

After validating the SOAP service setup from the Integration Repository user interface, you can optionally perform the following steps to validate the Oracle E-Business Suite Integrated SOA Gateway setup using the diagnostic script:

1. Source the APPS environment file.

2. Execute the following commands and verify the reports generated at `$JAVA_TOP/oracle/apps/fnd/isg/ant`, for any errors:

```
ant -f $JAVA_TOP/oracle/apps/fnd/isg/ant/isgDesigner.xml DiagnoseAPPSetup -Dverbose=ON
```

This command runs configuration checks on the Oracle SOA Suite side.

```
ant -f $JAVA_TOP/oracle/apps/fnd/isg/ant/isgDesigner.xml DiagnoseAGENTSetup -Dverbose=ON
```

This command runs configuration checks on the Oracle E-Business Suite side.

```
ant -f $JAVA_TOP/oracle/apps/fnd/isg/ant/isgDesigner.xml DiagnoseISGFunctionality -Dverbose=ON
```

This command runs all design-time operations for all types of interfaces in Oracle E-Business Suite Integrated SOA Gateway.

> **Note:** When executing this command, you may find the following errors for Java APIs for Forms. These errors may be shown in the `ISGFunctionalDiagnosticsReport.xml` report.
>
> ```
> oracle.apps.fnd.isg.common.error:ISGException: ISG_SERVICE_GENERATE_ERROR: Error in generating JAVA package
> ```
>
> ```
> <oracle.apps.fnd.isg.diagnostics.agent.FunctionalTests.checkSOAPFORMSOperations status="Failed" message="Unexpected
> Error : null, Unable to suggest any corrective action." level="1"/>
> ```
>
> Since Java APIs for Forms are not serviceable interfaces and cannot be exposed as SOAP services in this release 12.2 (see Document 966982.1 for information about the desupport of Java APIs for Forms), you can ignore these errors for Java APIs for Forms.

If there are any failures in the diagnostic reports, please verify the setups. For more information on how to use the script, see Oracle E-Business Suite Integrated SOA Gateway Diagnostic Tests, *Oracle E-Business Suite Integrated SOA Gateway Implementation Guide.*

Return to your perspective section to continue the configuration for SOAP services.

Overview

## Section 7: Validating Oracle E-Business Suite Integrated SOA Gateway Setup for REST Services

This section describes the steps to deploy the REST services from the user interface and from the backed script to validate the setup for REST services.

- Section 7.1: Validating REST Services Setup from the Integration Repository User Interface
- Section 7.2: (Optional) Validating REST Services Setup Using Oracle E-Business Suite Integrated SOA Gateway Script

**Section 7.1: Validating REST Services Setup from the Integration Repository User Interface**

After configuring Oracle E-Business Suite Integrated SOA Gateway for REST services, you need to validate the setup by performing the design-time activities from the Integration Repository user interface.

1. Log in to Oracle E-Business Suite Home Page as a user who has the FND_IREP_ADMIN role.

2. Select the Integrated SOA Gateway responsibility from the navigation menu and then select the Integration Repository link. Click the **Search** button.

3. To locate a PL/SQL API name, for example enter "FND_USER_PKG" in the Internal Name field and click the **Go** button to execute the search. Click the User API link from the search result table. The Interface Details page for the selected interface 'User' is displayed.

   To locate a Java Bean Service and Application Module Services, click the **Show More Search Options** link to display more search fields.
   Enter the following search values:

   - Category: Interface Subtype
   - Category Value: Java Bean Services or Application Module Services

   For example, select the "REST Service Locator" from the search result table to display the Interface Details page.

4. Click the REST Web Service tab, enter the following information:

   - Service Alias: Specify service alias information.
   - In the Service Operations table, select one or more methods for the selected PL/SQL API to be exposed as REST service operations.
   - If the selected interface is an interface type of Java Bean Services, Application Module Services, or Open Interface, select desired HTTP methods from the Service Operations table.

   > **Note**: PL/SQL APIs and Concurrent Programs can be exposed as REST services with the POST method only. Java Bean Services and Application Module Services can be supported with both the GET and POST methods.
   >
   > The supported method for Open Interface Tables and Views are determined by the direction of the selected interface. For Open Interface Tables with *Inbound* direction, four HTTP methods (GET, POST, PUT, and DELETE) are supported for a REST service operation. For Open Interface Tables with *Outbound* direction and Open Interface Views, only the GET method is supported.

   For Java Bean Services and Application Module Services, if the Java or Application Module method is annotated with a specific HTTP method, then the corresponding HTTP method check box is preselected for that method in the table.

   For annotation guidelines for Java Bean Services and Application Module Services, see Annotations for Java Bean Services and Annotations for Application Module Services, *Oracle E-Business Suite Integrated SOA Gateway Developer's Guide*.

5. Click the **Deploy** button to deploy the REST service. Service should be deployed without any errors. The REST Service Status field should show "Deployed".

6. Click the **Undeploy** button to undeploy the deployed service. The REST Service Status field should be changed to "Not Deployed".

If there are any errors appear, verify the configuration steps based on the error message. For more information on deploying and undeploying REST services through the Integration Repository user interface, refer to Administering REST Web Services, *Oracle E-Business Suite Integrated SOA Gateway Implementation Guide*.

**Section 7.2: (Optional) Validating REST Services Setup Using Oracle E-Business Suite Integrated SOA Gateway Script**

After validating the REST service setup from the Integration Repository user interface, you can optionally use the Ant script `$JAVA_TOP/oracle/apps/fnd/isg/ant/isgDesigner.xml` to execute the design-time activities for REST services such as deploy and undeploy services from command line.

For example, execute the following scripts to validate the Oracle E-Business Suite Integrated SOA Gateway setup for REST services:

- Deploy a PL/SQL interface "FND_USER_PKG" as a REST service with the POST method:

```
ant -f $JAVA_TOP/oracle/apps/fnd/isg/ant/isgDesigner.xml -Dactions=deploy -DserviceType=REST
-DirepNames=FND_USER_PKG[{TESTUSERNAME:SYNC:POST}] -Dverbose=ON -Dalias=FndUserPkgSvc
```

- Deploy a Java Bean Service as a REST service with both the POST and GET methods:

```
ant -f $JAVA_TOP/oracle/apps/fnd/isg/ant/isgDesigner.xml -Dactions=deploy -DserviceType=REST -
DirepNames=oracle.apps.fnd.rep.ws.service.EbsRestLocator[{GETRESTINTERFACE:SYNC:GET+POST}] -Dverbose=ON -Dalias=locator
```

- Undeploy and then deploy an open interface table "RA_INTERFACE_LINES_ALL" contained in the "RAXMTR" open interface as a REST service operation with four supported HTTP methods:

```
ant -f $JAVA_TOP/oracle/apps/fnd/isg/ant/isgDesigner.xml
-DirepNames=RAXMTR[{RA_INTERFACE_LINES_ALL:SYNC: GET+POST+PUT+DELETE}] -DserviceType=REST -Dalias=raxmtr -
Dactions="undeploy,deploy" -Dverbose=ON
```

- Deploy an open interface view "EGO_ITEM_SYNC_V" as a REST service with the GET method:

```
ant -f $JAVA_TOP/oracle/apps/fnd/isg/ant/isgDesigner.xml
-DirepNames=EGO_ITEM_SYNC_V[{EGO_ITEM_SYNC_V:SYNC:GET}] - DserviceType=REST -Dalias=ego -Dactions="deploy" -Dverbose=ON
```

This script on successful execution will deploy the specified Java Bean Service and PL/SQL interfaces. The associate WADLs would be shown in the logs. Pasting a desired WADL on the browser should describe the corresponding REST service thereby confirming a successful setup for REST services. For more information on how to use the Ant script, refer to Managing REST Service Life Cycle Activities Using An Ant Script, *Oracle E-Business Suite Integrated SOA Gateway Implementation Guide*.

Return to your respective section to continue the configuration for REST services.

## Section 8: Configuring Integration Repository Parser for Custom Interfaces

If custom integration interfaces are used, configure Integration Repository Parser (IREP Parser) for custom interface validation. For information on the parser setup tasks, refer to Administering Custom Integration Interfaces and Services, *Oracle E-Business Suite Integrated SOA Gateway Implementation Guide*.

If you update a custom service, set the `ISG_CLEAR_JPUB_CACHE` property to reflect the changes in the updated service:

> **Note:** Set this property to Yes only when there are updates in the service. Otherwise, set it to No or it should be commented out.

- For a custom SOAP service, set `<SID>.ISG_CLEAR_JPUB_CACHE=YES` in isg.properties.
- For a custom REST service, set `<SID>.ISG_CLEAR_JPUB_CACHE=YES` in isgagent.properties.

Return to your perspective section to continue the configuration for SOAP or REST services.

## Section 9: Deploying Generic XML Gateway Services for SOAP Services

If your system is upgraded from an earlier Oracle E-Business Suite release and you have been using generic XML Gateway services, the generic XML Gateway services can be displayed for a selected XML Gateway interface. To successfully display the generic XML Gateway service WSDL URL in the Generic XML Gateway Service subregion within the Web Service region, the following conditions must be met:

> **Note:** In this release, Oracle XML Gateway web services depend on Oracle E-Business Suite Integrated SOA Gateway. If your system is upgraded from an earlier Oracle E-Business Suite release and you have been using XML Gateway services, then install Oracle SOA Suite first, before the upgrade to Release 12.2.

- The "FND: XML Gateway Map Generic Service" profile value must be set to "Yes".

  Use this profile option to display or hide the Generic XML Gateway Service subregion for the selected XML Gateway interface. Once it is set to "Yes", the Generic XML Gateway Services subregion will be displayed within the Web Service region.

- The generic XML Gateway service must be deployed.

  Once a generic XML Gateway service has been deployed, the deployed service WSDL URL is populated as the profile value for the "ISG: Generic Service WSDL URL for XMLG" profile option. The WSDL URL is also displayed in the Generic XML Gateway Service subregion. If the generic XML Gateway service is not deployed, the profile value will not be shown and hence no WSDL URL is displayed in the subregion for the selected XML Gateway interface.

Use the following steps to deploy generic XML Gateway services:

1. Run script `<JAVA_TOP>/oracle/apps/fnd/isg/ant/isgDesigner.xml` as follows:

   ```
   ant -f $JAVA_TOP/oracle/apps/fnd/isg/ant/isgDesigner.xml deployGenericXMLG -Dverbose=<ON|OFF>
   ```

2. Search for an XML Gateway interface in the Integration Repository. Observe that generic XML Gateway service is deployed. Click on the WSDL link to see the deployed generic XML Gateway WSDL description.

Return to your respective section to continue the configuration for SOAP services.

## Section 10: File Logging for SOAP Services

In Oracle E-Business Suite release 12.2, log statements can be captured either in the Oracle SOA Suite server's file system (File Logging) or in the Oracle E-Business Suite database tables (Database Logging).

To capture log statements on the file system, specify the following properties in `$INST_TOP/soa/isgagent.properties` and `<ISGTEMP>/isg.properties`:

- `<SID>.ISG_GLOBAL_LOG=TRUE`
- `<SID>.ISG_LOGGER=FILE`

Stop and restart `oafm` and `oacore` managed server in Oracle E-Business Suite environment and SOA managed server in Oracle SOA Suite. ISGLog.log file is created in `ISG_TEMP_DIRECTORY_LOCATION` specified in above properties file.

> **Note:** If your instance is configured with multiple nodes, stop and restart `oafm` and `oacore` managed server on each Oracle E-Business Suite and Oracle SOA Suite node of the multi-node environment.

Please note that log configuration for file logging should be the same across Oracle E-Business Suite as well as Oracle SOA Suite. For example, if file logging is configured by adding the above mentioned properties in Oracle E-Business Suite, then it must be enabled on Oracle SOA Suite as well.

For more information on file logging, refer to Viewing Service Processing Logs, *Oracle E-Business Suite Integrated SOA Gateway Implementation Guide*.

For information on enabling logging at the integration interface level from the Integration Repository, refer to Logging for Web Services, *Oracle E-Business Suite Integrated SOA Gateway Implementation Guide*.

Return to your respective section to continue the configuration for SOAP services.

Overview

## Part D: Configuring Oracle E-Business Suite Integrated SOA Gateway for Upgrading and Cloning Scenarios

This section includes the following topics:

## Section 11: Configuring Oracle E-Business Suite Integrated SOA Gateway for SOAP Services on Release 12.2.x Upgraded From Oracle E-Business Suite Release 12.1.x

Perform the following steps to configure Oracle E-Business Suite Integrated SOA Gateway for SOAP services on Release 12.2.x upgraded from Oracle E-Business Suite Release 12.1.x:

1. Follow the upgrade information in the *Oracle E-Business Suite Upgrade Guide: Release 12.0 and 12.1 to 12.2* to upgrade Oracle E-Business Suite Release 12.2.2 from Release 12.1.x.

   If you are upgrading from Release 12.1.x to Release 12.2.3 or higher, complete the upgrade of Oracle E-Business Suite Release 12.2.0, including the preparing for the upgrade tasks and post-upgrade steps, before you apply Oracle E-Business Suite Release 12.2.3 or higher.

   - For Oracle E-Business Suite Release 12.2.9, refer to *Oracle E-Business Suite Release 12.2.9 Readme* (Document 2495027.1, *Applying the R12.ATG_PF.C.Delta.8 Release Update Pack* (Document 2490921.1), and *Oracle E-Business Suite Release 12.2 Information Center* (Document 1581299.1).

   - For Oracle E-Business Suite Release 12.2.8, refer to *Oracle E-Business Suite Release 12.2.8 Readme* (Document 2393248.1, and *Applying the R12.ATG_PF.C.Delta.7 Release Update Pack* (Document 2230914.1).

   - For Oracle E-Business Suite Release 12.2.7, refer to *Oracle E-Business Suite Release 12.2.7 Readme* (Document 2230783.1, and *Applying the R12.ATG_PF.C.Delta.7 Release Update Pack* (Document 2230914.1).

   - For Oracle E-Business Suite Release 12.2.6, refer to *Oracle E-Business Suite Release 12.2.6 Readme* (Document 2114016.1, and *Applying the R12.ATG_PF.C.Delta.6 Release Update Pack* (Document 2113163.1).

   - For Oracle E-Business Suite Release 12.2.5, refer to *Oracle E-Business Suite Release 12.2.5 Readme* (Document 1983050.1, and *Applying the R12.HR_PF.C.Delta.7 Release Update Pack* (Document 1982999.1).

   - For Oracle E-Business Suite Release 12.2.4, refer to *Oracle E-Business Suite Release 12.2.4 Readme* (Document 1617458.1).

   - For Oracle E-Business Suite Release 12.2.3, refer to *Oracle E-Business Suite Release 12.2.3 Readme* (Document 1586214.1).

   Refer to *Oracle E-Business Suite Release 12.2 Information Center* (Document 1581299.1) for additional relevant resources.

   > **Note:** *Oracle E-Business Suite Upgrade Guide: Release 12.0 and 12.1 to 12.2* is required by Release 12.0 and Release 12.1 customers applying Release 12.2.2. It can be accessed from Oracle E-Business Suite Documentation Web Library.

   Please note that if your system is upgraded from Oracle E-Business Suite Release 12.0 or 12.1, and you have leveraged Oracle XML Gateway web services or Oracle E-Business Suite Integrated SOA Gateway feature, install Oracle SOA Suite 11g first, before the upgrade to Release 12.2.

2. Follow all the steps described in Section 1: Configuring Oracle E-Business Suite Integrated SOA Gateway for SOAP Services on a New Installation of Release 12.2.3 or Higher.

3. (Optional) If custom integration interfaces are used for Oracle E-Business Suite release 12.2.x, Integration Repository Parser (IREP Parser) needs to be configured again for custom interface validation. Refer to Section 8: Configuring Integration Repository Parser for Custom Interfaces for details.

4. (Optional) If SAML Token security is used, follow the setup instructions described in My Oracle Support Knowledge Document 1332262.1, *Setting Up SAML Token Security for Oracle E-Business Suite Integrated SOA Gateway Release 12.2*.

5. Log in to Oracle E-Business Suite Middle tier and execute the following script:

   ```
   ant -f <JAVA_TOP>/oracle/apps/fnd/isg/ant/isgDesigner.xml -Dactions=upgrade -Dverbose=ON
   ```

   A report file is created in directory `<INST_TOP>/soa/ISGUpgrade.txt` which contains the 'Upgrade' Action summary. This summary contains the Service Names and new Service End Point (Service Location) URLs.

   > **Important:** There is no change in Oracle E-Business Suite Integrated SOA Gateway services when migrated from 12.1.x to Oracle E-Business Suite Release 12.2.x except Service End Point (Service Location) URL of the deployed services. New Service End Point (Service Location) URL is listed in the file `<INST_TOP>/soa/ISGUpgrade.txt`. It is also available in the Interface Detail page of the Integration Repository user interface. To ensure backward compatibility, the previous 12.1.x service endpoint (services deployed in Oracle E-Business Suite) will continue to work at run time after the upgrade. New service endpoint from Oracle SOA Suite server will be shown in the interface detail page and should be used for client programs.

6. (Optional) If you have been using generic XML Gateway services in an earlier Oracle E-Business Suite release, perform the steps described in Section 9: Deploying Generic XML Gateway Services to deploy generic XML Gateway services.

7. (Optional) To capture log statements on the file system for Oracle E-Business Suite release 12.2.x, refer to Section 10: File Logging for SOAP Services for information on how to enable file logging.

## Section 12: Configuring Oracle E-Business Suite Integrated SOA Gateway on Release 12.2.x Cloned From an Existing 12.2.x Environment

This configuration applies to an Oracle E-Business Suite instance either with or without Oracle E-Business Suite Integrated SOA Gateway configuration being cloned.

1. Enable your Oracle E-Business Suite Integrated SOA Gateway by following instructions as described in Section 1 for SOAP services or Section 2 for REST services.

> **Note:** Ensure that you have applied the patches mentioned in Section 1 and Section 2.

2. Log in to Oracle E-Business Suite middle tier and execute the following script:

```
ant -f  $JAVA_TOP/oracle/apps/fnd/isg/ant/isgDesigner.xml -Dactions="postclone" -Dverbose=ON
Enter Service Type :  (SOAP, [REST], BOTH)
```

> **Important:** If an API has overloaded methods, the `postclone` script may not work as expected. Hence, before executing the script, make a note of the deployed overloaded methods. Additionally, after executing the script, redeploy the overloaded methods from Oracle Integration Repository UI page or using backend script.
>
> Note that the `postclone` script for cloning REST services is currently certified with Oracle E-Business Suite shared file system.

- To clone SOAP services, select "SOAP" as the Service Type value.

  A report file `PostCloneResults.txt` is generated. This file is created on the Oracle SOA Suite instance in `<DBSID>.ISG_TEMP_DIRECTORY_LOCATION` mentioned in the `<TEMP>/appsutil/<CONTEXT>/bpel/isg_contextfile.properties` file.

- To clone REST services, leave the default selection "REST" as the Service Type value.

  The script writes results to the `$INST_TOP/soa/RESTPostCloneResults.txt` file. It includes postclone status and WADL URL for each deployed interface. If the script fails to redeploy an interface, it is also mentioned in this file.

- To clone both SOAP and REST services, select "BOTH" as the Service Type value.

  The script writes results to `PostCloneResults.txt` for SOAP services and `RESTPostCloneResults.txt` for REST services.

> **Important:** There is no change in the Oracle E-Business Suite Integrated SOA Gateway services when the `postclone` method is called except the Service End Point (Service Location) URL of these services. The new Service End Point (Service Location) URL is listed in the file `<INST_TOP>/soa/PostCloneResults.txt` for SOAP services or the `RESTPostCloneResults.txt` file for REST services. It is also available in the Interface Detail page of the Integration Repository.

## Section 13: Configuring Oracle E-Business Suite Integrated SOA Gateway for REST Services on 12.2.x Upgraded From Oracle E-Business Suite Release 12.1.x

Perform the following steps to configure Oracle E-Business Suite Integrated SOA Gateway Release 12.2.x upgraded from Oracle E-Business Suite Release 12.1.x:

1. Follow the upgrade information in the *Oracle E-Business Suite Upgrade Guide: Release 12.0 and 12.1 to 12.2* to upgrade Oracle E-Business Suite Release 12.2.2 from Release 12.1.x. This includes the preparing for the upgrade tasks and post-upgrade steps, before you apply Oracle E-Business Suite Release 12.2.3 or higher.

   - For Oracle E-Business Suite Release 12.2.9, refer to *Oracle E-Business Suite Release 12.2.9 Readme* (Document 2495027.1), *Applying the R12.ATG_PF.C.Delta.8 Release Update Pack* (Document 2490921.1), and *Oracle E-Business Suite Release 12.2 Information Center* (Document 1581299.1).

   - For Oracle E-Business Suite Release 12.2.8, refer to *Oracle E-Business Suite Release 12.2.8 Readme* (Document 2393248.1, and *Applying the R12.ATG_PF.C.Delta.7 Release Update Pack* (Document 2230914.1).

   - For Oracle E-Business Suite Release 12.2.7, refer to *Oracle E-Business Suite Release 12.2.7 Readme* (Document 2230783.1, and *Applying the R12.ATG_PF.C.Delta.7 Release Update Pack* (Document 2230914.1).

   - For Oracle E-Business Suite Release 12.2.6, refer to *Oracle E-Business Suite Release 12.2.6 Readme* (Document 2114016.1, and *Applying the R12.ATG_PF.C.Delta.6 Release Update Pack* (Document 2113163.1).

   - For Oracle E-Business Suite Release 12.2.5, refer to *Oracle E-Business Suite Release 12.2.5 Readme* (Document 1983050.1, and *Applying the R12.HR_PF.C.Delta.7 Release Update Pack* (Document 1982999.1).

   - For Oracle E-Business Suite Release 12.2.4, refer to *Oracle E-Business Suite Release 12.2.4 Readme* (Document 1617458.1).

   - For Oracle E-Business Suite Release 12.2.3, refer to *Oracle E-Business Suite Release 12.2.3 Readme* (Document 1586214.1).

   Refer to *Oracle E-Business Suite Release 12.2 Information Center* (Document 1581299.1) for additional relevant resources.

> **Note:** *Oracle E-Business Suite Upgrade Guide: Release 12.0 and 12.1 to 12.2* is required by Release 12.0 and 12.1 customers applying Release 12.2.2. It can be accessed from Oracle E-Business Suite Documentation Web Library.

2. To configure REST services, follow all the steps described in Section 2: Configuring Oracle E-Business Suite Integrated SOA Gateway for REST Services.

3. (Optional) If custom PL/SQL interfaces are used for Oracle E-Business Suite release 12.1.x, Integration Repository Parser (IREP Parser) needs to be configured again for custom PL/SQL interface validation. Refer to Section 8: Configuring Integration Repository Parser for Custom Interfaces for details.

## CHANGE RECORD

| Date | Description |
|---|---|
| August 16, 2019 | • Added Oracle E-Business Suite 12.2.9 readme reference in Section 11 and Section 13<br>• Updated "ISG Release 12.2 Certification Matrix" by removing Oracle SOA Suite 11g (11.1.1.6.0) and 11g (11.1.1.7.0) from the matrix table and removed Step 15 about Oracle SOA Suite (11.1.1.6.0) from Section 1.2 |
| July 5, 2019 | • Replaced Patch 28785455:R12.OWF.C, ISG Consolidated Patch (19_1_5), with Patch 29832501:R12.OWF.C, ISG Consolidated Patch (19_3_1) in the first Note of Section 1 and Section 2<br>• Replaced Patch 28785464 with Patch 29832529 in step 11, Section 1.2 |
| May 27, 2019 | • Updated first Note in Section 2 about Patch 29555671:R12.OWF.C |
| April 6, 2019 | • Updated first Note in Section 2 by adding Patch 29555671:R12.OWF.C |
| March 7, 2019 | • Replaced Patch 27949145:R12.OWF.C, ISG Consolidated Patch (18_3_3), with Patch 28785455:R12.OWF.C, ISG Consolidated Patch (19_1_5), in the first Note of Section 1 and Section 2<br>• Updated Section 12 by including the postclone feature for REST services<br>• Replaced Patch 27949147 with Patch 28785464 in step 11, Section 1.2 |
| October 5, 2018 | • Added Oracle E-Business Suite 12.2.8 readme reference in Section 11 and Section 13 |
| August 1, 2018 | • Added Oracle SOA Suite 12.2.1.3.0 in the ISG Release 12.2 Certification Matrix table<br>• Added a new Note right before Part A about the naming convention mentioned in ISG consolidated patch description<br>• Replaced Patch 27913724:R12.OWF.C, ISG Consolidated Patch (18_2_2), with Patch 27949145:R12.OWF.C, ISG Consolidated Patch (18_3_3), in the first Note of Section 1 and Section 2<br>• Replaced Patch 27730725 with Patch 27949147 in step 11, Section 1.2 |
| May 1, 2018 | • Replaced Patch 27730717:R12.OWF.C, ISG Consolidated Patch (18_2_1), with Patch 27913724:R12.OWF.C, ISG Consolidated Patch (18_2_2), in the first Note of Section 1 and Section 2 |
| April 21, 2018 | • Replaced Patch 27498317:R12.OWF.C with Patch 27730717:R12.OWF.C, ISG Consolidated Patch (18_2_1), in the first Note of Section 1 and Section 2<br>• Added a new Section 5 for enabling TLS on Oracle SOA Suite<br>• Replaced Patch 27204035 with Patch 27730725 in step 11, Section 1.2 |
| February 23, 2018 | • Updated Section 1.2, steps 3, 12, 13, 14, and 18<br>• Added a new section 4.2 for upgrading Oracle SOA Suite 11g to Oracle SOA Suite 12c |
| February 13, 2018 | • Replaced Patch 24329622:R12.OWF.C with Patch 27498317:R12.OWF.C, ISG Consolidated Patch (18_1_3), in the first Note of Section 1 and Section 2<br>• Replaced Patch 25295369 with Patch 27204035 in step 11, Section 1.2 |
| September 21, 2017 | • Replaced Patch 24787334:R12.OWF.C with Patch 24329622:R12.OWF.C, ISG Consolidated Patch for Release 12.2 (17_3_5), in the first Note of Section 1 and Section 2<br>• Replaced Patch 26260293 with Patch 25295369 in step 11, Section 1.2 |
| September 08, 2017 | • Added the ISG Release 12.2 Certification Matrix in the beginning of this document<br>• Updated the first note in Section 2 to include information about Concurrent Programs as REST services<br>• Replaced Patch 24495469 with Patch 26260293 in step 11, Section 1.2 for Oracle E-Business Suite Release 12.2.7 |
| April 18, 2017 | |

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|---|---|
| | • Updated step 2, Section 11 |
| March 6, 2017 | • Updated the second Note in step 4, Section 2 |
| February 8, 2017 | • Replaced Patch 25188060:R12.OWF.C with Patch 24787334:R12.OWF.C, ISG Consolidated Patch for Release 12.2 (17_1_3), in the first Note of Section 1 and Section 2 |
| December 16, 2016 | • Replaced Patch 23510855:R12.OWF.C with Patch 25188060:R12.OWF.C, ISG Consolidated Patch for Release 12.2 (16_4_5), in the first Note of Section 1 and Section 2 |
| September 15, 2016 | • Updated Section 4 by adding Oracle SOA Suite 12c installation reference information<br>• Replaced Patch 22075986 with Patch 24495469 in step 11, Section 1.2 for Oracle E-Business Suite Release 12.2.6 |
| August 18, 2016 | • Updated the second Note and Section 4 by including Oracle SOA Suite 12c (12.1.3) with Oracle E-Business Suite Release 12.2 |
| August 8, 2016 | • Added a Note in Section 3 |
| July 14, 2016 | • Updated the second Note and Section 4 by including Oracle SOA Suite 12c (12.2.1) with Oracle E-Business Suite Release 12.2 |
| June 10, 2016 | • Replaced Patch 22328483:R12.OWF.C with Patch 23510855:R12.OWF.C in the first Note of Section 1 and Section 2 |
| April 14, 2016 | • Updated the second Note and Section 4 by including Oracle E-Business Suite Release 12.2.3 with Oracle SOA Suite 12c (12.1.3) |
| December 17, 2015 | • Replaced Patch 20512031:R12.TXK.C, Patch 17765665:R12.OWF.C, and Patch 20881938:R12.OWF.C with Patch 22328483:R12.OWF.C in the first Note of Section 1 and Section 2<br>• Replaced Patch 21304361, Patch 20882039, and Patch 17765676 with Patch 22075986 in step 11, Section 1.2<br>• Added the Oracle WebLogic Server 12c version 12.2.1 to the first Note in the Oracle E-Business Suite SOAP Services heading<br>• Updated Section 6.2 by removing Oracle E-Business Suite Release 12.2.3, Release 12.2.4, and Release 12.2.5 sub-headings when validating REST service setup using a script |
| October 16, 2015 | • Added Patch 21304361 in Section 1.2, step 11 for Oracle E-Business Suite Release 12.2.5 |
| August 18, 2015 | • Replaced Patch 20635091.R12.OWF.C with Patch 20881938:R12.OWF.C in Section 1 and Section 2<br>• Replaced Patch 20504227 with Patch 20882039 in Section 1.2, step 11 |
| July 6, 2015 | • Updated "Preparation for Oracle SOA Suite in a Multi-node Environment" heading in Section 1 |
| June 19, 2015 | • Updated note content in Section 1.2, step 12 |
| May 12, 2015 | • Added multi-node diagrams in Part A for SOAP services and Part B for REST services |
| April 10, 2015 | • Removed Section 2: Configuring Oracle E-Business Suite Integrated SOA Gateway for SOAP Services on New Installation of Release 12.2.2<br>• Added multi-node setup information in Part A and Part B<br>• Moved upgrading and cloning scenarios to Section D |
| March 13, 2015 | • Added Patch 20635091:R12.OWF.C in Section 1 and Section 5 for Oracle E-Business Suite Release 12.2.4<br>• Updated Section 1.2 by replacing 12.2.4 ISG Patch 1885244 with Patch 20504227 |
| November 20, 2014 | • Added Patch 17765665:R12.OWF.C in Section 1 and Section 5 for Oracle E-Business Suite Release 12.2.3<br>• Updated Section 1.2 by replacing 12.2.3 ISG Patch 17507959 with Patch 17765676<br>• Updated Section 11 about the `ISG_CLEAR_JPUB_CACHE` property |
| November 7, 2014 | • Updated step 13, Section 1.2: Configuration Steps on Oracle SOA Suite to Integrate with Oracle E-Business Suite |

| August 8, 2014 | • Added Section C to include common steps for both SOAP and REST services for Release 12.2.4<br>• Updated the Overview section and section 1 for Release 12.2.4 |
|---|---|
| February 4, 2014 | • Added step 2 in Section 8, Configuring Oracle E-Business Suite Integrated SOA Gateway for REST Services |
| December 13, 2013 | • Updated the Overview section, and added configuration steps for SOAP (Part A) and REST (Part B) services for Release 12.2.3 |
| October 3, 2013 | • Updated the first Note in the Overview section |
| September 19, 2013 | • Initial publication |

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| August 8, 2014 | • Added Section C to include common steps for both SOAP and REST services for Release 12.2.4<br>• Updated the Overview section and section 1 for Release 12.2.4 |
|---|---|
| February 4, 2014 | • Added step 2 in Section 8, Configuring Oracle E-Business Suite Integrated SOA Gateway for REST Services |
| December 13, 2013 | • Updated the Overview section, and added configuration steps for SOAP (Part A) and REST (Part B) services for Release 12.2.3 |