pitney bowes

Spectrum™ Technology Platform
Version 12.0 SP1

Siebel Module User Guide

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1 - Introduction to the Siebel Module

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Siebel Module

The Spectrum™ Technology Platform Siebel Module identifies and manages duplicate records, standardizes and validates addresses, standardizes and validates names, and auto-populates missing fields. Records in your Siebel system are checked against known, up-to-date reference data from sources such as regulatory bodies (for example, the United States Postal Service), third-party data providers (for example, Dun & Bradstreet) or your company's internal reference sources (for example, accounting data).

The Siebel Module is available in two implementations: Siebel Data Quality (SDQ) and Non-SDQ. The SDQ implementation uses the Siebel Data Quality Universal Connector to connect Siebel to Spectrum™ Technology Platform. The Non-SDQ implementation utilizes a custom connector to connect Siebel to Spectrum™ Technology Platform.

SDQ Architecture
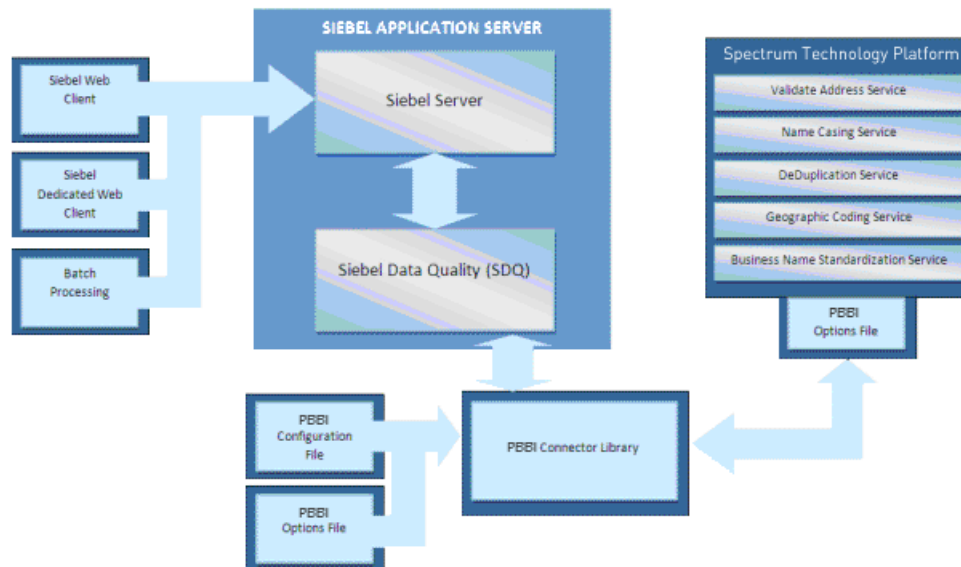
Non-SDQ Architecture
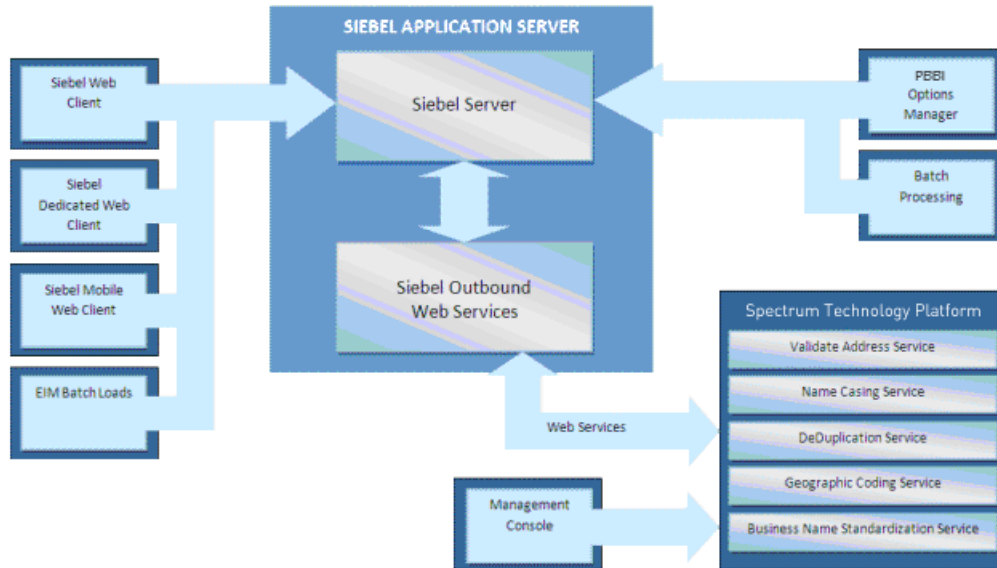
The following table illustrates the differences between SDQ and Non-SDQ implementation.

Table 1: Supported Web Clients

	SDQ	Non-SDQ
Web Client	Yes	Yes
Dedicated Web Client	Yes	Yes
Mobile Web Client	No	Yes
Open UI	Yes	Yes

Data cleansing may be enabled for business addresses, personal addresses, and prospect addresses. De-duplication may be enabled for accounts, contacts, business addresses, personal addresses[1], and prospects. Settings are global for interactive mode and can be unique for each batch job. Settings for the Siebel Module are managed using options and configuration files for SDQ. For Non-SDQ, Siebel's Options Manager and the Spectrum™ Technology Platform Management Console are used to set options and configuration.

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[1] Personal Address is supported only for Siebel Industry Applications

Siebel Module Services

The Siebel Module consists of the following services.

- **Siebel Business Name Standardization**—Standardizes terms against a previously validated form of that term and applies the standard version. This evaluation is done by searching a table for the term to be standardized. If the term is found, the term is either replaced with the standard version or it is extracted from the field. Standardization can include changing full words to abbreviations, changing abbreviations to full words, changing nick names to full names or misspellings to corrected spellings.
- **Siebel Generate Match Key**—Generates a match key. The match key is generated using a substring or consonant algorithm.
- **Siebel Generate Match Score**—Compares candidate records and generate a score that reflects its similarity. The higher the score, the closer the match.
- **Siebel Generate Search Key**—Used for duplicate detection and error-tolerant searching.
- **Siebel Standardize Name**—Formats input data with either mixed case or upper case.
- **Siebel Validate Address With No Candidates**—Validates addresses. If you have licensed the Enterprise Geocoding Module, it also returns latitude and longitude. If the address is not found, no candidates are returned.
- **Validate Address With Candidates**—Validates addresses. If you have licensed the Enterprise Geocoding Module, it also returns the latitude and longitude. If the address is not found, it returns a list of possible matches (candidates).
- **Siebel Global Type Ahead**—Automatically suggests addresses as you type and immediately returns candidates based on your input.

Siebel Module Databases

The Siebel Module relies on other Spectrum™ Technology Platform modules to provide various capabilities such as address standardization and geocoding. Depending on the features you have licensed you may have one or more of the following modules. Each module requires certain reference data (databases) to be installed on the Spectrum™ Technology Platform server.

> **Note:** For instructions on installing these databases, see the *Spectrum™ Technology Platform Installation Guide*.

Address Now Module Database

The Address Now database contains postal data from all supported countries. You can install the entire database or the data for specific countries only. The database is installed on the server. This database is available by subscription from Pitney Bowes and is updated monthly.

U.S. Geocoding Databases (U.S. Only)

These databases contain the spatial data necessary to perform address standardization and geocoding. You must install at least one of these databases to perform geocoding for USA. You set the database that you want to match against with the processing options. Enterprise Geocoding tries to match to the database you indicate. To verify you are matching to the database you want, you can review the value returned in the StreetDataType output field.

These databases use proprietary files called GSD files. For ZIP Code centroid matching, the file us.Z9 contains all the centroid info for all states and normally has a z9 extension.

- **Centrus Enhanced Geocoding**—This database consists of TIGER data provided by the U.S. Geological Survey and address data provided by the U.S. Postal Service.
- **TomTom Geocoding**—This database provides more up-to-date data than the Centrus Enhanced Geocoding database. It requires an additional license. This data is provided by TomTom, a third-party provider of spatial data, and postal data from the U.S. Postal Service.
- **NAVTEQ Geocoding**—This database provides more up-to-date data than the Centrus Enhanced Geocoding database. It requires an additional license. NAVTEQ data is provided by NAVTEQ, a third-party provider of spatial data. For more information about these databases, contact your sales representative.
- **ZIP + 4 Centroid**—This database provides only address standardization and ZIP + 4 centroid matching. It does not provide street-level matching.

Each geocoding database has an optional Statewide Intersections Index. The Statewide Intersection Index is designed to enable fast intersection identification on a statewide basis. For example, the Statewide Intersection Index will allow the database search for "1st and Main St, CO" and return a list of possible matches in Colorado more quickly than searching the entire geocoding database for each instance of the intersection.

U.S. Points Databases (U.S. Only)

Points databases contain data for locating the center of a parcel. These databases provides enhanced geocoding accuracy for internet mapping, property and casualty insurance, telecommunications, utilities, and others.

These databases are optional, but either Centrus Enhanced Points or Centrus Premium Points is required for Reverse Assessor's Parcel Number (APN) Lookup. These databases are also separately licensed.

- **Centrus Points**—This database contains the data necessary to locate the center of a parcel or building. It does not contain Assessor's Parcel Number (APN) or elevation data.
- **Centrus Elevation**—This database contains the same data as Centrus Points, plus elevation data.

- **Centrus Enhanced Points**—This database contains the same data as Centrus Points, plus APN data.
- **Centrus Premium Points**—This database contains the same data as Centrus Points, plus both APN and elevation data.
- **Centrus TomTom Points Database**—The data in this database is provided by TomTom, a third-party provider of spatial data.
- **Master Location Data** — This database provides the best available address point location for every mailable and deliverable address in the United States.

Reverse Geocoding Database (U.S. Only)

This database contains the data you need to convert a latitude/longitude location to an address.

This database is optional, but is required for Reverse Geocode US . This database is also separately licensed.

Auxiliary Files (U.S. Only)

Auxiliary files contain user-defined records. You can use auxiliary files to provide custom data to use in address matching and geocode matching.

DPV® Database (U.S. Only)

The Delivery Point Validation database allows you to check the validity of any individual mailing address in the U.S. The DPV database is distributed as an optional feature and can be installed to enhance the geocoding database's ability to validate mailing addresses. Each time an edition of the geocoding database is released, a corresponding edition of the optional DPV database is released. The date of the DPV database must match the date of the geocoding database for DPV processing to function. DPV lookups may not be performed after the expiration date of the DPV database.

This database is optional, but is required for CASS™ processing. The DPV database is also required to determine ZIP + 4 and ZIP + 4 related output (DPBC, USPS record type, etc.). This database is also separately licensed.

> **Note:**
>
> Postal Service licensing prohibits using DPV for the generation of addresses or address lists, and also prohibits the DPV database being exported outside the United States.

EWS Database (U.S. Only)

The Early Warning System (EWS) database contains data that prevents address records from miscoding due to a delay in postal data reaching the U.S. Postal database.

The USPS® refreshes the EWS file on a weekly basis. Unlike the DPV and LACS^Link databases, the EWS database does not need to have the same date as the geocoding database. You can download the EWS.zip file free of charge from the CASS section of the USPS® RIBBS website at:

https://ribbs.usps.gov//index.cfm?page=doclist

When you download the EWS database, you will receive a file named OUT. You must rename the OUT file to EWS.txt before using it.

LACS^{Link} Database (U.S. Only)

The LACS^{Link} database allows you to correct addresses that have changed as a result of a rural route address converting to street-style address, a PO Box renumbering, or a street-style address changing.

This database is optional, but is required for CASS™ processing. The LACS^{Link} database is also required in CASS mode to receive ZIP + 4 and ZIP + 4 related output (delivery point bar code, USPS record type, etc.).

The date of the LACS^{Link} database must match the date of the geocoding database for LACS^{Link} processing to function.

Note:

USPS licensing prohibits using LACS^{Link} for the generation of addresses or address lists, and also prohibits the LACS^{Link} database being exported outside the United States.

Universal Addressing Module Databases

Table 2: Universal Addressing Module Databases

Database Name & Description	Required or Optional	Supplier
U.S. Postal Database The U.S. Postal Database is in a Pitney Bowes proprietary format. It contains every house number range in the United States and is updated on a monthly basis. The database files contain the following information: • ZIP + 4® Code • Standardized address elements • City and state information The U.S. Postal Database also contains the data needed to perform Enhanced Street Matching (ESM) and All Street Matching (ASM). ESM and ASM apply extra matching logic to any input address that is not matched through the regular address validation process.	Required for U.S. address processing	Pitney Bowes monthly subscription

Database Name & Description	Required or Optional	Supplier
Canadian Postal Database The Canadian Postal database is in Pitney Bowes proprietary format. The database files contain the following information: • Postal code • Standardized address elements • Municipality and province information	Required for Canadian address processing	Pitney Bowes monthly subscription
International Postal Database The International Postal Database is a collection of postal address data from around the world. Data from each country is categorized according to the level of data available. The categories are: • **Category A**—Enables the validation and correction of an address's postal code, city name, state/county name, street address elements, and country name. • **Category B**—Enables the validation and correction of an address's postal code, city name, state/county name, and country name. It does not support the validation or correction of street address elements. • **Category C**—Enables the validation and correction of the country name, and the validation of the format of the postal code.	Required for International address processing	Pitney Bowes quarterly subscription
DPV® Database The Delivery Point Validation database allows you to check the validity of an individual mailing address in the U.S. The DPV database enhances the U.S. Postal database's ability to validate mailing addresses. **Note:** The DPV database also contains the data required for Commercial Mail Receiving Agency (CMRA) processing. Each time an edition of the U.S. Postal database is released, a corresponding edition of the DPV database is released. Although USPS licensing allows the use of the U.S. Postal database beyond the expiration date (with certain restrictions), DPV lookups may not be performed after the expiration date of the DPV database. USPS licensing prohibits using DPV data for the generation of addresses or address lists. To prevent the generation of address lists, the DPV database contains "false positive records." False positive records are artificially manufactured addresses. For each negative response that occurs in a DPV query, a query is made to the False/Positive table in the DPV database. A match to this table will stop DPV processing. USPS licensing also prohibits exporting the DPV data outside the United States.	Optional, but required for CASS Certified™ processing; U.S. addresses only	Pitney Bowes monthly subscription

Database Name & Description	Required or Optional	Supplier
eLOT® Database The Enhanced Line of Travel (eLOT) database is a U.S. address database that ensures that Enhanced Carrier Route mailings are sorted as close as possible to the actual delivery sequence. the eLOT database is required for certain types of postal discounts. You will receive monthly updates to your eLOT database on the same media as the U.S. Postal database. You must install the U.S. Postal database and eLOT database from the same month (i.e., September eLOT data must be processed with a September U.S. Postal database). If the U.S. Postal database and the eLOT database are not from the same month, there may be ZIP + 4® Codes for which eLOT numbers cannot be assigned. The ZIP Code™, ZIP + 4 Code, carrier route code, and the delivery point of an address must be provided to assign a eLOT code.	Optional; U.S. addresses only	Pitney Bowes monthly subscription
EWS Database The Early Warning System (EWS) database prevents address validation errors that can result due to a delay in postal data reaching the U.S. Postal database. The EWS database consists of partial address information limited to the ZIP Code™, street name, pre- and post-directionals, and a suffix. For an address record to be EWS-eligible, it must be an address not present on the most recent monthly production U.S. Postal database. The USPS® refreshes the EWS file on a weekly basis (Thursdays). You can download the EWS file from the USPS® website at **ribbs.usps.gov**.	Optional; U.S. addresses only	Download for free from USPS® website
LACSLink® Database The LACSLink database allows you to correct addresses that have changed as a result of a rural route address converting to street-style address, a PO Box renumbering, or a street-style address changing. USPS licensing prohibits using LACSLink for the generation of addresses or address lists. To prevent the generation of address lists, the LACSLink database contains "false positive records." False positive records are artificially manufactured addresses. For each negative response that occurs in a LACSLink query, a query is made to the False/Positive table in the LACSLink database. A match to this table will stop LACSLink processing. USPS licensing also prohibits exporting the LACSLink database outside the United States	Optional, but required for CASS Certified™ processing; U.S. addresses only	Pitney Bowes monthly subscription

Database Name & Description	Required or Optional	Supplier
RDI™ Database The Residential Delivery Indicator (RDI™) database contains data that can help you determine the best cost for shipping your packages. RDI is similar to DPV in that the RDI data is supplied as hash tables. However, RDI is a much simpler process than DPV in that the standard hash algorithm is only determined for the 9-digit and 11-digit ZIP Code™ rather than the entire address.	Optional; U.S. addresses only	License directly from USPS®
Suite^LinkTM Database Suite^LinkTM corrects secondary address information for U.S. business addresses whose secondary address information could not be validated. If Suite^Link processing is enabled, Validate Address attempts to match the value in the FirmName field to a database of known firm names. Validate Address then supplies the correct secondary address information.	Optional; U.S. addresses only	Pitney Bowes monthly subscription

Global Addressing Module Databases

The Global Addressing Module for the Spectrum™ Technology Platform provides enhanced address standardization and validation for addresses outside the U.S. The Global Addressing Module provides benefits that include:

- **Better data**—Global Address Validation combines data from multiple data sources into a single Global Addressing Validation database to provide the most extensive and accurate international addressing data possible.
- **Global addressing expertise**—Global Addressing Validation analyzes and compares each input address to the Global Addressing database for the appropriate country. If needed, Global Address Validation corrects and formats the address based on postal standards and user preferences.
- **Automated address suggestion**—Global Type Ahead automatically suggests addresses as you type characters.
- **Address parsing**—Global Address Parser splits address strings into individual address elements with the help of machine learning techniques.

Components

The Global Addressing Module consists of:

- **Global Address Validation**—Analyzes and compares each input address to the Global Addressing database for the appropriate country. If needed, Global Address Validation corrects and formats the address in accordance with the postal standards for that country.

- **Global Type-Ahead**—Automatically suggests addresses as you type and immediately returns candidates based on your input.
- **Global Address Parser**—Splits address strings into individual address elements, such as name of organization, city, locality, district, and postal code, using machine learning techniques.

For details on installing or adding, modifying, or deleting a global addressing module database resource, see Adding, Modifying, or Deleting a Global Addressing Module Database Resource and Installing Global Addressing Module Databases in the Addressing Guide.

2 - Integrating Siebel with Spectrum

In this section

Integrating with Siebel Data Quality

To integrate Spectrum™ Technology Platform with Siebel Data Quality, you need to install supporting databases and dataflows on the Spectrum™ Technology Platform server, and then configure your Siebel system to communicate with Spectrum™ Technology Platform. Once you do this, users of Siebel Data Quality will have access to address validation and geocoding functionality from within Siebel Data Quality.

1. On the Spectrum™ Technology Platform server, install the databases required to perform address validation, geocoding, and tax jurisdiction assignment and define database resources for each database.

   You must give the database resources the following names.

Database	Required Name for Database Resource
Enterprise Geocoding Module - Canada Database	IGEO_CAN
Enterprise Geocoding Module - U.S. Database	EGM_US
Enterprise Tax Module Database	ETM
Universal Addressing Module - Canada Database	Canada
Universal Addressing Module - Loqate Database	Loqate
Universal Addressing Module - U.S. Database	UAM_US

2. When you install the Siebel module, several dataflow files are automatically installed. Other dataflow files must be manually copied into the Spectrum™ Technology Platform server.

   a) Browse to one of the following folders on your Spectrum™ Technology Platform server:

   - For Siebel Business Applications, go to:
     `<SpectrumPlatformLocation>\server\modules\dataflows\siebel\sea`
   - For Siebel Industry Applications, go to:
     `<SpectrumPlatformLocation>\server\modules\dataflows\siebel\sia`

   b) Review the following table then copy the applicable dataflow files to:

   `SpectrumLocation\server\app\import`

Table 3: Dataflow Files To Import

If you are installing this set of modules	Copy these dataflow files to the import folder
Address Now Module only	SiebelGetGlobalCandidateAddresses.df ValidateAddressWithCandidates.ADN.df
Address Now Module Universal Addressing Module	SiebelGetGlobalCandidateAddresses.df ValidateAddressWithCandidates.UAM_ADN.df
Address Now Module Enterprise Geocoding Module	GeocodeUSAddressWithCandidates.df SiebelGetGlobalCandidateAddresses.df ValidateAddressWithCandidates.EGM_ADN.df
Address Now Module Enterprise Geocoding Module Universal Addressing Module	GeocodeUSAddressWithCandidates.df SiebelGetGlobalCandidateAddresses.df ValidateAddressWithCandidates.UAM_EGM_ADN.df
Universal Addressing Module only	ValidateAddressWithCandidates_UAM.df
Universal Addressing Module Enterprise Geocoding Module	GeocodeUSAddressWithCandidates.df ValidateAddressWithCandidates_UAM_EGM.df
Universal Addressing Module Enterprise Tax Module	GeocodeUSAddressWithCandidates.df ValidateAssignGeoTAXInfo.df ValidateAddressWithCandidates_UAM_ETM.df
Universal Address Module with Loqate	ValidateAddressWithCandidates_UAM_Loqate.df
Universal Addressing Module with Loqate Enterprise Geocoding Module	ValidateAddressWithCandidates_Loqate_EGM.df

If you are installing this set of modules	Copy these dataflow files to the import folder
Universal Addressing Module, Loqate only Enterprise Geocoding Module	ValidateAddressWithCandidates_Loqate_EGM.df
Universal Addressing Module with Loqate Enterprise Tax Module	ValidateAddressWithCandidates_UAM_Loqate_ETM.df
Universal Addressing Module with Loqate Enterprise Geocoding Module Enterprise Tax Module	ValidateAddressWithCandidates_UAM_Loqate_EGM_ETM.df
Universal Addressing Module, Loqate only	ValidateAddressWithCandidates_Loqate.df
Enterprise Geocoding Module	ValidateAddressWithCandidates_EGM.df
Enterprise Tax Module	ValidateAssignGeoTAXInfo.df
Global Addressing Module	SiebelGlobalTypeAhead.df

> **Note:** If errors occur in Management Console or Enterprise Designer, delete the client cache. To delete the client cache, go to **Tools** > **Options** in Management Console or Enterprise Designer, click the **Advanced** tab, then click **Clear Cache**. After you clear the cache, restart Management Console or Enterprise Designer.

3. Optional: If you are using the Enterprise Geocoding Module, configure the geocoding dataflow to use the geocoding database resource name you have configured on your system:

a) In Enterprise Designer, open the dataflow GeocodeUSAddressWithCandidates.

b) In each dataflow, open the Geocode US Address stage.

c) In the **Database** field, select the name of the geocoding database as defined in the Management Console. The default name is KGDDatasource but if the geocoding database has a different name on your system, select the appropriate name.

> **Note:** For more information about database resources, see the *Spectrum™ Technology Platform Administration Guide*.

   d) Save and close each dataflow.

4. Copy Siebel objects to your system:

   a) Browse to the location where you downloaded the Spectrum™ Technology Platform installer.

   b) Browse to the appropriate folder for your version of Siebel as shown in the following table.

Siebel Version	Folder
Siebel Business Applications 8.0 SDQ	`Siebel Objects\8.0\Business\SDQ`
Siebel Business Applications 8.1.1 SDQ	`Siebel Objects\8.1.1\Business\SDQ`
Siebel Industry Applications 8.0 SDQ	`Siebel Objects\8.0\Industry\SDQ`
Siebel Industry Applications 8.1.1 SDQ	`Siebel Objects\8.1.1\Industry\SDQ`

   c) Copy the contents of the folder to a temporary directory.

> **Note:** This temporary folder will be the referred to as `<Spectrum Package>` in the following steps.

5. Create objects and allow object locking:

   a) Log in to Siebel Tools as the user SADMIN. In the **Connect to** field select **Server**.

   b) In the Object Explorer, click **Project**.

   c) Create three new records using the following values in the **Name** column. To create a new record, right-click in the Projects area and select **New Record**.

> Group 1 Data Quality
> Group 1 EAI Testing
> Group 1 Workflow

   d) Open the file `<Spectrum Package>\tools\CDQP_Queries.txt.`

   e) Copy and paste the query contents to the Project list of your Object Manager. Cross-check the query result with the table below and perform the action suggested. To toggle object locking, go to Object Explorer and browse to the Project object. From the Project area, right-click and select the project, and select **Toggle Object Locking**.

Table 4: Queries for Siebel SDQ

Siebel Business Applications	Siebel Industry Applications	Project	Action
	X	Account	Toggle Object Locking
X		Account (SCW)	Toggle Object Locking
X	X	Account (SSE)	Toggle Object Locking
X	X	Contact	Toggle Object Locking
		Contact (SSE)	Toggle Object Locking
		CUT Account	Toggle Object Locking
		CUT Siebel Communications	Toggle Object Locking
		CUT Usage	Toggle Object Locking
		DNB Data	Toggle Object Locking
		DeDuplication	Toggle Object Locking
		eAutomotive	Toggle Object Locking
X	X	Employee	Toggle Object Locking
		FINS Contract	Toggle Object Locking
		FINS Contract Info	Toggle Object Locking
		FINS Deal Commercial	Toggle Object Locking
		FINS Financial Services	Toggle Object Locking
		FINS Opportunity	Toggle Object Locking
X	X	Group 1 Data Quality	Create and Toggle Object Locking

Siebel Business Applications	Siebel Industry Applications	Project	Action
X	X	Group 1 EAI Testing	Create and Toggle Object Locking
X	X	Group 1 Workflow	Create and Toggle Object Locking
		List Mgmt (Import)	Toggle Object Locking
X	X	List Mgmt (UI)	Toggle Object Locking
		Mvg	Toggle Object Locking
		Oppty	Toggle Object Locking
		Oppty (SSE)	Toggle Object Locking
X		Personal Contact	Toggle Object Locking
X	X	Picklist	Toggle Object Locking
		Server Component Requests	Toggle Object Locking
		Siebel Sales Enterprise	Toggle Object Locking
		Siebel Universal Agent	Toggle Object Locking
	X	VERT CUT Address	Toggle Object Locking
		VERT Cut Common	Toggle Object Locking

6. Check out the Siebel Projects:

a) Log in to Siebel Tools as the user SADMIN. In the **Connect to** field select **Local**.

b) Select **Tools** > **Check Out**.

c) Select the projects indicated in the following table and click **Checkout**.

Table 5: Siebel Projects for SDQ

Siebel Business Applications	Siebel Industry Applications	Project
	X	Account
X	X	Account (SCW)
X	X	Account (SSE)
X	X	Contact
		Contact (SSE)
		CUT Account
		CUT Siebel Communications
		CUT Usage
		DNB Data
		DeDuplication
		eAutomotive
X	X	Employee
		FINS Contract
		FINS Contract Info
		FINS Deal Commercial
		FINS Financial Services
		FINS Opportunity
		Group 1 Data Quality
X	X	Group 1 EAI Testing

Siebel Business Applications	Siebel Industry Applications	Project
X	X	Group 1 Workflow
		List Mgmt (Import)
X	X	List Mgmt (UI)
		Mvg
		Oppty
		Oppty (SSE)
X		Personal Contact
X	X	Picklist
		Server Component Requests
X		Siebel Sales Enterprise
		Siebel Universal Agent
	X	VERT CUT Address
		VERT Cut Common

7. Import the Spectrum™ Technology Platform Siebel Objects.

   a) Select **Tools** > **Import from Archive**.

   b) Browse to the Spectrum™ Technology Platform installation package. In the `Siebel Objects` folder, browse to the subfolder for your version of Siebel and select the SIF files.

   c) Select **Merge the object definition in the repository** and click **Next**.

8. Check in all locked projects:

   a) Select **Tools** > **Check In**.

   b) Select all the Projects to check in and click **Check in**.

9. (Open UI Only) Import the Spectrum™ Technology Platform Siebel Objects for Open UI:

   a) Select **Tools** > **Import from Archive**.

   b) Browse to the Spectrum™ Technology Platform installation package. In the `Siebel Objects` folder, browse to the `OPEN_UI` subfolder for your version of Siebel and select the SIF files.

c) Select **Merge the object definition in the repository** and click **Next**.

10. Compile all Projects:

a) Select **Tools** > **Compile Projects**.

b) Click **All Projects**.

c) In the **Siebel Repository File** field, enter the path of your Siebel Web Client SRF file.

d) Click **Compile**.

11. Deploy the Siebel objects in the client:

> **Note:** Keep a backup of the old SRF in case old binaries need to be re-implemented.

a) Copy the generated SRF to your web client objects folder.

For example, on Windows the web client object folder may be `C:\Program Files\Siebel\8.0\web client\OBJECTS\ENU`. On Unix or Linux the folder may be `/disk2/sia78/webclient/OBJECTS/enu/`.

b) Copy the contents of `<Spectrum Package>\dll` to your `BIN` folder.

c) Copy the contents of `<Spectrum Package>\cfg` to your `BIN/ENU` folder.

12. Deploy the Siebel objects to the server:

a) Stop the Siebel server.

b) Copy the generated SRF file to your web client objects folder.

For example, the folder for Siebel Business on Windows may be `C:\sea80\siebsrvr\OBJECTS\ENU`. On Unix or Linux the folder may be `/disk2/sea78/siebsrvr/OBJECTS/enu/`.

c) Copy the libraries to your server.

- For Windows, copy the contents of `<Spectrum Package>\lib\win` to your `BIN` folder.
- For Unix or Linux, copy the contents of `<Spectrum Package>/lib/sol` to your `LIB` folder.

d) Copy the contents of `<Spectrum Package>\cfg` to your `BIN\ENU` folder.

e) Start the Siebel server.

13. Install the options file.

a) Click **Site Map** > **Administration - Data** > **LOV Explorer**.

b) Click **New**.

c) In the **Type** column, enter `FILE_PATH`.

d) Click **Query**.

e) In the **Type** column, enter `FILE_PATH`.

f) Browse to the **Values** folder.

g) In the **Display Value** column, enter the absolute path to the folder where you want to keep the options file. You can specify any folder you want.

h) Browse to the Spectrum™ Technology Platform installation package.

i) In the `Siebel Objects` folder, browse to the `cfg` subfolder for your version of Siebel and select the `Group1Connector.opt` file.

j) Copy this file to the folder you specified for FILE_PATH.

14. Activate the Spectrum™ Technology Platform workflows in the Siebel web client:

a) Log in to the Siebel application, connecting to the server data source.

b) Select **Site Map** > **Administration - Business Process** > **Workflow Deployment**.

c) Query for all the GROUP 1* workflows.

d) Click **Activate** for each workflow.

e) Query for all the Promote* workflows.

f) Click **Activate** for the ff workflows **Promote Prospect (Single)** and **Promote Prospect (Many)**.

15. Verify the installation:

a) Log in to Siebel Application.

b) All applets should load properly without error.

16. Configure the Siebel instance configuration parameters:

a) Select **Site Map** > **Administration - Server Configuration** > **Enterprises**.

b) Verify/Change the ff Parameters:

- Data Cleansing Type—G1Cleansing
- DeDuplication Data Type—G1DataMatching

c) Click **Component Definitions** and select the ff components. For each component, verify parameters and values.

Table 6: Siebel Business

Component Definitions	Parameter	Value/Value on Restart
*Data Quality Manager *Sales Object Manager (ENU) *List Import Service Manager	Data Cleansing Type	G1Cleansing
	Data Cleansing Enable Flag	True
	DeDuplication Data Type	G1DataMatching
	DeDuplication Enable Flag	True

Table 7: Siebel Industry

Component Definitions	Parameter	Value/Value on Restart
*Data Quality Manager *eAutomotive Object Manager (ENU) *List Import Service Manager	Data Cleansing Type	G1Cleansing
	Data Cleansing Enable Flag	True
	DeDuplication Data Type	G1DataMatching
	DeDuplication Enable Flag	True

d) Select **Site Map** > **Server Configuration** > **Servers**. Repeat steps b through c for server configuration parameters.

e) Select **Site Map** > **User Profile Preferences** > **Data Quality**. Change the following settings:

Parameter	Value
Enable DeDuplication	Yes
Enable Data Cleansing	Yes

f) Browse to `<Siebel Installation>\bin\ENU` and open the appropriate file:

   • Siebel Business: siebel.cfg and uagent.cfg
   • Siebel Industry: auto.cfg

g) Under the area [DataCleansing] change the ff Parameters:

```
Enable = TRUE
Type = G1Cleansing
```

h) Under the area [DeDuplication] change the ff Parameters:

```
Enable = TRUE
Type = G1DataMatching
```

i) Select **Site Map** > **Administration - Server Configuration**. Click the **Synchronize** link and select **Synchronize** after being redirected.

17. Configure data cleansing configuration parameters:

a) Select **Site Map** > **Administration** > **Data Quality** > **Third Party Administration**. On the Vendor Applet, include the ff value

Name	DLL Name
G1Cleansing	Group1Connector

b) Add the ff BC Vendor Field Mapping:

Table 8: Siebel Business

Business Component	Operation
Account	Data Cleansing
Business Address	Data Cleansing
Contact	Data Cleansing
List Mgmt Prospective Contact	Data Cleansing
Personal Address	Data Cleansing

Table 9: Siebel Industry

Business Component	Operation
Account	Data Cleansing
CUT Address	Data Cleansing
Contact	Data Cleansing
List Mgmt Prospective Contact	Data Cleansing
Personal Address	Data Cleansing

c) Under each BC operation, add the ff field mappings:

Table 10: Siebel Business

Business Component Field	Mapped Field
Account	
Name	FirmName
Business Address	
City	City
Country	CountryName
County	USCountyName
Disable DataCleansing	DisableDataCleansing
G1 Delivery Point Validation Indicator	DPV
G1 Latitude	Latitude
G1 Location Code	LocationCode
G1 Longitude	Longitude
G1 Match Code	MatchCode
G1 Residential Delivery Indicator	RDI
Postal Code	PostalCode
State	StateProvince
Street Address	AddressLine1
Street Address 2	AddressLine2
Contact	
First Name	FirstName

Business Component Field	Mapped Field
Last Name	LastName
M/M	TitleOfRespect
Middle Name	MiddleName
List Management Prospective Contact	
City	City
Country	CountryName
County	USCountyName
Disable DataCleansing	DisableDataCleansing
First Name	FirstName
G1 Delivery Point Validation Indicator	DPV
G1 Latitude	Latitude
G1 Location Code	LocationCode
G1 Longitude	Longitude
G1 Match Code	MatchCode
G1 Residential Delivery Indicator	RDI
Last Name	LastName
Middle Name	MiddleName
Postal Code	PostalCode
State	StateProvince
Street Address	AddressLine1

Business Component Field	Mapped Field
Street Address 2	AddressLine2
Personal Address	
City	City
Country	CountryName
County	USCountyName
Disable DataCleansing	DisableDataCleansing
G1 Delivery Point Validation Indicator	DPV
G1 Latitude	Latitude
G1 Longitude	Longitude
G1 Residential Delivery Indicator	RDI
Postal Code	PostalCode
State	StateProvince
Street Address	AddressLine1
Street Address 2	AddressLine2

Table 11: Siebel Industry

Business Component Field	Mapped Field
Account	
Name	FirmName
CUT Address	
City	City

Business Component Field	Mapped Field
Country	CountryName
County	USCountyName
Disable Data Cleansing	DisableDataCleansing
G1 Delivery Point Validation Indicator	DPV
G1 Latitude	Latitude
G1 Location Code	LocationCode
G1 Longitude	Longitude
G1 Match Code	MatchCode
G1 Residential Delivery Indicator	RDI
Postal Code	PostalCode
State	StateProvince
Street Address	AddressLine1
Street Address 2	AddressLine2
Contact	
First Name	FirstName
Last Name	LastName
Middle Name	MiddleName
M/M	TitleOfRespect
List Management Prospective Contact	
City	City

Business Component Field	Mapped Field
Country	CountryName
County	USCountyName
Disable DataCleansing	DisableDataCleansing
First Name	FirstName
G1 Delivery Point Validation Indicator	DPV
G1 Latitude	Latitude
G1 Location Code	LocationCode
G1 Longitude	Longitude
G1 Match Code	MatchCode
G1 Residential Delivery Indicator	RDI
Last Name	LastName
Middle Name	MiddleName
Postal Code	PostalCode
State	StateProvince
Street Address	AddressLine1
Street Address 2	AddressLine2
Personal Address	
City	City
Country	CountryName
County	USCountyName

Business Component Field	Mapped Field
Disable DataCleansing	DisableDataCleansing
G1 Delivery Point Validation Indicator	DPV
G1 Latitude	Latitude
G1 Longitude	Longitude
G1 Residential Delivery Indicator	RDI
Postal Code	PostalCode
State	StateProvince
Street Address	AddressLine1
Street Address 2	AddressLine2

d) Add the ff Vendor Parameters.

Table 12: Siebel Business

Name	Value
Account DataCleanse Record Type	Account
Business Address DataCleanse Record Type	Business Address
Contact DataCleanse Record Type	Contact
List Mgmt Prospective Contact DataCleanse Record Type	List Mgmt Prospective Contact
Personal Address DataCleanse Record Type	Personal Address

Table 13: Siebel Industry:

Name	Value
Account DataCleanse Record Type	Account
CUT Address DataCleanse Record Type	CUT Address
Contact DataCleanse Record Type	Contact
List Mgmt Prospective Contact DataCleanse Record Type	List Mgmt Prospective Contact
Personal Address DataCleanse Record Type	Personal Address

e) Select **Site Map** > **Administration - Data Quality** > **Third Party Administration** > **Data Quality Settings**. Add the ff data for Data Quality Settings. These settings enable data cleansing for your Siebel Application

Name	Value
Enable DataCleansing	Yes

18. Configure data matching configuration parameters:

a) Select **Site Map** > **Administration** > **Data Quality** > **Third Party Administration**. On the Vendor Applet, include the ff value

Name	DLL Name
G1DataMatching	Group1Connector

b) Add the ff BC Vendor Field Mapping:

Table 14: Siebel Business Applications

Business Component	Operation
Account	DeDuplication
Business Address	DeDuplication

Business Component	Operation
Contact	DeDuplication
List Mgmt Prospective Contact	DeDuplication

Table 15: Siebel Industry Applications

Business Component	Operation
Account	DeDuplication
CUT Address	DeDuplication
Contact	DeDuplication
List Mgmt Prospective Contact	DeDuplication

c) Under each BC operation, add the ff Field Mappings.

Table 16: Siebel Business Applications

Business Component Field	Mapped Field
Account	
Dedup Token	DedupToken
Id	Id
Location	Location
Name	Name
Primary Account City	City
Primary Account Country	CountryName
Primary Account Postal Code	PostalCode

Business Component Field	Mapped Field
Primary Account State	StateProvince
Primary Account Street Address	AddressLine1
Business Address	
City	City
Country	CountryName
Id	Id
Postal Code	PostalCode
State	StateProvince
Street Address	AddressLine1
Street Address 2	AddressLine2
Contact	
First Name	FirstName
Id	Id
Last Name	LastName
Middle Name	MiddleName
Primary Account Name	AccountName
Primary City	City
Primary Country	CountryName
Primary Postal Code	PostalCode
Primary State	StateProvince

Business Component Field	Mapped Field
List Management Prospective Contact	
Account	Account
City	City
Country	CountryName
First Name	FirstName
Id	Id
Last Name	LastName
Middle Name	MiddleName
Postal Code	PostalCode
State	StateProvince
Street Address	AddressLine1
Street Address 2	AddressLine2

Table 17: Siebel Industry Applications

Business Component Field	Mapped Field
Account	
Dedup Token	DedupToken
Id	Id
Location	Location
Name	Name
Primary Account City	City

Business Component Field	Mapped Field
Primary Account Country	Country
Primary Account Postal Code	PostalCode
Primary Account State	State
Primary Account Street Address	AddressLine1
CUT Address	
City	City
Country	Country
Id	Id
Postal Code	PostalCode
State	State
Street Address	AddressLine1
Street Address 2	AddressLine2
Contact	
First Name	FirstName
Id	Id
Last Name	LastName
Middle Name	MiddleName
Primary Account Name	Name
Primary City	City
Primary Country	Country

Business Component Field	Mapped Field
Primary Postal Code	Code
Primary State	State
List Management Prospective Contact	
Account	Account
City	City
Country	CountryName
First Name	FirstName
Id	Id
Last Name	LastName
Middle Name	MiddleName
Postal Code	PostalCode
State	StateProvince
Street Address	AddressLine1
Street Address 2	AddressLine2

d) Add the ff Vendor Parameters:

> **Note:** Token Expression and Query Expression are custom fields in their respective Business Components.

Table 18: Vendor Parameters

Name	Value
Account DeDup Record Type	Account

Name	Value
Account Query Expression	"|" + [Query Expression 1] + [Query Expression 2] + [Query Expression 3]
Account Token Expression	"|" + [Token Expression 1] + [Token Expression 2] + [Token Expression 3]
Batch Max Num of Records	200
(Siebel Business Only) Business Address DeDup Record Type	Business Address
(Siebel Industry Only) CUT Address DeDup Record Type	CUT Address
Contact DeDup Record Type	Contact
Contact Query Expression	"|" + [Query Expression 1] + [Query Expression 2] + [Query Expression 3]
Contact Token Expression	"|" + [Token Expression 1] + [Token Expression 2] + [Token Expression 3]
List Mgmt Prospective Contact DeDup Record Type	List Mgmt Prospective Contact
List Mgmt Prospective Contact Query Expression	"|" + [Query Expression 1] + [Query Expression 2] + [Query Expression 3]
List Mgmt Prospective Contact Token Expression	"|" + [Token Expression 1] + [Token Expression 2] + [Token Expression 3]
Realtime Max Num of Records	200

e) Select **Site Map** > **Administration - Data Quality** > **Third Party Administration** > **Data Quality Settings**. Add the ff data for Data Quality Settings. These settings enable data matching for your Siebel Application.

Name	Value
Enable DeDuplication	Yes

Name	Value
Force User DeDupe - Account	Yes
Force User DeDupe - Contact	Yes
Force User DeDupe - List Mgmt	Yes

19. (Open UI Only) Grant the EAI File Transport business service access to the file system by following these steps.

   a) Click **Navigate** > **Site Map**.
   b) Click **Administration - Server Configuration**.
   c) In the **Administration - Server Configuration** section, under **Enterprises**, click **Parameters**.
   d) Click **Query**.
   e) In the **Name** column, enter `EAI File Transport Folder List.`
   f) Click **Go**.
   g) In the **Value** column, enter the root of the drive where you have Siebel installed. For example, `C:\.`
   h) Click the **Servers** link:

   i) Click the **Parameters** tab:

j) Click **Query**.

k) In the **Name** column, enter `EAI File Transport Folder List`.

l) Click **Go**.

m) In the **Value** column, enter the root of the drive where you have Siebel installed. For example, `C:\`.

n) Add the following values to the .cfg file appropriate for your system (for example, `auto.cfg`, `tools.cfg`, and so on).

```
[EAIFileTransportConfigSubsys]
EAIFileTransportFolders=C:\
```

o) Restart the Siebel server and gateway.

20. Set the EditProfileAttr parameter:

a) Click **Navigate** > **Site Map**

b) Click **Administration - Server Configuration**.

c) In the **Administration - Server Configuration** section, under **Servers**, click **Components**.

d) On the **Components** tab, click **Query**.

e) In the **Component** column, enter the name of the Object Manager component. For example, "eAutomotive Object Manager".

f) Click **Go**.

g) Click the **Parameters** tab at the bottom of the window.

h) Scroll to the parameter EditProfileAttr.
i) Enter `True` in the **Value**, **Value on Restart**, and **Default Value** columns.

You have now configured Siebel SDQ to use Spectrum™ Technology Platform for data quality processing.

Integrating with Siebel Non-SDQ

To integrate Spectrum™ Technology Platform with Siebel Non-SDQ, you need to install supporting databases and dataflows on the Spectrum™ Technology Platform server, and then configure your Siebel system to communicate with Spectrum™ Technology Platform. Once you do this, users of Siebel Non-SDQ will have access to address validation and geocoding functionality from within Siebel Non-SDQ.

1. On the Spectrum™ Technology Platform server, install the databases required to perform address validation, geocoding, and tax jurisdiction assignment and define database resources for each database.

   You must give the database resources the following names.

Database	Required Name for Database Resource
Enterprise Geocoding Module - Canada Database	IGEO_CAN
Enterprise Geocoding Module - U.S. Database	EGM_US
Enterprise Tax Module Database	ETM
Universal Addressing Module - Canada Database	Canada
Universal Addressing Module - Loqate Database	Loqate
Universal Addressing Module - U.S. Database	UAM_US

2. When you install the Siebel module, several dataflow files are automatically installed. Other dataflow files must be manually copied into the Spectrum™ Technology Platform server.

   a) Browse to one of the following folders on your Spectrum™ Technology Platform server:

   - For Siebel Business Applications, go to:
     `<SpectrumPlatformLocation>\server\modules\dataflows\siebel\sea`
   - For Siebel Industry Applications, go to:
     `<SpectrumPlatformLocation>\server\modules\dataflows\siebel\sia`

   b) Review the following table then copy the applicable dataflow files to:

   `SpectrumLocation\server\app\import`

Table 19: Dataflow Files To Import

If you are installing this set of modules	Copy these dataflow files to the import folder
Address Now Module only	SiebelGetGlobalCandidateAddresses.df ValidateAddressWithCandidates.ADN.df
Address Now Module Universal Addressing Module	SiebelGetGlobalCandidateAddresses.df ValidateAddressWithCandidates.UAM_ADN.df
Address Now Module Enterprise Geocoding Module	GeocodeUSAddressWithCandidates.df SiebelGetGlobalCandidateAddresses.df ValidateAddressWithCandidates.EGM_ADN.df
Address Now Module Enterprise Geocoding Module Universal Addressing Module	GeocodeUSAddressWithCandidates.df SiebelGetGlobalCandidateAddresses.df ValidateAddressWithCandidates.UAM_EGM_ADN.df
Universal Addressing Module only	ValidateAddressWithCandidates_UAM.df
Universal Addressing Module Enterprise Geocoding Module	GeocodeUSAddressWithCandidates.df ValidateAddressWithCandidates_UAM_EGM.df
Universal Addressing Module Enterprise Tax Module	GeocodeUSAddressWithCandidates.df ValidateAssignGeoTAXInfo.df ValidateAddressWithCandidates_UAM_ETM.df
Universal Address Module with Loqate	ValidateAddressWithCandidates_UAM_Loqate.df
Universal Addressing Module with Loqate Enterprise Geocoding Module	ValidateAddressWithCandidates_Loqate_EGM.df

If you are installing this set of modules	Copy these dataflow files to the import folder
Universal Addressing Module, Loqate only Enterprise Geocoding Module	ValidateAddressWithCandidates_Loqate_EGM.df
Universal Addressing Module with Loqate Enterprise Tax Module	ValidateAddressWithCandidates_UAM_Loqate_ETM.df
Universal Addressing Module with Loqate Enterprise Geocoding Module Enterprise Tax Module	ValidateAddressWithCandidates_UAM_Loqate_EGM_ETM.df
Universal Addressing Module, Loqate only	ValidateAddressWithCandidates_Loqate.df
Enterprise Geocoding Module	ValidateAddressWithCandidates_EGM.df
Enterprise Tax Module	ValidateAssignGeoTAXInfo.df
Global Addressing Module	SiebelGlobalTypeAhead.df

> **Note:** If errors occur in Management Console or Enterprise Designer, delete the client cache. To delete the client cache, go to **Tools** > **Options** in Management Console or Enterprise Designer, click the **Advanced** tab, then click **Clear Cache**. After you clear the cache, restart Management Console or Enterprise Designer.

3. Optional: If you are using the Enterprise Geocoding Module, configure the geocoding dataflow to use the geocoding database resource name you have configured on your system:

a) In Enterprise Designer, open the dataflow GeocodeUSAddressWithCandidates.

b) In each dataflow, open the Geocode US Address stage.

c) In the **Database** field, select the name of the geocoding database as defined in the Management Console. The default name is KGDDatasource but if the geocoding database has a different name on your system, select the appropriate name.

>   **Note:** For more information about database resources, see the *Spectrum™ Technology Platform Administration Guide*.

> d) Save and close each dataflow.

4. Copy Siebel objects to your system:

> a) Browse to the location where you downloaded the Spectrum™ Technology Platform installer.
> b) Browse to the appropriate folder for your version of Siebel as shown in the following table.

Siebel Version	Folder
Siebel Business Applications 8.0 Non-SDQ	`Siebel Objects\8.0\Business\non SDQ`
Siebel Business Applications 8.1.1 Non-SDQ	`Siebel Objects\8.1.1\Business\non SDQ`
Siebel Industry Applications 8.0 Non-SDQ	`Siebel Objects\8.0\Industry\non SDQ`
Siebel Industry Applications 8.1.1 Non-SDQ	`Siebel Objects\8.1.1\Industry\non SDQ`

> c) Copy the contents of the folder to a temporary directory.

> >   **Note:** This temporary folder will be the referred to as `<Spectrum Package>` in the following steps.

5. Create objects and allow object locking:

> a) Log in to Siebel Tools as the user SADMIN, with the connection pointing to the server data source.
> b) Go to **Object Explorer**, drill down to the **Project** object. From the Project area, right-click and select **New Record**. Create the following projects:

> > • Group 1 Data Quality
> > • Group 1 EAI Testing
> > • Group 1 Workflow

> c) Open the file `<Spectrum Package>\tools\CDQP_Queries.txt`.
> d) Copy and paste the query contents to the Project list of your Object Manager. Cross-check the query result with the table below and perform the action suggested. To toggle object locking, go to Object Explorer and browse to the Project object. From the Project area, right-click and select the project, and select **Toggle Object Locking**.

Table 20: Queries for Siebel non-SDQ

Siebel Business Applications	Siebel Industry Applications	Open UI	Project	Action
X	X	X	Account	Toggle Object Locking
X	X	X	Account (SCW)	Toggle Object Locking
X	X	X	Account (SSE)	Toggle Object Locking
X	X	X	Contact	Toggle Object Locking
X	X	X	Contact (SSE)	Toggle Object Locking
	X	X	CUT Account	Toggle Object Locking
	X	X	CUT Siebel Communications	Toggle Object Locking
	X	X	CUT Usage	Toggle Object Locking
X	X	X	DNB Data	Toggle Object Locking
X	X	X	DeDuplication	Toggle Object Locking
	X	X	eAutomotive	Toggle Object Locking
X	X	X	Employee	Toggle Object Locking
	X	X	FINS Contract	Toggle Object Locking

Siebel Business Applications	Siebel Industry Applications	Open UI	Project	Action
	X	X	FINS Contract Info	Toggle Object Locking
	X	X	FINS Deal Commercial	Toggle Object Locking
	X	X	FINS Financial Services	Toggle Object Locking
	X	X	FINS Opportunity	Toggle Object Locking
X	X	X	Group 1 Data Quality	Create and Toggle Object Locking
X	X	X	Group 1 EAI Testing	Create and Toggle Object Locking
	X	X	Group 1 Workflow	Create and Toggle Object Locking
X			List Mgmt (Import)	Toggle Object Locking
X	X	X	List Mgmt (UI)	Toggle Object Locking
X			Mvg	Toggle Object Locking
X	X	X	Oppty	Toggle Object Locking
X	X	X	Oppty (SSE)	Toggle Object Locking
X	X	X	Personal Contact	Toggle Object Locking
X	X	X	Picklist	Toggle Object Locking

Siebel Business Applications	Siebel Industry Applications	Open UI	Project	Action
X	X	X	Server Component Requests	Toggle Object Locking
X		X	Siebel Sales Enterprise	Toggle Object Locking
X			Siebel Universal Agent	Toggle Object Locking
	X	X	VERT CUT Address	Toggle Object Locking
	X	X	VERT Cut Common	Toggle Object Locking

6. Check out the Siebel Projects:

a) Log in to Siebel Tools on Local Datasource.

b) Select **Tools** > **Checkout**.

c) Select the projects indicated in the following table and click **Checkout**.

Table 21: Siebel Projects for non-SDQ

Siebel Business Applications	Siebel Industry Applications	Project
X	X	Account
X	X	Account (SCW)
X	X	Account (SSE)
X	X	Contact
X	X	Contact (SSE)
	X	CUT Account
	X	CUT Siebel Communications
	X	CUT Usage

Siebel Business Applications	Siebel Industry Applications	Project
X	X	DNB Data
X	X	DeDuplication
	X	eAutomotive
X	X	Employee
	X	FINS Contract
	X	FINS Contract Info
	X	FINS Deal Commercial
	X	FINS Financial Services
	X	FINS Opportunity
X	X	Group 1 Data Quality
X	X	Group 1 EAI Testing
	X	Group 1 Workflow
X		List Mgmt (Import)
X	X	List Mgmt (UI)
X		Mvg
X	X	Oppty
X	X	Oppty (SSE)
X	X	Personal Contact
X	X	Picklist
X	X	Server Component Requests

Siebel Business Applications	Siebel Industry Applications	Project
X		Siebel Sales Enterprise
X		Siebel Universal Agent
	X	VERT CUT Address
	X	VERT Cut Common

7. Import the Spectrum™ Technology Platform Siebel objects:

a) Select **Tools** > **Import from Archive**.

b) Import the Siebel SIF files located in `<Spectrum Package>\sif`. Select **Overwrite the object definition in the repository** and click **Next** to proceed until the import process has been completed.

- G1_NEW.sif
- G1_APPLET.sif
- G1_BO.sif
- G1_LINK.sif
- G1_BC.sif
- G1_BC_SCRIPTS.sif
- G1_EAI_TESTING.sif
- G1_APPLICATION.sif
- G1_PICKLIST.sif
- G1_VIEW.sif
- G1_WORKFLOW.sif
- (8.1.1 only) Rebranding.sif
- PB_SecToken.sif

> **Note:** *PB_SecToken.sif* must be imported in the end.

c) (Open UI Only) Import the Siebel SIF files located in `<Spectrum Package>\OPEN_UI`. Select **Overwrite the object definition in the repository** and click **Next** to proceed until the import process has been completed.

- FINS Personal Address List Applet.sif
- G1 Common Browser Scripts Service.sif
- Siebel Sales Enterprise.sif

8. Check in all locked projects:

a) Select **Tools** > **Check In**.

b) Select all the Projects to check in and click **Check in**.

9. Compile all Projects:

   a) Select **Tools** > **Compile Projects**.

   b) Click **All Projects**.

   c) In the **Siebel Repository File** field, enter the path of your Siebel Web Client SRF file.

   d) Click **Compile**.

10. Update the application .CFG flie:

   a) Open the appropriate .cfg file in an editor:

      For example, for Siebel Business:

      • Siebel Call Center—`uagent.cfg`
      • Siebel Sales—`siebel.cfg`

      For example, for Siebel Industry:

      • eAutomotive—`auto.cfg`
      • Financial—`fins.cfg`
      • eCommunication—`ecomm.cfg`

      Siebel .cfg files are usually found in the following locations:

      • Siebel thick client—`Siebel\<version>\web client\bin\enu`
      • Siebel thin client—`<Siebel Server>\bin\enu`

   b) Add the following lines under the `[SWE]` section:

```
ClientBusinessService0 = G1 Async Service
ClientBusinessService1 = G1 Business Name Standardization Service
ClientBusinessService2 = G1 Common Browser Scripts Service
ClientBusinessService3 = G1 Common Server Scripts Service
ClientBusinessService4 = G1 DNB VBC Service
ClientBusinessService5 = G1 Data Cleansing Service
ClientBusinessService6 = G1 DeDuplication Service
ClientBusinessService7 = G1 Generate HashKey Service
ClientBusinessService8 = G1 GeoCoding Service
ClientBusinessService9 = G1 Interactive Service
ClientBusinessService10 = G1 Merge Records Service
ClientBusinessService11 = G1 Name Casing Service
ClientBusinessService12 = G1WebService
```

11. Deploy the Siebel objects in the client:

   Note: Keep a backup of the old SRF in case old binaries need to be re-implemented.

   a) Copy the generated SRF to your web client objects folder.

For example, on Windows this folder may be `C:\Program Files\Siebel\8.0\web client\OBJECTS\ENU`. On Unix or Linux this folder may be `/disk2/sia78/webclient/OBJECTS/enu/`.

b) Open a command prompt and go to the BIN folder of the web client.

For example, on Windows this folder may be `C:\Program Files\Siebel\8.0\web client\BIN`. On Unix or Linux, this folder may be `/disk2/sia80/webclient/BIN`.

c) Generate browser scripts by issuing this command:

On Windows:

```
genbscript "ENU\siebel.cfg" "[public\enu folder]"
```

On Unix or Linux:

```
genbscript [location of .cfg] [public/enu folder]
```

For example, on Windows:

```
C:\Program Files\Siebel\8.0\web client\BIN>genbscript "enu\siebel.cfg"
"C:\Program Files\Siebel\8.0\web client\PUBLIC\enu"
```

On Unix or Linux:

```
genbscript /disk2/sia80/webclient/BIN/enu/siebel.cfg
sia80/webclient/PUBLIC/enu
```

d) Copy `g1_check.gif` and `g1_x.gif` from the temporary folder to `public\enu\images` in the Siebel web client.

e) Copy the contents of `<Spectrum Package>\dll` to your `BIN` folder.

f) Copy the contents of `<Spectrum Package>\cfg` to your `BIN/ENU` folder.

12. Deploy the Siebel objects to the server:

a) Stop the Siebel server.

b) Copy the generated SRF file to your web client objects folder.

For example, the folder for Siebel Business on Windows may be `C:\sea80\siebsrvr\OBJECTS\ENU`. On Unix or Linux the folder may be `/disk2/sea80/siebsrvr/OBJECTS/enu/`.

c) Open a command prompt and go to the BIN drive of the web client.

For example, on Windows this folder may be `C:\sia80\siebsrvr\BIN`. On Unix or Linux this folder may be `/disk2/sea80/siebsrvr/BIN`.

d) Generate browser scripts by issuing this command:

On Windows:

```
genbscript "ENU\siebel.cfg" "[webmaster folder]"
```

On Unix or Linux:

```
genbscript [location of Siebel.cfg] [webmaster folder]
```

For example, on Windows:

```
C:\sia80\siebsrvr\BIN>genbscript "enu\siebel.cfg"
"C:\sia80\siebsrvr\WEBMASTER"
```

For example, on Unix or Linux:

```
genbscript /disk2/sea80/siebsrvr/BIN/enu/siebel.cfg
/disk2/sea80/siebsrvr/WEBMASTER/
```

e) Copy `g1_check.gif` and `g1_x.gif` from the temporary folder to the following folder on the Siebel sever.

On Windows:

```
public\enu\images
```

On Unix or Linux:

```
WEBMASTER/images/enu
```

> **Note:** For Siebel Thin Client, copy `g1_check.gif` and `g1_x.gif` from the temporary directory to `SWEApp/PUBLIC/enu/images`.

f) Copy the generated browser scripts from `/WEBMASTER` to `<SWEApp Location>/public/ENU`.

g) Start the Siebel server.

13. Activate the Spectrum™ Technology Platform workflows in the Siebel web client:

a) Log in to the Siebel application, connecting to the server data source.

b) Select **Site Map** > **Administration - Business Process** > **Workflow Deployment**.

c) Query for all the GROUP 1* workflows.

d) Click **Activate** for each workflow.

e) Query for all the Promote* workflows.

f) Click **Activate** for the ff workflows **Promote Prospect (Single)** and **Promote Prospect (Many)**.

g) Click **Import Process** in the **Menu** option in the **Active Workflow Process** screen. Specify the file `<Spectrum Package>\workflows\PB Token WS Workflow.xml`.

14. Load the Group 1 configuration.

a) Log in to the Siebel application connecting to the server data source.

b) Go to **Site Map** > **Administration - Business Service** > **Simulator**.

c) In the top applet, create a new record and set the following fields:

Service Name	Workflow Process Manager
Method Name	Run Process

Service Name	Workflow Process Manager
Iterations	1

d) In the Input Arguments applet, load:

```
<Spectrum Package>\tools\OptionsManagerLoadData.xml
```

> **Note:** Delete the entry if previous GROUP 1 options already exist in the database. Run the following SQL Script: `DELETE SIEBEL.S_LST_OF_VAL WHERE CODE = 'G1'`

e) Click **Run** in the top applet of the Simulator view. Delete the record.

f) Repeat steps c. and d. for the ff files:

- `ViewAccessLoadData.xml`
- `AdminAccessLoadData.xml`

g) Go to **Site Map** > **Administration - Application** > **Responsibilities**:

h) Query for the responsibility Group 1 Responsibility.

i) In the Users tab, add SADMIN or any Siebel administrator. This associates the Group 1 Administration Screen to the user.

> **Note:** In order to see the changes you must log-in again.

j) Go to **Site Map** > **Administration - Group 1 Data Quality** > **Options Manager** > **General Behavior**.

k) Change the server and port number where the Spectrum™ Technology Platform server is located.

15. Verify the installation:

a) Log in to Siebel Application.

b) All applets should load properly without error.

16. Modify and apply web services.

a) Go to **Site Map** > **Administration - Web Services** > **Outbound Web Services**.

b) Click **Import** on the **Outbound Web Services** area and then specify the file `<Spectrum Package>\webservices\G1WebService.xml`.

c) Query on the Name field ValidateAddress, and modify its settings as follows:

On the Service Port applet, change the following fields:

- Transport: Local Business Service
- Address: G1 WebService Filter Service

On the Operations applet, change the following fields:

- Response Filter Service Display: G1 WebService Filter Service

- Response Filter Method Display: filter Response

d) Click **Import** on the **Outbound Web Services** area and then specify the file `<Spectrum Package>\webservices\TokenManagerServiceImplService.xml`.

17. Encrypt and apply Spectrum™ Technology Platform user name and password.

a) Run the following command on the command prompt:

```
java -version
```

Java Runtime Environment (JRE) 1.4.x is required. If none is installed, you can download from **java.sun.com/j2se/1.4.2/download.html**. Download the JRE of your target platform.

b) Acquire the file `<Spectrum Package>\tools\Base64.class`.

c) On the command prompt, type the following command:

```
java Base64 -encode -s "<username>:<password>"
```

where <username> and <password> is to the login information of Spectrum™ Technology Platform server. Copy the generated value.

> **Note:** The default Spectrum™ Technology Platform password can be found in `<Spectrum Package>\tools\Default Password.txt`.

d) Go to **Site Map** > **Administration - Group 1 Data Quality** > **Password Manager**. Paste the value generated in step c. and click **Save Changes**.

18. Configure Siebel server configuration events.

The Siebel server must be configured so that the records created in the local database can be synchronized to the server.

a) Navigate to **View** > **Administration - Server Configuration** > **Servers** > **Components** > **Event**.

b) Locate the Workflow Process Manager Server components.

c) Set the following Component Event Configuration for Workflow Process Manager:

Task Configuration	4
Component Tracing	3
SQL Parse and Execute	4
Workflow Definition Loading	4
Workflow Engine Invoked	4
Workflow Step Execution	4

Workflow Process Execution	4
Object Manager Business Service Operation and SetErrorMsg Log	4
Object Manager Business Component Operation and SetErrorMsg Log	4
Object Manager SQL Log	4

d) Locate the Transaction Merger server components.

e) Set the following Component Event Configuration for Transaction Merger:

General Events	4
Components Tracing	3
SQL Parse and Execute	4

19. Enable marketing server components.

The Marketing Server Components must be enabled to import a list from the List Management business object.

a) Navigate to **Administration - Server Configuration** > **Enterprises** > **Component Groups**.

b) In the Spectrum™ Technology Platform Server list, select the appropriate server.

c) In the Enterprise Component Groups list, locate each of the required component groups using the following table. If the **Enable State** field does not contain the value **Enabled**, select the component groups, click the menu button, and choose **Enable Component Group**.

Group Name	Components	Description
MktgOM	• Marketing Obj Mgr • eMarketing Obj Mgr • eEvents Obj Mjr	Marketing Object Manager. Supports the user interface and business objects for the Marketing application.
Mktg Srv	List Import Service Manager	Marketing Server. Used for list management list import.

d) Click the **Synchronize view** tab and click **Synchronize**.

e) Restart the Siebel server. The Siebel server must be restarted each time synchronization occurs.

20. (Open UI Only) Grant the EAI File Transport business service access to the file system by following these steps.

a) Click **Navigate** > **Site Map**.

b) Click **Administration - Server Configuration**.

c) In the **Administration - Server Configuration** section, under **Enterprises**, click **Parameters**.

d) Click **Query**.

e) In the **Name** column, enter `EAI File Transport Folder List`.

f) Click **Go**.

g) In the **Value** column, enter the root of the drive where you have Siebel installed. For example, `C:\`.

h) Click the **Servers** link:

i) Click the **Parameters** tab:

j) Click **Query**.

k) In the **Name** column, enter `EAI File Transport Folder List`.

l) Click **Go**.

m) In the **Value** column, enter the root of the drive where you have Siebel installed. For example, `C:\`.

n) Add the following values to the .cfg file appropriate for your system (for example, `auto.cfg`, `tools.cfg`, and so on).

```
[EAIFileTransportConfigSubsys]
EAIFileTransportFolders=C:\
```

o) Restart the Siebel server and gateway.

21. Set the EditProfileAttr parameter:

a) Click **Navigate** > **Site Map**

b) Click **Administration - Server Configuration**.

c) In the **Administration - Server Configuration** section, under **Servers**, click **Components**.

d) On the **Components** tab, click **Query**.

e) In the **Component** column, enter the name of the Object Manager component. For example, "eAutomotive Object Manager".

f) Click **Go**.

g) Click the **Parameters** tab at the bottom of the window.

h) Scroll to the parameter EditProfileAttr.

i) Enter `True` in the **Value**, **Value on Restart**, and **Default Value** columns.

22 (Siebel Open UI only) Configure the **Type Ahead** feature using these steps:

> **Note:** This feature requires acquiring the license of the **Global Addressing Module**.
> Also, you need to enable CORS on the Spectrum server for accessing **Type Ahead** service.
> For details see the **Security** chapter in the Spectrum Administration Guide.

a) On the Siebel web server, go to `<SWEApp>\PUBLIC\enu`, and copy these files located in `<Spectrum Package>\OPEN_UI` folder to the `PUBLIC\enu folder`.

- pb-bootstrap.min.js
- pb-bootstrap-comboned.min.css

> **Note:** In case of Siebel IP 16, copy the files to `<SWEApp>\PUBLIC`.

b) Copy these files from `<Spectrum Package>\OPEN_UI` to `<SWEApp>\PUBLIC\enu\<buildnumber>\scripts\siebel\custom` and `<SIEBEL ROOT>\Siebsrvr\WEBMASTER\<buildnumber>\scripts\siebel\custom`.

- AccountAddressAutoCompletePR.js
- ContactAddressAutoCompletePR.js

> **Note:** In case of Siebel IP 16, copy the files to `<SWEApp>\PUBLIC\enu\scripts\siebel\custom`.

c) In the **Siebel** application, go to **Administration- Application** > **Manifest Files** and add these files:

- siebel/custom/AccountAddressAutoCompletePR.js
- siebel/custom/ContactAddressAutoCompletePR.js

d) Go to **Administration - Application** > **Manifest Administration**, and perform PR configuration for these applets and associate the manifest files added in the previous step.

- Account Address Mvg Applet
- Contact Personal Address Mvg Applet

You have now configured Siebel non-SDQ to use Spectrum™ Technology Platform for data quality processing.

3 - Using the Siebel Module with Siebel SDQ

In this section

Siebel Module OPT File Options

The Pitney Bowes Spectrum™ Technology Platform Connector for Siebel SDQ contains an OPT file that allows you enable or disable certain processing components in the Management Console.

The Siebel Module OPT file can be found at:

`<install directory>\Siebel\<version>\web client\BIN\ENU.`

All options in each section can be set to a value of either Y or N.

Table 22: OPT File Options

Option	Description
AccountBusinessNameStandardization	Specifies whether the account name will be standardized using the standard form of the business name.
	Y (Default) Yes, standardize business names.
	N No, do not standardize business names.
AccountNameCasing	Specifies whether to standardize the casing of the account name. If enabled, Spectrum™ Technology Platform applies the casing options selected in the Management Console for the Siebel Standardize Name service.
	Y (Default) Yes, standardize the casing of account names.
	N No, do not standardize casing of account names.
ContactNameCasing	Specifies whether to standardize the casing of the contact person's name. If enabled, Spectrum™ Technology Platform applies the casing options selected in the Management Console for the Siebel Standardize Name service.
	Y (Default) Yes, standardize the casing of contact names.
	N No, do not standardize casing of contact names.

Option	Description
ProspectNameCasing	Specifies whether to standardize the casing of a prospect's name. If enabled, Spectrum™ Technology Platform applies the casing options selected in the Management Console for the Siebel Standardize Name service.
	Y (Default) Yes, standardize the casing of prospect names.
	N No, do not standardize casing of prospect names.
BusinessAddressCleansing	Specifies whether to enable address validation for business addresses.
	Note: Check the **Disable Cleansing** column of the business address applet to deactivate the data cleansing for each business address.
	Y (Default) Yes, validate and standardize business addresses.
	Note: If you want to perform interactive address validation, you must also set `BatchAddressValidation` to `N`.
	N No, do not standardize business addresses.
PersonalAddressCleansing	Specifies whether to enable address validation for personal addresses.
	Note: Check the **Disable Cleansing** column of the personal address applet to deactivate the data cleansing for each personal address.
	Y (Default) Yes, validate and standardize personal addresses.
	Note: If you want to perform interactive address validation, you must also set `BatchAddressValidation` to `N`.
	N No, do not standardize personal addresses.

Option	Description
ProspectAddressCleansing	Specifies whether to enable address validation for prospects' addresses.

<table>
<tr><td></td><td></td><td>Note: Check the Disable Cleansing column of the business address applet to deactivate the data cleansing for each business address.</td></tr>
<tr><td></td><td>Y</td><td>(Default) Yes, validate and standardize prospect addresses.

Note: If you want to perform interactive address validation, you must also set <code>BatchAddressValidation</code> to <code>N.</code></td></tr>
<tr><td></td><td>N</td><td>No, do not standardize business and prospect addresses.</td></tr>
</table>

Option	Description
BusinessAddressGeocoding	Specifies whether to determine the latitude/longitude coordinates of business addresses.

<table>
<tr><td></td><td>Y</td><td>(Default) Yes, determine the latitude/longitude coordinates of business addresses.</td></tr>
<tr><td></td><td>N</td><td>No, do not determine the latitude/longitude coordinates of business addresses.</td></tr>
</table>

Option	Description
PersonalAddressGeoCoding	Specifies whether to determine the latitude/longitude coordinates of personal addresses.

<table>
<tr><td></td><td>Y</td><td>(Default) Yes, determine the latitude/longitude coordinates of personal addresses.</td></tr>
<tr><td></td><td>N</td><td>No, do not determine the latitude/longitude coordinates of personal addresses.</td></tr>
</table>

Option	Description
ProspectAddressGeocoding	Specifies whether to determine the latitude/longitude coordinates of prospects' addresses.

<table>
<tr><td></td><td>Y</td><td>(Default) Yes, determine the latitude/longitude coordinates of prospect addresses.</td></tr>
<tr><td></td><td>N</td><td>No, do not determine the latitude/longitude coordinates of prospect addresses.</td></tr>
</table>

Option	Description
PerformDPV	Specifies whether to perform Delivery Point Validation (DPV) on U.S. addresses. DPV is a United States Postal Service (USPS) technology that validates the accuracy of address information down to the physical delivery point.
	Y (Default) Yes, perform DPV on U.S. addresses.
	N No, do not perform DPV on U.S. addresses.
PerformESM	Specifies whether to perform Enhanced Street Matching (ESM) on U.S. addresses. Enhanced Street Matching (ESM) applies additional matching logic to correct misspelled or complex street names.
	Y (Default) Yes, perform ESM on U.S. addresses.
	N No, do not perform ESM on U.S. addresses.
PerformRDI	Specifies whether to perform Residential Delivery Indicator (RDI) processing on U.S. addresses. RDI processing checks if an address is a residential address (not a business address).
	Y (Default) Yes, perform RDI processing on U.S. addresses.
	N No, do not perform RDI processing on U.S. addresses.
Threshold	Specifies the minimum match score needed for a record to be considered a duplicate of another record. For example, if the threshold is 70, only records with a score of 70 or above are considered duplicates.
	Specify a value between 50 and 100. The default is 50.
BatchAddressValidation	Specifies whether to enable the use of batch address validation. If batch address validation is not enabled, you will not be able to submit batch address validation jobs.
	Y Yes, enable the use of batch address validation.
	Note: To enable batch address validation you must also enable address cleansing for the types of addresses you want to process (prospect, personal, or business). To do this, set one or more of the following parameters to `Y`: `ProspectAddressCleansing`, `PersonalAddressCleansing`, and `BusinessAddressCleansing.`
	N No, do not enable the use of batch address validation. You must use this setting if you want to perform interactive address validation.

Specifying Data Quality Settings

1. From the Siebel Application window, click **Navigate** > **Site Map**.
2. Click **Administration - Data Quality**.
3. Click **Data Quality Settings**.

   The Data Quality Settings screen displays.

4. Configure the data quality settings as needed. The following table describes the settings.

| Parameter	Description
Enable DataCleansing	Determines whether real-time data cleansing is enabled for the Siebel Server the administrator is currently logged into.
Enable DeDuplication	Determines whether real-time data matching is enabled for the Siebel Server the administrator is currently logged into.
Force User Dedupe -Account	Determines whether duplicate records are displayed in a pop-up window when a user saves a new account record. The user can then merge duplicates. If the value is set to No, duplicates are not displayed in a pop-up window, but the user can merge duplicates in the Duplicate Accounts view.
Force User Dedupe -Contact	Determines whether duplicate records are displayed in a pop-up window when a user saves a new contact record. The user can then merge duplicates. If the value is set to No, duplicates are not displayed in a pop-up window, but the user can merge duplicates in the Duplicate Contacts view.

| Parameter	Description
Force User Dedupe -List Mgmt	Determines whether duplicate records are displayed in a pop-up window when a user saves a new prospect record. The user can then merge duplicates. If the value is set to No, duplicates are not displayed in a pop-up window, but the user can merge duplicates in the Duplicate Prospects view.

Merging Duplicate Records

In the **Administration - Data Quality** screen you can choose which record will survive and which records you want to merge with the surviving record. You can merge duplicate records in two ways.

• Merge Button

Go to **Site Map** > **Administration - Data Quality** and select the appropriate duplicate resolution view.
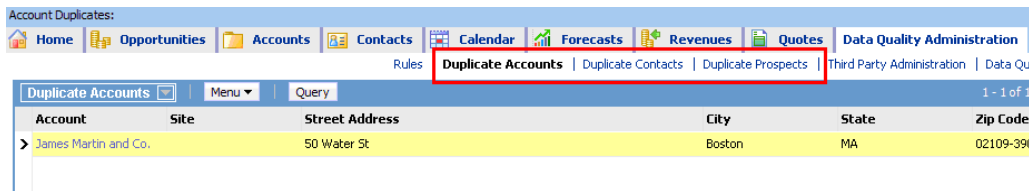
Select the records you want to merge and assign sequence number to the record. The record with the lowest sequence number will survive.
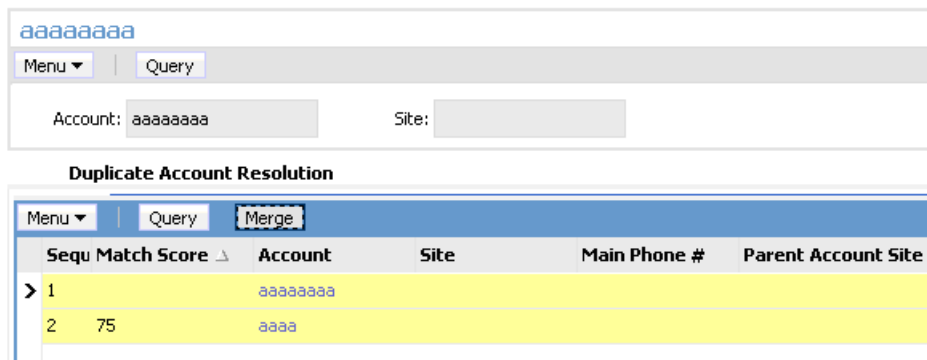

• Merge Records

This action performs standard merging functionality in Siebel. Select the record you want to merge. The surviving record associates all child records from the non surviving record before deleting the non surviving record.
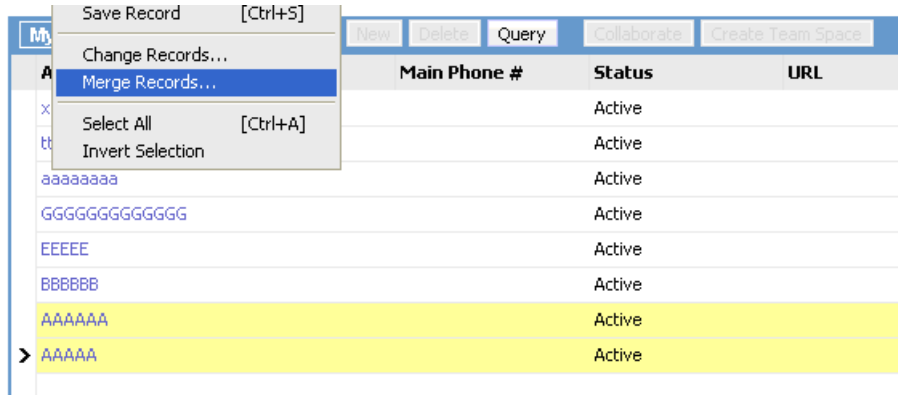
Running a Batch Job

This procedure describes how to run batch processes for business name standardization, data cleansing, data deduplication, geocoding and name casing. In order to run a batch job, you must enable batch processing in the OPT file. For more information, see **Siebel Module OPT File Options** on page 63.

1. From the Siebel Application window, click **Navigate** > **Site Map**.
2. A screen appears with numerous links in alphabetical order. Select **Administration - Server Administration** > **Jobs**.
3. Click the **New** button and enter `Data Quality Manager` in the **Component/Job** field.
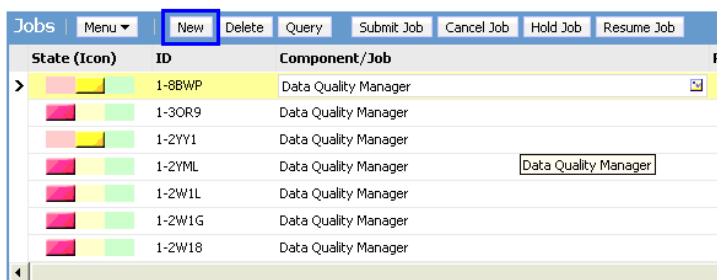
4. On the same screen, set the job parameters by clicking **New** and providing the necessary details.

The following tables show the required and optional job parameters.
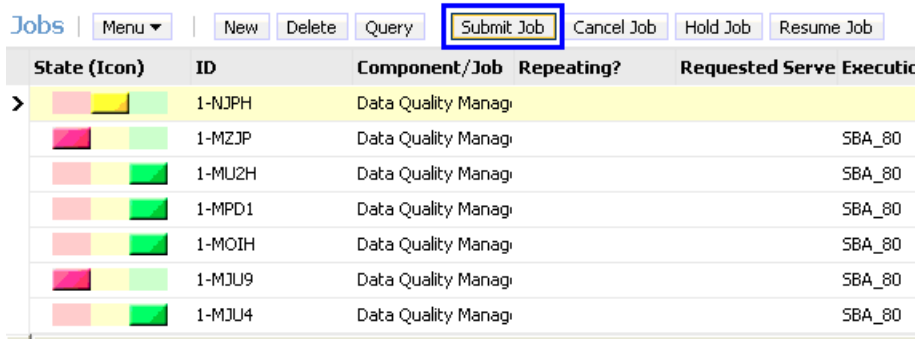
Table 23: Required Job Parameters

Job Parameter	Description
Buscomp name	The name of the business component: • Account • Contact • List Mgmt Prospective Contact • Business Address
Business Object Name	The name of the business object: • Account • Contact • List Mgmt Prospective Contact • Business Address(Data Cleansing Only)
Operation Type	Type of operation used: • Data Cleansing: Does one or more of the following depending on the features you have licensed: standardizes casing and business names, validates addresses, and geocodes addresses. • Key Generate: Generates hash keys for all records in the business component. • Key Refresh: Refreshes hash keys for all records in the business component. • DeDuplication: performs data matching to identify duplicate records

Table 24: Optional Job Parameters

Job Parameter	Description
Object Sorting Clause	A clause that specifies how candidate records are sorted for optimal processing by the data matching software. The default value is: `Dedup Token` **Note:** This parameter applies to Data Matching operations only.
Object Where Clause	A clause that limits the number of records processed by a data quality task. For example: `[DUNS Number] is NULL` **Note:** You should specify an object where clause when performing DeDuplication on Prospects (use with value "[DUNS Number] is NULL").
Rule Name	Specifies the name of a Business rule that you want to use while performing batch cleansing or deduplication. Use the rule names defined in the **Administration - Data Quality** > **Rules** view.

5. Click **Submit Job**.

Testing EAI

Enterprise Application Integration (EAI) is a means of cleansing data in Siebel as it is updated from an external system. EAI testing simulates this process.
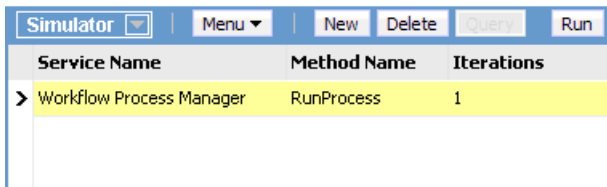
1. Navigate to **Site Map** > **Administration - Business Service** > **Simulator**.

2. Click on the button shown below or select **New Record** from the menu button.
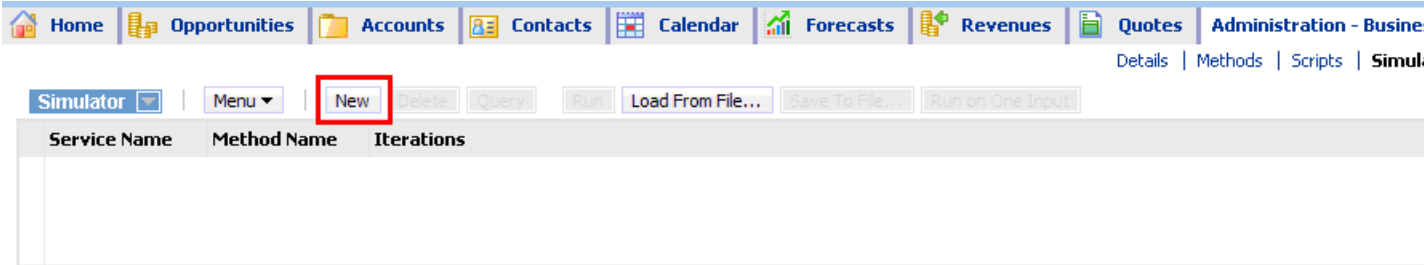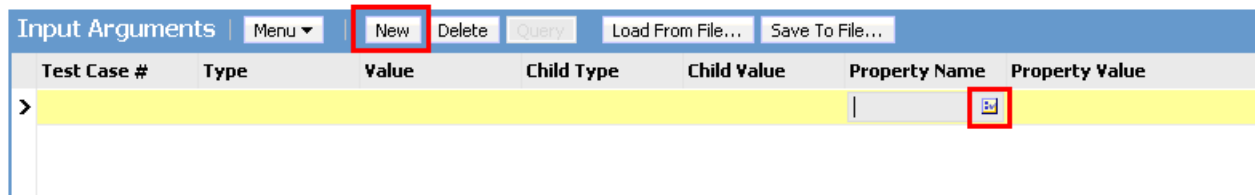

3. Enter the following information:

   • **Service Name**: Workflow Process Manager
   • **Method Name**: Run Process

4. In the Input Arguments applet, click **New**.

5. Click the icon under **Property Name** and add the following records.

Property Name	Value
ProcessName	The name of the workflow to run: • GROUP 1 ADMIN - EAI TEST (CONTACT with ACCOUNT) WORKFLOW • GROUP 1 ADMIN - EAI TEST (CONTACT with ACCOUNT/PERSONAL ADDRESS) WORKFLOW • GROUP 1 ADMIN - EAI TEST (CONTACT with PERSONAL ADDRESS) WORKFLOW • GROUP 1 ADMIN - EAI TEST (PROSPECT) WORKFLOW • GROUP 1 EAI ACCOUNT TEST WORKFLOW
XML File	The location of the XML file that contains the input data you want to use to test EAI.
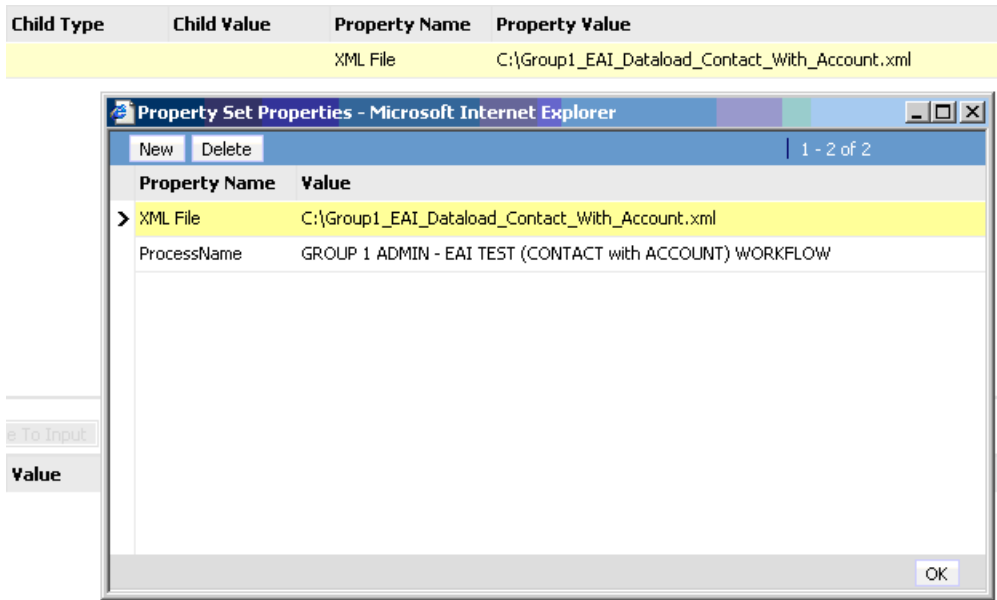
6. Click the **Run** button shown below.
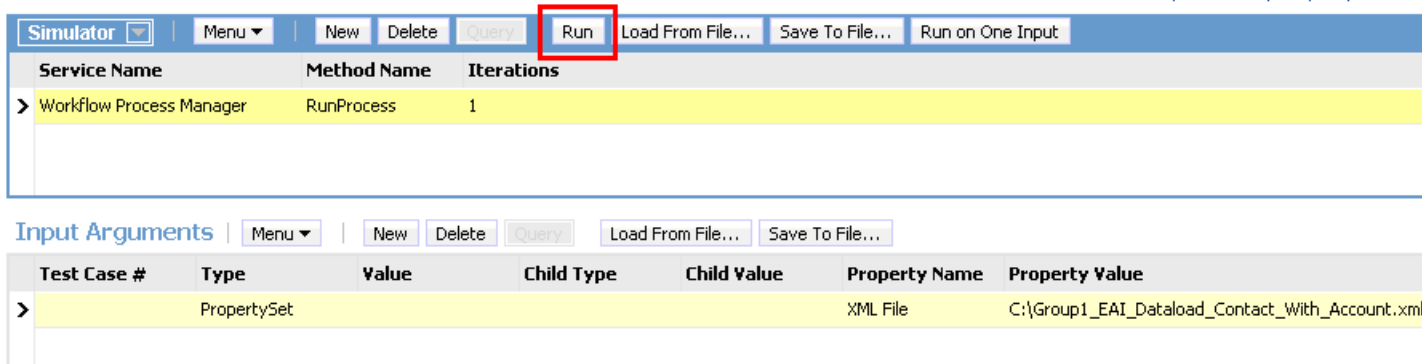
4 - Using the Siebel Module with Siebel Non-SDQ

In this section

Configuring Siebel non-SDQ

Configuring Business Name Standardization

The Business Name Standardization options include parameters for Dunn & Bradstreet (D&B) Information and Automatic Business Name Standardization.

1. From the Siebel window, click **Navigate** > **Site Map**.
2. Click **Administration - PBBI Group 1 Data Quality Administration**.
3. Under the **PBBI Group 1 Data Quality Administration** heading at the top of the page, click **Options Manager**.
4. Configure the options. When you are done, click **Save Changes**. Use Clear Cache to reset the options.

Table 25: Business Name Standardization Options

Option	Values	Description
Update Accounts with D&B Information	Enable, Disable	Indicates if accounts will be updated with Dunn & Bradstreet information. If enabled, created accounts will be updated with matching D&B information.
D&B Interactive Threshold	50 - 100	Specifies the minimum match score needed to identify a possible Dunn & Bradstreet account match during interactive processing. The higher the value, the closer the match must be. The default is 50. If the score produced by the comparison of the account and D&B records is greater than the entered value (must be between 50 and 100), then the record will be identified as duplicate and a pop-up window will be displayed to the user, allowing the user to choose the action to take. The lower the match threshold, the more match candidates will be displayed.

Option	Values	Description
D&B Batch Update Threshold	0 - 100	Specifies the minimum match score needed to identify a possible Dunn & Bradstreet account match during batch processing. The higher the value, the closer the match must be. The default is 50.
		If the score produced by the comparison of the account and D&B records is greater than the entered Value (must be between 0 and 100), then the D&B records are made D&B candidates of the account record. The account record is updated with the D&B record with the greatest score.
D&B Batch Import Threshold	0 - 100	Specifies the minimum match score needed to identify a possible Dunn & Bradstreet account match during EAI processing.
		If the score produced by the comparison of the account and D&B records is greater than the entered Value (must be between 0 and 100), then the D&B records are made D&B candidates of the account record. The account record is updated with the D&B record with the greatest score.
Automatic Business Name Standardization	Enable, Disable	Indicates if automatic business name standardization will be performed.
		If enabled, the account name will be replaced by the matching business name from DQC.
Update Account Addresses using Firm Name File	Enable, Disable	Indicates if Account will use D&B Address as primary.
		If enabled, the primary address of the account record will be replaced by the physical address of the chosen D&B record (as the picked D&B account's primary address).

Configuring Data Cleansing

The data cleansing options control address validation. Address validation involves matching and standardizing a U.S., Canadian, or International address against the Pitney Bowes address databases.

> **Note:** The **Cleansing Status Flag** (Succeeded ✔ , Failed ✖ , Not Yet Cleansed) are shown only in views where addresses can be added or modified.

1. From the Siebel window, click **Navigate** > **Site Map**.
2. Click **Administration - PBBI Group 1 Data Quality Administration**.
3. Under the **PBBI Group 1 Data Quality Administration** heading at the top of the page, click **Options Manager**.
4. Configure the options. When you are done, click **Save Changes**. Use Clear Cache to reset the options.

Table 26: Data Cleansing Options

Option	Values	Description
Business Address Cleansing	Enable, Disable	Specifies whether cleansing is enabled for business address. A business address is one used for business purposes It is associated with a contact's account. If enabled, the selected options in the Management Console for ValidateAddress will be activated for processing for business addresses. **Note:** Check the Disable Cleansing column of the business address applet to deactivate the data cleansing for each business address.
Personal Address Cleansing	Enable, Disable	Specifies whether cleansing is enabled for personal address. A personal address is associated with a contact. If enabled, the selected options in the Management Console for ValidateAddress will be activated for processing for personal addresses. **Note:** Check the Disable Cleansing column of the personal address applet to deactivate the data cleansing for each personal address.
Prospect Address Cleansing	Enable, Disable	Specifies whether cleansing is enabled for prospect address.A prospect address is the personal address of a prospect. If enabled, the selected options in the Management Console for ValidateAddress will be activated during processing for prospect addresses.

Option	Values	Description
DPV	Enable, Disable	Specifies whether Delivery Point Validation will be performed. Delivery Point Validation (DPV®) validates that a specific address exists, as opposed to validating that a specific address is within a range of valid addresses. **Note:** This option is only available if the Delivery Point Validation option is enabled in the Management Console and if the DPV® database is installed.
RDI	Enable, Disable	Specifies whether Residential Delivery Indicator process will be performed. Residential Delivery Indicator (RDI™) processing checks if an address is a residential address (not a business address). To perform RDI™ processing, you must have the RDI™ database installed. **Note:** This option is only available if the RDI™ option is enabled in the Management Console and if the RDI™ database is installed. The result of RDI™ processing is shown in a field added in Address Information that contains one of the following: • **Residential** - This value is returned by the Universal Coder in case the address entered by the user is a Residential Address • **Business** - This value is returned by the Universal Coder in case the address entered by the user is a Business Address • **Mixed** - This value is returned by the Universal Coder in case the address entered by the user is both a Residential and Business Address.
ESM	Enable, Disable	Specifies whether Enhanced Street Matching process will be performed. Enhanced Street Matching (ESM) applies additional matching logic to correct misspelled or complex street names and obtain a match. ESM produces more validated addresses but reduces performance. **Note:** This option is only available if the ESM option is enabled in the Management Console.

Configuring Data Deduplication

Data deduplication involves scoring a candidate set of records against a master record to identify possible duplicates and then resolving the duplicates into a single record.

1. From the Siebel window, click **Navigate** > **Site Map**.
2. Click **Administration - PBBI Group 1 Data Quality Administration**.
3. Under the **PBBI Group 1 Data Quality Administration** heading at the top of the page, click **Options Manager**.
4. Configure the options. When you are done, click **Save Changes**. Use Clear Cache to reset the options.

Table 27: Data Deduplication Options

Option	Description
Account Deduplication	Specifies whether to identify duplicate account records. If enabled, the Deduplication applet displays when a user attempts to save a record. It shows the potential duplicates and allows the user to merge or delete records.
Prospect Deduplication	Specifies whether deduplication is enabled for prospect records. If enabled, the Deduplication applet displays when a user attempts to save a record. It shows the potential duplicates and allows the user to merge or delete records.
Contact Deduplication	Specifies whether deduplication is enabled for contact records. If enabled, the Deduplication applet displays when a user attempts to save a record. It shows the potential duplicates and allows the user to merge or delete records.
Contact Address Option	Indicates which type of address to use when deduplicating your contact information. You can choose Business Address or Personal Address. A business address is one used for business purposes It is associated with a contact's account. A personal address is associated with a contact.
Deduplication Popup Applet	Indicates whether the Deduplication applet is enabled for interactive deduplication. The Deduplication applet displays the potential duplicates and allows the user to merge or delete records.

Option	Description
Interactive Resolution	Allows you to select how you wish to interact with Siebel to resolve duplicates. You can choose:

Automatic   When you select this option, Spectrum™ Technology Platform automatically merges a master record with a candidate duplicate record containing the highest score (probability) of being a duplicate without any interaction.

Manual   When you select this option, you will see a list of possible duplicate records. Then you will have the choice to merge the duplicate record with the current record or to merge it with the other listed duplicates.

Note: To avoid encountering any error during automatic merging, the user must press **<CTRL-S>** to save the record before navigating to another record.

Option	Description
Interactive Threshold	Specifies the minimum match score needed to identify a possible duplicate during interactive processing. The higher the value, the closer the match must be. The default is 50.

If the score produced by the match attempt is greater than the entered value (must be between 0 and 100), then the record will be identified as duplicate and a pop-up window will be displayed to the user, allowing the user to choose the action to take. The lower the match threshold, the more match candidates will be displayed.

Option	Description
Batch Import Resolution	Specifies how you want to interact with Siebel to resolve duplicates.

Automatic   When you select this option, Spectrum™ Technology Platform automatically merges a master record with a candidate duplicate record containing the highest score (probability) of being a duplicate without any interaction.

Manual   When you select this option, you will see a list of possible duplicate records. Then you will have the choice to merge the duplicate record with the current record or to merge it with the other listed duplicates.

Option	Description
Batch Update Resolution	Specifies how you want to interact with Siebel to resolve duplicates.

Automatic   When you select this option, Spectrum™ Technology Platform automatically merges a master record with a candidate duplicate record containing the highest score (probability) of being a duplicate without any interaction.

Manual   When you select this option, you will see a list of possible duplicate records. Then you will have the choice to merge the duplicate record with the current record or to merge it with the other listed duplicates.

Option	Description
Batch Import Threshold	Specifies the minimum match score needed to identify a possible duplicate record during EAI processing.
	If the score produced by the match attempt is greater than the value you specify (must be between 0 and 100), then the record is considered a match candidate. The record is updated with the candidate record that has the greatest score.
Batch Update Threshold	Specifies the minimum match score needed to identify a duplicate record during batch processing. The higher the value, the closer the match must be. The default is 50.
	If the score produced by the comparison of the records is greater than the value you entered (must be between 0 and 100), then the records are considered duplicates.
Account Name Treatment	Determines how the name parser should treat the account name. One of the following:
	Company — Assumes that all names are companies.
	Analyze — Assumes that all names are persons.
	Name Parser — Analyzes the data to determine if it is the name of a company or a person.
Contact Name Treatment	Determines how the name parser should treat the contact name. One of the following:
	Company — Assumes that all names are companies
	Analyze — Assumes that all names are persons
	Name Parser — Analyzes the data to determine if it is the name of a company or a person.
Prospect Name Treatment	Determines how the name parser should treat the prospect name. One of the following:
	Company — Assumes that all names are companies.
	Analyze — Assumes that all names are persons.
	Name Parser — Analyzes the data to determine if it is the name of a company or a person.

Option	Description
Intelligent Merge of Duplicates	Specifies whether to allow empty fields to be replaced with non-empty fields when merging two potential duplicate records. Without Intelligent Merge enabled, you may risk losing phone numbers and e-mail information during merging of records.

For Account Business Component, the following fields are copied to the surviving record:

- Main Phone Number
- Main Fax Number
- Type
- URL
- Account Status

For Contact Business Component, the following fields are copied to the surviving record:

- Fax Phone #
- Work Phone #
- Home Phone #
- Alternate Phone #
- Assistant Phone #
- Cellular Phone #
- Email Address
- Comment

For Prospect, the following fields are copied to the surviving record:

- Fax Phone #
- Work Phone #
- Home Phone #
- Job Title
- Email Address
- Time Zone
- Comment
- Preferred Contact Method

Option	Description
Deduplication Address Option	Indicates which addresses to use for deduplication. One of the following:

Primary to Primary	Compare the records using the primary address of the master and candidate records.
Active to Primary	Compare the records using the active address of the master record and the primary address of the candidate records.
Active to All	Compare the records using the active address of the master record and all the addresses of the candidate records.
All to All	Compare the records using all the addresses of the master record and all the addresses of the candidate records.

Option	Description
Survivorship Date Criterion	Indicates the order by which the records are merged with the survivor record.

	Newest	The newest duplicate record is merged first.
	Oldest	The oldest duplicate record is merged first.

Option	Description
Survivorship Status Criterion	If enabled, merging an Active record to an Inactive record is not allowed. Only the following merging scenarios are allowed: • Active to Active • Inactive to Inactive • Inactive to Active

Generate Match and Search Key Option	Specifies which characters to use to generate the match key and search key.

	Substring	Use the first few characters of the record to generate the match key and search key.
	Consonant	Use just the consonants to generate the match key and search key.

Configuring General Behavior

Under the General Behavior section of the Options Manager, you can activate pop-up applets, set up your log directories, and conduct other logging tasks.

1. From the Siebel window, click **Navigate** > **Site Map**.
2. Click **Administration - PBBI Group 1 Data Quality Administration**.
3. Under the **PBBI Group 1 Data Quality Administration** heading at the top of the page, click **Options Manager**.
4. Configure the options. When you are done, click **Save Changes**. Use Clear Cache to reset the options.

Table 28: General Behavior Options

Option	Description
Error Popup Applet	Specifies whether to display an error dialog when errors occur when performing interactive data quality functions. If enabled, errors from the Siebel Module will be displayed. Also, an error will appear if there is a connectivity problem between Spectrum™ Technology Platform and Siebel.
Server Name	Indicates the server name or IP address of the Spectrum™ Technology Platform server.
Port Number	Indicates the port number of the Spectrum™ Technology Platform server.

Configuring Geocoding

Geocoding is the process of assigning a latitude/longitude coordinate to an address. Once a latitude/longitude coordinate is assigned, the address can be displayed on a map or used in a spatial search.

1. From the Siebel window, click **Navigate** > **Site Map**.
2. Click **Administration - PBBI Group 1 Data Quality Administration**.
3. Under the **PBBI Group 1 Data Quality Administration** heading at the top of the page, click **Options Manager**.
4. Configure the options. When you are done, click **Save Changes**. Use Clear Cache to reset the options.

Table 29: Geocoding Options

Option	Description
Business Address GeoCoding	Specifies whether to determine the latitude/longitude coordinates of business address.
Personal Address GeoCoding	Specifies whether to determine the latitude/longitude coordinates of personal addresses.

Option	Description
Prospect Address GeoCoding	Specifies whether to determine the latitude/longitude coordinates of prospect addresses.

Configuring Logging

The Pitney Bowes Data Quality Connector for Siebel provides a logging service to monitor its events.

1. From the Siebel window, click **Navigate** > **Site Map**.
2. Click **Administration - PBBI Group 1 Data Quality Administration**.
3. Under the **PBBI Group 1 Data Quality Administration** heading at the top of the page, click **Options Manager**.
4. Configure the options. When you are done, click **Save Changes**. Use Clear Cache to reset the options.

Table 30: Logging Options

Option	Description
Client Log File	Specifies the Siebel client machine destination log directory and filename when using Siebel Thick Client.
	This log file contains error messages, return code messages, cleansing and deduplication information about each transaction, your original input information, and the information once it has been processed through the Data Quality Connector for Siebel. All of the information found in this log file pertains to the client side of the Data Quality Connector for Siebel.
	Note: This option is ignored when accessing the Siebel application through Siebel Thin Client

Option	Description
Server Log File	Specifies the Siebel Server machine destination log directory and filename when using Siebel Thin Client.
	This log file contains error messages, return code messages, cleansing and deduplication information about each transaction, your original input information, and the information once it has been processed through the Data Quality Connector for Siebel. All of the information found in this log file pertains to the server side of the Data Quality Connector for Siebel.
	Note: This option is ignored when accessing the Siebel application through Siebel Thick Client.
Logging	Specifies whether logging is enabled. You can choose to enable or disable this option.
Cleansing Logging Level	Specifies how data cleansing results are logged. One of the following:
	0 Log nothing.
	1 Log errors when cleansing address function fails.
	2 Log cleansing input and output as well as errors when cleansing function fails.
Deduplication Logging Level	Specifies how data deduplication results are logged. One of the following:
	0 Log nothing.
	1 Log errors when data deduplication fails.
	2 Log data deduplication input and output as well as errors when data deduplication function fails.
Merge Logging Level	Specifies the logging level for merging. One of the following:
	0 Log nothing.
	1 Log errors when data merging fails.
	2 Log data merging input and output as well as errors when data merging function fails.

Configuring Name Casing

Under the Name Casing section of the Options Manager, you can control casing options for account names, contact names, and prospect names.

1. From the Siebel window, click **Navigate** > **Site Map**.
2. Click **Administration - PBBI Group 1 Data Quality Administration**.
3. Under the **PBBI Group 1 Data Quality Administration** heading at the top of the page, click **Options Manager**.
4. Configure the options. When you are done, click **Save Changes**. Use Clear Cache to reset the options.

Table 31: Name Casing Options

Option	Description
Account Name Casing	Specifies whether to standardize the casing of account names.
Contact Name Casing	Specifies whether to standardize the casing of contact names.
Prospect Name Casing	Specifies whether to standardize the casing of prospect names.

Changing the Password

This procedure describes how to change the password used to log in to the Spectrum™ Technology Platform server.

1. From the Siebel window, click **Navigate** > **Site Map**.
2. Click **Administration - PBBI Group 1 Data Quality Administration**.
3. Under the **PBBI Group 1 Data Quality Administration** heading at the top of the page, click **Password Manager**.
4. In the **Password** field, enter the password to use when communicating with the Spectrum™ Technology Platform server. The password must be encrypted in Base64 code.
5. Click **Save Changes**.

Configuring Global Type Ahead

To configure the Siebel Global Type Ahead options, go to the **Options Manager** screen of the Siebel application, and click **Type Ahead** in the Options list on the left pane. You can perform these configurations:

- Enable/disable the type ahead feature
- Define the type of fuzzy match
- Specify the maximum number of records to be displayed for type ahead suggestions

To configure the type ahead options, perform these steps:

1. From the Siebel window, click **Navigate** > **Site Map**.
2. Click **Administration - Group 1 Data Quality Administration**.
3. Click the **Options Manager** tab and perform these configurations:

Options	Description
Type Ahead	Select if you want to `Enable` or `Disable` the type ahead feature.
Max Candidates	Specify the maximum number of records you want to be displayed as suggestions. The maximum value it can have is 20.
Fuzzy Match	Indicate the fuzzy match type for PB type ahead. The options are: • Hard Match • Soft Match • None

Validating an Address

When you enter an address for an Account, Contact, or Prospect, the record is automatically validated when you click outside an address field.

If the address is successfully validated, a green check mark (✔) is shown in the **Cleansing Status** column.

If the address cannot be validated, a red "X" (✖) is shown in the **Cleansing Status** column.
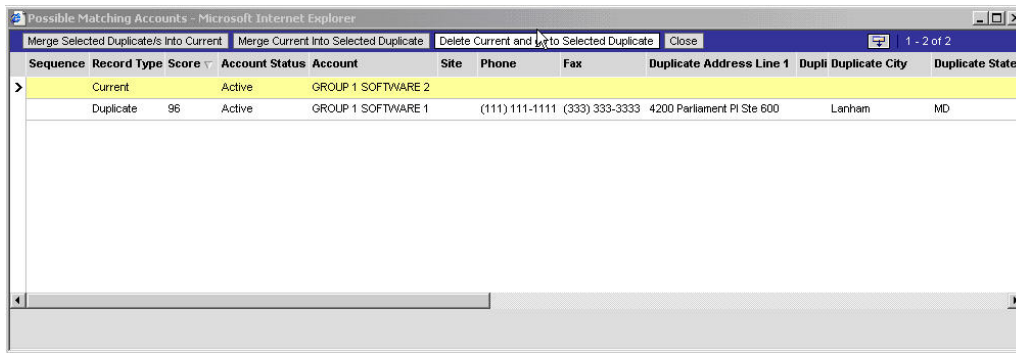
If there are multiple candidate addresses, you are prompted to select one. Select the address you want to use then click **Pick Address**.

> **Note:** To close the **Candidate Address** window, click on the **Cancel** button located in the upper left of the window. Do not close the window using the "X" button in the upper right corner.

Note that the **Latitude** and **Longitude** fields are only populated for addresses in the U.S. and Canada. The **Location Code**, **Match Code**, **DPV**, and **RDI** fields are not currently used.

Merging Duplicate Records

If you have selected the **Intelligent Merge of Duplicates** option, you can also determine how existing data will be merged. As shown on the screen below, merging can be initiated by pressing specific options/buttons in the Deduplication Applet (Popup or Embedded).

> **Note:** To close the Deduplication popup applet, click on the **Close** button located in the upper left of the applet. Do not close the applet using the **X** button in the upper right corner of the applet because it will not reset the values of profile attributes used in processing the record.

For data merging you have the following configuration options:

Table 32: Data Merging Options

Option	Description
Merge Selected Duplicate into Current	This option merges the duplicate records with the current record shown in the Deduplication applet. When using this option, you must select the duplicate records in the Deduplication applet.
	The Sequence field can be used to determine the order of which the selected duplicates will be merged. If there is no sequence number, the order will be determined by the survivorship date criterion in the Options Manager. If Survivorship Status Criterion is set to Enable, the status of the duplicate records will be checked against the surviving record. For more information, see **Configuring Data Deduplication** on page 79.
	The current record will be the surviving record after a successful merge.
Merge Current into Selected Duplicate	This option merges the current record with the duplicate record shown in the Deduplication applet. When using this option, you must select the duplicate record in the Deduplication Applet.
	If Survivorship Status Criterion is set to Enable, the status of the duplicate records will be checked against the surviving record. For more information, see **Configuring Data Deduplication** on page 79.
	The duplicate record will be the surviving record after a successful Merge.
Delete Current Record and go to Selected Duplicate	This option deletes the current record as shown in the Deduplication applet. When using this option, you must select the duplicate record in the Deduplication applet.
	The duplicate record will be the surviving record after a successful deletion.

Adding D&B Information to a Record

If the **Update Accounts with D&B Information** option is enabled, the account record will be matched to a D&B record. There are two ways in which the account record can be matched to a D&B record.

Match the First Three Letters of the Business Name

The first three letters of the account name will be used to match the D&B record if the DUNS Number is not provided or the DUNS Number provided is not matched to any D&B record. The D&B popup applet will list all possible matches that are greater than the threshold set in D&B Interactive Threshold of the Group 1 Options Manager. For more information about the D&B Interactive Threshold, please refer to **Configuring Business Name Standardization** on page 75.

The **Pick D&B** option of the applet picks the D&B record as the match for the account record. The following D&B fields will be copied to their equivalent account fields:

D&B Field	Account Field
Business Name	Name
DUNS Number	DUNS Number
Domestic Ultimate DUNS	Domestic Ultimate DUNS
Global Ultimate DUNS	Global Ultimate DUNS
Parent HQ DUNS	Parent HQ DUNS
Location Type + Physical City + DUNS Number	Location

If the **Update Account Addresses using Firm Name File** option is enabled, the physical address of the D&B record will be used as the primary business address of the account record.

> **Note:** To close the D&B Popup Applet, click on the **[Cancel]** button located in the upper left of the applet. Do not close the applet using the "**X**" button in the upper right corner of the applet because it will not reset the values of profile attributes used in processing the record.

Match the DUNS Number

A D&B® D-U-N-S® number is a unique nine-digit sequence recognized as the universal standard for identifying and keeping track of over 80 million businesses worldwide. The user will provide the DUNS # in the Account Entry Applet - Child - Admin Applet of the Account Administration View. This DUNS number will be matched to a D&B record.

Running a Batch Job

The Batch Manager is used to select the job to run batch processes for business name standardization, data cleansing, data deduplication, geocoding and name casing.

1. From the **Siebel Application** window, go to **Navigate** > **Site Map**.
2. Select **Administration - PBBI Group 1 Data Quality Administration**.
3. Click **Batch Manager**.
4. Click **New** on the form applet to create a new batch job.
5. Click **Batch Job MVG** to select the batch job.
6. Enter a **Search Specification** to limit the records to be processed. Follow the Search Specifications used to configure Siebel Objects in Siebel Tools.
7. Click **Start** or **Submit Job** to start the Pitney Bowes batch process.
8. Check the status of the job and verify that it reaches the *Completed* status. Navigate to the **Account**, **Contact** or **Prospect** view to check the result of the job. For example, Cleansing or Deduplication.

5 - Services Reference

In this section

Siebel Business Name Standardization

Siebel Business Name Standardization standardizes terms against a previously validated form of that term and applies the standard version. This evaluation is done by searching a table for the term to be standardized. If the term is found, the Standardization feature either replaces the term with the corresponding standard version or it extracts the term from the field. Standardization can include changing full words to abbreviations, changing abbreviations to full words, changing nick names to full names or misspellings to corrected spellings.

Siebel Generate Match Key

Siebel Generate Match Key creates a non-unique key to identify potentially duplicate records. Match keys facilitate the matching process by only comparing records that contain the same match key. A match key is comprised of input fields. Each input field specified has an algorithm performed on it. The result of each field is then concatenated to create a single match key field.

For example, this input:

First Name - Fred
Last Name - Mertz
Postal Code - 21114-1687
Gender Code - M

Might produce this match key:

211141687MertzFredM

Siebel Generate Match Score

Siebel Generate Match Score compares candidate records and generates a score that reflects their similarity. The higher the score means the closer the match.

Siebel Generate Search Key

Siebel Generate Search Key is used for duplicate detection and error-tolerant searching. This service generates keys that are used to when identifying duplicate records. When duplicate records are found, the user is presented with the records and can choose to merge, delete, or ignore the duplicate.

Siebel Standardize Name

Siebel Standardize Name formats business and personal names by applying consistent casing and, optionally, adding the title of respect (Mr., Ms., and so on) and punctuation. Siebel Standardize Name can also determine the gender of a name.

Siebel Validate Address With No Candidates

Siebel Validate Address With No Candidates validates addresses. It returns the validated address and, if you have licensed the Enterprise Geocoding Module, also determines the latitude and longitude coordinates.

Validate Address With Candidates

Validate Address With Candidates validates and standardizes addresses. It returns the validated address. If you have licensed the Enterprise Geocoding Module, it also returns the latitude and longitude coordinates of the address. If the address cannot be validated, it returns candidate addresses.

Siebel Global Type Ahead

Siebel Global Type Ahead is a component of the **Global Addressing Module**. It automatically suggests addresses as you type and returns candidates based on your input.

Countries Supported

These countries are supported by the Global Type Ahead service:

- • Andorra (AND)
- Australia (AUS)
- Austria (AUT)
- Bahrain (BHR)
- Belgium (BEL)
- Brazil (BRA)
- Canada (CAN)
- Czech Republic (CZE)
- Denmark (DNK)
- Finland (FIN)
- France (FRA)
- Germany (DEU)
- Greece (GRC) (Does not include POI information)
- Hungary (HUN)
- Ireland (IRL)
- Italy (ITA)
- Japan (JPN)
- Kuwait (KWT)
- Liechtenstein (LIE)
- Luxembourg (LUX)
- Mexico (MEX)
- Netherlands (NLD)
- New Zealand (NZL) (Does not include POI information)
- Norway (NOR)
- Oman (OMN)
- Poland (POL)
- Portugal (PRT)
- Qatar (QAT)
- Russia (RUS)
- Saudi Arabia (SAU)
- Singapore (SGP)

- Slovakia (SVK)
- Slovenia (SVN)
- South Africa (ZAF)
- Spain (ESP)
- Sweden (SWE)
- Switzerland (CHE)
- Thailand (THA)
- Turkey (TUR)
- United Arab Emirates (ARE)
- United Kingdom (GBR)
- United States (USA)

A - Validate Address Confidence Algorithm

In this section

Introduction to the Validate Address Confidence Algorithm

ValidateAddress computes a confidence score for each validated address. This score describes how likely it is that the validated address is correct. Confidence code values range from 0 to 100, with a zero confidence level indicating no confidence and 100 indicating a very high level of confidence that the match results are correct. Confidence codes are calculated based on an algorithm that takes into account the match results for individual output fields. The output fields involved in this calculation include:

• Country
• City
• State
• PostalCode
• StreetName
• HouseNumber
• LeadingDirectional
• TrailingDirectional
• StreetSuffix
• ApartmentNumber

Each field has its own Weight in the algorithm. Additionally, for each field the match result could be labeled as Success, Failure, or Changed. ("Changed" refers to cases where the contents of the field have been corrected in order to get a match.) The match result—Success, Failure, or Changed—determines what the Factor is for that field. Thus, the calculation for the confidence code is a product of Weight by Factor as follows:

```
Confidence = (Weight * Factor) for City
   + (Weight * Factor) for Country
   + (Weight * Factor) for State
   + (Weight * Factor) for PostalCode
   + (Weight * Factor) for StreetName
   + (Weight * Factor) for HouseNumber
   + (Weight * Factor) for Directionals
   + (Weight * Factor) for Street Suffix
   + (Weight * Factor) for ApartmentNumber
```

Confidence Algorithm for U.S. and Canadian Addresses

The following table details the scoring and logic behind the ValidateAddress confidence algorithm for U.S. and Canadian addresses.

Table 33: Confidence Algorithm for U.S. and Canadian Addresses

Field	Weight/Match Score	Factor if Changed[2]	Factor If Filled[3]
Country	10	100%	0%
City	10	50%	75%
State	15	50%	75%
PostalCode	15	25%	25%
StreetName	15	50%	75%
HouseNumber	15	50%	75%
Directionals	10	50%	75%
StreetSuffix	5	50%	75%
ApartmentNumber	5	50%	75%

Confidence Algorithm for International Addresses

There are two confidence algorithms for addresses outside the U.S. and Canada, one for addresses in countries that use postal codes and one for addresses in countries that do not use postal codes.

The following table details the confidence algorithm for non-U.S. and non-Canadian addresses from countries that use postal codes.

---

[3] Refers to instances when the input data in this field is not present but is filled in order to achieve a match.

[2] Refers to instances when the input data in this field is changed in order to achieve a match.

Table 34: Confidence Algorithm for Countries With Postal Codes

Field	Weight/Match Score	Factor if Changed[4]	Factor If Filled[5]	Factor if Postal Data Unavailable
Country	11.1111111111111	100%	0%	0%
City	11.1111111111111	50%	75%[6]	0%
State	16.6666666666667	100%	100	80%
PostalCode	16.6666666666667	100%	100%	80%
StreetName	16.6666666666667	50%	75%	50%
HouseNumber	16.6666666666667	50%	75%	50%
Directionals	0	50%	75%	0%
StreetSuffix	5.55555555555556	50%	75%	50%
ApartmentNumber	5.55555555555556	50%	75%	50%

[5] Refers to instances when the input data in this field is not present but is filled in order to achieve a match.

[4] Refers to instances when the input data in this field is changed in order to achieve a match.

[6] If the country is a Category C country, this value is 50%. Countries fall into one of these categories:

- **Category A**—Enables the validation and correction of an address's postal code, city name, state/county name, street address elements, and country name.
- **Category B**—Enables the validation and correction of an address's postal code, city name, state/county name, and country name. It does not support the validation or correction of street address elements.
- **Category C**—Enables the validation and correction of the country name, and the validation of the format of the postal code.

The following table details confidence algorithm for countries that do not use postal codes.

Table 35: Confidence Algorithm for Countries Without Postal Codes

Field	Weight/Match Score	Factor if Changed[7]	Factor If Filled[8]	Factor if Postal Data Unavailable
Country	13.3333333333333	100%	0%	0%
City	13.3333333333333	50%	75%[9]	0%
State	20	100%	100	80%
StreetName	20	50%	75%	50%
HouseNumber	20	50%	75%	50%
Directionals	0	50%	75%	0%
StreetSuffix	6.66666666666667	50%	75%	50%
ApartmentNumber	6.66666666666667	50%	75%	50%

---

[8] Refers to instances when the input data in this field is not present but is filled in order to achieve a match.

[7] Refers to instances when the input data in this field is changed in order to achieve a match.

[9] If the country is a Category C country, this value is 50%. Countries fall into one of these categories:

- **Category A**—Enables the validation and correction of an address's postal code, city name, state/county name, street address elements, and country name.
- **Category B**—Enables the validation and correction of an address's postal code, city name, state/county name, and country name. It does not support the validation or correction of street address elements.
- **Category C**—Enables the validation and correction of the country name, and the validation of the format of the postal code.

The following table lists countries without postal codes.

Table 36: Countries Without Postal Codes

Afghanistan	Albania	Angola
Anguilla	Bahamas	Barbados
Belize	Benin	Bhutan
Botswana	Burkina Faso	Burundi
Cameroon	Cayman Islands	Central African Rep.
Chad	Cocos Islands	Colombia
Comoros	Congo (Dem. Rep.)	Congo (Rep.)
Cote d'Ivoire	Korea (North)	Djibouti
Dominica	Equatorial Guinea	Eritrea
Fiji	Gabon	Gambia
Ghana	Grenada	Guyana
Ireland	Jamaica	Kiribati
Libya	Malawi	Mali
Mauritania	Namibia	Nauru

Palau	Panama	Peru
Qatar	Rwanda	Saint Lucia
Saint Vincent and the Grenadines	Samoa	Sao Tome and Principe
Seychelles	Sierra Leone	Suriname
Tanzania	Timor	Togo
Tonga	Trinidad & Tobago	Tuvalu
Uganda	United Arab Emirates	Vanuatu
Yemen	Zimbabwe	

B - Match and Location Codes for U.S. Geocoding

In this section

Match Codes

The geocoder returns match codes indicating the address portions that matched or did not match to the database.

If the geocoder cannot make a match, the match code begins with "E" and the remaining digits indicate why the address did not match. For the descriptions of the "E" match codes, see **Match Codes for No Match - Definitions for "Ennn" return codes** on page 112. The digits do not specifically refer to which address elements did not match, but rather why the address did not match.

Match Codes

This section covers:

• **Match Code Definitions** on page 106
• **Definitions for 1st-3rd hex digit match code values** on page 108
• **Definitions for Extended Match Code (3rd hex digit values)** on page 109
• **Definitions for the Reverse PBKey Lookup "Vhhh" return codes** on page 111
• **Match Codes for No Match - Definitions for "Ennn" return codes** on page 112

Match Code Definitions

The table below contains the match code values.

For descriptions of the hex digits for the match codes, see **Definitions for 1st-3rd hex digit match code values** on page 108.

Code	Description
Ahhh	Same as Shhh, but indicates match to an alias name record or an alternate record.
Chh	The street address did not match, but the geocoder located a street segment based on the input ZIP Code or city .
D00	Matched to a small town with P.O. Box or General Delivery only.

Code	Description
Ghhh	Matched to an auxiliary file.
Hhhh	The house number was changed.
Jhhh	Matched to a user-defined dictionary.
Nxx	Matched to the nearest address. Used with reverse geocoding. The following are the only values for N:

NS0	Nearest street center match (nearest street segment interpolated)
NS1	Nearest unranged street segment
NP0	Nearest point address
NX0	Nearest intersection

Code	Description
P	Successful reverse APN lookup.
Qhhh	Matched to USPS range records with unique ZIP Codes. CASS rules prohibit altering an input ZIP if it matches a unique ZIP Code value.
Rhhh	Matched to a ranged address.
Shhh	Matched to USPS data. This is considered the best address match, because it matched directly against the USPS list of addresses. S is returned for a small number of addresses when the matched address has a blank ZIP + 4.
Thhh	Matched to a street segment record.
Uhhh	Matched to USPS data but cannot resolve the ZIP + 4 code without the firm name or other information. CASS mode returns an E023 (multiple match) error code.
Vhhh	Matched to MLD and DVDMLDR using Reverse PBKey Lookup. For match code values, see **Definitions for the Reverse PBKey Lookup "Vhhh" return codes** on page 111.

Code	Description
Xhhh	Matched to an intersection of two streets, for example, "Clay St & Michigan Ave." The first hex digit refers to the last line information, the second hex digit refers to the first street in the intersection, and the third hex digit refers to the second street in the intersection. **Note:** The USPS does not allow intersections as a valid deliverable address.
Yhhh	Same as Xhhh, but an alias name record was used for one or both streets.
Z	No address given, but verified the provided ZIP Code .

Definitions for 1st-3rd hex digit match code values

The table below contains the description of the hex digits for the match code values.

Note: The third hex digit is only populated for intersection matches or as part of the Extended Match Code.

- For intersection matches, use the table below for the 3rd hex digit definitions.
- For Extended Match Code, see **Definitions for Extended Match Code (3rd hex digit values)** on page 109.

Code	In first hex position means:	In second and third hex position means:
0	No change in last line.	No change in address line.
1	ZIP Code changed.	Street type changed.
2	City changed.	Predirectional changed.
3	City and ZIP Code changed.	Street type and predirectional changed.
4	State changed.	Postdirectional changed.

Code	In first hex position means:	In second and third hex position means:
5	State and ZIP Code changed.	Street type and postdirectional changed.
6	State and City changed.	Predirectional and postdirectional changed.
7	State, City, and ZIP Code changed.	Street type, predirectional, and postdirectional changed.
8	ZIP + 4 changed.	Street name changed.
9	ZIP and ZIP + 4 changed.	Street name and street type changed.
A	City and ZIP + 4 changed.	Street name and predirectional changed.
B	City, ZIP, and ZIP + 4 changed.	Street name, street type, and predirectional changed.
C	State and ZIP + 4 changed.	Street name and postdirectional changed.
D	State, ZIP, and ZIP + 4 changed.	Street name, street type, and postdirectional changed.
E	State, City, and ZIP + 4 changed.	Street name, predirectional, and postdirectional changed.
F	State, City, ZIP, and ZIP + 4 changed.	Street name, street type, predirectional, and postdirectional changed.

Definitions for Extended Match Code (3rd hex digit values)

As mentioned in **Extended Match Codes**, when **Return extended match code** is enabled, `ExtendedMatchCode Option.ExtendedMatchCode` is set to "Y", additional information is returned about any changes in the house number, unit number and unit type fields in the matched address, as well as whether there was address information that was ignored. This additional

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information is provided in a 3rd hex digit that is appended to match codes for address-level matches only - A, G, H, J, Q, R, S, T or U (see **Match Code Definitions** on page 106).

"Address information ignored" is specified when any of these conditions apply:

• The output address has content in the `AdditionalInputData` field.
• The output address has a second address line (`AddressLine2`).
• The input address is a dual address (two complete addresses in the input address). For example, "4750 Walnut St. P.O Box 50".
• The input last line has extra information that is not a city, state or ZIP Code, and is ignored. For example, "Boulder, CO 80301 USA", where "USA" is ignored when matching.

The table below provides the descriptions for the Extended Match Code 3rd hex digit return values:

> **Note:** For Auxiliary file matches, the 3rd hex digit is always "0".

Code	In 3rd hex position means:
0	Matched on all address information on line, including Unit Number and Unit Type if included.
1	Matched on Unit Number and Unit Type if included. Extra information on address line ignored. Extra information on address line ignored. Extra information not considered for matching moved to `AddressLine2` or `AdditionalInputData` field.
2	Matched on Unit Number. Unit Type changed.
3	Matched on Unit Number. Unit Type changed. Extra information on address line ignored. Extra information on address line ignored. Extra information not considered for matching moved to `AddressLine2` or `AdditionalInputData` field.
4	Unit Number changed or ignored.
5	Unit Number changed or ignored. Extra information on address line ignored. Extra information on address line ignored. Extra information not considered for matching moved to `AddressLine2` or `AdditionalInputData` field.
6	Unit Number changed or ignored. Unit Type changed or ignored.
7	Unit Number changed or ignored. Unit Type changed or ignored. Extra information on address line ignored. Extra information on address line ignored. Extra information not considered for matching moved to `AddressLine2` or `AdditionalInputData` field.
8	Matched on Unit Number and Unit Type if included. House Number changed or ignored.

Code	In 3rd hex position means:
9	Matched on Unit Number and Unit Type if included. House Number changed or ignored. Extra information on address line ignored. Extra information not considered for matching moved to `AddressLine2` or `AdditionalInputData` field.
A	Matched on Unit Number. Unit Type changed. House Number changed or ignored.
B	Matched on Unit Number. Unit Type changed. House Number changed or ignored. Extra information on address line ignored. Extra information not considered for matching moved to `AddressLine2` or `AdditionalInputData` field.
C	House Number changed or ignored. Unit Number changed or ignored.
D	House Number changed or ignored. Unit Number changed or ignored. Extra information on address line ignored. Extra information on address line ignored. Extra information not considered for matching moved to `AddressLine2` or `AdditionalInputData` field.
E	House Number changed or ignored. Unit Number changed or ignored. Unit Type changed or ignored.
F	House Number changed or ignored. Unit Number changed or ignored. Unit Type changed or ignored. Extra information on address line ignored. Extra information on address line ignored. Extra information not considered for matching moved to `AddressLine2` or `AdditionalInputData` field.

Definitions for the Reverse PBKey Lookup "Vhhh" return codes

The table below lists the "Vhhh" hex digit values returned with Reverse PBKey Lookup. For more information, see **Reverse PBKey Lookup**.

> **Note:** When there are one or more address variations for a Reverse PBKey Lookup, the match code returned is always "`V000`".

Match Code	Definition
V000	Match made using input pbKey. One Standard or Enhanced point address result returned depending on license.
V001	Match made using input pbKey. Multiple Standard and/or Enhanced point address variations results returned depending on license.
V002	Match made using input pbKey. One Standard, some Enhanced point address variations results returned depending on license.

Match Code	Definition
V003	Match made using input pbKey. Multiple Standard, some Enhanced point address variations results depending on license.

Match Codes for No Match - Definitions for "Ennn" return codes

The table below describes the values returned when the application cannot find a match or an error occurs.

Code	"nnn" values	Description
Ennn		Indicates an error, or no match. This can occur when the address entered does not exist in the database, or the address is badly formed and cannot be parsed correctly. The last three digits of an error code indicate which parts of an address the application could not match to the database.
	nnn = 000	No match made.
	nnn = 001	Low level error.
	nnn = 002	Could not find data file.
	nnn = 003	Incorrect GSD file signature or version ID.
	nnn = 004	GSD file out of date. Only occurs in CASS mode.
	nnn = 010	No city and state or ZIP Code found.
	nnn = 011	Input ZIP not in the directory.
	nnn = 012	Input city not in the directory.
	nnn = 013	Input city not unique in the directory.

Code	"nnn" values	Description
	nnn = 014	Out of licensed area. Only occurs if using Group 1 licensing technology.
	nnn = 015	Record count is depleted and license has expired.
	nnn = 020	No matching streets found in directory.
	nnn = 021	No matching cross streets for an intersection match.
	nnn = 022	No matching segments.
	nnn = 023	Unresolved match.
	nnn = 024	No matching segments. (Same as 022.)
	nnn = 025	Too many possible cross streets for intersection matching.
	nnn = 026	No address found when attempting a multiline match.
	nnn = 027	Invalid directional attempted.
	nnn = 028	Record also matched EWS data, therefore the application denied the match.
	nnn = 029	No matching range, single street segment found.
	nnn = 030	No matching range, multiple street segments found.
	nnn = 040	No match found using input PBKey with Reverse PBKey Lookup.

Code	"nnn" values	Description
	nnn = 041	Not licensed to return Enhanced point address(es) found for input PBKey. Additional Reverse PBKey Lookup license option required to return results.

Location Codes

Location codes indicate the locational accuracy of the assigned geocode. Note that an accurately placed candidate is not necessarily an ideal candidate. Examine the match codes and/or result codes in addition to location codes to best evaluate the overall quality of the candidate.

A Location Code of "E" indicates a location code is not available. This usually occurs when you have requested ZIP Code centroids of a high quality, and one is not available for that match. It can occur infrequently when the Enterprise Geocoding Module does not have a 5-digit centroid location. The Enterprise Geocoding Module can also return an "E" location code when it cannot standardize an input address and there is no input ZIP Code. In this case, do not assume the ZIP Code returned with the non-standardized address is the correct ZIP Code because the Enterprise Geocoding Module did not standardize the address; therefore, the Enterprise Geocoding Module does not return geocoding or Census Block information.

Address Location Codes

Location codes that begin with an "A" are address location codes. Address location codes indicate a geocode made directly to a street network segment (or two segments, in the case of an intersection).

An address location code has the following characters.

1st character		Always an "A" indicating an address location.
2nd character		May be one of the following:
	C	Interpolated address point location
	G	Auxiliary file data location

	I	Application infers the correct segment from the candidate records
	P	Point-level data location
	R	Location represents a ranged address
	S	Location on a street range
	X	Location on an intersection of two streets

3rd and 4th character	Digit indicating other qualities about the location.

Table 37: Address Location Codes

Code	Description
AGn	Indicates an Auxiliary file for a geocode match where n is one of the following values:
n = 0	The geocode represents the center of a parcel or building.
n = 1	The geocode is an interpolated address along a segment.
n = 2	The geocode is an interpolated address along a segment, and the side of the street cannot be determined from the data provided in the auxiliary file record.
n = 3	The geocode is the midpoint of the street segment.

Code	Description
APnn	Indicates a point-level geocode match representing the center of a parcel or building, where nn is one of the following values:
nn = 00	User Dictionary centroid. Geocode returned by a User Dictionary.
nn = 02	Parcel centroid Indicates the center of an accessor's parcel (tract or lot) polygon. When the center of an irregularly shaped parcel falls outside of its polygon, the centroid is manually repositioned to fall inside the polygon as closely as possible to the actual center.
nn = 04	Address points Represents field-collected GPS points with field-collected address data.
nn = 05	Structure centroid Indicates the center of a building footprint polygon, where the building receives mail or has telephone service. Usually a residential address consists of a single building. For houses with outbuildings (detached garages, shed, barns, etc.), only the residences have a structure point. Condominiums and duplexes have multiple points for each building. Larger buildings, such as apartment complexes, typically receive mail at one address for each building and therefore individual apartments are not represented as discrete structure points. Shopping malls, industrial complexes, and academic or medical center campuses where one building accepts mail for the entire complex are represented as one point. When addresses are assigned to multiple buildings within one complex, each addressed structure is represented by a point. If the center of a structure falls outside of its polygon, the center is manually repositioned to fall inside the polygon.

Code	Description
`nn = 07`	**Manually placed** Address points are manually placed to coincide with the midpoint of a parcel's street frontage at a distance from the center line.
`nn = 08`	**Front door point** Represents the designated primary entrance to a building. If a building has multiple entrances and there is no designated primary entrance or the primary entrance cannot readily be determined, the primary entrance is chosen based on proximity to the main access street and availability of parking.
`nn = 09`	**Driveway offset point** Represents a point located on the primary access road (most commonly a driveway) at a perpendicular distance of between 33-98 feet (10-30 meters) from the main roadway.
`nn = 10`	**Street access point** Represents the primary point of access from the street network. This address point type is located where the driveway or other access road intersects the main roadway.
`nn = 21`	**Base parcel point** When unable to match to an input unit number, or when the unit number is missing from an address location with multiple units, the "base" parcel information is returned, the address is not standardized to a unit number, and additional information, such as an Assessor's Parcel Number, is not returned.
`nn = 22`	**Backfill address point** The precise parcel centroid is unknown. The address location assigned is based on two known parcel centroids.

Code	Description
nn = 23	**Virtual address point** The precise parcel centroid is unknown. The address location assigned is relative to a known parcel centroid and a street segment end point.
nn = 24	**Interpolated address point** The precise parcel centroid is unknown. The address location assigned is based on street segment end points.
AIn	The correct segment is inferred from the candidate records at match time.
ASn	House range address geocode. This is the most accurate street interpolated geocode available.

AIn, ASn and ACnh share the same values for the 3rd character "n" as follows:

Code	Description
n = 0	Best location.
n = 1	Street side is unknown. The Census FIPS Block ID is assigned from the left side; however, there is no assigned offset and the point is placed directly on the street.
n = 2	Indicates one or both of the following: • The address is interpolated onto a TIGER segment that did not initially contain address ranges. • The original segment name changed to match the USPS spelling. This specifically refers to street type, predirectional, and postdirectional. **Note:** Only the second case is valid for non-TIGER data because segment range interpolation is only completed for TIGER data.

Code	Description
`n = 3`	Both 1 and 2.
`n = 7`	Placeholder. Used when starting and ending points of segments contain the same value and shape data is not available.
ACnh	Indicates a point-level geocode that is interpolated between 2 parcel centroids (points), a parcel centroid and a street segment endpoint, or 2 street segment endpoints.
	The ACnh 4th character "h" values are as follows:
`h = 0`	Represents the interpolation between two points, both coming from User Dictionaries.
`h = 1`	Represents the interpolation between two points. The low boundary came from a User Dictionary and the high boundary, from a non-User Dictionary.
`h = 2`	Represents the interpolation between one point and one street segment end point, both coming from User Dictionaries.
`h = 3`	Represents the interpolation between one point (low boundary) and one street segment end point (high boundary). The low boundary came from a User Dictionary and the high boundary from a non-User Dictionary.
`h = 4`	Represents the interpolation between two points. The low boundary came from a non-User Dictionary and the high boundary from a User Dictionary.
`h = 5`	Represents the interpolation between two points, both coming from non-User Dictionaries.

Code	Description
h = 6	Represents the interpolation between one point (low boundary) and one street segment end point (high boundary). The low boundary came from a non-User Dictionary and the high boundary from a User Dictionary.
h = 7	Represents the interpolation between one point and one street segment end point and both came from non-User Dictionaries.
h = 8	Represents the interpolation between one street segment end point andone point, both coming from User Dictionaries.
h = 9	Represents the interpolation between one street segment end point (low boundary) andone point (high boundary). The low boundary came from a User Dictionary and the high boundary from a non-User Dictionary.
h = A	Represents the interpolation between two street segment end points, both coming from User Dictionaries.
h = B	Represents the interpolation between two street segment end points. The low boundary came from a User Dictionary and the high boundary from a non-User Dictionary.
h = C	Represents the interpolation between one street segment end point (low boundary) and one point (high boundary). The low boundary came from a non-User Dictionary and the high boundary from a User Dictionary.
h = D	Represents the interpolation between one street segment end point and one point, both coming from non-User Dictionary.

Code	Description
h = E	Represents the interpolation between two street segment end points. The low boundary came from a non-User Dictionary and the high boundary from a User Dictionary.
h = F	Represents the interpolation between two street segment end points, both coming from non-User Dictionaries.
ARn	Ranged address geocode, where "n" is one of the following:
n = 1	The geocode is placed along a single street segment, midway between the interpolated location of the first and second input house numbers in the range.
n = 2	The geocode is placed along a single street segment, midway between the interpolated location of the first and second input house numbers in the range, and the side of the street is unknown. The Census FIPS Block ID is assigned from the left side; however, there is no assigned offset and the point is placed directly on the street.
n = 4	The input range spans multiple USPS segments. The geocode is placed on the endpoint of the segment which corresponds to the first input house number, closest to the end nearest the second input house number.
n = 7	Placeholder. Used when the starting and ending points of the matched segment contain the same value and shape data is not available.
AXn	Intersection geocode, where n is one of the following:
n = 3	Standard single-point intersection computed from the center lines of street segments.

Code	Description
n = 8	Interpolated (divided-road) intersection geocode. Attempts to return a centroid for the intersection.

Street Centroid Location Codes

Location codes that begin with "C" are street centroid location codes. Street centroid location codes indicate the Census ID accuracy and the position of the geocode on the returned street segment. Street centroids may be returned if the street centroid fallback option is enabled and an address-level geocode could not be determined.

A street centroid location code has the following characters.

1st character	Always "C" indicating a location derived from a street segment.
2nd character	Census ID accuracy based on the search area used to obtain matching Street Segment.
3rd character	Location of geocode on the returned street segment.

The table below contains the values and descriptions for the location codes.

Character position	Code	Description
2nd Character		
	B	Block Group accuracy (most accurate). Based on input ZIP Code.
	T	Census Tract accuracy. Based on input ZIP Code.

Character position	Code	Description
	C	Unclassified Census accuracy. Normally accurate to at least the County level. Based on input ZIP Code.
	F	Unknown Census accuracy. Based on Finance area.
	P	Unknown Census accuracy. Based on input City.
3rd Character		
	C	Segment Centroid.
	L	Segment low-range end point.
	H	Segment high-range end point.

ZIP + 4 Centroid Location Codes

Location codes that begin with a "Z" are ZIP + 4 centroid location codes. ZIP + 4 centroids indicate a geocode could not be determined for the address, so the location of the center of the address's ZIP + 4 was returned instead. ZIP + 4 centroid location codes indicate the quality of two location attributes: Census ID accuracy and positional accuracy.

A ZIP + 4 centroid location code has the following characters.

1st character	Always "Z" indicating a location derived from a ZIP centroid.
2nd character	Census ID accuracy.

3rd character	Location type.
4th character	How the location and Census ID was defined. Provided for completeness, but may not be useful for most applications.

Table 38: ZIP + 4 Centroid Location Codes

Character Position	Code	Description
2nd Character		
	B	Block Group accuracy (most accurate).
	T	Census Tract accuracy.
	C	Unclassified Census accuracy. Normally accurate to at least the County level.
3rd Character		
	5	Location of the Post Office that delivers mail to the address, a 5-digit ZIP Code centroid, or a location based upon locale (city). See the 4th character for a precise indication of locational accuracy.
	7	Location based upon a ZIP + 2 centroid. These locations can represent a multiple block area in urban locations, or a slightly larger area in rural settings.

Character Position	Code	Description
	9	Location based upon a ZIP + 4 centroid. These are the most accurate centroids and normally place the location on the correct block face. For a small number of records, the location may be the middle of the entire street on which the ZIP + 4 falls. See the 4th character for a precise indication of locational accuracy.
4th Character		
	A	Address matched to a single segment. Location assigned in the middle of the matched street segment, offset to the proper side of the street.
	a	Address matched to a single segment, but the correct side of the street is unknown. Location assigned in the middle of the matched street segment, offset to the left side of the street, as address ranges increase.
	B	Address matched to multiple segments, all segments have the same Block Group. Location assigned to the middle of the matched street segment with the most house number ranges within this ZIP + 4. Location offset to the proper side of the street.
	b	Same as methodology B except the correct side of the street is unknown. Location assigned in the middle of the matched street segment, offset to the left side of the street, as address ranges increase.

Character Position	Code	Description
	C	Address matched to multiple segments, with all segments having the same Census Tract. Returns the Block Group representing the most households in this ZIP + 4. Location assigned to t he middle of the matched street segment with the most house number ranges within this ZIP + 4. Location offset to the proper side of the street.
	c	Same as methodology C except the correct side of the street is unknown. Location assigned in the middle of the matched street segment, offset to the left side of the street, as address ranges increase.
	D	Address matched to multiple segments, with all segments having the same County. Returns the Block Group representing the most households in this ZIP + 4. Location assigned to the middle of the matched street segment with the most house number ranges within this ZIP + 4. Location offset to the proper side of the street.
	d	Same as methodology D except the correct side of the street is unknown. Location assigned in the middle of the matched street segment, offset to the left side of the street, as address ranges increase.
	E	Street name matched; no house ranges available. All matched segments have the same Block Group. Location placed on the segment closest to the center of the matched segments. In most cases, this is on the mid-point of the entire street.

Character Position	Code	Description
	F	Street name matched; no house ranges available. All matched segments have the same Census Tract. Location placed on the segment closest to the center of the matched segments. In most cases, this is on the mid-point of the entire street.
	G	Street name matched (no house ranges available). All matched segments have the same County. Location placed on the segment closest to the center of the matched segments. In most cases, this is on the mid-point of the entire street.
	H	Same as methodology G, but some segments are not in the same County. Used for less than .05% of the centroids.
	I	Created ZIP + 2 cluster centroid as defined by methodologies A, a, B, and b. All centroids in this ZIP + 2 cluster have the same Block Group. Location assigned to the ZIP + 2 centroid.
	J	Created ZIP + 2 cluster centroid as defined by methodologies A, a, B, b, C, and c. All centroids in this ZIP + 2 cluster have the same Census Tract. Location assigned to the ZIP + 2 centroid.
	K	Created ZIP + 2 cluster centroid as defined by methodologies A, a, B, b, C, c, D, and d. Location assigned to the ZIP + 2 centroid.

Character Position	Code	Description
	L	Created ZIP + 2 cluster centroid as defined by methodology E. All centroids in this ZIP + 2 cluster have the same Block Group. Location assigned to the ZIP + 2 centroid.
	M	Created ZIP+2 cluster centroid as defined by methodology E and F. All centroids in this ZIP + 2 cluster have the same Census Tract. Location assigned to the ZIP + 2 centroid.
	N	Created ZIP + 2 cluster centroid as defined by methodology E, F, G, and H. Location assigned to the ZIP + 2 centroid.
	O	ZIP Code is obsolete and not currently used by the USPS. Historic location assigned.
	V	Over 95% of addresses in this ZIP Code are in a single Census Tract. Location assigned to the ZIP Code centroid.
	W	Over 80% of addresses in this ZIP Code are in a single Census Tract. Reasonable Census Tract accuracy. Location assigned to the ZIP Code centroid.
	X	Less than 80% of addresses in this ZIP Code are in a single Census Tract. Census ID is uncertain. Location assigned to the ZIP Code centroid.
	Y	Rural or sparsely populated area. Census code is uncertain. Location based upon the USGS places file.

Character Position	Code	Description
	Z	P.O. Box or General Delivery addresses. Census code is uncertain. Location based upon the Post Office location that delivers the mail to that address.

Geographic Centroid Location Codes

Location codes that begin with "G" are geographic centroid location codes. Geographic centroids may be returned if the street centroid fallback option is enabled and an address-level geocode could not be determined. Geographic centroid location codes indicate the quality of a city, county, or state centroid.

A geographic centroid location code has the following characters.

1st character	Always "G" indicating a location derived from a geographic centroid.

2nd character	Geographic area type. One of the following:
	M Municipality (for example, a city)
	C County
	S State

C - Encountering False Positives

In this section

What is a False-Positive?

To prevent the generation of address lists, the DPV and LACS^{Link} databases include false-positive records. False-positive records are artificially manufactured addresses that reside in a false-positive table. For each negative response that occurs in a DPV or LACS^{Link} query, a query is made to the false-positive table. A match to this table (called a false-positive match) disables your DPV or LACS^{Link} key. In batch processing the job that contains the violation will complete successfully but you will not be able to run any subsequent jobs that use DPV or LACS^{Link} until you report the violation and obtain a key to reactivate DPV or LACS^{Link}.

> **Note:** The term "seed record violation" is also used to refer to encountering false positive records. The two terms mean the same thing.

Reporting DPV False-Positive Violations

Spectrum™ Technology Platform indicates a false-positive match via messages in the server log.

During batch processing, if you encounter a false positive record the job will continue. After the job completes you will not be able to run any other jobs using DPV because your DPV key is disabled. When a DPV false positive record violation occurs, the following text is displayed in the Execution History:

```
DPV Seed Record Violation. Seed Code S<ZIP, ZIP+4, Address, Unit>
```

You can report the violation and obtain a restart key by following these steps.

1. In your browser, go to http://<yourserver>:<port>/<product code>/dpv.jsp. For example, http://localhost:8080/unc/dpv.jsp for the Universal Addressing Module and http://localhost:8080/geostan/dpv.jsp for the Enterprise Geocoding Module.
2. Enter the mailer's information into each field. The number in parentheses after each field name indicates the maximum length of the field.
3. Click **Submit** when you're done. A **File Download** dialog will appear.
4. Click **Save** to save the file to your computer. A **Save As** dialog will appear.
5. Specify a file name and location on your local hard drive (for example `c:\DPVSeedFile.txt`) and click **Save**.
6. Go to **www.g1.com/support** and log in.
7. Click **DPV & LACS^{Link} False Positive**.
8. Follow the on-screen instructions to attach your seed file and obtain a restart key.

DPV False Positive Header File Layout

The USPS® has determined the required layout of the DPV false-positive header file, which is currently defined as a fixed-length file containing two or more 180-byte records. The first record must always be the header record, whose layout is shown below.

Table 39: DPV False-Positive Header Record Layout

Position	Length	Description	Format
1-40	40	Mailer's company name	Alphanumeric
41-98	58	Mailer's address line	Alphanumeric
99-126	28	Mailer's city name	Alphanumeric
127-128	2	Mailer's state abbreviation	Alphabetic
129-137	9	Mailer's 9-digit ZIP Code	Numeric
138-146	9	Total Records Processed	Numeric
147-155	9	Total Records DPV Matched	Numeric
156-164	9	Percent Match Rate to DSF	Numeric
165-173	9	Percent Match Rate to ZIP + 4®	Numeric
174-178	5	Number of ZIP Codes on file	Numeric
179-180	2	Number of False-Positives	Numeric

The trailer record contains information regarding the DPV false-positive match. There must be one trailer record added to the false-positive file for every DPV false-positive match. The layout is shown below.

Table 40: DPV False-Positive Trailer Record Layout

Position	Length	Description	Format
1-2	2	Street predirectional	Alphanumeric
3-30	28	Street name	Alphanumeric
31-34	4	Street suffix abbreviation	Alphanumeric
35-36	2	Street postdirectional	Alphanumeric
37-46	10	Address primary number	Alphanumeric
47-50	4	Address secondary abbreviation	Alphanumeric
51-58	8	Address secondary number	Numeric
59-63	5	Matched ZIP Code	Numeric
64-67	4	Matched ZIP + 4®	Numeric
68-180	113	Filler	Spaces

Reporting LACS/Link False-Positive Violations

Spectrum™ Technology Platform indicates a false-positive match via messages in the server log. Batch jobs will fail if a false-positive match occurs and client/server calls will throw an exception.

> **Note:** The term "seed record violation" is also used to refer to encountering false positive records. The two terms mean the same thing.

When a false positive record is encountered, the server log will say:

```
2005-05-19 09:40:10,758 WARN [com.g1.dcg.component.Log] Seed record
violation for RR 1            R74039  2924
2005-05-19 09:40:10,774 ERROR [com.g1.dcg.component.Log] Feature
Disabled: LLB: LACS Seed Record Violation. Seed Code: R74039  2924
2005-05-19 09:40:10,867 ERROR
[com.g1.dcg.job.server.stages.JobRunnerStages] Error executing job
com.g1.dcg.stage.StageException: com.g1.dcg.component.ComponentException:
 Feature Disabled: LLB
```

1. In your browser, go to http://<ServerName>:<port>/<product code>/lacslink.jsp. For example, http://localhost:8080/unc/lacslink.jsp for the Universal Addressing Module and http://localhost:8080/geostan/lacslink.jsp for the Enterprise Geocoding Module.

2. Enter the mailer's information into each field. The number in parentheses after the field name indicates the maximum length of the field. Click **Submit** when you're done. A **File Download** dialog will appear.

3. Click **Save** to save the file to your computer. A **Save As** dialog will appear.

4. Specify a file name and location on your local hard drive (for example `c:\lacslink.txt`) and click **Save**.

5. Go to **www.g1.com/support** and log in.

6. Click **DPV & LACS**^Link **False Positive**.

7. Follow the on-screen instructions to attach your seed file and obtain a restart key.

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