Installing an ESO Environment

This document describes the prerequires and steps required to install the three main components of the JDA ESO application, the database server, web server(s), and application (APE) server(s). Although not a strict requirement, this document assumes that the instances are on separate servers to provide separation of functions.

Steps

This document is intended to be followed in sequence.

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- Common Web & Application Server Setup
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    2. Configuration
- Web Server Specific Setup
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SQL Server

Prerequisites

- Windows Server 2012R2 or 2016.
- SQL Server 2014 or 2016.
- SQL Server 2005 Backward Compatibility Components.
- Domain account credentials with access to the DB Server, must have modify access to the root drive where the SQL databases are going to be placed.
- SQL user account with the ability to add a new login/user and assign db_owner level access.

Setup

Initial Installation

1. The following components should be selected during the installation process from with the SQL Server Installation Center:
    - SQL Server Database Services: Required.

- SQL Server Replication.
- Reporting Services: Optional.
- Client Tools Connectivity.
- Client Tools Backwards Compatibility.
- Management Tools – Basic.
- Management Tools – Complete.
- Shared feature directory: modify as needed.

2. Instance Configuration
   - The installation path for SQL files should point to a non-system drive.
   - The instance root directory should point to a non-system drive.
   - Avoid using named instances. The SQL Server should only provide services to the ESO application.
   - Verify disk space usage.

3. Server configuration panel
   - SQL Agent – enter domain account credentials and change the agent startup type to "Automatic". Do not use a group.
   - On the collation tab, check that the default collation is selected (SQL_Latin1_General_CP1_CI_AS).

4. Database Engine configuration
   - In the account provision tab, ensure that Mixed Mode authentication is selected.
   - Set the System Administrator password.
   - Configure the data directories. It is recommended to use different drives for the user databases, database logs and temp DB logs, the temp DB, and backup files.

5. Reporting Services (Optional)
   - Select native mode default configuration.

6. Click install to complete the initial installation

Configuration

Start the SQL Server Management Studio to complete the configuration

1. If not already installed run the SQLServer2005_BC_x64.msi to install backwards compatibility.
   - Click Next and accept the terms of the license agreement.
   - Enter Name and Company, click Next.
   - Do not change the feature installation list, click Next.
   - Click Finish.

2. Right click on the server instance name and select Facets. In Surface Area Configuration, set the following properties to true and click OK.
   - Ad-Hoc Remote Queries
   - CLR Integration
   - Database Mail

- SQL Mail

3. Right click on the server instance name and select Facets. In Server Configuration, set the max degree of parallelism to 4 if the server has 4 or more CPU cores, otherwise set the value to 0. Click OK.

4. Underneath the server tree, right click on Replication, then right click to selection Configure Distribution.
    - Click Next and set the server to act as its own Distributor, click Next.
    - Leave snapshot folder a as is, click Next.
    - Do not change the Distribution Database name but change the folder paths to the appropriate data directories, which should be located on a different drive, click Next.
    - Select Yes and click Next.
    - The publishers page is displayed, click Next.
    - Do not change the Configure distribution option, click Finish.
    - Click Finish again, the configuration should complete, then click Close.

5. Database Mail (Defer until later)

6. Configure Distributed Transaction Coordinator (DTC)
    - In windows search, select Administrative tools.
    - Double Click Component Services.
    - In the Component Services panel expand Computers, My Computer, Distributed Transactions.
    - Right Click on Local DTC, select Properties and select the Security tab. Enable the following:
        - Network DTC Access
        - Allow Remote Administration
        - Allow Inbound
        - Allow Outbound
        - No Authentication Required
        - Enable XA Transactions
    - Click OK, if prompted to restart DTC select Yes.
    - Exit Component Services and Administrative Tools.

7. If the server is a member of a cluster: (Need additional discussions).
    - Move the MSDTC resource to the passive node of the cluster.
    - Use the above instructions to verify the MSDTC Security settings are the same. If not, correct them.
    - Move the MSDTC resource back to the original node.
    - Take the SQL Server resource(s) off-line and bring it back on-line.

ESO Databases and Code Injection

1. Create SQL logins

a. SQL login IDs must be configured to install the ESO databases and to provide DB access for the web server and application server.

b. Open SQL Server Management Studio Security, Right-click Logins and select New Login.

c. Enter a login name. For example, esodbo.

d. Select SQL Server Authentication.

e. Do not enforce password policies or expiration and do not require the password to be changed at next login.

f. Click Server Roles, select sysadmin and Click OK to grant sysadmin rights to this user.

g. The esodbo user must also be given db_reader and dB writer access to the master database.

h. Create a web server login account, for example, esowebuser or a windows domain account. Do not grant any rights for now. Once the Enterprise databases have been created, this account will be given DB owner rights to the ESO databases.

i. Create an application server login account, for example, esoappuser or a windows domain account. Do not grant any rights for now. Once the Enterprise databases have been created, this account will be given DB owner rights to the ESO databases.

2. Create the Object Repository Database

a. Open SQL Server Management Server.

b. Right-click Databases and select Restore Database. The Restore Database window is displayed.

c. Click the To database drop-down list, select a name and append _or for the object repository database, for example, VP60_or.

d. Select the from device option and click the ellipses button. The Specify Backup window is displayed.

e. Click Add, navigate to the directory where the object repository ORB backup file (emptyorb.bak) is located. Select the .bak file and click OK. The Restore Database window is displayed.

f. Select the Restore check box next to the orb backup set.

g. Click Options in the Select a page area on the left panel of the window. The Restore Options are displayed.

h. Set the data and log directory locations and click OK.

i. Once the database has been restored navigate to the Users object within the new or database. If there is a user named waveuser, it can be deleted.

3. Import the Application Code.

a. In the retail code "ExtractedFiles" directory from the application package, there is an ImportBuild.cmd file. Open the file in a text editor and change the settings to match

the environment information. The cmd file calls a JavaScript file named ImportBuild that requires 4 parameters:

> Parameter 1: servername
>
> Parameter 2: Object Repository DB name.
>
> Parameter 3: DB owner user credentials
>
> Parameter 4: user password

    b. Save the changes to the cmd file and then execute the script. Any errors will be displayed on the screen and recorded in the importbuild.log file. This process will take several minutes.

4. Locate the database backup files from the installation package. Ensure that you are logged into the database server using ESO dbo user. Restore each of the following databases mapping the name to a Speedway database.:

    a. empty_Retail_{current version}, restore to VP60_eso

    b. empty_Retail_{current version}_archive, restore to VP60_eso_archive

    c. empty_Retail_{current version}_archive_yyyy_mm, restore to VP60_eso_archive_yyyy_mm (match to current year and month).

    d. empty_Retail_{current version}_wh, restore to VP60_eso_wh

    e. empty_Retail_{current version}_pos, restore to VP60_eso_pos

5. After each database is restored, ensure that the read only database property is set to false.

6. User role and mappings

    a. For both the web user and application logins using the login properties to set the user mapping for each of the ESO databases. The default schema should be dbo and the database role membership should be db_owner.

    b. Also assign the two users to the master database using the dbo schema and with db_reader level access.

7. Object Repository Views

    a. Locate the orbviews.sql file from the installation package and open it in a new query window.

    b. Select the main ESO retail data base and execute the script.

One Time Server Deploy

Within the installation package there is a one-time server deploy folder. The following steps need to be completed to install the ticket management structures and dll's:

    a. Navigate to the one time deploy folder and execute the script runner v2C application. ScriptRunner must be executed locally on the SQL server which contains the client and empty databases.

    b. In the Target Database section, enter the database server name, the username with sysadmin account created earlier and password and then click Connect to connect to the databases.

c. Click the Wave Database drop-down list and select your target database. The Warehouse and Archive database names populate automatically.

d. In the Replication Info section enter valid log, data, and temp directories.

e. Click Run to execute pre-scripts. Pre-scripts are used to check the client databases and SQL server for any potential issues prior to upgrade. A warning is displayed asking you to confirm running the package.

f. Note: The pre-scripts do not make any data changes. You may cancel the maintenance after the pre-scripts execute.

g. Click Yes. A confirmation is displayed notifying you that the pre-scripts are complete.

h. Click OK. The Output files are displayed in a window.

i. Convert.out and scriptrunner.out are log files. Any other files in the list will contain warnings or errors. Review any errors/warnings and address as needed.

j. Close the window. A confirmation window is displayed asking if you want to continue and an "out" folder is created that contains all out files that you may review later.

k. Note: Each time ScriptRunner is executed, this folder is overwritten. To save the results, rename the folder or copy the output files to a different location.

l. Click Yes. A confirmation message is displayed that notifies you where the files are located.

m. Click OK. The out files are displayed in a window.

n. Review the out files for errors.

o. Close Scriptrunner.

Generic Deploy

A Generic Deploy performs several application housekeeping tasks. It may be performed at any time (the environment must be offline) and it must be performed any time an application database set is restored to a different server or to a different name. The generic deploy is accomplished by running the ScriptRunnerV2c.exe file in the Generic Deploy folder, which executes SQL scripts to perform many database related tasks including:

a. update cross database name references

b. set database compatibility level

c. setup/rebuild replication

d. The Generic Deploy must be run using SQL Login credentials with sysadmin rights that was created earlier. The Generic Deploy updates the SQL master database and creates specific monthly archive databases.

Generic Deploy Steps:

a. Navigate to the Generic Deploy folder and run ScriptRunnerV2c.exe.

b. Important: ScriptRunner must be executed locally on the SQL server which contains the client and empty databases.

c. In the Target Database section, enter the database server name, username with system administrator privileges and password and then click Connect to connect to the databases.

d. Click the Wave Database drop-down list and select your target database. The Warehouse and Archive database names populate automatically.

e. In the Replication Info section enter valid log, data, and temp directories.

f. Click Run to execute pre-scripts. Pre-scripts are used to check the client databases and SQL server for any potential issues prior to upgrade. A warning is displayed asking you to confirm running the package.

g. Note: The pre-scripts do not make any data changes. You may cancel the maintenance after the pre-scripts execute.

h. Click Yes. A confirmation is displayed notifying you that the pre-scripts are complete.

i. Click OK. The Output files are displayed in a window.

j. Convert.out and scriptrunner.out are log files. Any other files in the list will contain warnings or errors. Review any errors/warnings and address as needed.

k. Close the window. A confirmation window is displayed asking if you want to continue and an "out" folder is created that contains all out files that you may review later.

l. Note: Each time ScriptRunner is executed, this folder is overwritten. To save the results, rename the folder.

m. Click Yes. A confirmation message is displayed that notifies you where the files are located.

n. Click OK. The out files are displayed in a window.

o. Review the out files for errors.

p. Note: The error regarding 440_create_monthly_archive is expected in new environments and can be ignored.

q. Close Scriptrunner. Note: The generic deploy is rerunnable, so if errors are encountered, run the process again.

Common Web and Application Servers Setup

There are two types of servers required for and ESO environment. At least one web server and at least one application server need to be installed. The web server provides user interface access to the ESO business functions, while the application server is responsible for executing scheduled background jobs and tasks.

Prerequisites

- Windows Server 2012R2 or 2016.
- .NET Framework 3.5 SP 1
- MS Report Viewer Redistributable 2008, Service Pack 1
- Visual C++ 2005 Redistributable Package x86 version only.

- SQL Client Tools
- SQL Server 2005 Backward Compatibility Components

Setup

Initial Installation

1. Verify that all the prerequisites are installed on the server. If not, run the execute the install file from the installation package.
2. IIS Installation. Note: Before starting the web server installation, ensure that remote administration of the server is enabled in the administration tools, services list.
    - On the target server, open Server Manager and select Manage, then Add Roles and Features.
    - Select Role-based installation, click Next.
    - Choose to Select a Server, then highlight the local server and click Next.
    - In Server Roles list, expand Web Server IIS and enable the set the following:
        1. Common HTTP features
            a. Default Document
            b. Directory Browsing
            c. HTTP Errors
            d. Static Content
        2. Health and Diagnostics
            a. HTTP Logging
            b. ODBC Logging
            c. Request Monitor
        3. Performance
            a. Static Content Compression
            b. Dynamic Content Compression
        4. Security
            a. Request Filtering
            b. Basic Authentication
            c. Windows Authentication
        5. Application Development
            a. .Net Extensibility 3.5
            b. .Net Extensibility 4.5
            c. ASP
            d. ASP.NET 3.5
            e. ASP.NET 4.5
            f. ISAPI Extensions
            g. ISAPI Filters
        6. Management Tools

  a. Management Console

  b. IIS 6 Management Compatibility

  c. Management Scripts and Tools

  d. Management Services

- Click Next, then Install.
- Click Next and Review the installation, click Install. Restart the IIS Service.
- Exit Server Manager.

3. IIS Administrative Configuration

- Navigate to Administrative Tools, Internet Information Services Manager.

 1. Highlight the Server name, Double Click Logging and set the following:

  a. Click Select Fields and Select all check boxes.

  b. In the directory field, enter a non-system drive in place of %SystemDrive%.

  c. Select Use Local Time.

  d. Click Apply, then Click back on the server name.

 2. Double Click on ASP, and set the following:

  a. Enabled Parent Paths = True

  b. Response Buffering Limit = 41943040

  c. Script Time-Out = 00:05:00

  d. Click Apply, then Click back on the server name.

 3. Double Click on Authentication and perform one of the following actions for the IIS Anonymous Account:

  a. If you have single server environments, leave the default setting.

  b. If you have multiple server environments, select Right Click to Edit. use the same account on all servers. A domain account is recommended. If you are using local accounts, verify the account name and password is the same on all servers. Note: Add this user to the IIS_USRS group in Local Users and Groups.

 4. Navigate to Administrative Tools, Component Services, expand My Computer, Distributed Transactions. Right Click on Local DTC, select the Properties Security and select the following:

  a. Network DTC Access

  b. Allow Remote Administration

  c. Allow Inbound

  d. Allow Outbound

  e. No Authentication Required

  f. Enabled XA Transactions

  g. Close component Services

  h. Restart DTC

Create the Web Site

- Open Internet Information Services (IIS) Manager. The Internet Information Services (IIS) Manager window is displayed.
- If there is a default web site present, right click on the name and remove it.
- Expand the Server node, right-click Sites and click Add Web Site. The Add Web Site Window is displayed.
- In the Site Name field, enter the environment name for the site. It shares the name of the instance of the EP deploy.
- In the Physical path field, enter the drive & directory created for the web site, for example e:\jda\deployedfiles.
- In the IP Address field, normally web servers are dedicated to the application and the IP Address can be left to All Unassigned.
- In the Host Name field, enter the URL for this web site. If this is left blank, the server responds to any URL that resolves to the server.
- Click OK.

Configure User for Default Application Pool

- Navigate to IIS Manager.
- Highlight the server name.
- Make sure anonymous authentication is enabled.
- Highlight Application Pools and set the identity of the default application pool to the domain web user credentials.
- Save the settings.

Disable DEP Settings

- Navigate to My Computer, System Properties.
- Click on the Advanced tab and click settings under the performance section.
- Disable DEP and save the changes. (Need to be more specific here)

Web Server Specific Setup

Prerequisites

- Sample web server Globalsettings.xml
- Log configuration .xml.
- Extracted files and deployment tool.

Setup

Configure Global Settings and Log Config files.

- Underneath the web site folder (e:jda\), create a LogFiles subdirectory with two additional directories named IIS and Log4Rad.
- Open the registry key creation (.reg) from the installation package using a text editor. Verify that the path names and drive letters match the directory structure. If the keys match, double click on the registry files to create the registry keys. From the installation package, copy the sample globalsettings.xml and the sample log4rad configuration file to the application folder (i.e., e:\jda). Open the global settings file in a text editor and configure the following values:
    a. ObjectRepository: Initial Catalog= the name of the object repository database
    b. ObjectRepository: Data Source=the name of the DB server for the environment
    c. __ImportExportDirectory = the server and share name of the environment import/export server."
    d. NameSpace: Name the environment namespace, for example SPWYProd.
    e. __TaskQueueStore = The name of the current server and the path for the AsynchQueueStore, for example \\xxx999.domain.com\AsynchQueueStore
    f. __ResolvedHostName = the server with the domain name.
    g. __PortalSiteID="7"
    h. __PortalName=The environment text name, for example "ESO - Production"
    i. __WaveTestMode="off"
    j. __ClientPollInterval="15000"
    k. __ImportWebserverURL= (need additional details)
    l. __WaveTrace="off"
    m. __WaveTranslation="off"
    n. __DefaultLanguage="English"
    o. __Protocol="http"
    p. __WaveSecurityCheck="off"
    q. __POSAppServerURL= the server with the domain name.
    r. __POSFileShareRoot== The name of the current server and the path for the AsynchQueueStore, for example \\xxx999.domain.com\xmlfiles
    s. __WaveDebug="off"
    t. __WaveErrorTrapping="on"
    u. __WaveAutoLogon="off"
    v. __QueryTimeoutOverride="180"
    w. __UseCompression="on"
    x. __ReportCellLimit="64000"
    y. __PDFServerURL=need additional details.
    z. __AllowPangeaAccess="true"
    aa. __SMTPServer="smtp.marathonpetroleum.com" (Need to check)

        bb. __WaveDatabaseConnection: Integrated Security = SSPI

        cc. __WaveDatabaseConnection: Persist Security Info = False.

        dd. __WaveDatabaseConnection: Initial Catalog = name of retail database, for example VP60_eso.

        ee. The above fields are repeated for the WaveDatamartConnection, WaveWebPOSConnection, WaveArchiveConnect, and ReadyonlyConnection except the initial catalog needs to reflect the corresponding database.

        ff. WaveDatamart = primary database name + _wh

        gg. WaveWebPost = primary database name + _pos

        hh. WaveArchive = primary database name + _archive

        ii. Readonly = primary database name (identical to the Wave database)

- Configure logconfig.xml. This file should exist in the same application directory defined in the registry entry.
- Set the file name value for the "AllErrors" appender, for example, E:\JDA\logs\log4rad\%ServerName%_allerrors.

reg

Deploy ESO Code.

1. Before proceeding, use windows explorer and navigate to the c:\windows\syswow64 folder and verify that a file named MSCOMCTL.OCX is present. If the file is not present copy it from the installation package and into the window\syswow64 folder. From within that folder, open a command prompt and execute the following:
2. Locate the deploy tool (deploy.exe) from the installation package>
3. In the Hosting Management Server name, enter the URL of the Hosting Management server.
4. You will be prompted for the user name and password for the HM application. This is not a database user and password. Click login.
5. Do not install APE or the import/export server.
6. In the Target Directory field enter the wave directory you created. For example, e:\jda\deployedfiles.
7. The Release field should contain the current release of Retail2018.2.0.1.
8. Click the Web Site drop-down list and select the name of the web site that was created on the server.
9. The Namespace field should match the namespace in the globalsettings.xml file.
10. Click OK. The log file is displayed.
11. Check the log for errors. Note: The code deployment is rerunnable, so if errors are encountered, run the process again.

Application Server Specific Setup

Prerequisites

- Sample application server Globalsettings.xml
- Log configuration .xml.
- Extracted files and deployment tool.

Setup

Configure Global Settings and Log Config files.

- Underneath the web site folder (e:jda\), create a LogFiles subdirectory with two additional directories named IIS and Log4Rad.
- Open the registry key creation (.reg) from the installation package using a text editor. Verify that the path names and drive letters match the directory structure. If the keys match, double click on the registry files to create the registry keys. From the installation package, copy the sample globalsettings.xml and the sample log4rad configuration file to the application folder (i.e., e:\jda). Open the global settings file in a text editor and configure the following values:
    a. ObjectRepository: Initial Catalog= the name of the object repository database
    b. ObjectRepository: Data Source=the name of the DB server for the environment
    c. __ImportExportDirectory = the server and share name of the environment import/export server."
    d. NameSpace: Name the environment namespace, for example SPWYProd.
    e. __TaskQueueStore = The name of the current server and the path for the AsynchQueueStore, for example \\xxx999.domain.com\AsynchQueueStore
    f. __ResolvedHostName = the server with the domain name.
    g. __PortalSiteID="7"
    h. __PortalName=The environment text name, for example "ESO - Production"
    i. __WaveTestMode="off"
    j. __ClientPollInterval="15000"
    k. __ImportWebserverURL= (need additional details)
    l. __WaveTrace="off"
    m. __WaveTranslation="off"
    n. __DefaultLanguage="English"
    o. __Protocol="http"
    p. __WaveSecurityCheck="off"
    q. __POSAppServerURL= the server with the domain name.
    r. __POSFileShareRoot== The name of the current server and the path for the AsynchQueueStore, for example \\xxx999.domain.com\xmlfiles
    s. __WaveDebug="off"

       t.   __WaveErrorTrapping="on"

       u.   __WaveAutoLogon="off"

       v.   __QueryTimeoutOverride="180"

       w.   __UseCompression="on"

       x.   __ReportCellLimit="64000"

       y.   __PDFServerURL=need additional details.

       z.   __AllowPangeaAccess="true"

     aa.   __SMTPServer="smtp.marathonpetroleum.com" (Need to check)

     bb.   __WaveDatabaseConnection: Integrated Security = SSPI

     cc.   __WaveDatabaseConnection: Persist Security Info = False.

     dd.   __WaveDatabaseConnection: Initial Catalog = name of retail database, for example VP60_eso.

     ee.   The above fields are repeated for the WaveDatamartConnection, WaveWebPOSConnection, WaveArchiveConnect, and ReadyonlyConnection except the initial catalog needs to reflect the corresponding database.

      ff.   WaveDatamart = primary database name + _wh

     gg.   WaveWebPost = primary database name + _pos

     hh.   WaveArchive = primary database name + _archive

      ii.   Readonly = primary database name (identical to the Wave database)

      jj.   For application servers, there will be rule settings. Leave these intact.

- Configure logconfig.xml. This file should exist in the same application directory defined in the registry entry.
- Set the file name value for the "AllErrors" appender, for example, E:\JDA\logs\log4rad\%ServerName%_allerrors.

Deploy ESO Code.

1. Before proceeding, use windows explorer and navigate to the c:\windows\syswow64 folder and verify that a file named MSCOMCTL.OCX is present. If the file is not present copy it from the installation package and into the window\syswow64 folder. From within that folder, open a command prompt and execute the following:
2. Locate the deploy tool (deploy.exe) from the installation package>
3. In the Hosting Management Server name, enter the URL of the Hosting Management server.
4. You will be prompted for the user name and password for the HM application. This is not a database user and password. Click login.
5. Click on the check box to also install APE Services.
6. In the Target Directory field enter the wave directory you created. For example, e:\jda\deployedfiles.
7. The Release field should contain the current release of Retail2018.2.0.1.

8. Click the Web Site drop-down list and select the name of the web site that was created on the server.
9. The Namespace field should match the namespace in the globalsettings.xml file.
10. Click OK. The log file is displayed.
11. Check the log for errors. Note: The code deployment is rerunnable, so if errors are encountered, run the process again.

Configure User accounts and Security for APE Services

1. Navigate to Administrative Tools, Services.
2. There should be a newly installed APE Service.
3. Right click on properties and navigate to the security tab.
4. Select a specific account and enter the user id and password for the domain account for the API Service.
5. Click OK to save.

DCOM Configuration settings

1. Navigate to administrative tools, component services, computer, my computer and DCOM config.
2. There will be 3 APE services interfaces that need to be configured (APEEngineOP, APEEngineIP, and APEService). For each one of these perform the following:
   a. Right click on properties and navigate to the security tab.
   b. In the Launch and Active permissions, select customize and Click the edit button.
   c. Add the application server domain user account to the list of users.
   d. Local Activation should be checked.
   e. Local Launch should be checked.

Installing Speedway Gold Databases

Speedway has installed and configured a Gold environment that has been upgraded to Retail2018.2.01. The databases in this environment contain the base data that will be consistent within all speedway development, test, and production environments.

After the completion of the environment installation, the databases created during the installation process will be restored using backup copies of the Speedway Gold databases:

VP60_eso
VP60_eso_archive
VP60_eso_archive_yyyy_mm
VP60_eso_pos
VP60_eso_wh

There is no need to restore VP60_or, or VP60_eso_refs.

After completing the restore of the Gold databases, the steps under the "Generic Deploy" listed above needed to be completed.