Oracle® Logistics Cloud

Getting Started Guide

Release 6.4.2

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Oracle® Logistics Cloud Getting Started Guide, Release 6.4.2

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Preface

The purpose of this document is to help you get started with implementing and using the Logistics Cloud Services. More detailed documentation on particular topics is available in the form of online help and documents.

Change History

Date	Document Revision	Summary of Changes
04/2017	-01	Initial release. Added a new section for Document Storage under complementary products to provide the details to integrate OTM with external content management system like Oracle Documents Cloud. Added Oracle Transportation Mobile to the Complementary Products chapter. Standardized the URLs to use this format: https://<servicename>-<identity-domain-name>.otm.<data-center>.oraclecloud.com Added "Business to Business Connectivity" section to chapter 5. Added Password Properties section. Improved instructions for retrieving SSL Certificate for Inbound Integration. Updating to make it clear that the XSL upload capability is restricted to DBA.ADMIN. Created Outbound Integration and PaaS/IaaS section. Documented that IPP Printing requires IP Whitelisting of the print server host. Clarified that Shipment Status Purge is for all Tracking Events. Documented Mobile Application Timeouts. Improved documentation of Property Sets. Added documentation for Business Object Caches. Added Business Number Generator section. Documented Here External Distance Engine. Added more email properties that Service Administrator should change. Modified Workflow Thread Tuning to recommend using the new

Date	Document Revision	Summary of Changes
		queueThreads properties for managing queue sizes. Added new Legacy Data Loading section to Data Management. Modified PC Miler Engine configuration to reference new WCF Web Service properties. Documented new Purge/Archive logic for business objects. Updated HERE External Distance Engine with the new HERE URl, under the GEO-CODING AND EXTERNAL DISTANCE/TIME section. Added eLocation properties to the Maps > Workbench Designer section. Updated default setting for OracleSpatial.port Removed the note - Note: Users of Oracle Fleet Management Cloud Service or Oracle Fleet Management are not permitted to use eLocation.oracle.com for mapping services or as an EDE (External Distance-time Engine). Added documentation of Memory Guard features for BIPublisher. Fixed a typo in glog.properties.email.recipients. Modified Business Intelligence/BIPublisher login details to reflect the SSO login step. Added Integration with Oracle E-Business Suite section. Added a reference to the P2T MOS Note.
05/2017	-02	Added notes for PCMiler Rail web services. Add information on printing reports that have bar codes.
10/2017	-03	Added details on data cleansed during Production to Test Clone Specified the port to be used with WMServlet Added information about Migration Projects Added Country Code configuration section Added more detailed steps for exporting the Root and Intermediate Certificates for Inbound Integration Added details on the Manage User Expiration action Added instructions for accessing OBIEE/BIPublisher Consoles

Date	Document Revision	Summary of Changes
		via the Logistics Cloud menu Updated Federated SSO links Changed OBIEE/BIPublisher customer artifact folder name from "Custom" to "custom" to accommodate migration script

1. Getting Started

Setting Up Logistics Cloud

Overview

This guide does not include all of the tasks that are required for a full implementation of the Logistics Cloud offering. The guide describes how to perform the initial setup required for creating or importing items.

To set up all of the options in the Logistics Cloud offering and take advantage of additional product management features, you will need to perform additional setup tasks that are not covered in this guide. Information about additional setup is available from Logistics Cloud help and in the guides. Help and guides are found at the Transportation and Global Trade Cloud Library (http://docs.oracle.com/cloud/latest/otmcs_gs/index.html). Additional documents and help are found on My Oracle Support (https://support.oracle.com/) in Doc ID 796594.1.

Access Requirements

Explained

To get started with Logistics Cloud implementation, you need access to the Oracle Identity Manager (OIM) and the Logistics Cloud application.

Before you begin, make sure you have the following information:

- URLs for Logistics Cloud application and OIM. For example, the URL for the Logistics Cloud application is `https://<servicename>-<identity-domain-name>.otm. <data-center>.oraclecloud.com`, where `<servicename>` and `<identity-domain-name>` are the values that were specified during provisioning. If you do not know the URLs, contact the person who installed the systems at your company. When the Logistics Cloud provisioning process completes, these URLs are shown on the summary page.
- The user name and password of the Logistics Cloud super user. For Oracle cloud application services, you specify the default user name of the Logistics Cloud super user. For all other implementations, the default user name of the Logistics Cloud super user is DBA.ADMIN.

  Note: HTTPS is required. If needed the port for SSL is 443 and it is not configurable.

System Requirements

Please refer to the following URL for the latest information on system requirements, including web browser support:

http://www.oracle.com/us/products/system-requirements/overview/index.html

2. User Management

Application Administrator

All Logistics Cloud Services automatically provision one user referred to as the Application Administrator. The Application Administrator has the responsibility of creating any additional users. By default, the Application Administrator is associated with the "DBA.ADMIN" user with Oracle Transportation Management. Certain application functions are restricted to users such as the Application Administrator, which have the User Role "DBA.ADMIN". It is strongly advised that you create at least one additional user that has the "DBA.ADMIN" User Role in the event that the Application Administrator is not available.

It is important to note that the "DBA.ADMIN" user is a reserved user. This means that editing of this user, other than changing the password, is prohibited. However, it is possible to change what user is associated with "DBA.ADMIN". When logged into Oracle Transportation Management as the Application Administrator, you can edit the "DBA.ADMIN" user and change the Username to a different email address. Note: This user must already exist in the SSO (see Single Sign-On for more details). If you are unable to login as the Application Administrator, you will need to open a Service Request to have the password reset or to change the Application Administrator.

If you do change the Application Administrator, it is important to note that you may also want to change the email address associated with the following Properties.

- glog.workflow.notify.advisor.email: Defines the sender for all emails from the system and the recipient of workflow notifications.
- glog.odi.email.to.address: Defines recipient of FTI/GTI data extraction errors.
- glog.properties.log.email.recipients: Defines recipients of Property Set changes.

See the "Property Set" section for more details on changing Properties or on-line Help for more details on these properties.

User Roles

Every user must have a default user role. The user role controls data visibility via a virtual private database (VPD) and functional security (Level) for that user.

After a user role is added to the system, you can assign it directly to a user or assigned to another role. If you assign multiple roles, a user can switch between each role without logging out and logging back into the system. For example, you may configure many user roles that provide domain level visibility into different sets of data for different companies. Then, you can assign one or more of these roles to a user and the user could switch between the roles as needed without logging in and out. You can also assign multiple roles to a master role and then assign the master role to a user thereby providing that user with visibility in multiple domains of select data.

This page is accessed via **Configuration and Administration > User Management > User Role.** For more details see, the "User Role" help topic.

User Access

With a web application, it is important to understand that menu options are NOT a form of security. Users can access particular web pages by directly changing the URL, not just by clicking on the menu. Therefore, in order to truly restrict access it is necessary to define user access.

This page is accessed via **Configuration and Administration > User Configuration > User Access.** For more details see the "User Access" help topic.

Provisioning New Users

Logistics Cloud user accounts are provisioned from within the application. When provisioning users, it is necessary to specify the domain created previously. By default, users created in one domain will only have access to PUBLIC data and data defined in that domain. Usernames should not contain the word "ADMIN" since these users are blocked from login.

The User manager is accessed via **Configuration and Administration > User Management > User Manager**. For more details see the "Manage User" help topic.

Single Sign-On (SSO)

All Logistics Cloud services are provisioned with Single Sign-On enabled. The Single Sign-On capability is provided by the Oracle Public Cloud Identity Management service. In order to log in to a service with Single Sign-On enabled, the user must exist in the Identity Management service and the Logistics Cloud service. Currently there is no automatic synchronization of user between these systems. Users need to be provisioned manually in both services. The Identity Management service provides a batch import capability. For more information on this topic, use the Help link provided on the User Creation screen in the Identity Management service.

Provisioning a User in the Identity Management Service

The following instructions provide the steps needed to provision a new user in the Identity Management Service. For details on provisioning the Logistics Cloud user accounts, refer to the "Provisioning New Users" section of this document.

1. Log into the Oracle Public Cloud My Services application using the URL, Identity Domain, and User Credentials provided in your Welcome email.
2. Click the **Users** menu tab
3. Click the **Add** button
4. Enter First Name, Last Name, and email address for the new user. Note: the email address must match the Nick Name field on the corresponding OTM User account.
5. Click the **Add** button[1]. The new user will receive an email containing their default password. They will be prompted to change the password on first login.

When creating users in the SSO, it is not necessary to add any roles to the user. The only exception is Service Administrators. Service Administrators should be granted roles in the SSO for Service Administration and Identity Management.

It is important to note that Inbound Integration, Oracle Business Intelligence, and BIPublisher Reporting are not currently configured to use Single Sign-On. These capabilities require the user to login with the password defined in the Logistics User Manager. A user that is only used for Integration does not need to exist in the Identity Management Service.

Users will be prompted via email to change their passwords in the SSO every 120 days. Failure to change the password will cause the account to be locked. The Password Policy for Oracle Cloud SSO is subject to change, but the current rules are as follows:

- 1. Password must be at least 8 character(s) long.
- 2. Password must contain at least 1 lowercase letter(s).

[1] If you want this user to also have Cloud Portal and Identity Management Administration rights, Click **Advanced Role Selection** and add all Available Roles to the Assigned Roles.

- 3. Password must contain at least 1 numeric character(s).
- 4. Password must contain at least 1 uppercase letter(s).

For more details on Oracle Public Cloud Identity Management, please refer to the following documentation: Understanding Identity Concepts.

Federated Single Sign-On

The Oracle Public Cloud Identity Management service now supports Federated Single Sign-On (SSO). Federated SSO provides the ability to propagate user authentication to an SSO system outside of the Oracle Public Cloud. For more details on this topic, please refer to the following document in the Oracle Public Cloud Documentation.

- Configure Single Sign-On
- Administering Oracle Cloud Identity Management
- Tutorials

Domains

One of the first steps is to create a domain. Domains allow you to keep databases separate and secure in a shared, web-based environment. The Domain manager enables administrators to organize and manage the domain structure of their installations.

There is considerable flexibility in the domain structure; you can customize the application to the particular needs of many types of organizations. Top-level domains and sub-domains, with a variety of access grants, are created and maintained.

You can use domains for different purposes, e.g. modeling business units within a company. At a minimum, a single domain must be created to contain all customer specific data. Data should not be created in the PUBLIC domain unless explicitly instructed to do so by Oracle product documentation.

Domains are created via **Configuration and Administration > Domain Management > Add Domain**. For more details, see the "Add Domain" help topic.

All installations of Logistics Cloud include several domains which are intended to facilitate implementation. Each of these domains includes a Domain Administrator user. In the Logistics Cloud Service these users disabled from interactive login. These users include: BLUEPRINT.ADMIN, E1.ADMIN, EBS.ADMIN, GUEST.ADMIN, SERVPROV.ADMIN. Every new domain created also creates a Domain ADMIN user which is disabled from login. These users should not be removed from the system.

Account Policies

For proper security, users should be defined with an account policy. Account policies allow you to control user login and password security attributes such as:

- User Password Expiration
- Lockout Attempts and Duration for Entering Incorrect Passwords
- Dormant Account Locking

> **Note**: With Oracle Single Sign-on, most users do not need an Account Policy since the password in OTM is not used for authentication. The exception to this is Integration users and users that need to create/modify Reports or Analytic Dashboards. Integration and the OBIEE/BIPublisher console applications still use OTM authentication.

Account policies are accessed via **Configuration and Administration > User Management > Account Policy**. For more details, see the "Account Policy" help topic.

3. Configuring the Application

Custom Properties

Much of the configuration and customization of Logistics Cloud involves managing properties used by the application. These properties are initially distributed in a set of hierarchical property files, where one property file can includes another within it. This allows reuse of common properties on both web and application servers, as well as, the ability to override these staged properties for a particular installation.

You can view the current value of a property using the App-Tier Properties and Web-Tier Properties accessed via **Configuration and Administration > Technical Support > Diagnostics and Tools > Configuration**. Type the beginning of a property name in the Filter field and click Refresh button to see a list of matching properties and their corresponding values.

> **Note**: Only users with an **ADMIN** User Role have access to this menu option.

> **Note**: Changes made to properties on this page are lost when the server is restarted.

Property Sets

In the Oracle Public Cloud, you can make permanent property changes using the Property Set manager. A property set is a collection of ordered property instructions stored in the database. This page is accessed via **Configuration and Administration > Property Management > Property Sets**. For more details, see the "Property Sets" help topic.

Property Sets contain important settings which affect the system. The following properties can be used to configure automated emails based on property changes.

- glog.properties.log.email.recipients

Please refer to the "glog.properties Properties" help topic for more details.

Password Properties

As of release 6.4.2, clear text and encoded passwords are not store in property files or property sets. Instead, password values are stored in secure wallets. See the Security Guide for more information on the use of wallets in Oracle Transportation Management.

Any attempt to set a text or Base64 encoded value for a password property will be ignored. Instead, all password properties should have a value of the form:

> **{w**<wallet key>

where <wallet key> is a key a wallet.

All password properties have staged defaults with a correct wallet key. To change the actual password value stored in the wallet, use the Property Set screen to modify the property. For password properties, the screen knows to store the value in the wallet rather than in the property set. The property set value is unchanged, still pointing to the correct wallet key.

Units of Measure

Logistics Cloud stores all amounts in two units of measure: the actual unit of measure and a storage default unit of measure. The storage default amount is stored in the database "BASE" columns and is used to support querying amounts (i.e. Shipment Total Weight) which have different actual units of

measure. The storage default is designated by an indicator on the unit of measure for each unit of measure type (weight, volume, distance, etc.). The default for storage default uses U.S. standard units of measure.

In most cases, the unit of measure displayed on the user interface is controlled by a user preference. If a user does not have a user preference defined, the unit of measure is controlled by the Display Default indicator on the unit of measure for each unit of measure type. The default for Display Default uses U.S. standard units of measure.

The Display Default and Storage Default settings can be modified by running an action on the corresponding unit of measure. In addition, new units of measure and corresponding conversions can be created. The Unit of Measure page is located at **Configuration and Administration > Power Data > General > Unit of Measure.** This page is only available when you are logged in as DBA.ADMIN. For more information, see the help topic "Unit of Measure".

Currency

By default, Logistics Cloud uses US Dollars when saving costs to the database. Also by default, Logistics Cloud triangulates all currency conversions through US Dollars.

Example

This example illustrates how Logistics Cloud stores a shipment cost record with the currency storage default set to two different currencies.

Total actual cost of the shipment is 1000 JPY. If Logistics Cloud's currency storage default is USD (current default in all Logistics Cloud installations), Logistics Cloud stores this cost as follows:

Total_actual-cost	Total-actual-cost_currency_GID	Total_Actual_cost_base
1000	JPY	7.76

If instead Logistics Cloud's currency storage default is GBP:

Total_actual-cost	Total-actual-cost_currency_GID	Total_Actual_cost_base
1000	JPY	5.31

In the first instance, the rate of 7.76 represents the USD value of 1000 JPY converted at the current rate in Logistics Cloud (128.77) while in the second instance the rate of 5.31 represents the GBP value of 1000 JPY converted at the current JPY/GBP rate in the system (188.08).

When to Change Currency Storage Default

There are two scenarios where you would like to change your currency storage default: either you only use one currency other than USD or you use multiple currencies but not USD.

Rates in One Single Currency

If you only have one currency other than USD, you only need to set your currency storage default to the currency you use. For example, Logistics Cloud stores a 100 GBP shipment cost as 100 in both the total cost and the total cost base fields so no currency conversion is needed. In the case of multiple currencies, you need to decide what the currency storage default is for your Logistics Cloud installation before setting it.

The Storage Default Unit of Measure can be set by running an action on the "Currency" Unit of Measure. The Unit of Measure page is accessed via **Configuration and Administration > Power Data > General > Unit of Measure.** This page is only available when you are logged in as DBA.ADMIN. For more information, see the help topic "Unit of Measure".

Logistics Cloud still needs currency rates to convert between the currencies you use. You can download rates from the IMF website. (This populates the DEFAULT rate in the CURRENCY_EXCHANGE_RATE table.) Note: All exchange rates from the IMF are against USD. The following instructions are for using a base currency other than USD or to use a source other than the IMF:

- Update the rates you need manually or use a XML or CSV process while again entering your needed rates against your preferred currency. You can do this nightly, monthly, or at any other frequency.
- In the `glog.properties` property file or the `CUSTOM` property set, set `glog.currency.base` to your currency storage default (e.g. EUR). This makes Logistics Cloud triangulate through the currency of your choice.

This means that Logistics Cloud will have all DEFAULT rates stated against your base currency and triangulate using your base currency.

Country Codes

Logistics Cloud can be configured to use 2 or 3 character Country Codes. Both sets of Country Codes are loaded into the Country Code table. However, the user interface needs to be configured to display values from only one of these data sets. It is important to decide which data set will be used up front since there is no facility to change this data on related entities once the data has been used. Configuring the Country Code data set is accomplished using the Database Property Management page accessed via Configuration and Administration > Property Management > Database Property Management.

Business Number Generator

The Business Number Generator (BNG) is an Oracle Transportation Management mechanism for creating IDs based on a complex set of business rules. Since the IDs are based on a sequence, it is necessary to generate the IDs one at a time in order to prevent duplicate IDs. For this reason, a process may have to wait for another process to finish generating an ID. This waiting can manifest itself as a performance issue. The impact is even more significant in a scalability environment since the synchronization must be coordinated across application servers. Oracle Transportation Management disables unnecessary BNG by default. In unusual circumstances it may be necessary to change this.

The Bill of Lading 'BM' Shipment reference number can be enabled with the following property:

```
glog.shipment.createBMRefnum=true
```

The Oracle Database sequence number generator has less overhead than the BNG and should be used instead of the BNG when possible. The following database sequences can be changed to use BNG by removing the following Properties

```
glog.server.bngenerator.oracleSequence.xid.S_SHIP_UNIT_XID.DEFAULT=S_SHIP_UNIT_
SEQUENCE
glog.server.bngenerator.oracleSequence.xid.SHIPMENT_XID.DEFAULT=SHIPMENT_SEQUEN
CE
glog.server.bngenerator.oracleSequence.xid.ORDER_MOVEMENT_XID.DEFAULT=ORDER_MOV
EMENT_SEQUENCE
```



```
glog.server.bngenerator.oracleSequence.xid.SHIP_UNIT_XID.DEFAULT=SHIP_UNIT_GID_
SEQUENCE
glog.server.bngenerator.oracleSequence.xid.ORDER_RELEASE_LINE_XID.DEFAULT=ORDER
_RELEASE_LINE_GID_SEQ
glog.server.bngenerator.oracleSequence.xid.MONITOR_AGENT_XID.DEFAULT=MONITOR_AG
ENT_SEQUENCE
```

Refer to the Property Set section for more details on how to remove a Property.

Notification Settings

The Logistics Cloud server sends out a variety of notifications to users. Changing these settings involves modifying the `glog.properties` file on your Logistics Cloud application server, or modifying the `APP_CUSTOM` property set, as described below.

```
glog.workflow.notify.advisor.email=OTMAdvisor@company.com
```

This setting defines the email address that email and fax notifications will appear to come from. This email address should be valid and this email box should be monitored, so that bounced emails and delivery failures are caught. The default value for this is the email address of the user that was specified during system provisioning.

User Interface

The Logistics Cloud user interface provides many capabilities for customizing the user experience. The following section describes some of these capabilities and potential pitfalls when using them.

Branding

As it relates to Logistics Cloud, the term "branding" refers to the process of changing the look and feel of the application to reflect the you or your client's brand. Logistics Cloud is shipped with customizable images and web interface themes, which gives you the ability to easily change colors and logos viewed on Logistics Cloud web pages. For example, you can use your own logos to replace the default Oracle and Logistics Cloud logos throughout the application. The Logistics Cloud service supports two forms of branding:

- Themes
- User-defined Images

Please refer to the Oracle Transportation Management Branding Guide for additional information on this topic.

> **Note**: Not all capabilities described in the Branding Guide are supported in the Oracle Public Cloud.

Themes

A Logistics Cloud "theme" is a specific color scheme for the application. A theme also provides the ability to reference user-defined images or logos. The following page allows you to create and modify themes: **Configuration and Administration > Branding > Theme Management.** This page can only be accessed by someone with DBA access.

Customizable images include:

Desktop Variables:

- branding_logo_img: Used on the global area.
- login_img: Used on the login and logout pages.
- home_img: Used on the landing page.
- branding_url: The URL used when clicking on the branding logo.
- branding_title: Text between the branding logo and the version number on the global area.

Mobile Variables:

- mobile_oraclebanner_img: Banner image on the mobile pages.
- mobile_otm_img: Branding logo on the mobile service provider page.

For more details, see the "Theme Management" help topic.

User-Defined Images

User-defined images can be any graphic in .gif or .jpg format. They can be used in email messages, themes, as design elements for a workspace, or be assigned to user-defined fields that get associated with business objects (for example, orders, shipments, etc). The Set Image action is used to set the image on the corresponding business object. The following page allows you to upload user defined images: **Configuration and Administration > Branding > Upload Mail and User Defined Images**. For more details, see the "Upload Mail and User Defined Images" help topic.

Finder Page Size

A Finder Page is the Logistics Cloud terminology for the standard result page which is returned when running a Logistics Cloud finder query. The number of records returned per page is configurable via the "Finder Page Size" user preference. Increasing this from the default value of 25 has a direct impact on the performance of loading this page due to the increased amount of data that needs to be processed and displayed. Values greater than 100 are likely to make the performance unacceptable.

User Favorites

Favorites allow you to limit initial `Find ()` results so that your favorite results are displayed first. For example, you can create a favorite for locations. In that favorite, you specify the top 10 locations which you use on a regular basis. Then, whenever you use the `Find ()` button the system first displays those 10 locations. If you want to find a different location, you are given the option to search for more locations.

Adding Search Fields to Finders (Grid-Flattening)

Grid flattening enables administrators to present "pseudo fields" for search, result, and other manager pages that are customized to the needs of their users. Pseudo fields "flatten" a grid by presenting field labels that are more specific than the default fields. For example, a PO Number field could be added to the order base search page, so users can search for purchase orders directly by their numbers. Grid flattening is used to make it appear as if data from a child database table is on a parent database table. Using grid flattening on search and result pages should be done with caution since the resulting query is more complex and therefore susceptible to slower performance.

Manager Layout Producer Configuration

Manager layout allows you to configure a page by adding or removing fields. The XML document for an object is created by a series of "producers". These producers are associated with objects within Logistics Cloud. Each manager in Logistics Cloud has an XML document associated with it. When you create a custom manager layout, you can create or remove fields from that manager. The system

creates an XML document containing relevant data that is displayed in that manager. However, the XML document may contain data that is no longer needed in a custom manager that has had a lot of fields removed. By deleting the associated producers from the custom manager the XML document will be smaller, allowing the page to load more quickly. For more details, see the "Manager Layout: Producers" help topic.

Diagnostic Tools

Logistics Cloud provides several utilities to help while configuring the system and while the system is running. The following sections describe these utilities.

Application Logging

Logistics Cloud provides an embedded logging utility. Application logging is configured on the page **Configuration and Administration > Power Data > General > Log Files**. Application logging provides detailed information about the processes running in the system. The output of the logging is viewed on the following page, which is accessible from all parent menu groups, **Process Management > Logs > System**. For more details, see the "Logs: System and Integration Files" help topic.

Although logging is a vital function in Logistics Cloud, excessive logging is a very common cause of poor performance. This is particularly true of bulk planning processes. You can review what logging is currently enabled in the system using the page **Configuration and Administration > System Administration > Logging Overview**. You can also temporarily disable all logging by setting the following property:

```
glog.log.suppressAll=true
```

Setting this property can be a quick method of determining whether logging is the cause of a performance issue.

> **Note**: The Log File and Logging Overview pages available via Configuration and Administration menu can only be used to display and configure details about log files enabled on the application server and web server. Logging on the web server can only be controlled through `glog.properties`, the `WEB_CUSTOM` property set, or Log File pages that are of type WEB.

LogIDs with a suffix of "Debug" or "Details" have the potential to log significant amounts of data and should be avoided unless directed to be by Oracle Technical Support. Ad-hoc logs are the most dangerous because they generate logging regardless of the user logged in. On the other hand, User logs only write to the log file when that particular user is logged in and using Logistics Cloud. In some scenarios user logs can still have a significant impact on performance, even if that particular user is not logged in. This logging happens because there is a certain amount of overhead in generating a log message. The overhead occurs before Logistics Cloud determines, based on the logged in user, that it does not need to write the message to the log file. For this reason, having many user logs with detailed logging enabled can have a significant impact on performance.

> **Note**: In the Oracle Public Cloud, log files are limited to a maximum size of 10MB and 20 Backups.

Performance Monitoring

Logistics Cloud provides embedded tools which should be used for investigating performance issues. The following tools are located on the menu at **Configuration and Administration > Technical Support**:

- Diagnostics and Tools
- Configuration Collection
- Performance Collection

These tools provide insight into the current transactions in the system, as well as, historical statistics based on previous transactions. They capture data on technical components of the application such as data caches, workflow threads, object locks, and more. Diagnostics and Tools are a set of user interfaces, whereas Configuration Collection and Performance Collection are utilities which capture data in an XML format. Should performance issues occur in the system you may be requested by Oracle Technical Support to monitor and/or capture data from one of these utilities.

Business Object Caches

The Oracle Transportation Management Business Object caches are maintained by Oracle Transportation Management. The majority of Oracle Transportation Management Business Objects caches use a Least Recently Used (LRU) strategy to maintain the cache. When an LRU cache reaches its maximum, a one-for-one exchange is made for the new object and the least recently used object in the cache. Most static data used by Oracle Transportation Management business logic is maintained in one of these caches. The App-tier Caches utility page, located on the menu under Technical Support – Diagnostics and Tools – Caches, can be used to review statistics on these caches.

The size of a Business Object Cache can have a significant impact on performance. The efficiency of a cache is measured by its hit ratio. A low hit ratio is a possible indication of an undersized cache. If a cache has reached its capacity and the hit ratio is low (less than 0.80), performance may be impacted. Increasing the maximum size of this cache may increase system performance. Temporary changes can be made to the cache using the diagnostic screen, but the changes will revert to the default upon restart. To permanently change the size of a cache the appropriate glog.property must be set in a Property Set. For example, the size of the Rate Offering cache is set by the following property:

```
glog.cache.TRateOfferingCache.capacity=2000
```

It is important to note that increasing the size of the cache has the adverse effect of increasing memory usage, so changes should be done incrementally and with thorough testing. Please refer to the Propety Sets section of this document for more details on changing property value.

Timeouts

In order to maintain stability of the application, timeouts have been configured. It is important to be aware of these timeouts, however they cannot be modified.

Idle/Session Timeouts

Oracle Cloud SSO Server

- **Idle Timeout**: 2 hours
- **Session Timeout**: 8 hours

  Note: These settings are consistent for all Oracle Public Cloud Services and they cannot be modified. After 8 hours the user will be forced to login to the SSO again.

OTM Server

- **Idle Timeout**: 30 minutes
- **Mobile Session Timeout**: 8 hours

Note: These settings are consistent for all OTM/GTM Cloud instances and they cannot be modified. If a user is logged into OTM and idle for more than 30 minutes, they will be forced to close their browser and navigate to the OTM URL again. So long as the SSO session has not timed out, the user will not need to login to the SSO again.

Mobile Application

- **Idle Timeout**: defaults to a few seconds less than the OTM server timeout
- **Session Timeout**: defaults to the OTM Server time, but using the "Remain Logged in for" preference in the app, you can set it for less than the OTM Server timeout.

SQL Timeouts

- UI Query – 5 minutes
- Agent Query – 5 minutes
- Direct SQL Update – 10 minutes

Workflow Thread Tuning

Oracle Transportation Management workflow is based on a set of business topics and workflow thread groups. A Topic is the Oracle Transportation Management terminology for a particular workflow process. For example, AutoMatchInvoice is a topic. Each Topic is associated with a thread group by a glog.property.

A Thread Group is a set of workflow threads dedicated to processing a set of workflow topics. Each thread group is given a number of threads that can be used to simultaneously process topics. When all threads in a group are busy processing a topic, all additional topics are placed in a queue until a thread becomes available. Oracle Transportation Management computes statistics for the amount of time a topic spends waiting to be processed and the amount of time spent processing the topic. These statistics can be reviewed with the Event Diagnostics page available on the DBA Technical Support menu.

The following are the non-default thread settings that are configured in Cloud.

- planningBuild – 6
- planningCommit – 6

A long average wait time and/or a backlog of queued events may indicate a need to increase the number of threads in a thread group. The preferred method for changing these thread settings is to use the Property Set Manager. These thread settings are maintained in a Property Set called "APP_WORKFLOW_THREADING" and can also be viewed/modified using the Property Set Manager. Each thread group has a corresponding property to control the number of threads

- glog.workflow.queueThreads.<queuename>=n

"<queuename>" should be replaced by the name of the queue (i.e. "planningBuild") and "n" is the number of threads.

In addition to configuring the number of threads, particular parts of the planning process support multi-threading. The behavior of multi-threading is configurable based on a Batch Size. By default, Cloud is configured with the following Batch Sizes.

- CommitShipmentGraphs - 25
- CommitShipmentGraphsForOrderMovements - 25
- BuildShipmentGraphCollections - 25

- BuildShipmentGraphs - 25
- BuildShipments - 25
- BuildShipmentGraphsForOrderMovements - 25
- FleetAssignment - 25

For details on this topic, please refer to the “glog.workflow Properties” section of On-line Help.

4. Configuring Business Intelligence

Business intelligence refers to the following optional product offerings:

- Fusion Transportation Intelligence (FTI)
- Global Trade Intelligence (GTI)

FTI and GTI business intelligence solutions are designed to enable strategic and tactical analysis of the various aspects of the trade and transportation business processes and to aid decision making.

Business intelligence solutions are developed using the Oracle BI EE (for the core analytics metadata and dashboard reports) and Oracle Data Integrator (for the core Extract, Transform, Load process) products. The following section provides some details on the configuration and use of these modules. For more information on these products, refer to the Fusion Transportation Intelligence and Global Trade Intelligence Reference Guides.

Both FTI and GTI are individually licensable product options. These product options are disabled by default in the Cloud. Please confirm that you have licensed these product options before proceeding with using them. By default the Extraction, Transformation, and Load (ETL) processes are disabled so the corresponding analytic database tables will be empty. You will receive the following warning if you click on one of the Business Intelligence Dashboard links "Business Intelligence is not currently licensed or installed on the server."

You will need to do the following in order to enable these product options. One or both of the following properties need to be set in order to enable the Business Intelligence product options. Please refer to the Custom Properties section of this document for more detail on how to set properties. These properties should be set in the "CUSTOM" property set.

FTI property
ALLOW_ADVANCED_ANALYTICS=true

GTI property
isAllowedGTIAnalytics=true

Once these properties are enabled the ETL will run automatically on a daily basis. The frequency of these ETLs is not configurable by the customer. In order to have visibility into the ETL process, the following property should be set. A summary of each ETL process will be sent to this email address when the process completes.

glog.odi.email.to.address=user@company.com

It is possible to configure Business Intelligence using Oracle Business Intelligence Enterprise Edition (OBIEE). The user interface for OBIEE is accessed via the menu option Transportation Intelligence > Administration.

The Business Intelligence console requires two levels of authentication. If you are not already logged into OTM when you access the Business Intelligence console URL, you will first be prompted with the SSO login. Once you are logged into the SSO, you will then encounter the Business Intelligence console login. This login requires the user to enter their OTM User ID/password. You must use the OTM User ID (i.e. DBA.ADMIN), not the OTM username (aka email address). Before logging into the Business Intelligence console for the first time, you must first login to OTM and specify the OTM password for the user.

Important! Before creating any reports or dashboards, you must create a catalog folder named "custom" inside the existing "Shared Folders" folder. All reports and dashboards must be created inside this folder or a sub-folder. Defining reports and dashboards inside the "custom" folder will ensure your custom reports and dashboards are retained during future upgrades.

Enabling Fiscal Calendars

In order to enable fiscal calendars in the business intelligence applications, you must populate data in the AD_TIME table. Populate the AD_TIME table as follows:

- FISCAL_YEAR VARCHAR2(50)
- FISCAL_QUARTER_ID VARCHAR2(50)
- FISCAL_MONTH_ID VARCHAR2(50)
- FISCAL_WEEK_ID VARCHAR2(50)
- FISCAL_DAY VARCHAR2(50)

These columns correlate the calendar dates to fiscal dates. This data can be loaded using CSV files. For more details, see the "Using the CSV Utility to Import Data" help topic.

Configuring Fusion Transportation Intelligence

Enabling Oracle Fusion Transportation Intelligence Agents in Logistics Cloud:

The business objects in Logistics Cloud (like shipments, order releases, etc.) are loaded into the Fusion Transportation Intelligence tables when they have a status of READY_TO_LOAD. This status is set by automation agents in Logistics Cloud. To enable these automation agents, complete the following:

1. Log on to Logistics Cloud as DBA.ADMIN.
2. Go to **Business Process Automation > Agents and Milestones > Automation Agent**.
3. Search for and activate the following automation agents:
   - LOAD_ORDER_BASE_TO_HD (Default Event: Order base created)
   - LOAD_ORDER_RELEASE_TO_HD (Default Event: Order on shipment tendered)
   - LOAD_SHIPMENT_TO_HD (Default Event: Shipment tendered)

Unloading a Logistics Cloud Object from Fusion Transportation Intelligence

When an object is deleted from Logistics Cloud, it has to be removed from the Fusion Transportation Intelligence tables also. You need an agent that will automatically take care of deleting objects from FTI tables when you delete the object in OTM.

Automation gents need to be created for each object type in Logistics Cloud. To create an agent for SHIPMENT, perform the following steps:

1. Log onto Logistics Cloud as DBA.ADMIN
2. Go to **Business Process Automation > Agents and Milestones > Automation Agent**. Select **New.**
3. Select **Agent Type** as *SHIPMENT*.
4. Select **Agent Event** as *SHIPMENT-REMOVED* with restrictions of *INTEGRATION*, *INTERNAL*, or *USER*.

5. Add **Agent Action** as *UNLOAD SHIPMENT FROM HD*.
6. Give a suitable name for the Agent ID and save the agent.

Any shipments which are now deleted in Logistics Cloud will be deleted from the Fusion Transportation Intelligence tables when the subsequent ETL is triggered.

Such automation agents need to be created for every needed object in Logistics Cloud (like order release, order base etc.). The list of **agent actions** available in Logistics Cloud are:

- UNLOAD SHIPMENT FROM HD
- UNLOAD ORDER RELEASE FROM HD
- UNLOAD ORDER BASE FROM HD
- UNLOAD ORDER MOVEMENT FROM HD
- UNLOAD SELL SHIPMENT FROM HD
- UNLOAD QUOTE FROM HD
- UNLOAD INVOICE FROM HD
- UNLOAD BULK PLAN FROM HD
- UNLOAD ORDER ITEM FROM HD

Mandatory Logistics Cloud User Role (VPD Profile) Configuration

VPD profile determines what data the user is entitled to see. All users of Logistics Cloud should have **one** of the following profile sets.

- **FTI_DEFAULT**: All users who **ARE NOT** service providers in Logistics Cloud should have this profile.
- **SERVPROV**: All the users who are service providers in Logistics Cloud.

Performing this step is mandatory for the proper operational behavior of Fusion Transportation Intelligence application.

Configuring Global Trade Intelligence

Loading an Oracle Global Trade Management Object into Global Trade Intelligence

By default, the Global Trade Management objects supported by GTI are all loaded into GTI. Please see the "Data Flow to Global Trade Intelligence" help topic for complete details.

Mandatory Logistics Cloud User Role (VPD Profile) Configuration

VPD profile determines what data the user is entitled to see. All users of Global Trade Intelligence should have the following profile set:

- **GTI_DEFAULT**: All users of Oracle Global Trade Intelligence should have this profile.

Unloading a Global Trade Management Object from Global Trade Intelligence

You can unload (soft delete) data from the Global Trade Intelligence historical database (HD). When data is deleted from GTM/OTM, you can mark that record as deleted in the Global Trade Intelligence HD. The record remains in the HD, but is it filtered out using the GTI_DEFAULT VPD profile.

There are several PUBLIC automation agents and agent actions intended for use with Global Trade Intelligence to enable this functionality. Please see the "Data Flow to Global Trade Intelligence" help topic for complete details.

Configuring BIPublisher Reporting

Logistics Cloud provides several reports which can be run from the Report Manager. You also have the ability to create custom Reports using BIPublisher. The user interface for creating and modifying reports is accessed via the menu option Transportation Intelligence > Administration > Manage BI Publisher.

The BIPublisher console requires two levels of authentication. If you are not already logged into OTM when you access the BIPublisher console URL, you will first be prompted with the SSO login. Once you are logged into the SSO, you will then encounter the BIPublisher console login. This login requires the user to enter their OTM User ID/password. You must use the OTM User ID (i.e. DBA.ADMIN), not the OTM username (aka email address). Before logging in to the BIPublisher console for the first time, you must first login to OTM and specify the OTM password for the user. You also must grant the User the BI Roles "BIAdministrators" and "BIAuthors". BI Roles are administrated using the OTM User Manager. This page is located at **Configuration and Administration > User Management > User Manager**.

> **Important!** Before creating any reports, you must create a catalog folder named "custom" inside the existing "Shared Folders" folder. All reports must be created inside this folder or a sub-folder. Defining reports inside the "custom" folder will ensure your custom Reports are retained during future upgrades. When creating a report, users must select the "otmoltp" JDBC Data Source.

In order to run a report from OTM you will need to obtain the BIPublisher Report Path. The Report Path can be obtained from BIPublisher by viewing the report and clicking **Actions > Share Report Link > Current Page**. For example:

```
https://myservice-mydomain.otm.<data-center>.oraclecloud.com:9704/xmlpserver/
/custom/my_pickup_summary/my_pickup_summary.xdo
```

In this example, the relative Report Path is:

```
custom/my_pickup_summary/my_pickup_summary.xdo
```

> **Note**: Prior to OTM 6.4.1, it was necessary to include the host name in the report path. This is no longer necessary.

After a report is created in BIPublisher, it is necessary to define the report in OTM. This page is located at **Business Process Automation > Power Data > Document Generation > Reports**. To configure a report to run the following options should be selected:

- Run on Third Party Report Server - Enabled
- Select via UI – Enabled
- Default Display Format - PDF
- Third Party Content Type - 'Embedded'
- Report Path – The Relative Report Path obtained previously

In order for users to be able to run BIPublisher Reports, it is first necessary to grant the user the BI Role "BIConsumer".

BIPublisher Reports are primarily built using SQL queries. However, a few utility PL/SQL functions are available for use in Reports. For more details on creating Reports, please refer to the OTM Report Designer's Guide.

Report Permissions

By default, reports can only be executed by the user that created the report in BIPublisher. In order to run reports from within OTM, the permissions for the report must be set for the "BI Consumer Role". Report permissions can only be set using OBIEE. The user interface for OBIEE is accessed via the following URL.

```
https://<servicename>-<identity-domain-name>.otm.<data-
center>.oraclecloud.com/analytics/
```

where <servicename> and <identity-domain-name> are the values that were specified during provisioning.

Please use the following steps to set permissions after creating custom Reports.

1. After you log into to OBIEE, click on the **Catalog** link in the menu.
2. Click on the **custom** link in the "Shared Folders"section of the catalog.
3. Click the **Permissions** icon on the "Tasks" menu.
4. Select the "BI Consumer Role" and choose "Full Control" for the "Permissions".
5. Check "Apply permissions to sub-folders." and "Apply permissions to items within folder."
6. Click "OK".

Report Distribution

Report Scheduling and Distribution via BIPublisher is not supported. Scheduled jobs in BIPublisher will not be preserved during upgrades. Report Scheduling and Distribution must be performed using the OTM Notification capabilities. For more details on this topic, please refer to the "Report Emails" Help topic.

Memory Guard

It is possible to create a custom Report in BIPublisher which is excessively large or poor performing. This can cause the system to become unstable and require a restart. The latest version of BIPublisher provides capabilities to prevent this from happening and these features have been enabled in OTM/GTM Cloud 6.4.2. Please be aware of the following restrictions.

Setting	Value
FREE_MEMORY_THRESHOLD	500MB
MAX_DATA_SIZE_UNDER_FREE_MEMORY_THRESHOLD	50MB
MINIMUM_SECOND_RUN_GARBAGE_COLLECTION	300
XML_DATA_SIZE_LIMIT	500MB
ONLINE_FORMATTING_PROCESS_TIMEOUT	600
SQL_QUERY_TIMEOUT	600
WAIT_SECOND_FOR_FREE_MEMORY	30
MAX_ROWS_FOR_CSV_OUTPUT	1000000

Setting	Value
ONLINE_REPORT_MAX_DATA_SIZE	300MB

Please refer to BIPublisher “Memory Guard” documentation for more details on these settings.

Generating Reports Containing a Bar Code

For information on how to create reports which need to print barcodes, refer to the "Using the Barcode Fonts Shipped with BI Publisher" section in the "Oracle Fusion Middleware Report Designer's Guide for Oracle Business Intelligence Publisher".

http://docs.oracle.com/middleware/11119/bip/BIPRD/create_rtf_tmpl.htm#hipbarcodes

You will be able to use the three bar code fonts shipped with BI Publisher.

5. Complementary Products

Oracle Transportation Mobile

Logistics Cloud integrates with Oracle Transportation Mobile, a mobile application. For more information on how to configure Logistics Cloud to work with Oracle Transportation Mobile, see the **Oracle Transportation Mobile Guide** on Oracle Help Center.

Pre-Built Integrations

Logistics Cloud includes pre-built integrations to optional components for Geo-coding, Distance, and Rate Calculation. The following section provides information on configuring Logistics Cloud to use these products. It is your responsibility to contact the corresponding vendor for additional details on their product offerings and corresponding license agreements.

Geo-coding and External Distance/Time

Geo-coding a location refers to setting the latitude and longitude (lat/lon) coordinates on the location. The lat/lon is necessary for displaying locations on a map. Logistics Cloud has two methods for geo-coding a location. One option is to configure an external distance engine. The other option is to load data into the geo_postal_point or geo_cityprov_point tables.

Oracle Spatial

Oracle Spatial is available as an external distance engine. In order to use the Oracle Spatial External Distance Engine, configure the following properties:

```
OracleSpatial.host=elocation.oracle.com
OracleSpatial.port=80
```

> **Note**: the "glog.ExternalDistanceEngine.OracleSpatialEngine.protocol" is set "https" by default and should not be modified. For more details on configuring Oracle Spatial, see the "External Distance Engines" help topic.

Oracle: http://www.oracle.com

PC Miler Web Service

PC Miler Web Service is an external distance engine which can be used for geo-coding and distance calculation. Logistics Cloud can be configured to use the PC Miler Service for distance and time calculation. Before you can use PC Miler Web service, you must set the corresponding `ExternalDistanceEngine` Properties. In order to use the PCMiler web services, you will need to obtain a license key from ALK and set the following property:

```
glog.ExternalDistanceEngine.PCMilerWS.AuthorizationKey
```

This property should be added to the APP_CUSTOM Property Set. Refer to the "Property Sets" section of this document for information on how to set properties.

> **Note**: The "glog.ExternalDistanceEngine.PCMilerWS.WCFWebserviceWSDLUrl" Property is set by default and should not be changed. For more details, see the "Configuring PCMiler Web Services" help topic.

ALK Technologies, Inc.: http://www.alk.com/

PC Miler Rail Web Service

PC Miler Rail Web Service is an external distance engine that can be used for distance calculation for rail. Logistics Cloud can be configured to use the PC Miler Rail Service for distance calculation between Rail Stations or SPLCs or City Province. Before you can use PC Miler Rail Web service, you must set the corresponding ExternalDistanceEngine Properties. In order to use the PC Miler Rail web services, you will need to obtain a license key from ALK and set the following property:

glog.ExternalDistanceEngine.PCMilerRailWS.AuthorizationKey

This property should be added to the APP_CUSTOM Property Set. Refer to the "Property Sets" section of this document for information on how to set properties.

> **Note:** The "glog.ExternalDistanceEngine.PCMilerRailWS.WsdlUrl" Property is set by default and should not be changed. For more details, see the "Configuring PC*MILER RAIL Web Services" help topic.

ALK Technologies, Inc.: http://www.alk.com/

HERE

HERE is an external distance engine which can be used for geo-coding and distance calculation. Logistics Cloud can be configured to use the HERE ReST API for distance and time calculation. Before you can use HERE ReST API, you must set the HERE properties in the glog.properties file. In order to use the HERE ReST API, configure the ReST web services authentication credentials through properties defined below:

```
here.app_id=
here.app_code=
```

You will need to specify the properties defined for the external distance engine parameters HOST and PORT of the HERE external distance engine created. For the public data shipped these would be

```
here.route.host=
here.route.port=
```

In the above properties, here.route.host is the route URL of HERE to get the distance or time between two given locations. For example, http://route.api.here.com/routing/7.2/calculateroute.xml.

here.route.port can contain any dummy port number. For example, 80 or 443.

For the external distance engine created for geo coding the external distance engine parameters HOST and PORT

```
here.geocode.host=
here.geocode.port=
```

In the above properties, here. geocode.host is the route URL of HERE to get the distance or time between two given locations. For example, http://geocoder.cit.api.here.com/7.2/geocode.xml.

here. geocode.port can contain any dummy port number. For example, 80 or 443.

These properties should be added to the APP_CUSTOM Property Set. Refer to the "Property Sets" section of this document for information on how to set properties. For more details about the properties, see the "HERE Properties" help topic.

HERE: https://here.com/

External Rating

SMC RateWareXL with Carrier Connect Web Service

Logistics Cloud can be configured to use the RateWareXL with Carrier Connect Service hosted by SMC. This web service provides a call to get rates and transit time. The following properties are used to configure the Rating engine to use this service.

```
glog.RatingEngine.RatewareXL.Username=
glog.RatingEngine.RatewareXL.Password=
glog.RatingEngine.RatewareXL.License=
```

These properties should be added to the APP_CUSTOM Property Set. Refer to the "Property Sets" section of this document for information on how to set properties.

> **Note**: The "glog.RatingEngine.RatewareXL.Wsdl.URL" Property is set by default and should not be modified. For more information on this topic, please refer to "How to Set Up and SMC Rate" in online Help.

SMC3: http://www.smc3.com/

Maps

Each of the map methods has different third party licensing options and configuration changes needed to enable them. If you intend to utilize any of these Map features, review the following information carefully.

Map Related Actions

The first method is via the actions menu on the Order Release, Shipment, Location and Operational Planning Managers. The Map related actions on these Managers currently use Oracle eLocation. In order to utilize these features, the following property needs to be enabled:

```
glog.mapServer=elocation.oracle.com
glog.map.baseurl=https://$glog.mapServer$/mapviewer
glog.map.elocation_url=https://$glog.mapServer$/elocation
```

> **Note**: Users of Oracle Fleet Management Cloud Service or Oracle Fleet Management are not permitted to use eLocation.oracle.com for mapping services or as an EDE (External Distance-time Engine).

Oracle: http://www.oracle.com

Fleet Dispatch Board

The second method is via the Fleet Dispatch Board. The Fleet Dispatch Board is used for mapping Orders and Shipments on an interactive Map. The Fleet Dispatch Board also currently uses Oracle eLocation. In order to utilize these features, the following property needs to be enabled:

```
glog.mapServer=elocation.oracle.com
glog.map.baseurl=https://$glog.mapServer$/mapviewer
glog.map.elocation_url=https://$glog.mapServer$/elocation
```


There is also a hosted map server option through Oracle eLocation Services which supports these map providers (ALK Maps and HERE Maps). For more details see the "Map Server Configuration" help topic.

This page is accessed via **Fleet Management > Dispatch Board.** For more details see the "Dispatch Board" help topic.

> **Note**: Users of Oracle Fleet Management Cloud Service or Oracle Fleet Management are not permitted to use eLocation.oracle.com for mapping services or as an EDE (External Distance-time Engine).

Oracle: http://www.oracle.com

Workbench Designer

The third method is via the Workbench Designer. A workbench is a type of screen that allows you to create multi-panel layouts containing tables, maps, and Gantt charts. Layouts define the look and feel of a workbench. Each layout can have multiple regions, with each region displaying different, but related, information. The workbench designer allows you to create and edit workbench layouts. The workbench supports the following vendors.

After acquiring Map licensing with HERE, the following properties need to be set in order to enable this feature:

```
here.app_id=
here.app_code=
```

HERE: https://company.here.com/here/

After acquiring Map licensing with ALK, the following property needs to be set in order to enable this feature:

```
alk.api_key=
```

ALK Technologies, Inc.: http://www.alk.com/

After acquiring Map licensing for Oracle Maps Cloud Service (formerly eLocation), the following properties need to be set in order to enable this feature:

```
elocation.mapviewer_url=
elocation.elocation_url=
```

This page is accessed via **Configuration and Administration > User Configuration > Workbench Designer.** For more details see the "Workbench Designer" help topic.

Configuring External Map Engines

You can set up Oracle Transportation Management to integrate with HERE Platform for Business and ALK Maps for external mapping. These additional properties are not configured by the installer. On your existing Oracle Transportation Management installation, adding the following properties using the Property Set Manager.

For HERE Platform for Business adds the following:

- Here.app_id: This property is used to specify the application ID which connects to map services provided by HERE.

- here.app_code: This property is used to specify the application code which connects to map services provided by HERE.

For ALK Maps add the following:

- alk.api_key: This property is used to specify the application key which connects to map services provided by ALK.

See Section 3 for more information on property sets.

Business to Business Connectivity

Carrier Integration

Logistics Cloud supports communication with carriers via the Carrier Portal, which is a UI that can be exposed to external users for the purpose of reviewing and accepting or rejecting shipment tenders, providing shipment status information, submitting invoices, and more. Alternatively, Logistics Cloud also supports integration with carriers in the same way as other external systems, as described in the "Integrating with Other Systems" section of this document.

Customers who transact with a large number of carriers may wish to consider a B2B connectivity partner to manage the integration process with each individual carrier. Most B2B providers are capable of providing such services, though the partners identified below have created turn-key solutions specifically for Logistics Cloud customers. Please note that Oracle does not offer packaged integration with any of these partners. Rather, it is the B2B providers who own and support these integrations. Thus it is the responsibility of the customer to perform due diligence and identify whether such a solution is needed and which partner solution best fits their organization's requirements.

SPS Commerce (http://www.spscommerce.com/) offers pre-mapped OTM XML to EDI messages for the shipment tender, tender response, shipment status, and invoice transactions. Their offering includes professional services for all carrier on-boarding and testing activities. SPS Commerce is based in Minneapolis, MN and has offices in ANZ, APAC, and EMEA. For more information, contact info@spscommerce.com.

Justransform (http://www.justransform.com/) is a cloud-based, self-service integration platform. Their solution includes packaged maps for all supported OTM versions to/from applicable transactions in all available versions of EDI X12 and EDIFACT, as well as many other integration capabilities. Justransform is based in Cupertino, CA. For more information, contact support@justransform.com.

Transporeon (http://www.transporeon.com/) offers pre-mapped OTM XML to EDI messages for the shipment tender, tender, response, shipments status, and invoice transactions. Their offering includes professional services for all carrier on-boarding and testing activities. Transporeon is based in Ulm, Germany and has offices throughout EMEA and in North America. For more information, contact info@transporeon.com.

Global Trade Management

Global Trade Content

Global trade practice requires companies to have access to and utilize the current trade data available. There are many types of trade data available with various sources, both nationally and internationally. Failure to utilize the most up-to-date data can result in inaccurate screenings which may lead to significant fines and penalties, delays, revocation of trade privileges, and lost revenues. Examples of trade content include, but are not limited to:

- Denied Party Screening Lists
- Harmonized System and Classification Information

- Tariff and Duty Rates
- Binding Rules and Regulations
- Free Trade Agreement Information

Global Trade Management provides an integration solution for automatically downloading much of this data directly from Descartes. For more information on this topic, please refer to "Global Trade Content" in on-line Help.

Descartes: https://www.descartes.com/

Customs Filing

U.S. export shipments require an export declaration to be filed with the U.S. Census. The export declaration is represented as EEI (Electronic Export Information) and is filed with the U.S. Census. The Oracle Global Trade Cloud Service supports filing with U.S. Customs and Border Protection's (CBP) Automated Export System (AES) interface via Descarte's Global Logistics Network (GLN) system. For more details on this topic, please refer to the Filing with AES via Descartes's GLN System section in the Customs Filing Integration Guide.

6. Integrating with Other Systems

Integration to/from Logistics Cloud is accomplished via XML documents. In the Oracle Public Cloud, all inbound and outbound integration is transferred via XML documents, transported over HTTPS. The XML content may optionally be contained in a SOAP Web service request.

Inbound Integration

Sending data to Logistics Cloud is supported using HTTPPOST and Web Services.

HTTPPOST

HTTPPOST integration is achieved by posting XML documents to the following URL:

https://<servicename>-<identity-domain-name>.otm.<data-center>.oraclecloud.com/GC3/glog.integration.servlet.WMServlet

The `<servicename>` and `<identity-domain-name>` values should be replaced with the values that were specified during provisioning. For example:

Input Provided During Provisioning

- **Service Name**: myotm
- **Identity Domain Name**: companyname

Resulting URLs:

https://myotm-companyname.otm.<data-center>.oraclecloud.com/GC3/glog.integration.servlet.WMServlet

https://myotm-test-companyname.otm.<data-center>.oraclecloud.com/GC3/glog.integration.servlet.WMServlet

If a specific port number is required by the upstream posting system, the port that should be used is 443. For proper security, the downstream system should require a username/password for user authentication. When the username and password fields are specified on an External System, they are automatically added to the Transmission Header in the generated XML document.

Web Services

You can also send data to Logistics Cloud via a web service call to the Logistics Cloud web server.

The WSDL file and corresponding XSD schema files can be retrieved via **Process Automation > Integration > Integration Manager > Retrieve WSDLs**. The WDL should be saved to a file and subsequently imported into the source system.

OTM enforces Web Service Security policies on all inbound and outbound Web Services. The Web Service Security Specification is an OASIS standard for defining security related information as part of a SOAP message. See http://www.oasis-open.org/. In the Oracle Public Cloud, OTM only supports the WS-Security Username Token Profile.

Inbound

For Inbound integration the username and password must be specified in the SOAP Header of the XML document. Please refer to the example below:


```
   <SOAP-ENV:Header>
          <Security xmlns="http://docs.oasis-open.org/wss/2004/01/oasis-200401-
wss-wssecurity-secext-1.0.xsd">
                <UsernameToken>
                      <Username>XYZ.OTMUSER</Username>
                      <Password Type="http://docs.oasis-
open.org/wss/2004/01/oasis-200401-wss-username-token-profile-
1.0#PasswordText">MYPASSWORD</Password>
                </UsernameToken>
          </Security>
   </SOAP-ENV:Header>
```

Integration User Role

In order to send data to Logistics Cloud, it is necessary for the remote system to authenticate with valid user credentials. In addition this user must have the correct Access Control List entry points. To facilitate this, Logistics Cloud provides by default the following options for inbound integration users:

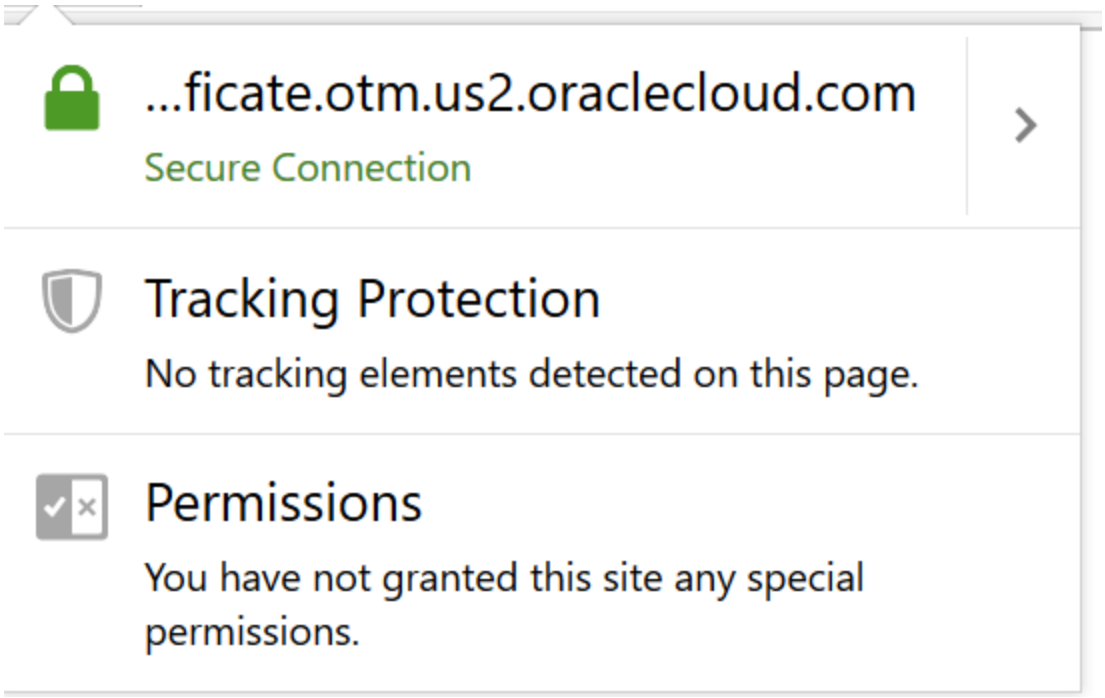
- 'INTEGRATION' user role for your inbound integration users. Assign this user role to your user.
- 'INTEGRATION' ACL for your inbound integration users. Assign this parent ACL to your custom user role or your user.
- 'External Integration' ACL for your inbound integration users. Assign this child ACL to your custom user role or your user.

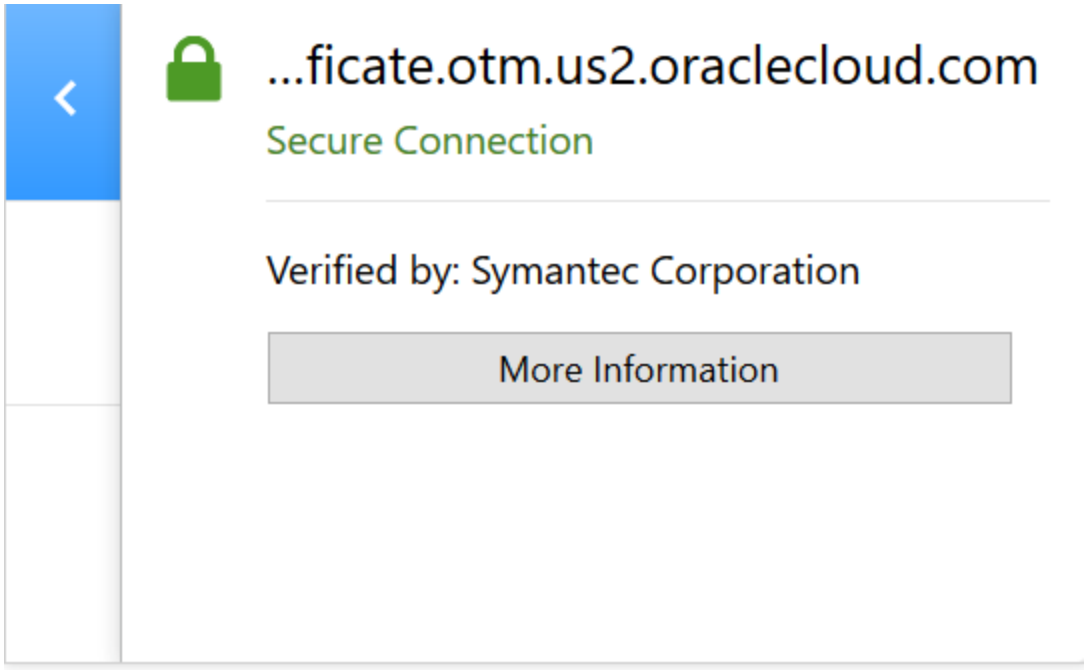
Inbound Integration and SSL Certificates

All inbound integration requires that the transport be protected using HTTPS. Communications over HTTPS are encrypted using SSL. These SSL communications are initiated using SSL Certificates. The SSL Certificates must be from a trusted signing authority (no self-signed certificates). It is possible that the list of trusted signing authorities on the system does not contain the signing authority used for the Oracle Public Cloud certificates. In that case it may be necessary to download and install the Certificate in the source system.

The following instructions explain how to obtain the Root and Intermediate Certificate for a Logistics Cloud instance. Both the Root and Intermediate Certificates must be imported in order to prevent issues when the Certificate expires each year. The instructions below assume the use of the FireFox web browser, but the steps will be similar with other browsers.

1. Open Firefox browser and type in the URL https://otmcertificate.otm.us2.oraclecloud.com/
2. 2. Click on the padlock (lock symbol) shown in above screen next to the URL. You should see a screen like the following:





3. Click the “More Information” button.
4. Click the “View Certificate” button.
5. Click the “Details” tab.
6. There is an Intermediate Certificate "Symantec Class 3 Secure Server CA -G4" and Root Certificate "VeriSign.....". You must export both certificates and import them into your keystore in order to recognize the OTM certificate.
7. Select "Symantec Class 3 Secure Server CA - G4" and then click on export certificate. This should prompt you to save the file and save the file. You must remember this location.

8. Repeat the above step 7 for 'Verisign...".
9. Import both root and intermediate certificates into keystore to recognize the OTM certificate by application using the keystore.

Integration Data Queues

It is important to note that in the Cloud service all Inbound integration utilizes the Integration Data Queue feature. This feature persists all inbound Transmissions into a database table. A polling process on the application server queries the corresponding table and processes Transmissions in batches. The Cloud Service is configured to have 2 polling threads with a batch size of 2, that poll every 2 seconds. The Integration Data Queue feature prevents the application server from being overwhelmed by a peak in integration volume. For more details on this topic, please refer to the Integration Guide. It is important to note though that the configuration of the Integration Data Queue feature is limited.

Trusted URL Registration

All web traffic out of the Oracle Public Cloud is verified using a McAfee Site Address filter. This applies to outbound integration as well as IPP Printing. Customers need to verify their outbound URL site's reputation at the following site.

http://www.trustedsource.org/en/feedback/url

Oracle recommends selecting the product "McAfee Web Gateway v7.x/6.9.x (resident)." If the URL is not trusted, the owner of the URL should submit a request to add the URL with the proper business category on the McAfee feedback site. Once the URL has been added to proper business category it will be allowed as per OPC URL filter policy.

McAfee® provides an online tool that enables you to check if a site is categorized within various versions of the SmartFilter Internet Database or the Webwasher URL Filter Database. After you check a URL, this tool also allows you to suggest an alternative categorization for a site. These requests will be addressed within an average of 3-5 business days with some requests requiring additional review and taking longer.

Please email sites@mcafee.com if you have any issues with this site.

XSL Stylesheets for Inbound Integration

Logistics Cloud service supports the ability to transform XML Documents during Inbound Transmission Processing. This capability is supported using the TransformerServlet. Please use the following steps to load your custom XSL files for Inbound Integration.

1. Add the following property to the 'CUSTOM' Property Set:

   ```
   glog.xslconf.on=true
   ```

2. Create Stylesheet Content: Create a Stylesheet Content record and upload the corresponding XSL file. This page is located at Business Process Automation > Power Data > Event Management > Stylesheet Content.
3. Set the stylesheet_name attribute in your XML file to the Stylesheet Content GID:

   ```
   <?gc3-int-translate stylesheet_name="GUEST.MYSTYLESHEETCONTENTGID"?>
   ```

   Note: This operation is restricted to the "DBA.ADMIN" user. For more detail on this topic, please refer to the "Transform Inbound XML with XSL" section in the *OTM Integration Guide*.

Outbound Integration and Notification

Outbound Integration from Logistics Cloud is supported using HTTPPOST and Web Services. In either case an External System is created to define the target system for the integration. Please refer the Integration Guide for more details on this subject.

Web Services

You can send data from Logistics Cloud via a web service call. For proper security, the downstream system used in outbound integration should require a username and password for user authentication. If the downstream system uses the WS-Security Username Token Policy, the username and password should be specified when creating the Web Service EndPoint.

OutXMLProfile for Outbound Integration and Notification

Out XML Profiles allow you to generate outbound XML and exclude portions of outbound XML with a high degree of control. This is done by specifying what XML builder class files should be excluded when generating XML documents or by selecting an XML template on which you can base the outbound XML. Outbound XML includes integration and notification. Unnecessarily large outbound integration is a common cause of performance issues. Reducing the size of the XML will greatly reduce the load on the database and application server.

XSL Stylesheets for XML Document Generation and Email Notification

Logistics Cloud Management supports the ability to customize XML Document Generation and Email Notification via XSL stylesheet. The following steps should be followed to upload an XSL stylesheet and apply it to an External System or Contact Notification.

1. Add the following property to the 'CUSTOM' Property Set

   ```
   glog.xslconf.on=true
   ```

2. Create Stylesheet Content

   Create a Stylesheet Content record and upload the corresponding XSL file. This page is located at **Business Process Automation > Power Data > Event Management > Stylesheet Content**.

3. Create Stylesheet Profile

   Create a Stylesheet Profile record, specifying the previously created Stylesheet Content. This page is located at Business Process Automation > Power Data > Event Management > Stylesheet.

4. For Email Notification:

   Create/Edit Contact Notification

   Set the Stylesheet for the 'Email' Communication Method to the Stylesheet Profile created in Step #2. This page is located at Business Process Automation > Communication Management > Contact Notification.

5. For XML Document Generation:

   Create/Edit External System

   Set the Stylesheet Profile to the Stylesheet Profile created in Step #2. This page is located at Business Process Automation > Communication Management > External Systems.

Outbound Integration and SSL Certificates

All outbound integration requires that the transport be protected using HTTPS. Communications over HTTPS are encrypted using SSL. These SSL communications are initiated using SSL Certificates. The SSL Certificates must be from a trusted signing authority (no self-signed certificates). It is possible that the list of trusted signing authorities in the Oracle Public Cloud will not contain the Certificate for your signing authority. In that case an SR will need to be raised to request the Certificate be reviewed for possible inclusion.

Outbound Integration Proxy Server

All outbound integration from the Oracle Public Cloud is routed through a proxy server. Customers may have a firewall with IP restrictions on inbound integration (outbound from the Cloud). In that case a Service Request will need to be logged to request the outward facing IP range used by the proxy server.

Outbound Integration and PaaS/IaaS

The following instructions are intended to provide high-level information for integrating OTM/GTM with an application hosted on Oracle Public Cloud PaaS/IaaS services. For more detail on this topic, please refer to the documentation corresponding to your particular PaaS service. Integration from OTM to any other application hosted on an Oracle Public Cloud service must be performed via a publicly accessible IP address and publicly accessible ports. By default, access to Oracle Public Cloud Services are available via port 80 (HTTP) and 443 (HTTPS). If the service is not provisioned with a public IP address, it will be necessary for the customer to reserve a public IP address for their service.

It is highly recommended that the customer register their service using a Public Domain Name and use the Domain Name in the URL, rather than the IP address. It is also recommended that the customer obtain an SSL Certificate for their Domain Name and require that all communication use HTTPS. Depending on the Certificate Authority used, it may be necessary to open a Service Request to have the SSL Certificate loaded into the OTM/GTM instance. Some Oracle Public Cloud Services support the ability to define a Security IP List, allowing customers to limit inbound traffic to a range of IP addresses. In the case of OTM/GTM, the customer would need to register the IP range of the Oracle Public Cloud proxy server. The customer can open a Service Request in order to request this IP range. Further security is available with optional VPN access for Cloud Services.

Note: It is possible for the customer to use non-standard ports, though additional configuration on the IaaS/PaaS environment is required to make this work.

The customer should test all URLs from outside of OTM first using a web browser or a utility such as JDeveloper, SOAPUI, curl, or wget. For more details, please refer to the "Register a Custom Domain Name with a Third-Party Registration Vendor" and "Obtaining the SSL Certificate" topics in the Infrastructure as a Service documentation.

Integrating with Oracle E-Business Suite

Customers integrating with Oracle E-Business Suite Financials may want to build their integration using the sample BPEL Flows. Please refer to the following MOS note for details and the corresponding files:

- **Note 2243451.1** - How to Obtain OTM BPEL Flows For Cloud Customers

7. Data Management

Migration Projects

The Migration Project feature, added in Oracle Transportation Management v6.3.2, introduces a standard way to define and manage one or more datasets for the purpose of migrating data from one Oracle Transportation Management instance to another.

Although the Oracle Transportation Management application is fully functional "out of the box", an operational system will typically require some custom configuration. Best practice would be for such a configuration to be developed and tested in a pre-production environment, accepted by product and business/operational experts and then promoted to the production environment.

For more details on using Migration Projects to move data between instances, please refer to the Migration Project section of the Data Management Guide.

Purge and Archive

In order to maintain optimal performance, it is necessary to periodically purge or archive data from the operational database. Logistics Cloud uses multiple methods for purging and archiving data. The following section explains these concepts in more detail.

Business Data Purge

Purging old data helps maintain optimal performance in the operational system. Archiving is used in conjunction with purging for critical business objects which need to be accessible for an extended period of time. When data is archived, it is moved to an archive database schema and compressed. Data in the archive schema can be queried, but cannot be modified.

The following table defines the business objects which support archiving. The Operational Retention Period defines how long the data is kept in the operational database. The Frequency defines how often the job runs to archive data. The Archive Retention Period defines how long the data is kept before it is permanently purged from the system.

Entity	Operational Retention Period	Frequency	Archive Retention Period
Demurrage Transaction	2 years	Weekly	10 years
GTM Transaction	2 years	Weekly	10 years
Invoice	2 years	Weekly	10 years
Order Base	2 years	Weekly	10 years
Order Release	2 years	Weekly	10 years
Shipment/Sell Shipment	2 years	Weekly	10 years
Work Invoice	2 years	Weekly	10 years

Data in the archive schema is accessible via SQL Queries. Some sample archive reports are provided upon installation. The reports are accessible via the Report Manager. There is a new section of "Archive" reports. The archive reports take a single parameter, which is the ID of the object to be retrieved from the archive. The search for the ID allows you to query the archive schema business objects using flexible criteria.

> **Note**: There are no indexes on the archive schema database tables, thus the performance of the search is expected to be slower than the operational database. If the data returned by the sample report is not sufficient, it is recommended to copy the default report and modify it as needed.

Scheduled Purges

Scheduled purges are used for purging miscellaneous transient and diagnostic data. The following table defines the retention period and purge frequency. The timing and frequency of these processes should not be altered.

Entity	Retention Period	Purge Frequency
Bulk Plan Results	30 days	Weekly
Bulk Reporting	30 days	Weekly
Device Association	2 years	Weekly
Planning Diagnostics	30 days	

Partitioned Purges

Logistics Cloud contains several integration and logging tables that can become quite large very quickly; these tables have been partitioned to allow for quick purges of older data. By partitioning the tables, a particular partition (segment) can be truncated, instead of records being individually deleted, which is inefficient for large amounts of data. The following table explains the time period which is used to create the partitions and the number of partitions for each entity.

Entity	Time Period	Partitions
Data Queues	Daily	12
Explanation	Daily	7
Integration Logging	Monthly	4
Integration Logging(Mobile)	Daily	7
Login History	Monthly	4
Mobile Messages	Daily	7
Object Lock	Daily	7

Entity	Time Period	Partitions
Problem	Monthly	4
Process Control History	Quarterly	4
Tracking Event (AKA Shipment Status)	Monthly	4
Transaction(Mobile)	Daily	7
Transaction(Inbound)	Monthly	4
Transaction(Outbound)	Weekly	4
Transaction(Mobile)	Daily	7
Transmission(Inbound)	Monthly	4
Transmission(Outbound)	Weekly	4

These jobs are set to run at 1 AM on the last day of the cycle. Every table reuses its partitions, because the intention is that before the end of the cycle, the oldest partition is purged in preparation for the new cycle. In other words, for a monthly table, on April 30th, partition 1 should be purged to remove January's data, which will then be used for May. For example:

If the time period of the table is monthly, then the data is segmented as follows:

Month	Partition
Jan	partition 1
Feb	partition 2
Mar	partition 3
Apr	partition 4
May	partition 1
June	partition 2
…	

Loading Legacy Data

Loading legacy Business Transaction data from a previous instance of Oracle Transportation Management/Global Trade Management is permitted. A maximum of two years of data is permitted. Legacy data will adhere to the same data retention policies previously described. It is important that the original insert_date of the data be preserved during the data upload in order to prevent the data from prematurely getting archived and to prevent performance issues during archiving. The Logistics

Cloud Service does not provide any mechanism for loading the data. Loading the legacy data is the responsibility of the customer and/or the corresponding implementation partner and must be performed using a support integration technology (i.e. CSV or XML).

Virus Scan

It is important to understand that all document upload interfaces to Logistics Cloud are protected with virus scanning for your added security. There is no configuration required and this feature cannot be disabled. If you encounter any issues with uploading documents, please open a Service Request.

Production to Test Cloning (P2T)

Logistics Cloud service supports the ability to have the production database instance cloned to your test instances. This is often a good idea to have done shortly after go-live in order to facilitate issue replication. It is also highly recommended to have this done prior to an upgrade. P2T requests are made by opening a Service Request.

The entire production database is cloned with the following exceptions.

- Recurring processes are disabled.
- All users other than Service Administrators (users with the 'DBA.ADMIN" role) are expired in order to prevent inadvertent use of the test system. There is a "Manager User Expiration Date" action available on the User Manager, which can be used to un-expire a group of users.
- The OTM password for Service Administrators is retained from production. Note: This password would only be used if the DBA.ADMIN user was used for Integration processing, which is highly discouraged. Regardless, it is highly recommended to change this password immediately following a P2T.
- Environment Specific data and data potentially containing Personally Identifiable Information (PII) is not propagated. The following table outlines the data that is not propagated.

Table Name	Column Name
ADHOC_NOTIFY	COM_ADDRESS
APP_MACHINE	MACHINE_URL
CONTACT	CELL_PHONE
CONTACT	FAX
CONTACT	FIRST_NAME
CONTACT	JOB_TITLE
CONTACT	LAST_NAME
CONTACT	MIDDLE_NAME
CONTACT	PHONE1
CONTACT	PHONE2
CONTACT_POINT	COM_ADDRESS

Table Name	Column Name
CUSTOMER_TAX_INFO	All Columns
DOMAIN_SETTING_TAX_INFO	All Columns
DRIVER	DATE_OF_BIRTH
DRIVER	FIRST_NAME
DRIVER	LAST_NAME
DRIVER_CDL	All Columns
EXTERNAL_SYSTEM	HOSTNAME
EXTERNAL_SYSTEM	URL
EXTERNAL_SYSTEM	IP_ADDRESS
I_MESSAGE	CELL_PHONE
ORDER_RELEASE	EM_PHONE_NUMBER
PROBLEM	PROBLEM_URL
REPORT_EMAIL	EMAIL_ADDRESS
SHIPMENT	EM_PHONE_NUMBER
WEB_MACHINE	MACHINE_URL
X_UN_LOC_CODE	EMAIL_ADDRESS
X_UN_LOC_CODE	FAX

Refer to the following MOS Note for the latest details on the P2T process:

- **Transportation and Global Trade Cloud Service Production to Test Clone Data Cleansing** (Doc ID 2018902.1)

8. Additional Documentation

The following link provides additional instructional and training materials for Logistics Cloud Management.

https://cloud.oracle.com/saasreadiness/scm?readinessRID=1415317857162

The following My Oracle Support note captures the key differences between the On-Premise and Cloud product offerings:

Note 1926811.1: Key Differences between Oracle Logistics On-Premise and Cloud