

Cleo ERP Connector for Oracle E-Business Suite (EBS) User Guide

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Contents

| | |
|---|-----------|
| Cleo ERP Connector for Oracle E-Business Suite (EBS) | 4 |
| Supported transactions..... | 4 |
| Related Help & Support..... | 5 |
| What's included | 6 |
| com.cleo.oracle.ecg.base | 6 |
| com.cleo.oracle.ecg.mypartner..... | 6 |
| Sample EDI Transactions..... | 7 |
| Sample Data and File Structure..... | 8 |
| Getting Started | 9 |
| Supported product versions and other system requirements | 9 |
| Download the Connector contents..... | 9 |
| Create the sample directory structure..... | 10 |
| Test the sample integrations | 11 |
| Start the server | 11 |
| Deploy objects | 12 |
| Start File Monitors | 13 |
| Replicate the sending/receiving of data | 13 |
| Create Schemas from other Oracle file definitions | 14 |
| Generate the Oracle file definition | 14 |
| Use the Oracle file definition to create a Schema..... | 16 |
| Use the Schema | 16 |
| General Recommendations & Best Practices | 17 |
| Re-purpose sample Projects for own business needs..... | 17 |
| Follow Naming Conventions | 17 |
| Practice version control | 18 |

Cleo ERP Connector for Oracle E-Business Suite (EBS)

The Cleo ERP Connector for Oracle E-Business Suite (EBS) provides customizable implementation solutions that can be used to integrate Cleo Clarify and Oracle E-Business Suite using the Oracle e-Commerce Gateway (ECG) interface and ASC X12 EDI transactions.

This Connector uses a proprietary flat file interface (via the file system) to send outbound transactions and receive inbound transactions. Clarify facilitates transactions between ECG and a Trading Partner (via EDI or other options). It also includes a large collection of Clarify resources, such as Rulesets, Business Processes, source and target Schemas, and source and target Adapters, as well as sample data and file structures that can be used for testing.

Also included is a metadata importer, which uses ECG definitions exported from Oracle's E-Business Suite (using the e-Commerce Gateway interface) to generate document definitions that represent the Oracle-side interface in Rulesets, for both source and target cases.

Supported transactions

Cleo ERP Connector for Oracle E-Business Suite (EBS) includes pre-built integrations for common EDI Order-to-Cash and Procure-to Pay transactions, using several default Oracle ECG documents. These integrations provide a starting point for creating customized implementations that utilize non-standard ECG documents, partner-specific EDI documents, customized data transformations and process automations, and partner-specific communication adapters. The pre-built integrations, shown below, can be used to integrate any EDI document type supported by e-Commerce Gateway.

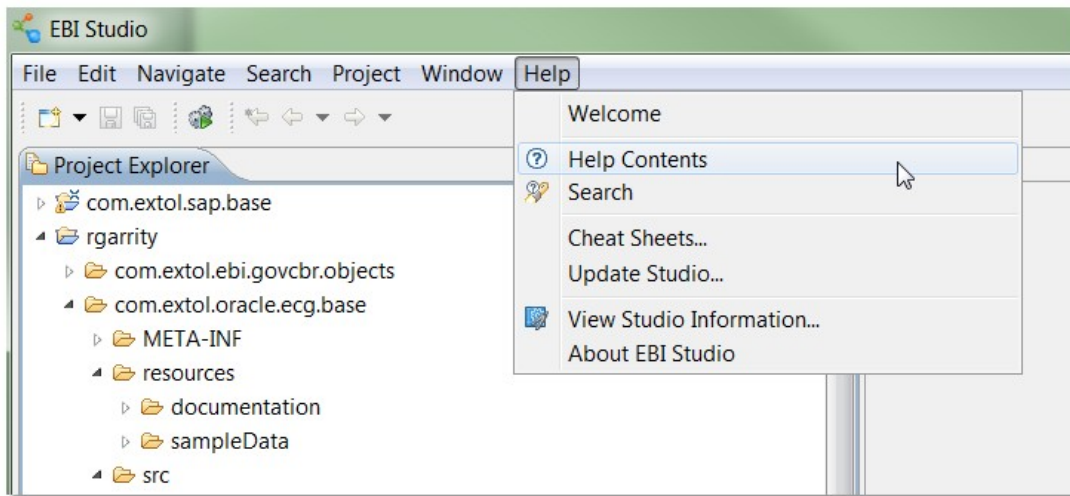
(EDIFACT column is shown for reference only)

| Document Type | X12 5010 | EDIFACT | ECG ID | Inbound | Outbound |
|--------------------------------|----------|---------|--------|---------|----------|
| Purchase Order | 850 | ORDERS | POI | ✓ | |
| Purchase Order | 850 | ORDERS | POO | | ✓ |
| Purchase Order Acknowledgement | 855 | ORDERSP | POAO | | ✓ |
| Purchase Order Change Request | 860 | ORDCHG | POCO | | ✓ |
| Purchase Order Change Request | 860 | ORDCHG | POCI | ✓ | |
| Grocery Purchase Order | 875 | ORDERS | POI | ✓ | |
| Invoice | 810 | INVOIC | INO | | ✓ |
| Invoice | 810 | INVOIC | INI | ✓ | |
| Shipment Notice | 856 | DESADV | DSNO | | ✓ |
| Shipment Notice | 856 | DESADV | ASNI | ✓ | |

Other transaction types can be implemented by using the included ECG Metadata Importer in conjunction with the EDI Standards, and other tools available in the Clarify Studio.

Related Help & Support

This document refers to the Clarify Studio's product Help (User Guide) for detailed instructions on how to complete certain tasks that are not described here. To view the Help, select Help Contents from the main menu in your Clarify Studio.



Need additional help? Contact CLEO Support

Cleo provides several different contacts based on the issue at hand. Use the table below to decide where to go to get help.

| For questions on... | Contact... |
|--|----------------------------------|
| Professional Services Project Assistance | 1-888-334-3986 (main line) |
| Product Licenses or Delivery | 1-888-334-3986 (main line) |
| Customer Support Hotline | 1-866-398-6524 (Clarify Support) |

What's included

Cleo ERP Connector for Oracle E-Business Suite (EBS) contains two Clarify Projects, containing several packages, objects, and sample data. These include:

- *com.cleo.oracle.ecg.base* (Project)
- *com.cleo.oracle.ecg.mypartner* (Project)
- Sample EDI transactions
- Sample data and file structures

com.cleo.oracle.ecg.base

This base Project contains several Packages containing multiple objects. These objects may be referenced, or shared, by other Projects; in this case, the other Project (*com.cleo.oracle.ecg.mypartner*). Clarify supports sharing the same objects between different Projects, and sharing the same objects and Projects between different users. Shared objects within this Project include:

- Application Interfaces
- Business Processes
- Code Tables
- Control Number Generators
- Events
- File Adapters
- File Monitors
- Formulas
- Global Variables
- Rulesets
- Ruleset Data Objects
- Schemas
- Transformation Settings

The Project also contains a *Resources* folder, which provides these folders:

- **Documentation:** contains a Read-Me file and this User Guide.
- **SampleData:** contains inbound and outbound sample directories to be used to test the sample integrations.

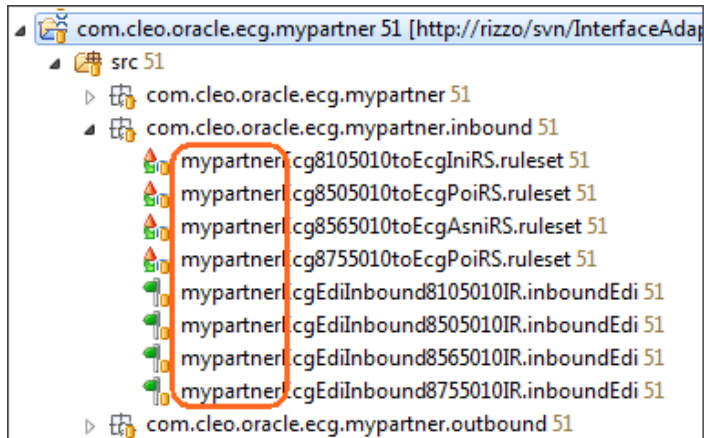
The steps to set up these sample directories are described in the topic [Create the sample directory structure](#) on page 10.

com.cleo.oracle.ecg.mypartner

This Project contains Packages and objects that are specific to the sample Trading Partner used throughout the sample EDI and ECG transactions within this Cleo ERP Connector. This includes inbound and outbound EDI Routes, EDI Envelopers, Rulesets, and Trading Partner objects.

Using the CLARIFY Project Generator

An important aspect to this Package is the use of the generic “mypartner” in the object names, shown here. This facilitates use of the Project Generator in Clarify, which allows you to easily replicate a template Project and its resources, updating new resource names, re-configuring enveloping and trading partner info, all while maintaining resource dependencies and other attributes and values to automatically reflect a newly generated Project.



For more information, please refer to the *Wizards and other Tools* topic in the *Clarify User Guide*.

Sample EDI Transactions

The Cleo ERP Connector for Oracle E-Business Suite (EBS) provides several inbound and outbound sample integrations for typical Order to Cash transactions. All samples use EDI X12 version 005010 messages, and implement the following transactions:

Inbound

- X12 850/875 to ECG POI
- X12 810 to ECG INI
- X12 856 to ECG ASNI

Outbound

- ECG INO to X12 810/880
- ECG DSNO to X12 856
- ECG POAO to X12 855
- ECG POO to X12 850
- ECG POCO to X12 860

Sample Data and File Structure

After extracting the contents of the *ECG_Sample_Directories.zip* file to your local file system, two root folders should now exist. These folders contain the sample data needed to execute the sample integrations. The root folders – *Inbound* and *Outbound* – are discussed below.

Inbound

The root *Inbound* folder contains sub-folders which store three Oracle inbound transaction types – **ASNI**, **INI** and **POI**. The inbound File Monitors listen for any files to be dropped into these folders. Within these sub-folders are the *ArchiveSource*, *ArchiveTarget*, and *Receive* folder.

- All sample documents can be found in the *ArchiveSource* folder within each transaction type folder, regardless of inbound or outbound samples;
- Once a document has been picked up from the transaction type folder, Clarify places a copy of document in the *ArchiveTarget* folder;
- The document disappears from the transaction type folder, and the resulting EDI document now appears in the *Receive* folder.

Outbound

The root *Outbound* folder contains sub-folders housing five Oracle outbound transaction types – **DSNO**, **INO**, **POAO**, **POCO** and **POO**.

- An *FA* folder also exists to store functional acknowledgements created during execution of the inbound transaction types.
- The *ArchiveTarget* and *Send* folders retain copies of the FA data.

Getting Started

This topic explains how to initially set up the Cleo ERP Connector for Oracle E-Business Suite (EBS) in your existing workspace, which when completed, will establish the necessary resources, sample data, and file system structure used for the different EDI and ECG transactions provided. Additional support information is also provided.

Supported product versions and other system requirements

This product has been designed and tested to work with Cleo Clarify v3.1 and above. All references within this document cite this version only. The following versioning and requirements apply:

- Clarify Studio v3.1.1 or later must be installed;
- Clarify Server v3.1.2 or later must be installed;
- Licensing for this Cleo ERP Connector must be enabled;
- Cleo ERP Connector for Oracle E-Business Suite (EBS) supports Oracle R11.

Please contact Cleo Support should you have additional questions on these requirements.

Download the Connector contents

The Cleo ERP Connector product can be downloaded from a Cleo-hosted SVN repository. Please contact Support for initial registration and setup.

Once you have access to the hosted SVN repository, follow this process to download contents.

1. From the Clarify Studio, create a repository location using the *SVN Repository* perspective. **This location URL will be provided by Support.**
2. Check out the two *Oracle EBS* Projects from the appropriate connector repository location. This establishes the necessary resources in your Workspace.
3. Disconnect the Projects from the hosted repository. Select a Project from the *Project Explorer* perspective, right-click, and choose *Team/Disconnect*. **You must perform this step for each Project.**

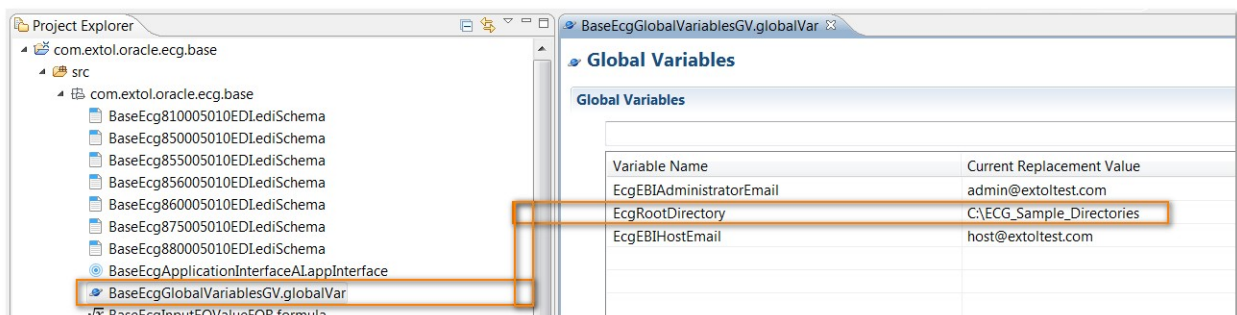
Create the sample directory structure

To create these sample directories on your local file system, extract the *ECG_Sample_Directories.zip* file. The recommended location is *C:\ECG_Sample_Directories*. This location corresponds with a configured replacement value found in a specific Clarify object.

If you select a location other than what's recommended, you will need to update the replacement value for the *EcgRootDirectory* variable with the new location.

This is done in the following object:

/com.cleo.oracle.ecg.base/src/com/cleo/oracle/ecg/base/BaseEcgGlobalVariablesGV.globalVar



The image above shows the Global Variable object opened in its respective editor. The Current Replacement Value reflects a default location for the sample directories.

Setting up E-mail error notifications

The same Global Variables object referenced above contains two variables (*EcgEBIAdministratorEmail* and *EcgEBIHostEmail*) that must be updated to reflect your e-mail server settings in order to receive any error notifications. This can be done from within the *Settings* view of the Admin Console in the Clarify Studio.

Test the sample integrations

Testing the sample integrations included with the Cleo ERP Connector for Oracle E-Business Suite (EBS) allow you to execute the inbound and outbound EDI and ECG integrations, including some of the automated processes such as data transformation, status analysis, file archiving, and e-mail notification (when configured).

This topic describes how to test these integrations using the sample data provided, and how to view the expected results in the Clarify Studio as well as in your file directory. While the inbound and outbound processes differ in certain aspects, the overall process follows the same basic flow regardless of transaction type. This is the process:

1. Start your Server.
2. Deploy objects.
3. Start the File Monitor.
4. Drop the files (replicate the sending/receiving of documents) and view the results.

For the purpose of this topic, we will use the inbound EDI *X12 856 to ECG ASN1* sample integration.

Prerequisites

The following prerequisites must be met before successful testing can occur.

- Licensing for Cleo ERP Connector must be acquired.
- The Sample Directory and its content must be available (and configured).

Start the server

For the purpose of testing these example scenarios, it's recommended to initially use the Local Test Server. This server's sole purpose is to provide an active server environment for ensuring that Clarify objects behave as expected before deploying them to formal test or production servers. It is integrated with each Clarify Studio installation.

Sample integrations may be tested using a remote Server, which works as the engine of Cleo Clarify. This runtime component is the installed instance of Clarify where your test and/or production environment resides. There are separate installing/licensing procedures for remote Servers.

Note: sample integrations should never be tested using a Production server.

To start the Local Test Server: From the *Admin Console's* main menu toolbar, select *Local Test* from the *Server Environment* drop-down, and click the **Start** button.


Deploy objects

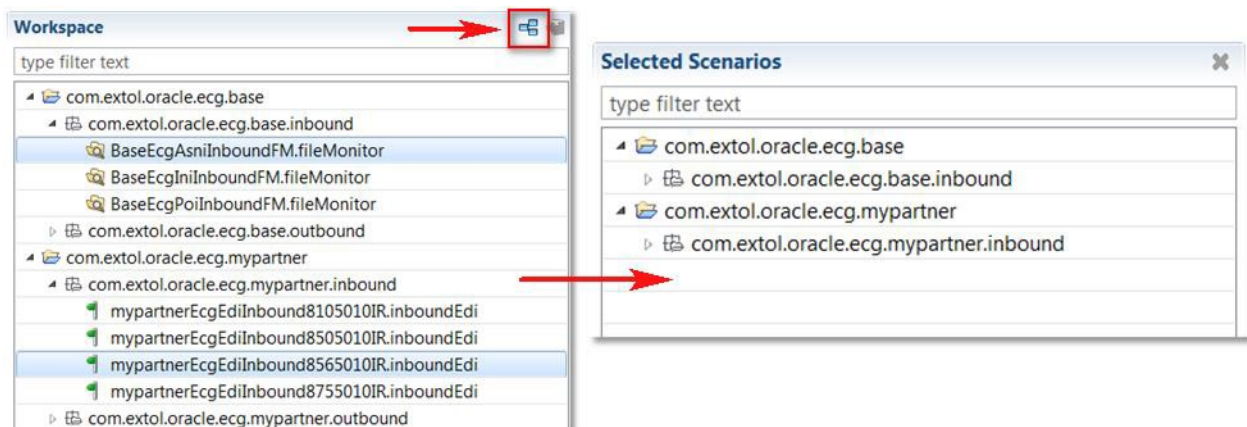
All deployment activities take place on the *Admin Console Perspective's Projects* view. Deployment essentially bundles all objects contained in a Project and copies them to a server. The Server may reside remotely (Clarify Server) or locally (Local Test).

In this example, the following objects will be deployed to the Local Test Server.

- File Monitor (from the base Project)
- Inbound EDI Route (from the Trading Partner Project)

To deploy objects to Local Test:

Select the objects and drag to the *Selected Scenarios* section. The object (and all other related objects) should now appear in both the *Selected Scenario* and *Server Projects* sections, with a status of Installed. The Project and Package structure are also displayed. You can also click the **Deploy Scenario** button  to accomplish the same thing. The result will be that not only do the two objects now appear in Selected Scenarios, but the Projects and packages they belong to are also included, as shown here.



Note: Deploying objects to the Local Test server environment differs from deploying them to a remote (runtime) Server. While an entire Project is the deployable unit for Clarify runtime servers, for the Local Test server individually objects are the deployable units – specifically, top-level objects.

To learn how to deploy to a remote Server, please refer to the *Designing Integration Solutions/Deploying the Solution* topics in the *Clarify User Guide*.

Start File Monitors

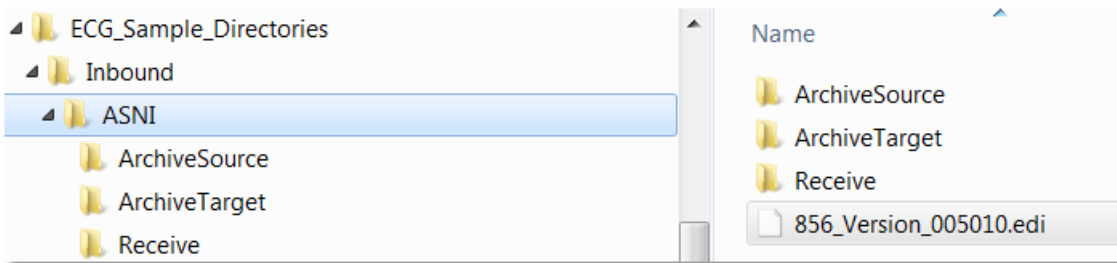
Now that the File Monitor has been deployed, it must be enabled, or started. An enabled File Monitor checks the directory in which the inbound or outbound files are placed; when data arrives, the Monitor raises an Event (causing specific processes to execute) and then moves the document to its applicable folder.

To start the File Monitor:

1. From the *Admin Console's Resource Monitors* view, select *File Monitor* from the *Resource Monitor Types* section. This will display any deployed File Monitor in the *Resource Monitors* section. Any monitor that has already been started has a green indicator, while red indicators show that a monitor is not started.
2. From the *Resource Monitor* section, select *BaseEcgAsniInboundFM.fileMonitor* and click **Start** (▶).

Replicate the sending/receiving of data

From your sample file directory, you will now take the EDI document (*856_Version_005010.edi*) from within the *ArchiveSource* folder and drop it directly into the *ASNI* folder, as shown here.



Results:

- The EDI document disappears within several seconds.
- A copy is placed in the *ArchiveTarget* folder;
- The resulting ECG ASNI document now appears in the *Receive* folder.
- A Functional Acknowledgement (997) is also generated for this inbound transaction, and is placed in the *Outbound/FA* folder.

If any of the above did not occur, there may have been an error in the process, which can be investigated through the Clarify Studio's *Auditor* view (part of the *Admin Console*).

Create Schemas from other Oracle file definitions

The Cleo ERP Connector license enables support in the Clarify Studio to import Oracle ECG metadata. Clarify provides a metadata importer, which uses ECG definitions exported from Oracle's E-Business Suite (using the e-Commerce Gateway interface) to generate file definitions that represent the Oracle-side interface in Rulesets, for both source and target cases.

You then use these file definitions to create source or target Schemas.

This topic explains the basic process behind this ECG metadata support, which is broken down into three stages:

1. Generate the Oracle file definition.
2. Create the Schema from the Oracle file definition.
3. Use the Schema in your Ruleset (to transform ECG data).

Generate the Oracle file definition

The descriptor files describe the formats of the ECG interface files and can be generated from your Oracle system. The approved format for metadata extracted from the Oracle ECG system is a text file where the metadata is expressed in a .csv format. In addition to the columns to include in the Clarify Schema, the following columns are mandatory (in order, with quotations around the appropriate fields):

```

RECORD_NUMBER,
EXTERNAL_LEVEL,
PARENT_LEVEL,
"INTERFACE_COLUMN_NAME",
POSITION,
WIDTH, "DATA_TYPE",
"RECORD_LAYOUT_CODE",
"RECORD_LAYOUT_QUALIFIER"

```

Using only required columns, the following is a fragment of a well-formed metadata file:

```

10,1,0,"COMMUNICATION_METHOD",10,2,"VARCHAR2","CT","CT"
10,1,0,"TP_TEST_FLAG",20,1,"VARCHAR2","CT","CT"
10,1,0,"DOCUMENT_ID",30,6,"VARCHAR2","CT","CT"

```

Note: Some fields are encapsulated with quotation marks. The Oracle importer expects this format and may encounter problems if the file does not contain the proper use of quotation marks. To ensure that the export file is fully compatible with the import utility, use the Oracle SQL Developer client to run a sql script which exports the metadata definition.

The following Oracle ECG tables are used to express the interface file format:

ECE_INTERFACE_COLUMNS
 ECE_MAPPINGS
 ECE_EXTERNAL_LEVELS

| Column Name | Data Type | Table | Nullable? | Description |
|-------------------------|--------------|-----------------------|-----------|-----------------------------|
| RECORD_NUMBER | NUMBER | ECE_INTERFACE_COLUMNS | Yes | Internal Record Number |
| EXTERNAL_LEVEL | NUMBER(15) | ECE_INTERFACE_COLUMNS | No | External Level |
| PARENT_LEVEL | NUMBER(15) | ECE_EXTERNAL_LEVELS | No | Parent Level |
| INTERFACE_COLUMN_NAME | VARCHAR2(50) | ECE_INTERFACE_COLUMNS | Yes | Interface Column Name |
| POSITION | NUMBER | ECE_INTERFACE_COLUMNS | Yes | Position of Attribute Value |
| WIDTH | NUMBER | ECE_INTERFACE_COLUMNS | Yes | Length of Attribute |
| DATA_TYPE | VARCHAR2(20) | ECE_INTERFACE_COLUMNS | Yes | Attribute's Data Type |
| RECORD_LAYOUT_CODE | VARCHAR2(30) | ECE_INTERFACE_COLUMNS | Yes | Record Layout Code |
| RECORD_LAYOUT_QUALIFIER | VARCHAR2(30) | ECE_INTERFACE_COLUMNS | Yes | Record Layout Qualifier |

For a comprehensive view of the tables and their relationships in the Oracle ECG application, consult the following Oracle documentation: *Oracle e-Commerce Gateway Technical Reference Manual*.

Use the Oracle file definition to create a Schema

After acquiring the sample Oracle definition file, it will then be used in the creation of a Schema in Clarify.

In Clarify, a Schema (object) defines data; this includes metadata qualities like data type, field length, decimal places, and EDI message ID. It also includes descriptions of fields, cells, or elements, such as order number, unit price, etc.

Before creating the Schema, place the Oracle file into Clarify.

Cleo recommends creating a new folder called samples in your working Project at the same level as the src and META-INF folders to hold sample data. To create the Schema:

1. Select *File | New | Oracle Schema* from the Clarify Studio *main menu*.

Note: If you select the Package (from your working Project) in which the Oracle Schema should reside before creating it, some parameters are automatically populated in the *New Oracle Schema* window.

2. The *New Oracle Schema* window appears. Under *Import Oracle e-Commerce Gateway File*, in the *File Name* field, click **Browse** to select a file. Click **Next**.
3. Provide the *Source* folder, *Package*, and *Name*.
4. Click **Finish**. A Schema editor appears.

Use the Schema

Now the Schema can be used as source or target for one of the shipped Rulesets in the Cleo ERP Connector for Oracle E-Business Suite (EBS), or when creating new Rulesets going forward.

At this point, you will make any required changes to the Schema using this editor. For more information, please refer to the *Designing Integration Solutions/Defining the Data/Schema* topics in the *Clarify User Guide*.

General Recommendations & Best Practices

This topic provides some general recommendations and best practices when working with the Cleo ERP Connector for Oracle E-Business Suite (EBS).

Re-purpose sample Projects for own business needs

The integrations provided in the Cleo ERP Connector provide a starting point for creating customized implementations that utilize non-standard ECG documents, partner-specific EDI documents, customized data transformations and process automations, and partner-specific communication adapters.

They serve as examples of EDI and ECG integrations only. They can, however, be customized for your actual business needs, and to rapidly onboard new Trading Partners. The Clarify Studio provides all of the tools necessary to customize, test, and deploy integration applications based on the default integrations included in the package.

How you re-purpose these examples depends on many factors, but the general path to customization will always reflect the creation of new objects, configuration with your environments, and the utilization of the Clarify Project Generator. This feature helps you quickly generate Projects by using an existing Project as a template. Clarify replicates the template Project and its resources, updates new resource names, re-configures enveloping and trading partner info (for EDI Projects), maintains resource dependencies, and updates other attributes and values to automatically reflect the newly generated Project.

For more information, please refer to the *Wizards and other Tools* topic in the *Clarify User Guide*.

Follow Naming Conventions

A good practice is to use a standardized method for naming Projects, Packages, and objects, but it's especially critical when employing a modular approach to designing Clarify solutions. Several rules are recommended based on common standards and experience, and provide several benefits.

- Enhance clarity in cases of potential ambiguity
- Avoid naming collisions or duplicate names
- Provide meaningful information
- At-a-glance understanding of Projects/Packages/objects, especially if you are away from developing integrations for an extended period of time
- Predictability

For more information, please refer to the *Guidelines and Recommendations* topic in the *Clarify User Guide*.

Practice version control

We recommend using version control to take advantage of change management, even if there is only one Clarify user, and no shared Projects. With an SVN repository for example, you can track all your changes, and your ability to revert to a previously saved state is much more robust than that of a resource's local history.

Cleo hosts an SVN repository to share Projects and resources. Please contact Support for initial registration and setup.

For more information, refer to the *Versioning & Synchronizing Projects* topic in the *Clarify User Guide*.