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Customs Management Installation Guide

For Customs Management Release 17.2.x Alliance users:

Customs Management requires your Alliance version to be up-to-date. If you have not already done so, you must install any outstanding Alliances releases and patches up to and including the current patch (Alliance R08 Patch 1 Hotfix 2.2) before installing Customs Management on the same day. These Alliance releases and patches must be installed in sequential order.

Once your Alliance version has been updated, then proceed to the installation of Customs Management 17.2.x on the same day (follow this guide for Customs Management installation instructions).

Please contact BluJay Solutions Technical Support at 866-649-1900 or go to http://blujaysolutions.force.com for help planning your upgrade. Customs Management only users:
If your database is up to date with the latest patch (R08 patch 1 Hotfix 2.2), you do not need to run database scripts. If it is not up to date with the latest patch, you must run the database scripts for the latest patch (obtain these database scripts from BluJay Solutions Technical Support) before running the Customs Management Installer program for Customs Management 17.2.x.

Contact BluJay Solutions Technical Support at 866-649-1900 or go to http://blujaysolutions.force.com to arrange for the database scripts to be run on your system.

Revised Publication: Nov, 2018

1. Introduction

1.1 Overview of Customs Management Installation

Before installing Customs Management or upgrading to a later version, BluJay Solutions strongly recommends that you familiarize yourself with the requirements and steps described in this Installation Guide. These requirements and steps are covered in the following sections:

- Implementation of Customs Management
- Customs Management Installer
- Installing Customs Management Adapter

1.2 Customs Management Components

The following sections describe the Customs Management components and third-party applications and programs that are installed and configured during the installation process.

<table>
<thead>
<tr>
<th>Component</th>
<th>Version</th>
<th>Description</th>
</tr>
</thead>
</table>

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<table>
<thead>
<tr>
<th><strong>Customs Management User Interface</strong></th>
<th>Matches the version on this document</th>
<th>User interface for Shipment Processing, maintenance and administration of Customs Management. This is the application that will be downloaded to the client via Java Webstart.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Customs Management Server (Foreground)</strong></td>
<td>Matches the version on this document</td>
<td>The backend for Shipment Processing, maintenance and administration of Customs Management. Connects and maintains Customs Management’ database.</td>
</tr>
<tr>
<td><strong>Customs Management Services (Background)</strong></td>
<td>Matches the version on this document</td>
<td>Scheduling of jobs for Forms and Reports printing, formatting, sending receiving of ABI messages from US Customs. And also, for processing of interfaces to other systems, e.g., Accounting Systems.</td>
</tr>
</tbody>
</table>
| **Customs Management Adapter** | Matches the version on this document document | Optional component which facilitates integration from other system to Customs via EDI or XML.  

The Customs Management Adapter must be updated each time you upgrade Customs Management. See the instructions provided with the Customs Management Adapter. Management |
### Message Broker (formerly Ebiz)

<table>
<thead>
<tr>
<th>Version</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.0.1 or later</td>
<td>Optional component which facilitates integration from other system to Customs Management via EDI or XML. Works with Customs Management Adapter. Note: Installation of Message Broker will not be covered in this document.</td>
</tr>
</tbody>
</table>

### 1.3 Third Party Components

<table>
<thead>
<tr>
<th>3rd Party Component</th>
<th>Version</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apache Tomcat</td>
<td>6.0.30 or later version of 6.0 for AIX, Linux and Windows</td>
<td>Required to run Customs Management. The application server where Customs Management components will be installed.</td>
</tr>
<tr>
<td>Java SDK</td>
<td>Oracle JDK 1.8.0_101/102/111/112/212 IBM JDK 1.8 SR3 FP10 or later version of 1.8 64-bit for AIX</td>
<td>Required to run Customs Management. Note: Installation of Java SDK will not be covered in this document for AIX and Linux.</td>
</tr>
<tr>
<td>Oracle Database</td>
<td>11g Release 2</td>
<td>Required to run Customs Management Note: Installation of Oracle Database will not be covered in this document.</td>
</tr>
<tr>
<td><strong>MQ Server</strong></td>
<td>7.0 or later</td>
<td>Prerequisite: MQ is required to communicate to CBP and should be installed before Customs Management installation and configuration setup begins. Customs Management supports MQ Server and Client mode connection to US Customs.</td>
</tr>
<tr>
<td>---------------</td>
<td>--------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| **Load Leveler** | IBM Tivoli Workload Scheduler LoadLeveler for AIX V5.1 or greater and maintenance | If On the IBM p7 / AIX platform Customs Management has a requirement for a software product and its support, appropriate to the AIX version being utilized.  
This software is licensed per processor core installed on the IBM p7 machine.  
Note: Installation of Load Leveler will not be covered in this document. |
| **SMTP Server** | MS Exchange or any other SMTP daemon | Required component which facilitates sending of reports, forms, XML and text files from Customs Management through email.  
Note: Installation of SMTP Server will not be covered in this document. |
1.4 Customs Management Release Number Nomenclature

<table>
<thead>
<tr>
<th>Overview</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customs Management releases are named with the following nomenclature:</td>
</tr>
<tr>
<td>Example: Release 1.2.3.4 where</td>
</tr>
<tr>
<td>1 = Major Release version #1</td>
</tr>
<tr>
<td>2 = Minor Release version #2</td>
</tr>
<tr>
<td>3 = Patch version #3</td>
</tr>
<tr>
<td>4 = Minor Patch or Hot fix version #4</td>
</tr>
</tbody>
</table>

2 Implementation of Customs Management

2.1 Implementation Requirements

Customs Management is a highly scalable system, depending on business requirements Customs Management can be implemented in the following setup described in the diagram below.

2.1.1. Small to Medium Customs Management implementation
2.1.2. Medium to Large Customs Management implementation

A load balancer appliance (F5 hardware, Citrix Netscaler, etc.) which supports “session affinity” is recommended for environments supporting >50 users and is required for those supporting >100 and those utilizing multiple instances of Tomcat, Applications Servers or Virtual Machines within a single Applications Server.

2.1.3. High Availability Customs Management Implementation

A load balancer appliance (F5 hardware, Citrix Netscaler, etc.) which supports “session affinity” is recommended for environments supporting >50 users and is required for those supporting >100 and those utilizing multiple instances of Tomcat, Applications Servers or Virtual Machines within a single Applications Server.
2.2 Hardware and Software Requirements

2.2.1 Hardware Configuration

The following table shows the minimum hardware and software requirements that must be in place before installing the Customs Management Server and Customs Management Services.

Note: The requirements in this document are applicable only for Customs Management. If Alliance is needed and will be running on the same machine, the requirements for Alliance must be in addition to the minimum requirements for Customs Management. For optimal performance and future expansions (e.g. additional users, running other applications on these machines), the setup must be higher than the minimum requirements.

- The general factor utilized for the Applications Server memory requirements is: 8GB for the OS + .25GB per User.

- The general factor utilized for the Database Server memory requirements is: 8GB for the OS + .4GB per User.

- The general factor utilized for the Database Server total storage requirements is: .00075GB per transaction.

<table>
<thead>
<tr>
<th>No. of Users</th>
<th>CPU if Linux</th>
<th>CPU if AIX</th>
<th>Application Server Memory (for Customs Management only) only)</th>
<th>Application Server Disk Space (for Customs Management)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 25</td>
<td>1 server x 1 Six-Core or equivalent</td>
<td>1 server x 1 IBM p7 or higher</td>
<td>16 GB</td>
<td>50 GB</td>
</tr>
<tr>
<td>Up to 50</td>
<td>1 server x 1 Six-Core or equivalent</td>
<td>1 server x 1 IBM p7 or higher</td>
<td>24 GB</td>
<td>50 GB</td>
</tr>
</tbody>
</table>
### Database server requirements

<table>
<thead>
<tr>
<th>No. of Users</th>
<th>Intel / AMD CPU if Linux or Windows</th>
<th>IBM CPU if Linux AIX Memory</th>
<th>DB Server Memory</th>
<th>DB Server Disk Space</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Up to 25</strong></td>
<td>1 server x 1 Six Core or equivalent</td>
<td>1 server x 1 IBM p7 or higher</td>
<td>16 GB</td>
<td><strong>330 GB</strong></td>
</tr>
<tr>
<td><strong>Up to 50</strong></td>
<td>1 server x 2 Dual / Six Core or equivalent</td>
<td>1 server x 1 IBM p7 or higher</td>
<td>32 GB</td>
<td><strong>660 GB</strong></td>
</tr>
<tr>
<td><strong>Up to 100</strong></td>
<td>1 server x 2 Six Core or equivalent</td>
<td>1 server x 1 IBM p7 or higher</td>
<td>48 GB</td>
<td><strong>1.3 TB</strong></td>
</tr>
<tr>
<td><strong>Over 100</strong></td>
<td>Custom Configuration</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note: The disk space for the database server is dependent on the number of transactions per year.*

#### 2.2.2 When to use AIX configuration

The application server must be AIX if any of the following is required:

- Import reconciliation
- FTZ-214
- Migrations from Alliance strategy includes incremental rollout
Note: The disk space for the database server is dependent on the number of transactions per year.
** This is an estimation of total space required to accommodate the application data and indices of Customs Management. Please contact a BluJay Solutions DBA to discuss the storage tier setup at more granular level (e.g. # of spindles, RPM, RAID levels etc) including storage requirements for backups based on desired retention policy. In general, small customers should be configured with RAID-1 or 1+0 with a minimum of 8x300GB drives. Medium and large systems should be configured with RAID-1 or 1+0 with a minimum of 12x300GB drives. Medium and large systems will need external storage.

<table>
<thead>
<tr>
<th>Component</th>
<th>Server</th>
<th>Workstation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating System</td>
<td>Any Oracle certified operating system such as Windows, AIX or Linux.</td>
<td>Windows 7 with SP1 or later</td>
</tr>
<tr>
<td></td>
<td>Please refer to BluJay Solutions to determine the exact version / kernel.</td>
<td></td>
</tr>
<tr>
<td>CPU</td>
<td>Linux: Intel Xeon Six Core with 2Ghz or higher.</td>
<td>Intel Dual Core with 1Ghz or higher</td>
</tr>
<tr>
<td></td>
<td>AIX: 4.2GHz 64-bit, IBM p7 core or higher.</td>
<td></td>
</tr>
<tr>
<td>Memory</td>
<td>See Hardware Configuration chart</td>
<td>2GB minimum</td>
</tr>
<tr>
<td>Component</td>
<td>Server</td>
<td>Workstation</td>
</tr>
<tr>
<td>-------------------</td>
<td>-------------------------------------</td>
<td>--------------------------------------------------------------------</td>
</tr>
<tr>
<td>Disk Space</td>
<td>See Hardware Configuration chart</td>
<td>DB server disks should be Raid disks and Application server disks are strongly recommended to be Raid disks.</td>
</tr>
<tr>
<td>Component</td>
<td>Server</td>
<td>Workstation</td>
</tr>
<tr>
<td>Ethernet Card</td>
<td>100Mb or better</td>
<td>100Mb or better</td>
</tr>
<tr>
<td>Printer</td>
<td>HP Laser Jet or equivalent connected to server or network</td>
<td>HP Laser Jet or equivalent connected to workstation or network. Must support postscript (PDF) printing.</td>
</tr>
<tr>
<td>Report Viewer</td>
<td>Not Applicable</td>
<td>Adobe Reader 8 or later</td>
</tr>
<tr>
<td>Internet Browser</td>
<td>Not Applicable</td>
<td>Internet Explorer 9 or later or Mozilla Firefox 38 or later</td>
</tr>
</tbody>
</table>
Remote Access

This is needed when installing remotely, or if you don’t have access to the server console.

Table:

<table>
<thead>
<tr>
<th>Remote Access</th>
<th>Remote Desktop Server or VNC Server for Windows Server platform</th>
<th>Remote Desktop Client or VNC Client for Windows 7 or later</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>XWindows Server or VNC Server for AIX and Linux platform</td>
<td>XWindows Client or VNC Client for Windows 7 or later</td>
</tr>
<tr>
<td></td>
<td>SSH server or Telnet server for AIX and Linux platform on manual installation of Customs Management</td>
<td>Putty (SSH Client) or Telnet Client for Windows 7 or later</td>
</tr>
</tbody>
</table>

2.2.4 Client, Terminal Server or Citrix Requirements (optional)

Minimum Requirements

- Dual core or better for Local Desktop Client 2GB RAM (non Citrix or non TSS).
- Six Core CPU or better for TSS or Citrix. Each Six Core can support up to 50 users.
- 400 MB memory per user for 32 bit Java. This is in addition to 64 or 32 bit OS requirements (min of 1GB for 32 bit OS Kernel).

**Note:** This is the recommended setting for typical environment. However, a 32 bit OS or Java have memory limitations.

- 1GB memory/user for 64 bit Java. This is in addition to 64 bit OS requirements (min of 2GB for 64 bit OS Kernel).

**Note:** The 64 bit OS server is required for Java 64 bit and to accommodate more users/server and very large shipments with multiple open editors, see “Procedure to Allow More than Five Shipment Editors to be Open at Once in Customs Management” section.

- 500 MB/user + 10 GB of free disk space per server or VM instance or per Local client.
- Windows 7 or later for Local client. Current version of TSS or Citrix OS.
• Direct network access to the Application server - preferably high speed network.
• Oracle Java Runtime 1.8_101/102/111/112 32-bit or 64-bit (available at oracle.com).
• Adobe Reader 8 or greater.
• Direct or network access to printer for local printing of PDF.
• The printer must support postscript printing.
• All users must be configured with Local Profiles. Any other configuration such as Roaming or Mandatory will impair the performance of the application.

**Note:** For Remote Customer Site Implementation.

### Implementation Notes for Remote Customers

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>The implementation of Customs Management at remote customer sites over a WAN requires Citrix or TSS to provide the required performance for remote sites.</td>
</tr>
<tr>
<td>2.</td>
<td>The remote client sites would access the application server through the Citrix or TSS server. The Citrix or TSS server must be local to the application server as well. If it cannot be local, a high speed connection between the two is required.</td>
</tr>
</tbody>
</table>

**Note:** Temporary directories and user profiles should be stored locally, rather than on a remote file server.

### 2.2.5 Network Considerations

The Database server and application server require a private network connecting the two. The private network should be configured as follows:

• Enable MTU size of 8192 for the PRIVATE network cards on application and database server.
• Enable jumbo frames on the switch (through which the new network cards would be talking to each other).
A crossover or twisted pair cable is not recommended for a private network for this application due to limited throughput and high error rate of data depending on the length of the cable.

2.2.6 OS Username and Mount point
On AIX or Linux, Customs Management should have its own OS username and mount point that can be configured for example as follows:

- /kcustums mount point with a minimum of 10 GB space. For recommended size, please refer to Application Server Disk Space requirement in the Hardware Configuration section (section 2.2.1).
- kcsupport OS username with the following settings:
  - /home/kcsupport – the home directory
  - Primary GROUP [kcsupport] for Linux.
  - Group SET [staff, alluser, mqm, loadl, oinstall, oracle, kcsupport] for AIX only.
  - With normal profile for AIX and Linux.

3 Customs Management Installer
Customs Management’ server processing is split between two separate server instances that execute on your AIX or Linux.

One instance is used to house the server component that services requests from the Customs Management interactive client. Throughout this guide, this is referred to as the foreground component.

The other instance is used to house the server component that processes background tasks such as ABI processing and communications with CBP. Throughout this guide, this is referred to as the background component.

The Customs Management installer is used to install both components, and therefore must be run twice; the first time for the foreground installation and the second time for the background installation.
3.1 Prerequisites and Default Values

The following prerequisites and directory determinations are required before you begin to run the installation.

3.1.1 X-Windows

The installer is a UI-based installer and a corresponding UI environ is a prerequisite for the installer to run.

On the AIX and Linux platform, the installer uses X-Windows to run. Therefore your AIX or Linux server must have X-Windows installed on it.

Additionally, for remote installation from a Windows PC, your PC must have X-Windows software installed on it as well (such as Cygwin/X).

3.1.2 The Installer JAR file

The installer JAR is the file that contains the installer. You must have previously downloaded the Customs Management Installer JAR file onto your AIX or Linux computer. The file is named kc.installer_x.x.x.x.jar where “x.x.x.x” is the Customs Management version that the installer houses. For example: kc.installer_17.0.jar.

3.1.3 Tomcat Servers

Two Apache Tomcat servers must have been previously installed on your server. One Tomcat instance is used for the foreground server component and the other Tomcat instance is used for the background server component.

On AIX or Linux, the two Tomcat directories usually would be:
- Foreground Tomcat
  /kcustoms/tomcatfg
- Background Tomcat
  /kcustoms/tomcatbg

If your directories are different, please make a note of the exact directories before starting the installation.

If you are performing a foreground installation, you should stop the foreground Tomcat process before you run the installer.
In the case of the background installation, you should stop the background Tomcat process before running the installer. The installer will remind you to do so.

3.1.4 Customs Management Home Directories
The Customs Management Home directories are used by the installer to back up the existing Customs Management installation if the installation being performed is an update of an existing installation.

On AIX or Linux, the Customs Management Installer defaults to the same directory for both the foreground and background Customs Management installations:

```
/kcustoms
```

3.1.5 Application Names
In the case of a new installation, the installer requires a name to be provided and associated with the foreground instance of Customs Management as well as a name to be provided and associated with the background instance of Customs Management.

You may simply use the name kcustoms in both cases.

3.1.6 Database Settings
The installer will attempt to connect to your Customs Management database and update it, if needed. Therefore the database must be up and running during the installation process. The installer will need the following information. Please ask your DBA the values for these settings.

- The IP address of your Customs Management database.
- The port of your database.
- The SID of your database.
- The user name used to connect to your database.
- The corresponding password used to connect to your database.

If you are performing an update, the installer will default to the settings of the existing Customs Management application.
3.1.7 Application Server and Port Settings

When performing a foreground installation the following settings will be needed:

- The IP Address of where the foreground server resides. This is usually the IP address of your AIX or Linux computer.
- The port number that the foreground server listens to.
- The port number that the background server listens to.
- The background app name (refer to the previous Application Names section).

This information should be provided to you by the person who installed the Tomcat instance for you.

3.1.8 Bypassing Long-Running SQL Scripts for Customers with Large Databases

Customers with large databases need to perform the following procedure before beginning the Customs Management installer program to temporarily bypass PL/SQL scripts which halt the installer program due to the large size of the affected tables.

PL/SQL scripts that will be bypassed

<table>
<thead>
<tr>
<th>PL/SQL Script</th>
<th>Description</th>
<th>Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALCOHOL_VALUE_CONVERT.sql</td>
<td>Modifies the existing values in the No_Of_Liters_Alcohol field in the CAT_CI_LINES and CI_TARIFF_CLASS tables to convert the existing data from three decimal places to one (rounding up to that one decimal place).</td>
<td>New in v. 4.6.0</td>
</tr>
<tr>
<td>CAT_CI_LINES.sql</td>
<td>Migrates CAT CI Lines table data from Alliance to Customs Management.</td>
<td>Updated for v. 2.1.4.5</td>
</tr>
<tr>
<td>File Name</td>
<td>Description</td>
<td>Updated</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>-----------</td>
</tr>
<tr>
<td>CAT_NHTSA_ES.sql</td>
<td>Converts CAT Parts data from the ACS Department of Transportation (DOT) database to the new ACE format for National Highway Safety Administration (NHTSA).</td>
<td>Updated for v. 4.9.1</td>
</tr>
<tr>
<td>CAT_PG_APHIS_ES.sql</td>
<td>Converts CAT Parts data from the ACS Lacey database to the new ACE format for Animal and Plant Health Inspection Service (APHIS).</td>
<td>Updated for v. 4.9.4</td>
</tr>
<tr>
<td>CAT_PG_APHIS_ES.Components.sql</td>
<td>Converts CAT Parts data from the ACS Lacey product components database to the new ACE format for Animal and Plant Health Inspection Service (APHIS).</td>
<td>Updated for v. 4.9.4</td>
</tr>
<tr>
<td>CAT_PG_FDA_ES.sql</td>
<td>Converts CAT Parts data from the ACS Food and Drug Administration (FDA) database to the new ACE format for FDA.</td>
<td>Updated for v. 4.9.6</td>
</tr>
<tr>
<td>CAT_PG_FDA_ES_Compliance.sql</td>
<td>Converts CAT Parts data from the ACS Food and Drug Administration (FDA) database to the new ACE format for FDA.</td>
<td>Updated for v. 4.8.0</td>
</tr>
<tr>
<td>PURGE_PARAMS.sql</td>
<td>In v.17.1, adds records for Work Management (Internal ID KEC10323).</td>
<td>New in v. 17.1</td>
</tr>
<tr>
<td>File Name</td>
<td>Description</td>
<td>Version</td>
</tr>
<tr>
<td>-----------</td>
<td>-------------</td>
<td>---------</td>
</tr>
<tr>
<td>SCHEDULE.sql</td>
<td>In v.17.0.0, adds the AbiReconFormatHandler for squeezing Recon files. In v.17.0.1, adds two new Schedule Handlers used only for Ad-Hoc processing: AdHocQuerySchedulerHandler and AdHocQueryQueueHandler. In v.17.0.3, adds a Schedule Handler for new Recon Selection screen (screen under construction at time of 17.0.3 release) (Internal ID KEC-10000). In v.17.1, adds a Schedule Handler for Work Management (Internal ID KEC-10323).</td>
<td>Updated for v. 17.0.3</td>
</tr>
<tr>
<td>SECURITY_PREFERENCE S.sql</td>
<td>Automatically adds new security preference ALLOW_AD_HOC_QUERY_PREVIEW and sets it to ‘Y’ at the Subscriber level in Security Administration so that the Preview button is enabled by default on the Ad-Hoc Query screen.</td>
<td>New in v. 17.0.0</td>
</tr>
<tr>
<td>SH_HDR_AUX_BOND_NO_UPDATE-KEC12029.sql</td>
<td>Updates the Bond No field in the Shipment Header Aux Maintenance table from Importer Bond Maintenance based on the shipment’s Importer’s</td>
<td>New in v. 17.2.1</td>
</tr>
<tr>
<td>File Name</td>
<td>Description</td>
<td>Version</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>---------------</td>
</tr>
<tr>
<td>SHIPMENT_DATES.sql</td>
<td>Migrates Shipment Dates table data from Alliance to Customs Management.</td>
<td>New in v. 2.1</td>
</tr>
<tr>
<td>SHIPMENT_HEADER.sql</td>
<td>Migrates Shipment Header table data from Alliance to Customs Management.</td>
<td>Updated for v. 2.1.4.9</td>
</tr>
<tr>
<td>SHIPMENT_OPEN_FILES.sql</td>
<td>Migrates Shipment Open Files table data from Alliance to Customs Management.</td>
<td>New in v. 2.1</td>
</tr>
<tr>
<td>STATEMENT_DETAIL.sql</td>
<td>Update the total_amount of existing statement_detail records to be ESTIMATED_DUTY + ADD_AMT + CVD_AMT + TOTAL_FEES_AMT + INTEREST_AMOUNT (estimated_tax is excluded) if DEFERRED_TAX_INDICATOR = 'Y' (Internal ID KEC-6188)</td>
<td>New in v. 4.9.3</td>
</tr>
<tr>
<td>TRADES_CERTIFICATE_OF_ORIGIN.sql</td>
<td>Migrates Trades Certificate of Origin table data from Alliance to Customs Management.</td>
<td>Updated for v. 4.2.4</td>
</tr>
</tbody>
</table>

The following install procedure needs to be done to activate the bypass:

1. Before running the installer, insert INSTALL_BYPASS_PLSQL in SYSTEM_PARAMETER using sqlplus:
a. Insert into SYSTEM_PARAMETER (PARAMETER_KEY, PARAMETER_VALUE) values ('INSTALL_BYPASS.PLSQL', 'Y');
   b. Commit;

2. Run the Customs Management Installer as normal.
3. After both foreground and background Customs Management Installer runs have finished, delete INSTALL_BYPASS.PLSQL in SYSTEM_PARAMETER using sqlplus:

   a. Delete from SYSTEM_PARAMETER where PARAMETER_KEY = 'INSTALL_BYPASS.PLSQL';
   b. Commit;

4. Then run the PL/SQL scripts in the list above this procedure. It is highly recommended that the scripts be run by your DBA on the DB server with nohup mode.

   If you are migrating to Customs Management for the first time, you need to run all of the scripts in the Scripts\Migrations directory of the release folder and also the scripts in the Scripts\Upgrades directory of the release folder.

   If you are upgrading from one version of Customs Management to another version, you need to run the scripts in all of the version folders above your current version in the Scripts\Upgrades directory of the release folder.

3.2 Stop all Alliance Processes

Customers who use Alliance along with Customs Management must perform the following procedures before running the Customs Management installer.

AIX users:
AIX users need to perform this general start/stop process:

General Start/Stop functionality was developed to help maintain all the batch jobs on a single screen and to avoid process specific programming for each start/stop functionality. This function enables you to view the real time job status on your system and to start or to stop a specific job. This is done using special logic that updates the real-time job status Load Leveler Queue and updates the Work/Mess field of Program Control, as follows:
1. RUN – If the job is found on the Load Leveler Queue.
2. FAIL – If the job is not found on the Load Leveler Queue and the job status in Program Control is “RUN”.
3. STOP – If the job is not found on the Load Leveler Queue and the job has been stopped from this screen.

Go to the System File Maints menu / System Management File Maints menu to find the General Start/Stop Processes option.

**General Process Start/Stop Function:**

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
<th>Comment</th>
</tr>
</thead>
</table>

![Image of General Process Start/Stop Function window]
1. Before beginning the Update / Patch / Hot Fix installation, you must stop all batch jobs that show a Job Status of RUN.

You should make a note of the batch jobs that you stop, so that you can start them after the installation is complete.

To stop a job, enter the line number for the job in the ACTION field. Then update the screen.

The screen below is an example of the General Process Start/Stop Function screen.

General Process Start/Stop Function ‘Shut it Down’ pop-up screen:

Fax Start Command File is running. Shut it down?

ACTION: SYJOBCT2-D0-10/04/07

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.</td>
<td>On the pop-up screen (above), enter Y to stop the job. Then update the pop-up screen.</td>
<td>When you enter Y to shut down a job, the pop-up screen will disappear and the program will end the job, holding you for approximately 10 seconds. The following message will display at the bottom of the screen:</td>
</tr>
<tr>
<td>3.</td>
<td>After the job ends, the program returns to the main screen and will redisplay the job statuses. You should</td>
<td></td>
</tr>
</tbody>
</table>
### General Process Start/Stop Function ‘Start it Up’ pop-up screen:

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Make sure all users are logged out of Customs Management.</td>
</tr>
<tr>
<td>2.</td>
<td>Stop all Alliance processes. See Section 3.2.</td>
</tr>
</tbody>
</table>
3. Configure and verify the X-Windows connection between your PC and your AIX or Linux computer.

4. If the installer is to be run on AIX or Linux, issue the following command at the command prompt. Substitute the proper version number for “x.x.x.x”, for example kc.installer_17.0.jar, “xxx” for JDK patch release, for example 101 or 102:

```
/usr/java8_64/bin/java -jar kc.installer_X.X.X.jar
```

Or

```
/kcustoms/jdk1.8.0_xxx/bin/java -jar kc.installer_X.X.X.jar
```

The sections below will first guide you through the Foreground installation, followed by the Background installation.

### 4.1 Performing the Foreground Install or Upgrade

Start the Customs Management Installer as referred to in the previous section titled Running the Installer.

#### 4.1.1 Welcome

The installer presents you with a welcome screen that indicates the version number as shown below.
Press the **Next** button to advance to the next screen.

### 4.1.2 Release Notes

The installer then displays where to get release notes for this release.
Press the **Next** button to continue.

### 4.1.3 License Agreement

The installer then presents you with the Customs Management license agreement.
4.1.4 Installation Type

Since you are performing a **Foreground** installation, select **Foreground**:

- [ ] Foreground (client/server component)
- [ ] Background (background processor component)
Then click the Next button.

4.1.5 Stop Tomcat

The installer’s next screen reminds you to stop Tomcat. If you have not done so stop the background Tomcat instance before continuing to the installer’s next screen.
4.1.6 Customs Management Home Directory

The installer prompts you for its Customs Management home directory. Simply accept the default setting presented to you. If you indeed wish to specify a different directory you may browse to it.
4.1.7 Apache Tomcat Directory

The installer then prompts you with the location of the Tomcat Directory. Since you are performing a foreground installation, the installer defaults to:

- AIX or Linux
  /kcustoms/tomcatfg

Accept the default and press the Next button to advance to the next screen. You can browse to a different directory if your foreground Tomcat resides in a different directory.

The installer verifies that the specified directory does indeed contain a Tomcat installation. If it cannot detect Tomcat, it will inform you and require you to browse to the proper directory.

4.1.8 Application Name

The installer then prompts you for application name associated with this installation of Customs Management.

If you are performing an update of an existing installation, select the name of the existing installation from the drop down list, and then press the Next
button.

The installer then asks for your confirmation that this application name is to be updated. If you are performing a new installation, enter the name, such as kcustoms. The installer then asks for your confirmation that this application name is to be created. If you are performing an update, the installer asks for your confirmation that this application name is to be updated.

4.1.9 Database Settings

The installer now prompts you for your database settings. If you are performing an update, then the installer defaults to the database settings found in the existing installation. Press the Next button to advance to the next screen.
If this is a new installation, supply the IP address, port, SID, username, and password you gathered from your DBA. Also provide the estimated number of users you expect to use the application.

Please note that when you press the Next button, the installer verifies the database settings by performing a test connection to the database.

If the installer cannot connect to the database, an error message is displayed. If you get an error, please then verify your settings with your DBA and try again.

### 4.1.10 Application Server and Ports

The installer now asks you for the following information:

- Application Server
- Foreground Port
- Background Port
- Background App Name
If you are performing an update, the installer will default to these values based on the previous installation. In that case, accept the values and press the Next button to advance to the next screen.

If you are performing a new installation, provide the values from this document’s Prerequisite’s Application Server and Port Settings section.

4.1.11 Customs Management Log File

The installer then prompts you for the location and name of the log file that the Customs Management foreground server writes to. Accept the default value presented to you and press the Next button to advance to the next screen.

Application Log File Location
4.1.12 Unpacking the Application Contents

The installer now presents you with a screen that will unpack the actual Customs Management application from itself once you press the Next button. This process is expected to take few minutes.
4.1.13 Processing

Now that the installer has all the setting it needs and has unpacked its contents, it is ready to process the installation, including applying the settings to the configuration files as well as updating the Customs Management database.
Press the Next button to tell the installer to begin processing. This may take several minutes.

Once it is finished, press the Next button to advance to the next screen.

### 4.1.14 Summary

The installer now displays the Configuration Summary screen displaying the various settings that were applied to the installation. If any errors occurred during the installation, this screen will list them at the top of the summary. Errors appear in red text. If there are any errors, please make note of them and provide them to Customer Support.

Warnings appear in blue text and can be ignored.

Press the Next button to advance to the final screen.

![Configuration Summary](image)

### 4.1.15 Installation Complete

The installer now displays the final screen, indicating whether the installer successfully completed.
4.1.16 Start Tomcat
Now restart the foreground instance of Tomcat.

When the Oracle database is restarted, then all of the Document Manager (formerly Kewill Imaging) services and processes and the Tomcat services 1 and 2 must be stopped and restarted to refresh their database connections.

4.2 Performing the Background Install or Upgrade
Start the Customs Management Installer as described in the previous section titled Running the Installer.

4.2.1 Welcome
The installer presents you with a welcome screen that indicates the version number as shown below.
Press the Next button to advance to the next screen.

4.2.2 Release Notes
The installer then displays where to get the release notes for this release.

Press the Next button to continue.
4.2.3 License Agreement

The installer then presents you with the Customs Management license agreement. To continue you must select the Accept option:

- I accept the terms of this license agreement.
- I do not accept the terms of this license agreement.

4.2.4 Installation Type

Since you are performing a Background installation select Background and Advance to the next screen:

- Foreground (client/server component)
- Background (background processor component)
4.2.5 Stop Tomcat

The installers next screen reminds you to stop Tomcat. If you have not done so, stop the background Tomcat instance before continuing to the installer’s next screen.
4.2.6 Customs Management Home Directory

The installer prompts you for Itie Customs Management home directory. Simply accept the default setting presented to you. If you indeed wish to specify a different directory you may browse to it.
4.2.7  Apache Tomcat Directory

The installer then prompts you with the location of the Tomcat Directory. Since you are performing a background installation, the installer defaults to:

- AIX or Linux
  /kcustoms/tomcatbg

Accept the default and press the Next button to advance to the next screen. You can browse to a different directory if your background Tomcat resides in a different directory.

The installer verifies that the specified directory does indeed contain a Tomcat installation. If it cannot detect Tomcat, it will inform you and require you to browse to the proper directory.

4.2.8  Application Name

The installer then prompts you for the name associated with this installation of Customs Management.

If you are performing an update of an existing installation, select the name of the existing installation from the drop down list, and then press the Next
The installer then asks for your confirmation that this application name is to be updated.

If you are performing a new installation, enter the name, such as `kcustoms`. The installer then asks for your confirmation that this application name is to be created. If you are performing an update, the installer asks for your confirmation that this application name is to be updated.

**4.2.9 Database Settings**

The installer now prompts you for your database settings. If you are performing an update, then the installer defaults to the database settings found in the existing installation. Press the Next button to advance to the next screen.

If this is a new installation, supply the IP address, port, SID, username, and password you gathered from your DBA. Also provide the estimated number of users you expect to use the application.
Please note that when you press the Next button, the installer verifies the database settings by performing a test connection to the database.

If the installer cannot connect to the database, an error message is displayed. Please then verify your settings with your DBA and try again.

4.2.10 Customs Management Log File

The installer then prompts you for the location and name of the log file that the Customs Management background server writes to. Accept the default value presented to you and press the Next button to advance to the next screen.
4.2.11 Unpacking the Application Contents

The installer now presents you with a screen that will unpack the actual Customs Management application from itself once you press the Next button. This process may take few minutes.
4.2.12 Processing

Now that the installer has all the setting it needs and has unpacked its contents, it is ready to process the installation, including applying the settings to the configuration files and updating the Customs Management database.

Press the Next button to tell the installer to begin processing. This may take several minutes.

Once it is finished, press the Next button to advance to the next screen.
4.2.13 Summary

The installer now displays the Configuration Summary screen displaying the various settings that were applied to the installation. If any errors occurred during the installation, this screen will list them at the top of the summary, displayed in red text.

If there are any errors, please make note of them and provide them to Customer Support. Press the Next button to advance to the final screen.
4.2.14 Installation Complete

The installer now displays the final screen, indicating whether the installer successfully completed.
4.2.15 Start Tomcat

Now restart the background instance of Tomcat.

When the Oracle database is restarted, then all of the Document Manager (formerly Kewill Imaging) services and processes and the Tomcat services 1 and 2 must be stopped and restarted to refresh their database connections.

4.3 Undo Upgrade and returning from Previous Installation

If you performed an update installation but need to restore from a previous version, you can perform the following steps to do so.

Please note that you may have to repeat the steps that follow twice: once for restoring the previous foreground installation and once for restoring the previous background installation.

4.3.1 Stop the appropriate instance of Tomcat

If you need to restore a previous foreground instance of Customs Management, stop the foreground Tomcat (tomcatfg). If you need to restore a previous background instance of Customs Management, stop the background Tomcat (tomcatbg).

4.3.2 Determine the directory name that contains the previous installation

As part of the installation process, when performing an update the installer renames the existing Customs Management installation to a directory under the Customs Management Home directory.

The directory name it creates is in the format of

app-name_datestamp_timestamp_{foreground or background}

If your Customs Management home directory on an AIX or Linux computer is /kcustoms and you performed an update installation with the name kcustoms, the directory name will resemble:

/kcustoms/kcustoms_2011Apr21_15532_foreground
4.3.3   **Delete the installation you just performed**  
If on AIX or Linux you installed Customs Management into the Tomcat directory  
/kcustoms/tomcatfg and installed it with the app name kcustoms, you should delete the following directory and the subdirectories contained within.  
/kcustoms/tomcatfg/webapps/kcustoms

4.3.4   **Rename the old directory from step 4.3.1 to the directory in step 4.3.2**  
On AIX or Linux you would rename:  
/kcustoms/kcustoms_2011Apr21_15532_foreground to  
kcustoms/tomcatfg/webapps/kcustoms

4.3.5   **Start Tomcat**  
The previous version should be ready for use at this point.  
When the Oracle database is restarted, then all of the Document Manager (formerly Kewill Imaging) services and processes and the Tomcat services 1 and 2 must be stopped and restarted to refresh their database connections.

5   Customs Management Installer  
Appendix  
This section outlines information that is not essential to running the installer.  It provides steps in confirming the installation process especially in the event that something went wrong.

5.1 **Verifying the Installer’s Database SQL Scripts Properly Ran**  
When the installer updates the Customs Management database, it executes a series of SQL scripts.
If the installer’s summary screen reported that one or more SQL scripts failed to properly execute, you may check the installer’s SQL log file to see the errors. You can find this file in the Customs Management Home directory, such as:

On AIX or Linux:

- /kcustums/kcustoms_background_sql 2016Jun07_095.txt
- /kcustums/kcustoms_foreground_sql 2016Jun07_095.txt

This file will contain lines similar to:

**Processing**

/kcustoms/tomcatbg/webapps/kcustoms/WEB-INF/classes/dbscript/upgrade/db-5.1/schema/id_gen.sql

Occasionally you will see an ORA error such as the following:

**Processing**

/kcustoms/tomcatbg/webapps/kcustomsbg/WEB-INF/classes/dbscript/upgrade/db-5.1/data/sql/SYSTEM_PARAMETER.sql

Warning: ORA-00001: unique constraint (R07LOCAL2.SYSTEM_KEY) violated

Insert into SYSTEM_PARAMETER (PARAMETER_KEY,PARAMETER_VALUE) values ('KEWILL_CUSTOMS','Y')

This is an acceptable error and should simply be treated as a warning.

If there are errors in the log file other than ORA-00001 then appropriate action should be taken, such as contacting Customer Support or your DBA.
Appendix 1 – Installing/Configuring Java Notes

Java Version Requirement

As of Customs Management Version 17.0, the Customs Management client and application server require Java Versions 1.8_101/102/111/112 32/64bit. The Java security level (Security tab in Java Control Panel) must be set to High for Java Versions 1.8_101/102/111/112 32/64-bit. You do not need to add the Customs Management URL to the Java Security Exception Site list when the Java security level is set to High.

Customs Management is currently incompatible with older Java Versions due to security and performance issues. However, if you need to run the latest version of Java on the same machine that Customs Management runs on, see Running the Latest Java Version Alongside a Customs Management-compatible Java Version.

Security Options for Java Versions 1.8.0_101 and later

Note: You need to perform one of these security modifications only once.

Option 1: Lower the Java security level to High

1. Navigate to the Java Control Panel dialog box as follows: In Windows Control Panel, select Java (32-bit). Or navigate to C:\Program Files\Java\jre1.8.0_xxx\bin and double-click javacpl.exe. (Where: xxx is the patch version of Java 1.8, for example 102)
2. Click the Security tab of the Java Control Panel dialog box.
3. Lower the security level down to High as shown below:
4. Click **OK** to apply the change and close the dialog box.

**Option 2: Add the Customs Management URL to the Java Security Exception Site List.**

1. Navigate to the Java Control Panel dialog box as follows: In Windows Control Panel, select Java. Or navigate to C:\Program Files\Java\jre1.8.0_102\bin and double-click javacpl.exe.
2. Click the Security tab of the Java Control Panel dialog box.
3. Add the Customs Management URL to the Exception Site List by clicking the Edit Site List button. This screenshot shows the Customs Management URL in the Exception Site List:
4. Click **OK** to apply the change and close the dialog box.

**Java Update Prompt**

If you get prompted to upgrade Java while starting up Customs Management as shown below, click **Later**.
Clearing Customs Management Instances From Cache

If you attempted to run Customs Management with the latest version of Java, you will need to clear all Customs Management instances from the Cache as follows:

1. Navigate to the Java Control Panel dialog box as follows: In Windows Control Panel, select Java. Or navigate to C:\Program Files\Java\jre1.8.0_102\bin and double-click javacpl.exe.
2. Click the General tab of the Java Control Panel dialog box.
3. Click the View button on the General tab.
4. In the Java Cache Viewer dialog box (shown below), select each Customs Management instance, and then click the large X in the center-top of the dialog box.

Viewing the Java Version Customs Management is Using

To view the version of Java that Customs Management is using, follow these steps:

1. In Customs Management, click the Help menu, then select About Customs Management.
2. Click the Installation Details button.
3. Click the Configuration tab on the Customs Management Installation Details dialog box (shown below).

4. Scroll to the Java Version (highlighted below):

Change the Install Directory when Installing Java
1. When installing java, change the Install Folder from the default location
   **For example:** Change from
   
   C:\Program Files\Java\jdk1.8.0_102
   
   **Change to**
   
   C:\Java\jdk1.8.0_102

2. Ensure that none of the folder names have spaces in them and are not too long.

**Installing 64-bit Java Version 1.8.0_102 (or newer patch releases for Java 1.8 64-bit) for Customs Management Version 5.4 or higher**

1. De-install any version of Java from Control Panel > Program and Features.
2. Download and Install Oracle Java SE Development Kit 1.8.0_102 64-bit for Windows (or newer patch release for Java 1.8 64-bit):
   http://www.oracle.com/technetwork/java/javase/downloads/jdk8-downloads-2133151.html and download: `jdk-8u102-windows-x64.exe`

**Note:** If an Oracle web site error page appears after clicking the like above, copy/paste the above hyperlink into a new browser tab and press Enter.

3. Install the JDK.
4. Once installed, check the Java security to make sure it is set to High by going to Control Panel >Java, then click the Security tab and select the the radio button High (Minimum recommended) (see image below).
5. Click Apply.
Launching Customs Management After Installing 64-bit Java Version

1. When launching Customs Management via webstart, a message box will appear as shown in the image below.
2. Select the check box “Do not show this again for apps from the publisher and location above”.
3. Click the Run button. Customs Management will then launch and display the login screen.

See Also:
Procedure to Allow More than Five Shipment Editors to be Open at Once in Customs Management

To enable the Customs Management user to open up more than five shipment editor tabs within the Windows login session, follow the procedures in this section. Java 64-bit allows the user to open up from small to large shipment simultaneously in a single instance of the Customs Management session provided that the Desktop or Terminal Server (RDP or Citrix Server) have enough memory and resource to allow the setup.

1. Install Java 64-bit SE and run Customs Management.
2. Increase the UserProcessHandleQuota and GDIProcessQuota registry settings in Windows (see procedure below).
3. Increase the EDITOR_LIMIT within Customs Management (see procedure following procedure below).

Increasing the USERProcessHandleQuota and GDIProcessHandleQuota Registry Settings in Windows

The default value for these registry settings in Windows is 10000 respectively and usually enough for most Windows applications. However, Customs Management is a very large application, therefore it requires higher than minimum settings.

For example, the shipment editor has approximately 1800+ UI elements and will require the same number of User Handles (a.k.a User Objects) and GDI Process (a.k.a GDI Objects) within Windows, so the default value will allow about five shipment editor tabs to be open at the same time in Customs Management.

If more than five shipment editor tabs are required (for example, up to ten), the USERProcessHandleQuota and GDIProcessHandleQuota has to be set to 20000.

Caution: Increasing these settings requires resource within the Windows OS, so be careful of increasing them too high, otherwise the OS will become unstable on a heavily used system.
The registry location for the two settings:
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion\Windows\USERProcessHandleQuota and GDIProcessHandleQuota

![Registry Setting Image]

### Increasing the EDITOR_LIMIT within Customs Management

1. Launch Customs Management and login with ADMIN privilege.
2. Go to Tools > Security Admin.
3. On the Preferences tab at the Subscriber level, add EDITOR_LIMIT if it does not exist. The value for the EDITOR_LIMIT must work in conjunction with the settings of USERProcessHandleQuota and GDIProcessHandleQuota on the Windows client. The default value for EDITOR_LIMIT is 5.

### Appendix 2 – Post-Installation Cleanup

You can run a script to clean up Customs Management temporary files, logs, core dumps, and backup directories that have been generated by the installer for Linux and AIX.

The script, called kc_cleanup.sh, is part of the Customs Management distribution. Follow these steps to run it:
1. Put the script in /kcustums.

2. On telnet or putty, run: `chmod 755 /kcustums/kc_cleanup.sh`

3. Then run: `./kcustums/kc_cleanup.sh`

**Note:** The following is assumed:

- The KCUSTOMS_BASE is located at /kcustums.

- KCUSTOMS_TOMCATBG is located at /kcustums/tomcatbg.

- KCUSTOMS_TOMCATFG is located at /kcustums/tomcatfg.

If not, edit kc_cleanup.sh and change the three variables to point to the correct location.

The script has to be run periodically. It is advisable to set up a crontab to run the script at least once per week.

---

**Appendix 3 – Post-Installation Database Triggers**

Changes were made to Customs Management that requires the use of database triggers. After completion of the Customs Management installation, your DBA should apply any of the triggers that apply to your company. These triggers can be found in the Scripts\Triggers directory of the Customs Management release.

<table>
<thead>
<tr>
<th>Script</th>
<th>Needed By</th>
<th>Updated for Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRG_DB_WORK_MGMT_HISTORY.sql</td>
<td>All customers using Work Management.</td>
<td>Updated for v. 4.4.4</td>
</tr>
<tr>
<td>Trigger Name</td>
<td>Description</td>
<td>Version</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>---------------</td>
</tr>
<tr>
<td>TRG_CAT_CFTA_TCO.sql</td>
<td>Any Alliance customer who uses Trade Certificates of Origin.</td>
<td>Updated for v. 4.6.1</td>
</tr>
<tr>
<td>TRG_CAT_CI_LINES_TCO.sql</td>
<td>Any Alliance customer who uses Trade Certificates of Origin.</td>
<td>Updated for v. 4.6.1</td>
</tr>
<tr>
<td>TRG_CAT_CI_LINES_ASSEMBLER</td>
<td>Any Alliance customer uploading parts into Customs Management.</td>
<td>New in v. 4.7.0</td>
</tr>
<tr>
<td></td>
<td>This trigger adds an assembler code as follows: Trigger is fired only on new cat_ci_lines with no empty assembler field created (will not fire if there is update on existing cat_ci_lines). If the assembler on new cat_ci_lines is not empty, the trigger will check if there is an assembler record in the Assembler table: if not, it will create a new Assembler record with ASSEMBLER = value of Assembler field of cat_ci_lines, name = &quot;ASSEMBLER &quot; + assembler field of cat_ci_lines, date/time update = system date, modified_by = &quot;CAT_ASSEMBLE&quot; and other fields will be empty.</td>
<td></td>
</tr>
<tr>
<td>File Name</td>
<td>Description</td>
<td>Updated for v.</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>TRG_CAT_DOT_ES.sql</td>
<td>When updating or inserting a new Parts record with ACS DOT data, associated data for ACE NHTSA will be updated or created.</td>
<td>4.9.1</td>
</tr>
<tr>
<td>TRG_CAT_FDA_ES.sql</td>
<td>When updating or inserting a new Parts record with ACS FDA data, associated data for ACE FDA will be updated or created.</td>
<td>4.9.6</td>
</tr>
<tr>
<td>TRG_CAT_FDA_ES_COMPLIANCE.sql</td>
<td>When updating or inserting a new Parts record with ACS FDA compliance data, associated data for ACE FDA will be updated or created.</td>
<td>4.8.0 (Created By field set to 'DB Trigger')</td>
</tr>
<tr>
<td>TRG_CAT_PGA_ES.sql</td>
<td>When updating or inserting a new Parts record with ACS Lacey data, associated data for ACE APHIS will be updated or created.</td>
<td>5.1.0</td>
</tr>
<tr>
<td>TRG_CAT_PGA_ES_INGREDIENT.sql</td>
<td>When updating or inserting a new Parts record with ACS Lacey ingredients, associated data for ACE APHIS will be updated or created.</td>
<td>5.1.0</td>
</tr>
<tr>
<td>Trigger Name</td>
<td>Description</td>
<td>Version</td>
</tr>
<tr>
<td>--------------</td>
<td>-------------</td>
<td>---------</td>
</tr>
<tr>
<td>TRG_CAT_PGA_ES_PROD_CMP.sql</td>
<td>When updating or inserting a new Parts record with ACS Lacey product components data, associated data for ACE APHIS will be updated or created.</td>
<td>Updated for v. 5.1.0</td>
</tr>
<tr>
<td>TRG_FORM_SELECTION_IUD.sql</td>
<td>Customers processing files in Alliance but want to print forms from Customs Management. This trigger will call the Web Service for Form Printing running on the Customs Management Adapter.</td>
<td>Updated for v. 4.8.0</td>
</tr>
<tr>
<td>TRG_SHIPMENT_DATES_INSERT.sql</td>
<td>Customers wishing to use the Import Carrier Tracker feature.</td>
<td>New in v. 4.9.0</td>
</tr>
<tr>
<td>TRG_SHIPMENT_DATES_IUD.sql</td>
<td>Customers wishing to use the Packet Requests feature.</td>
<td>New in v. 4.0.0</td>
</tr>
</tbody>
</table>

- The triggers must be installed under Alliance or Customs Management schema e.g. TPSDBA.

- The TRG_FORM_SELECTION_IUD.sql must be installed by a DBA under Alliance or Customs Management schema with the following procedure below:
  - Connect as sysdba using SQLPLUS or equivalent tool
Then run:

SQL> @?/rdbms/admin/utlmail.sql

SQL> @?/rdbms/admin/prvtmail.plb

SQL> grant execute on utl_mail to TPSDBA;
SQL> BEGIN
DBMS_NETWORK_ACL_ADMIN.CREATE_ACL(ACL => 'TPSDBA.xml'
    ,DESCRIPTION => 'Normal Access'
    ,PRINCIPAL => 'TPSDBA'
    ,IS_GRANT => TRUE
    ,PRIVILEGE => 'connect'
    ,START_DATE => NULL
    ,END_DATE => NULL);
END;
/

SQL> BEGIN

DBMS_NETWORK_ACL_ADMIN.ADD_PRIVILEGE(ACL => 'TPSDBA.xml'
    ,PRINCIPAL => 'TPSDBA'
    ,IS_GRANT => TRUE
    ,PRIVILEGE => 'connect'
    ,START_DATE => NULL
    ,END_DATE => NULL);
END;
/ 
SQL> BEGIN 
DBMS_NETWORK_ACL_ADMIN.ASSIGN_ACL(ACL=> 'TPSDBA.xml', HOST => '*'); 
); 
END; 
/

SQL> grant execute on utl_smtp to TPSDBA; 
SQL> grant execute on utl_http to TPSDBA; 

Note: where TPSDBA is the schema owner of Alliance/Customs Management

Appendix 4 – Logo Directory
To establish a directory for your company’s logo image files (for printing on forms from Customs Management), follow the steps below.

Note: The below sample commands are for an AIX operating system. AIX is case sensitive! Please note this has to be done in both the background (BG) and foreground (FG) tomcat locations:

On Tomcat 6:
  • Create directory common/classes/runtime/FOR\M/LOGOS under $CATALINA_HOME$

directory
mkdir –p /kcustoms/tomcatbg/common/classes/runtime/FOR\M/LOGOS mkdir –p /kcustoms/tomcatfg/common/classes/runtime/FOR\M/LOGOS
  • Upload all logo files under the LOGOS directory

/alliance is where the logos files were put by the programmer in this example:
rw–rw–rw 1 alliance alliuser 29775 May 06 18:50 KWEDO.jpg rw–rw–rw
1 alliance alliuser 71496 May 06 18:50 KWEDOverbage.jpg
So to copy, the commands would be:
cp /alliance/ KWEDO*
/kcustoms/tomcatfg/common/classes/runtime/FORM/LOGOS/KWEDO* cp
/alliance/ KWEDO*
/kcustoms/tomcatbg/common/classes/runtime/FORM/LOGOS/KWEDO*

• Edit the catalina.properties file under conf directory, there is an entry called "common.loader", add ,$
  {catalina.base}/common/classes,${catalina.home}/common/classes AT THE END (DO NOT change the previous setting there) First, make a copy of the files, just in case:
cp /kcustoms/tomcatbg/conf/catalina.properties
/kcustoms/tomcatbg/conf/catalina.properties_MMDDYYYY

  cp /kcustoms/tomcatfg/conf/catalina.properties
  /kcustoms/tomcatfg/conf/catalina.properties_MMDDYYYY Second, cut the data to input and paste it into Notepad, remove any additional carriage returns. Cut the data from Notepad.

Then, edit the original files to add the data:

vi /kcustoms/tomcatbg/conf/catalina.properties

When in the editor view, type /common.loader and press enter.
Right arrow to the end of the common.loader line and press a, this will move the cursor over one field. And then add ,${catalina.base}
/common/classes,$
{catalina.home}

/common/classes by right clicking on your mouse. Press the Esc key
Type :wq and press enter
Finally, repeat the above steps for:
/kcustoms/tomcatbg/conf/catalina.properties
Appendix 5 – Resolution for Internal Exception:

java.sql.SQLException: IO Error: Connection reset on Linux

If the error “Internal Exception: java.sql.SQLException: IO Error: Connection reset” occurred in a Linux environment, this indicates that the /dev/random generator on the operating system is very slow or blocking some of the JDBC connections. Please see [https://community.oracle.com/thread/943911](https://community.oracle.com/thread/943911) or Document 1594701.1 on the Oracle Support Web site. To resolve this issue, do the following:

- Create a symbolic link to /dev/urandom replacing /dev/random

OR

Edit the Tomcat catalina.sh, and in JAVA_OPTS add “-Djava.security.egd=file:///dev/urandom” without the quotes.
- Also make sure the hostname of the machine is defined in /etc/hosts.

(Internal ID KEC-4085)

Appendix 6 – Resolution for “Security Authentication was not valid” error

After Customs Management’s MQ libraries were patched to work with CBP MQ upgrades (KEC-3763 fixed in Versions 4.4.0 and 4.3.3), a "security authentication was not valid" error occurred when the MQ server was not configured correctly. To prevent the error, the MCA User ID is now required on the Client Channel (Server-Connection). Follow these instructions:

- On Windows:

  The MCA User ID has to be mquser@domain_name_or_machine_name.
  Where: mquser is a defined username within the domain or local machine running the MQ server services.

- On Unix (Linux or AIX):

  The MCA User ID has to be mqm.
  Where: mqm is a username defined within the machine running the MQ server processes.
Appendix 7 – Setting up Tomcat Server for Logging Rollover

Follow these steps to set up log4j for Apache Tomcat to rollover its logs daily to prevent them from growing indefinitely.

1. Backup /kcustoms/tomcatXX to a different directory.
2. Copy tomcat-juli.jar to /kcustoms/tomcatXX/bin, replacing the existing one.
5. Edit ../tomcatXX/conf/context.xml and change <context> to <context override="true" swallowOutput="true" useNaming="false">
6. Restart Tomcat.

Appendix 8 – Switching Customs Management or Tomcat to a newer version of Java on the Application Server

Switching Customs Management to a newer certified version of Java on the Application Server is rather easy and straight forward. It is driven by catalina.sh of Tomcat. It is assumed that the newer version of Java has been installed which can be installed any time prior to following the steps below.

1. Stop all Background and Foreground Tomcats.
2. Backup all Background and Foreground Tomcat catalina.sh to let say catalina_java1.7.sh.
3. Edit catalina.sh, and change JAVA_HOME to point to the root directory of newer version of Java.

For Example on Linux: JAVA_HOME=/kcustoms/jdk1.8.0_112; export JAVA_HOME
Where: jdk1.8.0_112; is the new Java version.

For Example on AIX: JAVA_HOME=/usr/java8_64; export JAVA_HOME
Where: java8_64; is the new Java version
4. Do this in all of the Foreground and Background tomcats.
5. Restart all Tomcats. The new Java version should be in effect at this point and can be checked by “ps –eaf | grep java”.

Appendix 9 – Settings for Improving Performance on AIX

• Set -Xms equals to the setting of -Xmx on catalina.sh of JAVA_OPTS to all Tomcat.
• Add -Xgcpolicy:gencon on catalina.sh of JAVA_OPTS to all Tomcat.
• Add -XX:+UseG1GC on catalina.sh of JAVA_OPTS to all Tomcat.
• Add -XX:+UseStringDeduplication of JAVA_OPTS to all Tomcat.
• Remove -Xoss2m or any –Xoss switch, it is not needed anymore.

Note: The changes on the Xms and Xmx will be dependent on the memory capacity of the Application Server.

For Example:


Appendix 10 – Settings for Improving Performance on Linux

• Set -Xms equals to the setting of -Xmx on catalina.sh of JAVA_OPTS to all Tomcat.
• Add -XX:+UseG1GC on catalina.sh of JAVA_OPTS to all Tomcat.
• Add -XX:+UseStringDeduplication of JAVA_OPTS to all Tomcat.
• Remove -XX:MaxPermSize=1024m or any -XX:MaxPermSize=value switch, it is not needed anymore

Note: The changes on the Xms and Xmx will be dependent on the memory capacity of the Application Server.
For Example:

```
JAVA_OPTS='-server -Xmx8G -Xms8G -XX:+UseG1GC 
XX:+UseStringDeduplication -XX:+DisableExplicitGC - 
Djava.awt.headless=true - 
Dicustoms.primary.url=http://10.10.96.218:8080/kcUSTOMs/MAINController - 
Dicustoms.abi.root.dir=/alliance/RUNTIME'; export JAVA_OPTS
```

Appendix 11 – Integration with BluJay Solutions ISF

Follow these steps if Customs Management is integrated with ISF and Customs Management is not able to send or receive data from or to ISF due to the error below:

```
javax.xml.ws.WebServiceException: Failed to access the WSDL at: 
https://isf.kewill.net/kc/request?wsdl. It failed with: 
sun.security.validator.ValidatorException: PKIX path building failed: 
sun.security.provider.certpath.SunCertPathBuilderException: unable to find 
valid certification path to requested target.
```

1. Download https://isf.stage.kewill.net/kc/certs/isf.stage.cer for ISF Stage or 
https://isf.kewill.net/kc/certs/isf.prod.cer for ISF Production
2. Upload isf.stage.cer (ISF Stage) or isf.prod.cer (ISF Production) to the Linux 
Application server to /kcustoms or to username used for Customs 
Management or Alliance home folder.
3. Assuming this is for Customs Management Cert or Test environment pointing 
to ISF Stage, run:

**On Linux:**
```
/kcustoms/jdk1.8.0_xxx/bin/keytool -import -alias isf.stage.kewill.net - 
keystore 
/kcustoms/jdk1.8.0_xxx/jre/lib/security/cacerts -file /kcustoms/isf.stage.cer
```

**On AIX:**
```
/usr/java8_64/bin/keytool -import -alias isf.stage.kewill.net -keystore 
/usr/java8_64/jre/lib/security/cacerts 
-file /kcustoms/isf.stage.cer
```

Where: xxx is the jdk version number e.g. 102 or 112
/kcustums is the location of the uploaded certificate And the command is one line

4. When prompted by “Enter keystore password:”, type-in: changeit
5. When prompted by “Trust this certificate? [no]:”, type-in yes
6. The result: “Certificate was added to keystore”
7. Restart tomcatbg.