



Siebel Consumer Goods Handheld Guide

Version 8.0, Rev. A
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1

What's New in This Release

What's New in Siebel Consumer Goods Handheld, Version 8.0, Rev. A

Table 1 lists the changes made to this version of the documentation to support Release 8.0 of the software.

Table 1. What's New in Siebel Consumer Goods Handheld Application, Version 8.0, Rev. A

Topic	Description
"Guidelines for Improving Siebel Handheld Application Performance" on page 176	Added additional topics containing guidelines on reducing the Repository Meta Language (RML) file size, database file size, and synchronization time.
Appendix C, "Business Components and Classes"	This appendix lists the supported business components, business component classes, and applet classes for Oracle's Siebel Handheld applications.
Appendix D, "User Properties"	Added descriptions of user properties and methods.
"COM Extensibility" on page 289	Updated features introduced in version 8.0, adding Component Object Model (COM) support for Siebel Handheld applications.

Additional Changes

The following is a list of documentation improvements:

- Included two diagrams to [Chapter 2, "Overview of Siebel Consumer Goods Handheld"](#) to illustrate the Siebel Handheld synchronization infrastructure and the Siebel Handheld client application architecture.
- Reorganized installation, uninstallation, and upgrade procedures in [Chapter 8, "Installing the Siebel Handheld Application"](#).

What's New in Siebel Consumer Goods Handheld, Version 8.0

Table 2 lists the changes made to this version of the documentation to support Release 8.0 of the software.

Table 2. What's New in Siebel Consumer Goods Handheld Application, Version 8.0

Topic	Description
"Configuring Tabbed Applets for the Siebel Handheld Client" on page 33	Tabbed applets in Siebel Handheld applications can support multiple applets for each view, up to a maximum of six in portrait mode and eight in landscape mode.
"Working With Different Handheld Device Specifications" on page 35	New topic. Device awareness feature introduced in Siebel 8.0.
"Configuring Alpha Tabs in List Applets for the Siebel Handheld Client" on page 37	It is now possible to configure alpha tabs in the list applet for Siebel Handheld applications. Alpha tabs appear as a row of tabs at the top of the applet.
"Radio Buttons" on page 39	Radio buttons can now be configured in form applets for any static or dynamic picklist control.
"Configuring Form UI Applets for the Siebel Handheld Client" on page 39	New topic. This is a new type of applet that is larger than normal form applets.
"Configuring Tree Applets for the Siebel Handheld Client" on page 41	Tree applets with automatic drilldown behavior can now be configured for Siebel Handheld applications.
"Configuring Calendar Settings" on page 46	Added a new topic about how to configure calendar settings.
"Configuring a Printer Settings Dialog Box for the Siebel Handheld Application" on page 58	Added a new topic describing how to configure a printer settings dialog box.
"Configuring Multiple Form and Multiple Quantity Printing for the Siebel Handheld Application" on page 59	Added a new topic describing how to configure multi-form multi-quantity printing for Siebel Handheld applications.
"Configuring Siebel Handheld Applications to Open Other Applications" on page 60	Added a new topic describing how to invoke a third-party program on Siebel Handheld applications.
"Developing Tasks for Task UI in Siebel Handheld Applications" on page 49	New topic. This is a new feature in Siebel 8.0 that enables you to create an interactive tool that can help users to perform tasks.
"Enhancing the Behavior of the Barcode Scan" on page 88	Added a new topic describing how to focus the behavior of a barcode scan.
"About BatchSync for Siebel Handheld Applications" on page 94	Added a new topic about administering batch synchronization for Siebel Handheld applications.

Table 2. What's New in Siebel Consumer Goods Handheld Application, Version 8.0

Topic	Description
"Enabling Encryption for Siebel Handheld Applications" on page 101	Added a new topic about enabling encryption for Siebel Handheld applications.
"Storing Asynchronous Data" on page 103	Added a new topic about storing asynchronous data as part of the enhancements for nomadic users.
"Receiving Incoming Messages from the Server" on page 104	Added a new topic about receiving incoming messages from the Siebel Server.
"Organization Enabled LOV Support" on page 108	Added a new topic on enabling an organization's list of values (LOV) support for Siebel Handheld applications.
"Deploying Attachments to Handheld Applications with Direct Server Synchronization" on page 150	Added a new topic about deploying attachments to Siebel Handheld applications.
"About Synchronization Options" on page 175	Added a new section to explain the Options menu items from the Siebel Handheld Synchronization dialog.
"Print Tagging Language" on page 241	Print tags have been enhanced (Applet, Cell) and added (Absolute, Relative, Set and Get tags, Frame, Portrait, Landscape, EndOfPage, DrawRect, LineTo, Background, Margin, List).
"PrinterUserSelect" on page 287	A new print configuration setting has been added to enable users to select printer settings when they print.
"COM Extensibility" on page 289	New feature introduced in version 8.0, adding Component Object Model (COM) support for Siebel Handheld applications.

2

Overview of Siebel Consumer Goods Handheld

The chapter introduces Siebel Consumer Goods Handheld. The following topics are covered in this chapter:

- [“Siebel Mobile Products” on page 17](#)
- [“About Siebel Handheld Applications” on page 19](#)
- [“Overview of Siebel Handheld Application Synchronization” on page 20](#)
- [“Synchronization Methods and Architecture for Siebel Handheld Applications” on page 21](#)
- [“Overview of Siebel Handheld Client Configuration” on page 23](#)

Siebel Mobile Products

Several mobile applications are included in the Siebel product line. Each serves a different purpose and runs on different devices. Often, these applications complement each other. The mobile applications are as follows:

Siebel Mobile Web Client and Siebel Remote. A disconnected client and supporting server-side software, respectively. These applications provide intelligent transaction routing, data synchronization, and Store-and-Forward Messaging (SFM) capabilities.

Siebel Handheld Application. A disconnected client with data filtering, data synchronization, and Store-and-Forward Messaging capabilities.

Siebel Wireless. Siebel applications delivered to client browsers that connect to a Siebel Server through a wireless network.

[Figure 1](#) illustrates the hardware platforms on which these products run.

NOTE: In [Figure 1](#), *form factors* refers to the general capabilities, screen shapes, and sizes of the various devices shown in the illustration.

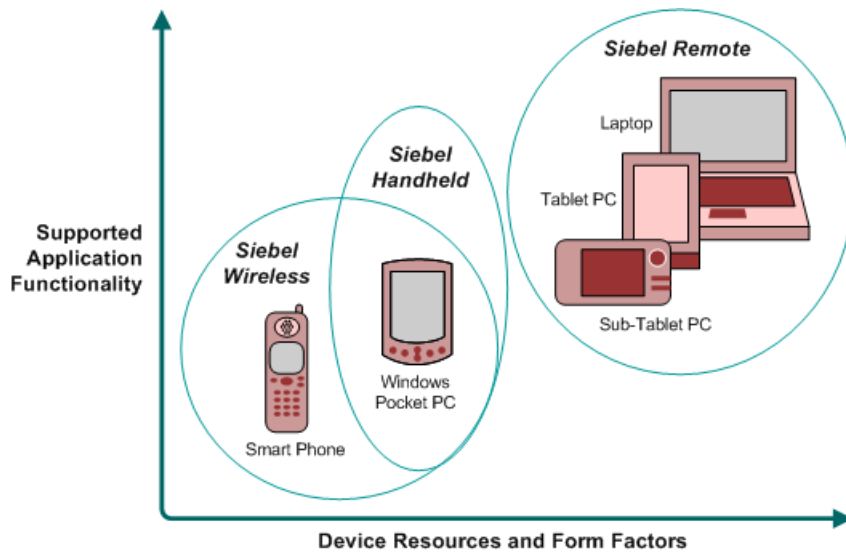


Figure 1. Siebel Mobile Product Platforms

Table 3 describes the Siebel mobile products' software components and supported hardware devices.

Table 3. Siebel Mobile Product Software Components and Supported Devices

Product Group	Server Components	Client Component	Supported Client Devices
Siebel Remote	Siebel Remote Store-and-Forward Messaging	Siebel Mobile Web Client	Desktop PCs Laptop PCs Tablet PCs
Siebel Handheld Applications	Handheld Application Synchronization Object Manager Store-and-forward Messaging	Siebel Handheld Client	Windows-based mobile devices
Siebel Wireless	Wireless Object Manager	Client Browser	Any mobile device running a supported client browser, including wireless devices and handheld devices

Table 4 describes the Siebel mobile products' supported Siebel applications and documentation on the Siebel Bookshelf for information about these products.

Table 4. Siebel Mobile Product Supported Applications and Related Documentation

Product Group	Supported Applications	Related Documentation
Siebel Remote	Almost all Siebel Business Applications and Siebel Industry Applications (Provides the same look and feel as those applications.)	<i>Siebel Remote and Replication Manager Administration Guide</i> <i>Siebel Store-and-Forward Messaging Guide for Mobile Web Client</i>
Siebel Handheld applications	Siebel Sales Siebel Field Service Siebel Consumer Goods Siebel Medical Siebel Pharma	<i>Siebel Sales Handheld Guide</i> <i>Siebel Service Handheld Guide</i> <i>Siebel Consumer Goods Handheld Guide</i> <i>Siebel Medical Handheld Guide</i> <i>Siebel Pharma Handheld Guide</i> <i>Siebel Store-and-Forward Messaging Guide for Handheld</i>
Siebel Wireless	Siebel Sales Siebel Field Service Siebel Partner Relationship Management Siebel Self-Service Applications	<i>Siebel Wireless Administration Guide</i>

About Siebel Handheld Applications

Siebel Handheld applications provide a focused subset of functionality in comparison to the Siebel Web Client. The Siebel Handheld Application Client differs from the Siebel Web Client and the Siebel Mobile Web Client in that it uses a selected subset of views, accommodates smaller screen sizes, and has a reduced memory capacity. For a list of functional differences, see [Chapter 3, "Developing Siebel Handheld Applications."](#)

Some features that are available on the Siebel Mobile Web Client are not available on the Siebel Handheld application. Scripting and Siebel engines (for example, Pricing and Reporting) are not supported on Siebel Handheld applications. For a list of features that are not supported, see ["Unsupported Features for Siebel Handheld Client" on page 26.](#)

Some supported features of the Siebel Handheld Client are as follows:

- **Application Development with Siebel Tools.** Siebel Handheld applications can be configured in Siebel Tools using the Web Applet Designer. You can take your existing Siebel application and use this as the basis for the Siebel Handheld application, or you can create a new application by using the Siebel Tools application shipped on the Siebel Handheld application DVD. For more information about application development with Siebel Tools, see [Chapter 3, “Developing Siebel Handheld Applications.”](#)
 - **Data filtering.** Filtering allows you to specify a subset of data to be used on the handheld device. Filtering is an important feature of a Siebel Handheld application deployment because of the relatively large size of the average enterprise database in comparison to the relatively limited memory capabilities of handheld devices. It is important that you allocate sufficient time in the project plan to create and test the handheld filters. For more information about data filtering, see [“Developing Siebel Handheld Applications” on page 25.](#)
 - **Installation options.** The Siebel Handheld application can be installed on Windows-powered devices in one of two ways. The first is to create a partnership between a desktop or laptop PC and the handheld device using Microsoft ActiveSync. The second is to install the Siebel Handheld application from external media, for example, a Cabinet (CAB) file. Handheld application patches can be remotely deployed using PatchAgent. For more information about installation options, see [Chapter 8, “Installing the Siebel Handheld Application.”](#)
 - **Patch updates.** Siebel Handheld applications automatically apply the latest software patches to the handheld device when needed.

PatchAgent automates the deployment of patches to handheld devices as part of the synchronization process. For more information about PatchAgent, see [“Installing the Siebel Handheld Application from External Media” on page 148.](#)
- NOTE:** Siebel Consumer Goods Handheld does not support Companion Synchronization.
- **Backing up and restoring data.** The Siebel Handheld application provides database backup functionality. A database restore utility is also included with the application. For more information about database backup and restoration, see [“Enabling Back Up of Siebel Handheld Application Database” on page 145.](#)

Overview of Siebel Handheld Application Synchronization

The Siebel Handheld Application Synchronization (Sync) Client synchronizes data between the Siebel Handheld application database and the Mobile Web Client database or Siebel Server database.

[Figure 2](#) illustrates the Siebel Handheld synchronization infrastructure.

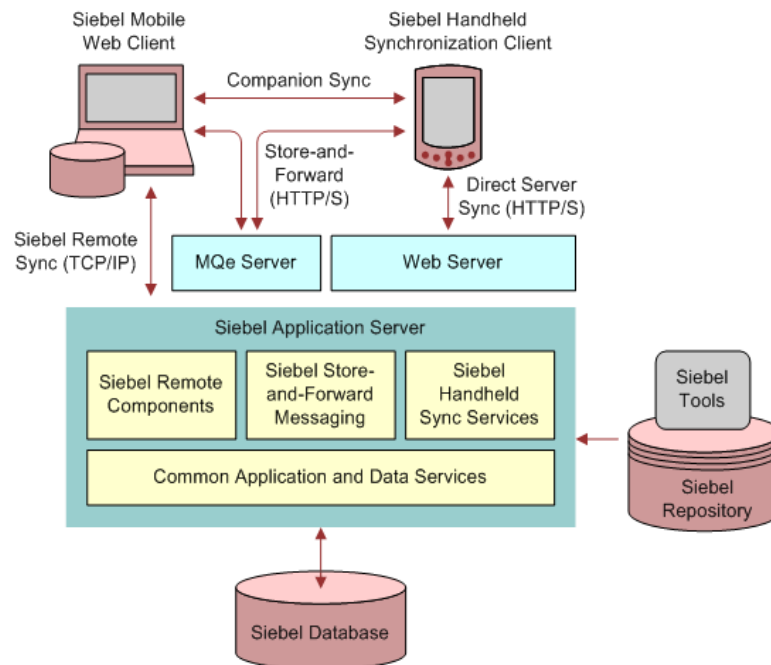


Figure 2. Siebel Handheld Synchronization Infrastructure

The synchronization process does the following:

- Updates the Siebel Server database with changes made to the Siebel Handheld application database
- Updates the database on the handheld device with changes made to the Siebel Server database
- Downloads metadata changes, such as object definitions for new or modified screens or views
- Allows users to select filters to limit the amount of data that is downloaded
- Automatically applies the latest software patches to the handheld device when needed

Synchronization Methods and Architecture for Siebel Handheld Applications

The following methods can be used to synchronize data on the handheld device with data in the Siebel Server database: Direct Server Synchronization (DSS) and Direct Server Synchronization via Proxy (DSSvP). The architecture of these methods is discussed in the following sections.

Handheld Application Synchronization

A Handheld Application Synchronization Server component that is running on the Siebel application server can accept concurrent synchronization requests from multiple synchronization clients. When connecting directly to a server, the Siebel Handheld Application Synchronization Client synchronizes its data directly to a server database.

In Direct Server Synchronization mode, the Siebel Handheld Application Synchronization Client uses the HTTP (or HTTPS) protocol over a network connection to communicate with the Siebel Handheld Application Synchronization Server. Users must configure their handheld devices for communication over the desired network.

Direct Server Synchronization

Direct Server Synchronization allows users to synchronize their Siebel Handheld application and database directly with the Siebel Server. The user connects the handheld device to the Siebel application server through a network connection that uses the HTTP protocol. The connection runs through a IIS Web Server to the application server, where the synchronization server components are installed and running.

Direct Server Synchronization via Proxy

Direct Server Synchronization via Proxy (DSSvP) allows users to synchronize their Siebel Handheld application and database directly with the Siebel Server. The user connects the handheld device to the Siebel application server through ActiveSync and the network connection established by the companion PC. The connection runs through a IIS Web Server to the application server, where the synchronization server components are installed.

Overview of Siebel Handheld Client Configuration

Figure 3 illustrates the Siebel Handheld client application architecture.

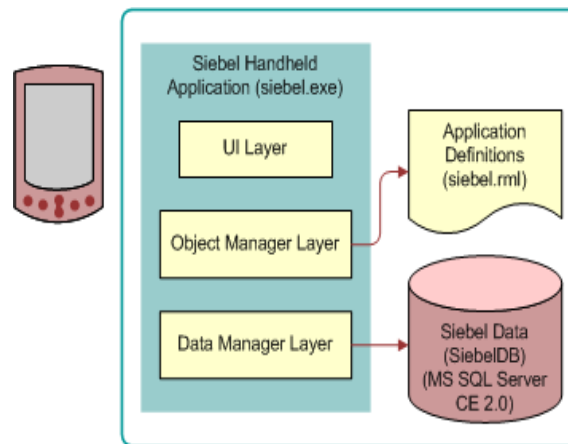


Figure 3. Siebel Handheld Client Application Architecture

The Siebel Handheld executable, siebel.exe, runs on the handheld client in a disconnected state, and includes the user interface, object manager, and data manager.

The siebel.exe accesses the siebel.rml file that contains the application definitions.

The siebel.rml file is the Siebel Handheld equivalent of the repository file used in desktop applications, because it provides the definitions of the Siebel Handheld screens, views, and applets.

The final component of the Siebel Handheld Client architecture is the Siebel Handheld application database. The Siebel Handheld application includes a relational database management system designed to run on the Microsoft Windows-powered platform.

Complete the following steps to configure your Siebel Handheld Client.

To configure the Siebel Handheld Client

1 Define the user functionality.

Determine which user interface elements (such as screens, views, toolbars, applets, find, and help) will be necessary for your Siebel Handheld Client users. For more information about defining user functionality, see [“About Defining User Functionality in the Siebel Handheld Client” on page 28](#).

2 Configure the Siebel Handheld Client application user interface.

The process for configuring user interface elements in the Siebel Handheld Client is the same as that for other Siebel clients. For more information about configuring user interfaces for Siebel Handheld applications, see [“Configuring User Interface Elements in the Siebel Handheld Client” on page 36](#) and *Configuring Siebel Business Applications*.

3 Identify all eScript or VB script.

Siebel Handheld applications do not currently support scripting, including eScript or VB script. Scripting used in your Siebel application can conflict with your Siebel Handheld application configuration.

4 Compile the new configuration.

For more information about compiling the configuration, see [“Compiling the Siebel Handheld Application” on page 53](#).

5 Test the new configuration.

Test the configuration, repeating the previous steps, to address any configuration errors.

After completing the configuration for the Siebel Handheld Client, you are ready to install it on the handheld devices. To install the Siebel Handheld application configuration on a handheld device, see the instructions in [“Installing the Siebel Handheld Application” on page 162](#).

3

Developing Siebel Handheld Applications

This chapter describes how to set up and configure Siebel Handheld applications. The following topics are covered in this chapter:

- [“Overview of Siebel Handheld Application Architecture” on page 26](#)
- [“Unsupported Features for Siebel Handheld Client” on page 26](#)
- [“About Defining User Functionality in the Siebel Handheld Client” on page 28](#)
- [“Configuration Guidelines for the Siebel Handheld Client” on page 28](#)
- [“About Creating Siebel Handheld Application Projects” on page 30](#)
- [“Designing Screens and Views for Siebel Handheld Applications” on page 32](#)
- [“Working With Different Handheld Device Specifications” on page 35](#)
- [“Configuring User Interface Elements in the Siebel Handheld Client” on page 36](#)
- [“Using the COM Interface with Siebel Handheld Applications” on page 45](#)
- [“Configuring Calendar Settings” on page 46](#)
- [“Developing Tasks for Task UI in Siebel Handheld Applications” on page 49](#)
- [“Scripting in the Siebel Handheld Application” on page 52](#)
- [“Compiling the Siebel Handheld Application” on page 53](#)
- [“Installing and Setting Up End User Translation Functionality” on page 53](#)
- [“Configuring Printing from the Siebel Handheld Application” on page 55](#)
- [“Configuring Siebel Handheld Applications to Open Other Applications” on page 60](#)
- [“Configuring Signature Capture Capabilities in Siebel Handheld Applications” on page 61](#)
- [“Testing the Siebel Handheld Application” on page 66](#)

Overview of Siebel Handheld Application Architecture

The process for configuring a Siebel Handheld application has a few differences, described in this chapter, from the process for configuring other types of Siebel applications.

NOTE: Familiarize yourself with the Siebel application configuration process described in *Configuring Siebel Business Applications* before you attempt to configure the Siebel Handheld application.

The five layers in the Siebel Handheld application architecture are comparable to those used on the Siebel Web Client:

- **Application layer.** The application layer starts and closes the application.
- **User Interface layer.** The user interface layer renders the display and interacts with actions of the user.
- **Object Manager layer.** The object manager layer provides a consistent object behavior and interaction between all business objects within the application.
- **Data Manager layer.** The data manager layer maintains an object-oriented abstraction of the native data stored in the data repositories for the benefit of the object manager.
- **Database layer.** The database layer includes the data that Siebel Handheld application users access.

Your Administrator configures an application on the Siebel client using Siebel Tools and compiles the Siebel repository (.srf) file. During the synchronization process, information specific to the Siebel Handheld application is extracted from the Siebel repository file. This information is used to create a repository metalanguage (.rml) file, which is downloaded to the handheld device.

The repository metalanguage file contains the layout information for the handheld device but not the database layer. The database layer is generated in the transport file called dbfile.txt, which is downloaded and imported to the Siebel Handheld application database (siebelDB.sdf). For more information about Siebel Tools, see *Using Siebel Tools*.

Unsupported Features for Siebel Handheld Client

The differences between configuring user interface elements for the Siebel Web Client and the Siebel Handheld Client are shown in [Table 5](#).

Table 5. Configuring Siebel Client User Interface Elements

Client	Siebel Tools	SWT Template Files	Specialized Algorithms
Siebel Web Client	Yes	Yes	No
Siebel Handheld Client	Yes	No	Yes

The following are not supported in Siebel Handheld applications:

- Chart and explorer applet types are not supported.
- Group boxes are not supported. For more information about group boxes, see [“Group Boxes” on page 39](#).
- Alarm Manager is not supported. Therefore, if an alarm check box is added to an applet and the check box is selected, no alarm sounds.
- The base time zone is determined by the system settings on the Siebel Server and cannot be changed on the handheld device.
- Siebel Browser and Siebel Server side scripting are not supported.
- Siebel Workflow is not supported.
- Siebel Personalization.

See the following topics, which outline, more specifically, other unsupported features.

Functions

Siebel Handheld applications support most of the calculated fields and operations used in the Siebel Web applications with a few exceptions. See the following list of unsupported functions.

- AccountId
- BCHasRows
- DockingNodeId
- DockingNodeName
- DockingNodeRouteId
- EAILookupExternal
- EAILookupSiebel
- EXISTS
- GetHQInstanceId
- GetHQInstanceName
- GetNumBCRows
- GetProfileAttr
- GetXAval
- IsDocked
- LanguageName
- LocaleName
- LookupMessage
- LookupTranslation

- NOT
- ParentFieldValue. This function works as a calculated field but not in, or with, a search specification.
- RepositoryId
- RepositoryName
- RowIdToRowNum
- ToolsLanguage

The NOT key word is not supported on Booleans. Use the != operator instead. For example, "Active" != "Y".

The RowIdToRowNum function is supported differently in Siebel Handheld applications than in the Web applications. In Web applications, RowIdToRowNum converts a row Id to a numeric value. In Siebel Handheld applications, the row ID itself is returned.

About Defining User Functionality in the Siebel Handheld Client

The first step in configuring a Siebel Handheld Client is to determine which user interface elements are necessary. Siebel Handheld Client users have different requirements from Siebel Web Client users. Keep in mind the differences in display size, memory capacity, and input methods between handheld devices and larger computers, such as desktop computers.

The goal is to create applications that are easy for your users to use and which take advantage of the strengths of the handheld device platform. Because of the processing speed, memory limitations, and form factor differences, include only those user interface elements that are necessary for users to complete their job responsibilities.

Configuration Guidelines for the Siebel Handheld Client

This topic contains general guidelines to use when you configure the Handheld application. Use these guidelines when you design any new objects for the Siebel Handheld Client. This approach facilitates a logical separation of the Siebel Handheld Client user interface elements from the Siebel Web Client user interface elements.

Identify user activities

Consider the following when identifying user activities:

- To conserve memory (and thereby improve performance) and ease navigation, identify business processes that are required by users and develop applications that support these processes.

- If more than one type of user needs a Siebel Handheld application, it is preferable to divide the application into multiple responsibilities rather than give all possible users access to all available screens and views. Responsibilities are fully configurable by the application developer.
- Do not include additional functionality that is not required to reside on the device.

Limit the number of screens and views

Consider the following when introducing new screens and views:

- Keep the number of views in your application to 30 or fewer. Determine the critical business processes that the Siebel Handheld application will support and pick only the views that are necessary and are compliant with your business requirements.
- Limit the number of views within a screen to 12 or fewer to keep the Show drop-down list concise.
- Limit the number of screens to six or fewer to keep the Screen drop-down list concise.
- Keep screen names to about 15 characters or fewer, so that they fit in the Screen drop-down list. The number of characters is a general guide, because characters vary in width.
- Keep view names to about 30 characters or fewer so that they fit in the Show drop-down list. The number of characters is a general guide, because characters vary in width.

Limit the number of applets for each view

Organize data in multiple applets in a single view to leverage Tabbed Views. This allows the user to access critical data via a single click.

Limit the number of columns and fields for each applet to minimize scrolling

Consider the following when designing applets:

- Design applications that contain as few screen and view hierarchy levels as possible. In a Web-based application, you can have views with many applets, and the user toggles between the applets.
- Include the most important fields and columns that a user needs to see at a glance before scrolling. For example, if you have a form applet that is a parent, include only needed fields to avoid scrolling.
- If you are using a list applet, determine how wide it needs to be.
- Design each applet so that it only contains columns and fields that are required for end-user tasks.
- Consider moving required and editable fields into visible area of the applet where users can enter data and do not have to scroll. Because there is less screen space on a handheld device than on a laptop or desktop, the most important data must be immediately visible.
- The Date column can be formatted to show only the date instead of Date and Time where Time is not relevant. This saves the user from having to scroll.

- To minimize horizontal scrolling, limit the number of columns displayed in a list applet to no more than ten.
- There is no limit on the number of fields in form applets of single-applet views. However, to minimize scrolling, keep the number of fields to 20 or fewer.
- Use a form applet for the parent for each parent-child view.
- In a multi-applet view, limit the number of fields in form applets to five or fewer. Add additional fields only if the field width is short. For example a check box field.
- Reduce the number of fields if the fields are multi-line, for example, a Comments box that contains three lines of text.
- Do not include read-only check boxes in form applets. It is very difficult for users to discern that the check box is not editable.
- Do not add pick applets or set the Runtime property to true for Read-Only fields that have a picklist value associated to them. This will improve overall extraction time, synchronization time and dbfile.txt file size since the process will not be forced to extract all the picklist values for these fields.
- Keep query names to about 15 characters or fewer, so that they fit in the Queries drop-down list. For example, North American Organization is too long for a query name, so change it to a shorter name, such as N. American Org. The number of characters is a general guide because characters vary in width (for example, W is wider than i).
- For each screen, create a view called My *(asterisk) or All * as a single list applet view. For example, for the Activities screen, create a My Contacts view that has the Contacts list applet only.

Design Data Filters

Consider the following when designing data filters:

- Limit the size of the dbfile.txt file to less than three megabytes (MB). The RDBMS on the handheld device is approximately three times the size of dbfile.txt. If the data files are so large that they cannot be imported into the database with the available memory, users cannot successfully synchronize their data. For information about how to design data filters to limit the amount of data that is synchronized to the handheld device, see [Chapter 5, "Data Filtering for Siebel Handheld Applications"](#).
- When working with assessment creation functionality, you need to name your templates in such a way that they will filter only the needed templates that will be downloaded to the device. Without properly setting up filters, all templates will be downloaded to the device.

About Creating Siebel Handheld Application Projects

The Siebel Handheld application projects appear in the list of projects in Siebel Tools; when Project is selected in the Object Explorer, the list of projects is displayed in the Object List Editor.

Use a naming convention that allows you to easily identify applications, screens, views, and applets belonging to a particular Handheld application. This allows you to locate all the object definitions in a Handheld application by querying on the name in the Object List Editor. For example, all of the Handheld application screens, views, applets, toolbars, and menus use either an SHCE prefix (for example, SHCE Sales Account List view) or a CE suffix. Use the Object List Editor to query for views that contain the prefix SHCE or the suffix CE; doing so displays all of the Handheld application views.

If you create a new Siebel Handheld application, create a new suffix or prefix to identify the name of the application and each screen, view, and applet name. For example, you might use PPC_SHCE for an application.

Designing Screens and Views for Siebel Handheld Applications

Views in Siebel Handheld applications can display two or more applets simultaneously. You can configure screens and views to display applets in two modes, as described in [Table 6](#).

Table 6. Applet Display Modes

Mode	Treatment of Applets	Maximum Number of Applets
Traditional Two-Applet	If the screen or view has only one applet, the applet uses the entire display area. If the screen or view has two or more applets, the first two applets in the frame array of a view definition are displayed, and the user toggles to see the other applets. The first applet is always displayed. Users can use the application-level menu to toggle between applets. You can also provide a toggle button as a visual cue to the user that there are additional applets. Add a toggle button to each applet except the first applet. Identify the button with a Toggle caption and set the <code>methodInvoked</code> property to <code>ToggleApplet</code>. For information about how to use the application-level menu, see the online help for the Siebel Handheld application.	Two
Tabbed Applet	Only one applet is displayed. All other applets are layered as tabs at the bottom or top of the display. Tabbed applet mode enables the user to maintain context and switch between applets easily. You can configure a context bar to show the parent applet information. Users can navigate to other applets in the following ways: ■ Tap the applet. ■ Tap the tab that represents the applet. ■ Use the application-level menu to select the applet. For information about how to use the application-level menu, see the online help for the Siebel Handheld application.	Six in portrait orientation and square screens. Eight in landscape orientation.

NOTE: Use only unique display names in the Screens and Show drop-down lists. The Siebel Handheld application uses the first screen or view display name that matches the selected name in the drop-down list. If two screens have the same display name, a search for the screen always returns the first display name found.

Configuring Tabbed Applets for the Siebel Handheld Client

The applet display mode is controlled by the application user property `DefaultViewType`. For more information about this user property, see [DefaultViewType User Property on page 223](#).

To override the effect of the `DefaultViewType` setting, set the value of the view-level user property `ViewType`. For more information about this user property, see [ViewType User Property on page 238](#).

To configure tabbed applet behavior for an application

- In Siebel Tools, set the value of the application user property `DefaultViewType`.

For more information about this user property, see [DefaultViewType User Property on page 223](#).

To configure tabbed applet behavior for a view

- 1 In Siebel Tools, set the value of the view-level user property `ViewType`.

For more information about this user property, see [ViewType User Property on page 238](#).

NOTE: `ViewType` overrides the `DefaultViewType` property in portrait orientation. In landscape orientation and on square screens, the default applet display mode is Tabbed.

- 2 If you do not want to show the context bar that displays the parent applet information at the top of a view, set the `DisableParentBar` user property to `TRUE`.

For more information about this user property, see [DisableParentBar User Property on page 224](#).

Screen Allocation for Traditional Two-Applet Mode

The amount of screen space available for applets is determined by the type of applets in the view. Two applets are stacked above one another. A parent form applet in a two-applet view displays multiple fields on a screen. Users use the scroll bar to navigate. The form applet dynamically resizes if there are fewer than five fields and, therefore, does not waste screen display space with empty lines. The maximum number of fields that are displayed at one time is configurable by setting the `Max Parent Applet Size` preference in the User Preferences dialog. For more information about user preferences, see [“Setting User Preferences in the Siebel Handheld Application” on page 171](#).

Drill-Down Only Views

Some views can be drill-down only views—that is, they can be accessed only by navigating from another view. These views are not accessible through the Show drop-down list. However, when the user navigates to the view, the view title appears in the Show drop-down list. To configure a drill-down only view, set the view title as you do for any other view and set the `ScreenMenu` property to `FALSE`. For more information about drill-down only views, see *Configuring Siebel Business Applications*.

Applet Focus Behavior

When navigating between views, sometimes you might need to override the default behavior for giving focus to an applet

The GotoView method is used to navigate from one view to another. A button control is added to the applet in the view you want to navigate from, the button's methodInvoked property is set to GotoView and the button's View property is set to the view that is to be created. When the GotoView method is executed, it builds the specified view. If the view includes a parent and child applet, GotoView gives focus to the child applet. This is the desired behavior in most instances when you are simply navigating from one view to another.

If the desired behavior is to navigate to a new view and, additionally, to create a new record, then you must use the GotoViewNewRecord method. This method calls two methods; first it calls GotoView, and then it calls NewRecord, which creates a new record in the new view.

In some instances the default behavior of these methods does not produce the intended behavior. For example, in the Orders view of the Service Requests screen, when you tap the Create New Order button, it takes you to the Order Details view, which contains a parent form applet (Service Request Order) and a child list applet (Service Order Entry Line Item). In this instance, when the Create New Order button's GotoViewNewRecord method is executed, you want a new order to be created.

However, the default behavior is to give focus to the child applet rather than creating a new record in the parent applet. Therefore, you need to override the default behavior of GotoView with the control user property OverrideDefaultApplet, and set the value to the applet that you want to give focus. For more information about this user property, see [OverrideDefaultApplet User Property on page 230](#). For more information about the View user property, see [View User Property on page 238](#).

For example, if you create a button labeled Create Service Request Order, you must define the user properties shown in [Table 7](#):

Table 7. User Properties

Name	Value
View	SHCE Service Order Line Items View
OverrideDefaultApplet	0

Views with Associated Print Templates or Reports

Print templates are text files that you design and create for printing. After creating a print template, you associate it with an applet. When a user chooses to print from a view, the print template that is associated with the applet is automatically selected and used for printing. Follow these guidelines when creating print templates:

- The print template name for a particular display applet is registered in the Mail Template property in the Applet object associated with the applet.
- The template must be placed in the Templates directory.
- The template name that goes into the Mail Template property must not include a path name or extension. For example, if the full path of the template is \Program Files\Siebel Handheld\Templates\InvoiceTemplate.txt, enter only the root name, InvoiceTemplate, in the property field.
- The template file itself must have a .txt extension on the device.

For more information about print templates, see [Appendix F, "Print Configuration Settings."](#)

Working With Different Handheld Device Specifications

Siebel Handheld applications can run on many handheld devices. The capabilities of handheld devices vary, depending on the following characteristics:

- Operating system (OS)
- Processor
- Storage memory
- Screen orientation
- Screen resolution

Siebel Handheld applications are aware of the devices on which they run. The applications do not need to be compiled specifically for particular devices. Handheld applications are device aware in the following respects:

- **OS:** Siebel Handheld applications can identify the OS of the device on which they are running.
- **Storage memory:** Siebel Handheld applications can determine the amount of storage memory available on the device on which they are running. Handheld applications use this information to determine if sufficient storage memory is available to download the dbfile.txt file.

Handheld applications do not download the file if available storage memory is insufficient. The applications request the user to apply more restrictive filters, or to make more memory available on the device.

- **Screen orientation:** Views in Siebel Handheld applications are displayed differently depending on the screen orientation of the device.
 - **Portrait orientation**—In this screen orientation one or two lists or forms are displayed on each screen. When the screen displays two lists or forms, the user can maximize and minimize the lists or forms.
 - **Landscape orientation and square screens**—In this screen orientation one list or form is displayed on each screen. The user can use a tab and an icon button to show one list or form, and simultaneously hide the list or form that is currently displayed.

Dialog boxes and other UI elements are also aware of screen orientation. All UI controls are automatically placed in an area that is not affected by changes to screen orientation. Any fields that users can edit are automatically placed in a location that is not obscured when the Software Input Panel (SIP) is displayed.

These automatic features are not enabled in form UI applets and task applets. When you develop these applets for Siebel Handheld applications, you must manually lay out UI items to ensure that they are not obscured by changes to screen orientation or SIP display.

- **Screen resolution:** Siebel Handheld applications can run on both high-resolution and low-resolution displays.

Configuring User Interface Elements in the Siebel Handheld Client

When configuring user interface elements on the Siebel Handheld Client, also consider the processing speed and memory constraints of handheld devices. The constraint on processing speed affects the performance of a handheld device. The performance of a handheld device is also related to the number of screens and views downloaded to the handheld device. Because handheld devices are not meant to provide the same functionality as larger devices, such as laptops, the number of screens and views must be kept to a minimum on the handheld device.

Due to size constraints on handheld devices, the Siebel Handheld Client displays user interface elements differently from the Siebel Web Client. Consider these differences when configuring the Siebel Handheld Client application. For example, Siebel Handheld Client does not support an alphabetical index.

The following topics are related to configuring user interface elements in the Siebel Handheld Client:

- [“Configuring List Applets for the Siebel Handheld Client” on page 36](#)
- [“Configuring Alpha Tabs in List Applets for the Siebel Handheld Client” on page 37](#)
- [“Configuring Form Applets for the Siebel Handheld Client” on page 38](#)
- [“Configuring Form UI Applets for the Siebel Handheld Client” on page 39](#)
- [“Using Auto Pop-Up Lists in the Siebel Handheld Client” on page 40](#)
- [“Configuring Tree Applets for the Siebel Handheld Client” on page 41](#)
- [“Configuring Tabbed Applets for the Siebel Handheld Client” on page 33](#)
- [“About Home Page Applets in Siebel Handheld Applications” on page 43](#)
- [“About Buttons in Siebel Handheld Applications” on page 43](#)
- [“About Multi-Value Groups in Siebel Handheld Applications” on page 44](#)
- [“About the Menu Bar in Siebel Handheld Applications” on page 44](#)
- [“About Toolbars in Siebel Handheld Applications” on page 44](#)
- [“About the Status Bar in the Siebel Handheld Application” on page 45](#)
- [“About Hyperlinks in the Siebel Handheld Application” on page 45](#)

Configuring List Applets for the Siebel Handheld Client

You configure list applets and list columns for Siebel Handheld applications the same way you configure them for other Siebel applications.

Recommended Strategy for Configuring List Applets

The recommended strategy when configuring the Siebel Handheld application is to use the list applets for record navigation and to rely on form applets to provide the record details.

The following are additional guidelines to follow when designing list applets:

- Configure specific list applets for your Handheld application, rather than reusing Siebel Web Client list applets.
- Remove all but the essential list columns. Because there is limited screen area to display list columns, omit all unnecessary columns to minimize horizontal scrolling.

You can either remove the columns from the Handheld application or set the Show in List property on the column to FALSE. These two methods are different in the following ways. If the columns are removed from the Handheld application, the data is not downloaded to the handheld device. This keeps the Handheld application data to a minimum and, in turn, optimizes the synchronization process performance. If the Show in List property on the column is set to FALSE, the data is still downloaded to the device but is not shown by default. This second approach, though without the synchronization optimization benefit, does allow convenience for the user who wants to customize visible columns. Take these concerns into account when setting up users.

- Reorder the remaining list columns so that the most frequently used columns are furthest to the left.
- Reduce the default width of the list columns so that more columns can be viewed at one time.
- Use hyperlinks to ease navigation by enabling users to drill into a form applet.

These changes can minimize the amount of horizontal scrolling and column reordering that users must do. Limiting the number of list columns to those that are essential minimizes the amount of data downloaded to the device, resulting in faster synchronization times and more economical use of device memory.

NOTE: In Siebel Handheld applications, an asterisk (*) on a form applet, or in a column heading of a list applet, indicates a required field. Administrators specify which fields are required.

Use Siebel Tools to modify, or rearrange List columns. For more information about the List column options, see *Configuring Siebel Business Applications*.

Configuring Alpha Tabs in List Applets for the Siebel Handheld Client

You can configure alpha tabs in list applets for Siebel Handheld applications to act on one or more list applet columns and to appear as a row of tabs at the top of the applet. Alpha tabs have the following characteristics:

- Can be configured for any field in the list applet provided the field is set up as the Alpha Tab Search Field user property in Siebel Tools.
- Can only be configured for one field at a time in the list applet.
- Can be configured to display either in single letter format (ungrouped) or in multiple letter (grouped) format.

- Can facilitate localizable tab definitions based on grouped and ungrouped alpha tab format. For example, alpha tabs can be configured for additional accented characters (in the case of some European Languages) and for English character ranges or local character ranges (in the case of some Asian Languages).
- Can include an ALL grouping which will show all records in the list applet by default the first time a user navigates to the view after launching the application.
- Can disable, if configured, any filters applied to the view the first time the view loads.
- Are supported in portrait orientation, landscape orientation, and on square screens.

To configure alpha tabs in list applets

- 1 In Siebel Tools, configure the AlphaTab Named Search property on the List object.

For more information about this user property, see [AlphaTab Named Search User Property on page 221](#).

- 2 Decide whether you want your alpha tabs to display in grouped or ungrouped format. The default behavior is to show grouped alpha tabs.

To display ungrouped alpha tabs, set the value of the DisableAlphaTabGroups user property for the applet to TRUE.

For more information about this user property, see [DisableAlphaTabGroups User Property on page 224](#).

By default, your Siebel Handheld application ships with grouped and ungrouped versions of alpha tabs for each language. For example:

```
IDS_ALPHATAB_GROUPED_SPEC "A-C|D-E|G-I|J-L|M-O|P-R|S-U|V-Z|*"
IDS_ALPHATAB_GROUPED_DISPLAY "ABC|DEF|GHI|JKL|MNO|PQR|STU|VWXYZ|All"
IDS_ALPHATAB_UNGROUPED_SPEC "A|B|C|D|E|F|G|H|I|J|K|L|M|N|O|P|Q|R|S|T|U|V|W|X|Y|Z|*"
IDS_ALPHATAB_UNGROUPED_DISPLAY "A|B|C|D|E|F|G|H|I|J|K|L|M|N|O|P|Q|R|S|T|U|V|W|X|Y|Z|All"
```

_SPEC represents the range for the search specification and _DISPLAY represents the strings that will be displayed on each tab. Currently, you cannot override these specifications.

Configuring Form Applets for the Siebel Handheld Client

The Siebel Handheld application uses a specialized algorithm to format and display form applets. Due to the display limitations on the device, only one pair of label and field controls are displayed on each row of the form, regardless of the layout shown within Siebel Tools.

Layout Sequence

When configuring form applets for the Siebel Handheld application, the Applet Web Template Items in the Applet Web Template determine the controls that appear on a form applet. The layout of form applets on the Handheld application is determined by the HTML Sequence field set on control objects.

The HTML Sequence field determines the screen layout of a Handheld application. Controls are ordered from top-to-bottom based on their HTML Sequence property values. Label and control pairs that do not fit on the same line as other label and control pairs wrap to the next line.

Labels

Keep field labels in applications short (approximately 12 characters or fewer, depending on the character width). Use abbreviations where possible. Labels that are too long are truncated.

Group Boxes

Group boxes are not supported and are not displayed in form applets, even if they are added in the Web Applet Designer. Therefore, reword the field labels to include group box information if necessary. For example, you can have two group boxes on the form, one labeled Ship To and another labeled Bill To. Each group box includes a field named Address. Because group boxes are not supported, the Ship To and Bill To labels are lost, and two fields with the identical Address label remain. Therefore, you must rename the Address labels “Ship To Addr” and “Bill To Addr” or some other label that distinguishes them.

Radio Buttons

You can configure any static or dynamic picklist control in form applets to display as a set of radio buttons, instead of as a normal picklist. To do this, you must set field type to DT_RADIO.

Configuring Form UI Applets for the Siebel Handheld Client

Form UI is a technique of applet design which enables Siebel Handheld application developers to create applets that are larger than normal form applets. An applet designed for form UI can have a greater height and a greater width than the applet display area. Form UI enables application developers to create large applets which can resemble a paper form.

You create form UI applets as normal form applets, but with the FormUI user property set to TRUE. For more information about this user property, see [FormUI User Property on page 228](#).

Location of UI Controls

The location of the UI controls on normal form applets is determined automatically. For form UI applets, you can define the location of each control. This enables you to design the applet in the way that you want the applet to appear to users. You can place UI controls in any location on the applet. This enables you to create forms that are easier for your users to use, or reflect your current business processes. For example, you can design an applet that resembles the layout of one of the paper forms that your business currently uses.

You can also design more complicated forms. For example, you can create a form that has three fields beside each other. Form UI allows the following benefits for UI design for Siebel Handheld applications:

- Flexible location of labels
- Hidden labels
- Flexible location of fields
- Flexible field sizes
- Flexible location of buttons
- Flexible button sizes
- Flexible location of radio buttons

You use the Grid Layout Editor in Siebel Tools to create form UI applets. Before you design the layout of the applet, you must set the FormUI user property to TRUE. In Grid Layout Editor, add the required controls to the applet, then arrange the controls appropriately.

Navigation Scheme

Form UI applets also have a new navigation scheme to enable users to navigate efficiently in a large form applet. There are no scroll bars in form UI applets. Instead, users can tap-and-hold on an area outside of the fields, then drag the form so that a part of the form that they cannot see is displayed.

To enable the new navigation scheme to function effectively, the performance of the screen drawing functionality for form UI applets is significantly better than for other types of applet.

COM Interface

To perform complex processing on a form UI applet, you can write components that use the Component Object Model (COM) architecture. For example, if you want to implement data validation or a more sophisticated UI, you can write a component extension for the applet. For more information about how to write component extensions, see [Appendix G, "COM Extensibility"](#).

UI Behaviors

To reduce the potential for user confusion, many of the automatic UI behaviors which occur in the normal form applet do not occur in form UI applets. For example, the following behaviors are different:

- When the SIP opens, the form UI applet does not resize or scroll automatically to show the insertion point. Instead, the user must drag the applet until the insertion point is visible.
- When you tab to a field that is not visible, the form UI applet does not scroll automatically to the active field. Instead, the user must drag the applet until the active field is visible.

Using Auto Pop-Up Lists in the Siebel Handheld Client

Sometimes when a user opens a view, the user must select a value from a pop-up list to fill in a required field. You can configure the view so that the pop-up list automatically opens when the user opens the view. If you do this, the user does not have to tap the control to open the pop-up list.

To configure a pop-up list to open automatically, use the AutoPopupField user property. For more information about this user property, see [AutoPopupField User Property on page 221](#).

To configure a pop-up list to open automatically, add the user property on the applet with Name set to AutoPopupField.

Depending on the type of applet, this property is set differently:

- For list applets, set the AutoPopupField property to the Business Component field name.
- For form applets, set the AutoPopupField property to the name of the control.

Configuring Tree Applets for the Siebel Handheld Client

As an alternative to List applets, Tree applets with automatic drilldown behavior can be configured for Siebel Handheld applications in much the same way that you configure them for other Siebel applications.

A tree applet is a structured and hierarchical list of nodes of related business components. Tree applets are used to create explorer views where users can expand (by tapping the + button) and collapse (by tapping the - button) nodes in the tree applet and view individual records in particular folders. There are two types of nodes:

- Folder nodes - have a folder bitmap next to them and represent hierarchies within the tree.
- Record nodes - have a document bitmap next to them and represent one record in the node business component.

The hierarchy displayed in a tree applet represents master-detail relationships between records of different business components.

To configure a tree applet

- 1 In Siebel Tools, define a tree applet with the following properties:

Property Setting	Description
Class	The name of a C++ class used to manage the applet. For explorer applets, Class must be set to CSSFrameTree. This is required in order for the tree applet functionality to work.
Business Component	The name of the business component whose data is to be displayed. The business component must be defined in the business object specified for any view that uses this applet.

- 2** Define trees in the tree applet by specifying the following property for each tree:

Property Setting	Description
Name	The name of the tree object definition which is basically just a name, usually ending with <i>tree</i> , to which child object definitions in the form of tree nodes can be attached.

- 3** Define tree nodes under the tree object definition. A tree node corresponds to one folder that the user sees in a tree applet. Important properties to define for each tree node object definition include the following:

NOTE: Trees and tree nodes are usually created and edited in the Applet Designer of Siebel Tools.

Property Setting	Description
Display Name	The name of the tree node object definition (folder name) as it will appear in the tree applet in Siebel applications. The display name appears to the immediate right of the folder symbol.
Applet	The name of the applet that is opened in the right half of the view when the user opens the corresponding folder. Generally a list applet is specified. The applet must be based on a business component that is in the appropriate hierarchical position in the business object. If not specified, nothing opens in the right-hand side of the view, which is desirable in some situations.
Position	Specifies the tree node's hierarchical position relative to other tree nodes, and its sequence on its level. The top-level node has a value of 1 and all immediate child nodes of the top-level node have a value of 1.x, where x specifies the node's order relative to other nodes on the same level. In turn, all immediate child nodes of 1.x have a value of 1.x.x and so on. In general, the right most digit in a position specifies its order relative to others on the same level, and all other digits specify the position it attaches to.
Business Component	The business component that populates values in this tree node. This must be set to the same business component as is specified by the applet invoked by this tree node.
Label Field	The name of the field in the business component that the Siebel application uses to populate names in the record list that appears when the node is expanded by the user.
Max Child Items	An integer that sets a limit on the number of child items that appear under the tree node. An arrow appears to let the user scroll further, if there are many child items.

Property Setting	Description
Selected Bitmap Index	An integer indicating which bitmap, in a multiple bitmap file, to display when a record is selected. This property should be set to the value 5, which corresponds to the folder symbol.

- 4 Decide on an operation mode for your applet by setting one of the following user properties in Siebel Tools:
- To display the applets in tabbed applet mode, set the view-level user property `ViewType` to `Tabbed`.

For more information about this property, see [ViewType User Property on page 238](#).
 - To display the applets in traditional two-applet mode, set the view-level user property `ViewType` to `Traditional`.
 - To suppress the second dynamic applet, so that only a single applet is displayed, set the view-level user property `Disable Second Applet` to `TRUE`.

For modes that display two applets, you can also specify how much space you want the tree applet to occupy. For more information about this property, see [Explorer Applet Size User Property on page 228](#).

About Home Page Applets in Siebel Handheld Applications

To configure a Home Page applet, create an applet that has controls of HTML Type Button only. Use the following guidelines in creating your Home Page applets:

- Set the `MethodInvoked` property of these controls to `GotoView`. Add a `View` user property to the control, and set the value of the `View` property to the name of the view that you want to display. For more information about this user property, see [View User Property on page 238](#).
- Set the `Caption` field.
- Set the `HTML Sequence` field according to the order in which the buttons are laid out on the device. The buttons appear on the Home Page applet of the handheld device, laid out in rows of three buttons.
- Set the `class` property of the Applet to `CSSFrameCEHome`.

About Buttons in Siebel Handheld Applications

Set the `HTML Type` field on buttons to `Button`, `MiniButton`, `PushButton`, or `MiniButtonEditNew`. All of these HTML Types map to the same button control on the handheld device.

Buttons with text labels on them are sized to the minimum width required to fit the text on the buttons.

NOTE: You cannot use scripting to augment the button functionality in Siebel Handheld applications.

You can add buttons as long as the method invoked is supported by the class or superclass of the frame or business component. You can also remove buttons from an applet. Be careful when removing buttons, because you might alter the behavior of your application in unintended ways.

For more information about button functionality, see [Appendix D, “User Properties.”](#)

About Multi-Value Groups in Siebel Handheld Applications

Multi-Value Groups (MVG) are supported by Siebel Handheld applications in the same way that they are supported by the Siebel Mobile Web Client. MVG fields and applets are used to input and display data on Handheld applications.

MVG fields have an MVG control button, similar to the ellipsis control (...). Tapping the MVG control—for example, on a parent form or list applet—opens the MVG applet. When the MVG applet is open, you can perform inserts, updates, or deletes on the MVG applet. Any updates performed on the MVG applet automatically appear in the corresponding MVG field, if appropriate.

NOTE: MVG fields are displayed as greyed out or read-only in the parent applet.

For more information about creating and configuring MVGs for your Siebel application, see *Configuring Siebel Business Applications*.

About the Menu Bar in Siebel Handheld Applications

The menu object definition in the Siebel repository that is implemented in Siebel Handheld applications is named SHCE Generic. The default menu bar configuration for the Handheld application includes the following menus: File, Edit, View, and Help. You can remove or rename menus on the menu bar, but you cannot add new menus. You can reorder the menu items by changing the Position property for the menu items. Generally, use the default menu bar configuration for all of your Handheld applications.

About Toolbars in Siebel Handheld Applications

This topic describes how to configure the toolbar for your Siebel Handheld application.

The following lists the supported toolbar functions:

- Back, Forward
- New Record
- New Query, Execute Query

- Next Record, Previous Record, First Record, Last Record
- Minimize or Maximize
- Delete Record

The default toolbar can be configured in Siebel Tools by configuring the SHCE Main toolbar object. SHCE Main is the main toolbar that is downloaded to the handheld device. If a toolbar named SHCE Main does not exist in your repository, a default toolbar, *Main*, is downloaded instead.

The SHCE Main toolbar contains the default buttons for the device: Back, Forward, New Record, New Query, and Execute Query. Change the order of the buttons on the display by modifying the Position property of the toolbar items. Remove a toolbar button by deleting it or making it inactive.

You can add additional default buttons to the toolbar by creating toolbar items whose Command property matches the name of an active bitmap in the SHCE Command Icons bitmap category. Do not add bitmaps to the SHCE Command Icons bitmap category because only those commands, which are already provided, are supported on the device. No additional commands are supported. You can remove a bitmap or make a bitmap inactive if you do not want it to appear in the Customize Toolbar dialog box.

You can change the bitmap for a toolbar by reimporting the bitmap from the SHCE Command Icons bitmap category.

Users can customize their toolbar from the application-level menu. For information about how to use the application-level menu, see the online help for the Siebel Handheld application. For more information about toolbars, see *Configuring Siebel Business Applications*.

About the Status Bar in the Siebel Handheld Application

The status bar is located above the toolbar. The status bar displays the status of an applet with focus, including the applet title and record item count (for example, Contacts: 1 of 13).

About Hyperlinks in the Siebel Handheld Application

Configuring a drilldown, or clicking a hyperlink or dynamic hyperlink in the Siebel Handheld application, is performed the same way as with other Siebel applications. For more information about configuring drilldowns, see *Configuring Siebel Business Applications*.

Using the COM Interface with Siebel Handheld Applications

To perform complex processing on applets, you can write components that use the COM architecture. For example, if you want to implement data validation or a more sophisticated UI, you can write a component extension for the applet. For more information about how to write component extensions, see [Appendix G, "COM Extensibility"](#).

Configuring Calendar Settings

This topic provides information about calendar enhancements such as calendar layout simplification, utilization of the menu bar as a partial toolbar, dynamic color and description coding. It also includes configuration steps and examples of implementing the enhancements.

The following topics are related to configuring calendar settings:

- [“User Properties for Calendar Settings” on page 46](#)
- [“Configuring Calendar Color Codes and Descriptions” on page 47](#)
- [“Configuring the Goto View Button” on page 48](#)

NOTE: The calendar settings are optional and need only be implemented, if required, by your business processes.

User Properties for Calendar Settings

Administrators can set the following user properties to enhance the calendar views for the Siebel Handheld applications:

- SHCEDailySlotHeight
- SHCEHideStatusBar
- SHCEHideToolBar
- SHCEMenuBackButton
- SHCEMenuForwardButton
- SHCEMenuNewButton
- UseSystemLocale

For more information about how to use these properties, see [User Properties on page 221](#).

NOTE: Registry settings take precedence over a user property configured from the user interface.

The administrator can also change the Setup.ini file to add the following Registry Setting parameters. These parameters are used by all calendar views:

```
SHCEMenuNewButton = TRUE
SHCEMenuBackButton = TRUE
SHCEMenuForwardButton = TRUE
SHCEHideToolBar = TRUE
SHCEHideStatusBar = TRUE
UseSystemLocale = TRUE
AuxiliaryConfigPath = \Program Files\Siebel Handheld\Templates\AuxConfig.txt
```

Configuring Calendar Color Codes and Descriptions

The auxconfig file contains a section for each organization and the rule expressions to define the color code and dynamic description for Daily and Weekly calendar views. Color code is rendered as the side bar color in a Daily view and is rendered as text background color of the time indicator in the Weekly view. The color code is a hexadecimal representation of the possible color to be used. The key values that can be defined are:

Default Color: Used if the Color expression does not evaluate to any color code.

Color: Used to show color codes based on the Expression defined.

Day Description: Used for the Daily view and defines which fields to display for Calendar Activity when it is shown in Daily view. The text word-wraps to multi-line display if timeslot spacing is for two or more lines.

Week Description: Used for Weekly view and defines which fields to display on Calendar Activity when it is shown in Weekly view. The number of fields displayed can be reduced due to limited display space.

Table 8 shows an example of a section from the auxconfig.txt file:

Table 8. Key Value Example

Key Value	Description
<1Ls-9n59>	Organization Id. If the administrator defines these Key Value Set under both Organization Id and Organization Name, the Organization Id takes precedence. Avoid duplicate sections for one Organization.
Default Color = 0000FF	Specifies what color code should be used for any activity that does not evaluate to a color code for each Color expression which in this example is set to Blue (0000FF)
Color = IIf ([Category] ='Contact Call', (IIf([Status]='Planned','FF0000', (IIf([Status]='Submitted','00FF00','FFFF00')))), (IIf([Category]='Account Call', (IIf([Status]='Planned','FF0000', (IIf([Status]='Submitted','00FF00','FFFF00')))), '0000FF')))	Color evaluates the Expression and if the activity is Contact Call or Account Call and has a status of Planned, the color displays in red (FF0000). If the activity has a status of Submitted, the color displays in green (00FF00). If the call has a status other than Planned and Submitted, for example, Synchronized, then the color displays in yellow (FFFF00). All other kinds of activities are displayed in blue (0000FF).

Table 8. Key Value Example

Key Value	Description
Day Description = IIf ([Category]='Contact Call', [Contact Last Name] + ' ' + [Category] + ' ' + [Status],[Description])	Day Description evaluates the expression and if the activity is Contact Call, Last Name, Category of Call, and Status is displayed. If the activity is not Contact Call, the Description field is displayed on the calendar.
Week Description = IIf([Category]='Contact Call', [Contact Last Name] + ' ' + [Status],[Description])	Week Description evaluates the expression and if the activity is Contact Call, Last Name, and Status is displayed. If the activity is not Contact Call, the Description field is displayed on the calendar.

Configuring the Goto View Button

Click the Goto view button to navigate to a specified view. The view name needs to be defined as a user property for the control.

To configure Goto View buttons on the Daily Calendar view

- 1 Set ClientConfigurationMode = ALL in tools.cfg file in \root\BIN\ENU directory.
- 2 Log in to Siebel Tools.
- 3 Query for Applet Name: SHCE Sales eCalendar Daily Applet - My in Applet.
- 4 Navigate to Applet > Control.
- 5 Add the following controls to Applet Control:

Name	Caption	HTML Type	Method Invoked	Type
CalNavigate	User defined	MiniButton	GotoView	Push Button

NOTE: The caption for all buttons can be user-defined. The method invoked is specialized.

- 6 Navigate to Applet > Applet Web Template > Applet Web Template Item.
- 7 Select CalNavigate in Applet Web Template.
- 8 Add the following Applet Web Template Item for CalNavigate:

Name	Control	Type	Item Identifier
CalNavigate	CalNavigate	Control	134

- 9 Add the following User Properties and respective values for the CalNavigate control:

Control Name	User Property Name	User Property Value
CalNavigate	View	Define the View name that you want to navigate to.

Developing Tasks for Task UI in Siebel Handheld Applications

Siebel Task UI enables you to create an interactive tool that can help users to perform tasks. *Siebel Tasks* are tools that display a series of screens, which guide users through the steps required to perform a task. Siebel Tasks are similar to software wizards.

Siebel Tasks can allow the user to navigate backwards and forwards within the task, and can allow users to pause and resume the task.

You can use Siebel Tasks to ensure that your business processes are executed as consistently and efficiently as possible. You can replicate the steps of your business processes in a task. For example, if your business process requires that the contact details of a new account are recorded before an order can be generated for the account, you can construct a task to reflect this requirement. When the users start the task to assign an order to a new account, the first screen they must complete is the contact details screen. The users cannot navigate to the order details screen until they enter all the required data on the contact details screen.

Siebel Tasks can guide inexperienced and intermittent users through the execution of unfamiliar tasks, and in that way increase the efficiency of these users.

The following procedures describe how to implement tasks in your Siebel Handheld applications:

- [“Designing a Task for Siebel Handheld Applications” on page 49](#)
- [“Creating a Task for Siebel Handheld Applications” on page 50](#)
- [“Example of Creating a Task for Siebel Handheld Application” on page 51](#)

For more information about Siebel Task UI, see *Siebel Business Process Framework: Task UI Guide*.

To perform complex processing on a task UI applet, you can write components that use the COM architecture. For example, if you want to implement data validation or a more sophisticated UI, you can write a component extension for the applet.

For more information about how to write component extensions, see [Appendix G, “COM Extensibility”](#).

Designing a Task for Siebel Handheld Applications

Before you create a task for a Siebel Handheld application, you must design the structure and sequential logic of the task. This design involves doing the following:

- Analyze the task, and divide the task into component steps. The steps that you identify will become individual screens in the task.

- Identify the sequence in which you want users to perform the steps that comprise the task. That is, you must define how the task flows. If an error is detected on the current screen, you might want to remain on the current screen until the error is resolved. In some situations, you might want the sequence to reverse.
- Identify the data that the user must enter or that must be displayed in the task.

Creating a Task for Siebel Handheld Applications

To create a Siebel Handheld application task, perform the following steps:

- 1 Create the task in Siebel Tools. A task for a Handheld application is implemented as a view which contains a series of task applets. You must create an applet for each screen.
- 2 Set the user property of the view to indicate that the view is a Siebel Task.
- 3 You create the applets as form UI applets; that is, with the FormUI property set to TRUE. The applets that you create must meet the following requirements:
 - Users cannot scroll on the applet, so the applet must fit in the display area of the target device.
 - Any fields that users can edit must be in a location that is not obscured when the SIP is displayed.
 - The only UI items that can appear in the bottom 20 pixels of the screen are the navigation buttons.
 - The navigation bar, menu bar, toolbar, and status bar on task applets are hidden. The applet must use the navigation buttons to control all navigation.

For more information about form UI applets, see [Configuring Form UI Applets for the Siebel Handheld Client on page 39](#).

- 4 Add UI controls to the task applet.
- 5 Add one, two, or three navigation buttons to the applets. Use frame methods to associate functionality with the buttons.

To add navigation buttons to an applet, you define the buttons in the user properties for the applet. For example, if you want to configure Back, Cancel, and OK buttons for an applet named OrderTaskProduct, add the following user property to the applet:

```
TaskNavigation="Back, Cancel, Ok(OrderTaskProduct)"
```

Note the following:

- A task applet does not automatically commit data when the user steps off the applet into another task applet in the same view. You must create the required code to ensure that the data is committed.

Alternatively, data is committed when the user steps off the view.

- To perform more complex processing in a task, you can write components that use the COM architecture. For example, if you want to implement data validation or a more sophisticated UI, write a component extension for the Handheld application.

For more information about how to write component extensions, see [Appendix G, “COM Extensibility”](#).

Example of Creating a Task for Siebel Handheld Application

The following example is a simple task for Siebel Handheld applications that users can execute to take a simple order. This task creates three screens, as follows:

- Select Product screen
- Specify Quantity screen
- Confirm Order screen

To create this task, perform the following steps:

- 1 In Siebel Tools, create a normal view named OrderTaskView.
- 2 Specify that the view is a task view, that is, set the TaskUI user property, as follows:

TaskUI="TRUE"

For more information about this user property, see [TaskUI User Property on page 237](#).

- 3 Create three applets on the view with the following names:
 - OrderTaskProduct
 - OrderTaskQuantity
 - OrderTaskSummary
- 4 For each applet, set the user properties as described in the following table:

User Property	OrderTaskProduct	OrderTaskQuantity	OrderTaskSummary
FormUI	"True"	"True"	"True"
TaskBtnMethod1	"UndoRecord,GoBack"	"UndoRecord,GoBack"	"NewRecord,GotoApplet"
TaskBtnBitmap1	"Delete Record"	"Delete Record"	"More"
TaskBtnMethod2	"NewRecord"	"GotoApplet"	"GotoApplet"
TaskBtnTarget2	—	"TASK1"	"TASK2"
TaskBtnBitmap2	"New Record"	"Go Back"	"Go Back"
TaskBtnMethod3	"GotoApplet"	"GotoApplet"	"GoBack"
TaskBtnTarget3	"TASK2"	"TASK3"	—
TaskBtnBitmap3	"Go Forward"	"Go Forward"	"Goto Last"

- 5 In Grid Layout Editor, add the required controls to each applet, and arrange the controls appropriately.

NOTE: No data validation is performed in this simple Task UI.

Scripting in the Siebel Handheld Application

The Siebel Handheld application does not execute Siebel Visual Basic (VB) or Siebel eScript scripting.

The Handheld application runs Siebel VB or Siebel eScript scripts and specialized business component logic at synchronization time, rather than in real time on the handheld device. This has significant consequences in applets and controls, because scripts attached to applets and controls are ignored.

CAUTION: Be aware of the following additional issues with respect to scripts and validation:

- **Deactivating scripts.** Do not deactivate existing scripts in Siebel Tools to make the handheld device or the synchronization process accept data it is excluding. Errors can occur within the Siebel Web Client or elsewhere from where these scripts are run.
- **Calls to user interface methods.** When a business component script makes a call to a user interface method (such as Msg Box), the script cannot be executed, and the record update, deletion, or addition is rejected during synchronization. The Siebel Visual Basic code must be restricted to the business component level. Applet-level Siebel Visual Basic does not execute and, therefore, must not be written for the Handheld application. As a substitute to using Siebel Visual Basic on the Handheld application, for real-time execution, use the following business component user properties:
- BC/Field Read only field for making fields or business components read-only dynamically.
- Pickmap for fields on the picklist.

Do not use message boxes or prompts in the Siebel Visual Basic code used in conjunction with the Handheld application business components.

If the business component is shared between the Siebel Handheld Client and other applications, use the following constructs to determine whether the code is executed by the handheld synchronization process or if the code is executed in real-time by other applications:

```
'ActiveViewName' is only available when the script is called real time on the laptop
If (TheApplication.ActiveViewName<>"") then
MsgBox"....."
End If
```

ActiveViewName is not available if the business component is accessed by other server processes, such as workflow or business service. To determine if the business component is called by synchronization for the Handheld application, do the following:

- Add a server script to Application_Start event of the Siebel Handheld application.
To do this, set a custom profile attribute with SetProfileAttr. If the custom attribute is not set, this indicates that:
 - The Application_Start event of the Handheld application did not occur.

- The business component is called by something other than synchronization process for the Handheld application.

Business component level scripting is executed during the synchronization process for the Handheld application. You might want to enhance error handling if the business component is shared between the Handheld application and the laptop.

Compiling the Siebel Handheld Application

Compiling the repository for the Siebel Handheld application is identical to compiling on the Siebel Web Client. For more information about compiling the repository, see *Using Siebel Tools*. For deployment to production, always perform a full compilation. This assumes that you have organized all of the object definitions for your Handheld application in one project or a limited set of projects.

When you compile your application, a Siebel repository file (.srf) is created and put in the destination directory you specified during the compile procedure. Make the .srf file the source of repository information for the Handheld application test client machine, defining all Siebel applications for that client, when you move it to your local \Siebel\objects directory.

It is strongly recommended that you make a backup of the existing .srf file in your local \Siebel\objects directory before overwriting it with the new one. That way, if you make an error or you want to revert to the original application, you have a backup that you can easily restore. Versioning for the repository is tracked, and if the .cfg, schema, or repository files have changed, the synchronization process will automatically rebuild the .rml and schema. For more information about compiling the Handheld application, see *Using Siebel Tools*.

Installing and Setting Up End User Translation Functionality

End User Translation functionality provides you with the ability to translate the text strings within the Siebel Handheld application. The translation process must happen during the development cycle and once completed your development team can then package the translated strings for distribution.

The translation process requires the generation of a file of strings from the binaries of the Handheld application which are then translated and distributed to the user base. This file, userstr.txt, containing the translated strings is then used to override the strings within the existing binaries for the Handheld application. Therefore, you will be required to build a copy of userstr.txt into the installation media for your Handheld application.

The translation string file is version specific so you must repeat this process every time you upgrade your Handheld application.

The following procedures are related to installing and setting up end user translation functionality:

- [“Performing Setup for Initial String Translation” on page 54](#)
- [“Distributing Translated Strings” on page 55](#)

Performing Setup for Initial String Translation

In order to perform the initial string translation you must perform the following steps prior to installation:

To set up Siebel Handheld application for initial string translation

- 1 In the installation directory of the Siebel Handheld application, add the following two lines to the setup.ini file:

```
[EndUserLocalization]
UserDefinedLang=Y
```

- 2 Install the Siebel Handheld application.

During application initialization and the subsequent startup, the file 'userstr.tmp' is generated within the ApplicationDataDirectory (by default this is \Program Files\Siebel Handheld). This file is generated upon startup whenever the UserDefinedFlag is set to Y within the registry of the Handheld application and an existing userstr.txt cannot be found.

- 3 Copy the generated file over to the computer where you will be performing the string translation.
- 4 Translate the strings as required and remove any untranslated strings from the file.

For example, given the following exported strings:

```
33872|HTML\
33873|Tab delimited text file\
33874|Export\
33875|Format:\
33876|Only Active applet\
33877|All applets in view\
33878|Output file name\
33879|Browse...\
33880|And paste output to clipboard\
33881|And open file\
```

Translate the required strings and remove any untranslated strings as follows:

```
33873|Archivo delimitado por tabulaciones\
33874|Exportar\
33875|Formato:\
33876|Sólo el applet activo\
33877|Todos los applets de la vista\
33878|Nombre del &archivo de salida:\
33880|Y pegar salida en el &portapapeles\
33881|Y &abrir el archive
```

NOTE: Strings 33872 and 33879 were removed from the userstr.txt, because they were not required to be translated.

- 5 Save the file as userstr.txt in a UNICODE file format and then copy back into the ApplicationDataDirectory on the handheld device.

- 6 After restarting the Siebel Handheld application, the translated strings are read from userstr.txt in place of the strings included in the binaries of the Handheld application.

Distributing Translated Strings

When you have generated and tested the userstr.txt file of translated strings, include this file in the installation media for the Siebel Handheld application.

To distribute translated strings

- Create a new language sub-directory named UserDefinedLanguage, within the installation directory of your Siebel Handheld application, from which user devices are installed and which contains the setup.exe.

This directory with the name UserDefinedLanguage exists alongside the language sub directories shipped with the application. The new userstr.txt file must be placed in this subdirectory.

Upon installation of the Handheld application, the custom file will be placed in the ApplicationDataDirectory of the destination device along with the usual Handheld application files.

Configuring Printing from the Siebel Handheld Application

Users can print from any view in the Siebel Handheld application. However, they are not necessarily printing what they see on their screen. They can print a portion of the data they view or data that is not viewable at the time.

A print template defines the document that is to be printed. After the template has been defined, it must be associated with an applet in a view.

The following procedures are related to configuring printing from the Siebel Handheld application:

- [“Defining Documents for Siebel Handheld Applications” on page 56](#)
- [“Designing Print Applets for Siebel Handheld Applications” on page 56](#)
- [“Configuring Print Applets for the Siebel Handheld Application” on page 57](#)
- [“Configuring Print Buttons for the Siebel Handheld Application” on page 57](#)
- [“Creating Print Templates for the Siebel Handheld Application” on page 58](#)
- [“Configuring a Printer Settings Dialog Box for the Siebel Handheld Application” on page 58](#)
- [“Configuring Multiple Form and Multiple Quantity Printing for the Siebel Handheld Application” on page 59](#)

Defining Documents for Siebel Handheld Applications

Defining documents for printing includes several steps:

- Determine the documents your users need to print.
- Determine the views from which they are most likely to print the documents.
- Lay out the document for printing.

Determining which documents users will need and the views from which they are most likely to print requires that you have a good understanding of the users' day-to-day work.

Whether the existing applets in a view include most of the required data or only a small portion is a secondary consideration. It is not likely that a printout of the existing applets, which are formatted for an electronic PDA interface, will provide an acceptable or usable printed document. In most instances, you need to create additional applets that are specifically used for printing data.

The printed document will be composed of several applets which are added to the view. The applets pull the data from the underlying business components. These applets, in turn, direct the data to the print templates discussed in [Appendix E, "Print Tagging Language."](#)

Designing Print Applets for Siebel Handheld Applications

The print template references applets associated with the view and is how you specify what data appears in the printed document. For information on print templates, see ["Creating Print Templates for the Siebel Handheld Application" on page 58](#). As you design your applets, be aware of the print specifications of the printers used in the field. Portable printers typically print on two-inch or four-inch wide paper. You need to design your applets so that the data fits within the limits of the paper width. Keep your documents simple so that they work with different sizes of paper. The following are some guidelines to use when designing your applets to accommodate the smaller paper sizes.

Form Applets

Data from only one business component can be displayed on each line in your document. When you design your form applets, keep in mind that you can display a maximum of two columns of data in form applets. You can specify that each column of data is preceded by an optional caption column. This means you can have up to four columns displayed in your document—two data columns and two caption columns. Alternatively, you can have no captions, and simply display one or two columns of data.

The ratio between caption and data columns is, respectively, 35 percent and 65 percent. This is a fixed relationship that cannot be customized in the template.

Limitations on multiple columns in printed output are largely hardware dependent. If printing seven fields on a 40-column printer, the physical limitations allow only 4-5 characters for each field $(40 - (7-1))/7 = 4.85$. To print more than four columns, an 80-column printer is recommended. Generally, the capabilities of impact printers are lower than those of thermal printers.

List Applets

When specifying the width of a column, you can either specify it with a unit of measurement or as a percentage of the total page width. For example, you can specify that the first column is 20 mm, and the second column is 40 mm. If the width of the paper you print to is narrower than 60 mm, the column widths automatically adjust to fit the printable width as a proportion of the specified width. Therefore, the first column will always be 33 percent, and the second column will be 67 percent of the paper width. The minimum width for a column is 8 mm, which includes a 3 mm gutter margin between columns.

You can specify any number of columns in your list applet. However, if the width of the column is less than 8 mm, the application ignores the column and does not print it.

On narrow paper widths, all the data from a field might not fit on one line. Data that does not fit can be specified, in the Applet tag, to wrap to the next line and keep wrapping until the data in that field is completely displayed. The printable width of the page is equal to the paper width minus the left and right margins ($\text{PaperWidth} - [\text{LeftMargin} + \text{RightMargin}]$). These parameters are set in the setup.ini file. For more information about setting these parameters, see [Appendix F, "Print Configuration Settings."](#)

Configuring Print Applets for the Siebel Handheld Application

Configure print applets as you do any other applet using Siebel Tools. In addition, set the following properties for each applet in the view:

- Set the HTML Popup Dimension value to 0x0.

The 0x0 setting hides the applet from the user who must not see the applet that is used to generate the document. Exposure of these applets complicates a product that is tightly configured for an effective and efficient workflow on a small mobile device.

NOTE: For compatibility with previous versions, Oracle continues to support the name, *Popup Dimension*, for this property. However, it is recommended that you use *HTML Popup Dimension*.

- Set the name of the Mail Template to be the name of the print template file. For more information about the print template file, see ["Creating Print Templates for the Siebel Handheld Application" on page 58](#). For more information about the Mail Template property, see ["Views with Associated Print Templates or Reports" on page 34](#).

Configuring Print Buttons for the Siebel Handheld Application

Users can use the application-level menu to print documents. For information about how to use the application-level menu, see the online help for the Siebel Handheld application.

You can also include a Print button on the applet to give users a visual reminder that it is possible to print from a particular view.

When you design your applets, keep the following in mind when deciding where to place the print button:

- Add the print button to the applet that is visible to the user. Do not add the print button to the print applet, which the user never sees.
- Consider what the desired behavior is when determining the placement of a print button.

For example, in a parent-child view, you might want to add the print button to the parent applet to ensure that the print button is always enabled. This is not necessarily true if the print button is placed on the child list applet. If there are no items in the list applet, the print button is disabled, and the user cannot print from that view. If you only want the user to print when there are list items, then placing the button on the child list applet is appropriate.

To configure a print button

- 1 From Siebel Tools, add a control to the print applet and specify the following:

HTML Type: Button

Method Invoked: Print

- 2 Set the Display Name property of the button. Generally, this is set to Print.

Creating Print Templates for the Siebel Handheld Application

Once you have identified and created the necessary views, you are ready to create print templates. A print template is a text file that includes instructions for printing a document. It specifies the data to be printed, document layout options, and text formatting. These instructions are specified using a print tagging language that is described in [Appendix E, "Print Tagging Language."](#)

Configuring a Printer Settings Dialog Box for the Siebel Handheld Application

If you want, you can configure a printer settings dialog box to popup once printing is initiated by a user in your Siebel Handheld application. The printer settings dialog box prompts the user to specify printer settings such as printer type, port, paper size, and page orientation.

If you do not configure a printer settings dialog box for your Handheld application, then you must manually configure the printer settings for your Handheld application in the setup.ini registry file. Print configuration settings are described in more detail in [Appendix F, "Print Configuration Settings."](#)

NOTE: The print settings that the user selects in the printer settings dialog box override those set in the registry (setup.ini file). The print settings specified via tags in the print template override those set in the registry or selected by the user in the printer settings dialog box.

To configure a printer settings dialog box

- 1 In the installation directory of your Handheld application, open the setup.ini file.
- 2 In the [Printing] Section of your setup.ini file, add PrinterUserSelect=1 or PrinterUserSelect=2.

PrinterUserSelect=1 - displays a printer dialog box for each copy of each form if multi-form, multi-copy printing is used.

PrinterUserSelect=2 - displays a printer dialog box only once when a form starts printing; the same settings are used for all copies of all forms if multi-form, multi-copy printing is used.
- 3 Install and synchronize your Handheld application. For more information about installing and synchronizing your Handheld application, see [“Process of Installing the Siebel Handheld Application” on page 141](#) and [“Synchronizing Data on Your Handheld Device” on page 173](#).

Configuring Multiple Form and Multiple Quantity Printing for the Siebel Handheld Application

Where multiple print templates or forms are associated with an applet, you can configure your Siebel Handheld application so that the user is given the option of specifying the number of copies, if any, to print for each form associated with that applet.

User can select 0 (to not print that form) or specify more than 0 by clicking the arrow keys.

To configure multi-form, multi-quantity printing

- 1 Configure print applets as you would any other applet using Siebel Tools.
- 2 Add the print applets to the View from which you want to print.
 - a From the Objects Explorer in Siebel Tools, select View > [My Print View] > View Web Template > Base > View Web Template Item, where *[My Print view]* is the name of the view from which you want to invoke printing.
 - b In the View Web Template Items List, add a record for each new print applet, specifying the value for Applet by selecting the new print applets you created in [Step 1](#).

NOTE: Specify values for Item Identifier to be greater than 2 to ensure that print applets are not visible in the user interface.
- 3 Create print templates as specified in [“Creating Print Templates for the Siebel Handheld Application” on page 58](#).
- 4 Configure a print button using the PrintBatch method as follows:
 - a From the Objects Explorer in Siebel Tools, select Applet > [My Print Applet] > Control, where *[My Print Applet]* is the applet upon which you want the Print button to appear.

- b** In the Control List, add a new record with the following properties:

Name = Print

HTML Type = Button

Method Invoked = PrintBatch

NOTE: If the applet already has a print button configured based on previous functionality, just edit the Method Invoked property for that button to PrintBatch.

- c** From the Objects Explorer in Siebel Tools, select Applet > [My Print Applet] > Applet User Prop, where *[My Print Applet]* is the same applet that you specified in part a of [Step 4](#).
- d** In the Applet User Properties List, add a PrintForms user property. For more information about this property, see [PrintForms User Property on page 231](#).

Install and synchronize your Siebel Handheld application. For more information about how to install and synchronize your Siebel Handheld application, see “[Process of Installing the Siebel Handheld Application](#)” on [page 141](#) and “[Synchronizing Data on Your Handheld Device](#)” on [page 173](#).

Configuring Siebel Handheld Applications to Open Other Applications

You can open other applications from hyperlinks within Siebel Handheld applications. To configure a field to be a hyperlink, you must specify the field type as FT_URL in Siebel Tools. For more information about how to configure a field, see *Configuring Siebel Business Applications*.

When a user taps a hyperlinked field, the content of the field is treated as a URL or as an attachment. Field values that start with *www* or *http* are automatically treated as URLs, otherwise they are treated as attachment files.

You must also configure the application user property, BrowserPath. You must specify the path to the application that you want to use to open a document in a URL field. The BrowserPath user property specifies the location of the executable file for the application in which to open attachments and URLs. For more information about how to use the BrowserPath user property, see [BrowserPath User Property on page 222](#).

The AttachmentDir setting specifies the storage location for your attachment files. For more information about AttachmentDir, see “[Configuring the Attachment Storage Location and Storage Capacity](#)” on [page 152](#).

NOTE: Field values are added to the start of the AttachmentDir registry value.

To open an application within a Siebel Handheld application

- 1** Set the BrowserPath application user property to, for example, \windows\pword.exe in Siebel Tools.
- 2** Set the registry setting AttachmentDir to, for example, \Program Files\Siebel Handheld\Attachment.

- 3 From the Siebel Handheld application on your handheld device, tap the URL or attachment to open the file in Pocket Word.

In this example, the field is displayed as a hyperlink. If the value of the URL field is *test.doc*, when the user taps the field value, the file `\Program Files\SiebelHandheld\Attachment\test.doc` is opened. The file is opened in Pocket Word, that is, `\windows\pword.exe`.

Configuring Signature Capture Capabilities in Siebel Handheld Applications

You can configure the Siebel Handheld application to capture, view, and print signatures. The following procedures are related to configuring signature capture:

- [“Enabling Signature Capture” on page 61](#)
- [“Invoking Signature Capture Dialog Box and Display” on page 62](#)
- [“Signature Capture Dialog Box and Signature Display” on page 62](#)
- [“Example of Configuring Signature Capture in Activities More Info View in Siebel Handheld Applications” on page 63](#)
- [“Adding a Signature Capture Button in Siebel Tools” on page 64](#)
- [“User Properties for Signature Capture Applets” on page 65](#)

Enabling Signature Capture

Enabling signature capture requires implementing the required supporting field and column definitions, adding a signature control to the applet and, if required, configuring an applet button through which the signature capture dialog box can be invoked. A field can be configured as a signature control in any list or form applet. Multiple signature controls can be added to a single applet. Once captured, signatures are converted to an ASCII encoding data and stored with the Siebel database as ASCII text.

When enabling Signature Capture, the following basic configuration is required:

- The Business Component field mapped to the signature control must be of Type `DTYPE_NOTE`.
- The underlying Table Column on which the Business Component field is based on Physical Type `LONG`.
- The Applet Control must have a control user property called `Signature` with a value `Y`. The Control's HTML Type property must be set to `Field`.

The Applet Control, by default, does not redisplay the signature data if there is data in the underlying business component field. In this case, the field displays as read-only and you are not able to see the signature that was captured.

To redisplay signatures, add another Control user property called ShowData with a value Y. With this additional configuration, the control is still read-only, but you are able to see the signature that was captured. For a full list of user properties available for configuring signature capture, see [“User Properties for Signature Capture Applets” on page 65](#).

Invoking Signature Capture Dialog Box and Display

There are two ways to invoke the Signature Capture dialog box or Signature Display. By default, the basic configuration specified in [“Enabling Signature Capture” on page 61](#) allows you to invoke the signature capture dialog box or display a signature using the (...) ellipses button.

You can also use the following basic configuration to invoke the Signature Capture dialog box or display with the Applet Signature button.

- Create a new Control with properties HTML Type = MiniButton, Method Invoked = StartSignature
- Add a Control user property to the MiniButton control to indicate the signature field in the business component (for example, the field that is being used to store signature in the business component on which the applet is based).

For examples, see [“Example of Configuring Signature Capture in Activities More Info View in Siebel Handheld Applications” on page 63](#) and [“Adding a Signature Capture Button in Siebel Tools” on page 64](#).

Signature Capture Dialog Box and Signature Display

The Signature Capture dialog or display box consists of three controls in the client area: header, signature, and footer. A toolbar displays various buttons depending on the existence of signature data.

Initially, when signature data does not exist or has not yet been captured, the user sees a single line of text within the field control that reads Not Signed. Once the signature capture dialog box or signature display is invoked, the Clear and Cancel buttons are enabled, while the Accept button is disabled. Once the Signature area within the dialog box is populated, the Accept button is automatically enabled. [Table 9](#) describes the functionality around these three buttons.

Table 9. Signature Capture Dialog Box Buttons

Button	Description
Accept	Tap this button to commit the signature to the database.
Clear	Tap this button to reset and clear the signature field.
Cancel	Tap this button to discard the signature and close the display.

Once the signature is committed (for example, signature captured and accepted in the database), the user sees a single line of text *x Signed x* within the applet field control.

The Header and Footer is a line of text in one or more paragraphs. The specific Header or Footer values that appear as well as how they appear in the dialog box is controlled by a set of user properties. See [“User Properties for Signature Capture Applets” on page 65](#).

Example of Configuring Signature Capture in Activities More Info View in Siebel Handheld Applications

The following example provides detailed steps to configure signature capture in Activities More Info View in the SIA Siebel Sales Handheld application. The Activities More Info View has one applet 'SIS HH Activity Entry Applet - CE', which is based on the Action Business Component, which in turn is based on S_EVT_ACT Table. The following example shows how to configure a field within the Action Business Component called Signature, which is based on a new column created from S_EVT_ACT_X Table. To enable basic signature capture (for example, no header or footer), follow these steps:

- 1 In Siebel Tools, add an extension column to the table S_EVT_ACT_X.

For this Field	Add This Value
Name	SIGNATURE
User Name	Signature
Type	Extension
Nullable	TRUE
Physical Type	Long
Length	0
Cascade Clear	Ignore
Transaction Log Code	TRUE
Status	Active
Sequence	999
Comments	Extension Column for Activity Signature Capture

- 2 Add a field to Action the business component with the following values:

For this Field	Add This Value
Name	Signature
Join	X_EVT_ACT_X
Column	SIGNATURE
Text Length	16,383
Type	DTYPE_NOTE

For this Field	Add This Value
Use Default Sensitivity	TRUE
Comments	Custom Field added for Signature Capture

- 3** Add a control to the applet. For this example, you add the control to the 'SIS HH Activity Entry Applet - CE'.

For this Field	Add This Value
Name	Signature
Caption	Signature
Caption String Reference	SBL_SIGNATURE-1005113048-35Y
Field	Signature
HTML Display Mode	EncodeData
HTML Row Sensitivity	TRUE
HTML Type	Field
Runtime	TRUE
Text Alignment	Left
Visible	TRUE
Comments	Custom control added to display and invoke Signature Capture.

- 4** Add two Control User Properties to the new 'Signature' control with the following values:

User Property Name	Value
Signature	Y
Show Data	Y

- 5** Add the new control to the Edit Web Template for SIS HH Activity Entry Applet - CE.

You can now invoke the signature capture dialog box by tapping the ellipsis points (...) on the signature field of the applet.

Adding a Signature Capture Button in Siebel Tools

Optionally, you can also configure the signature capture dialog box by placing a button on the applet. The following configuration steps provide details on doing this.

To create a new minibutton control

- 1 Create a new MiniButton control against the 'SIS HH Activity Entry Applet - CE'.

For this Field	Add This Value
Name	SignatureCapture
Caption	Sign
Caption String Reference	SBL_SIGN-1005113047-35W
HTML Type	MiniButton
MethodInvoked	StartSignature
Comments	Custom MiniButton to Invoke Signature Capture.

- 2 Add a Control user property to the MiniButton control to indicate the Signature field in the business component:

Name: SignatureField

Value: Signature

User Properties for Signature Capture Applets

You can use user properties to modify the style and other features of the signature capture applet. For more information about these user properties, see the following sections:

- [BorderStyle User Property on page 222](#)
- [EncryptKey User Property on page 228](#)
- [InkColor User Property on page 229](#)
- [InkWidth User Property on page 230](#)
- [ShowData User Property on page 234](#)
- [Signature User Property on page 234](#)
- [WritingGuide User Property on page 239](#)

You can use other user properties to modify the header and footer display and the save function. For more information about these user properties, see the following sections:

- [ConfirmAccept User Property on page 222](#)
- [MaximumFooterLines User Property on page 230](#)
- [MaximumHeaderLines User Property on page 230](#)
- [SignatureDataField User Property on page 235](#)
- [SignatureDate User Property on page 235](#)
- [SignatureFooterField User Property on page 235](#)

- [SignatureFooterSaveField User Property on page 235](#)
- [SignatureHeaderField User Property on page 236](#)
- [SignatureHeaderSaveField User Property on page 236](#)
- [SignatureHeight User Property on page 236](#)
- [SignatureTime User Property on page 236](#)

Testing the Siebel Handheld Application

Before deploying your application to your users, be sure to thoroughly test the application by synchronizing with a handheld device.

To test your Siebel Handheld application

- 1 Download the configuration for your Siebel Handheld application to a handheld device so you can test the functionality and verify that you have the desired behavior.
- 2 Check to see how much data is downloaded to your handheld device.

If too many records are downloaded, this increases the length of time it takes to synchronize the handheld device and slows down the application performance.

For more information about checking to see how much data is downloaded to your handheld device, see [“Monitoring Synchronization Sessions for Siebel Handheld Applications” on page 105](#), including the procedure [“To monitor data download” on page 105](#).

NOTE: You can also check the log file on the Siebel Server to see how many records are downloaded for each business component. However, you must turn on logging to capture this information in the log file. For more information about enabling logging for Direct Server Sync, see [“Configuring Logging Levels for Direct Server Synchronization” on page 137](#).

4

Siebel Handheld Application Administration

This chapter describes how to administer Siebel Handheld applications. The following topics are covered in this chapter:

- [“Overview of Siebel Handheld Application Administration Screens” on page 67](#)
- [“Setting Up Users in Siebel Handheld Applications” on page 69](#)
- [“About Thread Throttling in Siebel Handheld Applications” on page 73](#)
- [“About Settings in the Administration Screens of Siebel Handheld Applications” on page 74](#)
- [“Configuring Application Settings for Siebel Handheld Applications” on page 75](#)
- [“Configuring Component Level Settings for Siebel Handheld Applications” on page 81](#)
- [“Administering Barcode Settings for Siebel Handheld Applications” on page 82](#)
- [“About BatchSync for Siebel Handheld Applications” on page 94](#)
- [“Process for Administering Batch Sync for Siebel Handheld Applications” on page 95](#)
- [“Load Balancing Support for Synchronization” on page 100](#)
- [“Setting the ApplicationDirectory Parameter” on page 101](#)
- [“Enabling Encryption for Siebel Handheld Applications” on page 101](#)
- [“Storing Asynchronous Data” on page 103](#)
- [“About Monitoring Synchronization Sessions for Siebel Handheld Applications” on page 104](#)
- [“Organization Enabled LOV Support” on page 108](#)
- [“Setting Up a Van Inventory for Siebel Consumer Goods Handheld Applications” on page 111](#)
- [“Setting Up Products in Siebel Consumer Goods Handheld Applications” on page 115](#)
- [“Accounts Administration in Siebel Consumer Goods Handheld Applications” on page 120](#)
- [“Administering Document ID with Siebel Consumer Goods Handheld Applications” on page 122](#)

Overview of Siebel Handheld Application Administration Screens

This chapter is designed to show you how to administer Siebel Handheld applications. Key tasks are outlined that you can perform using the Administration - Mobile screen. Your organization might follow a different task sequence depending on its business requirements.

Following are the views used for administering Handheld applications. You can access the Administration - Mobile screen through either the Siebel Web Client or Siebel Mobile Web Client.

- **Session Administration.** This view contains a detailed information about user synchronization sessions. Use this view to monitor and investigate Handheld application user synchronization activities.
- **Server Component Administration.** This view allows you to manage server-level settings for synchronization components. These settings are used by the synchronization engine to extract application definition and user data. These settings will override the application-level settings.
- **Application Administration.** This view lists all the Handheld applications available within your enterprise. From this view, you can create new application settings and administer settings that have already been created. The contents of the following views are used by the synchronization engine to extract application definition and user data:
 - **Business Component Filters.** Use this view tab to change synchronization filter settings for business components. If you wish to restrict the contents of selected business components to reduce the data set otherwise visible to your users, you can change filter settings in this view.
 - **Business Object Filters.** Use this view tab to define business object level filters, which restrict data that is downloaded to the Siebel Handheld Client upon synchronization.
 - **Settings.** Use this view tab to define parameter settings for your application.
- **Conflict Administration.** This view allows you to access selected transaction errors.
 - **Audit Trail.** Use this view tab to obtain information about action taken on a particular data conflict. Audit Trail must first be enabled for the conflict data. The business components are Handheld Transaction Error and Handheld Txn Error Message.
 - **Business Components.** Use this view tab to see business component information associated with a particular data conflict.
 - **Error Details.** Use this view tab to get detailed information about specific data conflicts. You are also able to take particular action on any given conflict.
- **Barcode Administration.** This view allows you to create new barcode definitions for your Handheld applications.
- **User Administration.** This view allows you to manage user-specific settings, such as business object and business components filters, that filter the data that display to the user. The data sets contained in these user views are used by the synchronization engine to extract application definitions and user data. The Siebel Handheld application is populated by these data when the user performs synchronization. These settings override the Siebel Server component-level and application-level settings.
 - **User Business Components.** Under this view tab, you can set user-specific synchronization filter directives for business components. These settings override application-level settings.
 - **User Business Objects.** Under this view tab, you can set user-specific filters for business objects. In this setting, you limit the data set that is downloaded, at the time of synchronization, to the Siebel Handheld Client. These settings override application-level settings.
 - **User Settings.** Under this view tab, you can control user-specific settings which override the Siebel Server component-level and application-level settings.

- **Batch Synchronization Administration.** In this view you can extract Siebel Handheld application databases, process-pending transactions, and apply the transactions to the Siebel Server.
- **Barcode Enabling.** In this view you can enable barcode scanning for chosen views in the Siebel Handheld application.

NOTE: By default, most of the parameters referenced in this chapter are not automatically available as options in the drop-down menus of your Handheld application, and as a result are not set in the default configuration. If you want to make these and any other new parameters available, then you must add them to your Handheld application by creating a new parameter record for each parameter you want to make available.

Setting Up Users in Siebel Handheld Applications

To set up users in a Siebel Handheld application, you must perform a number of tasks. The tasks that you must perform include the following:

- [“Assigning User Responsibilities to Siebel Handheld Application Users” on page 69](#)
- [“Creating Siebel Handheld Application Views” on page 69](#)
- [“Setting Business Component Filters for Siebel Handheld Application Users” on page 71](#)
- [“Setting Business Object Filters for Siebel Handheld Application Users” on page 72](#)

Assigning User Responsibilities to Siebel Handheld Application Users

You must create user accounts and assign responsibilities and passwords for each user of the Handheld application. The steps are the same as those for creating user accounts, assigning responsibilities and passwords for the Siebel Web Client. For more information about creating user accounts, and assigning user responsibilities and passwords, see the *Siebel Applications Administration Guide*.

Creating Siebel Handheld Application Views

The synchronization engine for the Handheld application extracts views based on configuration (SRF) and the responsibility set up in the Application Administration view.

To configure a new view in your Handheld application, follow the list below. Knowledge of Siebel Tools is required to perform these tasks.

- 1 Create the new view in Siebel Tools. For information on creating views, see *Configuring Siebel Business Applications*.

- 2 Add that view to the Handheld application screen. For more information about adding views to screens, see *Configuring Siebel Business Applications*.
- 3 Add the screen to the Handheld application, if required. For more information about adding screens to applications, see *Configuring Siebel Business Applications*.
- 4 Compile the project. For more information about compiling projects, see *Using Siebel Tools*.
- 5 Add the new view to the Handheld application user's responsibility. For more information about adding views to a user's responsibility, see ["To add a Siebel Handheld application view to a user's responsibility" on page 70](#).

To add a Siebel Handheld application view to a user's responsibility

- 1 Launch the Siebel Web Client application that uses the same database that the Handheld application synchronizes with.
- 2 Navigate to the Administration - Application screen > Views view.
- 3 Add the new views.
- 4 In the Responsibilities view, associate each view with the appropriate Handheld application responsibility.
- 5 Add appropriate users to the responsibility.

NOTE: For more information about adding views and associating views with responsibilities, see *Siebel Applications Administration Guide*.

Specifying Views for the Siebel Handheld Application

The Handheld application uses a small subset of views used in the Siebel enterprise application. Because there are memory resource constraints on handheld devices, it is recommended that you compile an SRF to extract only those views that are used on the device.

The combination of the SRF and the user's responsibility determines which views are extracted. The handheld device only extracts views whose parent screen is included in the Handheld application and are part of the user's responsibility.

About Business Component Filters

Business component filters are used in some cases to restrict the size of extractions that otherwise might be excessive. They suppress the extraction of business component records. Use business component filters with discretion because excessive filtering can cause server data integrity problems.

Business component filters can be specified at either the application level or the user level, but not at the component level. They must not be specified at the user level outside of your test environment, and when tested they must be migrated to the application level.

If you are configuring synchronization for Handheld applications, a suggested practice, is to start with no business component filters at all. Attempt a synchronization and even if it fails due to excessive data extraction volumes, view the extraction results to determine the business components for which the data extraction was excessive. If any business component extraction is found to be excessive, you can reduce the extraction by adjusting the existing search specs specified in Siebel Tools (applets and business components), or Handheld application settings (for example, in DefaultBusObj), and selection filters (business object filters). If nothing else works, a business component filter can be used to force a reduction in the result set for a particular business component.

Setting Business Component Filters for Siebel Handheld Application Users

The Business Components Filters view tab in the Application Administration view contains the synchronization filter settings for business components. If you wish to add or remove business component filter settings for users, you do so in this view.

To add a business component filter setting

- 1 Navigate to the Administration - Mobile screen > Application Administration view.
- 2 In the Handheld Applications list, select the appropriate application, then click the Business Component Filters view tab.
- 3 Click New, then enter the required information.

Some fields in the Business Component Filters view are described in the following table:

Field	Comments
Owner	Read only. Contains the Handheld application to which the business component will be associated. For example, Siebel <Application name> for CE.
Business Component	A text box. Enter the business component name.
Name	A text box. Enter the business component filter name. For example, Filter 1.
Query	A text box. Enter the syntax for the query. For example, [Start Date] <=Today() For more information about developing queries, see "Data Filtering for Siebel Handheld Applications" on page 125

To remove a business component filter setting

- 1 Navigate to the Administration - Mobile screen > Application Administration view.
- 2 In the Handheld Applications list, select the appropriate application, then click the Business Component Filters view tab.
- 3 Select the filter setting record you wish to remove.

- 4 From the Business Component Filters menu, choose Delete Record.

About Business Object Filters

The Siebel Web Client supports named queries on most or all screens. These queries restrict the result set displayed to the user. Business object filters are the Handheld application synchronization equivalent to these named queries. Just like client based queries, they are applied to a specified business object. They also contain search or sort specifications for business components that are part of that business object.

The Default column is the only difference from the query syntax appearing in a BusObject filter for the Siebel Web Client. The Default column is unique to the business object filter mechanism. For Web client queries, users can set a default query for each view in their Preferences screen. If users do not set a default query for each view in their Preferences screen, there is no default query, and so all records are returned by default. This is not recommended for Handheld application deployments as this might result in excessive volumes of data being extracted. Thus, the Default column allows you to decide what filter to use by default if a user does not make a selection.

There is also a client option to revert to default filters selection. There must be at most a single default filter for each business object name. It is not recommended that you set more than one filter as the default for a particular business object. Note however, that the same default choice will be made by all clients.

Business object filters can be specified at either the application level or the user level, but not at the component level. Business object filters specified at the user level override a filter specified at the application level, provided the application-level filter has the identical values for the business object name and filter name. The list of filter choices presented to the user is the merged list of all application filters except those overridden at the user level, plus all user filters.

Setting Business Object Filters for Siebel Handheld Application Users

The Business Object Filters View in the Application Administration view contains the synchronization filter settings for business objects. If you wish to add or remove business object filter settings for users, you do so in this view.

To add a business object filter setting

- 1 Navigate to the Administration - Mobile screen > Application Administration view.
- 2 In the Handheld Applications list, select the appropriate application, and then click the Business Object Filters view tab.
- 3 Click New, and then enter the required information.

- 4 The fields in the Business Object Filters view are described in the following table:

Field	Comments
Owner	Read only. Contains the Handheld application to which the business component will be associated. For example, Siebel <Application Name> for CE.
Default	Check to allow you to decide what filter will be used by default if a user does not make a selection.
Business Object	A text box. Enter the business object name. For example, Account.
Name	A text box. Enter the business object filter name. For example, BOFilter 1.
Query	A text box. Enter the syntax for the query, for example, as follows: <pre>'Account'.Search = "[Account Status] = LookupValue ('ACCOUNT_STATUS'", "'Active'")" 'Account'.Sort = "Name, Location"</pre> For more information about developing queries, see “Data Filtering for Siebel Handheld Applications.”

To remove a business object filter setting

- 1 Navigate to the Administration - Mobile screen > Application Administration view.
- 2 In the Handheld Applications list, select the appropriate application, and then click the Business Object Filters view tab.
- 3 Select the filter setting record wish to remove.
- 4 From the Business Object Filters menu, choose Delete Record.

About Thread Throttling in Siebel Handheld Applications

When a large number of users attempt to synchronize simultaneously, the load on a single server can become excessive. Thread throttling significantly reduces the total number of simultaneously active transaction processor threads and database extraction threads, thereby increasing the overall throughput for synchronization, without reducing the number of concurrent users. Synchronization performance degrades slightly but will successfully complete for all users.

Thread throttling allows the maximum possible number of concurrent users. It throttles in a manner that maximizes application server usage during any mixture of transaction processor and database extraction threads. Thus, if the Siebel Handheld Application Server supports x concurrent transaction processing threads, it will allow this number of transaction processing threads while disallowing all database extraction threads. Similarly, if the server supports y concurrent database extraction threads, it will allow this number of database extraction threads while disallowing all transaction processing threads. If fewer than x transaction processing threads are currently active, some database extraction threads are allowed to execute concurrently. Similarly, if fewer than y database extraction threads are currently active, some transaction processing threads are allowed to execute concurrently.

For information on thread throttling settings, see [“Configuring Application Settings for Siebel Handheld Applications” on page 75](#).

To enable thread throttling, see [“To add a new application setting” on page 81](#).

About Settings in the Administration Screens of Siebel Handheld Applications

Settings can appear at three levels: Application, Component, or User. Certain settings are only allowed at specific levels.

There are also two types of settings: single-line and multi-line settings.

- For a single-line setting, only one row can contain a unique setting name at a given level. Thus, a single-line setting at the User level can be used only once at that level. For single-line settings, the Sequence column must always contain a value of zero.

For single-line settings, you can leave the sequence column value alone, which will result in a default value of zero being assigned.

- For multi-line settings, the sequence column is necessary to allow multiple rows. The sequence column has no effect on actual processing, but is part of the logical key in the database table. When you create a new record in this database table, the record must have a unique logical key.

For multi-line settings, each line must include a different sequence number to avoid logical key conflicts.

If the combination of setting name and sequence number is not unique for a particular parent record (Application, Component, or User), you will receive an error message when stepping off or saving the record. Multi-line entries must contain the correct key values before they can be saved to the database.

The rules for override are that any setting, whether single line or multi-line, specified at the lower levels overrides that same setting name at higher levels. Thus the settings at the application level apply unless specific settings are overridden for a particular component or a particular user. When an override occurs, it occurs for the complete setting name. Thus, if a particular multi-line setting has three rows at the user level and twelve rows at the application level, the resulting multi-line setting value for that setting will contain only the three rows at the user level. There is also an override mechanism to allow a setting to be removed, rather than replaced. To remove a setting from a higher level, specify the setting name to be removed, with an empty setting value.

Configuring Application Settings for Siebel Handheld Applications

The Administration - Mobile screen contains a Settings list that allows you to change default settings. Some of the settings are described in [Table 10 on page 75](#).

The Handheld setting value field has a limit of 2000 characters. To create a default business object (DefaultBusObj) setting value with more than 2000 characters, use the following general approach:

Break the value into multiple lines of DefaultBusObj settings. Enter these settings using the same DefaultBusObj value format:

```
BusObj|Visibility|Query|BusComp_1|query specifications_1[|BusComp_n|query specifications_n]
```

When defining multiple lines of DefaultBusObj settings for a single business object, all view modes and filters must match. If a business component is found in multiple DefaultBusObj settings for a single business object, then the business component's query specifications will be concatenated with a space and appended to the previous business component's query specifications. You must be aware of this effect in order to decide if both query specifications must be combined with an OR or AND operative.

The DefaultBCUserProps and DefaultFields settings for a single business component can also be broken into multiple lines of settings if their values exceed 2000 characters. These settings must all be entered using the same value format as well:

```
BusComp|BCUserProp_1[|BCUserProp_n] or BusComp|Field_1[|Field_n]
```

Table 10. Settings for Siebel Handheld Applications

Setting Name	Definition	Valid Values
AllowRememberPassword	Single-line setting. Specifies whether the Remember Password check box will be displayed on the Siebel Handheld Client Synchronization screen.	TRUE or FALSE
ApplicationDirectory	Single-line setting. Specifies the working directory (UNC path) for the Handheld application synchronization component where user data is stored.	\\server name\directory name
BatchDownloadStagger	Single-line setting. Enables the setting of the interval (in minutes) during which the polling for ready extracts is staggered.	integer >= 0; default is 30
BatchInitialDownload	Single-line setting. Enables the setting of the earliest time (HH:MM; 24-hour clock) at which the polling for a database extract can commence. The setting must be UTC enabled.	00:00 is the default value

Table 10. Settings for Siebel Handheld Applications

Setting Name	Definition	Valid Values
BatchPollFrequency	Single-line setting. Enables the setting of the amount of time (in minutes) between polling sessions.	integer ≥ 0 ; default is 15
ClientSyncDefault	Determines the default synchronization options available to the synchronization client in the Handheld application. It can have the following values: ■ Upload which means that the Upload Only option is selected in the batch synchronization dialog on the client. ■ Deferred which means that the Upload Now, Auto Download Later option is selected.	Deferred, Upload
DBExtractThreadLoad	Single-line setting. Enables Thread Throttling functionality for database extract threads. It is the load (or weight) that will be assigned to each individual Database Extractor thread. For each running database extracting thread, this load value will be used to determine the total system load, which is then compared against the MaxTotalThreadLoads value. A new thread will only be started if the total system load does not exceed the MaxTotalThreadLoads value. A value of zero disables throttling of Database Extractor threads.	integer ≥ 0 ; default is 2
DefaultBCUserProps	Multi-line setting. Reduces the number of User Properties that are extracted to the device metadata, thus decreasing the number of fields for a business component that need to be extracted. These reductions lower the metadata extract size and optimize client performance by removing irrelevant user properties from the Handheld application configuration. If this directive is not specified for a business component, then all user properties will be extracted.	

Table 10. Settings for Siebel Handheld Applications

Setting Name	Definition	Valid Values
DefaultBusObj	Multi-line setting. Used to force the extraction of a business object and its designated business components. This is typically used when a business component is not extracted because it is not specified via the "DefaultView" directive and is required for the application to function correctly. Another use of this directive is to designate business components that function as RBOs (reverse business objects).	Business Object Name Visibility Level Business Component Name QBE query construct For more information about QBE (query by example) structure, see "Constructing Business Component and Business Object Filters for Siebel Handheld Applications" on page 126.
DefaultFields	Multi-line setting. Used to force the extraction of fields for a particular business component. This is typically the case where the business component is extracted via the "DefaultView" directive but because the field is not visible on the applet, it is not extracted. Also when a hidden business component is extracted via the "DefaultBusObj" directive, it is necessary to specify all of the fields that need to be extracted for the business component. If no fields are specified via this directive, then the business component will not be extracted for this case.	Business Component Name Field1 Field2 ...
DefaultHandheldInsertMode	Single-line setting. Enables insert failure processing for synchronization. If enabled, synchronization will stop upon encountering a data conflict during an insert operation. Users or administrators must resolve the data conflict before synchronization can resume. This feature is disabled by default.	NoFail or FailOnError

Table 10. Settings for Siebel Handheld Applications

Setting Name	Definition	Valid Values
DefaultHandheldSyncPickMode	Single-line setting. Enables Extended Pick processing for synchronization. If enabled, synchronization stops when a data conflict is encountered during a pick operation. Users or administrators must resolve the data conflict before the synchronization can resume. This feature is disabled by default.	NoFail or FailOnError
Enable Application Lockout	Single-line setting. If set to TRUE, locks the Siebel Handheld application after a number of invalid attempts. The number of invalid attempts is specified in the FailedLoginAttempts setting. The Siebel Handheld application locks for the number of days specified in the LockOutPeriod setting. The default value is FALSE.	TRUE or FALSE
Enable Encryption	Single-line setting. If set to TRUE, enables encryption of the database on the handheld device. The default value is FALSE.	TRUE or FALSE
EnableBatchExtraction	Single-line setting. This parameter enables or disables the batch synchronization functionality. Disable batch synchronization is the default.	TRUE or FALSE
EnableThrottleDebugMode	Single-line setting. This parameter enables or disables Thread Throttling functionality.	TRUE or FALSE
ExtractionExpiration	For batch synchronization functionality. It specifies the number of hours that is used to determine when a database extraction has expired. When a database extract expires, batch synchronization will reextract the databases. If no value is provided, then databases will be extracted every time they are requested.	integer >= 0

Table 10. Settings for Siebel Handheld Applications

Setting Name	Definition	Valid Values
LoadBalanceLoc	Single-line setting. This setting can be specified only from the application level. The IP address or server name of the load balancer and port number are specified in the following format: [IP Address]:[port number]	Load balancing must be used for batch synchronization, if enabled.
MaxBatchsyncTasks	Single-line setting. This parameter enables a percentage of synchronization component tasks to be allocated to performing DBextract or Transaction Processing.	integer >= 0; default is 0.5
MaxThrottleWaitTime	Single-line setting. For Thread Throttling functionality. This is the upper limit on the amount of time (in minutes) any individual throttling request will be allowed to wait.	integer >= 0; default is 5
MaxTotalThreadLoads	Single-line setting. For Thread Throttling functionality. It defines the maximum number of total thread loads (determined by DBExtractThreadLoad and TranProcThreadLoad for each type of thread) that will be allowed to run across the scope defined by ThreadThrottleScope. If a throttling request is made that causes this maximum to be exceeded, the requesting thread is delayed. The default value is zero, which completely disables the throttling mechanism.	integer >= 0; default is 0
NoDatabaseBusComp	Multi-line setting. Defines a business component that must be omitted from the device database and excluded from database extraction.	
NoExtractBusComp	Multi-line setting. Defines a business component that must be excluded from database extraction.	
SchemaChangeNotification	Multi-line setting. Defines a Business Service that must receive the Handheld Schema Change Notification.	(Siebel internal)

Table 10. Settings for Siebel Handheld Applications

Setting Name	Definition	Valid Values
ThreadThrottleScope	Single-line setting. For Thread Throttling functionality. Defines the scope of the thread throttling mechanism as using one of two different modes: ■ Process Thread, where throttling occurs independently within each process. ■ Application, where throttling occurs across all processes running the same synchronization application on a single server. Only the first character of the ThreadThrottleScope parameter is used to determine the value. All other characters are ignored. Thus <i>aardvark</i> is interpreted as <i>Application</i>. Case is also ignored. The default value is Application.	Application or Process
TranProcThreadLoad	Single-line setting. For Thread Throttling functionality. It is the load (or weight) that is assigned to each individual Transaction Processor thread. For each running transaction processing thread, this load value is used to determine the total system load, which is then compared against the MaxTotalThreadLoads value. A new thread will only be started if the total system load does not exceed the MaxTotalThreadLoads value. A value of zero disables throttling of transaction processing threads.	integer ≥ 0 ; default is 3

Table 10. Settings for Siebel Handheld Applications

Setting Name	Definition	Valid Values
TranProcThreshold	Single-line setting. For Thread Throttling functionality. This is the minimum time (in minutes) that the Transaction Processor will continue processing transactions before performing a handshake with the client. Once this value has been exceeded, a handshake occurs instead of starting to process the next transaction. Doing so prevents the client from timing out the session when thread throttling is enabled.	integer ≥ 0 ; default is 5

To add a new application setting

- 1 Navigate to the Administration - Mobile screen > Application Administration view.
- 2 From the Settings list menu, select New Record.
- 3 Click the name field, and select the setting you require.
- 4 Click the Value field, and enter the text of the setting.

Configuring Component Level Settings for Siebel Handheld Applications

You administer server components for your handheld device from the Administration - Mobile screen > Server Component view. The component displayed is based on the application selected in the Application Administration view. The Server Component Administration screen is used for overriding application settings at the component level on a specific server. The data entered here is used by the synchronization engine when the user synchronizes with the Siebel Server.

The Server Component screen contains a list of server components associated with the application that was selected in the Application Administration screen. For each server component, the Settings view details the associated settings.

The Name field value needs to be the exact component name, such as SalesceObjMgr_enu, of the synchronization server component for the Handheld application.

Server component settings are used primarily for functionality required for individual server components. For example, thread throttling is dependent on components running on a particular server and is best set at the Siebel Handheld Application Server component level. Examples of settings that might be made at the component level are MaxTotalThreadLoads, TranProcThreadLoad, DBExtractThreadLoad, and so on. Generally, settings made at the application level are shared by all server components.

Administering Barcode Settings for Siebel Handheld Applications

Siebel Handheld applications can scan and parse data from HIBC and UCC/EAN barcodes. Administrators can set up Siebel Handheld application to scan and parse any one-dimensional barcode and render the corresponding data in an applet. For example, if a control in a list applet is enabled for barcode scanning and the barcode scanned is valid, the Handheld application will parse the barcode, create a new record, and fill in the field with parsed data. In form applets, after the user scans an item, the data representing the item automatically populates the barcode-enabled field. In order to do this, Siebel Administrators must define the barcodes and how data will be parsed from these barcodes in the Barcode Administration view.

The following procedures are included in this topic:

- [“Enabling Barcode Scanning in Siebel Handheld Applications” on page 82](#)
- [“Setting New Record Behavior for Barcode Scans” on page 83](#)
- [“Mapping a Button for Socket In-Hand Scan Card” on page 83](#)
- [“Creating New Barcode Definitions for Siebel Handheld Applications” on page 84](#)
- [“Enabling Applications Views for Barcode Scanning” on page 88](#)
- [“Enhancing the Behavior of the Barcode Scan” on page 88](#)
- [“Example of Creating a New Barcode Definition in the Siebel Handheld Application” on page 92](#)

Enabling Barcode Scanning in Siebel Handheld Applications

Before using the barcode scanning feature, you must add the following parameter value to the setup.ini file:

EnableBarcode = Y

If EnableBarcode is not set on a handheld device which has a barcode scanner attached to it, then:

- When you install the Siebel Handheld application on that handheld device, and
- Synchronize with the Siebel Server and default filters

An error message similar to the following displays as the application opens:

The barcode scanner could not be initialized.

If your Siebel Handheld application is not enabled for barcode scanning, then you must create an Application Event Services object in Siebel Tools. For more information about enabling barcode scanning for your Siebel Handheld application, see [“To enable barcode scanning for a Handheld application” on page 83](#).

To enable barcode scanning for a Handheld application

- 1 Navigate to Application object in Siebel Tools, and select Siebel CG Sales Enterprise CE.
- 2 Expand to the Application Event Services object in Siebel Tools, and add a new entry with the following details:

Field	Comments
Name	The description of the event. For example: SHCG Core Barcode Service
Event Name	The name of the application event service. For example: HHCG_Start
Service Name	The name of the business service on which to invoke the method. For example: SHCG Core Barcode Service

- 3 Add the following parameter value to the setup.ini file for your Handheld application:
EnableBarcode = Y

Setting New Record Behavior for Barcode Scans

You can specify whether to create a new record when a user scans a barcode. Typically, you create a new record for a parseable scan, and update the active record for a non-parseable scan.

To set the new record behavior

- In Siebel Tools, set the applet user property BarcodeNewRecord in Siebel Tools. For more information about this user property, see [BarcodeNewRecord User Property on page 222](#).

Mapping a Button for Socket In-Hand Scan Card

Siebel Handheld applications support embedded barcode scanners provided in Symbol and Intermec devices. In addition, Handheld applications support certain Socket scan cards. See *Siebel System Requirements and Supported Platforms* on Siebel SupportWeb for a list of supported handheld devices and socket scan cards. Note that different socket scan cards will require different scan card driver programs to be installed. Check with the card vendors or their Web sites for required driver program installation.

For Intermec and Symbol devices, the barcode scanning can be triggered by the built-in buttons. If you are using Socket scan cards, the following steps are required to be taken on the handheld device for mapping a button to the barcode-triggering utility software, SocketTrigger.exe.

To map a button to SocketTrigger.exe (Socket Scan Card only)

- 1 On your handheld device, open the application that enables you to customize the hardware button functions. For example, on Windows Mobile Version 5.0, choose Start > Settings > Personal > Buttons.
- 2 From the button list, select a button to trigger In-Hand Scan Card.
- 3 In the button assignment field, select SocketTrigger.
- 4 Confirm your selection.

NOTE: The ^ character signifies a circumflex.

Creating New Barcode Definitions for Siebel Handheld Applications

You can define new one-dimensional barcodes in the Barcode Administration views. To define a new barcode, you need to create a new barcode definition in the Barcodes list, then create corresponding records in the Barcode Item list to define data elements within the barcode.

To create a new barcode definition

- 1 Navigate to the Administration - Mobile screen > Barcode Administration view.
- 2 Click New, then fill in the fields.

The fields in the Barcodes list are described in the following table:

Field	Comments
Name	Required. Any descriptive name for the barcode. Must be unique for all records defined in the Barcode screen.
Sequence	Required. This is the sequence for barcode parsing. The lower of two sequence numbers takes precedence when deciding which barcode in the list to match. For example, if a scanned barcode matches two entries in the barcode list, the one with a lower sequence number will be picked for the match. The lowest sequence number is 1.
Barcode Type	Required. Type of barcode standard. Can either be Location or Code. For a Location type barcode, the barcode data element parsing is done solely by the Sequence field in Barcode Item list. For a Code type barcode, the barcode data is first parsed into multiple sections by the Code field in the Barcode Item list, then is further parsed by the Sequence field for each section. For more information about barcode type, see "Example of Location Type Barcode" on page 86 and "Example of Code Type Barcode" on page 87 .
Buscomp	Optional. Used to designate into which business component the target data is placed.

Field	Comments
Min Length	Optional. The minimum length for the barcode data in digits. If it is not set, the default minimum length is 1.
Max Length	Optional. The maximum length for the barcode data in digits. If it is not set, the default maximum length is 10000.
Prefix	Optional. Defines the value that the parsing algorithm uses to identify barcode definition to use. The allowed format for Prefix is any ASCII character for exact match, '#' for any single digit number match (that is, 0 - 9), '&' for any alphabet character in lower and upper case, or '*' for a wild card match. For example, you can enter ##9&* as the prefix, which means the first two characters can be any number, the third character has to be '9', the fourth character can be any alphabet character, and the fifth character can be any ASCII character.
Suffix	Optional. Allows you to associate suffixes with individual fields. The allowed format for Suffix is the same as the one specified for Prefix. In addition, the rules for matching Suffix are the same as the ones for Prefix.
Description	Optional. Detailed description for this barcode.

- 3** In the Barcode Item list, add new records to identify how data will be parsed from barcode. Depending on the type of barcode standard you just defined (either Location or Code), you then need to create new records in the Barcode Item list to identify how data is parsed.

- 4** In the Barcode Item list, Click New, then update the required fields.

Some of the fields are described in the following table:

Field	Comments
Name	Required. Name of the barcode item (for example, Product Name corresponds to the Product Name field). This name does not determine which field in BusComp the parsed data is written to. That field is determined by the Data Desc field.
Code	Applicable for Code barcodes only. Used to break a barcode into multiple barcode sections.
Sequence	Required. The sequence for barcode data elements parsing. For Location barcodes, this corresponds to the sequence used to parse data elements from the barcodes. For Code barcodes, this corresponds to the sequence used to parse data elements within barcode sections.
Min Length	Required. Minimum Length of the character string for this data element. If this is a variable length string, then Minimum Length is not equal to Maximum Length.

Field	Comments
Max Length	Required. Maximum Length of the character string for this data element. If this is a variable length string, then Minimum Length is not equal to Maximum Length.
Data Desc	Optional. Used by algorithm to identify what field to parse this data into. The value in this field must correspond to the exact field name. For example, Product Name corresponds to the Product Name field.
Data Format	Optional. Defines format for data element (for example, MMDDYY is for date).
Action	Optional. Defines the action for the data element. Both Data Format and Action are written in the following format to the Data Desc field: <parsed data element>,<Data Format>,<Action> See the example in Table 14 .

Example of Location Type Barcode

The two entries for the Barcode list, HIBC Secondary and IBM, are shown in [Table 11](#).

Table 11. Location Type Barcode List Entries

Name	Sequence	Barcode Type	Buscomp	Minimum Length	Maximum Length	Prefix	Suffix	Description
HIBC Secondary	1	Location	Medical Product		31	+\$9## ###3		
IBM	2	Location	Tech Product		30	+\$9## ###39		

Entries for Barcode - HIBC Secondary in the Barcode Item list are shown in [Table 12](#).

Table 12. Location Type Barcode Item List Entries

Name	Code	Sequence	Minimum Length	Maximum Length	Data Description	Data Format	Action
Prefix		1	4	4	Prefix		
Quantity		2	5	5	Quantity		
Exp date flag		3	1	1	Exp flag		
Date		4	6	6	Expiration Date	YYMMDD	

Table 12. Location Type Barcode Item List Entries

Name	Code	Sequence	Minimum Length	Maximum Length	Data Description	Data Format	Action
Lot		5	0	13	Lot #		
Link		6	1	1	Link		
Check		7	1	1	Check		

If the barcode being scanned is +\$\$\$90010039509283C001LZ, both barcode entries HIBS Secondary and IBM are good matches. Since HIBC Secondary has a lower sequence as 1, it is picked as the final match for parsing the barcode. The data is parsed as follows:

{(Prefix, "+\$\$\$9") (Quantity, "00100") (Exp flag, "3") (Expiration Date, "950928,YYMMDD") (Lot #, "3C001") (Link, "L") (Check, "Z")}

NOTE: In this example, the use of "Prefix" in the two tables is different. The Prefix column in the Barcode list table is required for matching the record in the Barcode list. The Prefix row in the Barcode Item list table is a user-defined data element to be parsed for a particular barcode.

Example of Code Type Barcode

Entries for Code type barcode in the Barcode list are shown in [Table 13](#).

Table 13. Code Type Barcode List Entries

Name	Sequence	Barcode Type	Buscomp	Minimum Length	Maximum Length	Prefix	Suffix	Description
UCC/EAN	1	Code	Medical Product		37	01		

Entries for Code type barcode in the Barcode Item list are shown in [Table 14](#).

Table 14. Code Type Barcode Item List Entries

Name	Code	Sequence	Minimum Length	Maximum Length	Data Description	Data Format	Action
AI 01	01	1	2	2	AI 01		
Packaging Indicator	01	2	1	1	Indicator		
UCC/EAN #	01	3	12	12	UCC/EAN		
Link	01	4	1	1	Link		

Table 14. Code Type Barcode Item List Entries

Name	Code	Sequence	Minimum Length	Maximum Length	Data Description	Data Format	Action
Quantity Section	30	1	3	5	Quantity Section	1000	Validate
AI 240	240	1	3	3			
Product #	240	2	1	13	Product #		

The barcode UCC/EAN is parsed to three sections, 01, 30, and 240. If the barcode being scanned is **01103123456789033050240**ABCDEFG, the data is parsed as follows:

Parsed Data = {(AI 01, "01") (Indicator, "1") (UCC/EAN, "031234567890") (Link, "3") (Quantity section, "3050,1000,Validate") (Product #, "ABCDEFG")}

NOTE: The Code portions in the barcode appear in bold text.

Enabling Applications Views for Barcode Scanning

You can enable any existing or new view for barcode scanning.

To enable an application view for barcode scanning

- 1 Navigate to the Administration - Mobile screen > Barcode Enabling view.
- 2 Click New, then enter the necessary information.

The fields in the Barcode Enable list are described in the following table:

Field	Comments
View	The view in the Handheld application from which the scan occurs.
Applet	The applet within the view from which the scan occurs.
Buscomp	The business component from which information is drawn.
Buscomp Field	The specific field within the business component that must be updated through barcode scanning.

Enhancing the Behavior of the Barcode Scan

If your business process requires that a specific barcode logic be performed when you perform a barcode scan using a handheld device, then you can enhance the behavior of your barcode scan. Enhancing your barcode scan behavior reduces the time taken to perform routine tasks with the scanner and quickly finds the correct record that needs to be updated.

The default behavior of a barcode scan results in the creation of a new record or the update of an existing record. However, if you want to find and update a record at the same time without having to use multiple key strokes, then you must define a new user property at the applet level.

To enhance the barcode scan behavior

- 1** Create a new applet user property called TriggerFindRecord in Siebel Tools.
For more information about creating TriggerFindRecord, see ["Defining the TriggerFindRecord" on page 89](#).
- 2** Create your barcode definition and add records to it identifying how the data will be parsed from the barcode.
For more information about creating a barcode definition and adding records to it, see ["Creating New Barcode Definitions for Siebel Handheld Applications" on page 84](#).
- 3** Enable your application views for barcode scanning.
For more information about enabling an application view for barcode scanning, see ["Enabling Applications Views for Barcode Scanning" on page 88](#).

Defining the TriggerFindRecord

To configure the behavior of your barcode scan, you must first define the user property TriggerFindRecord at the applet level in Siebel Tools. The syntax for TriggerFindRecord is as follows:

TriggerFindRecord = <Search fields> | <Activate field> | <Method> | <Action to apply>

The fields in TriggerFindRecord are described in the following table. Examples also follow.

Table 15. TriggerFindRecord Fields

Field	Definition
<Search fields>	Key fields used for searching. Search fields must be separated by a comma, for example, as follows: <Key field 1>, <Key field 2>, ... <Key field N>
<Activate field>	The name of the (focus) field that is activated in the UI after a record is found or added.

Table 15. TriggerFindRecord Fields

Field	Definition
<Method>	This field defines what functionality needs to be performed on the barcode scan. Each applet can define only one method in the user property. The following methods (or process modes) are supported: ■ FindOnly—searches for matching records in a list based on key fields. If no record is found, no new record is created. If matching records are found, the first matching record is selected, and the specified <Activate Field> has focus. If no focus field is specified, users must click the field they want to update. ■ AddOnly—searches for a record in a list based on key fields. If no record is found, a new record is created. If matching records are found, the first matching record is selected, and the specified <Activate Field> has focus. If no focus field is specified, users must click the field they want to update. This method does not update any fields in matching records. ■ UpdateOnly—searches for a record in a list based on key fields. If no record is found, no new record is created. If matching records are found, the first matching record is selected, and its data is updated with the scanned data. Additionally, if <Action to apply> has been specified, the appropriate intelligent updates occur. If no focus field is specified, users must click the field they want to update. This method does not create new records if the scanned record does not exist in the list. ■ AddAndUpdate—searches for a record in a list based on key fields. If no record is found, a new record is created and the specified <Activate Field> is activated. If matching records are found, the first matching record is selected, and its data is updated with the scanned data. Additionally, if <Action to apply> has been specified, the appropriate intelligent updates occur. If no focus field is specified, users must click the field they want to update.

Table 15. TriggerFindRecord Fields

Field	Definition
<Action to apply>	Separated by a comma, this field defines the action that will be applied to each field, for example, as follows: <Field 1>,<Action> ^ <Field 2>,<Action> ... <Field N>,<Action> The following actions can be applied to any field. Only one action can be specified for each field: ■ Add—adds the scanned value to the field value. If the field specified is nonnumeric, an error is returned. ■ Subtract—subtracts the scanned value from the field value. If the field specified is nonnumeric, an error is returned. ■ Replace—sets the scanned value on the field. If no action is specified, the default action is to <i>Replace</i> the value in the field. NOTE: <Action to apply> applies to the <i>UpdateOnly</i> and <i>AddAndUpdate</i> methods only.

Example 1: FindOnly

In the following example, Product Code and Lot# are specified as the key fields on which the search is based and Qty1 will be the activated field when the record is found.

```
TriggerFindRecord = Product Code, Lot# | Qty1 | FindOnly
```

Example 2: AddOnly

The following example specifies Product Code and Lot# as the key fields on which the search is based. If the record is found, then it is selected. If no record is found, then a new record is created with the scanned information, and Qty2 will be activated when the record is found or added.

```
TriggerFindRecord = Product Code, Lot# | Qty2 | AddOnly
```

Example 3: UpdateOnly

The following example specifies Product Code and Lot# as the key fields on which the search is based. UpdateOnly is specified as the method so the fields of any found records will be updated with the scanned information. The scanned Qty1 will be added to Qty1, the scanned Qty2 will be added to Qty2, and no field will be activated when the record has been updated.

```
TriggerFindRecord = Product Code, Lot# | | UpdateOnly | Qty1, "Add" ^ Qty2, "Add"
```

Example 4: AddAndUpdate

In the following example:

- SKU Code is specified as the key field on which the search is based.
- AddAndUpdate is specified as the method, so the fields of found records will be updated with the scanned information or a new record will be created with the scanned information.
- The scanned Qty1 will be added to Qty1.
- The scanned Qty2 will be subtracted from Qty2.
- The Expiry Date will be set.
- Qty1 will be the activated field when the record is found or added and updated.

```
TriggerFindRecord = SKU Code | Qty1 | AddAndUpdate | Qty1, "Add" ^ Qty2, "Subtract"  
^ Expiry Date, "Replace"
```

Example of Creating a New Barcode Definition in the Siebel Handheld Application

This topic gives one example of creating a new barcode definition in Siebel Service Handheld. Although this example is for the Siebel Service Handheld application, it pertains to all Siebel Handheld applications.

You can define new one-dimensional barcodes in the Barcode Administration views. To define a new barcode, you need to create a new barcode definition in the Barcode list, then create corresponding records in the Barcode Item list to define data elements within the barcode.

To create a new barcode definition, complete the following procedures. You can perform these procedures differently, depending on your business model.

- ["To create a new barcode definition for the Siebel Service Handheld application" on page 92](#)
- ["To enable the SHCE Service FS Activity Parts Movements views for barcode scanning" on page 93](#)

To create a new barcode definition for the Siebel Service Handheld application

- 1** Navigate to the Administration - Mobile screen > Barcode Administration view.
- 2** Click New, then fill in the necessary fields.

The following table describes the fields in the Barcodes list.

Field	Sample Data
Name	Hard Disk 100 GB
Sequence	Set to the greatest number in the current list view plus one
Barcode Type	Location
Buscomp	FS Activity Parts Movement

Field	Sample Data
Min Length	12
Max Length	12
Prefix	#
Description	Service

- 3** In the Barcode Item list, add a new record to identify how data will be parsed from the barcode. The following table describes the fields in the Barcode Item list.

Name	Sequence	Min Length	Max Length	Data Desc
UPC Code	1	1	1	
MFG Code	2	5	5	
Product Name	3	5	5	Product Name
CC	4	1	1	

NOTE: Reducing the amount of barcode seed data extracted to the Siebel Service Handheld application improves client performance and reduces synchronization database extract size. The following steps provide an example of extracting only the barcode standards that are required for the Siebel Service Handheld application. This is applicable as long as all the barcode records for the Siebel Service Handheld application defined in the Barcode list have the Description attribute set to Service.

- a** Navigate to the Administration - Mobile screen > Application Administration view.
- b** Select Siebel Service for CE.
- c** Click the Settings view tab, and make sure the parent record is the application Siebel Service for CE.
- d** Locate the DefaultBusObj directive that has the following value:
 - SHCE Barcode|0||SHCE Barcode||SHCE Barcode Item||SHCE Barcode Enable|.
 Replace that value with the following value:
 - SHCE Barcode|0||SHCE Barcode|[Description]="Service"|SHCE Barcode Item||SHCE Barcode Enable|.

To enable the SHCE Service FS Activity Parts Movements views for barcode scanning

- 1** Navigate to the Administration - Mobile screen > Barcode Enabling view.
The Barcode Enable list appears.

- 2 If the following record does not exist, create a new record to enable the Product Name field in the SHCE Service FS Activity Part Movements List Applet for barcode scanning with the following information:

View	Applet	Buscomp	Buscomp Field
SHCE Service FS Activity Part Movements	SHCE Service FS Activity Part Movements List Applet	FS Activity Parts Movement	Product Name

- 3 If the following record does not exist, create a new record for the Product Name field in the SHCE Service FS Activity Part Movements Form Applet for barcode scanning with the following information:

View	Applet	Buscomp	Buscomp Field
SHCE Service FS Activity Part Movements (More Info)	SHCE Service FS Activity Part Movements Form Applet	FS Activity Parts Movement	Product Name

- 4 Save the changes. Now the Buscomp Field Product Name in both the SHCE Service FS Activity Part Movements view and the SHCE Service FS Activity Part Movements (More Info) view have been enabled for barcode scanning. The Buscomp Field Product Name specified here matches the value in the Data Desc column in the Barcode Item list defined earlier.

NOTE: The example provided above assumes that the product Hard Disk 100GB has been defined and properly set in the appropriate product catalog.

About BatchSync for Siebel Handheld Applications

BatchSync is a utility that enables Siebel Handheld customers to split the Siebel Handheld synchronization process into several steps, as opposed to requiring a complete synchronization (sync) session. When batch processing is enabled, you can select from one of four sync options after logging in:

- **Full Sync.** Uploads transactions to the Siebel Server, processes transactions, extracts a configuration repository and database, downloads the repository and database to the handheld device, and logs off.
- **Upload Only, Auto Download Later.** Uploads transactions to the Siebel Server and sets the handheld device to wait mode. After a specified period of time, the handheld device begins polling the Siebel Servers at a predefined time interval. If, during polling, the device detects a valid extract such as an un-expired dbfile.txt, the extract automatically downloads to the handheld device.
- **Upload Only.** Uploads transactions to the Siebel Server and immediately logs off to enable transaction processing. If you need to create a new extract on the handheld device, the Upload Only session must be followed up by a Download Only session after the batchextract.exe completes on the Siebel Server.

- **Download Only.** Downloads a new database extract, followed by logoff. This option is only available if there is a valid or un-expired extract on the Siebel Server, and if there are no transactions remaining on the handheld device that requires uploading to the Siebel Server.

Process for Administering Batch Sync for Siebel Handheld Applications

The following procedures are included in this topic:

- [“Enabling BatchSync for Siebel Handheld Applications” on page 95](#)
- [“Downloading a Database Extraction” on page 96](#)
- [“Reviewing Batch Synchronization Status” on page 97](#)
- [“Running a Batch Extract” on page 99](#)
- [“Running a Batch Transaction Process” on page 99](#)

Enabling BatchSync for Siebel Handheld Applications

To split the synchronization process into several steps, you must enable the BatchSync utility for the Siebel Handheld application.

To enable Batch Synchronization

- 1 Install the Siebel Handheld application on the handheld device. No changes are required to the setup.ini or registry files.
- 2 Log on to the Siebel application from the Web. Ensure that the following are set up and running: Siebel Server, Handheld Synchronization components, and Batch Sync component.
- 3 Navigate to the Administration - Mobile > Application Administration view.
- 4 Select the application you are using, navigate to the Settings Tab, and set the following parameters to enable batch synchronization:
 - **EnableBatchExtraction:TRUE**
If set to TRUE, this parameter enables the batch synchronization functionality. Disable batch synchronization is the default
 - **ExtractionExpiration: 12**
This parameter specifies the number of hours that is used to determine when a database extraction has expired. When a database extraction expires, the batch synchronization re-extracts the databases. If no value is specified, then the databases are extracted each time they are requested.
- 5 Launch the Siebel Handheld application from the handheld device.

- 6 Select File > Synchronize to synchronize the Siebel Handheld application with the Siebel Server. After the synchronization process completes, the new settings are downloaded to the handheld device.
- 7 Select File > Synchronize to synchronize the Siebel Handheld application with the Siebel Server again.
- 8 Enter your username and password, and select Start.
- 9 Verify that the four sync options are displayed:
 - Full Sync
 - Upload Now, Auto Download Later
 - Upload Only
 - Download OnlyThe option, Upload Only, is inactive if no new transaction records reside on the device. Download Only will be inactive because no extract exists for the user on the Siebel Server yet.
- 10 Select Full Sync, and select All to set all filters during the synchronization process.
- 11 Launch the Siebel Handheld application from the device, and add some transaction records to the handheld device.
- 12 Start the synchronization, select Upload Only, and select OK.

To check the status of the batch synchronization, see [“Reviewing Batch Synchronization Status” on page 97](#).

Downloading a Database Extraction

You can download a new database extraction from the Siebel Server.

To download a database extract

- 1 Navigate to the Administration – Server Management > Jobs view.
- 2 Add a new record and specify the following:
Component/Job: BatchSync
Mode: Asynchronous
- 3 Enter the requested server name.
- 4 In the Parameter applet, enter the following parameters:
 - Run Mode: Extract
 - Application Name: Siebel ePharma CE
 - Application Language code: ENU
- 5 In the Job Details applet, enter the time schedule parameters.
- 6 Select Start in the top parent applet.

- 7 Navigate to the Administration Mobile > Batch Sync Administration view.
- 8 When the batch synchronization process is complete, launch the Siebel Handheld application from the handheld device.
- 9 Select File > Synchronization, and select Download Only.

Table 16 lists the specific parameters for scheduling Siebel Handheld database extract jobs.

Table 16. Parameters for Scheduling Handheld Database Extract Jobs

Parameter Name	Definition
RunMode	Run Mode. The following are valid values: ■ Extract—default value; extracts data for users who have uploaded their transactions to the Siebel Server where the component is running ■ ProcessTxn—processes pending transactions ■ ExtractUpgrade—extracts data for users who have uploaded their transactions to the Siebel Server during a major upgrade. Use only if an upgrade occurs between an upload and download of data ■ ProcessTxnUpgrade—processes pending transactions during the upgrade. Use only if an upgrade occurs between an upload and download of data
AppName	Application Name. An optional parameter to run batch synchronization for a specific application. Apply this parameter only in deployments where there are multiple Siebel Handheld applications. If no value is specified, or if the value is unclear, batch synchronization will be performed for all valid applications in the Siebel Handheld deployment.
AppLangCode	Application Language Code. This is a standard Siebel three-characters language code. It is an optional parameter to run batch synchronization for a specific language application; it is only applicable in Siebel Handheld application deployments where there are multiple languages. If no value is specified or if the value is unclear, batch synchronization is performed for all valid languages of an application (if specified) or all applications (if not specified).

Reviewing Batch Synchronization Status

The Batch Synchronization Status enables administrators to schedule and run batch synchronization as well as check the status of a batch synchronization for a specific application.

To review batch synchronization status

- 1 Navigate to the Administration - Mobile screen > BatchSync Administration view.

The Batch Synchronization Status displays a list of Handheld application users supported by batch synchronization. The fields in the Batch Sync Status list are described in the following table:

Field	Comments
User	User name of the Handheld application user supported by batch synchronization.
Sync Node ID	Internal identifier of a Handheld device or node.
Batch Transaction Proc Status	Last known status of the user's uploaded transactions with respect to batch transaction processing. The status values are as follows: ■ Completed ■ Failed ■ No Transaction ■ Scheduled ■ Scheduled by Admin ■ Scheduled by Sync ■ Unknown
Transaction Received	Timestamp of the last upload of transactions to be processed in batch.
Transaction Processed	Timestamp of the last processed transaction.
Batch Extract Status	Last known status of the user with respect to batch extract. The status values are as follows: ■ Downloaded ■ Extracted ■ Failed ■ Scheduled ■ No Extraction ■ Scheduled by Admin ■ Scheduled by Sync ■ Unknown
Extract Completed	Timestamp of the last completed batch extract.

- 2 Click the Batch Extraction Session tab to display the timestamp and status of batch extract sessions for the specified user.

If you use the UploadOnly sync option, the records have a status of TxnRcvOk.

- 3 Click the Batch Transaction Processing Session tab to display the timestamp and status of batch transaction processing sessions for the specified user.

Once the records are processed, the status changes to TxnProcOk.

NOTE: TxnRcvOK and TxnProcOK status are BatchSync specific. If you are running full sync, you will not see these statuses. The transactions are generally processed when you logoff from an Upload Only Session. The administrator can start a task to process all pending transactions which would also change the status. In the case of a full sync, the transactions are processed as and when they are uploaded.

Running a Batch Extract

When specifying a batch extract, administrators can specify that they want to extract data for users who have uploaded their transactions to the server where the component is running.

To run a batch extract

- 1 Navigate to the Administration - Mobile screen > BatchSync Administration view.
- 2 Select the users for whom you want to run a batch extract.
- 3 Click Schedule Extract to change the batch extract status of the selected Handheld application user to Scheduled.

Details of the Handheld application user is extracted when the batch synchronization component is run with the appropriate run-mode. When the batch extract finishes, all users with a status of Batch Extract have the value of Scheduled and are extracted for download.

NOTE: The devices for the selected users are able to perform a download-only synchronization and download their extract.

- 4 Click Unschedule Extract to change the batch extract status of the selected user to Unscheduled.

Running a Batch Transaction Process

Administrators can run a batch transaction process for transactions that are uploaded to the Siebel Server by users.

To run a batch transaction process

- 1 Navigate to the Administration - Mobile screen > BatchSync Administration view.
- 2 Select the users for whom you want to run a batch transaction process.

- 3 Click Schedule Transaction-Processing to change the transaction process status of the selected user to Scheduled.

The user's uploaded transactions are processed when the batch synchronization component is run with the appropriate run-mode. When the batch transaction process finishes, all users with a status of Batch Transaction Process have the value of Scheduled and are processed.

- 4 Click Unschedule Transaction-Processing to change the transaction process status of the selected user to Unscheduled.

Load Balancing Support for Synchronization

Siebel Handheld application direct server synchronization can be load-balanced (at the application server level) to achieve better scalability and high availability. This capability removes the limitation of assigning users to a specific application server at installation time.

The application server uses a location on the server to store users' extracted files and state information. There is a unique synchronization directory for each user and device combination. The ApplicationDirectory user parameter enables the administrator to define this location. For information about setting the ApplicationDirectory user parameter, see [“Setting the ApplicationDirectory Parameter” on page 101](#).

By defining a shared location for this parameter, synchronization services for Handheld applications can be load-balanced. When a user requests a synchronization session, their request is directed (by a load-balancer) to an available Handheld application server hosting the appropriate Siebel Handheld Object Manager, which will be able to access the user's synchronization directory. For example, a Siebel Handheld application can be configured to point to a generic URL for synchronization.

The LoadBalanceLo parameter defines the location of the hostname (or IP address) port to be set for the load balancing server. This setting must be used in a load-balanced environment. When this value is specified, batch synchronization connects to the specified load balancer server instead of connecting to the application server directly.

The load balancers supported for synchronization are the same as those for the full Siebel Business application. You can use either the native load balancer or a third-party HTTP load balancers supported by Oracle. For more information about the supported load balancers, see *Siebel System Requirements and Supported Platforms* on Siebel SupportWeb.

For information about configuring Siebel Server load balancing, see *Siebel Applications Administration Guide*. Load balancing distributes workload across multiple Siebel Servers. For background information on load balancing, see the *Siebel Installation Guide* for the operating system you are using and *Siebel Deployment Planning Guide*.

Setting the ApplicationDirectory Parameter

ApplicationDirectory is an application-level parameter that is defined in the Administration - Mobile screen. The default value for this parameter in the standard product is hhsync\app_name, where app_name is the name of the application, such as sales or service, and so on. You can set this parameter using the following procedures.

To set the ApplicationDirectory Parameter

- 1 Login to the Siebel Server using a user ID with a Siebel administrator responsibility.
- 2 Navigate to the Administration - Mobile screen > Application Administration view.
- 3 Select the appropriate application (for example, Siebel Sales for CE) from the Handheld Applications list.
- 4 In the bottom applet, choose the Settings view tab and set the value of the ApplicationDirectory parameter to be the shared network location using a UNC format, for example, as follows:
\\shareddsk\hhsync\sales.
- 5 Save the change.
- 6 Restart the Handheld Object Manager server component.

NOTE: The location for the ApplicationDirectory must be a networked, high performance, highly available drive. SAN or NAS with a high RAID rating is a good option for this purpose.

Enabling Encryption for Siebel Handheld Applications

This topic relates to the encryption and security of the handheld device. Siebel Handheld applications provide robust encryption of the Siebel password and database on the handheld CE devices. Users are authenticated at application startup time and certain components of the Handheld applications require intermittent access to the user's password.

To enable full encryption of your Siebel Handheld application, complete the following procedures:

- [“Enabling Application Lockout for a Siebel Handheld Application” on page 102](#)
- [“Enabling Authentication for a Siebel Handheld Application” on page 102](#)
- [“Enabling Local Database Encryption for a Siebel Handheld Application” on page 103](#)

Enabling Application Lockout for a Siebel Handheld Application

An application lockout can occur if a user fails to enter their correct password after a certain number of attempts. If authentication fails n times, where n is defined by the administrator by setting the FailedLoginAttempts setting, the current date is written to the security settings file, and a notification message that the application is exiting is displayed. The administrator can set the duration of the lockout by setting a value for the Lockout Period setting from the Administration - Mobile screen > Application Administration > Settings view tab.

If a user forgets their password and transactions exist in the device database, then the administrator can reset the user's password to blank using third-party device management software.

After the password is reset, the user can log into the Siebel Handheld application using the blank password. However, users must still provide their password to synchronize. After the next successful synchronization login, the application password is automatically set to match the synchronization password.

To configure the Enable Application Lockout setting

- 1 Navigate to the Administration - Mobile screen > Application Administration > Settings view tab.
- 2 Select the Enable Application Lockout setting.
- 3 Set the value to TRUE.

Enabling Authentication for a Siebel Handheld Application

The authentication of a handheld device is necessary for security reasons. Any user who has access to a handheld device must not be able to use the Handheld application without the appropriate access rights. For this reason, users are required to enter a password at the splash screen, before the application loads. You are prompted for both a username and password when you want to perform synchronization.

The Allow Remember Password feature allows the user to save their password when they log into the Siebel Handheld application. If the user selects the Save Password check box on the log in splash screen, the password is saved to the device registry. When complete, users will not need to enter the password each time they log in to the Handheld application.

The check box on the splash screen is only enabled when the administrator sets the Allow Remember Password property to true.

To configure the Allow Remember Password setting

- 1 Navigate to the Administration - Mobile screen > Application Administration > Settings view tab.
- 2 Select the Allow Remember Password setting.
- 3 Set the value to TRUE.

Enabling Local Database Encryption for a Siebel Handheld Application

Siebel Handheld database encryption is required to provide extra security for users data on the handheld device. If the Enable Encryption setting is enable, the database is always encrypted so that no other application can open and view the data. Once the application is loaded, the database is decrypted as expected. No other application can try to access the database because it is locked by the Handheld application. The database is always encrypted when not in use by the Handheld application.

To enable encryption on a local database

- 1 Navigate to the Administration - Mobile screen > Application Administration > Settings view tab.
- 2 Select the Enable Encryption setting.
- 3 Set the value to True.

When this setting is enabled, the database is encrypted when the application exits, and is decrypted when the application is started.

Storing Asynchronous Data

An asynchronous query enables users to search information from the Siebel Server through SFM if the information is not available from the Siebel Handheld application local database. Users can integrate query results from an asynchronous query in the Siebel Handheld application database.

Users can perform an asynchronous query for the business objects (for example, Solution, Product, Asset and Orders) defined for the application. For example, if a mobile field technician at a customer site wants to check the status of an order and the order is not available on the local database, the technician can send an asynchronous query to the Siebel Server through SFM by specifying the account name and order date for the order. Shortly afterwards, the Asynchronous Query icon flashes, which means that the query results are returned from the Siebel Server.

To store asynchronous data

- 1 Tap the icon to open the Asynchronous Query Result Alert window.
The alert window lists all the asynchronous queries performed by the user.
- 2 Highlight the query you want and tap the Details button.
The Asynchronous Query Result List view lists the data that meets the query criteria.
- 3 Select the record that you want and tap the Store button to store the record into the Siebel Handheld application database for further reference.

NOTE: When the record is stored on your Siebel Handheld application, you can review, search, or update the record from the Handheld application screens and views.

Receiving Incoming Messages from the Server

From the incoming message notification window, users can drill down on the hyperlink under the dispatched activity section to navigate directly to the activity detail view. Messages or activities are dispatched through SFM. You can handle incoming alert messages differently, depending on your business model.

You can tap the message alert icon to open the incoming message alert window. The alert window displays all the incoming messages sent from the Siebel Server by SFM. The top row shows the most recent message. You can close the alert window or can tap the hyperlinked activity # or message to review the detail information of the activity or message.

Removing Reassigned Activities

You can remove reassigned activities differently, depending on your business mode. Users can delete an activity from a Siebel Handheld application database through SFM if the activity has been assigned to another user. If an activity has been dispatched to user A on a Handheld application and then the activity is assigned to another mobile user, the activity on user A's Handheld application must be deleted.

For example, Technician A is assigned activity 12-98Y98 via SFM and the activity 12-98Y98 is stored in the Handheld application database. A call center agent, however, then decides to re-assign the activity (12-98Y98) to another technician, Technician B. The call center agent goes to the Dispatch Board, drags and drop the activity, and assigns the activity to Technician B. Because the activity has been reassigned to Technician B, the Siebel Server sends an SFM message to Technician A's Handheld application. This message arrives on Technician A's handheld device, and removes the activity from their Handheld application database. Technician A can see an alert message in the application's incoming message alert window, which indicates that the activity has been assigned to another technician and removed from their Handheld application database.

About Monitoring Synchronization Sessions for Siebel Handheld Applications

You can monitor synchronization sessions and synchronization conflicts for Siebel Handheld applications from a number of screens within the Siebel Mobile Web Client. If you are using Direct Server Synchronization (DSS) or Direct Server Synchronization via Proxy (DSSvP), you do so by way of the Siebel Web Client. Every time a user synchronizes with the Siebel Server, a record is made.

The following procedures relate to monitoring synchronization:

- [“Monitoring Synchronization Sessions for Siebel Handheld Applications” on page 105](#)
- [“Obtaining Error Details from Synchronization Sessions in Siebel Handheld Applications” on page 106](#)
- [“Obtaining Business Component Information from Synchronization Conflicts in Siebel Handheld Applications” on page 106](#)
- [“Obtaining an Audit Trail for Synchronization Sessions in Siebel Handheld Applications” on page 107](#)
- [“Responding to Synchronization Errors in Siebel Handheld Applications” on page 107](#)

Monitoring Synchronization Sessions for Siebel Handheld Applications

The Session Administration view allows you to gather all data related to each synchronization session a user performs. In the Session Administration view, the Sync Status list appears above two child lists—Sync Sessions and Extraction Info.

- Sync Status—Allows you to monitor each user synchronization session, and includes information on synchronization status, date, type of synchronization, and so on.
- Sync Sessions—Allows you to gather further information on the status of each synchronization session, including information on any conflicts that occurred during the synchronization, the size of the data extracted, and so on.
- Extraction Info—Allows you to review a detailed description of all data extracted during the synchronization session, including business component information and the number of records extracted.

To monitor synchronization sessions

- Navigate to the Administration - Mobile screen > Session Administration view.

The Sync Status list appears with the two child lists, Sync Sessions and Extraction Info, below it.

To monitor data download

- 1 Navigate to the Administration - Mobile screen > Session Administration view.

The Sync Status list appears with the two child lists, Sync Sessions and Extraction Info, below it.

- 2 Scroll down to the Extraction Info list.

There is one extraction record for each unique extraction context. Review the data extraction information recorded. Information recorded for review is described in the following table.

Field	Comments
Business Component	The business component on which the synchronization is based.
Context	The context of the extraction.
# Records Extracted	The number of records that exist in the context of applied filters.
Extract Time	The length of time it took to extract the set of records.
Business Object Filter	The business object filter (if any) applied to the extraction.
Business Component Filter	The business component filter (if any) applied to the extraction.

You should use this information to help answer the following questions:

- Why did I download a particular record to the device?
- Why is an expected server record not downloaded to the device?

- Why is the total number of records showing up in some views so big?
- Why is the total number of records showing up in some views so small?
- Why does the extraction take so long?

The extraction record lists the filters used to control the extraction, the context of the extraction, how many records exist in that context for those filters, and how long it took to extract that set of records. By analyzing these records, and looking at all extraction changes resulting from filter changes, and, or changes to search specifications (defined in Siebel Tools), you can answer all of the above questions.

NOTE: Because storage space on a handheld device is typically limited, and available networking bandwidth for synchronization might not always be optimal, it is critical to carefully configure the filters and keep the size of your local database small. It is recommended that users should have a local database size of around three megabytes (MB), and this should never exceed 10 MB.

Obtaining Error Details from Synchronization Sessions in Siebel Handheld Applications

The Conflict Administration view allows you to obtain information on synchronization errors that occur during individual synchronization sessions.

To obtain synchronization error details

- 1 Navigate to the Administration - Mobile screen > Conflict Administration view.
- 2 In the Transactions list, select the appropriate record, and then click the Error Details view tab.
- 3 In the Error Details list, select or query for the desired record.

Obtaining Business Component Information from Synchronization Conflicts in Siebel Handheld Applications

The Transactions view on the Conflict Administration screen allows you to obtain business component information related to synchronization errors that occur during individual synchronization sessions.

To obtain business component error details

- 1 Navigate to the Administration - Mobile screen > Conflict Administration view.
The Transactions list appears.
- 2 In the Transactions list, select the appropriate record, and then click the Business Components view tab.

Obtaining an Audit Trail for Synchronization Sessions in Siebel Handheld Applications

The Transactions view on the Conflict Administration screen allows you to obtain audit trail information for an action that was taken against a particular transaction. You must enable Audit Trail separately. For information about enabling Audit Trail, see *Siebel Applications Administration Guide*.

To obtain audit trail information for synchronization error details

- 1 Navigate to the Administration - Mobile screen > Conflict Administration view.
The Transactions list appears.
- 2 In the Transactions list, select the appropriate record, and then click the Audit Trail view tab.

Responding to Synchronization Errors in Siebel Handheld Applications

When reviewing a synchronization error, you can respond to it in one of three ways—you can ignore it, export it, or reapply it.

To respond to synchronization transaction errors

- 1 Navigate to the Administration - Mobile screen > Conflict Administration view.
The Transactions list appears. The transaction buttons are described in the following table:

Action	Result
Reapply	Reapplies the selected transaction with values listed in the view (or Field Value view). These values override the results provided by the Siebel Server.
Export	Exports the content of the transaction in the same format used by the synchronization engine. This output file can be sent to Siebel Technical Support for problem analysis.
Ignore	Accepts the current status and does not act upon the error. The record becomes read-only. There is no impact, except that the error will no longer appear in queries for unresolved conflicts.

- 2 Click either Reapply, Export, or Ignore depending on your needs.

NOTE: This works only when the Object Manager is running on a Windows-based server.

Organization Enabled LOV Support

Siebel Handheld applications by default support a fixed set of LOV values for given LOV types across all organizations. If you want your Handheld application to support multiple organization enabled LOVs, then you must enable organization LOV support in the Siebel Handheld Client.

- [“Enabling Organization LOV Support in the Siebel Handheld Client” on page 108](#)
- [“Example of Configuring, Enabling, and Using Multiple Organization LOVs in Handheld Applications” on page 109](#)

NOTE: Before enabling organization LOV support in the Siebel Handheld Client, make sure that you have satisfactorily associated your organizations with LOV types and LOV values in the Siebel Web Client. For more information about LOVs, see *Siebel Applications Administration Guide*. For more information about setting up organization enabled lists of values, see *Configuring Siebel Business Applications* and also the example that follows.

Enabling Organization LOV Support in the Siebel Handheld Client

There are two main stages involved in enabling organization LOV support in the Siebel Handheld Client.

- First you must create a new business object in Siebel Tools (for example, SHCE LOV Internal) and attach *List Of Values (Internal) buscomp* to it. For more information about creating business objects in Siebel Tools, see *Using Siebel Tools*.
- Then you must force extraction of the *List Of Values (Internal) buscomp* with a specific filter expression. This involves the following:
 - Creating a new DefaultBusObj directive in the Siebel Web Client and assigning a value to it. For more information about this task, see [“To create a new default directive” on page 108](#).
 - Adding a business object filter setting to your Siebel Web Client, which will run on DefaultBusObj. For more information about this task, see [“To add a business object filter setting” on page 72](#).

To create a new default directive

- 1 Navigate to the Administration - Mobile screen > Application Administration view.
- 2 In the Handheld Applications list, select the appropriate application, and then click the Settings tab.
- 3 Click New, and then enter the required information.

Field	Comments
Name	The name of the directive. For example, DefaultBusObj.

Field	Comments
Value	The value to set in the directive. This value should correspond to the business object from which you want to extract List Of Values (Internal) buscomp. For example, SHCE LOV Internal 0 List Of Values (Internal) [Intersection Table Org Id].

Example of Configuring, Enabling, and Using Multiple Organization LOVs in Handheld Applications

This topic gives an example of configuring, enabling, and using multiple organization LOVs in the Siebel Service Handheld application. Although this example is for the Siebel Service Handheld application, it pertains to all Siebel Handheld applications. You can perform these procedures differently, depending on your business model.

- [“To configure organization LOVs in the Web Client for Siebel Service Handheld” on page 109](#)
- [“To enable organization LOV support for Siebel Service Handheld” on page 110](#)
- [“To use organization enabled LOVs in Siebel Service Handheld” on page 111](#)

To configure organization LOVs in the Web Client for Siebel Service Handheld

- 1 Create the new LOV type CONTACT_TYPE LOV in Siebel Tools. Enter new records for its LOV values and configure a picklist to display the LOV type.

For information about creating new LOV types and LOV values using Siebel Tools, see *Configuring Siebel Business Applications*.

- 2 Set up CONTACT_TYPE LOV to be organized enabled. Do this by associating the following LOV values to CONTACT_TYPE LOV for the following organizations.

LOV Type	LOV Value
For Xerco Pharmaceutical Organization:	
CONTACT_TYPE LOV	Physician
CONTACT_TYPE LOV	Nurse Practitioner
CONTACT_TYPE LOV	Pharmacy Directory
For Medical Products Organization:	
CONTACT_TYPE LOV	Cardiologist
CONTACT_TYPE LOV	Purchasing Director
CONTACT_TYPE LOV	Nurse Practitioner

For information about associating organizations to LOV values and LOV types, including guidelines for setting up organization enabled lists of values, see *Configuring Siebel Business Applications*.

To enable organization LOV support for Siebel Service Handheld

- 1 Create a new business object (SHCE LOV Internal) in Siebel Tools and attach *List Of Values (Internal) buscomp* to it. For more information about enabling organization LOV support, see *Using Siebel Tools*.
- 2 Create a new default directive for Siebel Service Handheld as follows:
 - a Navigate to the Administration - Mobile screen > Application Administration view.
 - b In the Handheld Applications list, select Siebel Service for CE, and then click the Settings tab.
 - c Click New, and then enter the required information.

Field	Sample Data
Name	DefaultBusObj
Value	SHCE LOV Internal 0 List Of Values (Internal) [Intersection Table Org Id]
NOTE: This value should correspond to the business object from which you want to extract List Of Values (Internal) buscomp.	

- 3 Then add a business object filter setting for Siebel Service Handheld, which will run on DefaultBusObj, as follows:
 - a Navigate to the Administration - Mobile screen > Application Administration view.
 - b In the Handheld Applications list, select Siebel Service for CE, and then click the Settings tab.
 - c Click the Business Object Filters view tab.
 - d Click New, and then enter the required information.

Field	Comments
Owner	Siebel Service for CE
Default	Leave unchecked
Business Object	Account
Name	OrgLOVFilter1
Query	[Intersection Table Org Id] is NOT NULL OR [OrgSpecializedLOV.Internal_Organization] is NOT NULL

To use organization enabled LOVs in Siebel Service Handheld

- 1 Open your Siebel Service Handheld application in your handheld device, then synchronize with the Web client. Make a note of your active position. For example, are you associated with the Xerco Pharmaceutical Organization, the Medical Products Organization, or some other organization.

For information about how to synchronize your handheld device with your Siebel Handheld Application Server, see the online help for the Siebel Handheld application.

NOTE: If you do not know what your active position is, contact your system administrator.

- 2 Navigate to My Contacts on your handheld device and add a new contact record.

When you specify the contact type, the LOVs associated with your current organization (the organization to which your active position is associated) are displayed in the Type field.

For information about how to add records, see the online help for the Siebel Handheld application.

For example, if your active position is associated with Xerco Pharma Organization, then the Type field includes the following LOV options: Physician, Nurse Practitioner, and Pharmacy Director. But if your active position is associated with Medical Products Organization, then the Type field includes the following LOV options: Cardiologist, Purchasing Director, and Nurse Practitioner.

NOTE: A user can be associated with multiple organizations if they hold multiple positions, but only the organization of the active position determines which LOVs are displayed.

- 3 Navigate to My Contacts on your handheld device and open an existing contact record by tapping it. Notice that when you view the contact type, the LOVs associated with the record's owner organization are displayed.

For example, if your active position is associated with Xerco Pharma Organization, but the owner of the record you are viewing is associated with Medical Product Organization, then the LOVs displayed for the picklist are those associated with Medical Product Organization (Cardiologist, Purchasing Director, and Nurse Practitioner).

- 4 Synchronize the handheld device again to copy any changes made using your handheld device with the Siebel Web Client database.

For more information about synchronization, see ["Synchronizing Data on Your Handheld Device" on page 173](#).

Setting Up a Van Inventory for Siebel Consumer Goods Handheld Applications

Consumer goods organizations can collect orders and deliver products using a number of processes, including the following:

- A presales representative can capture an order one day that is then delivered the next day by a delivery representative.
- A van sales representative can capture an order and fulfill that order on site, as well as take orders that can be fulfilled at a later date.

In the case of van sales, sales representatives are provided with a van filled with goods to be sold that day or week. Each delivery van is viewed as a mobile warehouse.

Set up each van as a separate inventory location. To do this, you must complete some preliminary steps. First, create a product in the Siebel Handheld application database to represent a van, then set up each van as an asset. Next, create an inventory location and associate it with the asset.

Setting up inventory locations allows organizations to manage and track assets and inventory more effectively. Inventory product details help van sales representatives manage their own inventory as they conduct their daily activities.

To set up a van inventory, complete each of the following procedures in the order shown:

- 1 [Creating a Van Product for Siebel Consumer Goods Handheld Applications on page 112](#)
- 2 [Setting Up a Van as an Asset for Siebel Consumer Goods Handheld Applications on page 113](#)
- 3 [Creating an Inventory Location for a Van on page 114](#); see also [“Setting Up Product Inventories” on page 115](#).

Creating a Van Product for Siebel Consumer Goods Handheld Applications

In the following procedures a product is created to represent a van, and a unit of measurement, called a product measurement, is associated with the van. Product measurements are required.

To create a van product

- 1 Navigate to the Administration - Product screen.
- 2 In the My Inventory Locations list, add a record and complete the necessary fields.

Some of the fields are described in the following table.

Field	Comment
Name	Type the name of the product (for example Van).
Type	Choose the product type from the drop-down list.

The Product Measurements view defines the measurements that are the basis for determining asset use.

To set up measurements for the new van product

- Navigate to the Administration - Products screen > Measurements view.

Field	Comment
Frequency	Schedule for obtaining readings of the specified measurement, chosen from a list.
Use Basis (Days)	Time period, in days, over which the expected use is to occur. This value must match the value in the Frequency field.

A read-only version of the Product Measurements view is available in the Products screen. See *Siebel Product Administration Guide* for details on adding a new product.

Setting Up a Van as an Asset for Siebel Consumer Goods Handheld Applications

Each van is an asset with certain characteristics that identify it, such as its license plate number and vehicle identification number. In this procedure, you define these asset characteristics for each van and associate a measurement with the van.

To set up a van as an asset

- 1 Navigate to the Assets screen > All Assets view.
- 2 In the All Assets list, click New to add a record.
The Asset number is automatically generated.
- 3 In the Product field, click the Select button, then select the Van from the Pick Product picklist.

4 Complete the remaining necessary fields.

Some of the fields are described in the following table.

Field	Comment
Asset #	This field is automatically populated, but you can change the value to the license plate number of the van or some other unique number.
Serial #	This field is automatically populated, but you can change the value to the serial number of the van or some other unique number.
Description	Includes the description of the specific van asset (for example, Van #20).
Status	Indicates the status of the van. For example, Available, In Repair, In Transit.
Registered	The date the vehicle was registered with the DMV or other appropriate authority.

NOTE: Associating the odometer measurement with a van is optional. Complete the following steps only if the sales representative will be tracking odometer readings.

5 Click the Measurements view tab.

6 Scroll down to the Measurements form and add a record.

7 In the Measurement Type field, select Odometer.

When you select Odometer as the Measurement Type, the Name field is automatically populated with the name you gave to the product measurement under ["Creating an Inventory Location for a Van" on page 114](#).

Creating an Inventory Location for a Van

Once you have set up your van as an asset and set up a measurement for the van, you are now ready to create an inventory location for the van. This associates a position and an asset with a particular van.

To create an inventory location for a van

1 Navigate to the Inventory Location Management screen.

- 2 In the Inventory Locations list, add a new record and complete the necessary fields. Some of the fields are described in the following table.

Field	Comment
Name	The name of the van (for example, Van #20)
Type	Type of inventory location (for example, Trunk)
Asset	The asset number of the van. Pick an asset record from the Asset pop-up list.
Position	Click the Select button, then chose from the position type in the Pick Position pop-up list.
Ownership	Chose ownership type from the drop-down list. For instance, 3rd Party, Customer, or Owned.
Owner Company	If the owner is external, click the Select button, then chose the owner company from the Pick External Organization pop-up list.
Description	Enter a description in the text box.
Asset Number	An automatically-populated field based on the Asset record choice.

NOTE: It is recommended that you associate only one position to each van and only one van to each position. For example, the position Van Sales Representative for San Francisco is assigned to Van #20, whose asset number is 12-34567. Each sales representative can be primary to only one position.

Setting Up Product Inventories

For information about setting up a product inventory for an inventory location, see the chapter about service inventory in *Siebel Field Service Guide*.

When setting up product inventories for Siebel Consumer Goods Handheld, two product buckets must be created for each product: one where Status is equal to Good and one where Status is equal to Defective. These provide buckets for good items to be delivered and for defective items being returned. Both product buckets must have Availability set to On Hand, so that the bucket is visible on the handheld device.

Setting Up Products in Siebel Consumer Goods Handheld Applications

This topic includes the following product–related procedures:

- [“Administering Products with Siebel Consumer Goods Handheld Applications” on page 116](#)
- [“Setting a Bonus Threshold in Siebel Consumer Goods Handheld Applications” on page 116](#)

- [“Creating a Tax List in Siebel Consumer Goods Handheld Applications” on page 117](#)
- [“Setting Up Volume Discounts” on page 117](#)

Administering Products with Siebel Consumer Goods Handheld Applications

You create products in the Product Administration screen. When you create a new product record, you define, among other things, the Product name, the product line to which it is a part, the parent product to which it might be subordinate, and the unit of measure which will be used to quantify the product.

To create a product record

- 1 Navigate to the Administration - Product screen.

The Products list appears.

- 2 Click New, then enter the required information for the new product record.

The following table defines some of the fields in the Products list.

Field	Comments
Name	Enter the name of the product. The record becomes a hyperlink, which, when clicked, navigates the user to a detail view of the product.
Part Number	Enter a part number for the product.
Type	Choose, from a drop-down list, a type category for the product.
Description	Enter a text description of the product.
Product Line	Click the select button to select a product line from the Product Lines pop-up list.
Parent	Click the select button to chose a parent product to which this product record will belong.
Vendor	Click the select button and choose a vendor name from the Pick Vendor pop-up list.
UoM	Unit of Measure. Pick a value for the number of units in a case to allow easier stock taking and ordering.

Setting a Bonus Threshold in Siebel Consumer Goods Handheld Applications

Bonus thresholds allow you to control how many items trigger a bonus. For example, if you want to offer one free case of soda for every three that a customer purchases, you set the bonus threshold for soda cases to three.

For information about creating price lists, see *Siebel Pricing Administration Guide*.

To indicate a bonus threshold for an item in a price list

- 1 Navigate to the Administration - Pricing Administration screen > Price Lists view.
- 2 In the Price Lists list, select a price list.
- 3 Click the Price List Line Items view tab.
- 4 In the Price List Line Items list, select a line item.
- 5 In the Bonus Threshold field, enter the number of items that triggers a bonus. For example, for a “buy three, get one free” offer, enter 3.

If the Bonus Threshold column is not displayed, click the list menu button and select Columns Displayed to add the Bonus Threshold column to the Displayed Columns list.

Creating a Tax List in Siebel Consumer Goods Handheld Applications

Tax lists help you calculate multiple taxes that apply to specific locations or types of customers (for example, hotels versus convenience stores).

For information about assigning tax lists to accounts, see [“Associating a Tax List with an Account in Siebel Consumer Goods Handheld Applications” on page 121](#).

To create a tax list

- 1 Navigate to the Administration - Tax screen.
- 2 In the Tax List list, add a record and complete the necessary fields.
- 3 Click the Tax List Line Items view tab.
- 4 In the Tax List Line Items list, add a record for each product.
- 5 In the Tax 1, Tax 2, Tax 3, and Tax 4 fields, enter the tax rates in decimal format for federal, state, local, and other taxes, as appropriate.

For example, if a tax is 20%, enter 0.2.

The values represent the various taxes that can be applied to the product. These values are used in the Order Line Items and RMA Line Items views in the Handheld application to calculate the List Tax, Extended Tax, and Total fields. The tax fields are updated based on the tax values from the tax list and the order quantity at the line item level.

Setting Up Volume Discounts

To set up a volume discount, you go through the following process:

- 1 Creating a Volume Discount Record

- 2 Creating Volume Discount Line Items
- 3 Linking the Volume Discount to a Product

Creating a Volume Discount Record

A volume discount record provides the top-level information about a volume discount, including its name, whether it is a simple or tiered volume discount, and the start and end dates.

CAUTION: If you delete a volume discount record, all references to this discount become invalid. Any price list line items that used this discount will no longer have a volume discount.

To create a volume discount record

- 1 Navigate to the Administration - Pricing screen > Volume Discounts view.
- 2 In the Volume Discounts list, click New.
A new Volume Discount record appears.
- 3 Enter information in the new record or the More Info form. The following table defines the fields in the Volume Discounts view.

Field	Description
Name	Enter a name for the volume discount. The record becomes a hyperlink, which, when clicked, navigates the user to a detailed view of the discount.
Discount Method	From the drop-down list, choose Simple or Tiered.
Effective From	Click the calendar select button to choose a date and time the discount becomes effective.
Effective To	Click the calendar select button to choose a date and time the discount expires.
Currency	From the drop-down list, choose a currency type.
Exchange Date	Click the calendar select button to choose an exchange date.
Description	Enter a description for the volume discount.

Creating Volume Discount Line Items

Volume discount line items include information about quantities and percentage values of a volume discount.

Add a volume discount line item for each discount rate in the volume discount. For example, if you want to apply a 10% discount when the quantity is five to 10 and a 20% discount when the quantity is 11 or more, then you must add two volume discount line items.

When you add volume discount line items, be careful not to create gaps or overlapping quantities, which will create the following errors:

- If you leave a gap in a simple discount, quantities that fall within the range of the gap receive no discount at all.
- If you leave a gap in a tiered discount, quantities that fall within the range of the gap default to the lower tier.
- If you create overlapping discount items, quantities that fall within the range of the overlap default to the lower tier.

How the discounts in the line items are applied depends on whether this is a simple or tiered volume discount, as described in the topic About Simple and Tiered Volume Discounts in the *Siebel Pricing Administration Guide*.

To create a volume discount line item

- 1 Navigate to the Administration - Pricing screen > Volume Discount view.
- 2 Select the volume discount for which you want to create line items.
- 3 Click the Volume Discounts Line Items view tab.
- 4 In the Volume Discounts Line Items list, click New.

A new Volume Discount Line Item record appears.

- 5 Enter information in the new record. The following table defines the fields in the Volume Discounts Line Items form.

Field	Description
Name	Enter a name for the volume discount line item.
Min Qty	Click the calculator button to enter a quantity.
Max Qty	Click the calculator button to enter a quantity.
Adjustment Type	Click the drop-down list to select an adjustment type.
Adjustment Amount	Click the calculator button to enter an adjustment amount.
Description	Enter a description of the volume discount line item.

Linking the Volume Discount to a Product

After a volume discount record has been created and the line items that describe the discount have been defined, you link it to a product. After you link a volume discount to a product, the discount is applied automatically when a sales representative or other user enters the product in a quote.

To apply a discount to a product

- 1 Navigate to the Administration - Pricing screen > Price List view.
- 2 In the Price Lists list, select the price list to which you want the volume discount to apply.
- 3 Click the Price List Line Items view tab.

- 4 In the Price List Line Items list, in the Volume Discount field for a product, select the volume discount you want to apply to that product.

Accounts Administration in Siebel Consumer Goods Handheld Applications

This topic describes various tasks associated with administering consumer goods accounts. It includes the following procedures:

- [Setting Available Credit for an Account in Siebel Consumer Goods Handheld Applications on page 120](#)
- [Associating a Price List with an Account in Siebel Consumer Goods Handheld Applications on page 121](#)
- [Associating a Tax List with an Account in Siebel Consumer Goods Handheld Applications on page 121](#)
- [Indicating Which Products an Account Can Order Using Siebel Consumer Goods Handheld Applications on page 121](#)
- [Indicating Which Products to Audit in Siebel Consumer Goods Handheld Applications on page 122](#)

Setting Available Credit for an Account in Siebel Consumer Goods Handheld Applications

Use the Available Credit field in the Accounts list to specify the amount of credit available to an account. The sales representative can determine whether to take an order based on the current balance or cancel the order if it exceeds the available credit.

To set available credit for an account

- 1 Navigate to the Administration - Data screen > Account List view.
- 2 In the Accounts list, select an account.
- 3 In the Available Credit field, enter an amount.

If the Available Credit column is not displayed, click the list menu button and select Columns Displayed to add the Available Credit column to the Displayed Columns list.

Associating a Price List with an Account in Siebel Consumer Goods Handheld Applications

You determine the prices individual customers pay for your products by assigning price lists to their accounts. The price list that you use for a particular account can depend on the customer's location or type of business.

To associate a price list with an account

- 1 Navigate to the Accounts screen > Accounts List view.
- 2 In the Accounts list, click the desired account record hyperlink.
A detailed view of the account appears.
- 3 Click the More Info view tab.
- 4 In the Pricing and Purchasing Information view, click the Select button in the Price list field.
The Pick Price List pop-up list appears.
- 5 Choose a price list, then click OK.

Associating a Tax List with an Account in Siebel Consumer Goods Handheld Applications

To associate a tax list with an account use the following task.

To associate a tax list with an account

- 1 Navigate to the > Accounts screen > Accounts List view.
- 2 In the Accounts list, select the desired account record.
- 3 Click the Accounts Administration link on the link bar.
- 4 In the Tax List field, click the select button.
If the Tax List column does not appear, select View > Columns displayed from the application-level menu, and add the Tax List column.
- 5 In the Tax Lists pop-up list, select the desired tax list, and click OK.

Indicating Which Products an Account Can Order Using Siebel Consumer Goods Handheld Applications

Use the Siebel Web Client to set up which products a particular account can order using Siebel Consumer Goods Handheld.

To indicate which products an account can order

- 1 Navigate to the Accounts screen > Accounts List view.
- 2 In the Accounts list, select the account.
- 3 Click the Distribution view tab.
- 4 In the Distribution list, for each product that can be ordered by the selected account, mark the Retail Order check box.

Indicating Which Products to Audit in Siebel Consumer Goods Handheld Applications

Use the Siebel Web Client to set up which products will be audited by Siebel Consumer Goods Handheld.

To indicate which products to audit

- 1 Navigate to the Accounts screen > Accounts List view.
- 2 In the Accounts list, select an account.
- 3 Click the Merchandising Location view tab, then navigate to the Products secondary view.
- 4 In the Products list mark the Retail Audit check box for each product that can be ordered by the selected account.

If the Retail Audit column is not displayed, click the list menu button and select Columns Displayed to add the Retail Audit column to the Displayed Columns list.

Repeat Steps 3–5 for each merchandising location.

Administering Document ID with Siebel Consumer Goods Handheld Applications

Document IDs support the legal requirement to print unique numbers on legal documents, such as invoices and receipts. Governments provide specifications for the document ID format, and this format can be used to generate a document ID mask within the Handheld application.

Use the Document ID Mask view to create a document ID mask for each document, as required. A mask is a set of components that, when compiled together in a particular sequence, generate a completed document ID. For example, the first component of a mask can be a company code, the second component can be an employee ID, and the third component can be a code specific to the type of document. Together, these components make up a document ID.

Once the mask is created, it must be assigned to an individual user who has the authority to use it. When the user prints from the Handheld application then, a unique sequence of numbers is printed onto each legal document defined with a document ID mask.

In the Document ID Assignments view, associate each document with an individual who is authorized to print it. For example, if you have 200 van sales representatives who are all authorized to print both invoices and receipts, you will assign two document IDs to each representative, for a total of 400 records added to the Document ID Assignments view.

To create a document ID mask

1 Navigate to the Administration - Document ID screen > Document ID Mask view.

2 In the Document list, create a record and complete the necessary fields.

Some of the fields are described in the following table.

Field	Comment
Name	Unique name for the document (for example, California invoice).
Document Type	Type of document being printed (for example, invoice).
Mask Separator	A character used to separate the components of the document ID.

3 In the Mask list, add a record for each component of the document ID mask, and complete the necessary fields.

Some of the fields are described in the following table.

Field	Comment
Sequence	A number that indicates the position of the component in the mask.
Mask Type	Indicates whether the component is a literal value, a lookup value, or a concatenation of a literal value and a lookup value.
Literal Value	The static value used if the mask type is literal or literal lookup.
Look Up Type	Select either the Look Up Name, or the Position ID as required.

NOTE: Populate only one of the two fields, Value or Employee Field, not both.

4 Click the Document ID Assignments hyperlink.

5 In the Sequence list, add a record and complete the necessary fields.

Some of the fields are described in the following table.

Field	Comment
Document	The name of the document you assigned in Step 2 of this procedure.
Document Type	This field is automatically populated when you choose the document.
Employee	The ID number of the employee authorized to print this document.

Field	Comment
Login Name	This field is automatically populated when you choose the Employee.
Initial Sequence	The first sequence number to be used in the document ID mask. This number is incremented each time the document is printed by the employee from the Handheld application to make sure that each document ID is unique.
Last Sequence Number	This number is synchronized from the Handheld application and indicates the last number in the sequence used by this document and employee combination.
Mask Value	The generated value of the mask (minus the sequence number), based on the mask and employee selected.
Last Document ID	This value is synchronized from the Handheld application and indicates the last document ID used on the Handheld application by the employee.

5

Data Filtering for Siebel Handheld Applications

The purpose of this chapter is to outline how to develop data filters for your Siebel Handheld application. It includes the syntax for constructing business components and business object filters, as well as some useful information on managing your business object filters. The following topics are covered in this chapter:

- [“Developing Data Filters for Siebel Handheld Applications” on page 125](#)
- [“Constructing Business Component and Business Object Filters for Siebel Handheld Applications” on page 126](#)
- [“Business Object Filters for Siebel Handheld Applications” on page 127](#)
- [“Recommendations for Managing Business Object Filters for Siebel Handheld Applications” on page 127](#)

Developing Data Filters for Siebel Handheld Applications

The following general steps are recommended for developing synchronization filters for Siebel Handheld applications.

- Identify the screens and views of your application. Then identify the business components that are required to support each screen and view, noting the areas where each business component occurs. For example, identify the form, list, or pick applets that are based on each business component.
- Within Siebel Tools, establish the base parent-child relationships and any reverse relationships at the component level.
- Review the business components that occur in picklists and consider creating business component filters for those that will cause large numbers of records to synchronize to the device. These filters are created and maintained in the Mobile Administration screens. For each business component, determine whether it is possible to apply a search specification to all instances of the business component within the Siebel Handheld application. Develop a set of suitable business component filters in the Mobile Administration screens.

Common examples of business components that are suitable for global business component filters include:

- Employees (for large organizations)
- Activities (for example, filter for current Activities, Activities of only certain kinds)
- Accounts (for example, by geography)
- Products (for example, active, orderable products)

- Orders (for example, open, closed in last three months)
- Create appropriate business object synchronization filters for each business object and make sure that each business object includes a default filter. Default filters make sure that users avoid accidental download of an excessive number of records.

NOTE: In a multi-lingual environment, default filters are created for the primary language only. If your environment is multi-lingual, then you must configure additional filters for each additional language you want to run.

Constructing Business Component and Business Object Filters for Siebel Handheld Applications

Business component filters are used to limit the extraction of a business component for every context in which it is extracted.

Example of Business Component Filter Syntax:

Business component filters use query by example (QBE) syntax.

```
[Status] = "Not Started" OR [Status] = "In Progress" OR ([Status] IS NULL) OR [Status] = "On Hold" OR ([Status] = "Done" AND [Done] >= Today() - 7)
```

For more information about QBE syntax, see *Siebel Developer's Reference*.

Business object filters are used to supply filters that a user can select at synchronization time. These are the filters that are displayed in the SetFilters dialog on the device.

Example of Business Object Filter Syntax:

Business object filters use predefined query (PDQ) syntax.

PDQ syntax rules are as follows:

- The business component name must be a valid business component in the business object on which the PDQ is based
- Search and Sort can be specified for all active buscomps in the business object on which the view is based, appended to each other in any order using space as delimiter.

The normal search specification and sort specification syntax applies except that quotes in the search specification have to be escaped using double quotes since the search specification itself is enclosed in double quotes.

The syntax is as follows:

```
'Account'.Search = "[State] = LookupValue ( ""STATE_ABBREV"", ""CA"" )" 'Account'.Sort = "Name, Location"
```

Descriptions of the terms are shown in [Table 17](#).

Table 17. Business Object Filter Syntax

Syntax Term	Description
Account	Business component name.
Search	Key word.
"[State] = LookupValue (""STATE_ABBREV"", ""CA"")"	Search specifications using PDQ syntax.
State	Field name.
LookupValue	Function for find and LOV value.
STATE_ABBREV	LOV type.
CA	LOV value.
'Account'.Sort = "Name, Location"	Sort specification for sorting the returned list.

For more information about PDQ syntax, see *Siebel Developer's Reference*.

Business Object Filters for Siebel Handheld Applications

All business object filters for Siebel Handheld applications are available for selection by a user at the time of synchronization. Additionally, there is no naming convention for business object filters.

A default filter for a business object is indicated by checking the Default flag in the Administration - Mobile screen > Application Administration > Business Object Filters view of the Siebel Web Client. Be sure to define a default filter for each business object in the Handheld application. If no filters are applied during the synchronization process, an unacceptably high volume of data will be downloaded to the handheld device.

CAUTION: You must select only one filter as the default for each business object. If two filters are marked as the default for the same business object, the actual default can be determined only by proceeding to synchronize and select the default filters from the selection UI.

Recommendations for Managing Business Object Filters for Siebel Handheld Applications

The following topics provide recommendations for creating and managing filters.

- ["Direct Server Synchronization Deployments" on page 128](#)
- ["Examples of Default Business Object Declarations" on page 128](#)
- ["Designating Visibility" on page 130](#)

- [“Overriding the Popup Visibility” on page 130](#)
- [“Multiple Visibility Methods” on page 131](#)

Direct Server Synchronization Deployments

For Direct Server Synchronization deployments, administrators can create user-specific business object and business component filters in the Administration - Mobile screen > User Administration view. For more information about creating business objects and business component filters, see [“Setting Business Component Filters for Siebel Handheld Application Users” on page 71](#) and [“Setting Business Object Filters for Siebel Handheld Application Users” on page 72](#).

Both application-level and user-level filters can be used in this deployment. They are managed in the same set of views. Changes to any filters will be effective on your next synchronization session, without having to restart the synchronization OM component for the Handheld application.

These business object filters are made available to all users and, therefore, must be defined with the needs of all users in mind.

Examples of Default Business Object Declarations

You can set default business object declarations in the Administration - Mobile screen > Application Administration > Settings view, as described in the following examples.

Example 1

“State Model” default business object setting:

```
State Model - Engine|0||State Model|[BusComp Name]="Expense"|State Model -  
Transition||State Model - State||State Model - Position|
```

The first three segments of the declaration are followed by a series of repeating BusCompName search specification pairs:

- 1 Business object name
- 2 Visibility Type
- 3 (Siebel internal)
- 4 Root business component name
- 5 Search specification QBE for root BusComp records
- 6 Child business component name
- 7 Search specification QBE for child BusComp records (this must normally be empty, causing all children to be extracted)
- 8 Grandchild business component name
- 9 Search specification QBE for grandchild BusComp records (this must normally be empty, causing all grandchildren to be extracted), and so on.

The total number of fields must be at least 5 and must be an odd number.

Example 2

```
Action|0||Action||Action Employee|
```

This example default business object declaration results in an extraction of the Action and Action Employee business components where they occur with visibility 0 using the business object filter indicated. The business object filters are generally used only for extracting business components that do not correspond to any views or applets. Business object declarations identify specific business components within the business object to be extracted. The business object filters normally give a query based on the primary business component in the business object and force extraction of any business components mentioned in the query when there is no corresponding applet within the application that can cause the desired extraction to occur.

Example 3

In the following example, the declaration is used to extract all the Price List Line Items under the Order Entry (Sales) business object.

```
DefaultBusObjs13= Order Entry (Sales)|0||Price List Item|
```

Note that this declaration lacks an associated QBE clause. When this is the case, all of the records available to the user for the given visibility are extracted.

Exercise caution when modifying a default business object setting for pick applets, and do so only with the support of a skilled Siebel configurator.

Use default business object declarations to force the extraction of data for a given business component in the context of a given business object and Visibility type. For more information about visibility designations, see [“Designating Visibility” on page 130](#). The default business object extractions are performed in the first phase of data extraction.

You will most often use these declarations to extract additional data that is not extracted as part of the user interface extraction. This can be useful for business components that are referenced programmatically by other business components, but are not exposed in the user interface. The default business object declarations are used to enforce the extraction of a subset of data to the Handheld application that might not have been otherwise extracted or, most commonly, to filter the data downloaded for dynamic picklists or pick applets.

All pick data is not downloaded to the device due to the memory constraints on the device. Only pick data for fields that are editable is downloaded. Therefore, if you are doing a query on a pick field, you might not be able to display the picklist. When viewing a record in an applet, if a pick field is read-only, its pick button will be disabled. If users select a read-only field with a pick control, they receive the following error: No data available in picklist because field is read-only.

Designating Visibility

It is very important that you use the correct visibility designation in the default business object declarations. The visibility entered must be the visibility that governs the data displayed for the business component within the context of the business object specified in the declaration. In the previous Example 1, visibility code 3 is designated. This corresponds to All Visibility, which is the visibility that applies to the Account business component when it is used in a pick applet.

You determine the correct visibility to use by examining View and business component properties within Siebel Tools. When creating a default business object declaration to restrict the volume of data extracted for a pick applet, begin by examining the Popup Visibility Type in Business Component Properties. Cross-reference the visibility type to the list below, and enter the appropriate visibility code in the declaration. If the Popup Visibility Type field on the business component is null, the default value is All. [Table 18](#) summarizes popup visibility types and the corresponding visibility codes.

Table 18. Visibility Codes

Popup Visibility Type	Visibility Codes
Sales Representative	0
Manager	1
Personal	2
All	3
None	4
Organization	5
Contact	6

NOTE: Do not use the Group, Catalog, or Sub Organization Popup Visibility Types. These are not supported in the CE Handheld application.

Overriding the Popup Visibility

If the Popup Visibility Type setting is not sufficiently restrictive (for example, All Visibility), this can lead to a large number of records being extracted when the picklist is processed during synchronization. Making the Popup Visibility Type more restrictive reduces the number of records extracted for picklists. The `OverridePopupVisibility` user property for an applet overrides the Popup Visibility Type on a business component. Use this property when the desired visibility differs from the business component's Popup Visibility Type, and you do not want to change the Popup Visibility Type. If several picklists use the same business component, you can also use the `OverridePopupVisibility` user property to vary the visibility of the picklists in the different applets.

There are two considerations you must keep in mind if multiple applications are sharing the same repository. First, changing the Popup Visibility Type has a global effect for all instances where the business component is used. If multiple applications share the same repository and use the same business components, changing the Popup Visibility Type for a common business component might have an undesirable effect for another application. Second, if multiple applications share the same applet, the picklist in each applet shares the same visibility as defined by `OverridePopupVisibility` property. This is because the `OverridePopupVisibility` property is set on the containing applet.

In Siebel Tools, navigate to Applet > Applet User Properties, and define the `OverridePopupVisibility` user property on the applet containing the control that opens the pick applet. For more information about this property, see [OverridePopupVisibility User Property on page 231](#).

If `OverridePopupVisibility` is used, then the picklist and pick applet search specifications are ignored during the synchronization when the records for the picklist are extracted.

Multiple Visibility Methods

When a record is extracted by means of different visibilities, the record is tagged with each visibility. For example, if an individual contact record is extracted under Org visibility, and later the same contact record is extracted under Salesrep visibility, the visibility field on the record contains a bitmask indicating that the two visibilities apply for this record. Handheld synchronization extracts data in the following order:

- DefaultBusObjs
- Views
- PickList

You can check the visibilities for a record in the `dbfile.txt` file. [Table 19](#) lists the values for the visibility bitmasks.

Table 19. Visibility Bitmask Values

Visibility Bitmask	Values
VISIBILITY_SALESREP	1
VISIBILITY_MANAGER	2
VISIBILITY_PERSONAL	4
VISIBILITY_ALL	8
VISIBILITY_NOVISIBILITY	16
VISIBILITY_ORG	32
VISIBILITY_CONTACT	64

For example, the visibility for a record extracted for both SalesRep and Org would have a visibility set to 33.

NOTE: Not all visibilities are supported on the handheld device.

Specifically, Group, Catalog and Suborg visibilities are not supported. These are mapped to different visibilities as follows:

- Group -> All
- Catalog -> Org
- SubOrg -> Org

6

Deploying Siebel Handheld Applications

This chapter provides important information about how to deploy a Siebel Handheld application, and includes information about server topology, hardware, network configuration, server installation, Siebel Handheld application installation, and performance and scalability. The following topics are covered in this chapter:

- [“Overview of Deployment for the Siebel Handheld Application Client” on page 133](#)
- [“Installing the Siebel Server for Direct Server Synchronization” on page 135](#)
- [“Configuring the Siebel Server for Direct Server Synchronization” on page 137](#)
- [“Performance and Scalability of Synchronization for Handheld Applications” on page 139](#)
- [“Providing Synchronization Security with Secure Sockets Layer” on page 139](#)
- [“Process of Installing the Siebel Handheld Application” on page 141](#)
- [“Installing Print Templates in the Siebel Handheld Install Directory” on page 146](#)
- [“Setting Up Siebel Handheld Application Installation on a CompactFlash Card” on page 147](#)
- [“Changing the SyncURL on Handheld Devices” on page 147](#)
- [“Installing the Siebel Handheld Application from External Media” on page 148](#)
- [“Distributing Siebel Handheld Application Patches” on page 148](#)
- [“Setting up PatchAgent on Windows 2003” on page 153](#)

Overview of Deployment for the Siebel Handheld Application Client

This topic provides an overview of important factors to consider when planning a Siebel Handheld application deployment using Direct Server Synchronization (DSS). One aspect of successful planning and execution of a Handheld application deployment using DSS is to understand hardware and network requirements. While these factors are generally applicable to all deployments, there are unique aspects to each customer configuration and implementation strategy. Therefore, it is highly recommended that customers conduct detailed configuration, sizing, and production readiness reviews with Siebel Expert Services. This is especially important for complex deployments, such as those supporting large numbers of users over wide geographic areas.

You can also improve the performance and scalability of DSS deployments by working with the Siebel application server component parameters. For more information about the Siebel application server, see [“Optimizing Siebel Server Process Management for Direct Server Synchronization” on page 138](#).

NOTE: The recommendations in this chapter are general ones and are intended to raise your awareness of the key factors in Siebel Handheld application synchronization, performance, and scalability. These factors must be confirmed for your actual environment, and the usage patterns in your enterprise must be taken into consideration.

Siebel Server Topology Overview

The diagram in [Figure 4](#) shows the servers and components that are required to deploy Direct Server Synchronization for a Handheld application. The components are the Siebel Handheld application database, Siebel Server, Siebel Web engine, and Siebel Handheld application. The synchronization components are the synchronization engine for the Siebel Handheld application which resides on Siebel Server, and the Siebel Handheld Synchronization Client which resides on the Siebel Handheld application.

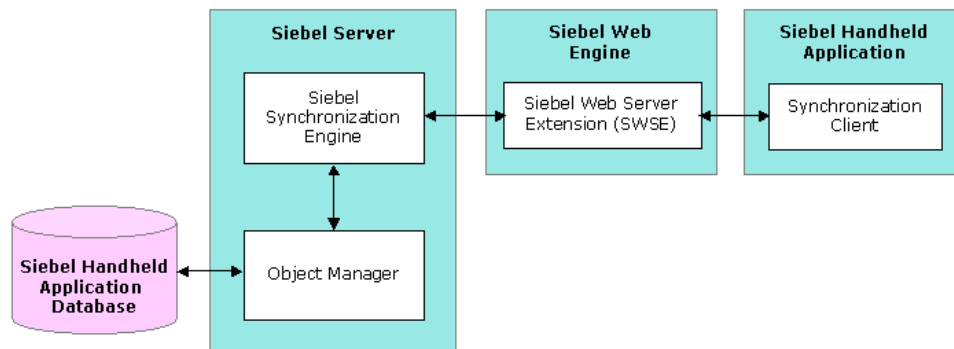


Figure 4. Servers and Components

Recommended Hardware and Network Configuration

There are many factors to take into account when designing and implementing your server and network hardware and architecture, and sizing your Siebel Handheld application database. The critical factor in sizing the implementation for a Siebel Handheld application is the expected peak synchronization load. Specific Handheld application variables to consider in calculating this load are: the number of concurrent users, number of transactions, and size of the data file. These variables must be considered within the context of the hardware specifications, including memory and processor speed.

The following resources are available as you plan the implementation of your Siebel Handheld application:

- Refer to Microsoft and manufacturer documentation for comprehensive information on server hardware and registry parameters.
- Refer to Siebel Technical Note 405 for specific recommendations on the following topics:
 - Server architecture
 - Server hardware and registry parameters
 - Database server sizing

- Database tuning
- Dial-Up and network
- Wireless
- VPN (Virtual Private Networks)
- The Expert Services Handheld Review Package assists customers with planning their hardware and network implementations for Handheld applications. Contact Siebel Expert Services for more information about this program.

Installing the Siebel Server for Direct Server Synchronization

The components that are required for Siebel Handheld applications are installed when you install the Siebel Server.

The following information is included in this topic:

- [“Installing the Components for Direct Server Synchronization Using the Siebel Server Installer” on page 135](#)
- [“Siebel Server Component Parameters for Direct Server Synchronization” on page 136](#)

For information about installing and configuring Siebel Server, see the *Siebel Installation Guide* for the operating system you are using.

Installing the Components for Direct Server Synchronization Using the Siebel Server Installer

Install the Siebel Server, following the instructions in the Siebel Server installation guide for the operating system you are using. When you reach the Setup Type screen in the Installer wizard, you are presented with three installation options:

- **Typical.** This setup option installs all Siebel Server components except those displayed.
- **Compact.** This setup option installs only those components necessary to run the Siebel Server, but no additional components or help.
- **Custom.** This setup option lets you customize your installation by choosing the specific components you want to install.

To install the components for Direct Server Synchronization with your Siebel Server installation

- 1 During the Siebel Server installation, when the Setup Type screen appears, choose the Custom setting, and then click Next.

NOTE: At this screen, you can also choose a different directory for your Siebel Server installation.

2 From the following components, choose Handheld Synchronization:

- Object Manager Component
- Handheld Synchronization
- Siebel Data Quality Connector
- Remote Search Support
- Siebel Java Integrator

NOTE: You must enable synchronization on your handheld device to enable Direct Server Synchronization for your installation.

3 Click Next.

Continue with the installation in the *Siebel Installation Guide* for the operating system you are using.

The install wizard automatically installs and configures the components for Direct Server Synchronization.

Siebel Server Component Parameters for Direct Server Synchronization

See [Table 20](#) for a list of required parameters. For information on adding server components for Direct Server Synchronization, see *Siebel System Administration Guide*.

Table 20. Siebel Server Component Parameters for Direct Server Synchronization

Parameter	Default Value	Description
ApplicationName	Siebel CG Sales Enterprise CE	The Siebel Handheld application. This value must match the name of the Handheld application as it is specified in Siebel Tools.
ApplicationTitle	Siebel CG Sales Enterprise CE	The name of the Siebel Handheld application as shown on the title bar on the browser. This parameter is only used if the Siebel application developed for the handheld device is run on the Siebel Mobile Web Client.

Table 20. Siebel Server Component Parameters for Direct Server Synchronization

Parameter	Default Value	Description
ApplicationSplashText	Siebel CG Sales Enterprise	The Siebel Handheld application name as shown on the splash screen. This parameter is only used if the Siebel Tools application developed for the handheld device is run on the Siebel Mobile Web Client.
ComponentName	Siebel Sales Enterprise Client	Required for Direct Server Synchronization, this parameter is entered in the registry on the handheld device.

Configuring the Siebel Server for Direct Server Synchronization

The Siebel Server installer copies the necessary DLLs to create an Object Manager for Direct Server Synchronization and creates and configures a Server Component and Component Group. This topic describes which options you must select to correctly install the software, along with creating or configuring additional Object Managers.

The following procedures are included in this topic:

- [“Configuring Logging Levels for Direct Server Synchronization” on page 137](#)
- [“Optimizing Siebel Server Process Management for Direct Server Synchronization” on page 138](#)

Configuring Logging Levels for Direct Server Synchronization

To set the logging level, you need to perform the following two tasks:

- [“To configure Siebel Server logging levels” on page 138](#)
- [“To configure Siebel Server logging levels using the Server Configuration screen” on page 138](#)

You set the logging level to a value between 1 and 5 as shown in [Table 21](#).

Table 21. Logging Levels

Logging Level	Results
1	Error listing
2	Warning listing
3	Information listing, including SQL tracing

Table 21. Logging Levels

Logging Level	Results
4	Information listing
5	Debug

To configure Siebel Server logging levels

- 1 Log into Server Manager from a (m:\siebel\bin\w32ud) prompt.
- 2 Run the following:
change evtloglvl HandheldSyncLog=[LogLevel] for comp [OMName], where [LogLevel] = an integer between 1 - 5 (5 enables all logging) and [OMName] = the OM name (for example, <ApplicationName>CEObjMgr_enu)

To configure Siebel Server logging levels using the Server Configuration screen

- 1 Navigate to Administration - Server Configuration screen > Servers view > Components view tab.
- 2 In the Component list, query for the appropriate component, such as Handheld Sales CE (ENU).
- 3 In the Events list, search for the event type Handheld Sync Logging.
- 4 Set the value to a number between 1-5 and then save the change.
See [Table 21](#) for logging level results.

NOTE: To enable Object Manager logging, add ObjMgrSqlLogLevel to the PDA section of your Siebel Handheld application's CFG file. Valid values range from 1-5 as described in [Table 21 on page 137](#).

Optimizing Siebel Server Process Management for Direct Server Synchronization

Several parameters are outlined below that help optimize Siebel Server processing for Direct Server Synchronization.

To set parameters to optimize Siebel Server process management

- 1 Log into the Siebel application as a user with Administrative responsibility.
- 2 Navigate to the Administration - Server Configuration screen > Servers view > Components > Parameters view tab.
- 3 In the Component Parameters sub-view, query for SalesCEObjManager.

- 4 Use the following table to update the parameters.

Parameter	Description
Max Tasks	Determines the maximum number of threads that can run concurrently for a given component. Set the value of this parameter to a number equal to that of the expected peak number of concurrent synchronizations for each Siebel Server.
Min MT Servers	Determines how many multithreaded server processes are started by default for the Siebel Object Manager.
Max MT Servers	Defines the maximum number of processes supported by the instance of the Siebel Object Manager. The value for this parameter must be the same as Min MT servers and must be set so that threads for each process (Max Tasks/Max MT Servers) is optimized.

Performance and Scalability of Synchronization for Handheld Applications

There are a number of factors that affect the performance and scalability of synchronization in Siebel Handheld applications. It is very important that administrators and those involved in the design and deployment of Siebel Handheld applications understand the impact of usage parameters on synchronization performance and scalability. For more information, see Technical Note 405 for application-specific variables affecting synchronization and data from synchronization scalability tests.

Using Multiple Siebel Handheld Synchronization Servers

As you scale your deployment, you might need to use multiple Siebel Handheld Synchronization Servers to accommodate all of your users. Your users must be manually assigned to a particular Siebel Handheld Synchronization Server. Resonate products cannot be used for load balancing. For more information about scaling deployments, refer to Technical Note 405 and to your hardware manufacturer's documentation.

Providing Synchronization Security with Secure Sockets Layer

The synchronization data stream can be secured using Secure Sockets Layer (SSL). To employ SSL security:

- Make sure that a certificate has been created and installed on all Web Servers that service synchronization in Handheld applications.

Use the following steps to install the root certificate on each handheld device.

To install the root certificate on the handheld device running PPC 2003 or newer

- 1 Navigate to the certificate authority server from your desktop computer.
- 2 Select the first option (retrieve the CA certificate or certificate revocation list), and click Next.
- 3 Click on Download CA certificate.
- 4 Click Save, and save as certca.cer on your desktop.
- 5 Use ActiveSync to copy the downloaded certificate, certca.cer, from the desktop to the My Documents folder on the handheld device.

NOTE: Make sure the certca.cer file is copied into the My Documents folder.

- 6 Go to My Documents and tap the certificate icon.
The certificate must be installed. You can validate it by going to Settings > System > Certificate.
- 7 Click the Root tab.
The new certificate is displayed on the list.
- 8 Open a browser, and run the following command, substituting the appropriate server name, application name, UserName and Password.

`https://<SERVERNAME>/<APPLICATION NAME>/
start.swe?SWEExtSource=siebelpda&SWEExtCmd=ExecuteLogin&UserName=<USER
LOGIN>&Password=<PASSWORD>`
- 9 When a dialog box appears, click Yes.

To complete root certificate installation on PPC 2002 device

- 1 From a Web browser, navigate to the Microsoft Web site and download and launch the following executable file:

AddRootCert.exe
- 2 Double-click to open the executable file.
A list of certificates appears.
- 3 Select certca.cer.
Information for the certca.cer Certificate appears.
- 4 Click Install Certificate.
- 5 Following successful installation, click OK.

Process of Installing the Siebel Handheld Application

Before you install the Siebel Handheld application, perform the following tasks:

- [“Editing the Siebel Handheld Application Installation Configuration File” on page 141](#)
- [“Enabling Back Up of Siebel Handheld Application Database” on page 145](#)
- [“Deploying Patches to Handheld Applications with Direct Server Synchronization” on page 149](#)
- [“Deploying Attachments to Handheld Applications with Direct Server Synchronization” on page 150](#)
- [“Downloading Patches to the Handheld Device” on page 152](#)
- [“Setting up PatchAgent on Windows 2003” on page 153](#)

NOTE: If you are setting up your Siebel Handheld application to allow end user translation functionality, see [“Installing and Setting Up End User Translation Functionality” on page 53](#).

Editing the Siebel Handheld Application Installation Configuration File

This task is a step in [“Process of Installing the Siebel Handheld Application” on page 141](#).

The Siebel Handheld application setup.ini file configures the Siebel Handheld Client installer. Before you deploy a custom-configured Siebel Handheld application, you must update the parameters in the setup.ini file so that the correct values are written to the device registry before distributing the Siebel Handheld Client installer to users.

The setup.ini file resides in the Siebel Handheld application directory. To modify this file, create a Handheld application installation directory on the network, or create and duplicate a custom DVD-ROM for distribution to users. This installation directory must include the same files and directory structure as the original DVD-ROM. Then, modify the setup.ini file in the custom installation directory.

NOTE: If you wish to set up parameter values other than default values, add the parameter to the setup.ini file and add the proper values.

Table 22 lists the parameters that you might need to modify in the setup.ini file, their default value, and a description of the parameter.

Table 22. Siebel Handheld Application setup.ini Parameters

Parameter	Default Value	Description
Version	8.0	Version of the desktop Siebel application against which the Siebel Handheld application version synchronizes.
ApplicationName	Siebel CG Sales Enterprise CE	The Siebel Handheld application. This value must match the name of the Handheld application as it is specified in Siebel Tools.
ApplicationSplashText	Siebel CG Sales Enterprise CE	The Siebel Handheld application name as shown on the splash screen.
EnableRemote	N	Used for Integrated Sync. The default value is N. Valid values are Y = [Enable Remote Sync] check box is selected, N = [Enable Remote Sync] check box is unselected in the synchronization window of the Handheld application.
MultiCurrency	True	Required for the Handheld application to handle multiple currencies.
PressureThreshold	29	Specifies when the user is prompted to restart the Handheld application. For more information about this parameter, see “Changing the SyncURL on Handheld Devices” on page 147 .
SyncURL	<i>http://Web Server Name or IP address/Virtual Directory Name</i>	Required for all synchronization methods. This value is entered in the registry for the Siebel Handheld application. For more information about this parameter, see “Changing the SyncURL on Handheld Devices” on page 147 .
[EndUserLocalization] Section		
User DefinedLang	Y	
LogUserDefinedLangErrors	N	
[Printing] Section	(various)	For more information about the parameters used to configure printing, see Appendix F, “Print Configuration Settings.”

Table 22. Siebel Handheld Application setup.ini Parameters

Parameter	Default Value	Description
[Backup] Section	(various)	Enables Siebel Handheld application database backups. For more information about settings for the parameters in this section of the setup.ini file, see “Enabling Siebel Handheld Application Database Backup” on page 146 .
[ApplicationLocation] Section	(various)	Specifies where the Siebel Handheld application and database are installed. For more information about the parameters in this section of the setup.ini file, see “Setting Up Siebel Handheld Application Installation on a CompactFlash Card” on page 147 .
InternetOptionReceiveTimeout	600000	Length of time to receive data or a response (except data extraction) from the server in the case of Direct Server Synchronization, before the Siebel Handheld application times out. The default value, 600000 milliseconds, is 10 minutes.
InternetOptionSendTimeout	600000	Length of time to send data to the server in the case of Direct Server Synchronization, before the Siebel Handheld application times out. The default value, 600000 milliseconds, is 10 minutes.
InternetOptionDataExtraction Timeout	900000	Length of time to extract data from the server in the case of Direct Server Synchronization, before the Siebel Handheld application times out. The default value, 900000 milliseconds, is 15 minutes.
[Logging] Section		

Table 22. Siebel Handheld Application setup.ini Parameters

Parameter	Default Value	Description
TXNErrorLevel	1	This level controls the extent of transaction error information received from the server. The default value is 1. Valid values are 0 = no log information, 1 = report txn errors in the Siebel Handheld Client log, txnerror.hh. A "Transaction Errors Reported" message appears during synchronization when txn errors occur. To view errors, double click the message.
DefaultLogLevel	2	The default value is 2. You can set the value to any of the following: -1 = NO LOGGING 0 = LOG_SYSTEM 1 = LOG_ERROR 2 = LOG_WARNING 3 = LOG_INFO, INCLUDING SQL TRACING 4 = LOG_DEBUG The log messages with level equal to or lower than the set value will be logged. For example, if the default log level is set to 2, the messages belonging to System, Error, and Warning log levels will be logged. If the DefaultLogLevel is -1, no logging will be provided.
MaxLogFileSize	2000	This is the maximum log file size in KB. If the program finds the size of the latest log file is greater than this value, a new log file must be used for logging.

Table 22. Siebel Handheld Application setup.ini Parameters

Parameter	Default Value	Description
MaxSavedLogFiles	3	Determines the number of log files to save on the device. It does not include the one currently used by the program. If the value is set to 2, then the valid log file names are siebel_log.txt, Siebel_log1.txt, and siebel_log2.txt. Siebel_log.txt is the current log file. Siebel_log1 is an older one and Siebel_log2 is the oldest.
PressureThreshold	29	Prompts user to restart the Handheld application after 30 visits, thereby freeing application memory.

Enabling Back Up of Siebel Handheld Application Database

This task is a step in [“Process of Installing the Siebel Handheld Application” on page 141](#).

The Siebel Handheld application framework provides a way to automatically back up a snapshot of a user's Siebel Handheld application database and current settings, and to restore those settings if the handheld device fails. The backup functionality automatically copies all the necessary files to a single compressed file. Each time a user backs up, the backup process creates a new copy of the file and deletes older backup files. The backup process must close the Handheld application in order to copy the RDBMS and handheld configuration files. After the files are copied, it automatically restarts the Handheld application.

The backup feature must be enabled in the Handheld application. If the backup feature is enabled, a backup is created during every synchronization. This way, the user retains an up-to-date snapshot of the Siebel Handheld application database, and older backup versions are removed.

When the database backup feature is enabled, a Siebel Handheld application database backup occurs automatically at the end of each synchronization. This makes the overall time to synchronize somewhat longer. The size of the Siebel Handheld application database and the speed of the CompactFlash card also affect the time it takes to complete synchronization.

NOTE: Backup files must not be used as a replacement for synchronization.

Setting Up Siebel Handheld Application Database Backups

In order to back up the Siebel Handheld application database, you must do the following:

- Provide users with an external memory card.
- Install the Siebel Handheld application with the backup functionality enabled. See, [“Enabling Siebel Handheld Application Database Backup” on page 146](#).
- Instruct users to back up their Siebel Handheld application databases on a regular basis.

Backing Up to External Media

It is recommended that you back up to external media—for example, a CompactFlash card or the embedded backup storage that is included in many devices.

Enabling Siebel Handheld Application Database Backup

Before users can back up their Siebel Handheld application databases, you must first enable the Backup menu item on the Siebel Handheld application. This requires editing the setup.ini file to enable backup.

NOTE: Backup files must be kept on external media or built-in storage. Trying to set the location to the main memory, such as \My Documents, will not work.

The following is an example of the default settings for the backup parameters:

```
[Backup]
BackupLocation = \Storage Card\Siebel Backup
BackupEnabled = N
```

- BackupEnabled = [Y/N] The default is N (No). Change this setting to Y (Yes) to enable the Backup menu item and to trigger a backup to occur automatically after each synchronization.

If the product is installed with Backup = N, the backup menu item is disabled. You need to change the parameter, then reinstall the product in order to enable the menu item.

- BackupLocation = [Backup location] The default is an external storage card. Specify the location where you want the data backed up.

For more information about the setup.ini file, see [Chapter 8, “Installing the Siebel Handheld Application.”](#)

Restoring from a Backup

For information about restoring a Siebel Handheld application database from a backup, see [“Backing Up and Restoring Data with the Siebel Handheld Client” on page 172.](#)

Installing Print Templates in the Siebel Handheld Install Directory

If your Siebel Handheld application allows printing, you must include all print templates in the template subdirectory of the Handheld application Install directory. The print templates are language-specific, so copy the templates to the template subdirectory within the language directory of the language you are deploying (for example, . . . \ENU\Templ ate). If the template includes double byte characters, such as Japanese string, you must save the template files as Unicode (UTF16) files. For supported language codes, see *Siebel System Requirements and Supported Platforms* on Siebel SupportWeb.

For more information about printing and print templates, see [Appendix E, “Print Tagging Language”](#) and [Appendix F, “Print Configuration Settings.”](#)

Setting Up Siebel Handheld Application Installation on a CompactFlash Card

The default, when installing Siebel Handheld applications, is to install both the Handheld application and the Siebel Handheld application database into random access memory (RAM) on the device. In most instances, there is sufficient available memory, and users are satisfied with the Handheld application performance. There are situations, however, where you might need to optimize storage on the device.

If you need to maximize main memory availability, you can install the Handheld application binary files on an external location such as a CompactFlash card. Installing the data on the CompactFlash card is not recommended because performance likely degrades.

You can specify, in the Handheld application's setup.ini file, where the Handheld application files and Siebel Handheld application database files are to be installed. By default, this is set to the handheld device. In the ApplicationLocation section of the setup.ini file, there are two parameters. The following shows the default settings for these parameters:

```
[ApplicationLocation]
ApplicationBinariesLocation = Device
ApplicationDataLocation = Device
```

ApplicationBinariesLocation = Device means that the default location for the binaries is the handheld device. The other value is CF (CompactFlash).

ApplicationDataLocation = Device means that the default location for data is the handheld device. It is recommended that you always install the data files on the handheld device.

After you have edited the setup.ini file, follow the instructions for installing the Siebel Handheld application.

Changing the SyncURL on Handheld Devices

For Direct Server Synchronization, SyncURL is used to locate the Web Server and the virtual directory so synchronization for the Siebel Handheld Client can communicate with synchronization for the Siebel Handheld Application Server. For example:

```
SyncURL = http://web server name or IP address/virtual directory name
```

You can reset the SyncURL by re-installing the Handheld application with the updated setup.ini file.

Installing the Siebel Handheld Application from External Media

Users who synchronize in Direct Server Synchronization mode might not have a PC, and so cannot create a partnership and synchronize using Microsoft ActiveSync. You can install the Handheld application for each user through a standard partnership, or you can configure a stand-alone installer.

During the installation, the InstallShield Wizard screen prompts you by asking:

Would you like to deploy a CAB file to enable rapid installation for additional devices?

You can configure a stand-alone installer by selecting Yes.

You are prompted to select a language for the Handheld application and to specify a location for the CAB file. The installer creates the CAB file in the location you specify.

The CAB file is a self-extracting file that includes all the files needed to install the Siebel Handheld application on the handheld device. When you single-click the file, the CAB file installs the Handheld application.

You can create an image of the Handheld application installer that can be loaded onto external media such as a CompactFlash card. When you create a stand-alone installer platform, a Cabinet file (CAB) is created in a location that you specify. The CAB file name must be `siebel.pocketpc_arm.CAB`. You can copy the CAB file to a CompactFlash card, insert the card into the handheld device, and single-click on the file to install the Siebel Handheld application on the device.

NOTE: When installing the Handheld application on the handheld device, the user is asked if they want to install the Handheld application in the default directory. Regardless of the answer, the Handheld application is always installed in the directory specified by the `setup.ini` file. Therefore, the only way to change the directory the Handheld application is installed in is to modify the parameters in the `ApplicationLocation` section of the `setup.ini` file.

Distributing Siebel Handheld Application Patches

PatchAgent is the patch delivery mechanism for your Siebel Handheld applications. PatchAgent is a tool that automates the deployment of patches to handheld devices as part of the synchronization process. It allows administrators to distribute patches to users with minimal involvement by the users.

During synchronization the PatchAgent executable is called, and if it detects a Handheld application patch, it automatically installs the patch on the handheld device. In order for PatchAgent to detect and deploy the patch, the patch files must be created and placed in the directory where PatchAgent expects to find the files.

The following procedures are included in this topic:

- [“Deploying Patches to Handheld Applications with Direct Server Synchronization” on page 149](#)
- [“Deploying Attachments to Handheld Applications with Direct Server Synchronization” on page 150](#)

- [“Downloading Patches to the Handheld Device” on page 152](#)

Deploying Patches to Handheld Applications with Direct Server Synchronization

This task is a step in [“Process of Installing the Siebel Handheld Application” on page 141](#).

In order to set up patch deployment for Direct Server Synchronization users, you need to patch the Siebel Server and patch one Siebel Handheld Client which serves as the “model” from which patch files are pulled. Then the patch files are then packaged and placed in the location on the Siebel Server where PatchAgent expects to find the files. The next time the user synchronizes with Siebel Server, the patch is installed onto their handheld device.

For more information about how the patch process works with synchronization, see [“Downloading Patches to the Handheld Device” on page 152](#).

To set up patch deployment

- 1 On Siebel Server, verify that the following directories exist. If they do not, create the directories.

- C:\patch\AppBinDir
- C:\patch\WinDir

NOTE: You can specify a drive other than C:. However, the directory names must be specified as shown above.

- 2 Apply the patch to Siebel Server.
- 3 Apply the patch to one Siebel Handheld Client.
- 4 Examine the Handheld application directory (My Device\Program Files\Siebel Handheld) to determine which files to copy over to the Siebel Server directory (C:\patch\AppBinDir).
- 5 Examine the Handheld application directory (My Device\Windows) to determine which files to copy over to the Siebel Server directory (C:\patch\WinDir).

To do [Step 4](#) and [Step 5](#) accurately, it is recommended that you use one of the following methods:

- First, take a snapshot of all files in the Siebel Handheld application directory before you install the new build. Then install the new Handheld application build, making a note of all files that are installed in the process.

By comparing the list of files in the Handheld application directory before installation of the new build with the list of files in the Handheld application directory after installation of the new build, you can determine which files are new and which files remain the same.

Copy all new files over to the Siebel Server directory.

- Take a snapshot of the siebel.inf file before you install the new build. The siebel.inf file contains a complete list of all files that are installed on the handheld device, and is created just before the installation of the Handheld application (before clicking the finish button to finish installation of your Siebel Handheld application, the %temp%\siebelhh\files\siebel.inf file is created).

In the case of [Step 4](#), by comparing the list of files in the [Files.AppBinDir] section of siebel.inf with the list of files that are installed with the new build in the \Program Files\Siebel Handheld folder, you can determine which files are new and which files remain the same.

In the case of [Step 5](#), by comparing the list of files in the [Files.Windows] section of siebel.inf with the list of files that are installed with the new build in the \Windows folder, you can determine which files are new and which files remain the same.

Copy all new files over to the Siebel Server directory.

NOTE: In all cases, compare the file size and timestamp on the older build with the newer build to determine which files need to be patched.

- 6 From the DOS prompt, change directory to *Siebel Root*\SWEApp\BIN.
- 7 Execute the following command to stage the patch files and the patchlist.txt in the correct location on the Siebel Server:

```
C:\Siebel Root\SWEApp\BIN>createpatchlist /s c:\patch /t c:\Siebel Root\sweapp\cepatch
```

where

- /s – source directory. The directory where the patch files were moved.
- /t – target directory. The directory where PatchAgent checks for the patch files.

NOTE: You can specify a drive other than C:. However, the location of the source and target directories must be specified exactly as shown.

After the patch files have been moved and the patch list created, the following message appears: Patch List has been successfully created in *Siebel Root*\SWEApp\cepatch files transferred successfully.

The patch files are now ready to be deployed to Direct Server Synchronization users.

Deploying Attachments to Handheld Applications with Direct Server Synchronization

This task is a step in [“Process of Installing the Siebel Handheld Application” on page 141](#).

You deploy attachments to the Siebel Handheld application with Direct Server Synchronization in much the same way you deploy patches. PatchAgent automates the deployment of attachments to handheld devices as part of the synchronization process. For more information about how the patch process works with synchronization, see [“Downloading Patches to the Handheld Device” on page 152](#).

You can specify the storage location for attachment files, and set a limit on the storage capacity to be made available for attachments on a handheld device. For more information about storage location and capacity, see [“Configuring the Attachment Storage Location and Storage Capacity” on page 152](#).

Setting Up Your Attachment Files

In order to set up attachments for Direct Server Synchronization users and subsequently download them to a handheld device, you must first set up the attachment files on the Siebel Server that requires a patch.

To set up attachment files on the Siebel Server that requires a patch

- 1 Set up your patch deployment as already described in steps 1-6 of ["Deploying Patches to Handheld Applications with Direct Server Synchronization"](#) on page 149.

- 2 Execute the following command to stage the patch files and the patchlist.txt in the correct location on the Siebel Server:

```
C:\Siebel Root\SWEApp\BIN>createpatchlist /s C:\AttachmentDir\UserResponsibilityX
/t C:\Siebel Root\sweapp\cepatch_xxx\UserResponsibilityX
```

where

- /s – source directory. The directory where the patch files are located. Put all attachment files for a certain responsibility (for example, *UserResponsibilityX*) here.
- /t – target directory. The directory where PatchAgent checks for the patch files.
- xxx is the language [enu, esn, and so on]

Repeat for other responsibilities, as required:

```
C:\Siebel Root\SWEApp\BIN>createpatchlist /s C:\AttachmentDir\UserResponsibilityY
/t C:\Siebel Root\sweapp\cepatch_xxx\UserResponsibilityY
```

After the patch files have been moved and the patch list created, the following message appears:
Patch List has been successfully created in
Siebel Root\SWEApp\cepatch_xxx\UserResponsibilityX files transferred successfully.

NOTE: The name of the user responsibility directory corresponds to the actual user responsibility (for example, Sales Rep).

- 3 Copy the patchlist.txt and all the compressed patch files to the appropriate subdirectory, named according to the responsibility, under the CEPatch directory on the Siebel Web Server:

```
\SWEApp\Public\enu\CEPatch_xxx\Route Sales - HH CE\patchlist.txt
```

The CEPatch directory on the Web Server will look similar to the following:

```
\SWEApp\Public\enu\CEPatch_xxx\patchlist.txt
    \file1
    \file2
    \...
    \UserResponsibilityX|
    \UserResponsibilityX\patchlist.txt
    \UserResponsibilityX\AttachmentFile1
    \UserResponsibilityX\AttachmentFile2
    \UserResponsibilityX\...
    \UserResponsibilityY|
    \UserResponsibilityY\patchlist.txt
    \UserResponsibilityY\AttachmentFileA
```

```
\UserResponsibilityY\AttachmentFileB  
\UserResponsibilityY\...  
\...
```

The patch files are now ready to be downloaded to Direct Server Synchronization users. For more information about downloading patch files, see [“Downloading Patches to the Handheld Device” on page 152](#).

Configuring the Attachment Storage Location and Storage Capacity

After the initial installation of your Siebel Handheld application, you can change the storage location for your attachment files, and set a limit on the storage capacity to be made available for attachments on your handheld device.

To change the storage location for attachment files, add the following line to the RegKeyList section of patchlist.txt:

```
HKLM,%reg_path%,"AttachmentDir",0x00000000,DIRECTORY
```

where DIRECTORY is the new attachment folder you want to use.

To set a size limit on the storage capacity, add the following line to the RegKeyList section of patchlist.txt:

```
HKLM,%reg_path%,"MaxAttachmentStorage",0x00000000,SIZE
```

where SIZE is a positive integer in bytes of storage (for example, 2MB=2,097,152 bytes).

Downloading Patches to the Handheld Device

This task is a step in [“Process of Installing the Siebel Handheld Application” on page 141](#).

Patches are downloaded as part of the synchronization process. When the patch is staged, the patch is downloaded the next time the user synchronizes the handheld device with Siebel Server. The users synchronize as they normally do using Direct Server Synchronization. First, any transactions are uploaded from the handheld device. Then:

- If a patch needs to be applied to the handheld device, the synchronization process terminates, and the patch process is started, which downloads the patch.
- If no patch needs to be applied, the synchronization process continues until the process is complete.

After a successful patch installation, synchronization for the Siebel Handheld application launches automatically and continues the extraction.

If the patch files are not successfully downloaded, the user is prompted to restart the patch process. The user must locate and launch patchagent.exe manually. Then, once the patch is successfully installed, the user is prompted to complete the synchronization.

Setting up PatchAgent on Windows 2003

This task is a step in [“Process of Installing the Siebel Handheld Application” on page 141](#).

When Siebel Web Server Extension (SWSE) software is installed on Windows 2003, you must complete the steps outlined in [“To set up PatchAgent on Windows 2003” on page 153](#) to allow PatchAgent to run without error on Siebel Handheld applications.

To set up PatchAgent on Windows 2003

- 1 Make sure that the Internet Guest Account (MACHINE_NAME\IUSR_MACHINE_NAME) exists in the system. This is automatically created after you install Windows 2003 Server.

- 2 Right-click on the CEPATCH folder and select Properties.

- a Select the Security tab and add the following account:

Internet Guest Account MACHINE_NAME\IUSR_MACHINE_NAME

- b Set the permission to Yes for all rights, except for Full Control.

- 3 Open IIS console and navigate to the Properties tab on the IIS level.

Select the MIME types tab (go to the MIME types section) and add the following two properties to create a new MIME type:

Property	Comment
.*	The extension field (.* is a period followed by an asterisk).
application/octet-stream	The MIME type field.

This is required to enable PatchAgent to access all files at the file level.

- 4 Using IIS console, right-click the cepatch_enu virtual folder and select the Properties tab.

- a Go to the Security tab, and click the Edit... button.

The authentication and access control dialog box displays.

- b Enter the details for the user account (for example, IUSR_MACHINE_NAME).

- c Enter the password for the account.

- d Select the Enable Anonymous Access check box.

- 5 Restart IIS.

NOTE: On a standard Windows 2003 installation, steps 1 and 4 might already be in place, but steps 2 and 3 must be setup by you.

7

Synchronization Conflict Handling and Recovery with Siebel Handheld Applications

The purpose of this chapter is to outline how to handle synchronization conflicts and recovery for Siebel Handheld applications. The following topics are covered in this chapter:

- [“Preventing Synchronization Transaction Conflicts with Handheld Applications” on page 155](#)
- [“Recovering Error Data in Siebel Handheld Applications” on page 159](#)

Preventing Synchronization Transaction Conflicts with Handheld Applications

When multiple users synchronize with a remote database, transaction conflicts can occur which can result in data loss. The Extended Pick and Insert Failure functionality minimizes synchronization conflicts. If transaction conflicts are unavoidable, then the Synchronization Service for the Siebel Handheld application captures the transaction information so that the data can be recovered. The combination of these features eliminates the potential for data loss.

There are two features that minimize synchronization transaction conflicts—Extended Pick processing and Insert Failure processing:

- [“Extended Pick Processing in Siebel Handheld Applications” on page 155](#)
- [“Insert Failure Processing in Siebel Handheld Applications” on page 158](#)

Extended Pick Processing in Siebel Handheld Applications

The Handheld application is used to capture and record transactions entered by users. During synchronization, these transactions are processed on the server. A situation can arise in which a transaction fails when it is applied to the Siebel Server (through Direct Server Synchronization). For example, a Handheld application user creates a professional call activity for one of their contacts. However, since they last synchronized with the server, the contact involved in this transaction was deleted from the server database. As a result, when the user tries to synchronize their handheld device, the server does not find the contact, and the call activity for the contact cannot be inserted into the server database. To generalize this example, any transaction that involves data selected through picklists or pick applets fails on the server if that pick data is not present at the time of synchronization.

With many users synchronizing with Siebel Server and modifying data at different times, this scenario is not uncommon.

Synchronization Conflict Handling and Recovery with Siebel Handheld Applications

■ Preventing Synchronization Transaction Conflicts with Handheld Applications

The following describes how a pick transaction is recorded on a handheld device and processed on the server during synchronization. Assume that the user wants to create a new call activity for the contact. In order to do this, the user inserts a new record in the Professional Call screen and picks the desired contact. When the contact is selected on the handheld device, the Row Id of the contact (Contact Id) is recorded. However, on the handheld device, the application does not record any of the pick map fields associated with the contact; only the Contact Id is recorded. When the user synchronizes their handheld device, that Contact Id is used to locate the contact record in the server database. The Contact Id is then used to retrieve all of the fields used in the pick map for the Contact Id (Last Name, First Name, Middle Initial, Address, City, State, Zip Code, and so on).

In order to minimize pick processing failures, the Handheld application must record the pick row ID and all of the pick map data that is required for a successful transaction. This data must be recorded at the time of the pick, so that it can be passed to the server for processing. This enhanced functionality is called Extended Pick processing. Now, when the user synchronizes, the transaction is processed on the server as follows:

- The synchronization process first looks for the pick record on the server database. For example, to add an activity it looks for the contact and, if it finds the contact, it retrieves the necessary data and adds the activity. This is the default behavior.
- If the server does not find the pick map record in the database and extended pick processing is enabled, it retrieves the pick record ID and pick map data from the Handheld application transaction and applies the data directly to the server.

Enabling Extended Pick Processing in Siebel Handheld Applications

You can enable Extended Pick processing globally or at the business component level when configuring the Siebel Handheld application. When the *DefaultHandheldSyncPickMode* parameter is enabled, every pick transaction is subject to pick processing.

To enable extended pick processing globally

- 1 Navigate to the Administration - Mobile screen > Application Administration view.
- 2 Click the Settings tab, then Query on the following value:

DefaultHandheldSyncPickMode

If there is no such record, a new record with that value must be created. See [Table 23](#) for the values to enter.

Table 23. Application Settings

Setting Name	Value	Description
DefaultHandheldSyncPickMode	NoFail	Turns Extended Pick processing ON.
	FailOnError	Turns Extended Pick processing OFF This is the default behavior if the parameter is not specified in the Settings view.

To enable extended pick processing at the business component level

- When enabling extended pick processing at the business component level, the user property is defined on specific business components. Use the HandheldSyncPickMode user property to set the extended pick processing mode for the fields you require. For more information about this user property, see [HandheldSyncPickMode User Property on page 229](#).

Table 24 shows the combined effect of the settings in the Application - Mobile > Settings View and on a business component.

- The DefaultHandheldSyncPickMode setting is omitted from application settings.
- If there is no setting on a particular business component, the setting defined in the Settings view applies.
- If there is no setting defined in the Settings view, or on the business component, the default behavior is for Extended Pick to be turned OFF.

In Table 24, read down the Tools Configuration column (which shows what HandheldSyncPickMode is equal to) and across to the Mobile Administration View Setting column (which shows what DefaultHandheldSyncPickMode is equal to) to see the combined result. For example, a NoFail configuration in Tools combined with a FailOnError setting in the Mobile Administration View results in the combined effect NoFail.

Table 24. Combined Effect of Extended Pick Settings for Business Components

Tools Configuration (User Property)	Mobile Administration View Settings		
	NoFail	FailOnError	Omitted
NoFail	NoFail	NoFail	NoFail
FailOnError	FailOnError	FailOnError	FailOnError
Omitted	NoFail	FailOnError	FailOnError

Recommended Extended Pick Processing Settings

It is recommended that you use the Extended Pick processing settings in the following way:

- Product|NoFail
- **FS Invoice Payments.** Payment Num|NoFail
- **FS Invoice.** Account Name|NoFail, Order Number|NoFail
- **Retail Audit Product.** Product Name|NoFail
- **Cycle Counting.** Inventory Location Name|NoFail
- **Cycle Counting Execution.** Product|NoFail
- **CPG Store Conditions in Retail Audit.** Product Name|NoFail
- **CPG Account Merchandising Product.** Product Name|NoFail
- **Asset Mgmt – Asset.** Product Name|NoFail
- **CG FS Activity Parts Movement.** Product Name |NoFail

The Consumer Goods Handheld application comes with these default recommended settings.

Insert Failure Processing in Siebel Handheld Applications

When the server executes an insert transaction and the insert fails, there are two ways the insert failure can be handled:

- A record is logged that indicates the insert failed, and synchronization continues. This is the default insert behavior. The Conflict Administration screen can be used to recover the data.
- The insert failure is logged, including details of the failure, and synchronization is interrupted. This is the FailOnError behavior. FailOnError behavior guarantees that, if an insert fails, data loss does not occur since synchronization is stopped until the circumstances causing the failure are resolved.

NOTE: If FailOnError processing takes place, synchronization is interrupted. The synchronization process continues to fail until the problem is resolved. Users must contact their system administrators to recover from the failure. The recovery effort can involve modifying transactions queued for processing, modifying data on the server, or reentering transactions through the Siebel Handheld application.

Handling Insert Failures

You can enable insert failure processing globally or at the business component level when you configure the Siebel Handheld application. The following setting applies globally throughout the application. When FailOnError is specified, every failed insert interrupts synchronization.

DefaultHandheldInsertMode

You can specify the value for this setting through the Settings view in the Administration-Mobile screen.

Table 25 shows the settings for this parameter.

Table 25. Insert Failure Processing Parameter Setting

Parameter	Value	Description
DefaultHandheldInsertMode	NoFail	Insert failures are logged and synchronization continues. This is the default behavior.
	FailOnError	Insert failures are logged and synchronization terminates. The system administrator must intercede to recover from this failure.

You can also use the `HandheldInsertFailMode` user property to enable insert failure processing at the business component level. For more information about this user property, see [HandheldInsertFailMode User Property on page 229](#).

Table 26 shows the combined effect of the setting in the Settings view and the setting on a business component.

- The business component setting always takes precedence over the settings defined in the Administration-Mobile > Settings view.
- If there is no setting on a particular business component, the Applications Settings value applies.
- If there is no setting in either the Settings view or on the business component, the default behavior is the same as NoFail. Insert failures are logged and synchronization continues.

In Table 26, read down the Tools Configuration column (which shows what `HandheldInsertFailMode` is equal to) and across to the Application Settings Value (which shows what the `DefaultHandheldInsertMode` is equal to) to see the combined result. For example, a NoFail BC setting combined with a FailOnError application setting results in the combined effect NoFail.

Table 26. Combined Effect of Insert Failure Settings

Tools Configuration (User Property)	Application Settings Value		
	NoFail	FailOnError	Omitted
NoFail	NoFail	NoFail	NoFail
FailOnError	FailOnError	FailOnError	FailOnError
No Setting on Business Component	NoFail	FailOnError	NoFail

Recovering Error Data in Siebel Handheld Applications

Selected synchronization and conflict errors are captured to the database, and can be accessed through the Conflict Administration screens. This mechanism is always enabled. For more information about recovering error data, see [“Obtaining Error Details from Synchronization Sessions in Siebel Handheld Applications” on page 106](#).

8

Installing the Siebel Handheld Application

This chapter guides you through the process of installing and upgrading a Siebel Handheld application. The following topics are covered in this chapter:

- [“Process of Installing, Reinstalling, or Upgrading a Siebel Handheld Application” on page 161](#)
- [“Uninstalling the Siebel Handheld Application” on page 161](#)
- [“Installing the Siebel Handheld Application” on page 162](#)

Process of Installing, Reinstalling, or Upgrading a Siebel Handheld Application

The Siebel Handheld application cannot be upgraded directly on the handheld device. You must uninstall the old Siebel Handheld application and then install the new one. To reinstall or upgrade your existing Siebel Handheld application and migrate its data and settings to the current release, or to install a new Siebel Handheld application, use the following process:

- 1 If you have a Siebel Handheld application installed, before you reinstall or upgrade the application, back up its data by synchronizing your application with the Siebel Handheld application database. See [“Synchronizing Data on Your Handheld Device” on page 173](#).
- 2 If you have a Siebel Handheld application installed, uninstall the Siebel Handheld application. See [“Uninstalling the Siebel Handheld Application” on page 161](#).
- 3 Install the current version of your Siebel Handheld application. See [“Installing the Siebel Handheld Application” on page 162](#).
- 4 Synchronize your Siebel Handheld application data. See [“Synchronizing Data on Your Handheld Device” on page 173](#).

Uninstalling the Siebel Handheld Application

Uninstalling the Siebel Handheld application deletes the database files as well as the application files.

This task is a step in [“Process of Installing, Reinstalling, or Upgrading a Siebel Handheld Application” on page 161](#).

CAUTION: Before uninstalling your Siebel Handheld application, you must synchronize the Siebel Handheld application database to save any changes to your data since the last synchronization. If you do not synchronize before uninstalling, these changes will be lost.

To uninstall the Siebel Handheld application

- 1 Synchronize your Siebel Handheld application database. See [“Synchronizing Data on Your Handheld Device” on page 173](#).
- 2 Select Start > Settings.
- 3 Select the System tab, and tap Remove Programs.
- 4 From Remove Programs, select the Siebel Handheld application, and tap Remove.

A dialog box appears indicating that a file cannot be deleted. This occurs because a file might still reside in memory.

- 5 Ignore the message, and tap OK to delete all the Siebel Handheld application and database files.

Installing the Siebel Handheld Application

There are two ways to install software onto any Windows-powered handheld device. The first is to create a partnership between a desktop or laptop PC and the handheld device using Microsoft ActiveSync. The second is to install the Siebel Handheld application from some type of external media.

The steps in this procedure apply to both companion synchronization and Direct Server Synchronization. For more information about Direct Server Synchronization and setting filters, see [Chapter 5, “Data Filtering for Siebel Handheld Applications.”](#)

NOTE: Often, a Direct Server Synchronization user does not have access to a PC for creating a partnership with her or his handheld device. In such cases, an administrator must create a temporary partnership with each user's device and install the Siebel Handheld application. You can install it in Direct Server Synchronization mode with the Siebel Installer as described in this topic.

This task is a step in [“Process of Installing, Reinstalling, or Upgrading a Siebel Handheld Application” on page 161](#).

To install the Siebel Handheld application

- 1 Using Microsoft ActiveSync, establish a partnership between the handheld device and the PC.
- 2 On the PC network or DVD-ROM, locate the folder where the Siebel Handheld Application folder is installed, then double-click setup.exe.

The installation process begins.

- 3 Follow the directions that appear on screen to complete the installation.

- 4 After installing the Siebel Handheld application, and *before* using it, perform an initial synchronization. See [“Synchronizing Data on Your Handheld Device” on page 173](#).

NOTE: Before using the Siebel Handheld application, you must synchronize the handheld device to download the Siebel Handheld application configuration and populate the Siebel Handheld application database. Therefore, an administrator can install the Siebel Handheld application for a user, but the synchronization must occur while a user is logged in to the Siebel Handheld application with a valid username and password.

9

Working with Siebel Handheld Applications

The purpose of this chapter is to introduce the Siebel Handheld application interface by describing the components of the interface and how to navigate it, and introducing some useful tasks, such as, entering data, exporting data, synchronizing data, and printing. The following topics are covered in this chapter:

- [“Components of the Siebel Handheld Application Interface” on page 165](#)
- [“Navigating the Siebel Handheld Application Interface” on page 167](#)
- [“Navigating a List of Records in the Siebel Handheld Application” on page 168](#)
- [“Entering Data with the Siebel Handheld Application” on page 169](#)
- [“Finding and Querying Data in the Siebel Handheld Application” on page 170](#)
- [“Printing with the Siebel Handheld Application” on page 170](#)
- [“Exporting Data with the Siebel Handheld Application” on page 171](#)
- [“Setting User Preferences in the Siebel Handheld Application” on page 171](#)
- [“Backing Up and Restoring Data with the Siebel Handheld Client” on page 172](#)
- [“Synchronizing Data on Your Handheld Device” on page 173](#)
- [“About Synchronization Options” on page 175](#)
- [“Troubleshooting Synchronization with the Siebel Handheld Application Client” on page 175](#)
- [“Guidelines for Improving Siebel Handheld Application Performance” on page 176](#)

Components of the Siebel Handheld Application Interface

The components of the Siebel Handheld application interface include the Screens drop-down list, Show drop-down list, application-level menu, Queries drop-down list, toolbar, and status bar.

Figure 5 shows the components of the Siebel Handheld application.

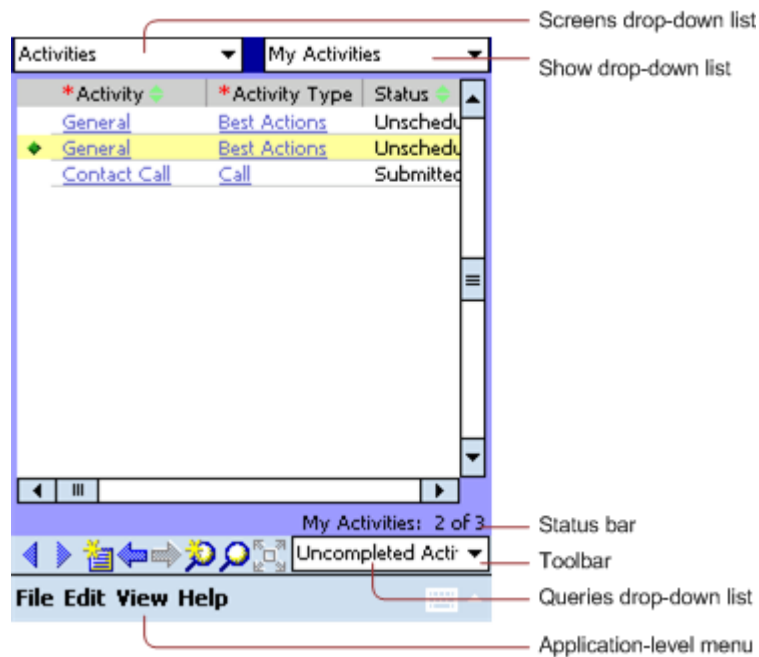


Figure 5. Siebel Handheld Application Screen Components

Screens Drop-Down List

The Screens drop-down list is the first level of navigation in the Siebel Handheld application. When you launch the Siebel Handheld application for the first time, this drop-down list is labeled Screens unless you have configured a start up view to appear. When you tap the Screens drop-down list, a drop-down list of all available screens appears. Tap the desired screen in the list to navigate to it.

For information about configuring a start up view, see [“Setting User Preferences in the Siebel Handheld Application” on page 171](#).

Show Drop-Down List

The Show drop-down list is the second level of navigation in the Siebel Handheld application. This is where you choose views for the selected screen. When you launch the Siebel Handheld application for the first time, this drop-down list is labeled Views.

Application-Level Menu

The application-level menu consists of the File, Edit, View, and Help menus. Tap a menu to select a menu option. The options that are available in each menu vary depending on the task you are performing.

Queries Drop-Down List

Up to two predefined queries, or business object filters are displayed in the Queries drop-down list. The list displays the query chosen when you synchronized (or the default filter if you did not change the Set Filters selection) and the All Records query, if it is defined. For more information about the queries drop-down list, see [Chapter 5, “Data Filtering for Siebel Handheld Applications.”](#)

Toolbar

The toolbar on the Siebel Handheld application has buttons for frequently used functionality like record navigation and querying. You can configure your toolbar and specify which buttons are displayed. For more information about the toolbar on your Siebel Handheld application, see the Siebel Handheld application online help.

Status Bar

The status bar appears at the bottom of the application window. It provides information about the current view.

Navigating the Siebel Handheld Application Interface

Navigating the Siebel Handheld application is achieved through the Screens drop-down list, the Show drop-down list, drilling down, drilling across, toolbar buttons, and toggling.

Screens Drop-Down List

The Screens drop-down list provides the first level of navigation. Here you select the screen you want to work with. For more information about the Screens drop-down list, see [“Components of the Siebel Handheld Application Interface” on page 165.](#)

Show Drop-Down List

The Show drop-down list is the second level of navigation. After you have selected a screen from the Screens drop-down list, select a view from the Show drop-down list. Views in the Show drop-down list are specific to each screen.

For example, in the Activities screen you can pick the My Activities view from the Show drop-down list.

Navigating between Applets

Two or more applets can be displayed at any one time in a Siebel Handheld application. Navigating between applets depends on whether your application is configured to display in traditional two-applet mode or tabbed applet mode.

For information about how to navigate between applets in either mode, see the online help for the Siebel Handheld application.

Expandable Fields

Due to the limited screen size on the handheld device, it is not always easy to view the data in a field without scrolling or resizing the field width. Therefore, some fields that can contain large amounts of text are expandable—that is, the data can be viewed in a text box. An ellipsis (...) appears in the field to indicate that the field is expandable. When you tap the ellipsis, a text box opens showing the data in that field. When you step off the field, the text box closes.

In form applets, an ellipsis is always visible in those fields that are expandable. However, in list applets, due to space constraints, the ellipsis is not always visible in expandable fields. When you tap on an expandable field in a list applet, the ellipsis appears. Once the ellipsis appears, you tap the ellipsis to open the text box.

URLs in Applet Fields

Tapping on a field that contains a URL value launches the URL in PocketIE.

Navigating a List of Records in the Siebel Handheld Application

Within the view you select from the Show drop-down list, you can view detailed information on a record. When records are displayed in a list, you can drill down or drill across the record to get additional details.

Drilling down occurs when you tap a hyperlink in a record and are taken to another view within the current screen. For example, if you are in the Accounts screen, and tap the Account Name hyperlink, you navigate to the details for that account. You do not leave the Accounts screen; you just move deeper into it.

NOTE: Hyperlinks are indicated by blue underlined text as long as they are set up this way in User Preferences. For more information about user preferences, see [“Setting User Preferences in the Siebel Handheld Application” on page 171](#).

Drilling across a record occurs when you tap a hyperlink in a record and are taken to another view in a different screen. For example, tapping a hyperlink in the Accounts column of a contact record in the Contacts screen takes you to the record for that account in the Accounts screen.

Dynamic drilldown occurs when you tap a hyperlink in a record and are taken to another screen or just another view. Where you navigate to depends on the content in the drilldown field. For example, if you are in the Outlet Visits > Visit Activities view, there are a number of different activity types that you can see. If you drill down on the Retail Audit activity, you jump to the Retail Audit screen. If you drill down on the Retail Order activity, you jump to the Orders screen.

History Arrows

To navigate back to views you have recently displayed, tap the Back button. After you have used the Back button, you can use the Forward button to navigate back to your original screen and view.

NOTE: The History arrows allow you to navigate only between views. These arrows do not allow you to recover data that might have been entered or deleted in another view.

Record Navigation Buttons

Use the Record Navigation buttons to move back and forth through a set of records. The navigation buttons are described in [Table 27](#).

Table 27. Record Navigation Buttons

Button	Description
	Navigates back to the previous record in the list or form.
	Navigates forward to the next record in the list or form.
	Navigates back a view based on the navigation history. You can define which views are part of the history. If a view is set to not be recorded as part of the history, the back button will not go back to that view.

Entering Data with the Siebel Handheld Application

There are several different methods for entering data in the Siebel Handheld application. Tap the up arrow next to the Input Panel button to select a method. See the user guide for your device for information on using the different input methods.

Working with Columns in the Siebel Handheld Application Client

Data is displayed in lists and forms in your Siebel Handheld application. You can organize and work within it in a number of ways to better suit your needs.

There are several ways in which to organize columns in a list. You can:

- Sort data by up to three columns
- Resize columns
- Change the order in which the columns appear
- Show and hide columns
- Lock columns for horizontal scrolling

You can sort records in a list by tapping in the column header of the column in which you want to sort the records. If the green column sort indicator points up, the column is sorted in ascending order. If it points down, the column is sorted in descending order.

If you need to sort by more than one column, you can sort up to three columns at one time. For information about how to perform an advanced sort, see the online help for the Siebel Handheld application.

Resize columns by tapping and dragging the divider between the column headings until the column is the desired size.

You can also change the order of columns. For information about how to change the order of columns, see the online help for the Siebel Handheld application.

Show and hide columns using the Columns Displayed dialog box. In the Available columns list, select the items you want to show and tap the arrow to move the selected items to the Selected columns list. To hide columns, select the items and tap the arrow to move the selected items to the Available columns list.

Lock or unlock columns by tapping and holding the column header.

Finding and Querying Data in the Siebel Handheld Application

You can search for data using the Find or Query functionality in your Siebel Handheld application.

- [“About Find in Siebel Handheld Applications” on page 170](#)
- [“About Queries in Siebel Handheld Applications” on page 170](#)

About Find in Siebel Handheld Applications

You can use the Find feature to do a simple search for a record. For more information about how to use the Find feature, see the online help for the Siebel Handheld application.

About Queries in Siebel Handheld Applications

Use Query to locate a number of records containing a specific set of criteria. There are a number of ways in which to perform query tasks in your Siebel Handheld application.

For information about how to perform query tasks, see the online help for the Siebel Handheld application.

Printing with the Siebel Handheld Application

You can print from any view in the Siebel Handheld application that has been configured to support printing. When you print from a handheld device, a document that has been configured for the view is printed. You can print directly to a printer, or, if you are not connected to a printer at the time, you can queue your print jobs and wait until you have access to a printer to print your documents.

NOTE: When you print from a view, you are not necessarily printing what is visible on the screen at the time. Every field on the screen might not be relevant for the document. The document might contain only a portion of what is in the view, and it might also contain data that is not viewable at the time. A separate applet, which often cannot be viewed in the user interface, is configured specifically for printing.

The print templates used for generating and formatting print output are installed during setup. For a list of supported printers, see *Siebel System Requirements and Supported Platforms* on Siebel SupportWeb.

For information about how to perform print tasks, see the online help for the Siebel Handheld application.

Exporting Data with the Siebel Handheld Application

You can export data from any view in your application in HTML format or as tab delimited text and save it to a file. This file can be viewed in applications such as Microsoft Pocket Word, Microsoft Pocket Excel, and Internet Explorer.

For information about how to export data, see the online help for the Siebel Handheld application.

In the Export dialog box, you can specify the following:

- **Format.** Specify either HTML or Tab delimited text file.
- **Export.** Select Only active applet to export only the data in the active applet. Select All applets in view to export the data in all visible applets.
- **Output file name.** By default, the file is saved in the temp directory with the filename “output.” You can tap Browse to specify a different location or filename.
- **Paste Output to Clipboard.** Select the check box to save the data to the clipboard.
- **Open file.** Select the check box to automatically open the file. When you tap OK in the Export dialog box, the data is exported to the specified file, and the file is automatically opened.

NOTE: You must specify a valid output format for the application. See Table 28 for the correct formats to specify for the supported applications.

Table 28. Export Data Options

To export data to	Do the following
Microsoft Word	Set the Format option to Tab delimited text file.
Microsoft Excel	Select the <i>And paste output to clipboard</i> check box. Set the Output format to either HTML or Tab delimited text file. Paste the data from the clipboard into an Excel spreadsheet.
Microsoft Internet Explorer	Set the Format option to HTML.

Setting User Preferences in the Siebel Handheld Application

You can set preferences that are related to the appearance and functionality of your Siebel Handheld application. You can do the following:

- Set a default startup screen.
- Set the maximum number of history threads to save.
- Set the maximum percentage of the display area that the parent applet can take up.
- Change font size.
- Set the grid lines.
- Set preferences for the calendar, for example, default view, start time, time slot interval, and default appointment duration.

For information about how to set the user preferences, see the online help for the Siebel Handheld application.

Backing Up and Restoring Data with the Siebel Handheld Client

It is recommended that you back up your data to an external device—for example, a CompactFlash card or a Secure ID card. If the handheld device is damaged, the backup might not be retrievable. If you store your backups in RAM, depending on the size of your application and data extract, you can decrease the amount of memory available for the application, and your application performance can suffer.

Automatic Backup after Synchronization

The automatic backup feature must be enabled in the application by your System Administrator. If the backup feature is enabled, a backup is automatically created at the end of every synchronization. This way, you have an up-to-date snapshot of the database.

CAUTION: You must never synchronize your data to the handheld device and then restore the database using an older copy of the database. If you do, the next time you synchronize, the application tries to rewrite changed transactions. This can cause data integrity problems. Therefore, when the database backup feature is enabled, a database backup occurs automatically at the end of each synchronization.

Keep in mind that enabling automatic backup makes the overall time to synchronize somewhat longer. The size of the database and the speed of the CompactFlash card also affect the time it takes to complete synchronization.

For more information about automatic backup, see [“Enabling Back Up of Siebel Handheld Application Database” on page 145](#).

Backing Up Data

You can back up the data in your Siebel Handheld application. The Siebel Handheld application configuration files and data are copied to the backup location specified in the setup.ini file. Typically, the backup location is a CF or SD card.

For more information about how to back up data, see the online help for the Siebel Handheld application.

Restoring Data from a Backup

In order to restore the application to its previous state, the user must contact the system administrator. Any work performed on the handheld device since the last backup will be lost.

To restore the database

- 1 Remove the external flash card from the damaged device and place it in a new handheld device where the application has been installed.
- 2 Navigate to the \Program Files\Siebel Handheld folder.
- 3 Start the restore by tapping the BackupUtility file twice.

A dialog box appears, asking you to confirm that you want to restore the device from a previous backup.

- 4 Tap Yes.

A status dialog box appears, indicating that the restore is in progress. The backup utility restores the files to the state when the backup was performed. A dialog box appears telling you if the restore was successful. If successful, it asks you to confirm that you want to restart the Siebel Handheld application.

- 5 Tap Yes to start using the application.

Synchronizing Data on Your Handheld Device

The tasks covered in this topic are part of the [“Process of Installing, Reinstalling, or Upgrading a Siebel Handheld Application” on page 161](#).

You must synchronize the data on your handheld device:

- After you install or upgrade the Siebel Handheld application.
- Before uninstalling the Siebel Handheld application.
- On a regular basis to keep your data synchronized with Siebel Server

The topics that follow describe how to synchronize using Direct Server Synchronization (DSS) and Direct Server Synchronization via Proxy (DSSvP), and provide some troubleshooting tips:

- [“Using Synchronization with the Siebel Handheld Application Client” on page 174](#)
- [“Using Direct Server Synchronization with the Siebel Handheld Application Client” on page 174](#)

Using Synchronization with the Siebel Handheld Application Client

Synchronization in the Siebel Handheld application differs depending on whether users synchronize through Direct Server Synchronization or Direct Server Synchronization via Proxy. The following topics show you how to launch and use synchronization in your Siebel Handheld application for each method.

NOTE: A given user can only synchronize using one method.

Using Direct Server Synchronization with the Siebel Handheld Application Client

There are two methods for synchronizing between the handheld device and the Siebel Handheld Application Server:

- Direct Server Synchronization (DSS) provides synchronization between the Siebel Handheld application and the Siebel Handheld Application Server.
- Direct Server Synchronization via Proxy (DSSvP) provides synchronization between the Siebel Handheld application and the Siebel Handheld Application Server, using the desktop or companion PC to provide the network connection between the handheld device and the server.

To synchronize with the Siebel Handheld Application Server

- 1** If you are synchronizing using DSS, create a direct network connection through a modem or a direct LAN connection.

If you are synchronizing using DSSvP, establish an ActiveSync connection between the handheld device and the PC.

- 2** Start the synchronization process from the application-level menu.

For information about how to start synchronization from the application-level menu, see the online help for the Siebel Handheld application.

- 3** Enter your user name and password.

- 4** Tap Start.

The Siebel Handheld Sync dialog box appears.

- 5** Tap OK to exit Siebel Handheld Sync dialog, and the application launches automatically. If synchronization errors occur, an error dialog box appears.

NOTE: DSS works if the version of the Siebel Handheld application on your handheld device is slightly different to the version installed on your server. However, it is recommended that versions of the Siebel Handheld application on your device be the same or as close as possible to the Siebel Handheld application version on the server.

About Synchronization Options

From the Siebel Handheld Sync dialog, the following items are contained in the Options menu:

- **Filters:** If this is the first time you synchronize, then the default filters are used. Enables you to choose the screens that you want to filter. Choose the filter for each screen that you select. You can choose only one filter for each screen.
- **Change User:** This option enables a new user to use the handheld device when the original user no longer needs the device. The Siebel Handheld application does not need to be re-installed when a new user wants to access the application from the handheld device.

NOTE: If there are pending transactions for the current user, you have to synchronize them first before you can change to a different user name.

- **Save Password:** If you want to save your password so that you do not need to enter it each time you access the Siebel Handheld Sync dialog, select the Save Password check box.

When you select Save Password, the password is encrypted and saved on your hard drive. Once the password is saved, when you start the application you do not see the Siebel Handheld Sync login dialog. The encrypted password must be deleted in order for you to be able to access the login dialog box. To remove the encrypted password, delete "Password=<encrypted text>" under the [Parameters] section of the pimsync.cfg file.

Save password check box is enabled only if the Allow Save Password application setting is set to TRUE on the server. That is done using the Administration - Mobile screen on the server. Once the password is saved on the device, you are not prompted for the password when the Siebel Handheld application is launched. Similarly, when you invoke the Siebel Handheld Sync login dialog, the password and user name is pre-populated if password is already saved on the device.

Troubleshooting Synchronization with the Siebel Handheld Application Client

This topic lists potential error messages that are associated with synchronization. In addition, this topic helps to understand transaction errors.

General Synchronization Errors

There are a number of different errors that can occur when synchronization does not complete successfully, for example:

- Faulty wire connection
- Server crash
- Insufficient memory
- Login error

When these errors occur, the user must exit Siebel Handheld application synchronization and launch the application again.

NOTE: When you restart Siebel Handheld application synchronization, you might see an error message indicating that another instance of `syncmanager.exe` is running. You are asked whether you want to terminate the first instance or not, and you must choose Yes.

Transaction Conflicts

Transaction conflicts are minimized when customers adhere to the standard configuration practices outlined in this document. However, even when proper configuration practices are followed, conflicts can occur for a variety of reasons. For example, if a field value is updated on both the Siebel Handheld Application Client and the Siebel Server between synchronization events, a transaction update conflict occurs. In this instance, the user is presented with an error dialog after synchronization has completed.

A transaction consists of one or more smaller transactions called mini-transactions. For example, if you update several fields in a record, the update to the record counts as a single transaction, and each update to a field is a mini-transaction. Individual fields are skipped when update conflicts occur. Changes to any field that has been updated on the server since the last synchronization (perhaps by another Siebel Handheld application user) are discarded (but logged and returned as errors to the user). All non-conflicting fields normally are updated. Except for field-level conflicts, which are skipped when they occur, a transaction is applied in its entirety, and at this point will either succeed or fail in its entirety.

Guidelines for Improving Siebel Handheld Application Performance

If you find that the performance of the Siebel Handheld application is very slow or begins to degrade, the following can help to improve the application performance:

- Verify that you are using a Siebel supported device for your application. See *Siebel System Requirements and Supported Platforms* on Siebel SupportWeb.
- Maximize the amount of memory that is available to run the Siebel Handheld application. When you run the Siebel Handheld application, it is recommended that you do not run any other applications.
- Increase the amount of memory that is allocated for running applications.
- Install the binaries to a CompactFlash card. For more information about this task, see [“Setting Up Siebel Handheld Application Installation on a CompactFlash Card” on page 147](#).

To increase application memory

- 1 From the Start menu, select Settings.
- 2 Select the System tab and tap Memory.
- 3 Move the slider bar so that more memory is allocated to Program Memory, then tap OK.

The following topics contain guidelines to help reduce the Repository Meta Language (RML) file size, database file (dbfile) size, and synchronization time.

Guidelines for Reducing the Synchronization Time

The process of reducing the sync time and improving performance for the Siebel Handheld application depends on your ability to:

- Reduce the amount of data that is downloaded
- Reduce the period of time it takes to extract the data
- Reduce the size of the .RML file

Follow these guidelines:

- Keep the Siebel Handheld application database file under 3 megabytes (MB).
- Keep the RML file under 1.5 MB.
- Limit the amount of views in the application to 30.

Limit the size of the dbfile.txt file to less than 3 megabytes (MB). The RDBMS on the handheld device will be approximately three times the size of dbfile.txt. If the data files are so large that they cannot be imported into the database with the available memory, users will not be able to successfully synchronize their data. Design data filters to limit the amount of data that is synchronized with the handheld device.

If too many records are downloaded, this increases the length of time it takes to synchronize the handheld device and slows down the Siebel Handheld application performance.

For more information about checking to see how much data is downloaded to your handheld device, see [“Monitoring Synchronization Sessions for Siebel Handheld Applications” on page 105](#).

NOTE: You can also check the Siebel Server log file to see how many records are downloaded for each business component. However, you must turn on logging to capture this information in the log file. For more information about enabling logging for Direct Server Synchronization, see [“Configuring Logging Levels for Direct Server Synchronization” on page 137](#).

Guidelines for Designing Data Filters

Oracle suggests the following general steps for developing synchronization filters for the Siebel Handheld application:

- Ensure you have configured the Business Object filters, in addition to the Business Component filters. Failure to optimize or set Business Object filters will lead to more data being downloaded, which negatively affects the overall synchronization time. Therefore, set the Business Object filters for your Siebel Handheld application deployment.
- Identify the screens and views of your Siebel Handheld application. Also, identify the business components that are required to support each screen and view, noting the areas where each business component occurs. For example, identify the form, list, or pick applets that are based on each business component.

- Set expectations as what data and how many records will be shown to a user for each view (Low, Avg, High). For Child records, make sure you specify a number based on the parent record.
- List the expected record counts for the picklist and pick applets.
- Prioritize the value of the data that is downloaded.
- Within Siebel Tools, establish the base parent-child relationships and any reverse relationships at the component level.
- Create the appropriate business object synchronization filters for each business object or screen and make sure that each screen includes a default filter. Default filters help to ensure that users avoid accidentally downloading an excessive number of records.
- Review the business components that occur in picklists and consider creating default synchronization filter declarations for those that will cause large numbers of records to synchronize to the handheld device. These declarations are maintained in the PDAQBE file.
- Pay attention to the business components containing enterprise visible data and create suitable filters for:
 - Employees (for large organizations)
 - Positions (for large organizations)
 - Products (for example, active, orderable products)
 - Activities (for example, filter for current Activities, Activities of only certain kinds)
- Ensure that the filter queries are based on the indexed fields, and that they are optimized to download only the required data to the handheld device.
- Translate all parent business component filters to the default business component filters to boost performance significantly.

NOTE: Configuration file directives are used only in specific situations and do not consider them as the primary method for filtering data. Modify these filters and directives cautiously and only with the support of skilled Siebel configurators.

For more information about how to design data filters to limit the amount of data that is synchronized to the handheld device, see [Chapter 5, “Data Filtering for Siebel Handheld Applications”](#).

Guidelines for Reducing Synchronization Time

To reduce the synchronization time, filter the amount of data downloaded to the business objects first. Specifically, set the data filters in this order:

- 1 Business Object filters.** This setting restricts data to the necessary parent records.
- 2 Business Component filters.** This setting extracts the relevant child records from only those parent records that made it through the Business Object filters.

Guidelines for Reducing the Time of Data Extraction

Your Siebel Handheld application generates different types of log and output files. Review the generated log file to identify:

- Which business object, business component, views, applets, and picklists are being extracted and in what order?
- How many records are being extracted?
- How long it takes for each record to be extracted?

Based on the information in the log file you need to identify trouble spots, which might be caused by bad filter query, no indexes, or too much data. For more information about how to address some of these issues, see [“Siebel Handheld Application Performance” on page 204](#).

You can also eliminate pick applets and set run-time property=False for read only fields to avoid the unnecessary extraction for data.

Review the data and evaluate if the same data is being extracted twice under two business components with different names. If this situation is the case, change the configuration to rectify this. Additional configuration information can be found in the Siebel Technical Note 405 on Siebel SupportWeb.

Guidelines for Reducing the Size of the RML File

The Siebel Handheld application performs best if you use the following guidelines:

- Keep the number of views in your application to 30 or fewer.
- For optimal usability, limit each view to one or two applets.
- To minimize horizontal scrolling, limit the number of columns displayed in a list applet to no more than ten.
- There is no limit on the number of fields in form applets of single-applet views. However, to minimize scrolling, keep the number of fields to 20 or fewer.
- Use a form applet for the parent for each parent-child view.
- In a multi-applet view, limit the number of fields in form applets to five or fewer for Pocket PC and 10 or fewer for Handheld PC. Add additional fields only if the field width is short, for example, a check box field. Reduce the number of fields if the fields are multiline. for example, a Comments box that contains three lines of text.
- Limit the number of views within a screen to 12 or fewer so that the View drop-down list is not too long and unwieldy.
- Limit the number of screens to six or fewer so that the Screen drop-down list is not too long and unwieldy.

The areas that affect the RML file size are:

- **DefaultViewxxx.** The greater the number of views, the larger the RML file size, which results in an increase in sync time.
- **DefaultBusObjs.** An increase in the number of business objects and business component results in a larger RML size and dbfile size.
- **DefaultFields.** An increase in the amount of fields also results in larger RML size and dbfile size.

Guidelines for Improving the Configuration of the Siebel Handheld Application

Use the following guidelines when reviewing your Siebel Handheld application:

- Multi-value fields with links to search specifications have a negative impact on extraction time.
- For custom or heavily configured business components, it might be beneficial in some cases to clone the business component for the Siebel Handheld application to reduce the number of joins, links, and fields that are needed.
- Force Active and Link Spec properties force a field to be extracted to the Siebel Handheld application. If possible, avoid using these properties for fields that do not need to be downloaded to the handheld device.
- Siebel Handheld applications rely on specialized classes and user properties. These might require some Out-Of-Box (OOB) fields to be present when configuring the Siebel Handheld application. During development, ensure to keep the logging levels at the maximum level and review the log files for any missing fields.
- Avoid over-customization because it usually causes performance degradation and problems during an upgrade.

For more information, see ["Configuration Guidelines for the Siebel Handheld Client" on page 28](#).

10 Using Siebel Consumer Goods Handheld

This chapter describes how to use some important features in your Siebel Consumer Goods Handheld application. The following topics are covered in this chapter:

- [“Siebel Consumer Goods Van Sales Representative Usage Scenario” on page 181](#)
- [“Backing Up the Siebel Handheld Application” on page 183](#)
- [“Visiting with Siebel Consumer Goods Handheld” on page 183](#)
- [“Working with Visit Activities with Siebel Consumer Goods Handheld” on page 185](#)
- [“Working with Billings in Siebel Consumer Goods Handheld” on page 185](#)
- [“Conducting a Retail Audit Using Siebel Consumer Goods Handheld” on page 187](#)
- [“Collecting Returns with Siebel Consumer Goods Handheld” on page 187](#)
- [“Executing a Retail Order with Siebel Consumer Goods Handheld” on page 188](#)
- [“Performing Other Activities with Siebel Consumer Goods Handheld” on page 190](#)
- [“Buttons and Status in Siebel Consumer Goods Handheld” on page 193](#)

Siebel Consumer Goods Van Sales Representative Usage Scenario

This scenario provides an example of a workflow process performed by a van sales representative using Siebel Consumer Goods Handheld. Your company might follow a different process flow according to its business requirements.

Van sales representatives are responsible for performing retail audits, capturing orders, invoicing, and collecting payments. In addition to these primary sales responsibilities, they can also collect payment for outstanding billings, collect items that are being returned, exchange products with other delivery representatives, and deposit on-hand payments at the local bank.

As a van sales representative, you begin your day at the depot by synchronizing your handheld device. You connect to the Siebel Server by docking the handheld device into its cradle and synchronize the Siebel handheld application with the Siebel database, retrieving updated details for the day, including visits, activities, and inventory information.

When synchronization is complete, you can begin to perform (for example) the following tasks:

- [“Recording Van Information in Siebel Consumer Goods Handheld” on page 182](#)
- [“Verifying Van Inventory in Siebel Consumer Goods Handheld” on page 182](#)
- [“Working with Billings in Siebel Consumer Goods Handheld” on page 185](#)
- [“Collecting Returns with Siebel Consumer Goods Handheld” on page 187](#)

■ [“Performing Other Activities with Siebel Consumer Goods Handheld” on page 190](#)

Recording Van Information in Siebel Consumer Goods Handheld

Before leaving the depot, a van sales representative verifies the van identification information and records the van's mileage.

To record van information

- 1 Navigate to the Inventory screen.
- 2 From the Show drop-down list, choose My Van Details.
- 3 Verify that the information contained in the Van Plate # and Serial # fields is correct.
- 4 Select the list in the My Van Details view.
- 5 Tap the New Record button on the toolbar.
Doing so adds a new Readings record to the list.
- 6 In the Reading field, enter the van's current mileage.
Most of the remaining fields are automatically generated.
- 7 Check the Complete field to indicate that the reading has been completed.

Verifying Van Inventory in Siebel Consumer Goods Handheld

As a van sales representative, before you visit outlets, you need to verify that the inventory on your handheld device matches the actual inventory in the van. The inventory is verified by performing a cycle count.

To do a cycle count

- 1 Navigate to the Cycle Counting screen.
- 2 Choose My Pending Cycle Counts from the Show drop-down list.
- 3 Select the appropriate cycle count record for the current date and time.
- 4 Tap Start.
Tapping Start displays the Cycle Count Products view, records the start time, and changes the status of the Cycle Count to In Progress.

- 5 In the detail view, tap the List Products button.

This populates the list of products for the cycle count.

NOTE: The List Products button in the Cycle Count Products view lists all products in the current van inventory belonging to a particular sales representative. This includes the various product buckets such as Good, Defective, and so on.

- 6 Verify the count of the stock in your van and enter the amounts of each item in the Count column.

NOTE: You can also use the Count UOM1 and Count UOM2 fields to capture the count of the physical inventory. These fields represent two units of measure that are related by Case Pack, which is a value set up by the administrator. Updates to Count UOM1 and Count UOM2 also updates Count when it is committed based on the Case Pack.

- 7 When you are finished entering the amounts for your inventory, tap Count Complete.

The Count Complete button locks the Cycle Count Product records, preventing any further changes.

- 8 If there are any products with variances greater than or less than zero, select those products and press Adjust to update inventory with the current count.

NOTE: The Adjust button only processes selected records. Use CTRL + Tap to select multiple records.

- 9 Return to My Pending Cycle Count by choosing it from the Show drop-down list and tap End.

The value in the Status field is changed from In Progress to Done.

Backing Up the Siebel Handheld Application

Before you start the day, back up your Siebel Handheld application configuration and data to the flashcard. Then, if the Handheld application fails, you can load all data and configuration information from the flashcard onto another device. For information on the procedure to back up the Handheld application on the handheld device, see [“Backing Up and Restoring Data with the Siebel Handheld Client” on page 172](#).

Visiting with Siebel Consumer Goods Handheld

The following topics explain how you should prepare for a visit with Siebel Consumer Goods Handheld, and takes you through the tasks of starting and closing a visit.

- [“Preparing for a Visit with Siebel Consumer Goods Handheld” on page 184](#)
- [“Beginning a Visit with Siebel Consumer Goods Handheld” on page 184](#)
- [“Ending a Visit with Siebel Consumer Goods Handheld” on page 184](#)

Preparing for a Visit with Siebel Consumer Goods Handheld

Before you start your visits for the day, the assigned visits must be reviewed and the necessary records for the first visit created.

To review visits

- 1 Navigate to the Outlet Visits screen.
- 2 Choose My Outlet Visits from the Show drop-down list.

A list of the visits scheduled for the day appears.

NOTE: What is displayed depends on which filters were used during synchronization. For more information about filters, see [Chapter 5, "Data Filtering for Siebel Handheld Applications."](#)

- 3 Select the first outlet you will visit and tap Prepare Visit.

This creates any records required for a Retail Order activity, if one is assigned to the visit. For a Retail Order activity, the application creates the order header and all line items that have been marked as orderable. For more information about Retail Order, see [Chapter 4, "Siebel Handheld Application Administration."](#)

Beginning a Visit with Siebel Consumer Goods Handheld

At the first outlet, you open the My Outlet Visits view of the Outlet Visits screen. The visit you have prepared appears in the My Outlet Visits view with a status of Not Started.

To start the visit

- 1 Navigate to the Outlet Visits screen.
- 2 Select the visit you want to begin.
- 3 Tap Start Visit.

This takes you to the Visit Activities view, records the start time of the visit, and changes the status of the visit to In Progress.

Ending a Visit with Siebel Consumer Goods Handheld

When you have completed all activities for this outlet, the visit is ready to be closed.

To close the visit and prepare for the next visit

- 1 From the My Outlet Visits view in the Outlet Visits screen, tap End Visit.

The status of the visit changes to Done and Actual End is recorded with the current time stamp.

- 2 Select the next visit on your route and tap Prepare Visit.

As you drive to the next location, Siebel Consumer Goods prepares the necessary records.

Working with Visit Activities with Siebel Consumer Goods Handheld

As a sales representative, you perform a number of activities. You begin and end activities as described in the following procedures:

- [“Beginning an Activity with Siebel Consumer Goods Handheld” on page 185](#)
- [“Ending an Activity with Siebel Consumer Goods Handheld” on page 185](#)

Beginning an Activity with Siebel Consumer Goods Handheld

Begin an activity in one of two ways:

- Select the activity and tap Start Activity.
This records the start time, changes the activity status to In Progress, and causes the relevant view for the activity to appear.
- Drill down on the hyperlink in the Type field of the activity.
The relevant view for the activity appears. Manually change the activity's status and record the start time.

Ending an Activity with Siebel Consumer Goods Handheld

End an activity as follows:

- Navigate to the My Outlet Visits view. Select the activity and tap End Activity.
This records the completion time of the activity, changes the status to Completed, and locks the activity, preventing any further changes.

Working with Billings in Siebel Consumer Goods Handheld

A common activity at retail outlets is reviewing billings. The sales representative reviews all outstanding invoices, applies any discounts, collects payments, and records the payments on their handheld device.

To review outstanding invoices

- 1** Navigate to the Outlet Visits screen, then from the Show drop-down list, choose Visit Activities.
The Invoices view in the Accounts screen appears, displaying all outstanding invoices for the current account.
- 2** Select the Review Billings activity and tap Start Activity.
- 3** Select the invoice record and drill down on the Invoice # hyperlink.
The Invoice Line Items view in the Billings screen appears.
- 4** Tap Pay.
The Invoice Payments view in the Billings screen appears.

To collect and record payments

- 1** Navigate to the Billings screen, and locate the account record in the Billings list.
- 2** From the Show drop-down list, choose Invoice Payments.
- 3** Tap the Pay button.
The Billings form from the payment record appears.
- 4** To pay an invoice, the sales representative can either collect a payment from the customer, or use existing credit to pay the invoice.
To collect a new payment from the customer, do the following:
 - a** Tap the New Record Button to create a payment record.
 - b** Tap in the Method field of the detail form, and choose the payment type. For example, Automatic Debit, Check, Wire Transfer, Cash, and so on.
 - c** Enter the payment amount in the Apply to Invoice field.
NOTE: The Payment Total is defaulted to the amount outstanding for the invoice. Apply To Invoice determines what is applied to the invoice. The amount applied to the invoice cannot be greater than amount outstanding on the Invoice.
 - d** Tap Commit.
The payment record details are auto-populated in the Payments list.
- 5** To use an existing credit to pay off the invoice, do the following:
 - a** Select an existing record in the Pick Payment dialog box.
NOTE: This is an open credit memo or residual payment credited to the customer.
 - b** Enter the amount to apply to the invoice in the New Amount field.
 - c** Tap OK.
- 6** Tap Visit Home to return to the Visit Activities view for the current visit.
- 7** Tap End Activity to record the actual end time and to change the activity status to Done.

Conducting a Retail Audit Using Siebel Consumer Goods Handheld

Sales representatives perform retail audits, also known as stock checks. The list of products assigned to the audit is created when you tap Prepare Visit on the My Outlet Visits view.

To perform a retail audit

- 1 Navigate to the Outlet Visits screen, select a record, then select Visit Activities from the Show drop-down list.
- 2 In the detail view, select the Retail Audit activity and drill down on the Retail Audit hyperlink.
- 3 To add products to the audit list, tap List Products or select the list and tap the New Record button on the toolbar.
- 4 To delete a product from the audit list, select it in the list and choose Edit > Delete Record.
NOTE: The List Products button at the top of the list applet automatically creates a list of products authorized for auditing. The products displayed come from the Account > Merchandising Locations view and are filtered based on the audit flag.
- 5 Record the count for each product in the Display Count, Shelf Stock, and Back Stock fields, as well as any other applicable details.
- 6 When you have completed the count, return to the Visit Activities view by tapping the Back button.
- 7 Select the Retail Audit activity if it is not already selected, and tap End Activity.

Collecting Returns with Siebel Consumer Goods Handheld

The sales representative checks to see if the customer has items to return. If so, a Return Merchandise Authorization (RMA) can be generated.

NOTE: If there are no returns, change the status of the Return Order activity to Acknowledged in the Visit Activities view of the Outlet Visits screen.

To collect returns

- 1 Navigate to the Outlet Visits screen, select the desired record, then select Visit Activities from the Show drop-down list.
- 2 Create a new record by tapping in the Activity list view, then tapping the New Record button.
- 3 Tap in the Type field and select Return Order from the drop-down list, then drill down on the Return Order hyperlink.
The RMAs view in the Accounts screen appears.
- 4 Create a new record by tapping inside the RMA list, then tapping the New Record button.

- 5 Select an RMA type for the new record from the Type drop-down list, then drill down on the hyperlink in the RMA # field.

The RMA Line Items view in the RMAs screen appears.

- 6 Select the Line Items list and tap the New Record button to record the line items and quantities of the products being returned.

NOTE: The RMA line items are not limited to the authorized product distribution list. You can add any product that is available on the handheld device as a listed product, including discontinued products.

- 7 Tap Credit when you are finished adding line items.

Tapping Credit does the following:

- Changes the RMA status to Billed.
- Generates a Credit Note record.
- Creates a credit note for the RMA account.
- Displays the Invoice Line Items view in the Billings screen.

NOTE: If the RMA product does not currently exist in the van inventory, the inventory product is added when you tap the Credit button.

- 8 In the Line Items view, tap Deliver.

Tapping Deliver does the following:

- Creates a Credit Memo.
- Updates the inventory.
- Changes the invoice status to Closed.

- 9 Tap the Visit Home button to return to the Visit Activities view of the Outlet Visits screen, then select the Return Order activity and tap End Activity.

TIP: When a product exchange between a sales representative and a customer results in a credit being issued, this is treated as an RMA. Each product is recorded as a line item in the RMA Line Items view and the value of the item is the current list price. You can make product exchanges of items with the same price through Product Movements.

Executing a Retail Order with Siebel Consumer Goods Handheld

At retail outlets, another frequent activity for sales representatives is taking retail orders.

To execute a retail order

- 1 Navigate to the Outlet Visits screen, select a record, then tap Prepare Visit.
- 2 Create a new record by tapping in the Activity detail list, then tapping the New Record button.

- 3 Tap in the Type field, and select Retail Order activity from the drop-down list, and tap Start Activity.

The Order Line Items view appears.

NOTE: This assumes you prepared the visit as described in [“Preparing for a Visit with Siebel Consumer Goods Handheld” on page 184](#).

- 4 Enter the order details in the list in the Order Line Items view.

The products shown are taken from the distribution list for that particular account. List Price and List Tax fields are automatically populated based on the product listed. The Bonus quantity and Extended Tax and Price are calculated based on the quantity.

You can enter Order Qty for two units of measure and you can use the Qty UOM1 and Qty UOM2 to capture the order quantity. For more information about Qty UOM1 and Qty UOM2, see [“To do a cycle count” on page 182](#).

NOTE: This is a three-applet view. To toggle between the applets, select the applet on the right and tap Toggle (or select View > Toggle from the menu).

- 5 When the order is complete, tap Invoice.

Tapping Invoice does the following:

- Checks each line item to see if there is sufficient on-hand stock to fulfill the order. If there is not, an error message appears. You will have the option of having the system update the order based on available stock quantity or returning to the Order Line Items view to manually edit the order.
- If there is enough inventory, checks if the order total exceeds the Available Credit. If the order total is more than the available credit, a warning message appears.
- Changes the status of the order to Billed.
- Removes all zero-quantity line items.
- Creates the invoice.
- Opens the Invoice Line Items view.

- 6 From the Invoice Line Items view, do one of the following:

- a Tap Deliver.

Tapping Deliver does the following:

- Updates the inventory base on the order.
- Changes the status of the invoice.

- b Tap Pay.

Tapping Pay does the following:

- Navigates to the Payments view.
- Opens up the earliest available payment.

- Communicates the Unallocated Amount that can be applied to this invoice.

In this view you can then Commit this payment. Doing this does the following:

- Changes the status of the Invoice to Paid or Partially Paid.
- Takes the user to the Billings view that has a list of all payments that have been made to this Invoice.

7 Tap Print to print an invoice for the order.

8 To collect payment on the invoice, tap Pay.

For information on collecting payment for the invoice, see [“Working with Billings in Siebel Consumer Goods Handheld” on page 185](#).

NOTE: If the end user has a portable printer, the documents can be printed as each activity is completed. Otherwise, the documents are sent to a queue to be printed in batch at a later time. For more information about printing, see [Chapter 9, “Working with Siebel Handheld Applications.”](#)

9 Tap the Visit Home button to return to the Visit Activities view of the Outlet Visits screen.

10 Select the Retail Order activity and tap End Activity.

Performing Other Activities with Siebel Consumer Goods Handheld

Van sales representatives, presales representatives, and delivery representatives perform a number of tasks. This topic explains how to perform some of the main ones, including:

- [“Working with Deposits in Siebel Consumer Goods Handheld” on page 190](#)
- [“Performing Stock Transfers with Siebel Consumer Goods Handheld” on page 191](#)
- [“Reconciling Inventory Using Siebel Consumer Goods Handheld” on page 192](#)
- [“Reconciling Value Using Siebel Consumer Goods Handheld” on page 193](#)

Working with Deposits in Siebel Consumer Goods Handheld

As a van sales representative, you might have to deposit payments you have collected during the day. When you do so, you can record the information in your handheld device.

To record a deposit

- 1** Navigate to the Deposits screen.
- 2** Tap New in the Deposit detail view.
- 3** Complete the fields provided, such as Bank Name, Bank Account #, and Deposit Amount.

Displaying Deposit History with Siebel Consumer Goods Handheld

Sales representatives can display a deposit history which displays deposits made.

To display deposit history

- 1 Navigate to the Deposits screen.
- 2 From the Show drop-down list, select Deposit History.

Working with Undeposited Payments in Siebel Consumer Goods Handheld

From the Deposit screen, sales representatives can see a list of undeposited payments collected during the business day. From this screen, they can select payment records and generate an actual Deposit, creating a link between payment and deposit.

To display undeposited payments

- 1 Navigate to the Deposits screen.
- 2 The Deposit detail view displays all undeposited payments, indicating payment type, such as Cash, as well as amount, pay date, method and so on.

To deposit undeposited payments

- 1 From the Deposits screen, select each undeposited payment record in the detail view.
 - a To select individual items, tap in the Select field of each desired record.
 - b To select all items, tap the Select All button.
 - c To deselect all items in the detail list, tap the Deselect All button.
- 2 Tap the New button in the Deposit screen, then enter the required information, such as the destination bank name, routing number, and so on.
- 3 Tap the Deposit button to record the Deposit.

The Deposit Payments view appears.
- 4 Tap Print to print the record.

Performing Stock Transfers with Siebel Consumer Goods Handheld

If products are exchanged between two sales representatives, each representative has to complete a set of procedures.

To give product to another sales representative

- 1** Navigate to the Outlet Visits screen.
- 2** Tap the New Record button on the toolbar to add a new visit, choosing an Account record from Account drop-down list.
- 3** Select Visit Activities from the Show drop-down list, then create a new record in the Activities list by tapping the New Record button.
- 4** In the Type drop-down list, select Stock Transfer, then complete the remaining fields.
- 5** Tap the Stock Transfer hyperlink in the Type field.
The Product Movement view appears.
- 6** Create a new record by selecting the Product list and tapping the New Record button.
- 7** Choose the desired product from the Product drop-down list.
- 8** Set the values for the Source and Destination fields:
 - If you are taking product from your van, select Trunk from the Source field, and Customer from the Destination field.
 - If you are adding inventory to your van, select Customer from the Source field, and Trunk from the Destination field.
- 9** Tap Commit to update the inventory.

Reconciling Inventory Using Siebel Consumer Goods Handheld

Delivering products, taking returns, and exchanging products with other representatives all impact the van inventory. Periodically during the day, van sales representatives can check to be sure that the inventory properly reflects all these changes.

To see the inventory reconciliation

- 1** Navigate to the Inventory screen.
- 2** Choose Reconciliation from the Show drop-down list.
The Inventory Reconciliation screen displays a summary inventory status for all products. The table displays quantities including starting quantity, current on-hand quantity, sales orders, returned goods, transfers, adjustments, and the variance.
- 3** Verify that the variance for each product is 0 (zero).
If the Variance field is not zero, the value must be equal to the value in the Adjustments field, representing the adjustment made at the beginning of the day.

Reconciling Value Using Siebel Consumer Goods Handheld

In order to further enforce the closed loop business processes integral to the Siebel Consumer Goods Handheld product, there are a number of *end of reconciliations* that representatives can perform. One of these is the ability to view all payments that have been received and deposited. This allows representatives to clearly understand how much of various forms of payment they will be expected to deliver to the depot at the end of their working cycle. The value reconciliation communicates both qualitative and quantitative information to assist this vital end of day process.

To view and print a value reconciliation report

- 1 Navigate to the Billings screen and choose an account record.
- 2 From the Show drop-down list, select Value Reconciliation.
- 3 Review the figures contained in the record, then tap Print.

Buttons and Status in Siebel Consumer Goods Handheld

Buttons on the screen are enabled or disabled based on the status of the order, the RMA, or the invoice. The status also affects whether line items and header information can be modified.

For more information about buttons and status in Siebel Consumer Goods Handheld, see the following topics:

- [“Order Line Items View Buttons in Siebel Consumer Goods Handheld” on page 194](#)
- [“RMA Line Items View Buttons in Siebel Consumer Goods Handheld” on page 194](#)
- [“Invoice Line Items View Buttons in Siebel Consumer Goods Handheld” on page 195](#)

Order Line Items View Buttons in Siebel Consumer Goods Handheld

The Invoice and Print buttons in the Order Line Items view are enabled for the status shown in [Table 29](#).

Table 29. Button Availability for each Status in the Order Line Items View

Button	Pending	Open	Booked	Billed	Others
Invoice	Y	Y	Y		Y
Print			Y	Y	Y

NOTE: Y equals enabled.

The order header information and the line items are read-only when the Status is Booked or Billed.

RMA Line Items View Buttons in Siebel Consumer Goods Handheld

The Credit and Print buttons in the RMA Line Items view are enabled for the status shown in [Table 30](#).

Table 30. Button Availability for each Status in the RMA Line Items View

Button	Pending	Open	Booked	Billed	Others
Credit	Y	Y	Y		Y
Print			Y	Y	Y

NOTE: Y equals enabled.

The order header information and the line items are read-only when the Status is Booked or Billed.

Invoice Line Items View Buttons in Siebel Consumer Goods Handheld

The buttons in the Invoice Line Items view are enabled for the status shown in [Table 31](#).

Table 31. Button Availability for each Status in the Invoice Line Items View

Button	Open	Cancelled	Delivered	PP	Paid	Credited	Closed	User Defined
Delivery	Y				Y			
Cancel	Y							
Pay	Y	Y	Y	Y	Y		Y	Y
Print			Y	Y	Y	Y	Y	Y
Insert Payment Record	Y		Y	Y				Y

NOTE: Y equals enabled.

Button behavior is also affected by the invoice type and status, as shown in [Table 32](#). Notice in the table that the Type and Status are related by the T/S column. For example, the Cancel button is enabled when the Type is Receivable AND when the Status is Open.

Table 32. Default Button Behavior for Invoice Line Items View

Button	Type	T/S	Status	Result
Delivery	Receivable Payable	AND	Open Paid	Button is enabled.
Cancel	Receivable	AND	Open	Button is enabled.
Pay	Payable	OR	Credited	Button is disabled.
Print	Receivable Payable		Open Cancelled	Button is disabled.
Insert Record	Payable	OR	Closed Cancelled Paid Credited	Button is disabled.

The invoice status and the amount due together determine the subsequent status when you tap the Pay button. There are two possible cases:

- The payment will make the Invoice Total Due zero.
- The payment will leave the Invoice Total Due greater than zero.

For example, if the status of an invoice is Open, and the payment will leave an amount due of zero, the next status is always Paid.

The complete set of such relationships is shown in [Table 33](#).

Table 33. Invoice Status After Invoking the Pay Button

If Invoice Status Is . . .	And Invoice Total Due Becomes . . .	Next Invoice Status Is . . .
Delivered	0.00	Closed
Open		Paid
Partially Paid		Paid
User Defined		Closed
Delivered	> 0.00	Partially Paid
Open		Partially Paid
Partially Paid		Partially Paid
User Defined		Partially Paid

The Deliver button can be invoked from an invoice with a status of either Open or Paid. The subsequent status is shown in [Table 34](#).

Table 34. Invoice Status After Invoking the Deliver Button

Invoice Status	Next Invoice Status
Open	Delivered
Paid	Closed

A

Troubleshooting

This appendix addresses some of the common issues—including installation, logging, and performance—faced while deploying a Siebel Handheld application. The audience for this appendix is Siebel database administrators, system administrators, and application administrators. The following topics are covered in this appendix:

- [“Troubleshooting Siebel Handheld Application Installation” on page 197](#)
- [“Troubleshooting Siebel Handheld Application Synchronization” on page 198](#)
- [“Siebel Handheld Application Log Files” on page 200](#)
- [“Using SQLTrace with Siebel Handheld Applications” on page 202](#)
- [“End User Error Messages” on page 203](#)
- [“Web Server Timeout Errors” on page 203](#)
- [“Handheld Device Timeout Errors” on page 204](#)
- [“Siebel Handheld Application Performance” on page 204](#)

Troubleshooting Siebel Handheld Application Installation

Siebel Handheld applications support a specific and limited set of devices, Handheld application OS, desktop OS, server OS, server databases, and languages. This range of devices and platform support varies widely across the range of Siebel Handheld application releases and must be carefully checked to confirm support. For information about supported handheld devices, operating systems, desktop OS, server OS, and server databases, see *Siebel System Requirements and Supported Platforms* on Siebel SupportWeb for your Siebel application.

Client Installation, Backup, and Restore

If you encounter problems while installing the Siebel Handheld application on client devices from a desktop PC, refer to the following checklist. Most installation problems are covered by this checklist.

- Confirm that the handheld device is certified and supported. Refer to *Siebel System Requirements and Supported Platforms* on Siebel SupportWeb.
- Confirm that the handheld device has 64 megabytes (MB) or higher of random access memory (RAM) with the majority of it available for the Siebel Handheld application.
- Make sure an ActiveSync connection is running (green icon). If not, check your computer to make sure that the serial or USB port is activated and functioning correctly.

- If a previous version of Siebel Handheld application is installed on the device, make sure you uninstall the application. For more information about uninstalling applications, see [“Uninstalling the Siebel Handheld Application” on page 161](#).

The binaries for the Siebel Handheld application can also be installed to a CompactFlash card to conserve (RAM) memory. The application will still be loaded into memory when it executes. To install on the CompactFlash card, set the ApplicationBinariesLocation and ApplicationDataLocation parameters in the setup.ini file. For more information about installing on a CompactFlash card, see [“Setting Up Siebel Handheld Application Installation on a CompactFlash Card” on page 147](#).

The Siebel Handheld application only (no data) can also be copied onto a CompactFlash card to aid in deployments. The initial backup image must be made of a device that has not done an initial synchronization. An initial synchronization will still be required by each user to receive the configuration and data. For information on backup utilities, see the documentation accompanying your handheld device.

It is also possible to back up your Siebel Handheld application on a PC using the Backup/Restore feature within ActiveSync.

Troubleshooting Siebel Handheld Application Synchronization

Synchronization problems can be caused by incorrect settings in the Siebel Handheld application setup.ini or .cfg files. Be sure that application names, data sources, and .srf files are correct.

Make sure to set the SyncURL setting in the client setup.ini file for all synchronization methods. Also, be sure to grant the user visibility to these views in the Administration - Application screen > Responsibilities view.

NOTE: Check the log files and confirm the accuracy of the generated connect string.

To troubleshoot synchronization for your Siebel Handheld application, review the following topics:

- [“Direct Server Synchronization Checklist” on page 198](#)
- [“Resynchronizing Problems” on page 199](#)
- [“Synchronization Timeout Parameters” on page 199](#)

Direct Server Synchronization Checklist

Use the following checklist to troubleshoot problems you encounter using Direct Server Sync.

- Did you install all client and server components successfully?
- Is there a PDA object manager (OM) running on the Siebel Server?
- Did you bounce the IIS, SWE, and Siebel Server after installation?
- Do you have network access to the URL for DSS? Can you ping the IIS server from inside and, if applicable, from outside the firewall?

- Can you successfully run a SWE command?
- Do you have the correct SyncURL defined in the setup.ini file?
- Is the network connection working from the device? Try Pocket Internet Explorer.
- If you have problems logging in, check to make sure that you can use the same credentials to log into the desktop client.
- Remember to keep a 1:1 ratio of users to devices. Only a single user can log in to synchronize each device. Failure to do so causes data corruption.

To troubleshoot Direct Server Synchronization configuration errors

- 1 Turn on synchronization logging for your Siebel Handheld application to 5 and look for more error details in the Synchronization OM log of your Siebel Handheld application.

For more information about logging, see [“Configuring Logging Levels for Direct Server Synchronization” on page 137](#).
- 2 Use the Validate function in Siebel Tools to look for a configuration error.
- 3 Remove the Siebel Handheld application views from user responsibility until synchronization passes the error point.
- 4 Remove DefaultBusObjs from the Administration - Mobile screen > Application Administration > Settings view until synchronization passes the error point.

Resynchronizing Problems

Generally if, for whatever reason, synchronization is terminated, the user is prompted with a message and the synchronization process ends. In this situation the synchronization session is allowed to close. However, if the connection with the server is unintentionally broken, the session might not have a chance to close before the connection is broken. Therefore, if the user tries to immediately synchronize again, they might get an error message and be unable to synchronize. If this occurs, the user must wait for a period of time (generally, 15 minutes) to allow the session to time out and terminate. Once the session terminates, the user can synchronize again.

Synchronization Timeout Parameters

The following parameters control the timeouts for the synchronization process.

- Direct Server Synchronization timeout parameters are stored in the .cfg file and include:
 - IIS Timeout—This is the length of idle time between communications from a handheld device to the server, before a timeout occurs.
 - OM Timeout—An OM (object manager) timeout is triggered by an idle timeout on the server or any loss of communication with the OM for the defined period.
- For more information about changing these timeout settings, see [“To change the IIS timeout value” on page 200](#) and [“To change the OM timeout value” on page 200](#).

To change the IIS timeout value

- 1 Open IIS.
- 2 Go to Default Web Site, right click, and open Properties.
- 3 Change the value for the Connection Timeout setting.

The default value for Connection Timeout is 900000 milliseconds, or 15 minutes.

NOTE: This parameter only applies to synchronizations using Direct Server Sync.

To change the OM timeout value

- 1 Open the .cfg file for your handheld device.
- 2 Under the Siebel section, change the entry for SrvrTimeOutInterval.

The default value for SrvrTimeOutInterval is 600000 milliseconds, or 10 minutes.

NOTE: This parameter only applies to synchronizations using Direct Server Sync.

Siebel Handheld Application Log Files

This topic provides information about the different types of log and output files that are generated by your Siebel Handheld application. This topic includes the following information:

- [“Direct Server Synchronization Log and Output Files” on page 200](#)
- [“Handheld Device Log” on page 201](#)

Direct Server Synchronization Log and Output Files

The name of the Direct Server Synchronization Log is the OM name plus the task ID for that log session. The log is found in the log subdirectory under the Siebel root directory. Depending on the amount of detail enabled, this file can give a good perspective of what has happened during synchronization regarding the Siebel OM.

To assist Siebel Technical Support, collect the following files when logging a Siebel Handheld application service request. The following files are found on the machine where Siebel Server is installed:

- All server synchronization user files in the *Siebel Root\siebsrvr\hhsync\application directory\user id\node id* directory.
- Server application event log extract.
- Server system event log extract.

- All files in the *Siebel Root*\siebsrvr\log directory including CompName_task.log.
where CompName is the name of an application server component, and task is a Siebel task number. Each synchronization session is assigned a new Siebel task, so there will be many of these. An example CompName value is SalesCE_enu (note that language is part of the component name itself).
- All files from all subdirectories under the *Siebel Root*\siebsrvr\logarchive directory.
- Server performance and monitoring log files (showing memory, network, disk performance), if available.

The following files are found on the machine where the Web Server (that is, IIS) is installed:

- SWE log files from *Siebel Root*\eappweb\log (all files).
- IIS server application event log extract.
- IIS server system event log extract.
- IIS server performance and monitoring log files (showing memory, network, disk performance), if available.

Handheld Device Log

The siebel_log.txt file is found in the /Program Files/Siebel Handheld directory on the handheld device. It is controlled by reg key DefaultLogLevel, with values 0-4. For more information about DefaultLogLevel, see [“Siebel Handheld Application setup.ini Parameters” on page 142](#).

The default value of the reg key during installation is 2. This file logs all of the following:

- Database objects that were imported during synchronization.
- All SQL statements generated by the application. You must set a parameter in the setup.ini file to turn this log on. DefaultLogLevel=3 and 4 will log SQL statements to the device log.
For more information about setting DefaultLogLevel, see [“Siebel Handheld Application setup.ini Parameters” on page 142](#).
- All system error messages. You must set a parameter in the setup.ini file to turn this log on. DefaultLogLevel=4 will give the most detailed log with debug info.
For more information about setting DefaultLogLevel, see [“Siebel Handheld Application setup.ini Parameters” on page 142](#).
- All of the messages displayed on the Sync Manager dialog box as well as some basic information about synchronization, such as data source and connect string. You can set the logging level for this file using the DefaultLogLevel parameter in the setup.ini file.

Logging Synchronization Errors for Siebel Handheld Applications

Synchronization for a Siebel Handheld application logs all the strings that the user sees in the synchronization message window, as well as many informational messages that do not get displayed in the UI. These informational messages are used to help track down where an error occurred. Synchronization for a Siebel Handheld application determines which messages get logged based on a value stored in the registry under the key `DefaultLogLevel`. The values range from 0 to 4, where 0 logs all error messages and strings that the user sees, and 4 logs all data that is sent and received during synchronization.

If synchronization for your Siebel Handheld application fails, check the `siebel_log.txt` file immediately after the failure. If you need more detail, increase the logging level of `DefaultLogLevel` and run synchronization for the Siebel Handheld application again. For more information about changing `DefaultLogLevel`, see ["Siebel Handheld Application setup.ini Parameters" on page 142](#).

You can determine when and where an error occurs during synchronization of your Siebel Handheld application by referring to `siebel_log.txt` and the Sync Object Manager log.

The device log, `siebel_log.txt`, shows the last HTTP command that was sent to server, for example, `ExecuteLogin`, `Init`, `ProcessTransactionEx`, `ExtractDB`, and so on. The Sync Object Manager log receives the request and invokes the corresponding method.

For example, in the device log (`siebel_log.txt`), the following code indicates that the device is sending an initialization request to the Siebel Server:

```
INF00x6F46107E03/30/2005 16:58:27http ://PPP_PEER:2323/cgce/
start.swe?SWEEExtSource=siebelpda&SWEEExtCmd=Init&PatchLevel=7.7.2.2PDA%5b18356_1]
8.471262E-309NU&SyncFormat=CE0&SyncNodeId=&TimeStamp=1112230707

INF00x6F46107E03/30/2005 16:59:20<Init ReturnCode="OK" Complete="100">
```

The server log (Sync Object Manager log, that is, `CompNameObjMgr_enu_xxxxx.log`), shows that the `Init` request is received by the server and the `Init` method is invoked:

```
ObjMgrBusServiceLogInvokeMethod402005-03-23 10:45:27Begin: Business Service
'Handheld Synchronization' invoke method: 'Init' at 10c2bc68

HandheldSyncLogDebug502005-03-23 10:45:27Request Init received
```

(Where `CompName` is the server component name of the synchronization for the specific Siebel Handheld application.)

In addition to the device log, check `SalesCEObjMgr_enu_xxxxx.log` in Siebel Server (for DSS). For more information about changing logging levels, see ["Configuring Logging Levels for Direct Server Synchronization" on page 137](#).

Using SQLTrace with Siebel Handheld Applications

Use SQLTrace for diagnostic purposes if you encounter serious configuration errors or performance problems and cannot otherwise diagnose the problem. The problem can quickly become apparent in the log entries from SQL tracing.

To enable SQL tracing

- 1 Log into srvrmgr prompt.
- 2 At the DOS prompt, run server manager (srvmgr) from the <siebsrvr/bin> directory:
`srvmgr /g gateway /e enterprise /u sadmin /p sadmin`
- 3 Run: change evtloglvl ObjMgrSqlLog=4 for comp [OMName], where [OMName] = the OM name (for example, CGCObjMgr_enu).
- 4 Log entries are written as described in [“Siebel Handheld Application Log Files” on page 200](#).

CAUTION: When SQL tracing is enabled, synchronization is severely and adversely affected. Therefore, it is recommended that you turn SQL tracing on for a limited time to diagnose a specific problem, then turn SQL tracing off.

End User Error Messages

In addition to errors found in the siebel_log.txt file, you might receive a Transaction Errors Reported message during synchronization. These errors are logged in TXNError.hh. The message appears on the handheld device in the Syncmanager Status box. You can double-click the message at any time to see the errors. You can set the following settings in setup.ini:

- TXNErrorLevel = 0 (no log information)
- TXNErrorLevel = 1 (report txn errors in the client)

For more information about user messages, see [“Troubleshooting Synchronization with the Siebel Handheld Application Client” on page 175](#).

Web Server Timeout Errors

If synchronization times are long due to the size of the database file or the speed of the network connection, your users can encounter Web Server timeout errors and synchronization failures. First try to resolve this problem by reducing the size of your extract and configuring your server performance. You can reduce the size of the extract by fine-tuning filters, or if appropriate filters have already been defined, select ones that will return less data. If after doing this, your users continue to experience timeout errors, then increase the timeout parameter on IIS for the default Web Server.

Follow the procedure for your platform to change the timeout parameter.

To change the timeout parameter on Windows

- 1 From the Start menu, select Programs > Administrative Tools > Internet Services Manager.
- 2 From the Internet Information Services window, select the local machine, right-click on the Default Web Site, and select Properties from the pop-up list.
- 3 From the Web Site Properties window, select the Web Site tab.

- 4 Under the Connections heading, locate the Connection Timeout property and increase the number of seconds.
- 5 Click OK.

Handheld Device Timeout Errors

The following three parameters are stored in the device registry. They control the device timeout. For more information about device timeout errors, see the following parameters in [“Siebel Handheld Application setup.ini Parameters” on page 142](#):

- InternetOptionReceiveTimeout = 600000
- InternetOptionSendTimeout = 600000
- InternetOptionDataExtractionTimeout = 600000

Siebel Handheld Application Performance

This topic discusses ways you can optimize your client performance, server performance, and network performance.

Client Performance

Client performance is affected primarily by the device capability (minimum 206 MHz processor and 64 MB RAM), configuration, and the quantity of data loaded onto the device. In general, screen-to-screen and view-to-view navigation times of 3 to 4 seconds or less are considered normal.

It is strongly recommended that you follow these general guidelines to optimize the performance of your Siebel Handheld applications:

- Keep configuration under 30 views.
- Keep RML file size under 1.75 MB.
- Keep database files (dbfile.txt) under 3 MB.
- Keep the number of records for each business component under 2,500.
- Avoid installing other applications on the device at the same time.
- Users must synchronize their data frequently.

Additional configuration information can be found in the Siebel Technical Note 405.

The Siebel Handheld Client benefits from periodically closing and restarting the Siebel Handheld application to release memory consumed by the operating system. Close the Siebel Handheld application from the application-level menu. For information about how to close the application, see the online help for the Siebel Handheld application.

If an external VGA driver is or has been loaded on the device in the past and is no longer needed, be sure to unload it, because it is known to have significant performance impacts on handheld devices.

Server Performance

Server performance affects the performance and scalability of Direct Server Synchronization processes. Customers can engage Expert Services to do a Scalability Review. The following guidelines are general in nature and pertain to the synchronization components of your Siebel Handheld application running on a Siebel Server:

- Use Performance Monitor to track memory and processor performance on the Siebel Server.
- Make sure that the Servers (IIS, GW, OM and DB) are on the same high speed LAN segment.
- The synchronization components of your Siebel Handheld application will stress Siebel Server and database performance because of the intensive interactions during large concurrent synchronizations.
- Estimate that 64 MB is used for each Siebmtsh.exe instance.
- To calculate the theoretical maximum concurrent users:

$$\text{Numusers} = \text{Server_Memory} * \text{threads_per_process_ratio} / 64 \text{ MB}$$
- Optimize the Threads for each Process Ratio (Max Tasks/Max MT Servers) according to Technical Note 405.
- Set Max Tasks=Max. number of concurrent users (for example, 150).
- Set MinMTServers=MaxMTServers (for example, 30 for 5:1 ratio, if this is determined to be appropriate).

To optimize and tune a Siebel DB server:

- Use Performance Monitor to track memory and processor performance on the DB server.
- Turn on SQL tracing and search for long-running SQL calls.
- Estimate 64 MB of RAM for each concurrent user.
- Consider creating indexes to tune the queries (only performed with the assistance of Siebel Expert Services).
- Consider using a RAID 0+1 disk array with an expanded number of spindles to optimize database performance.

NOTE: Make sure that DB Server settings are set to recommended values. Set timeouts at the Siebel Server. Be careful that the timeout is set longer than the longest SQL query.

Network Performance

The condition of the network affects Direct Server Synchronization performance and scalability. In general, a low-latency, high-bandwidth network is preferred with dedicated rather than shared network connections. The following are general network considerations:

- Make sure there is adequate bandwidth throughout the entire round-trip of network packets and estimate where bottlenecks will occur due to high concurrent load. For example, if 50 users are concurrently synchronizing 1 MB each, 50 MB of data must pass through the network. If this data is passing through a single leased 56 KB per second line, then this data will minimally take $500,000 \text{ KB} / 56 \text{ KB/sec} = 8928 \text{ seconds} = 148 \text{ minutes}$. In reality, a 56 KB per second line will offer only 30-40 KB per second average throughput, which causes further bandwidth constraints. Check the total available bandwidth of network providers (private or public ISP).
- Verify that you have low latency lines with ping round trips of less than 1 second (1000 ms) with no dropped packets.
- Verify if roundtrips occur with less than 10 hops.
- Check the actual throughput of network connections by performing simple file transfers with no Siebel software.
- VPN software from third parties accounts for 30 to 60 percent of additional packet overhead because of the encryption.

Network problems can usually be resolved by working with network providers to size network connections and optimize network routing. Consider the use of burst networks, quality of service contracts, private networks, and dedicated modem banks directly into a high-speed LAN environment.

B

Screens and Views

The Siebel Handheld Client supports a subset of the screens and views supported by the Siebel Web Client. Other screens and views can be configured for your Siebel Handheld application if they are based on currently supported classes. The following topics are covered in this appendix:

■ [“Screens and Views” on page 207](#)

Application developers and application administrators will find the information in this appendix useful.

NOTE: If you configure screens and views based on unsupported classes, you might see anomalous results. For information on how to determine the classes used by other screens and views, see *Siebel Object Types Reference*.

Screens and Views

The screens and views shipped with the Siebel Consumer Goods Handheld sample application are listed in [Table 35](#).

Table 35. Siebel Consumer Goods Handheld Screens and Views

Screen	View Name on UI	View Name in Siebel Tools
Accounts	My Accounts	Account List View CE
	Activities	SIS HH CG Account Detail - Activities View CE
	Assets	SIS HH CG Account Asset Mgmt - Asset View - CE
	Profile	CG Retail Account Profile View - CE
	Agreements	SIS HH CG Account Agreement List View - CE
	Product Distribution	CPG Product Distribution View - CE
	Orders	CPG HH Account Orders View CE
	RMAs	CPG HH Account RMAs View CE
	Invoices	CPG HH Account Invoices View CE
	Credit Memos	CPG Account Credit Memo View - CE
	Merchandising Location	CG Account Merchandising Location Product View - CE
	Assessments	CG Account Assessment View - CE

Table 35. Siebel Consumer Goods Handheld Screens and Views

Screen	View Name on UI	View Name in Siebel Tools
	Addresses	SIS CG Accounts Addresses View - CE
	Private Notes	SIS CG Accounts Private Notes View - CE
	Shared Notes	SIS CG Accounts Shared Notes View - CE
Activities	No view name on UI	FS Activity Part Movements CE
	My Activities	SIS HH Activity List View CE
Billings	No view name on UI	HH CG Billing Screen - CE
	My Invoices	SIS HH My Invoices View - CE
	Invoice Line Items	SIS HH Invoice Line Item Details View - CE
	Invoice Payments	CG Invoice Payments View - CE
	Value Reconciliation	HH CG Value Reconciliation View
Calendar	No view name on UI	SHCE Sales Calendar Add/Modify View
	Daily	SHCE Sales Calendar Daily View - My
	Weekly	SHCE Sales Calendar Weekly View - My
Contacts	My Contacts	SHCE Sales Contact List View
Cycle Counting	My Pending Cycle Counts	CG My Cycle Counts CE
	Cycle Count Products	CG Part List CE
Inventory	My Inventory	CPG HH Van Inventory View CE
	My Van Details	CPG HH Van Details View CE
	Reconciliation	CPG HH Inventory Reconciliation View CE
Orders	My Sales Orders	CPG HH Order Entry - Order List View (Sales) CE
	Order Line Items	CPG HH Order Entry - Line Items View (Sales) CE
Outlet Visits	My Outlets Visit	CG Outlet Visit Activities List View CE
	Visit Activities	CG Outlet Visit Activities View CE
Products	All Products	Product List View - CE
RMAs	My RMAs	CPG HH Order Entry - All Orders View CE
	RMA Line Items	CPG HH Order Entry - Line Items View CE
Routes	Route Accounts	CPG Route Account List View - CE
	My Routes	CPG Routes List View - CE

Table 35. Siebel Consumer Goods Handheld Screens and Views

Screen	View Name on UI	View Name in Siebel Tools
Deposits	Create Deposit	HH CG Undeposited Payments View CE
	Deposit History	SIS HH Deposits View- CE

C

Business Components and Classes

The Siebel Handheld Client supports a subset of the business components and classes supported by the Siebel Web Client application. This appendix lists the supported business components, business component classes, and applet classes. The following topics are covered in this appendix:

- [“Business Components for Siebel Consumer Goods Handheld” on page 211](#)
- [“Business Component Classes for Siebel Consumer Goods Handheld” on page 214](#)
- [“Applet Classes for Siebel Consumer Goods Handheld” on page 218](#)

Business Components for Siebel Consumer Goods Handheld

Table 36 lists the supported business components for Siebel Consumer Goods Handheld applications

Table 36. Business Components for Siebel Consumer Goods Handheld

Supported Business Components	Description
Account	Contains a list of accounts for which Orders, Activities, and Invoices are created.
Account Note	Holds notes for accounts.
Account Private Note	Holds notes that have a private flag set to True.
Action	Holds activity information, such as, activity type, due date, and completion date. This information is used to track the activities carried out for an account or a contact.
Asset Mgmt - Asset	Holds asset information.
CG FS Activity Parts Movement	Holds information which is used by Van reps to transfer products.
CG Inventory Location	Holds inventory location information for Vans.
CG MerchLoc Product	Holds information about products at a merchandising location in a store.
CG Retail Product	Holds product information for a specific account.
Contact	Holding all contact related information, this business component supports Find enhanced functionality - which provides the ability to search for contacts based on entered search criteria.

Table 36. Business Components for Siebel Consumer Goods Handheld

Supported Business Components	Description
CPG Account Credit Memo	Holds (and displays) available credit memo records for a given account. This is a read-only business component on the Handheld application.
CPG Account Merchandising Product	Holds products stored at a merchandising location.
CPG HH Inventory Location CE	Holds inventory location information. In the Consumer Goods Handheld application, there can only be a single inventory location, which is usually referred to the user's Van
CPG Route Account	Holds a list of all the accounts on a given route.
CPG Routes	Holds the routes to which a user is assigned.
CPG Store Conditions in Retail Audit	Holds audit information about a product at a store for a particular store visit.
CPG Tax List	Holds tax list header records, which can be associated with an account. This business component is based on the Price List table.
CS HH Deposits	Holds bank deposit header records.
CS HH FS Payments	Holds payments collected by the Rep, which can be associated with a deposit's header.
CUT Address	Holds address related information, such as, Postal Code and City.
Cycle Counting	A BC that allows a Rep to perform Cycle Counting. This is the header record with Start and End Dates and Inventory Location
Cycle Counting Execution	Holds cycle count line items.
FS Asset Measurement Characteristics	Holds a Rep's Van information.
FS Asset Reading	Holds recordings of Van readings.
FS Bucket	Holds a list of products currently in the Van for a given Rep.
FS Inventory Location	Holds data pertaining to inventory locations for a given account or customer.
FS Invoice	Holds invoice information.
FS Invoice Line Items	Holds a record of the invoice line items. There can only be one invoice line item record for a given invoice.
FS Invoice Line Item Details	Holds the details for a given invoice line item.
FS InvLoc Product	Holds inventory (Van) product records.

Table 36. Business Components for Siebel Consumer Goods Handheld

Supported Business Components	Description
FS Invoice Payments	Holds a record of the payments that are made against a given invoice.
FS Picklist Product	Holds product records.
In Store Activity	Holds a list of activities that the Rep will be performing on their in store visit.
In Store Visit	Holds a list of in store visits that the Rep will be embarking upon.
Internal Product	Holds a list of products.
Order Entry - Line Items	Holds order line items (products) for a given order.
Order Entry - Orders	Holds orders for a given customer.
Price List	Used for orders, this business component holds price list information for a product.
Retail Audit Product	Holds a list of products that are authorized for a given account.
Retail Outlet Best Call Time	Holds information about best time to call or visit for a given account.
Sales Assessment	Holds information about the assessments header for a given account.
Sales Assessment Attributes	Holds assessment attributes for an assessment template.
Sales Assessment Template	Holds assessment template information.
Sales Assessment Value	Holds the assessment values for sales assessment attributes.
Service Agreement	Holds information about service agreements with an account.
SIS Document ID Number CE	Used (by Orders, Invoices, and Printing) to generate unique document ID numbers.
SIS Document Type	Used by the handheld application to map document type with invoice or order type in order to determine document ID.

Business Component Classes for Siebel Consumer Goods Handheld

This topic lists the supported business component classes for Siebel Consumer Goods Handheld applications.

NOTE: The business component classes for Siebel Handheld applications are based on the classes for the Siebel Web Client. However, in most instances, because of the limitations of Siebel Handheld applications, only a subset of the class functionality that is required for the handheld application is supported. All business components are shared by the Siebel Handheld application and the Siebel Server.

CSSBCActivityPartMvmt

This Siebel Web Client class is not used in the Consumer Goods Handheld application, but is a parent to class “[CSSBCCGActivityPartMvmt](#)” on page 214.

CSSBCAccountSIS

This class provides specialized functionality for managing a hierarchical account through its life cycle. This class is one of many in the hierarchy of classes that make up the Account Module in Siebel Industry Applications.

Usage Guidelines: Use this class in Consumer Goods Handheld to create a new account, by copying from an existing account. The new account created inherits some attributes from the original account, for example, Price List, Tax List, and Product Distribution records. This allows a Rep to place orders for the new account straight away.

NOTE: For more information about the CSSBCAccountSIS class, see *Siebel Developer's Reference Guide*.

Parent: CSSBCBase

Accessible Methods: Not Applicable

BC User Properties: Not Applicable

Field User Properties: Not Applicable

Dependencies & Limitations: This class can only be used for copying an account and assumes the existence of Tax List, Price List Fields, and Retail Audit Product BC.

CSSBCCGActivityPartMvmt

This class provides specialized functionality for carrying out stock transfers.

Usage Guidelines: Use this class to carry out stock transfers for one or more records; and to control the ListProducts button, which adds all the inventory product records for a stock transfer activity.

Parent: CSSBCActivityPartMvmt

Accessible Methods: Not Applicable

BC User Properties: Not Applicable

Field User Properties: Not Applicable

Dependencies & Limitations: Can only be used with CG FS Activity Parts Movement BC.

CSSBCCGcylCntExecution

This class provides specialized functionality for performing cycle counting on handheld applications.

Usage Guidelines: Use this class to lock and reconcile cycle count product records; use the List Products option to enable the addition of all products for a cycle count record in a single click.

Parent: CSSBCCylCntExecution

Accessible Methods: Not Applicable

BC User Properties: Not Applicable

Field User Properties: Not Applicable

Dependencies & Limitations: Only works with Cycle Count Execution BC.

CSSBCDocId

This class provides specialized functionality for generating document IDs, and belongs to the parent class [“CSSBCBase” on page 217](#).

CSSBCDocInvoice

This class is mapped to FS Invoice BC and provides specialized functionality for controlling the Deliver and VoidInvoice buttons, and for generating invoice document IDs.

Usage Guidelines: Use this class to invoke the Deliver and VoidInvoice buttons, and to generate document IDs for invoices.

Parent: CSSBCInvoice

Accessible Methods: Not Applicable

BC User Properties: Document Type, Document Type Field, Document Type LOV Type, Use Document Type Field, TranslateAmount, Hard Stop On Deliver

Field User Properties: Not Applicable

Dependencies & Limitations: Can only be used with FS Invoice BC.

CSSBCInStoreActivity

This class provides specialized functionality for handling the Start and End Activity buttons for the In Store Activity BC.

Usage Guidelines: Use this class to invoke the Start and End Activity buttons for In Store Activity BC.

Parent: CSSBCBase

Accessible Methods: Not Applicable

BC User Properties: Not Applicable

Field User Properties: Not Applicable

Dependencies & Limitations: None

CSSBCInStoreVisit

This class provides specialized functionality for visit-related activities on handheld applications.

Usage Guidelines: Use this class to invoke the Start and End Visit buttons and to prepare Visit and Visit Check functionality.

Parent: CSSBCBase

Accessible Methods: Not Applicable

BC User Properties: ActivityStatusToCloseVisit, Start Visit Status Check, Status Check Business Object, Status Check Business Component

Field User Properties: Not Applicable

Dependencies & Limitations: None

CSSBCInvPay

This class provides specialized functionality for Invoice Payments.

Usage Guidelines: Use this class to manage available credit and invoice status based on the amount remaining. Use it also to generate document IDs for payment records.

Parent: CSSBCBase

Accessible Methods: Not Applicable

BC User Properties: Document Type, Use Document Type Field

Field User Properties: Not Applicable

Dependencies & Limitations: None

Other Supported Business Component Classes

The following business component classes are supported by Siebel Consumer Goods Handheld, but there is no specialized code in the Siebel Handheld application (specific to Siebel Consumer Goods Handheld) for these classes:

- CSSBCAgreement
- CSSBCAssess
- CSSBCAssessValue
- CSSBCAssetReading
- CSSBCAutoProduct

■ CSSBCBase

NOTE: CSSBCBase is a base class from which other business component classes are derived. This class provides functionality through business component user properties and invokes methods that are useful in many common situations. For more information about the CSSBCBase class, see *Siebel Developer's Reference Guide*.

■ CSSBCCalAct

■ CSSBCCContactSIS

■ CSSBCCredMem

■ CSSBCCUTAgreement

■ CSSBCCYCInvLoc

■ CSSBCDivision

■ CSSBCFINSActivity

■ CSSBCRoute

■ CSSBCRouteAcct

■ CSSBCSHMAsset

■ CSSBusComp

NOTE: CSSBusComp is a base class from which other business component classes are derived. This class provides functionality through business component user properties and an object interface and is useful in many common situations. For more information about this class, see *Siebel Developer's Reference Guide*.

■ CSSSIABCOrder

NOTE: All order functionality specific to Siebel Consumer Goods Handheld is supported through CSSBCOrderMgmtOrder.

It is required that you keep the same class name for the following classes on both the Siebel Handheld application and on the Siebel Server. However, unlike the class on the Siebel Server, there is no functionality in the class on the Siebel Handheld application:

CSSBCAutoProduct

CSSBCCContactSIS

CSSBCCredMem

CSSBCCUTAgreement

CSSBCDivision

CSSBCFINSActivity

CSSBCRoute

CSSBCRouteAcct

CSSBCSHMAsset

Applet Classes for Siebel Consumer Goods Handheld

You can create additional screens and views for your Siebel Handheld applications. Any new screens and views must be based on classes and business components that are supported for the Siebel Consumer Goods Handheld application.

This topic lists the supported applet classes for the Siebel Consumer Goods Handheld application.

CSSFrameCylCntExe

This class provides specialized functionality for the Cycle Count Products applet.

Usage Guidelines:	Use this class to control the Count Complete, Adjust and List Products buttons.
Parent:	CSSFrameList
Accessible Methods:	Not Applicable
Applet User Properties:	Not Applicable
Control User Properties:	Not Applicable
Dependencies & Limitations:	None

CSSFrameHHInvoice

This class provides specialized functionality for the Invoice Frame applet.

Usage Guidelines:	Use this class to control button enable/disable functionality for all buttons displayed by the Invoice Frame applet.
Parent:	CSSFrame
Accessible Methods:	Not Applicable
Applet User Properties:	Not Applicable
Control User Properties:	Not Applicable
Dependencies & Limitations:	None

CSSFrameHHOrder

This class provides specialized functionality for the Orders Frame applet.

Usage Guidelines:	Use this class to control button enable/disable functionality for all buttons displayed by the Orders Frame applet.
Parent:	CSSFrame
Accessible Methods:	Not Applicable
Applet User Properties:	Not Applicable
Control User Properties:	Not Applicable
Dependencies & Limitations:	None

CSSFrameListInStoreActivity

This class provides specialized functionality for the In Store Activities List applet.

Usage Guidelines:	Use this class to control button enable/disable functionality for the Start and End buttons (displayed by the In Store Activities List applet).
Parent:	CSSFrameList
Accessible Methods:	Not Applicable
Applet User Properties:	Not Applicable
Control User Properties:	Not Applicable
Dependencies & Limitations:	None

CSSFrameListInStoreVisit

This class provides specialized functionality for the In Store Visit List applet.

Usage Guidelines:	Use this class to control button enable/disable functionality for the Start and End Visit buttons (displayed by the In Store Visit List applet).
Parent:	CSSFrameList
Accessible Methods:	Not Applicable
Applet User Properties:	Not Applicable
Control User Properties:	Not Applicable
Dependencies & Limitations:	None

CSSFrameListInvPay

This class provides specialized functionality for the Invoice Payment List applet.

Usage Guidelines:	Use this class to control button enable/disable functionality for buttons displayed by the Invoice Payment List applet, and to control the printing of manual Doc IDs.
Parent:	CSSFrameList
Accessible Methods:	Not Applicable
Applet User Properties:	Not Applicable
Control User Properties:	Not Applicable
Dependencies & Limitations:	None

CSSFrameListRetailAudit

This class provides specialized functionality for performing retail audits.

Usage Guidelines:	Use this class to handle the addition of products to a retail audit activity.
Parent:	CSSFrameList

Accessible Methods:	Not Applicable
Applet User Properties:	Not Applicable
Control User Properties:	Not Applicable
Dependencies & Limitations:	None

Other Supported Applet Classes

The following applet classes are supported by Siebel Consumer Goods Handheld, but there is no specialized code in the Siebel Handheld application (specific to Siebel Consumer Goods Handheld) for these classes:

■ CSSFrame

NOTE: CSSFrame is a specialized applet class that represents an applet object in the Siebel UI Frameworks. For more information about this class, see *Siebel Developer's Reference Guide*.

■ CSSFrameAlarmList

■ CSSFrameBase

NOTE: CSSFrameBase provides functionality through applet user properties and invokes methods that are useful in many common situations. The FrameListBase classes contain the same functionality and behaviors as their FrameBase counterparts. For more information about this class, see *Siebel Developer's Reference Guide*.

■ CSSFrameCECalAddModify

■ CSSFrameCEGridDay

■ CSSFrameCEGridWeek

■ CSSFrameCylCnt

■ CSSFrameList

NOTE: CSSFrame is a specialized applet class that represents a list applet object in the Siebel UI Frameworks. For more information about this class, see *Siebel Developer's Reference Guide*.

■ CSSFrameListBase

NOTE: CSSFrameListBase is a specialized applet class used for base frame functionality in list applets. For more information about this class, see *Siebel Developer's Reference Guide*.

■ CSSFramePopupCurrency

D

User Properties

This appendix documents the specific user properties for Siebel Consumer Goods Handheld applications. The following topics are included in this appendix:

- [“User Properties for Siebel Consumer Goods Handheld Applications” on page 221](#)

User Properties for Siebel Consumer Goods Handheld Applications

This topic lists the user properties for Siebel Consumer Goods Handheld applications.

AlphaTab Named Search User Property

Use this property to specify the field on which you want to implement the Alpha Tab Search feature.

Values: Fields available in your application.

Parent Object Type: List applet.

Usage: Select the field from the drop-down list.

For example, if you specify the Account Name field as the AlphaTab Names Search, the alpha search is applied to the Account Name field in the business component for the list applet, and the list applet displays an alpha tab search bar.

Note: You can configure as many AlphaTab Named Search properties as you require, but you can define only one for each list applet.

AutoPopupField User Property

Use this property to configure a view so that a pop-up list for a particular field automatically opens when the user opens the view.

Values: Fields available in your application.

Parent Object Type: View.

Usage: If the field is in a list applet, set the AutoPopupField property of the view to the Business Component field name.

If the field is in a form applet, set the AutoPopupField property of the view to the name of the control.

BarcodeNewRecord User Property

Use this property to specify the behavior you require for new record creation when a scan is performed.

Values: Y or N.

Parent Object Type: Applet.

Usage: If you specify Y, when the user performs a parseable scan, a new record is created for the scan, and that record is populated with the values parsed from the barcode.

If you specify N, when the user performs a nonparseable scan, a new record is not created for the scan, but the active field is populated with the barcode number.

BC Read Only Field User Property

For information about this user property, see *Siebel Developer's Reference* and *Configuring Siebel Business Applications*.

BorderStyle User Property

Use this property to specify the border style of a signature control.

Values: Double or Single.

Parent Object Type: Signature control applet.

Usage: Specify the style you require for the control.

BrowserPath User Property

Use this property to specify the application to start when the user taps a URL or attachment in the application. By default, when users tap a URL or attachment, the item is displayed in Pocket Internet Explorer.

Values: String.

Parent Object Type: Application.

Usage: The default value for this property makes attachments and URLs open in Pocket Internet Explorer.

ConfirmAccept User Property

Use this property to specify whether to display a confirmation message after the user taps the Accept button on the signature control.

Values: Y or N.

Parent Object Type: Signature control applet.

Usage: Set this property to Y to display a confirmation message after the user taps the Accept button.

Set this property to N to display no confirmation message.

Credit Payment Dec Types User Property

Use this property to specify a value or values, which effects a decrease in the Accounts Available Credit field. When the Payment Method matches any of the values listed for this user property, the Accounts Available Credit field is decremented by the value of the New Payment field in the Payment record.

Values: *Value_1, Value_2, ... Value_n*

Parent Object Type: FS Invoice Payment business component.

Usage: Enter a value or values that you want to use to effect a decrease in the Accounts Available Credit field.

Credit Payment Inc Types User Property

Use this property to specify a series of values, each of which effects an increase in the Accounts Available Credit field. When the Payment Method matches any of the values listed for this user property, the Accounts Available Credit field is incremented by the value of the New Payment field in the Payment record.

Values: *Value_1, Value_2, ... Value_n*

Default Value: Cash, Check, Credit Memo

Parent Object Type: FS Invoice Payment business component.

Usage: Enter a value or values that you want to use to effect an increase in the Accounts Available Credit field.

DefaultViewType User Property

Use this property to configure how applets are displayed in an application. For more information about applet display modes, see [Designing Screens and Views for Siebel Handheld Applications on page 32](#).

Values: Tabbed or Traditional.

Default Value: Traditional

Parent Object Type: Application.

- Usage:** If set to Tabbed, the first applet in the frame array of a view definition is treated as the parent applet. The parent applet is displayed when users navigate to this view. All other applets in the view are treated as child applets and appear on the tab bar of the parent applet. A parent context bar also appears at the top of the view.
- If set to Traditional, the application displays the applets in the traditional two-applet view. To switch between the two applets, choose View > Toggle.
- In portrait orientation, the default tabbed applet behavior for the application, when not explicitly specified, is Traditional. You can change the default tabbed applet behavior to Tabbed, if required.
- In landscape orientation and square screens, the default tabbed applet behavior for the application is Tabbed, and you cannot change this value to Traditional.
- Note:** This user property can be overridden by the view-level user property ViewType. For more information about the ViewType user property, see [ViewType User Property on page 238](#).

Disable Second Applet User Property

Use this property when you configure a tree applet to suppress the dynamically created second applet so that only a single applet is displayed.

- Values:** TRUE or FALSE.
- Default Value:** FALSE
- Parent Object Type:** View.
- Usage:** If set to TRUE, the second dynamic applet is not displayed.
- If set to FALSE, only a single applet is displayed.

DisableAlphaTabGroups User Property

Use this property to specify how to display alpha tabs in ungrouped format.

- Values:** TRUE or FALSE.
- Parent Object Type:** Applet.
- Usage:** If set to TRUE, the alpha tabs are displayed in ungrouped format.
- If set to FALSE, the alpha tabs are displayed in grouped format.

DisableParentBar User Property

Use this property to specify not to display the parent context bar in a view that displays multiple applets in tabbed applet mode. You might use this property if a view contains applets that are not linked in a parent-child relationship.

- Values:** TRUE or FALSE.

Parent Object Type: View.

Usage: If set to TRUE, the parent context bar is not displayed. When a user selects an applet, the tab of the applet is highlighted, but no parent context bar is displayed.

If set to FALSE, the parent context bar is displayed.

Document Type Field User Property

Use this property if you want the application to check the value of a field when the Use Document Type Field user property is set to Y. For more information about the Use Document Type Field user property, see [Use Document Type Field User Property on page 238](#).

Values: Values listed in the Document Type LOV Type user property.

Parent Object Type: The following business components:

- FS Invoice
- FS Invoice Payments
- Order Entry—Orders

Usage: Specify the field whose value you want the application to check.

Document Type1 User Property

Use this property to specify the type of document to print.

Values: **FS Invoice**
user_defined_invoice_type,user_defined_document_type

Order Entry—Orders

user_defined_order_type,user_defined_document_type

Default Value: **FS Invoice**

Payable,Credit Note

Order Entry—Orders

Sales Order,Sales Order

Parent Object Type: The following business components:

- FS Invoice
- Order Entry—Orders

Usage: The application reads the values of some user properties, then searches for the corresponding document type. The application reads the values of the following user properties:

- Use Document Type Field
- Document Type Field
- Document Type LOV Type

FS Invoice

If the Document Type LOV Type is of type Payable, then the Document Type1 user property is used and the Credit Note document is printed.

Order Entry—Orders

If the Document Type LOV Type is of type Sales Order, then the Document Type1 user property is used and the Sales Order document is printed.

Document Type2 User Property

Use this property to specify the type of document to print.

Values: **FS Invoice**
user_defined_invoice_type,user_defined_document_type

Order Entry—Orders
user_defined_order_type,user_defined_document_type

Default Value: **FS Invoice**
Receiveable, Invoice
Order Entry—Orders
RMA Return,RMA

Parent Object Type: The following business components:

- FS Invoice
- Order Entry—Orders

Usage: The application reads the values of some user properties, then searches for the corresponding document type. The application reads the values of the following user properties:

- Use Document Type Field
- Document Type Field
- Document Type LOV Type

FS Invoice

If the Document Type LOV Type is of type Receiveable, then the Document Type1 user property is not used, because the default value of Document Type1 is Payable. The application searches Document Type2 user property for a match, and the invoice document is printed.

In this example, the print templates for a Credit Note and an Invoice are identical; however, the document IDs that are generated differ for Credit Notes and Invoices.

Order Entry—Orders

If the Document Type LOV Type is of type RMA Return, then the Document Type1 user property is not used, because the default value of Document Type1 is Sales Order. The application searches Document Type2 user property for a match, and the RMA document is printed.

In this example, the print templates for a Sales Order and RMA Return are identical; however, the document IDs that are generated differ for Sales Orders and RMA orders.

Document Type LOV Type User Property

Use this property to specify a list of values for the Document Type user property. For more information about the Document Type Field user property, see [Use Document Type Field User Property on page 238](#).

Values: Types of drop-down list defined in List of Values Type in the business component.

Default Value: **FS Invoice**

A list of values for Invoice Type, that is, FS_INVOICE_TYPE.

Order Entry—Orders

A list of values for Order Type, that is, FS_ORDER_TYPE.

Parent Object Type: The following business components:

- FS Invoice.
- Order Entry—Orders.

Usage: Enter the type of drop-down list for this user property.

EncryptKey User Property

Use this property to specify the default key to use when encrypting signatures. If you do not specify a value for this property, an internal mechanism is used to generate the encryption key.

Values: Integer, between 1 and 999999999.

Parent Object Type: Signature control applet.

Usage: Enter the encryption key you require as the value for this property.

Explorer Applet Size User Property

Use this property when you configure a tree applet to specify how much space you want the tree applet to occupy.

Values: Integer, between 1 and 100.

Default Value: 50

Parent Object Type: View.

Usage: Enter the percentage of space that you want the tree applet to occupy.

Field Read Only Field *fieldname* User Property

For information about this user property, see *Siebel Developer's Reference* and *Configuring Siebel Business Applications*.

FormUI User Property

Form UI is a technique of applet design that enables Siebel Handheld application developers to create applets that are larger than normal form applets. For more information about Form UI applets, see [Configuring Form UI Applets for the Siebel Handheld Client on page 39](#).

Use this property to specify whether an applet is a Form UI applet or not.

Values: TRUE or FALSE.

Parent Object Type: Applet.

Usage: If set to TRUE, makes the applet a form UI applet.

If set to FALSE, makes the applet a normal applet.

Fulfilled Order Status User Property

Use this property to specify a value that indicates when an order is considered fulfilled, and no other invoices can be generated for that order. When a user taps the Invoice button, the order status changes to the value of this user property.

Values: User-defined.

Default Value: Billed

Parent Object Type: Order Entry—Orders business component.

Usage: Enter the value which you want to use to indicate that an order is fulfilled.

HandheldInsertFailMode User Property

Use this property to specify how to handle record insert failures for the business component. For more information about how insert failures are handled, see [“Insert Failure Processing in Siebel Handheld Applications” on page 158](#).

Values: NoFail or FailOnError.

Default Value: NoFail

Parent Object Type: Business component.

Usage: If you specify NoFail, insert failures are logged and synchronization continues.

If you specify FailOnError, insert failures are logged and synchronization terminates.

HandheldSyncPickMode User Property

Use this property to enable Extended Pick processing for specified fields in a business component. For more information about Extended Pick processing, see [“Extended Pick Processing in Siebel Handheld Applications” on page 155](#).

Values: *Fieldname_1|Mode_1, Fieldname_2|Mode_2 ... Fieldname_n|Mode_n*

Parent Object Type: Business component.

Usage: Specify the field name and the mode for each field for which you want to specify this property. Specify one of the following modes:

■ NoFail

■ FailOnError

If set to NoFail, enables Extended Pick processing for the specified field.

If set to FailOnError, disables Extended Pick processing for the specified field.

Note: The setting on the business component takes precedence over the setting defined in the Settings view tab on the Administration - Mobile screen > Application Administration view.

You can use the business component setting to nullify the global application of Extended Pick. Conversely, you can enable Extended Pick processing on specific business components if the setting in the Settings view tab has disabled the functionality.

InkColor User Property

Use this property to specify the color to use on the signature control applet.

Values: Hexadecimal value from 0x000000 to 0xFFFFFFFF.

Parent Object Type: Signature control applet.

Usage: The six hexadecimal digits in the value that you specify represent the color to use. The six digits comprise three groups of two digits. Each group of two digits is the value for one of the colors: blue, green, and red, in that order. For example, the value 0xFF0000 represents the color blue.

InkWidth User Property

Use this property to specify the width of the line that is created in the signature control applet.

Values: 1-5.

Parent Object Type: Signature control applet.

Usage: A typical line width is 2.

MaximumFooterLines User Property

Use this property to specify the maximum height of the footer display control.

Values: Integer.

Parent Object Type: Signature control applet.

Usage: Specify the height as the number of text lines. If the footer text exceeds this number, the user can use the pen to scroll vertically. The footer display control does not display a scroll bar.

MaximumHeaderLines User Property

Use this property to specify the maximum height of the header display control.

Values: Integer.

Parent Object Type: Signature control applet.

Usage: Specify the height as the number of text lines. If the header text exceeds this number, the user can use the pen to scroll vertically. The header display control does not display a scroll bar.

On Field Update Set *n* User Property

For information about this property, see *Siebel Developer's Reference*.

OverrideDefaultApplet User Property

Use this property to override the default behavior to give focus to an applet. This user property is typically used with the GotoViewNewRecord method.

Values: 0 or 1.

Parent Object Type: Control.

Usage: If set to 0, gives the focus to the parent applet.
If set to 1, gives the focus to the child applet.

OverridePopupVisibilityn User Property

Use this property to specify fields that override the business component Popup Visibility Type setting in an applet. Use this property when the visibility you require for a field differs from the Popup Visibility Type of the business component, and you do not want to change the Popup Visibility Type of the business component. For more information about visibility types, see [Designating Visibility on page 130](#).

Values: *Business_Component_Field, Visibility_Type*

Parent Object Type: Applet control or column.

Usage: The name of the OverridePopupVisibility parameter must be unique, so you must append a unique number to the name of the parameter for any other items, for example, OverridePopupVisibility1, OverridePopupVisibility2, and so on.

Assign a value to this property that contains the name of the business component field, followed by a comma, and then the visibility type you require for the field. [Table 18](#) summarizes popup visibility types and the corresponding visibility codes.

PrintForms User Property

You can implement multiple printing of forms in Siebel Handheld applications. To do this, you must add a control that invokes the PrintBatch method.

Use the PrintForms user property to specify the forms to print, the print templates, and a default number of copies of each form to print. You can specify up to 10 sets of forms, print templates, and default numbers.

For more information about how to configure multiple-form printing and multiple-quantity printing, see [Configuring Multiple Form and Multiple Quantity Printing for the Siebel Handheld Application on page 59](#).

Values: *form_name_1, template_filename_1, default_number_of_copies_1, form_name_2, template_filename_2, default_number_of_copies_2, ... form_name_10, template_filename_10, default_number_of_copies_10,*

Parent Object Type: Control.

Usage: Enter the sets of forms, print templates, and default numbers that you require.

Note 1: Do not enter a space before or after the commas. A comma must always follow the last entry.

Note 2: All of the applets that are specified in the following print tags must be configured in the view from which the PrintBatch method is invoked:

- Applet
- List
- GetTotal
- GetCount

In other words, all of the applets that are specified in these print tags, in all of the print templates that are used in the PrintBatch method, must be configured in the view.

Use the GetDirect print tag to get the value of a field from a business component that is not configured in the view.

Example: You might have forms with templates as follows:

- Order with Price, OrderwithPrice.txt
- Order without Price, OrderwithoutPrice.txt
- Temporary ID Card, TemporaryIDCard.txt

To print one copy of the first form only, specify the following value for this property:

```
Order with Price,OrderwithPrice.txt,1,Order without  
Price,OrderwithoutPrice.txt,0,Temporary ID  
Card,TemporaryIDCard.txt,0,
```

Read-Only Order Status User Property

Use this property to specify a series of values, each of which makes an order read-only. When the order status matches any of the values listed for this user property, the Invoice button is disabled.

Values: *Value_1, Value_2, ... Value_n*

Default Value: Billed

Parent Object Type: Order Entry—Orders business component.

Usage: Enter a value or values that make an order read-only.

SHCE COM Disable User Property

Use this property to disable support for the COM feature for a Siebel Handheld application.

Values: Y or N.

Parent Object Type: Application.

Usage: Set to Y to disable the COM feature.

SHCEDailySlotHeight User Property

Use this property to change the time slot spacing in the Daily Calendar Applet.

Values: Integer, between 14 and 50.
Default Value: 15
Parent Object Type: Daily calendar applet.
Usage: No additional information.

SHCEHideNavBar User Property

Use this property to hide the navigation bar in a calendar applet or find applet.

Values: TRUE or FALSE.
Parent Object Type: Applet.
Usage: If set to TRUE, hides the navigation bar.
 If set to FALSE, does not hide the navigation bar.

SHCEHideStatusBar User Property

Use this property to hide the status bar in a calendar applet or find applet.

Values: TRUE or FALSE.
Parent Object Type: Applet.
Usage: If set to TRUE, hides the status bar.
 If set to FALSE, does not hide the status bar.

SHCEHideToolBar User Property

Use this property to hide the toolbar in a calendar applet or find applet.

Values: TRUE or FALSE.
Parent Object Type: Applet.
Usage: If set to TRUE, hides the toolbar.
 If set to FALSE, does not hide the toolbar.

SHCEMenuBackButton User Property

Use this property to add the Go Back button to the menu bar in a calendar applet or find applet. This property enables you to have no toolbar on the applet to save screen space, and to still have a Go Back button in the applet.

Values: TRUE or FALSE.
Parent Object Type: Applet.

Usage: If set to TRUE, adds the Go Back button to the menu bar.
If set to FALSE, does not add the Go Back button to the menu bar.

SHCEMenuForwardButton User Property

Use this property to add the Go Forward button to the menu bar in an applet. This property enables you to have no toolbar on the applet to save screen space, and to still have a Go Forward button in the applet.

Values: TRUE or FALSE.

Parent Object Type: Applet.

Usage: If set to TRUE, adds the Go Forward button to the menu bar.
If set to FALSE, does not add the Go Forward button to the menu bar.

SHCEMenuNewButton User Property

Use this property to add the New Record button to the *menu bar* in an applet. This property enables you to have no toolbar on the applet to save screen space, and to still have a New Record button in the applet.

Values: TRUE or FALSE.

Parent Object Type: Applet.

Usage: If set to TRUE, adds the New Record button to the menu bar.
If set to FALSE, does not add the New Record button to the menu bar.

ShowData User Property

Use this property to specify if the content of the signature field can be displayed. If you specify not to display signature data, the ellipses in the signature applet control are disabled.

Values: Y or N.

Parent Object Type: Signature field in a signature capture applet.

Usage: Set this property to Y to allow the content of the signature field to be displayed.
Set this property to N to prevent the display of signatures.

Signature User Property

Use this property to specify if a field can store a signature.

Values: Y or N.

Parent Object Type: Signature capture applet.

Usage: Set this property to Y to make a field a signature field.
Set this property to N if you do not want a field to store signatures.

SignatureDataField User Property

Use this property to specify a destination field for the captured signature if you do not want to save the signature in the user interface field.

Values: A field name in the current business component.

Parent Object Type: Signature capture applet.

Usage: Enter the name of the business component field where you want to save the signature data.

SignatureDate User Property

Use this property to specify whether to add the current date under the signature footer.

Values: Y or N.

Parent Object Type: Signature capture applet.

Usage: No additional information.

Note: The date is added in the regional default date format of the handheld device.
The date is saved to the field specified in the SignatureFooterSaveField user property. For more information about this user property, see [SignatureFooterSaveField User Property on page 235](#).

SignatureField User Property

Use this property to specify the name of the user interface field where the signature data is stored.

Values: UI field name.

Parent Object Type: Signature button control.

Usage: Enter the name of the field where you want to store the signature data.

SignatureFooterField User Property

Use this property to specify the field from which to copy the content for the signature footer.

Values: A field name in the current business component.

Parent Object Type: Signature capture applet.

Usage: No additional information.

SignatureFooterSaveField User Property

Use this property to specify the field to which the content for the signature footer is saved.

Values: A field name in the current business component.

Parent Object Type: Signature capture applet.

Usage: If the SignatureDate user property is set to Y, the date is included in the data that is saved to this field.

If the SignatureTime user property is set to Y, the time is included in the data that is saved to this field.

SignatureHeaderField User Property

Use this property to specify the field from which to copy the content for the signature header.

Values: A field name in the current business component.

Parent Object Type: Signature capture applet.

Usage: No additional information.

SignatureHeaderSaveField User Property

Use this property to specify the field to which the content for the signature header is saved.

Values: A field name in the current business component.

Parent Object Type: Signature capture applet.

Usage: No additional information.

SignatureHeight User Property

Use this property to specify the height of the signature capture control.

Values: Integer, between 1 and 200.

Parent Object Type: Control on signature capture applet.

Usage: Specify the height in pixels.

SignatureTime User Property

Use this property to specify whether to add the current time under the signature footer.

Values: Y or N.

Parent Object Type: Signature capture applet.

Usage: No additional information.

Note: The time is added in the time format of the handheld device.

The time is saved to the field specified in the SignatureFooterSaveField user property. For more information about this user property, see [SignatureFooterSaveField User Property on page 235](#).

SignatureWidth User Property

By default, signature controls occupy the full width of the screen on the handheld device. Use the SignatureWidth user property to set the width of a signature control.

Values: Integer, between 1 and 240.

Parent Object Type: UI field.

Usage: Enter the width of the screen.

SingleSelect User Property

Use this property to restrict to one the number of records that the user can select from a control.

Values: TRUE or FALSE.

Parent Object Type: Control.

Usage: If set to TRUE, disables multiselect mode and autoselect mode, and enables the user to select one record only.

If set to FALSE, enables multiselect mode and autoselect mode.

TaskUI User Property

Use this property to specify that a view contains a Siebel Task. For more information about Siebel Tasks, see [Developing Tasks for Task UI in Siebel Handheld Applications on page 49](#).

Values: TRUE or FALSE.

Parent Object Type: View.

Usage: If set to TRUE, specifies that the view contains a Siebel Task.

If set to FALSE, specifies that the view is not a Siebel Task.

TriggerFindRecord User Property

For information about how to use this property, see [Enhancing the Behavior of the Barcode Scan on page 88](#).

Two Digit Currency Rounding User Property

Use this property to specify whether to round off the invoice amount to two digit.

Values: Y or N.

Parent Object Type: Order Entry—Orders business component.

Usage: Set to Y to round off the invoice amount.

Use Document Type Field User Property

Use this property to specify to ignore print properties when a user prints an order.

Values: Y or N.

Parent Object Type: The following business components:

- FS Invoice
- FS Invoice Payments
- Order Entry—Orders

Usage: Set to Y if you do not want the application to ignore the print properties.
Set to N if you want the application to ignore the print properties.

UseSystemLocale User Property

Use this property if you want a Calendar applet to display the dates according to the regional date settings on the handheld device where the application is installed.

Values: TRUE or FALSE.

Parent Object Type: Applet.

Usage: If set to TRUE, the applet uses the regional date settings on the handheld device to display dates on the calendar.
If set to FALSE, the applet does not use the regional date settings.

View User Property

Use this property to specify the name of the view to display when a user selects the control.

Values: Views available in your application.

Parent Object Type: Control.

Usage: No additional information.

ViewType User Property

Use this property to configure how applets are displayed in a view. For more information about applet display modes, see [Designing Screens and Views for Siebel Handheld Applications on page 32](#).

Values: Tabbed or Traditional.

Parent Object Type: View.

Usage: For information about the usage of this property, see [DefaultViewType User Property on page 223](#).

Note: ViewType overrides the DefaultViewType property in portrait orientation. In landscape orientation and on square screens, the default applet display mode is Tabbed.

WritingGuide User Property

Use this property to display information in the applet. This information provides instructions on how to create a signature on a handheld device.

Values: Y or N.

Parent Object Type: Signature control applet.

Usage: Set this property to Y to display the writing guide in the applet.

Set this property to N if you do not want to display the writing guide in the applet.

E

Print Tagging Language

This appendix describes the print tagging language that is used to create print templates for your handheld device. The audience for this appendix is Siebel Handheld application developers. The following topics are covered in this appendix:

- [“Overview of Print Tagging Language for Siebel Handheld Applications” on page 241](#)
- [“Print Mode Tags” on page 242](#)
- [“Data Output Tags” on page 243](#)
- [“Print Formatting Tags” on page 249](#)
- [“Get and Set Tags” on page 263](#)
- [“Control Positioning Tags” on page 269](#)
- [“Data Manipulation and Logic Tags” on page 273](#)
- [“Using Variables in Print Templates” on page 277](#)

Overview of Print Tagging Language for Siebel Handheld Applications

You can create the print template file in any text editor.

- Tags are enclosed in angle brackets and identified with the keyword TAG, followed by a colon. For example, <TAG: . . . >.
- Parameters are specified with a keyword, followed by an equals sign (=). Arguments are in uppercase, surrounded by quotation marks. For example, Font = "FONT FACE".
- Values are in uppercase and lowercase, surrounded by quotation marks. For example, Font = "Helvetica".
- Tags can appear in any order in the file. The only required tag is the Title tag.
- Variables within a print template must be uniquely named. Variable names must be one-word strings and spaces are not allowed.

Print Mode Tags

The following two tags determine the mode of printing. The print mode determines how printing is going to be handled by the Siebel Handheld application.

- [“Absolute Tag” on page 242](#)
- [“Relative Tag” on page 242](#)

Absolute Tag

The Absolute tag sets the print mode to absolute. Print mode determines how printing is going to be handled by your Handheld application. Absolute mode-only tags and parameters are enabled and processed accordingly while in absolute mode.

Usage

The Absolute tag can appear anywhere in the template for any number of times to switch between print modes. Print mode defaults to Relative if none is specified.

Syntax

<TAG:Absolute>

Parameter	Description
TAG:Absolute	(Required) Absolute tag indicator.

Relative Tag

The Relative tag sets the print mode to relative, cancelling the absolute mode. Absolute mode-only tags and parameters are disabled and ignored while in Relative mode.

Usage

The Relative tag can appear anywhere in the template for any number of times to switch between print modes. Print mode defaults to Relative if none is specified.

Syntax

<TAG:Relative>

Parameter	Description
TAG:Relative	(Required) Relative tag indicator.

Data Output Tags

The following tags are used to control data output for printing:

- [“Applet Tag” on page 243](#)—Specifies which applets are used in the document.
- [“Cell Tag” on page 245](#)—Creates cells of data in a row in a table.
- [“Picture Tag” on page 246](#)—Adds graphic images to the document.
- [“Static Text Tag” on page 248](#)—Adds text that does not change to the document.

Applet Tag

The Applet tag specifies the applet to be printed.

Usage

Any data that appears in your document must be generated from the applets in the view. Therefore, you must create applets that produce the data required for your document.

Use the Applet tag to specify the number of list or form applets within the template and to locate the applet in your document. In the form view, a maximum of two fields for each row are supported.

Syntax

```
<TAG:Applet name="APPLET NAME" query="QUERY" caption="CAPTION"
headerdivider="HEADERDIVIDER" recorddivider="RECORDDIVIDER" wrap="WRAP" grid="GRID"
linewidth="THICKNESS" offset="OFFSET" width="WIDTH" sql="SQL_Statement"
maxlines="MAXLINES" startat="Number">
```

Parameter	Description
TAG:Applet	(Required) Applet tag indicator.
name	(Required) Applet name as defined in Siebel Tools.
query	(Optional) Specifies the query string directly set to the business component supporting the print template. If the query string is not specified, the currently active query string in the view is applied to expose the relevant records.
caption	(Optional) Specifies whether the captions in the form applets are suppressed. Valid values are TRUE (default) and FALSE. This parameter does not apply to list applets. Column headings in list applets are always enabled.
headerdivider	(Optional) Specifies whether a divider is printed below the column heading in list applets. Valid values are TRUE and FALSE (default). This parameter does not apply to form applets.

Parameter	Description
recorddivider	(Optional) Specifies whether a horizontal divider is printed between records in list applets. Valid values are TRUE and FALSE (default). This parameter does not apply to form applets.
wrap	(Optional) Specifies whether to enable word wrap for text field values. Valid values are TRUE and FALSE (default). This parameter does not apply to numeric fields.
grid	(Optional) Specifies whether a grid is used to display data in list applets. Valid values are TRUE and FALSE (default). If TRUE, a grid is drawn between fields, rows, and columns in list applets. This parameter does not apply to form applets.
linewidth	(Optional) Specifies grid thickness in millimeters. Valid values are 1-5. The default value is 1, which produces a line 0.2 mm wide. Increasing the value by 1 increases the width by 0.2 mm. A 5 produces a line that is 1 mm wide.
offset	(Optional, absolute mode-only) Specifies the distance, in millimeters, to the right from the left margin. This value can be a number ("40") or a variable that contains a number value ("_X" or "posx").
width	(Optional) Specifies the width of the applet in millimeters.
sql	(Optional) Where clause for the SQL statement. For example, <code>sql="\status"=\'good\'</code> selects all records where status field is set to good. NOTE: Enclose the field name in double quotes and use backslash followed by double quotes to include a double quote within the parameter, then enclose the value in single quotes.
maxlines	(Optional) Specifies the maximum number of records to print for list applets. This parameter does not apply to form applets.
startat	(Optional) Starts printing from the specified record in the row set.

Example

The following example prints the same applet twice side-by-side starting at record 10 in the list:

- The first time CS HH Product Bucket List Applet is printed, it is printed with gridlines of 0.4 mm in thickness, and 0 mm from the left edge of the printable area of the page (on the left margin).
Only records where Status=Defective are displayed. Up to two records are printed (Maxlines="2").
- The second time CS HH Product Bucket List Applet is printed, it is printed with gridlines where the left side of the applet is positioned 80 mm from the left margin.
Only records where Status=Good are displayed. Up to two records are printed (Maxlines="2").

```
<TAG:Applet name="CS HH Product Bucket List Applet" sql="\Status\"='Defective'" maxlines="2"
startat="10" recordddivider="FALSE" wrap="TRUE" grid="TRUE" offset="0" width="75"
linewidth="0.4">
```

```
<TAG:SETVARIABLE variable="var_equal" name="">
<TAG:SETVARIABLE variable="var_fieldname" name="\Status\">
<TAG:SETVARIABLE variable="var_criteria" name="'Good'">
```

```
<TAG:CONCAT variable="var_equal" prepend="<variable>var_fieldname"
append="<variable>var_criteria">
```

```
<TAG:SETY y="0">
```

```
<TAG:Applet name="CS HH Product Bucket List Applet" sql="<variable>var_equal" maxlines="2"
startat="10" recordddivider="FALSE" wrap="TRUE" grid="TRUE" offset="80" width="75">
```

Cell Tag

The Cell tag prints the string stored in the name="STRING" parameter or variable="VARIABLE NAME" parameter at the specified location on the current line.

Usage

Use the Cell tag to create cells of data in a row in a table. Use it with the EndOfLine tag. If the data exceeds the width of the cell specified by the Startat and Endat parameters, then the data wraps to the next line.

Syntax

```
<TAG:CELL startat="START" endat="END" name="STRING" align="ALIGNMENT" left="LEFT"
top="TOP" right="RIGHT" bottom="BOTTOM" box="BOX" linewidth="LINEWIDTH">
<TAG:CELL startat="START" endat="END" variable="VARIABLE NAME" align="ALIGNMENT"
left="LEFT" top="TOP" right="RIGHT" bottom="BOTTOM" box="BOX" linewidth="LINEWIDTH">
<TAG:EndOfLine>
```

Parameter	Description
TAG:Cell	(Required) Required tag indicator.
startat	(Required in relative mode) Specifies the starting point of the cell, expressed as a percentage of the printable page width. For example, if START =10, then the cell starts at the point that is 10% from the left edge of the printable width.
endat	(Required in relative mode) Specifies the end point of the cell, expressed as a percentage of the printable page width. For example, if END=50, then the cell ends at the point that is 50% from the left edge of the printable width.
name	(Optional) String value. If a variable parameter is not specified, then name is a required parameter.

Parameter	Description
variable	(Optional) Variable where the value is stored. If a name parameter is not specified, then variable is a required parameter.
align	(Optional, Existing) Specifies the alignment of the string. Valid values are LEFT (default), CENTER, and RIGHT.
left	(Optional, absolute mode-only tag) Specifies the distance, in millimeters, of the left side of the cell from the left margin. If omitted, the current head position is used and RIGHT parameter is used to specify the width of the cell.
top	(Optional in absolute mode) Specifies the distance, in millimeters, of the top side of the cell from the top margin. If omitted, the current head position is used and the BOTTOM parameter is used to specify the height of the cell.
right	(Required in absolute mode) Specifies the distance, in millimeters, of the right side of the cell from the left margin.
bottom	(Required in absolute mode) Specifies the distance, in millimeters, of the bottom side of the cell from the top margin.
box	(Optional) Specifies whether to draw a box around the printed cell data in form applets. Valid values are TRUE and FALSE (default). This parameter does not apply to list applets.
linewidth	(Optional in absolute mode) Specifies the thickness, in millimeters, of the line drawn if BOX is set to TRUE. If omitted, line width is 0.2 millimeters.

Example

The following example prints "Text In A Box" inside a rectangular box 10 millimeters (mm) long x 30 mm wide, which is 200 mm from the top margin, and 10 mm from the left margin.

```
<TAG:Cell name="Text In A Box" top="200" left="10" bottom="210" right="60" box="TRUE"
linewidth="0.1" align="LEFT">
<TAG:EndOfLine>
```

Picture Tag

The Picture tag specifies the graphic files that are included in the print template. When used in absolute print mode (with absolute mode-only tags), graphics are printed from the specified file at the specified position, and according to the specified dimensions.

Usage

Use the Picture tag to add graphic images, such as a company logo, to your documents. Supported file formats are BMP and JPG.

Graphics files are located in the \Program Files\Siebel Handheld\templates directory on the handheld device. Specify the full path name of the file for the Name parameter. Scaling or graphics operations, such as inverse image, are not supported.

The *alignment* and *position* parameters are used together to place the graphic. Alignment specifies the left edge, the center, or the right edge of the graphic. Position is the distance, specified in millimeters, from the left edge of the paper.

Example

- If align="Left" and position="30", then the left edge of the graphic is set 30 mm from the left edge of the paper.
- If align="Center" and Position="30", the center of the graphic is set 30 mm from the left edge of the paper.
- If align="Right" and Position="30", the right edge of the graphic is set 30 mm from the left edge of the paper.

If the position is not specified, the position defaults to 0. Depending on the alignment setting, the graphic is left-aligned (align="Left"), right-aligned (align="Right"), or centered (align="Center").

- In absolute mode-only, if left="20", top="40", right="80", and bottom="80", then the picture is drawn 20 mm from the left margin and 40 mm from the top margin, and is 60 x 40 millimeters in size.
- In the absolute mode-only, if right="80" and bottom="80", then the picture is drawn at the current location and is 80 x 80 mm in size.

When left="x" and top="y" parameters are not specified, the picture is drawn at the current head position. In such cases, the right="x" and bottom="y" parameters specify the width and height of the image respectively.

Syntax

```
<TAG:Picture name="FILE NAME" align="ALIGNMENT" position="POSITION">
```

Parameter	Description
TAG:Picture	(Required) Picture tag indicator.
name	(Required) Specifies the full path and name of the graphics file.
align	(Optional) Specifies the left edge, the center, or the right edge of the graphic. Used with the Position parameter to specify the horizontal position of the graphic. Valid values are LEFT (default), CENTER, and RIGHT.
position	(Optional) Specified in millimeters, this is the distance from the left edge of the paper. Used with the Alignment parameter to specify the horizontal position of the graphic. The default is 0.

Example

```
<TAG:Picture name="\Program Files\Siebel Handheld\templates\logo.bmp" alignment="Right"
Position="88">
```

Syntax (absolute mode-only)

```
<TAG:Picture name="FULL PATH FILE NAME" left="LEFT VALUE" right="RIGHT VALUE top="TOP
VALUE" bottom="BOTTOM VALUE" position="POSITION">
```

Parameter	Description
TAG:Picture	(Required) Picture tag indicator.
left	(Optional, absolute mode-only tag) Specified in millimeters, this is the distance of the left side of the rectangle from the left margin. If omitted, the current head position is used, and the RIGHT parameter is used to specify the width.
top	(Optional, absolute mode-only tag) Specified in millimeters, this is the distance of the top side of the rectangle from the top margin. If omitted, the current head position is used, and the BOTTOM parameter is used to specify the height.
right	(Required, absolute mode-only tag) Specified in millimeters, this is the position of the right side of the rectangle on the X axis from the left margin.
bottom	(Required, absolute mode-only tag) Specified in millimeters, this is the position of the bottom side of the rectangle on the Y axis from the top margin.

Example (absolute mode-only)

```
<TAG:Picture name="\Program Files\Siebel Handheld\templates\logo.bmp" left="20" top="40"
right="80" bottom="80">
<TAG:Picture name="\Program Files\Siebel Handheld\templates\logo.bmp" right="80"
bottom="80">
```

Static Text Tag

You can add static text anywhere in your template by using the current Format settings. The text goes across the entire page width. If the text exceeds the width of the page, it wraps to the next line.

Example

This quote is valid for 60 days from the date on this quotation.

Print Formatting Tags

The following tags provide flexibility in formatting print templates and are used to specify the format of the print output:

- **"Background Tag" on page 249**—Prints an image to specified coordinates, much like a watermark.
- **"Comment Tag" on page 250**—Adds comments that do not appear in the final document.
- **"Divider Tag" on page 251**—Adds visual lines to visually separate different parts of the document.
- **"DrawRect Tag" on page 251**—Draws a rectangle at specified coordinates.
- **"EndOfPage Tag" on page 253**—Advances to a new page.
- **"Footer Tag" on page 253**—Adds information such as page numbers, date, and time.
- **"Format Tag" on page 254**—Specifies characteristics such as font, boldface, italics, and underline.
- **"Frame Tag" on page 255**—Draws a surrounding frame around the whole page for all pages in the print template.
- **"Header Tag" on page 256**—Adds information such as page numbers, date, and time.
- **"Landscape Tag" on page 257**—Sets landscape paper orientation for the subsequent print tags.
- **"List Tag" on page 257**—Prints the selected columns with the specified width.
- **"LineTo Tag" on page 259**—Draws a line of a specified line thickness from the current printer head position to the specified coordinate.
- **"Margin Tag" on page 260**—Sets the margin for a specific template.
- **"PageBreak Tag" on page 261**—Specifies a break in the text, forcing the text that follows to appear on the next page.
- **"Portrait Tag" on page 261**—Sets portrait paper orientation for the subsequent print tags.
- **"Title Tag" on page 262**—Specifies a name for the template that appears in the print job list.

Background Tag

The Background tag prints an image at specified coordinates for all pages in the print template. Supported file formats are BMP and JPG only.

Usage

Use the Background tag to print logos or images in the header, footer, or main printable area of the print template. When the Background tag is used, the image is printed like a watermark logo, and any other object included in the print template is printed over it.

It is recommended that you declare the Background tag immediately after the Absolute, Margin, Header, or Footer tags.

Syntax

```
<TAG:Background name="FILE NAME" left="LEFT" top="TOP" right="RIGHT" bottom="BOTTOM">
```

Parameter	Description
TAG:Background	(Required) Required tag indicator.
name	(Required) Specifies the full path and name of the graphics file.
left	(Optional) Specifies, in millimeters, the position of the left side of the image on the X axis from the left side of the paper. This setting defaults to zero if omitted.
top	Specifies, in millimeters, the position of the top side of the image on the Y axis from the top of the paper. This setting defaults to zero if omitted.
right	Specifies, in millimeters, the position of the right side of the image on the X axis from the right side of the paper. The image is shrunk or expanded to fit within the specified size.
bottom	Specifies, in millimeters, the position of the bottom side of the paper on the Y axis from the bottom of the paper. The image is shrunk or expanded to fit within the specified size.

Example

The following example prints a 50 x 30 mm image at 30 mm from the left edge and 50 mm from the top edge of the page. The header or footer or both can overlap the image if the image is placed on the header or footer area:

```
<TAG:Absolute>
<TAG:Margin left="30" Top="50" right="80" bottom="100">
<Tag:Header left="<page>" center="<variable>numrows" right="<date>">
<Tag:Footer left="receipt" center="<variable>numrows" right="<page>">
<Tag:Background name="\logo.gif" left="30" top="50" right="80" bottom="100">
```

Comment Tag

The Comment tag adds code comments to the print template.

Usage

Use the Comment tag to add explanatory notes or documentation to explain and maintain the print template. Comment tags are ignored during printing and do not appear in the printed document.

Syntax

```
<REM:COMMENT>
```

Parameter	Description
REM	(Required) Comment tag indicator.
COMMENT	(Optional) Comment text.

Example

```
<REM: Quotation Print Template. This template includes four applets.>
```

Divider Tag

The Divider tag renders a horizontal line across the width of the page.

Usage

Use the Divider tag to visually separate the different sections of your document. The Divider tag can be used between other tags; therefore, you can add a line between two applets. However, you cannot embed a Divider within an applet.

Syntax

```
<TAG:Divider weight="WEIGHT" startat="START" endat="END">\
```

Parameter	Description
TAG:Divider	(Required) Divider tag indicator.
weight	(Optional) Specifies line thickness. Valid values are 1–5. The default value is 1, which produces a line 0.2 mm wide. Increasing the value by 1 increases the width by 0.2 mm. A 5 produces a line that is 1 mm wide.
startat	(Optional) Percentage that specifies the starting point of the line. The default is 0%, the farthest left point.
end	(Optional) Percentage that specifies the end point of the line. The default is 100%, the farthest right point.

Example

```
<TAG:Divider weight="2" startat="20" endat="80">
```

DrawRect Tag

The DrawRect tag draws a rectangle at the specified coordinates. This is an absolute mode-only tag.

Usage

Use the DrawRect tag to draw a rectangle anywhere in the printable area of your page. This tag can be used with the Applet tag to draw a rectangle around a form applet.

Syntax

```
<TAG:DrawRect left="LEFT" right="RIGHT" top="TOP" bottom="BOTTOM"
linewidth="THICKNESS">
```

Parameter	Description
TAG:DrawRect	(Required) Applet tag indicator.
left	(Optional) Specifies the distance, in millimeters, of the left side of the rectangle from the left margin. If omitted, the current head position is used and the RIGHT parameter is used to specify the width.
top	(Optional) Specifies the distance, in millimeters, of the top side of the rectangle from the top margin. If omitted, the current head position is used and the Bottom parameter is used to specify the height.
right	(Required) Position, in millimeters, of the right side of the rectangle on the X axis from the left margin.
bottom	(Required) Position, in millimeters, of the bottom side of the rectangle on the Y axis from the top margin.
linewidth	(Required) The thickness, in millimeters, of the line.

Example

The following example draws a thin 100 x 90 mm rectangle at 30 mm from the top and 20.5 mm from the left edge of the printable area:

```
<TAG:DrawRect left="20.5" top="30" right="120.5" bottom="120" linewidth="0.2">
```

EndOfLine Tag

The EndOfLine tag specifies the end of a row and advances to the next line.

Usage

Use the EndOfLine tag to create rows of data in a table. Used with the Cell tag.

Syntax

```
<TAG:EndOfLine>
```

Parameter	Description
TAG:EndOfLine	(Required) End of line tag indicator.

Example

```
<TAG:Cell startat="0" endat="50" name="TOTAL:" align="RIGHT">
<TAG:Cell startat="50" endat="100" variable="vvv1total" align="RIGHT">
<TAG:EndOfLine>
```

EndOfPage Tag

The EndOfPage tag advances to a new page.

Usage

Use the EndOfPage tag to create a page break and start a new page within the print template.

Syntax

```
<TAG:EndOfPage>
```

Parameter	Description
TAG:EndOfPage	(Required) End of page tag indicator.

Example

```
<TAG:Cell startat="0" endat="50" name="TOTAL:" align="RIGHT">
<TAG:Cell startat="50" endat="100" variable="vvv1total" align="RIGHT">
<TAG:EndOfPage>
```

Footer Tag

The Footer tag adds footer information such as page numbers, the current date, and the current time.

Usage

You might, for example, always want the text *Thank you for your business!* to appear on the bottom of your receipts. If so, you can include this text in a Footer tag.

The Footer tag can be specified anywhere in the template file; however, it will always appear at the very bottom of your document. Only one Footer tag is applied to the document. If you have multiple Footer tags in the file, only the last Footer tag is used; any other Footer tags are ignored.

If you include a Footer tag in your template, then you must set the BottomMargin in setup.ini to a minimum of 20.

The footer has three sections, Left, Center, and Right, which are used to position the information in the footer.

The text in the footer is formatted in 10 point, Helvetica font. If Helvetica is not available on your system, the default font is used. You cannot customize text formatting of the Footer tag. The Format tag does not affect the formatting of the footer.

Syntax

```
<TAG:Footer left="DATA" center="DATA" right="DATA">
```

Parameter	Description	
TAG:Footer	(Required) Footer tag indicator.	
left, center, or right	(Optional) Static text or one of the following data tags:	
	Data tag	Description
	<page>	Page number
	<date>	Date of the printing
	<time>	Time of the printing

Example

```
<TAG:Footer Left="<date>" Right="<page>"
```

Format Tag

The Format tag specifies the characteristics of the text—for example, the typeface or font, whether the text is in boldface, italics, or underlined, and the text alignment.

Usage

Use the Format tag to specify the typeface and font size of the text in your template. The Format tag applies to the text that immediately follows it, or up until the next Format tag appears.

When an applet is rendered, the field alignment specification takes precedence over the align="TEXT ALIGNMENT" parameter of the Format tag.

Syntax

```
<TAG:Format face="FONT FACE" size="FONT SIZE" bold="BOLD" italic="ITALIC"
underline="UNDERLINE" align="TEXT ALIGNMENT">
```

Parameter	Description
TAG:Format	(Required) Format tag indicator.
face	(Required) Specifies the typeface of the text. Any typeface installed on the handheld device can be specified. There is no default for this parameter.
size	(Required) Specifies the text size. Any installed font size for an installed typeface on the handheld device can be specified. There is no default for this parameter.
bold	(Optional) Specifies whether the text is in bold. Valid values are TRUE or FALSE (default). If TRUE, text is set to bold.
italic	(Optional) Specifies whether the text is in italic. Valid values are TRUE or FALSE (default). If TRUE, text is set to italic.
underline	(Optional) Specifies whether the text is underlined. Valid values are TRUE or FALSE (default). If TRUE, text is set to underline.
align	(Optional) Specifies the text alignment. Valid values are LEFT (default), RIGHT, and CENTER.

Example

```
<TAG:Format face="Helvetica" size="10">
```

Frame Tag

The Frame tag draws a frame (rectangular box) around all pages in the template.

Usage

Use the Frame tag to draw a rectangular box around each page in your template. The frame is drawn at the edge of the page, just inside the paper margins.

Place the Frame tag after the Margin, Header, or Footer tags.

Syntax

```
<TAG:Frame pageframe="BOOLEAN VALUE" linewidth="THICKNESS">
```

Parameter	Description
TAG:Frame	(Required) Required tag indicator.
pageframe	(Required) Specifies whether to draw a frame around the page. Valid values are TRUE or FALSE. If set to TRUE, a frame is drawn around each page.
linewidth	(Required) Specifies the thickness of the line in millimeters. If omitted, the default value is 0.3 millimeters.

Example

```
<TAG:Frame pageframe="TRUE" linewidth="0.5">
```

Header Tag

The Header tag adds header information such as page numbers, the current date, and the current time to the template.

Usage

You might always want the current date and time to appear on your invoices. If so, you can include this information in a Header tag.

The Header tag can be specified anywhere in the template file; however, it always appears at the very top of your document. Only one Header tag is applied to the document. If you have multiple Header tags in the file, only the last Header tag is used; all other Header tags are ignored.

If you include a Header tag in your template, then you must set TopMargin in setup.ini to a minimum of 20.

The Header tag has three sections (Left, Center, and Right) which are used to position the information in the header. The Left parameter aligns the text with the left margin, and the Right parameter right aligns the text with the right margin. The Center parameter centers the text in the header.

The text in the header is formatted in 10 point, Helvetica font. If Helvetica is not available on your system, the default font is used. You cannot customize text formatting of the Header tag. The Format tag does not affect the format of the header.

Syntax

```
<TAG:Header left="DATA" center="DATA" right="DATA">
```

Parameter	Description								
TAG:Header	(Required) Header tag indicator.								
left, center, or right	(Optional) Static text or one of the following data tags:								
	<table> <tr> <th>Data tag</th><th>Description</th></tr> <tr> <td><page></td><td>Page number</td></tr> <tr> <td><date></td><td>Date of the printing</td></tr> <tr> <td><time></td><td>Time of the printing</td></tr> </table>	Data tag	Description	<page>	Page number	<date>	Date of the printing	<time>	Time of the printing
Data tag	Description								
<page>	Page number								
<date>	Date of the printing								
<time>	Time of the printing								

Example

```
<TAG:Header center="Company Confidential">
```

Landscape Tag

The Landscape tag sets the page orientation (or printout mode) to landscape for the subsequent page or print tags.

Usage

The Landscape tag must be placed after the Margin, Header, or EndOfpage tags. If the Landscape tag is specified in the template, users cannot override the orientation even if they change the paper orientation setting in the printer settings dialog box.

Syntax

```
<TAG:Landscape>
```

Parameter	Description
TAG:Landscape	(Required) Landscape tag indicator.

List Tag

The List tag prints the selected columns in a specified column width.

Usage

Use the List tag to print out a list of records containing specified fields.

Syntax

```
<TAG:List appletname="APPLET" columns="COLUMN1|COLUMN2|...|COLUMNx"
columnwidths="Col1Width|Col2Width|...|ColxWidth" header="HEADER"
headerdivider="HEADERDIVIDER" recorderdivider="RECORDDIVIDER" query="QUERY" sql="SQL"
sort="SORT" maxlines="MAXLINES" startat="START" wrap="WRAP" grid="GRID"
rowsprinted="ROWSPRINTED" offset="OFFSET" width="WIDTH" linewidth="LINEWIDTH">
```

Parameter	Description
TAG:List	(Required) List tag indicator.
appletname	(Required) Applet name as defined in Siebel Tools.
columns	(Required) List of field names in applet to be printed in the specified order, separated by a vertical bar ().
columnwidth	(Optional) Relative weight of each column width. For example, 1 2 means that the first column is half the width of the second column.
header	(Optional) Specifies whether to suppress or show headers. Valid values are TRUE (default) or FALSE. If FALSE, captions in form applets are suppressed. This parameter applies only to form applets.
headerdivider	(Optional, relative mode-only tag) Specifies whether to print a divider below the heading in a list applet. Valid values are TRUE or FALSE (default). If TRUE, a divider is printed below the column heading in list applets. This parameter applies only to list applets.
recorderdivider	(Optional, relative mode-only tag) Specifies whether to print a horizontal divider between records in a list applet. Valid values are TRUE or FALSE (default). If TRUE, a horizontal divider is printed between records in list applets. This parameter applies only to list applets.
query	(Optional) Specifies query specification.
sql	(Optional) Where clause for the SQL statement; sql="\\"status\\"='good'" selects all records where status field is set to good. NOTE: Enclose the field name in double quotes and use backslash followed by double quotes to include a double quote within the parameter, then enclose the value in single quotes.
sort	(Optional) Specifies sort specification.
maxlines	(Optional) The maximum number of records that are printed for this applet. This parameter applies only to list applets.
startat	(Optional) The point at which the specified record in the row set starts printing.

Parameter	Description
wrap	(Optional) Specifies whether word wrap is enabled for text field values. Valid values are TRUE or FALSE (default). If TRUE, word wrap is applied to text field values. This setting does not apply to numeric fields.
grid	(Optional, absolute mode-only) Specifies whether to print a grid between fields, rows and columns. Valid values are TRUE or FALSE (default). If TRUE, a grid is printed between fields, rows, and columns.
rowsprinted	Specifies the number of rows to print for list applets. This parameter does not apply to form applets.
offset	(Optional) Specifies the distance, in millimeters, to the right of the left margin. This can be a number ("40") or a variable that contains a number value ("_X" or "posx"). This is an absolute-mode only parameter.
width	(Optional, absolute mode-only) Specifies the width of the applet in millimeters.
linewidth	(Optional, absolute mode-only) Specifies the line grid thickness in millimeters.

Example

The following example prints out the records (30 x 70 mm respectively) from the CS HH Product Bucket List Applet containing the Status and Product Name fields:

```
<TAG:List appletname="CS HH Product Bucket List Applet" columns="Status|Product Name"
columnwidths="30|70" maxlines="2" line="False" wrap="TRUE" rowsprinted="numrows"
grid="TRUE" linewidth="0.5" offset="10" width="75">
```

LineTo Tag

The LineTo tag draws a line of a specified thickness from the current printer head position to a specified coordinate.

Usage

Use the LineTo tag along with the GetX, GetY, SetX, SetY, and Offset tags to draw lines anywhere in the printable area of your template.

Syntax

```
<TAG:LineTo x="END X" y="END Y" linewidth="THICKNESS">
```

Parameter	Description
TAG:LineTo	(Required) Applet tag indicator.
x	(Required) Position, in millimeters, on the X axis where the line ends from the left margin.
y	(Required) Position, in millimeters, on the Y axis where the line ends from the top margin.
linewidth	(Required) Thickness, in millimeters, of the line.

Example

The following example draws a vertical line of 1 mm thickness from (100,100) to (100,140), and a thin horizontal line from (100,140) to (120,140):

```
<TAG:SetX x="100">
<TAG:SetY y="100">
<TAG:LineTo x="100" y="140" linewidth="1">
<TAG:LineTo x="120" y="140" linewidth="0.2">
```

Margin Tag

The Margin tag sets all margin values for all pages in the print template.

Usage

Use the Margin tag to set all four page margin values. Use at the top of a page if you want to alter margins.

As an absolute mode-only tag, the Margin tag must be declared immediately after the Absolute tag. Any string or image printed on the page before a Margin tag is discarded.

Syntax

```
<TAG:Margin left="LEFT" top="TOP" right="RIGHT" bottom="BOTTOM">
```

Parameter	Description
TAG:Margin	(Required) Applet tag indicator.
left	(Required) Specifies the position, in millimeters, of the left side of the printable area from the left edge of the paper.
top	(Required) Specifies the position, in millimeters, of the top side of the printable area from the top edge of the paper.

Parameter	Description
right	(Required) Specifies the position, in millimeters, of the right side of the printable area from the right edge of the paper.
bottom	(Required) Specifies the position, in millimeters, of the bottom of the printable area from the bottom edge of the paper.

Example

The following example sets the margins at 30 mm from the left and right paper edge, and 50 mm from the top and bottom paper edge:

```
<TAG:Title title="Inventory Report">
<TAG:Absolute>
<TAG:Margin left="30" top="50" right="30" bottom="50">
```

PageBreak Tag

The PageBreak tag forces text that follows the tag to appear on the next page.

Usage

Use the PageBreak tag for multiple page documents or forms.

Syntax

```
<TAG:PageBreak>
```

Parameter	Description
TAG:PageBreak	(Required) Page break tag indicator.

Example

```
<TAG:PageBreak>
```

Portrait Tag

The Portrait tag sets the page orientation (or printout mode) to portrait for the subsequent page or print tags.

Usage

The Portrait tag must be placed after the Margin, Header, or Endofpage tags. If the Portrait tag is specified in the template, users cannot override the orientation even if they change the paper orientation setting in the printer settings dialog box.

Syntax

```
<TAG:Portrait>
```

Parameter	Description
TAG:Portrait	(Required) Portrait tag indicator.

Title Tag

The Title tag is the name used to identify the template.

Usage

The Title tag is a required tag in your print template file.

When you print your document, the Title tag appears in the print job list, but does not appear on the document that is printed. Use static text to add a document title to your template.

Syntax

```
<TAG:Title title="TITLE">
```

Parameter	Description
TAG:Title	(Required) Title tag indicator.
title	(Required) Title text can be between 1 to 255 characters.

Example

```
<TAG:Title title="Quotation">
```

The following is an example of what might be printed.

```
--QUOTATION--
```

Date	3/1/2001	Sales Rep	Mark Jewett
Quote #	12-44RLCZ	Effective From	3/1/2001
Revision #	1	Valid Through	3/15/2001

To:	Bill To:	Ship To:
XYZ Soda Company	Jim Jarvison	Jim Jarvison
123 Anywhere Street	123 Anywhere Street	123 Anywhere Street
Somewhere, AA 99999	Somewhere, AA 99999	Somewhere, AA 99999

Line	Product	Part #	Qty	UnitPrice	Line Price
1	Sizzle Word Processing	WP00011	25	\$500.00	\$12,500.00
2	Sizzle Spreadsheet	SP000012	25	\$450.00	\$11,250.00
3	Sizzle Page Layout	PL00013	10	\$900.00	\$9,000.00
4	One Year Service Agreement	SERVICE	1	\$15,000.00	\$15,000.00

Products	\$32,750.00
Tax	\$2,816.50
Services	\$15,000.00
Total	\$50,566.50

This quote provided based on information provided by Sales Representative and is subject to change at any time. Some other contractual language can appear here, based on how the company designs or customizes the document.

Get and Set Tags

You can add static text to the print template and also set variables. The following print tags allow you to calculate additional information and add it to your reports:

- [“GetCount Tag” on page 264](#)—Calculates the number of records.
- [“GetDate Tag” on page 264](#)—Gets the current date.
- [“GetDirect Tag” on page 265](#)—Returns the business component fields for any specified business component.
- [“GetField Tag” on page 266](#)—Gets the value of a field.
- [“GetRegistry Tag” on page 267](#)—Returns registry values.
- [“GetTime Tag” on page 267](#)—Gets the current time.
- [“GetTotal Tag” on page 268](#)—Calculates the total for a column of data.
- [“SetVariable Tag” on page 269](#)—Assigns a value to a variable.

All of this information is stored in variables that you specify. You can present this information in a report using the Cell and EndofLine tags to create tables of information. For more information about how variable parameters can be used to manipulate data output, see [“Variable Parameter Tags” on page 277](#). For an example of how variables can be used to present information in print templates, see [“Using Variables in Print Templates” on page 277](#).

GetCount Tag

The GetCount tag calculates the number of records in the selected rows and assigns this value to a variable.

Usage

Use the GetCount tag to calculate the number of records and print this value in your report.

Syntax

```
<TAG:GetCount appletname="APPLET NAME" query="QUERY STRING" variable="VARIABLE NAME">
```

Parameter	Description
TAG:GetCount	(Required) Required tag indicator.
appletname	(Required) Name of the applet.
query	(Optional) Search specification for the rows to be included in the row set. If not specified, the current search specification is used. The syntax for the query string is: Field Name Query Statement. You can specify one or more query strings separated by a vertical bar (). For example, Query="Name LIKE 'Sieb*'" "Location LIKE 'H*'"
variable	(Required) Name of variable where the value is stored.

Example

```
<TAG:GetCount appletname="CS HH Product Bucket List Applet" query="Status|Good"
variable="StatusGood">
```

GetDate Tag

The GetDate tag obtains the current date, offsets the date by the number of days specified in the dayoffset parameter, and stores the result in a variable.

Usage

Use the GetDate tag to print a specific date in your report.

Syntax

```
<TAG:GetDate dayoffset="NUMBER OF DAYS" variable="VARIABLE NAME" longformat="DATE
FORMAT">
```

Parameter	Description
TAG:GetDate	(Required) Required tag indicator.

Parameter	Description
dayoffset	(Optional) Number of days by which the current date is offset. For example, – 100 subtracts 100 days from the current date; 100 adds 100 days to the current date. The default is 0.
variable	(Required) Name of the variable where the value is stored.
longformat	(Optional) TRUE prints the date in long date format (for example, Monday, February 11, 2002). FALSE prints the short date format (for example, 2/21/02). The default is FALSE.

Example

```
<TAG:GetDate longformat="TRUE" variable="LongDate">
```

GetDirect Tag

The GetDirect tag returns the data in any business component of the Siebel Handheld application configuration, and stores it in the specified variable.

Usage

Use GetDirect to obtain the field data in any business component of your Siebel Handheld application configuration. GetDirect works the same way as GetFieldData, except that it specifies the business object name and business component name for the appropriate table. GetDirect is similar to the GetField tag in that the specified field value of the first record is stored in the specified variable.

Syntax

```
<TAG:GetDirect businessobject="BUSINESSOBJECT" businesscomponent="BUSINESSCOMPONENT"
fieldname="FIELD" variable="VARIABLE" query="QUERY" sort="SORT" sql="SQL">
```

Parameter	Description
TAG:GetDirect	(Required) Required tag indicator.
businessobject	(Required) Business object name.
businesscomponent	(Optional) Business component name.
fieldname	(Required) Field name.
variable	(Required) Variable to store the data.
query	(Optional) Query specification.
sort	(Optional) Sort specification.

Parameter	Description
sql	(Optional) Where clause for SQL statement; sql="\status"=\'good\' selects all records where status field is set to good. NOTE: Enclose the field name in double quotes and use backslash followed by double quotes to include a double quote within the parameter, then enclose the value in single quotes.

Example

The following example returns the Name field of the first record from the Account business component which is part of the Account business object, and puts it into the variable called getdirectresult1:

```
<TAG:GetDirect businessobject="Account" businesscomponent="Account" fieldname="Name"
variable="getdirectresult1" sql="var_equal">
```

GetField Tag

The GetField tag returns the value of the first record (in the first row of selected rows) in a specified column and assigns the result to a variable.

Usage

Use the GetField tag to print a value without developing a print applet. Design the query and sort strings so that the desired record is the first record in the selected rows (or column).

GetField only allows you to obtain the value in the first record.

Syntax

```
<TAG:GetField appletName="APPLET NAME" fieldname="FIELD NAME" query="QUERY STRING"
sort="SORT STRING" variable="VARIABLE NAME">
```

Parameter	Description
TAG:GetField	(Required) Required tag indicator.
appletname	(Required) Name of the applet.
fieldname	(Required) Name of the field or column.
query	(Optional) Search specification for the rows to be included in the total. If not specified, the current search specification is used.

Parameter	Description
sort	(Optional) Sort specification. If not specified, the current sort specification is used. The syntax is: Field Name [ASC][DESC]. The default is ASC (Ascending). For example: Sort="Account DESC, Date". In the example, the Account field is sorted in descending order, then the date field is sorted in ascending order.
variable	(Required) Name of variable where the value is stored.

Example

```
<TAG:GetField appletname="CS HH Product Bucket List Applet" fieldname="Quantity"
variable="ProdBucketListField">
```

GetRegistry Tag

The GetRegistry tag obtains a value in the registry and assigns it to a variable.

Usage

Use GetRegistry to print the contents of the registry key in your report.

Syntax

```
<TAG:GetRegistry name="REGISTRY NAME" variable="VARIABLE NAME">
```

Parameter	Description
TAG:GetRegistry	(Required) Required tag indicator.
name	(Required) Value in the registry.
variable	(Required) Name of the variable where the value is stored.

Example

```
<TAG:GetRegistry name="InstallDir" variable="Registry">
```

GetTime Tag

The GetTime tag obtains the current time, offsets the time by the number of seconds specified by the Secondoffset parameter, and assigns the result to a variable.

Usage

Use the GetTime tag to print a specific time in your report.

Syntax

```
<TAG:GetTime secondoffset="NUMBER OF SECONDS" variable="VARIABLE NAME">
```

Parameter	Description
TAG:GetTime	(Required) Required tag indicator.
secondoffset	(Optional) Number of seconds by which the current time is offset. For example, -100 subtracts 100 seconds from the current time; 100 adds 100 seconds to the current time. The default is 0.
variable	(Required) Name of variable where the value is stored.

Example

```
<TAG:GetTime secondoffset="3600" variable="Time">
```

GetTotal Tag

The GetTotal tag calculates the total for a specified column (or for all selected rows) and assigns the value to a variable.

Usage

Use the GetTotal tag to calculate a column total and display the total in your report.

Syntax

```
<TAG:GetTotal appletname="APPLET NAME" fieldName="FIELD NAME" query="QUERY STRING" variable="VARIABLE NAME">
```

Parameter	Description
TAG:GetTotal	(Required) Required tag indicator.
appletname	(Required) Name of the applet.
fieldname	(Required) Name of the field or column. Specify a field or column with numeric data. If you specify a field with non-numeric data, a 0 is assigned to the variable.
query	(Optional) Search specification for the rows to be included in the total. If not specified, the current search specification is used. The syntax for the query string is: Field Name Query Statement. You can specify one or more query strings separated by a vertical bar (). For example, Query="Name LIKE 'Sieb*'" "Location LIKE 'H*'"
variable	(Required) Name of variable where the value is stored.

Example

```
<TAG:GetTotal appletname="CS HH Product Bucket List Applet" fieldname="Quantity"
variable="ProdBucketListTotal">
```

SetVariable Tag

The SetVariable tag sets a value to a variable.

Usage

Use the SetVariable tag to assign a value to a variable. You can then print the value by specifying the variable in the Cell tag.

Syntax

```
<TAG:SetVariable name="VALUE" variable="VARIABLE NAME">
```

Parameter	Description
TAG:SetVariable	(Required) Required tag indicator.
name	(Required) A value.
variable	(Required) Name of variable where the value is stored.

Example

```
<TAG:SetVariable name="100" variable="TotalQuantity">
```

Control Positioning Tags

The following tags can be used to control positioning of printer heads. These tags can be used in conjunction with the Applet (SetY only), Cell, Picture, and LineTo tags to position objects in the printable area.

- [“GetX Tag” on page 269](#)—Returns the position of the printer head along the X axis.
- [“GetY Tag” on page 270](#)—Returns the position of the printer head along the Y axis.
- [“Offset Tag” on page 271](#)—Adds a number to a number value stored in a variable.
- [“SetX Tag” on page 271](#)—Sets the position of the printer head along the X axis.
- [“SetY Tag” on page 272](#)—Sets the position of the printer head along the Y axis.

GetX Tag

The GetX tag returns the printer head position, measured from the left margin (in millimeters) along the X axis, and assigns it to the input variable.

Usage

GetX is an absolute mode-only tag which can be used along with the SetX, SetY, and GetY tags to control the position of the printer head. Use the GetX tag in conjunction with the Cell, Picture, and Lineto tags to position objects in the printable area.

Syntax

```
<TAG:GetX variable="VARIABLE NAME">
```

Parameter	Description
TAG:GetX	(Required) Applet tag indicator.
variable	(Required) Name of the variable to which the X axis value of the current printer head position is stored.

Example

The following example returns the current X axis position of the printer head and stores it in the posx variable:

```
<TAG:GetX variable="posx">
```

GetY Tag

The GetY tag returns the printer head position, measured from the top margin (in millimeters) along the Y axis, and assigns it to the input variable.

Usage

GetY is an absolute mode-only tag that can be used with the SetX, SetY, and GetX tags to control the position of the printer head. Use the GetY tag in conjunction with the Cell, Picture, and Lineto tags to position objects in the printable area.

Syntax

```
<TAG:GetY variable="VARIABLE NAME">
```

Parameter	Description
TAG:GetY	(Required) Applet tag indicator.
variable	(Required) Name of the variable to which the Y axis value of the current printer head position is stored.

Example

The following example returns the current Y axis position of the printer head and stores it in the posy variable:

```
<TAG:GetY variable="posy">
```

Offset Tag

The Offset tag adds a value to a number value in a variable.

Usage

Use the Offset tag to perform (positive or negative) offset variable calculations. Offset can be used with SetX and SetY to position the printer head. Special variable names `_X` and `_Y` are reserved variables which indicate the current x and y coordinates of the printer head position. These variable names can be used to offset current printer head coordinates by a specified number value.

Syntax

```
<TAG:Offset variable="VARIABLE NAME" offset="NUMBER VALUE">
```

Parameter	Description
TAG:Offset	(Required) Applet tag indicator.
variable	(Required) Name of the variable to be offset. <code>_X</code> and <code>_Y</code> can be used to offset the current printer head position.
offset	(Required) Number value with which to offset the variable. This can be a positive or negative value.

Example

The following examples yield the same result. The examples place the printer head position at (+40,-40) from the current head position (`_X`, `_Y`). If the current printer head is (100,50), then this means that the new printer head position is (140,10):

```
<TAG:GetX variable="posx">
<TAG:GetY variable="posy">

<TAG:Offset variable="posx" offset="40">
<TAG:Offset variable="posy" offset="-40">

<TAG:SetX x="<variable>posx">
<TAG:SetY y="<variable>posy">

<TAG:Offset variable="_X" offset="40">
<TAG:Offset variable="_Y" offset="-40">
```

SetX Tag

The SetX tag sets the printer head position along the X axis.

Usage

SetX is an absolute mode-only tag that can be used with the GetX, GetY, and SetY tags to control the position of the printer head. Use the SetX tag in conjunction with the Cell, Applet, and Lineto tags to position objects in the printable area.

SetX cannot be used to position static text because full-line text is meant for printing text across the full width of the page. It is recommended that you use the Cell tag to position text in the exact location.

Syntax

```
<TAG:SetX x="X">
```

Parameter	Description
TAG:SetX	(Required) Applet tag indicator.
x	(Required) String value or variable if used with GetX tag specifying where to position the printer head based on its distance to the right, in millimeter from the left margin of the paper.

Example

The following sets the printer head position to 100 millimeters from the left margin:

```
<TAG:SetX x="100">
```

If using SetX with the GetX and Offset tags, the following example sets the printer head position 40 millimeters to the right of the current printer head position. This means that if the current printer head position is 100 millimeters from the left margin, then the new printer head position is 140 millimeters from the left margin:

```
<TAG:GetX variable="posx">  
<TAG:Offset variable="posx" offset="40">  
<TAG:SetX x="<variable>posx">
```

SetY Tag

The SetY tag sets the printer head position along the Y axis.

Usage

SetY is an absolute mode-only tag which can be used along with the GetX, GetY, and SetX tags to control the position of the printer head. Use the SetY tag in conjunction with the Cell, Applet, and Lineto tags to position objects in the printable area.

Syntax

```
<TAG:SetY y="Y">
```

Parameter	Description
TAG:SetY	(Required) Applet tag indicator.
y	(Required) String value or variable (if used with GetY tag) specifying where to position the printer head based on its distance to the bottom (in millimeters) from the top margin of the paper.

Example

The following sets the printer head position to 40 mm from the top margin:

```
<TAG:SetY y="40">
```

If using SetY with the GetY and Offset tags, the following example sets the printer head position 40 mm below the current printer head position. This means that if the current printer head position is 100 mm from the top margin, then the new printer head position is 140 mm from the top margin:

```
<TAG:GetY variable="posy">
<TAG:Offset variable="posy" offset="40">]
<TAG:SetY y="<variable>posy">
```

Data Manipulation and Logic Tags

The following tags are used to manipulate data, perform logical calculations and queries on print data output:

- **"Concat Tag" on page 273**—Appends or prepends a string to a string already stored in a variable
- **"Conditional Tags" on page 274**—Enable the conditional output of print data

NOTE: Double quote characters—Can be used in values, provided they are preceded by a leading backslash.
- **"sql (WHERE) Tag" on page 276**—Used in various tags to perform a simple query on the underlying print data
- **"Variable Parameter Tags" on page 277**—Are accepted for Applet, Header, and Footer tags

Concat Tag

The Concat tag appends or prepends a value to a string stored in a variable.

Usage

Use the Concat tag to combine string variables or simple string texts. The resulting (concatenated) string is stored in the original variable specified.

Syntax

```
<TAG:CONCAT variable= "VARIABLE NAME" prepend="PREPEND" append="APPEND">
```

Parameter	Description
TAG:Concat	(Required) Applet tag indicator.
variable	(Required) Name of the variable to be appended or prepended. The resulting string is stored in this variable
prepend	(Optional) Specifies whether to add a simple text string or variable in front of an existing stored variable. The variable must be specified in the form "<variable>name of variable". Prepend is required if Append is not specified.
append	(Optional) Specifies whether to add a simple text string or variable to the end of an existing stored variable. The variable must be specified in the form "<variable>name of variable". Append is required if Prepend is not specified.

Example

The following example sets the variables var_equal and var_criteria, then appends var_criteria and prepends a simple text string to var_equal. The concatenated string is stored in var_equal:

```
<TAG:SetVariable variable="var_equal" name=" ">
<TAG:SetVariable variable="var_criteria" name=" 'Good' ">
<TAG:Concat variable="var_equal" prepend="\status\" " append="<variable>var_criteria">
```

Conditional Tags

The conditional tag compares a variable against a criterion according to the operator, and decides to execute either an IF or an ELSE clause.

Usage

Use conditional tags to develop simple if-then logic to control the output of your print data. It is recommended that if-then-else tags are kept simple to ensure that print output is successful.

Syntax

```

<TAG:IF variable="VARIABLE NAME" operator="OPERATOR" criteria="CRITERIA" numeric=
"NUMERIC">
  <TAG:...>
  <TAG:...>
<TAG:ELSE>
  <TAG:...>
  <TAG:...>

```

NOTE: If the comparison is true, the tags immediately following the <TAG:IF...> tag are executed; if the comparison is false, the tags immediately following the <TAG:ELSE...> tag are executed.

Parameter	Description
TAG:IF	(Required) Applet tag indicator.
TAG:ELSE	(Required) Applet tag indicator
variable	(Required) Name of the variable being compared.
criteria	String value to which the variable will be compared.
operator	(Required) This can be one of the following: ■ EQ signifies Equal to ■ GT signifies Greater than ■ GE signifies Greater than or equal to ■ LT signifies Less than ■ LE signifies Less than or equal to
numeric	Specifies whether the condition is evaluated as a numeric comparison or a string comparison. Valid values are TRUE (numeric comparison) or FALSE (string comparison). For a string comparison, use the vertical bar () as an OR operator.

Example

The following example evaluates whether the variable numrows is equal to 15, 17, or 19:

- If true, then a string similar to the following is printed: Printed [numrows] rows that are odd
- If false, then a string similar to the following is printed: Printed [numrows] rows that are even

```

<TAG:IF variable="numrows" operator="EQ" criteria="15|17|19">
  <TAG:Concat variable="numrows" append=" rows." prepend="Printed ">
  <TAG:Concat variable="numrows" append=" that are odd.">
<TAG:ELSE>
  <TAG:Concat variable="numrows" append=" rows." prepend="Printed ">
  <TAG:Concat variable="numrows" append=" that are even.">
<TAG:ENDIF>

```

sql (WHERE) Tag

The sql (WHERE) tag is placed as a parameter, and so can be a value stored in a string variable.

Usage

Use the sql (WHERE) tag, for example, as follows:

```
sql="\Status\"='Defective'" and \"Quantity\">500"
```

in the Applet, GetTotal, GetField, GetDirect, and GetCount tags.

Syntax

```
SQL="\Status\"='Defective'"
```

Example 1

```
<TAG:Applet name="CS HH Product Bucket List Applet" sql="\Status\"='Defective'"
maxlines="2" startat="10" recorddivider="FALSE" wrap="TRUE" grid="TRUE" offset="0"
width="75" linewidth="0.4">
```

```
<TAG:SETVARIABLE variable="var_equal" name="">
<TAG:SETVARIABLE variable="var_fieldname" name="\Status\">
<TAG:SETVARIABLE variable="var_criteria" name="'Good'">
```

```
<TAG:Concat variable="var_equal" prepend="<variable>var_fieldname">
append="<variable>var_criteria">
```

```
<TAG:SETY y="0">
```

```
<TAG:Applet name="CS HH Product Bucket List Applet" sql="<variable>var_equal"
maxlines="2" startat="10" recorddivider="FALSE" wrap="TRUE" grid="TRUE" offset="80"
width="75">
```

Example 2

```
<TAG:Getfield appletname="CS HH Orders Print Applet" fieldname="Account" variable=
"var_name">
```

```
<TAG:SETVARIABLE variable="var_where" name="">
<TAG:SETVARIABLE variable="var_fieldname" name="\Name\">
```

```
<TAG:CONCAT variable="var_where" prepend="<variable>var_fieldname" append=
"<variable>var10">
```

```
<TAG:CONCAT variable="var_where" append="">
```

```
<TAG:GETDIRECT sql="<variable>var_equal" businessobject="Account" businesscomponent=
"Account" fieldname="Name" variable="var15">
```

```
<TAG:CELL name="<variable>var15" left="10" top="80" right="70" bottom="100" box="TRUE"
linewidth="0.4" align="RIGHT">
```

Variable Parameter Tags

Most parameters support variables. For example, a user can store a field value and use the field value as one of the parameters in a subsequent tag. Combining this feature with the Concat and Conditional tags and the SQL (WHERE) tag, you can construct complex query statements and print out the results.

Example 1

After the following tag sequence, var_equal contains "\"Status\"='Defective'":

```
<TAG:SETVARIABLE variable="var_equal" name="">
<TAG:SETVARIABLE variable="var_fieldname" name=""Status\"">
<TAG:SETVARIABLE variable="var_criteria" name=""Good\"">

<TAG:CONCAT variable="var_equal" prepend="<variable>var_fieldname" append=
"<variable>var_criteria">
```

NOTE: To include double quotes in a parameter, include a backslash before them.

Example 2

The following example includes a variable in the header tag:

```
<TAG:HEADER left="<page>" center="<variable>numrows" right="<date>">
```

Using Variables in Print Templates

The following example shows how to use variables in a print template.

```
<TAG:Title Title="Inventory Report">

<REM: *****Variable Assignment Examples*****>

<TAG:SetVariable name="THIS IS VARIABLE" variable="VarStr">
<TAG:GetRegistry name="InstallDir" variable="VarReg">
<TAG:GetDate dayoffset="10" variable="VarDate">
<TAG:GetDate longformat="TRUE" variable="VarLongDate">
<TAG:GetTime secondoffset="-3600" variable="VarTime">
<TAG:GetTotal appletname="CS HH Product Bucket List Applet" fieldname="Quantity"
variable="VarTotal">
<TAG:GetTotal appletname="CS HH Product Bucket List Applet" fieldname="Quantity"
query="Status|Good" variable="VarGoodTotal">
<TAG:GetTotal appletname="CS HH Product Bucket List Applet" fieldname="Quantity"
query="Status|Defective" variable="VarDefectiveTotal">
<TAG:GetField appletname="CS HH Product Bucket List Applet" fieldname="Quantity"
variable="VarQuantityField">
<TAG:GetCount appletname="CS HH Product Bucket List Applet" query="Status|Good"
variable="VarGoodCount">
<TAG:GetCount appletname="CS HH Product Bucket List Applet" query="Status|Defective"
variable="VarDefectiveCount">

<REM: *****Variable Assignment Examples End*****>
```

```

<REM: Inventory Print Template. This template includes 3 applets. The ENU template>

<TAG:Format Face="Helvetica" Size="16" Align="Center">
[Distributor Name
Street Address
City, Country Postal Code
Phone Number   Fax Number]

<TAG:Format Face="Helvetica" Size="20" Bold="TRUE" Align="Center">
Inventory Report
<TAG:Format Face="Helvetica" Size="8" >
<TAG:Applet Name="CS HH Inv Loc Print Applet" Caption="TRUE" Wrap="TRUE">
<TAG:Applet Name="CS HH Product Bucket List Applet" Line="FALSE" Headerdivider="TRUE"
Recorddivider="FALSE" Wrap="TRUE">

<REM: *****Variable Usage Example*****>
<TAG:Divider Weight="3" startat="20" endat="80">
<TAG:Cell startat="0" endat="50" name="TOTAL:" Align="RIGHT">
<TAG:Cell startat="50" endat="100" variable="VarTotal" Align="RIGHT">
<TAG:EndOfLine>

<TAG:Cell startat="0" endat="50" name="TOTAL Defective:" Align="RIGHT">
<TAG:Cell startat="50" endat="100" variable="VarDefectiveTotal" Align="RIGHT">
<TAG:EndOfLine>

<TAG:Cell startat="0" endat="50" name="TOTAL Good:" Align="RIGHT">
<TAG:Cell startat="50" endat="100" variable="VarGoodTotal" Align="RIGHT">
<TAG:EndOfLine>

<TAG:Cell startat="0" endat="50" name="Defective Count:" Align="RIGHT">
<TAG:Cell startat="50" endat="100" variable="VarDefectiveCount" Align="RIGHT">
<TAG:EndOfLine>

<TAG:Cell startat="0" endat="50" name="Good Count:" Align="RIGHT">
<TAG:Cell startat="50" endat="100" variable="VarGoodCount" Align="RIGHT">
<TAG:EndOfLine>

<TAG:Cell startat="50" endat="100" variable="VarReg">
<TAG:EndOfLine>

<TAG:Cell startat="50" endat="100" variable="VarStr">
<TAG:EndOfLine>

<TAG:Cell startat="0" endat="30" variable="VarDate">
<TAG:Cell startat="30" endat="70" variable="VarLongDate">
<TAG:Cell startat="70" endat="100" variable="VarTime">
<TAG:EndOfLine>

<REM: *****Variable Usage Example End*****>
<TAG:Divider Weight="2">
<TAG:Format Face="Helvetica" Size="12" Align="LEFT">
Warehouse Signature
<TAG:Divider Weight="2">
<TAG:Format Face="Helvetica" Size="12" Align="RIGHT">
Rep Signature

```

F

Print Configuration Settings

This appendix describes the print configuration settings that can be set up for your Siebel Handheld application, and includes the following topic:

- [“Overview of Print Configuration Settings for Siebel Handheld Applications” on page 279](#)
- [“Print Configuration Settings” on page 280](#)

Overview of Print Configuration Settings for Siebel Handheld Applications

The administrator sets up the default printer settings in the setup.ini file located in the setup directory. There are a number of parameters to specify printing on Siebel Handheld applications. The parameters specify the following:

- Printer attributes (printer model, port, baud rate, and printer handshake).
- Printing attributes (portrait or landscape orientation, print density and quality, use of compression techniques, and advancing continuous-feed paper).
- Dimensions of the paper (U.S. or European standard paper sizes or custom-size paper).
- Margin settings of the pages (left, right, top, and bottom margins).

These parameters are specified in the [Printing] section of the setup.ini file located in the setup directory. The file contains default settings for all the printing parameters. Review the settings in the file to verify that these settings will work for your printing environment. If necessary, edit the settings as required. You can use any text editor to edit the file.

Printing parameters are listed below in alphabetical order. Parameters are set up using the following syntax:

```
PARAMETER_NAME = VALUE
```

For example:

```
PrinterType = 1
```

Print Configuration Settings

The print configuration settings that can be set up for your Siebel Handheld application are:

- [“MarginBottom” on page 280](#)
- [“MarginLeft” on page 281](#)
- [“MarginRight” on page 281](#)
- [“MarginTop” on page 281](#)
- [“PaperHeight” on page 281](#)
- [“PaperSize” on page 281](#)
- [“PaperWidth” on page 282](#)
- [“PrinterBaudrate” on page 282](#)
- [“PrinterCompressed” on page 283](#)
- [“PrinterDensity” on page 283](#)
- [“PrinterDither” on page 283](#)
- [“PrinterDraftMode” on page 284](#)
- [“PrinterFormFeed” on page 284](#)
- [“PrinterHandshake” on page 285](#)
- [“PrinterOrientation” on page 285](#)
- [“PrinterPort” on page 285](#)
- [“PrinterType” on page 286](#)
- [“PrinterUserSelect” on page 287](#)
- [“Default Printing Settings” on page 287](#)

MarginBottom

Use the MarginBottom parameter to specify the dimensions of the bottom margin of your page. Specify the margin in millimeters using a whole number; decimal fractions are not valid. The default is 5 millimeters.

The data specified in the Footer tag of the print template is printed in the margin specified by MarginBottom. Therefore, if the print template includes a Footer tag, you must specify a wide enough bottom margin to accommodate the footer. MarginBottom must be set to a minimum of 20 millimeters. For more information about MarginBottom, see [“Footer Tag” on page 253](#).

MarginLeft

Use the MarginLeft parameter to specify the width of the left margin of your page. Specify the margin in millimeters using a whole number; decimal fractions are not valid. The default is 5 millimeters.

MarginRight

Use the MarginRight parameter to specify the width of the right margin of your page. Specify the margin in millimeters using a whole number; decimal fractions are not valid. The default is 5 millimeters.

MarginTop

Use the MarginTop parameter to specify the dimensions of the top margin of your page. Specify the margin in millimeters using a whole number; decimal fractions are not valid. The default is 5 millimeters.

The data specified in the Header tag of the print template is printed in the margin specified by MarginTop. Therefore, if the print template includes a Header tag, you must specify a wide enough top margin to accommodate the footer. MarginTop must be set to a minimum of 20 millimeters. For more information about MarginTop, see ["Header Tag" on page 256](#).

PaperHeight

If the paper that your printer uses is not one of the supported standard sizes, then set PaperSize to 5 (custom paper dimensions). Then, specify the height of the paper, in millimeters, using the PaperHeight parameter. You must use a whole number; decimal fractions are not valid. The default is 280 millimeters. If you specify a value of 1–4 for PaperSize, the PaperHeight parameter is ignored.

Use the PaperWidth parameter to specify the width of the paper.

PaperSize

Specify one of the standard paper sizes, or specify a custom paper size. [Table 37](#) describes the valid paper dimension values that you can specify for PaperSize. If you specify a custom paper size (value 5 in [Table 37](#)), you must also specify the PaperWidth and PaperHeight parameters.

Table 37. Paper Dimensions (1 of 2)

Value	Description
1	Letter size (8.5" x 11.5")
2	A4 (210 mm x 297 mm)

Table 37. Paper Dimensions (2 of 2)

Value	Description
3	B5 (176 mm x 250 mm)
4	Legal size (8.5" x 14")
5 (default)	Custom paper dimensions

PaperWidth

If the paper that your printer is printing to is not one of the supported standard sizes, then set PaperSize to 5 (custom paper dimensions). Then, you must specify the width measurement of the paper, in millimeters, using the PaperWidth parameter. You must use a whole number; decimal fractions are not valid. The default is 5 millimeters. If you specify a value of 1–4 for PaperSize, the PaperWidth parameter is ignored.

Use the PaperHeight parameter to specify the length of the paper.

PrinterBaudrate

Use PrinterBaudrate to specify the speed of the data transmission for the printer. [Table 38](#) describes the valid values you can specify for PrinterBaudRate. The PrinterBaudrate is applicable only when the PrinterPort is set to serial port.

Table 38. Printer Baud Rate

Value	Description
0	Always use 0 for LPT or printer ports, or for COM ports that communicate with the printer at 4800 baud.
1 (default)	9600 baud
2	19200 baud
3	38400 baud
4	57600 baud
5	115200 baud

PrinterCompressed

Use PrinterCompressed to specify the data compression mode. [Table 39](#) describes the valid values you can specify for PrinterCompressed. For the printers supported in this release, always set PrinterCompressed to 1.

Table 39. Data Compression

Value	Description
0	No compression techniques used
1 (default)	Use any known compression

PrinterDensity

Use the PrinterDensity parameter to get a lighter or darker output from the printer. Start with the default setting, 2, which corresponds to the printer manufacturer's default. As you get feedback from the field, you might need to adjust this setting.

The valid values are 0–4 where 0 is the lightest print density, 4 is the heaviest print density, and 2 is average print density.

PrinterDither

Use to specify the method by which different colors are represented. [Table 40](#) describes the valid values you can specify for PrinterDither. For the printers supported in this release, PrinterDither must always be set to 0.

Table 40. Print Dithering

Value	Description
0 (default)	Use color diffusion
1	Use dithering

PrinterDraftMode

Use PrinterDraftMode to specify the quality of the printing. [Table 41](#) describes the valid values you can specify for PrinterDraftMode. For the printers supported in this release, PrinterDraftMode must always be set to 0.

Table 41. Print Quality

Value	Description
0 (default)	Use the highest quality printing
1	Use a lower quality printing if available

PrinterFormFeed

Use PrinterFormFeed to specify how paper advances to the next page. [Table 42](#) describes the valid values you can specify for PrinterFormFeed.

If using sheets of paper, set PrinterFormFeed to 0.

Specify 1 or 2 for continuous-feed paper, as follows:

- Set PrinterFormFeed to 1 if you do not need to conserve paper or if you want pages of uniform length. The printer scrolls to the length specified by the PageHeight parameter and trims the page there.
- Set PrinterFormFeed to 2 to conserve paper or if it does not matter if your pages are of varying length. In this case, the printer scrolls 25 millimeters beyond the last printed line and trims the page there. The scroll distance, 25 mm, is not customizable.

For both values, 1 and 2, the page length must never exceed PageHeight.

Table 42. Printer Form Feed

Value	Description
0 (default)	Printer sends a form feed command to the printer at the end of each page. Use this setting for sheet paper.
1	Printer scrolls the page to the length specified by the PaperHeight parameter.
2	Printer scrolls the page 25 millimeters past the last printed line of the page.

PrinterHandshake

Use PrinterHandshake to define the serial port handshake. [Table 43](#) describes the valid values you can specify for PrinterHandshake. The PrinterHandshake parameter applies only when the printer port is a Com1, Com2, or any COM port. If PrinterPort is set to Com1 or Com2, then set PrinterHandshake to 1.

Table 43. Printer Handshake

Value	Description
0	Uses Xon or Xoff
1 (default)	Uses hardware control lines
2	No handshaking of serial port

PrinterOrientation

Specify whether the paper is to be oriented vertically (portrait) or horizontally (landscape). [Table 44](#) describes the valid values you can specify for PrinterOrientation. Not all printers can print in landscape orientation. Therefore, you will need to check the specifications for your printer.

Table 44. Paper Orientation

Value	Description
1 (default)	Portrait (vertical)
2	Landscape (horizontal)

PrinterPort

Specify the port to which the printer is connected with the PrinterPort parameter. [Table 45](#) describes the valid values you can specify for PrinterPort. If PrinterPort is an LPT port or a network path (value 2 or 9 in [Table 45](#)), then the PrinterBaudrate must be set to 0.

NOTE: The communication port on the printer must be compatible with the host PDA. For IrDA, the serial communication setting must be set correctly to allow reliable printing.

Table 45. Printer Port

Value	Description
0	Com1: serial port
1	Com2: serial port
2	LPT: parallel port

Table 45. Printer Port

Value	Description
3 (default)	IR Infrared port
4	Com3: serial port
5	Com4: serial port
6	Com5: serial port
7	Com6: serial port
8	Print to OUTPUT.PRN
9	Print to network address
10	Bluetooth BlueCard solution by Wireless Solutions
11	Socket PNC Bluetooth card support
12	Bluetooth BlueCard solution by Anycom
13	Com7: serial port
14	Com8: serial port

PrinterType

Specify the type of printer using the PrinterType parameter. [Table 46](#) lists the printers supported by the Printer CE print driver used by Siebel applications.

Table 46. Supported Printers

Value	Description
0	Canon BubbleJet compatible printers
1	Citizen PD-04
2	Citizen PN60i
3	Epson ESC/P 2 compatible printers
4	Epson Stylus compatible printers
5	HP PCL compatible - includes DeskJet and LaserJet
6	Pentax PocketJet 200
7	Pentax PocketJet II
8	Seiko DPU-3445
9	Generic Epson compatible 180DPI 24-pin printers (LQ/ESC)
10	Generic Epson compatible 360DPI 24-pin printers (LQ/ESC)

Table 46. Supported Printers

Value	Description
11	Generic Epson compatible 203DPI 24-pin printers (LQ/ESC)
12	Extech 2"
13	Extech 3"
14	O'Neil MicroFlash
15	DymoCoStar label printers
16	Seiko LabelWriter printers
17	Extech 4"
18	SiPix A6 printer
102	Generic 40 column Dot Matrix Printer
108	Generic 80 column Dot Matrix Printer

PrinterUserSelect

Use PrinterUserSelect to enable a printer dialog box for Siebel Handheld applications, whereby users are prompted via a dialog box to specify the settings for their printer each time they initiate a print job. For more information about the printer settings dialog box, see ["Configuring a Printer Settings Dialog Box for the Siebel Handheld Application"](#) on page 58.

Table 47 describes the valid values you can specify for PrinterUserSelect.

Table 47. Printer User Select

Value	Description
1	Displays a printer dialog box for each copy of each form if multi-form, multi-copy printing is used.
2	Displays a printer dialog box only once when the first form starts printing. The same settings are used for all copies if multi-form, multi-copy printing is used.

Default Printing Settings

The following are the printing parameters from the setup.ini file. The values shown are the default settings.

[Printing]

PrinterType= 14
PrinterPort= 3
PrinterBaudrate= 1
PrinterHandshake= 1
PrinterOrientation= 1
PrinterDensity= 2
PrinterCompressed= 1
PrinterDither= 0
PrinterDraftMode= 0
PrinterFormFeed= 0
PaperSize= 5
PaperWidth= 115
PaperHeight= 280
MarginLeft= 5
MarginRight= 5
MarginTop= 5
MarginBottom= 5



COM Extensibility

This appendix covers the extension of Component Object Model (COM) support for Siebel Handheld applications. The audience for this appendix includes Siebel application developers and Siebel integration developers. The following topics are covered in this appendix:

- [About COM Extensibility on page 289](#)
- [Process of Implementing a SCEC on page 296](#)

About COM Extensibility

COM support for Siebel Handheld applications allows customers to programmatically extend the functionality of the Handheld application. By developing a COM object according to a predefined Siebel specification, users can customize responses to Siebel events. Action request methods allow a customized COM object to interact with the Siebel Handheld application.

Overview of the SCEC Framework

This topic describes the major components of the Siebel Handheld CE (SHCE) COM Extension Framework.

An SHCE COM Extension Component (SCEC) is part of the Siebel Handheld application architecture. One or more SCECs can subscribe to event notifications on Siebel objects, including applets, business components, business services, and the application. A SCEC can perform action requests on the Siebel Handheld application to manipulate Siebel objects. SCECs implement an interface derived from `ISHCEEEvent`, which is defined by the COM Extension Framework.

Siebel events are defined as actionable requests triggered by application logic. Externally defined program modules, implemented by the customer, will handle these events. This feature allows customer-defined business logic to extend the application to handle third-party logic and validation. For example, `Buscomp::PreWriteRecord` will be called before any record is written to the Siebel Server database, thus allowing you to perform early, specialized validation on a particular field.

Siebel action requests are defined as APIs, implemented by the Siebel Handheld architecture, which allow external customer modules to perform standard operations on the Siebel Handheld application. All action request interfaces are derived from the base `ISHCEActionReq` interface. For example, `BusComp::SetFieldValue` can be called by a SCEC in order to set a specific value for a Business Component.

Both Siebel objects and SCECs exist within the Siebel process boundary in each layer of the Siebel architecture. For example, COM components can extend the applet functionality in the user interface layer, while on the object manager layer, extension objects can implement specialized logic by interacting with business components, business objects, and services.

The Siebel object and the SCEC maintain references to each other and interact through synchronous method calls. The Siebel object blocks while the SCEC implements custom behavior for the event to which it is subscribed. After the SCEC handles an event, it returns control to the Siebel object. The COM component uses a returned value to specify whether the Siebel object can continue processing the event normally, cancel operations, or return an error.

Receiving Event Notifications

To intercept Siebel object events, a customer must create a SCEC that implements one of the exported SHCE COM Event Interfaces (SCEI) derived from ISHCEEEvent. Although both the Siebel object and the SCEC are within the Siebel Handheld application process boundary, the SCEC is the COM server, and the Siebel Handheld application is the COM client consumer. All SCECs are free-threaded, in-process (.dll) COM servers.

A SCEC implements one of the event interfaces derived from the generic event interface (ISHCEEEvent). The event interfaces are listed in [Table 48](#).

Table 48. SCEI Interfaces

SHCE COM Event Interface (SCEI)	Description
ISHCEEEvent	Contains generic interfaces common to all SCEIs. All event interfaces are derived from ISHCEEEvent.
ISHCEAppletEvent	Used for applet events.
ISHCEApplicationEvent	Used for application and global events.
ISHCEBusCompEvent	Used for business component events.
ISHCEServiceEvent	Used for service events.

For example, to receive notifications that a business component (such as Account) is committing a record, a SCEC implements the event interface corresponding to the business component events (ISHCEBusCompEvent interface), and adds the specialized handling code in the method (PreWriteRecord).

User properties of the Siebel object in Siebel Tools indicate the events for which a SCEC will be notified. For more information about Tools configuration, see [Configuring SCEC User Properties in Siebel Tools on page 308](#). When a Siebel event, to which a SCEC is subscribed, occurs, the Siebel object will instantiate the SCEC and notify it of the event by invoking one of the SCEI interface methods.

A SCEC can manipulate the program flow by returning one of the HRESULT codes listed in [Table 49](#).

Table 49. SCEI Return Codes

SHCE COM Event Interface (SCEI) Return Codes	Description
EL_EVENT_EMPTY	No event procedure was found. Log a warning and perform normal processing.
EL_EVENT_CONTINUE	The event procedure ran successfully. The Siebel application should continue to perform normal processing.
EL_EVENT_COMPLETE	The event procedure performed the operation and ran successfully. The Siebel application should return without performing any additional processing (without performing normal processing).
EL_EVENT_ERROR	The event procedure generated an error. Return with error.
EL_EVENT_CANCEL	The event procedure was cancelled. Return without error.

COM extensibility supports the following Siebel events:

Applet_GotFocus	Application_PreSync	BusComp_PreNewRecord
Applet_InvokeMethod	Application_Start	BusComp_PreQuery
Applet_Load	BusComp_Associate	BusComp_PreSetFieldValue
Applet_PreInvokeMethod	BusComp_ChangeRecord	BusComp_PreWriteRecord
Applet_TaskButtonPressed	BusComp_DeleteRecord	BusComp_Query
Application_Close	BusComp_InvokeMethod	BusComp_SetFieldValue
Application_InvokeMethod	BusComp_NewRecord	BusComp_WriteRecord
Application_Navigate	BusComp_PreAssociate	Service_InvokeMethod
Application_PreClose	BusComp_PreDeleteRecord	Service_PreCanInvokeMethod
Application_PreInvokeMethod	BusComp_PreGetFieldValue	Service_PreInvokeMethod
Application_PreNavigate	BusComp_PreInvokeMethod	

Invoking Siebel Methods (Action Requests)

A SCEC uses action request interface references to interact with Siebel objects. Immediately after creating a SCEC, the Siebel Handheld application provides the action request interface pointers of the root Siebel objects to the SCEC and invokes the appropriate SCEC event method. A SCEC can use the root interface references to access and manipulate all other Siebel objects. When a SCEC intercepts a Siebel event, it can customize business logic by invoking action requests through the SHCE COM Action Request Interfaces (SCARI). Action request interface references to other objects are available from the root interfaces listed in [Table 50](#).

Table 50. SCARI Interfaces

SHCE COM Action Request Interface (SCARI)	Description
ISHCEActionReq	Generic interface from which all other callback interfaces are derived.
ISHCEApplet	Used for applet methods.
ISHCEApplication	Used for application and global methods.
ISHCEBusComp	Used for business component methods.
ISHCEBusObject	Used for business object methods.
ISHCEPropertySet	Property sets used to pass input arguments to other object methods.
ISHCEService	Used for service events.

COM Extensibility supports the Siebel Action Requests listed in [Table 51](#).

Table 51. SCARI Interfaces and Action Requests

SHCE COM Action Request Interface (SCARI)	Action Request
Applet Action Requests: ISHCEApplet	BusComp
	BusObject
	DrillDown
	GetChildProperty
	InvokeMethod
	Name
	SetChildProperty

Table 51. SCARI Interfaces and Action Requests

SHCE COM Action Request Interface (SCARI)	Action Request
Application Action Requests: ISHCEApplication	ActiveApplet
	ActiveBusComp
	ActiveBusObject
	GetBusObject
	GetLastErrCode
	GetLastErrText
	GetLocalString
	GetProperty
	GetService
	GetUserProperty
	GotoView
	InvokeMethod
	NewPropertySet
	PlaySound
	SetActiveApplet
	SetErrorCode
	SiebelMessageBox
	Trace
Business Component Action Requests: ISHCEBusComp	Associate
	BusObject
	CheckActiveRow
	ClearToQuery
	DeleteRecord
	EnableFullFetch
	ExecuteQuery
	FirstRecord
	GetAssocBusComp
	GetFieldValue
	GetNamedSearch
	GetPicklistBusComp

Table 51. SCARI Interfaces and Action Requests

SHCE COM Action Request Interface (SCARI)	Action Request
Business Component Action Requests: ISHCEBusComp (continued)	GetSearchExpr
	GetSearchSpec
	GetViewMode
	InvokeMethod
	IsFullFetch
	LastRecord
	Name
	NewRecord
	NextRecord
	ParentBusComp
	Pick
	PreviousRecord
	SetFieldValue
	SetNamedSearch
	SetSearchExpr
	SetSearchSpec
	SetSortSpec
	SetViewMode
	UndoRecord
	WriteRecord
Business Object Action Requests: ISHCEBusObject	GetBusComp
	Name

Table 51. SCARI Interfaces and Action Requests

SHCE COM Action Request Interface (SCARI)	Action Request
Property Set Action Requests: ISHCEPropertySet	AddChild
	Copy
	GetChild
	GetCount
	EnumProperty
	GetProperty
	GetType
	GetValue
	InsertChildAt
	RemoveChild
	Reset
	SetProperty
	SetType
	SetValue
Business Service Action Requests: ISHCEService	GetPropertySet
	InvokeMethod
	Name

Obtaining and Using Action Request Interface References

The action request interface corresponding to the application object (ISHCEApplication) allows access to all other ISHCEActionReq derived interfaces. A pointer to this interface is stored in `m_pApp`, which is a member of the `CSiebelSCECBase` class. For example, `ISHCEApplication::ActiveApplet` returns a reference to the `ISHCEApplet` interface of the active applet. Similarly, a reference to the Contact business component can be obtained by invoking `ISHCEBusObject::GetBusComp` on the business object interface reference returned by `ISHCEApplication::GetBusObject`.

A SCEC is also passed a reference to the corresponding action request object of the Siebel object that created it. For example, a SCEC implementing `ISHCEAppletEvent` will be able to access the `ISHCEApplet` interface reference of the current applet. A pointer to this interface is stored in `m_pRootObj`, which is a member of the `CSiebelSCECBase` class.

A SCEC can use this interface to obtain references to other action request interfaces. For example, if created from a service, a SCEC could access the service's property set using the `ISHCEService::GetPropertySet` method. Once the SCEC handles an event and returns control to the Siebel object that created it, the action request interfaces are invalidated and can no longer be used by the SCEC. Only action requests invoked on the same thread as event notification (the SCEC method invoked by the Siebel object) are supported. When the SCEC has finished handling the event, it releases all action request interface pointers.

Process of Implementing a SCEC

To create a SHCE COM Extension Component (SCEC), perform the following tasks:

- [Obtaining the SCEC Support Files on page 296](#)
- [Generating and Configuring a SCEC on page 297](#)
- [Modifying SCEC Files on page 298](#)
- [Deploying SCEC Files to a PDA Device on page 307](#)
- [Configuring SCEC User Properties in Siebel Tools on page 308](#)
- [Configuring SCEC Registry Settings on page 309](#)

Obtaining the SCEC Support Files

This task is a step in [Process of Implementing a SCEC on page 296](#).

Contact your Oracle Expert Services or Account Support representative to obtain the following SCEC support files:

<code>actionrequest.h</code>	<code>application_ar_i.c</code>	<code>busobj_ar.h</code>	<code>service_ar.idl</code>
<code>actionrequest.idl</code>	<code>application_ar_p.c</code>	<code>busobj_ar.idl</code>	<code>service_ar_i.c</code>
<code>actionrequest_i.c</code>	<code>application_ev.h</code>	<code>busobj_ar_i.c</code>	<code>service_ar_p.c</code>
<code>actionrequest_p.c</code>	<code>application_ev.idl</code>	<code>busobj_ar_p.c</code>	<code>service_ev.h</code>
<code>applet_ar.h</code>	<code>application_ev_i.c</code>	<code>dlldata.c</code>	<code>service_ev.idl</code>
<code>applet_ar.idl</code>	<code>application_ev_p.c</code>	<code>event.h</code>	<code>service_ev_i.c</code>
<code>applet_ar_i.c</code>	<code>buscomp_ar.h</code>	<code>event.idl</code>	<code>service_ev_p.c</code>
<code>applet_ar_p.c</code>	<code>buscomp_ar.idl</code>	<code>event_i.c</code>	<code>shcecom.h</code>
<code>applet_ev.h</code>	<code>buscomp_ar_i.c</code>	<code>event_p.c</code>	<code>siebelscecmacro.h</code>
<code>applet_ev.idl</code>	<code>buscomp_ar_p.c</code>	<code>propset_ar.h</code>	<code>t_siebelscec.h</code>
<code>applet_ev_i.c</code>	<code>buscomp_ev.h</code>	<code>propset_ar.idl</code>	<code>t_siebelscecapp.h</code>
<code>applet_ev_p.c</code>	<code>buscomp_ev.idl</code>	<code>propset_ar_i.c</code>	<code>t_siebelscecapplet.h</code>
<code>application_ar.h</code>	<code>buscomp_ev_i.c</code>	<code>propset_ar_p.c</code>	<code>t_siebelscecbc.h</code>
<code>application_ar.idl</code>	<code>buscomp_ev_p.c</code>	<code>service_ar.h</code>	<code>t_siebelscecsrv.h</code>

Generating and Configuring a SCEC

This task is a step in [Process of Implementing a SCEC on page 296](#).

To generate and modify a SCEC using the ATL Wizard in Visual Studio 2005

- 1 Create a new project in Visual Studio 2005 with the following settings:
 - Project type = Visual C++ > Smart Device
 - Template = ATL Smart Device Project
 - Name = Name of the SCEC (for example, SampleSCEC)
- 2 In the ATL Smart Device Project Wizard, click Next.
- 3 Click the left arrow button to remove the Pocket PC 2003 SDK from the list of Selected SDKs.
- 4 Click the right arrow button to add the Windows Mobile 5.0 Pocket PC SDK to the list of Selected SDKs. Click Next.
- 5 In the Application Settings screen, choose Dynamic-link library for the Server type. Do not check any other options. Click Finish.

This step generates SCEC files, such as SampleSCEC.cpp and SampleSCEC.idl.

- 6 Switch from the Solution Explorer to the Class view, right-click the SampleSCEC project, and select Add > Class.
- 7 From the Visual C++ Category, select Smart Device. From Visual Studio installed templates, select ATL Simple Object. Click Add.
- 8 In the Welcome to the ATL Simple Object Wizard screen, enter a name for the SCEC in the Short Name field (for example, SampleSCEC). This will automatically populate the other fields.

NOTE: If the project name is the same as the Short Name (for example, SampleSCEC), you must slightly modify the names of the .h and .cpp files, because by default they will be SampleSCEC.h and SampleSCEC.cpp, respectively. The ATL wizard will generate an error if you leave these names unchanged and click Next, because SampleSCEC.h is generated by MIDL and therefore cannot be used, and SampleSCEC.cpp has already been generated by the ATL wizard. For example, you can modify the names to be SampleSCECObj.h and SampleSCECObj.cpp.

Click Next.

- 9 In the Options screen, select the following options:
 - Threading Model = Free
 - Interface = Custom
 Click Finish.
- 10 Navigate to the Solution Explorer, right-click the generated .idl file (for example, SampleSCEC.idl), and select Properties.
- 11 Navigate to Configuration Properties > General and change the value of the Tool property from MIDL Tool to Custom Build Tool. Click Apply.

- 12** Navigate to Configuration Properties > Custom Build Step > General. In the Command Line text box, add the location of the Siebel (COMMIDL) .idl files in the following format:

```
midl /nologo /Oicf /I <action requests location> /I <events location> /h
"<ProjName>.h" /iid "<ProjName>_i.c" "<ProjName>.idl"
```

For example:

```
midl /nologo /Oicf /I ..\..\com\interfaces\actionrequests /I
..\..\com\interfaces\events /h "SampleSCEC.h" /iid "SampleSCEC_i.c" "SampleSCEC.idl"
```

- 13** Select Outputs and add the following files to the Outputs text box:

- .\<ProjName>.tlb
- .\<ProjName>.h
- .\<ProjName>_i.c

For example:

- .\SampleSCEC.tlb
- .\SampleSCEC.h
- .\SampleSCEC_i.c

Click OK.

- 14** Right-click the Project name and select Properties.

- 15** Navigate to Configuration Properties > C/C++ > General and modify the settings to include the generated Siebel COMMIDL idl files, t_siebelscec.h, and shcescec.h by specifying the appropriate directories in the Additional Include Directories text box.

For example:

```
..\..\com\comimpl;..\..\com\scec;..\..\com\interfaces\midl
```

Click OK.

Modifying SCEC Files

This task is a step in [Process of Implementing a SCEC on page 296](#).

To modify SCEC files

- 1** Open and modify the .cpp file generated by the ATL wizard (for example, SampleSCEC.cpp) by including one or more appropriate _i.c files.

For example:

```
#include "application_ev_i.c"

#include "buscomp_ev_i.c"

#include "service_ev_i.c"
```

```
#include "applet_ev_i.c"
```

- 2 Open the stdafx.cpp file, and add the following code above #include "stdafx.h":

```
#define _CE_ALLOW_SINGLE_THREADED_OBJECTS_IN_MTA
```

- 3 Modify the .idl files (for example, SampleSCEC.idl) as follows:

- a Remove the definition of the interface generated by the ATL wizard. For example, remove the following code:

```
import "oaidl.idl";
import "ocidl.idl";
import "atliface.idl";
```

```
[
object,
uuid (D26E065A-3365-4A41-ACDE-486E98C204A8),
helpstring ("ISampleSCEC Interface"),
pointer_default (unique);
]

Interface ISSampleSCEC : IUnknown{

};
```

- b Import the appropriate Siebel .idl files for the event to be implemented.

For example, if you are implementing a business component SCEC, add the following:

```
import "application_ar.idl";
import "application_ev.idl";
import "buscomp_ev.idl";
```

- c Replace the automatically generated interface name (for example, ISampleSCEC) with the appropriate ISHCEXXXEvent interface. For example, if you are implementing a business component SCEC, change the interface name to ISHCEBusCompEvent. The final lines of code resemble the following:

```
coclass SampleSCEC
{
    [default] interface ISHCEBusCompEvent;
};

};
```

4 Modify the SampleSCECObj.h file as follows:

- a** Add statements to include SampleSCEC.h and any Siebel templates for the implemented objects. For example:

```
#include "SampleSCEC.h"
```

```
#include "t_siebelSCECBC.h"
```

- b** Add any events that you intend to implement to the class definition. Use the appropriate template according to the event. Possible events and templates are listed in the following table:

Event	Template
Application events	CSiebelSCECAppBase
Business Component events	CSiebelSCECBusCompBase
Applet events	CSiebelSCECAppletBase
Service events	CSiebelSCECServiceBase

For example, to replace the ATL-generated class definition for CSampleSCEC, replace the following code:

```
class ATL_NO_VTABLE CSampleSCEC :
    public CComObjectRootEx<CComMultiThreadModel>,
    public CComCoClass<CSampleSCEC, &CLSID_SampleSCEC>,
    public ISampleSCEC
```

with this definition:

```
class ATL_NO_VTABLE CSampleSCEC :
    public CSiebelSCECBusCompBase
        <CSampleSCEC, &CLSID_SampleSCEC,
        &LIBID_SampleSCECLib, IDR_SAMPLESCEC>
```

Where:

- The first parameter (CSampleSCEC) indicates the class name.
 - The second and third parameters hold class and library Ids, respectively, and are defined in the <ProjName>_i.c file.
 - The fourth parameter (IDR_xxx) is defined in the resourceppc.h file.
- c** Replace the ATL-generated interface name (for example, ISampleSCEC) with the appropriate ISHCEXXXEvent interface. For example:
- ```
BEGIN_COM_MAP(CSampleSCEC)
```

```

 COM_INTERFACE_ENTRY(ISHCEBusCompEvent)

 END_COM_MAP()

```

- d** Remove the following:

```

DECLARE_PROTECT_FINAL_CONSTRUCT()

HRESULT FinalConstruct()
{
 return S_OK;
}

void FinalRelease()
{
}

```

- e** Add the appropriate STDMETHODCALLTYPE that you want to implement. For example, to add InvokeMethod, add the following code:

```

STDMETHOD (InvokeMethod) (BSTR pMethod, BSTR* args, int nArgs);

```

- 5** Implement the SCEC in the .cpp file (for example, SampleSCECObj.cpp). To implement CSampleSCEC::InvokeMethod, add the following code:

```

STDMETHODIMP CSampleSCEC::InvokeMethod(BSTR pMethod, BSTR* args, int nArgs)
{
 // Your implementation here
}

```

The following extended example first implements a helper method (URLEncode), then queries the selected account for an address, and displays it on a map.

```

#include "stdafx.h"

#include "SampleSCECObj.h"

```

```

// CSampleSCEC

// METHOD NAME

// URLEncode

// DESCRIPTION

// This function is used to encode a URL.

```

```

CComBSTR URLEncode (LPCTSTR pStr)
{
 CComBSTR pURL = _T("");

 if (!pStr)
 {
 return pURL;
 }

 TCHAR pBuffer[4];

 memset (pBuffer, 0x00, sizeof(TCHAR) * 4);

 for (; *pStr != _T('\0'); pStr++)
 {
 switch (*pStr)
 {
 case 0x0009 : case 0x000A : case 0x000D :
 {
 // put a 0, since these are single digit chars
 _stprintf (pBuffer, _T("%%0%x"), *pStr);
 pURL.Append (pBuffer);
 break;
 }

 case 0x0020 :
 {
 // encode space as a plus sign
 pURL.Append (_T("+"));
 break;
 }

```

```

 }

 case 0x0021 : case 0x0022 : case 0x0023 : case 0x0024 :
 case 0x0025 : case 0x0026 : case 0x0027 : case 0x0028 :
 case 0x0029 : case 0x002B : case 0x002C : case 0x002F :
 case 0x003A : case 0x003B : case 0x003C : case 0x003D :
 case 0x003E : case 0x003F : case 0x0040 : case 0x005B :
 case 0x005C : case 0x005D : case 0x005E : case 0x0060 :
 case 0x007B : case 0x007C : case 0x007D : case 0x007E :
 {
 // encode the special characters
 _stprintf (pBuffer, _T("%%X"), *pStr);
 pURL.Append (pBuffer);
 break;
 }

default:
{
 // no encoding is needed
 TCHAR pChar[1];
 _stprintf (pChar, _T("%c"), *pStr);
 pURL.Append (pChar);
 break;
}
}
}

return pURL;
}

```

```

STDMETHODIMP CSampleSCEC::InvokeMethod(BSTR pMethod, BSTR* args, int nArgs)
{
 CComPtr<ISHCEBusComp> pBusComp;
 CComPtr<ISHCEBusObject> pBusObj;

 START_EVENT_ARG (CSampleSCEC::InvokeMethod);

 // Check if the Map Address button was clicked
 if (pMethod && _tcscmp (pMethod, _T("EventMethod")) == 0)
 {
 /// Make sure there is at least 1 account record present
 if (m_pRootObj->CheckActiveRow () == S_OK)
 {
 // get the primary address id
 CComBSTR bstrPrimaryAddressId;

 CALL_INT (m_pRootObj, GetFieldValue (FALSE, CComBSTR (_T("Primary Address
 Id))), &bstrPrimaryAddressId));

 // now get the appropriate business object and business component
 CALL_INT (m_pApp, GetBusObject (CComBSTR (_T("Account")), &pBusObj));
 CALL_INT (pBusObj, GetBusComp (CComBSTR (_T("CUT Address")), &pBusComp));

 // query for the record:
 BOOL bBool = FALSE;
 CALL_INT (pBusComp, ClearToQuery ());

 CComBSTR bstrSearchSpec = CComBSTR (_T("[Id] = '"));
 bstrSearchSpec += bstrPrimaryAddressId;
 bstrSearchSpec += CComBSTR (_T(""));
 }
 }
}

```



```

CALL_INT (pBusComp, SetSearchExpr (bstrSearchSpec));
CALL_INT (pBusComp, ExecuteQuery ());
if (pBusComp->FirstRecord (&bBool) == S_OK && bBool)
{
 // get the required info about the address

 // get Street Address
 CComBSTR bstrStreetAddress;
 CALL_INT (pBusComp, GetFieldValue (FALSE, CComBSTR (_T("Street Address")),
 &bstrStreetAddress));

 // get Street Address 2
 CComBSTR bstrStreetAddress2;
 CALL_INT (pBusComp, GetFieldValue (FALSE, CComBSTR (_T("Street Address
2")), &bstrStreetAddress2));

 // get City
 CComBSTR bstrCity;
 CALL_INT (pBusComp, GetFieldValue (FALSE, CComBSTR (_T("City")),
 &bstrCity));

 // get State
 CComBSTR bstrState;
 CALL_INT (pBusComp, GetFieldValue (FALSE, CComBSTR (_T("State")),
 &bstrState));

 // get Zip Code
 CComBSTR bstrZipCode;
 CALL_INT (pBusComp, GetFieldValue (FALSE, CComBSTR (_T("Postal Code")),
 &bstrZipCode));

 // get Country

```

```

 CComBSTR bstrCountry;

 CALL_INT (pBusComp, GetFieldValue (FALSE, CComBSTR (_T("Country")),
 &bstrCountry));

 // construct and encode the URL

 CComBSTR bstrURL = CComBSTR (_T("www.mapquest.com/pda/
maps.adp?address="));

 if (_tcscmp (bstrStreetAddress2, _T("")) != 0)
 {
 bstrStreetAddress += CComBSTR (_T(" "));
 bstrStreetAddress += bstrStreetAddress2;
 }

 bstrURL += URLEncode (bstrStreetAddress);

 bstrURL += CComBSTR (_T("&city="));
 bstrURL += URLEncode (bstrCity);

 bstrURL += CComBSTR (_T("&state="));
 bstrURL += URLEncode (bstrState);

 bstrURL += CComBSTR (_T("&zipcode="));
 bstrURL += URLEncode (bstrZipCode);

 bstrURL += CComBSTR (_T("&country="));
 bstrURL += URLEncode (bstrCountry);

 // map the address
 PROCESS_INFORMATION inf;

```

```

 CreateProcess (_T("\\Windows\\iexplore.exe"), bstrURL, NULL, NULL, FALSE,
0, NULL, NULL, NULL, &inf);
 }
 else
 {
 // log message that there is no address to map
 CComBSTR bstrInfoMessage =
 CComBSTR (_T("CSampleSCEC::InvokeMethod : The currently selected
account record has no address to map.));

 CALL_INT (m_pApp, Trace (bstrInfoMessage, 0));
 }
}
}

ll_abort:
 FINISH_EVENT;
}

```

## Deploying SCEC Files to a PDA Device

This task is a step in [Process of Implementing a SCEC on page 296](#). You can either deploy the SCEC files to the PDA using Visual Studio, or deploy them manually.

### *To Deploy SCEC files to a PDA Device using Visual Studio*

- 1** To specify the deployment location, right-click the project and select Properties.
- 2** Navigate to Configuration Properties > Deployment and specify a Remote Directory, such as \program files\siebel handheld\scec.

**CAUTION:** Do not choose the \Windows directory as the deployment location on the PDA.

- 3** Choose Build > Deploy. This copies the .dll to the specified directory on the PDA and automatically registers the .dll.

### To Manually Deploy SCEC files to a PDA Device

- 1 Copy the SCEC .dll to a directory on the PDA.

**CAUTION:** Do not choose the \Windows directory as the deployment location on the PDA.

- 2 Register the .dll by running regsvrce.exe (located in \windows on the PDA). Specify the path of the .dll path, such as \program files\siebel handheld\scec\samplescec.dll.

## Configuring SCEC User Properties in Siebel Tools

This task is a step in [Process of Implementing a SCEC on page 296](#).

Once the SCEC has been created, locate the corresponding Siebel object in Oracle's Siebel Tools and add a user property to specify the class ID (CLISD), the Siebel method to subscribe to, and any additional information.

Format the user properties as follows:

Property Name: SHCE COM Event <x>

Property Value: "<MethodName>", "<CLISD>", "<extra info>"

**NOTE:** You must use quotes around the concatenated values.

where:

- <x> indicates number starting with 1. For example, SHCE COM Event 1.
- <MethodName> indicates the name of the method, such as BusComp\_PreWriteRecord.
- <CLISD> indicates the Class ID of the SCEC. The Class ID can be found in the SampleSCEC.idl file by searching for "library SampleSCECLib" and locating the uuid string. For example, uuid(85342298-0FD5-4F58-B454-07B1F6671A8C).
- <extra info> indicates optional extra information. Some events allow the specification of additional information, such as the method or field name for which events should be dispatched. The event will be dispatched only if the current method or field name match. If no additional arguments are specified, the event is always dispatched. For example, if you formatted the property value as "BusComp\_InvokeMethod", "12373DB6-4CEA-11D2-A3DC-0008C78A05F9", "FooBar Method", the event is dispatched when the FooBar Method is invoked. For all other methods, no event is dispatched.

The following Siebel events support the <extra info> information:

|                             |                          |                            |
|-----------------------------|--------------------------|----------------------------|
| Applet_InvokeMethod         | Application_PreNavigate  | Service_InvokeMethod       |
| Applet_PreInvokeMethod      | BusComp_InvokeMethod     | Service_PreCanInvokeMethod |
| Applet_TaskButtonPressed    | BusComp_PreGetFieldValue | Service_PreInvokeMethod    |
| Application_InvokeMethod    | BusComp_PreInvokeMethod  |                            |
| Application_Navigate        | BusComp_PreSetFieldValue |                            |
| Application_PreInvokeMethod | BusComp_SetFieldValue    |                            |

For example:

Name: SHCE COM Event 1

Value: "Buscomp\_PrewriteRecord", "37073DB6-4CEA-11D2-A3DC-0008C78A05F9"

## Configuring SCEC Registry Settings

This task is a step in [Process of Implementing a SCEC on page 296](#).

Configure the following Windows Registry PDA settings for each SCEC:

- **SHCE COM Disable.** This registry setting is not present by default. Add this setting and set it to Y to disable COM Extensibility.
- **SCEC Dir.** This registry setting specifies the location of the directory of the SCEC. All \*.dll files in this directory are preloaded. This registry setting is not present by default; you must add this setting.

For example:

\program files\siebel handheld\scec

**CAUTION:** Specify a directory containing only SCEC .dll files. Using \Windows causes the application to attempt to preload all .dll files.



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