Pivotal® CRM 6.0

Migration Guide

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Introduction to Pivotal CRM 6.0

Pivotal CRM 6.0 Overview

The customizable, extensible Pivotal CRM 6.0 is designed for flexibility and is built on the .NET Framework.

Pivotal CRM extends the ClickOnce and SmartClient technology from Microsoft®. For Pivotal Client and Pivotal CRM applications installed on a central deployment server, the extended technology supports:

- end-user-initiated installation from the central deployment server.
- automatic downloads of updates on to client computers.
- repair of applications on client computers.

Pivotal Client 6.0 replaces the access methods of Windows Access and Active Access previously used for Pivotal Lifecycle Engine. Pivotal Client has a rich user interface with customizable navigation. This provides easy access to tasks and activities that are performed frequently. The SmartClient feature of Pivotal Client allows you to work with any Pivotal CRM application.

Pivotal CRM provides close integration of data from Pivotal CRM applications with Microsoft Outlook.

The Pivotal CRM also provides functionality that leverages and integrates with Microsoft's SharePoint Services. With Pivotal Portal Resources 6.0, there is no need for end users to launch a separate browser window to view pages from the Web or from a SharePoint site, as Web pages can be viewed from the Pivotal Client interface.

With Pivotal Client 6.0, there is no need to individually install the Pivotal Client and application components on each client computer. Instead, you can install all the files for Pivotal Client and Pivotal CRM applications on a central deployment server configured with the CDC Updater Service. Based on Microsoft's ClickOnce technology, distributed client computers can access installation files and incremental updates for the Pivotal CRM system by accessing a URL that points to the development server. For more information about Pivotal Client deployment using a central deployment server, see the *Pivotal CRM 6.0 Installation and Deployment Guide*.

Pivotal CRM 6.0 Components

Pivotal CRM 6.0 contains the following components:

- *Pivotal Client*
- *Pivotal Business Server*
- *Pivotal SyncStream*
- *Pivotal Toolkit*
- *Pivotal License Manager*
- *Pivotal Integration 6.0 for Microsoft Outlook*
- *Pivotal Portal Resources*

Pivotal Client

Pivotal Client is the client component of Pivotal Platform developed in the .NET Framework. Pivotal Client replaces the Windows Access and Active Access access methods of working with Pivotal CRM systems. With an interactive, rich and friendly user interface, Pivotal Client provides a flexible structure that can be tailored to meet a company's business needs. It consists of customizable navigation components that enable you to work with new or existing information. Using Pivotal Client, you can access various Pivotal CRM applications for sales, service, marketing, and so on.

End users can install Pivotal Client from a central deployment server. For more information about Pivotal Client deployment using a central deployment server, see the *Pivotal CRM 6.0 Installation and Deployment Guide*.

Pivotal Client is built on a SmartClient Framework that uses the Composite Application Block (CAB) and Windows Presentation Foundation technology from Microsoft.

Pivotal Business Server

Pivotal Business Server is the middle-tier service for the Pivotal Platform. It provides business logic and data retrieval services for Pivotal CRM applications. This was referred to as Lifecycle Server in Pivotal CRM r5.x Systems.

Pivotal SyncStream

Pivotal SyncStream provides applications and services for synchronizing data changes between the master, satellite, and mobile Pivotal systems. Use SyncStream to apply your customization changes to the Offline System, and upgrade from the Offline System.

Even if you do not plan to deploy satellite or mobile systems, use SyncStream to install the Active Notification Manager (ANM) and the Pivotal Administration Console. Using the Pivotal Administration Console, you can provide security privileges to a user. In Pivotal CRM r5.x systems, this application is termed as the eRelationship Enterprise Manager. For more information on changes in terminology, see *Terminology Changes* on page 3-2.

Pivotal Toolkit

Pivotal Toolkit is a set of utilities designed to customize and extend the functionality of Pivotal applications.

Toolkit enables definition and customization of the structure of Pivotal databases, client and server-side business logic. Use the Toolkit to define and customize the Pivotal Client end-user interfaces.

Toolkit components include:

- Customization Module

  The Customization Module is a set of tools and utilities used to modify Pivotal applications.
- Pivotal OLE Control Extension (OCX)

  Pivotal OCX is used to export data to, or import data from, third-party applications. Pivotal OCX also ensures that all data synchronization tasks are performed when data is modified by third-party applications.
- Pivotal Toolkit

  Pivotal Toolkit application is similar to the Windows Access application. This application is used for customization.

Note: In Pivotal CRM 6.0, the Windows Access application is used only for customization, and not as a run time client.

Installing Toolkit also installs Visual Studio 2008 Premier Partner Edition required for designing forms. For more information about using Toolkit, see the *Pivotal Toolkit 6.0 Toolkit Guide*.

Pivotal License Manager

Pivotal CRM enforces license management. Only named and activated users are granted access to Pivotal systems. The license server is a Windows Server 2003 computer with the following installed:

- *Sentinel RMS Development Kit Server*
- *Pivotal License Manager*

A license file must be added to the license server. The license file is used by the license server to track the number of available licenses that can be assigned or unassigned. For more information about licensing, see the *Pivotal CRM 6.0 Installation and Deployment Guide*.

Pivotal Integration 6.0 for Microsoft Outlook

Pivotal Integration 6.0 for Microsoft Outlook provides a seamless integration between Pivotal CRM and Microsoft Outlook. With Outlook as your e-mail client, Pivotal Integration for Microsoft Outlook also enables you to:

- Create, send, and view Pivotal CRM e-mail messages.
- Manually or automatically link e-mail messages (with or without attachments), tasks, and appointments to relevant records in Pivotal CRM.
- Schedule, modify, and view Pivotal CRM appointments.
- Create, modify, assign, and view Pivotal CRM tasks.
- Create, view, and modify Pivotal CRM Contacts.

Pivotal Integration for Microsoft Outlook supports Microsoft Outlook 2003 and 2007. Mobile users can use the Outlook Integration functionality when working in the offline mode with Outlook and Pivotal Client.

Pivotal Portal Resources

You can display portal pages within the Pivotal Client interface. A portal page consists of many web parts that you can use to display information. Pivotal Portal Resources allows you to use portal pages to display information from your Pivotal CRM system such as search results lists, or Web pages that you need to access frequently within Pivotal Client. Create and configure portal pages using Microsoft SharePoint Services 3.0 and Pivotal Portal Resources.

Pivotal CRM 6.0 Architecture

The Pivotal Platform uses a three-tier architecture that consists of a data layer, business logic layer, and a presentation layer.

Figure 1-1 on page 1-6 shows the three-tier software architecture of the Pivotal Platform.

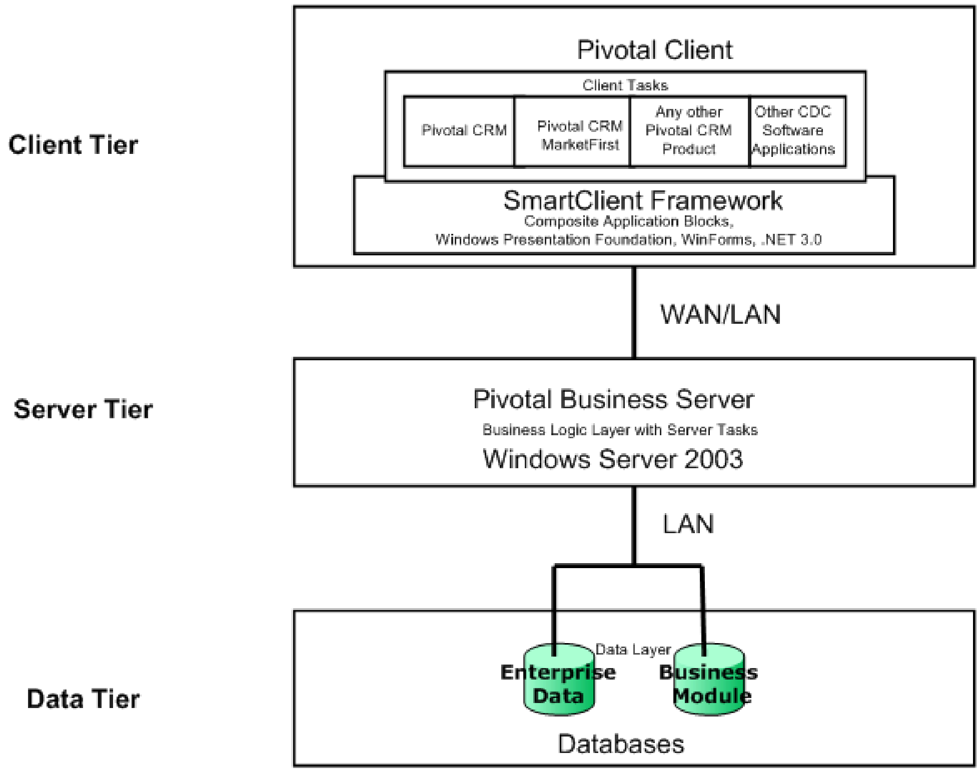


Figure 1-1 Pivotal 6.0 architecture

Client Tier

The client tier includes the CDC Software Smart Client Framework and Pivotal Client. The client tier uses Composite Application Blocks technology from Microsoft and Pivotal Client Tasks are used to implement business logic. Users can access or modify organizational data using the rich user interface of Pivotal Client.

Server Tier

The server tier or middle tier is responsible for retrieving and saving data for the Pivotal CRM system. The Pivotal Business Server running on a Windows Server 2003 computer is at the core of the server tier and is responsible for user authentication, user authorization, and for any data access. A part of the server tier, known as the business logic layer uses Server Tasks for defining business logic. It is the Pivotal Business Server that is responsible for running the business logic that is appropriate for any specific activity. Other areas that are contained in Pivotal Business Server are reporting, formula evaluation and server-side LetterExpress. The business logic layer or middle tier connects to SQL Server or the Oracle Server in order to retrieve or save data. The middle tier uses Microsoft Internet Information Service (IIS), COM+, MS DTC, ADO, OLE DB, and ADO.NET. On the server tier, the business logic layer with the Server Tasks, is built on top of the foundation of the Pivotal Middle Tier. The Pivotal Middle Tier provides a data access layer and Pivotal Client uses the Pivotal Middle Tier's client-side server proxy to avail itself of Middle Tier services.

Data Tier

The data tier has a data layer with the Enterprise Data and the Business Module databases. The Enterprise Data stores all the organizational data. The Business Module database contains the Enterprise Data schema definition, system business logic, and group security. You can customize the Business Module database to suit various business requirements. For more information about customizing the Business Module database, see the *Pivotal Toolkit 6.0 Toolkit Guide*.

Unsupported r5.x Components

The following components are no longer supported in Pivotal CRM 6.0.

- Windows Access

  Windows Access is not used as a user interface with Pivotal CRM 6.0. Instead, Pivotal Client 6.0 is used as the user interface.
- Active Access

  Active Access is not used as a user interface with Pivotal CRM 6.0. Instead, Pivotal Client 6.0 is available as the user interface.
- Agents

  Agents in Pivotal r5.9 were used to automate tasks for Windows Access users. In Pivotal CRM 6.0 agents are used only in the Customization System to perform certain tasks. Target Agents are not supported any more.
- Pivotal r5.x RTRs

  Import of r5.x RTRs on a Pivotal CRM 6.0 is not supported. Hence, any pending pivotal r5.x RTRs must be imported before the migration process begins.

Backward Compatibility

Pivotal CRM 6.0 provides backward compatibility to Client Scripts and AppServer Rules that are created in Pivotal CRM r5.x. The legacy Client Scripts and AppServer Rules can still be used in Pivotal CRM 6.0, The customizer can rewrite these as Client and Server Tasks during the conversion phase, after the migration. However, some of the legacy APIs are not supported in Pivotal CRM 6.0, and these have to be rewritten as Client and Server Tasks. For more information on unsupported APIs, see Appendix C, *Changes to Pivotal r5.9 APIs*.

2

Migration Overview

What is Migration?

In Pivotal CRM 6.0, Pivotal Client is used as the end-user interface, unlike the Pivotal r5.x systems which used Windows Access or Active Access as the end-user interfaces. Because there is a single end-user interface in Pivotal CRM 6.0, the migration process involves changing the Business Module and Enterprise Data databases to make them compatible with Pivotal Client. Pivotal CRM 6.0 provides backward compatibility with the existing VB Script code and AppServer Rules. *Figure 2-1* on page 2-2 illustrates the migration process.

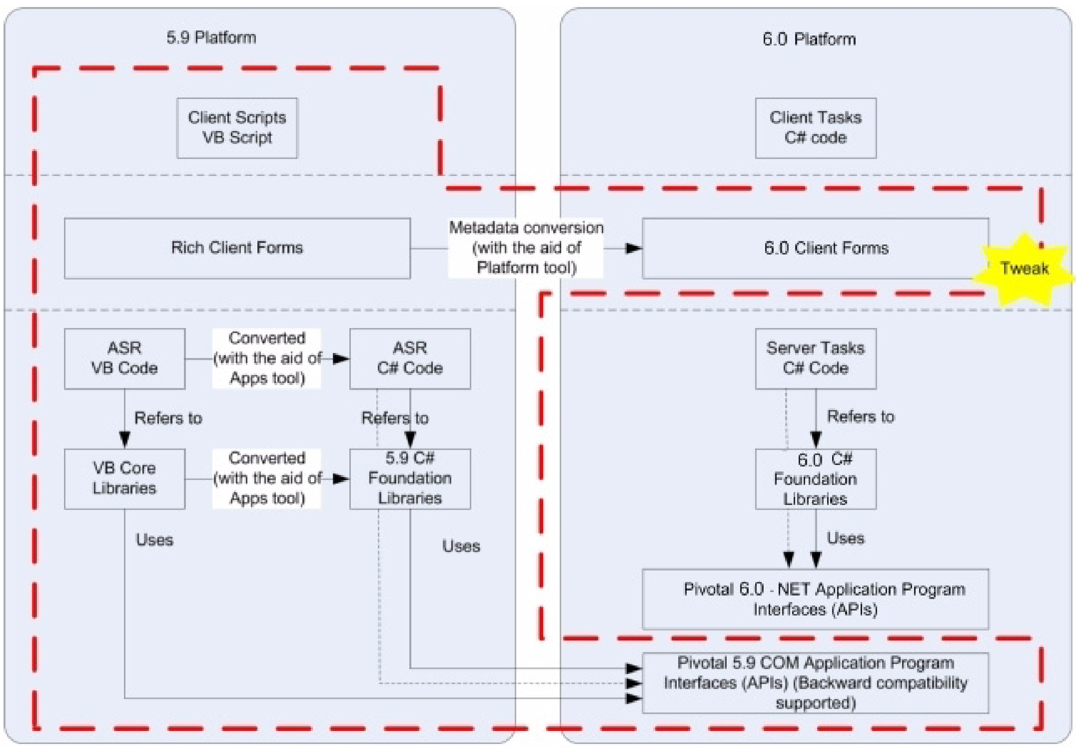


Figure 2-1 Migration process

After migration, a customizer can choose to convert the migrated Pivotal CRM system. Conversion process involves manually rewriting the existing Client Scripts as Client Tasks, and AppServer Rules as Server Tasks, to make the Pivotal System completely .NET compatible. C# is the language that is used for writing Client and Server Tasks. *Figure 2-2* on page 2-3 illustrates the conversion process.

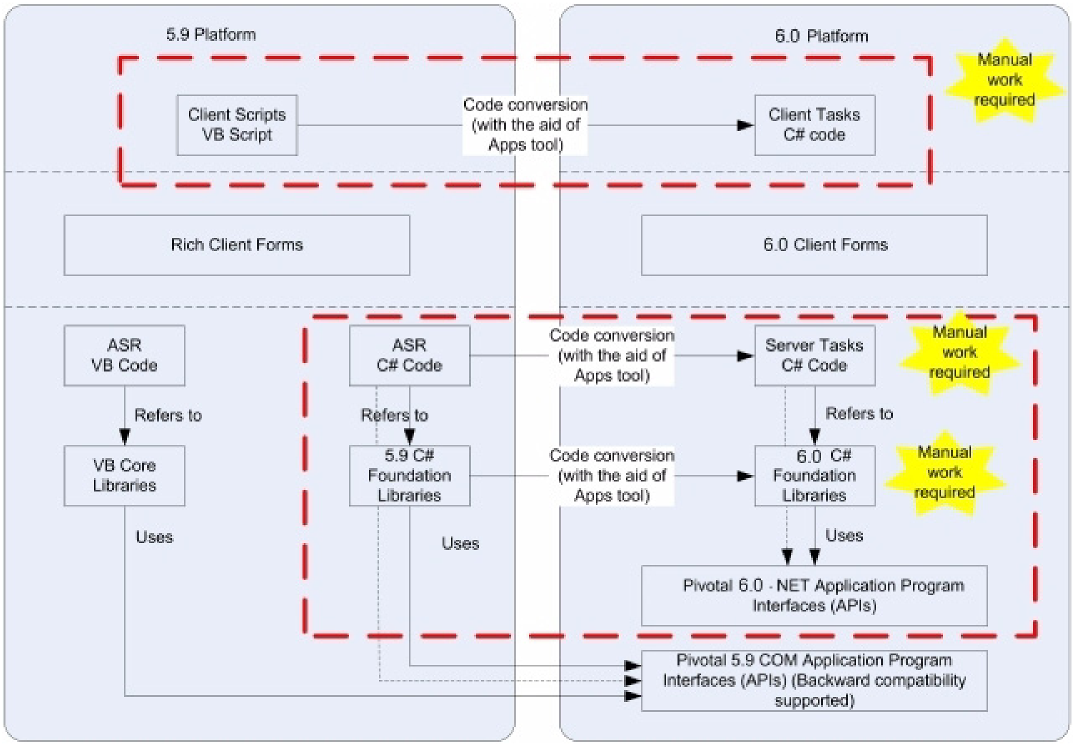


Figure 2-2 Conversion process

Migration Path

The only migration path that is available is from Pivotal r5.9 to Pivotal CRM 6.0. To migrate any Pivotal CRM systems prior to r5.9, first upgrade the Pivotal r5.x systems to Pivotal r5.9, and then migrate to Pivotal CRM 6.0. For more information on upgrading to Pivotal r5.9, see the *Pivotal Lifecycle Engine r5.9 Upgrade and Migration Guide*.

Note: Ensure that you import any pending r5.x RTRs before migrating to Pivotal CRM 6.0. Import of r5.x RTRs on a Pivotal CRM 6.0 is not supported.

Migration Options

The following migration options are available:

- Migrating an Active Access system

  Involves migrating a Pivotal r5.9 that uses Active Access as the end-user interface, to Pivotal CRM 6.0. Select this option to migrate the security permissions and components created by the Active Access client.

  A customizer can choose to manually rewrite the Client Scripts as Client Tasks and AppServer Rules to Server Tasks, in C#.

- Migrating a Windows Access system

  Involves automatic migration of security permissions and the following manual tasks:

  - Running the Pivotal Agent Convertion Tool to convert Agents to Client Tasks.

    For more information about running Pivotal Agent Convertion Tool, see *Pivotal CRM 6.0 Agent Convertion Quick Reference*.

  - Refactoring the converted code to get the desired Client Task behaviour.

    For more information about running Pivotal Agent Convertion Tool, see *Pivotal CRM 6.0 Agent Convertion Quick Reference*.

  - Recreating the Windows Forms as Client Forms.

What Components are not Migrated?

Due to the introduction of Pivotal Client as the end-user layer, some components of Pivotal r5.9 are not supported in Pivotal CRM 6.0. Hence, these components do not have a migration path. The following components from a Pivotal r5.9 cannot be migrated to Pivotal CRM 6.0:

- Business Objects

  Business Objects are replaced with Pivotal Client navigation. Hence, the Business Objects need to be recreated as Pivotal Client navigation. For more information about the navigation structure of Pivotal Client, see *Post BM Migration Tasks* on page 20-2.

- Shortcuts

  The URL shortcuts that are created in Windows Access r5.9 have the following format: http://<server_name>/epower/rdaui.htm?<system_name>&http://<server_name>&Form=<form_name>&Record=<record_id>.

  These shortcuts cannot be reused in Pivotal Client. Hence, the URL shortcuts have to be recreated in the following format: sccx://<server_name>/<instance_name>/<environment>?actionCommand=Show&actionContentType=Record&application=CRMFormApplication&table=<table_name>&formId=<form_name>&recordId=<record_id>

Note: You cannot create an URL shortcut for a data table.

  For more information on the APIs that are used for creating URL shortcuts, see the *Pivotal Client 6.0 API Reference*.

- Lists

  Lists are not supported in Pivotal CRM 6.0. There is no component in Pivotal CRM 6.0 that can replace a List. A customizer however, can create a Search Results List to replicate some of the actions. For more information about creating a Search Results List, see the *Pivotal Toolkit 6.0 Toolkit Guide.*

- Diagrams

  Diagrams are not supported in Pivotal CRM 6.0. There is no component Pivotal CRM 6.0 that can replace a diagram.

- Smart Portal

  Smart Portal is replaced with Portal Pages in Pivotal CRM 6.0. For more information on creating Portal Pages, see *Pivotal Toolkit 6.0 Toolkit Guide*.

3

Old and New Terminology

Terminology Changes

Table 3-1 on page 3-2 lists the new products that are introduced with Pivotal CRM 6.0.

Table 3-1 Pivotal CRM 6.0: New Products and Components

Pivotal CRM 6.0 Products and Components
CDC Software SmartClient Framework
Pivotal Client
Pivotal Integration for Microsoft® Outlook®
Pivotal Toolbar for Microsoft® Outlook®
Pivotal Contact Integration for Microsoft® Outlook®
PIM Integration Data Service
Pivotal Synchronization Service for Microsoft® Exchange
Pivotal Portal Resources (Includes Pivotal WebParts, Web Service for Deployment, Web Service for Customization, and Web Site Templates)
Pivotal Report Designer - Driver (Contains the Pivotal drivers for Crystal Report Designer and Pivotal System Manager for configuring Pivotal CRM systems)

Table 3-2 on page 3-2 lists the new terms that are introduced with Pivotal CRM 6.0.

Table 3-2 Pivotal CRM 6.0 Terms

Pivotal CRM 6.0 Term	Description
Pivotal Client	Client on end-user computers to access Pivotal CRM systems
Portal page	A SharePoint portal page with Pivotal Web Parts

Table 3-2 Pivotal CRM 6.0 Terms (Continued)

Pivotal CRM 6.0 Term	Description
Deployment server	Windows 2003 Server computer with the following installed: • CDC Software SmartClient Framework • Pivotal Client • Pivotal Integration for Microsoft Outlook
Instance	Installed applications on the deployment server are instances.
Environment	For an application instance, you can define more than one environment. For every environment defined on the deployment server, there must exist a corresponding Pivotal CRM system.

Some of the terms that are used in Pivotal CRM r5.x have undergone a change with Pivotal CRM 6.0. *Table 3-3* on page 3-3 lists changes in terminology.

Table 3-3 Product Name changes with Pivotal CRM 6.0

Pivotal r5.9	Pivotal CRM 6.0
Pivotal Lifecycle Server	Pivotal Business Server
Pivotal CRM Reports	Pivotal Reports
Pivotal Windows Access	Not supported as an end-user interface. Use Pivotal Toolkit to access a Customization System
Pivotal Active Access	Not supported. Replaced by Pivotal Client
Intellisync for Pivotal	Not supported in Pivotal CRM 6.0
Pivotal Outlook Synchronization Manager	Not supported in Pivotal CRM 6.0

In Pivotal CRM 6.0, the Pivotal Configuration Utility replaces the following r5.x tools:

- SMTP Configuration (configsmtp.exe)
- Active Notification Configuration (configactivenote.exe)
- Email Management Service Configuration (configems.exe)
- Scheduled Script Service Configuration (configscriptsvc.exe)

Table 3-4 on page 3-4 details the tabs in the Pivotal Configuration Utility and the tools that they replace.

Table 3-4 Pivotal Configuration Utility tabs

Pivotal Configuration Utility Tabs	Tool
E-mail Settings	SMTP Configuration
Active Notifications	Active Notification Configuration
E-mail Management Service	Email Management Service Configuration
Schedule Task Service	Scheduled Script Service Configuration

Table 3-5 on page 3-4 lists the component and terminology changes with Pivotal CRM 6.0.

Table 3-5 Component and Terminology changes with Pivotal CRM 6.0

Pivotal r5.9	Pivotal CRM 6.0
Pivotal eRelationship Services (PRS) user	Pivotal CRM Services (PCS) user
Pivotal eRelationship Active Client (PRAC) user	Pivotal Business Server (PBS) user
RelationshipUsers Group	PivotalCRMUsers Group
RelationshipAdmin Group	PivotalCRMAdmin Group
Pivotal CRM security	Pivotal security
Pivotal eRelationship	Pivotal CRM
Pivotal Lifecycle Engine	Pivotal platform has been used in lieu of Lifecycle Engine
Pivotal eRelationship Enterprise Manager	Pivotal Administration Console
Pivotal Customization Assistant	Replaced by Pivotal Configuration Utility
Lifecycle Engine Inproc AppServer	Pivotal Business Server Inproc

4

Overall Migration Tasklist

Tasklist for Migrating Active Access Clients

Table 4-1 on page 4-2 lists the tasklist for migrating Active Access clients to Pivotal CRM 6.0.

Table 4-1 Overall Migration Tasklist for Active Access Clients

Step #	Task	Optional/Mandatory	Note to the User
1	Back up the Production System. *Setting up the Upgrade Environment* on page 5-2	Mandatory	
2	Perform pre-upgrade tasks *Pre-Upgrade Tasks* on page 5-5	Mandatory	
3	Upgrade satellites and mobiles. Chapter 6, *Upgrading Satellites and Mobiles*	Mandatory	Install the Pivotal 6.0 software on the satellites and mobiles. Pivotal SyncStream 6.0 is backward compatible with the Pivotal SyncStream r5.9 server, and hence even after the upgrade, the synchronization with the Production System will continue as before.
4	Upgrade the Offline System. Chapter 7, *Upgrading the Pivotal r5.9 Systems*	Mandatory	Upgrade the Offline System by installing the Pivotal 6.0 software.
5	Add the user to the security group. *Adding the User to the Security Group* on page 7-8	Mandatory	
6	Migrate the Webstore. *Migrating the WebStore* on page 7-8	Optional	
7	Specify the Portal Server details. *Specifying the Portal Server* on page 7-9	Mandatory	
8	Initiate automatic Business Module migration. Chapter 8, *Automatic Business Module Migration*	Mandatory	
9	Import `BM Upgrade for Pivotal CRM 6.0.rtr` *Importing the BM Upgrade for Pivotal CRM 6.0.rtr* on page 8-5	Mandatory	
10	Import the language dictionary strings *Importing Langauge Dictionary Strings* on page 8-6	Mandatory	
11	Install Pivotal Application Foundation Libraries 6.0. Chapter 9, *Installing Application Foundation Library*	Mandatory	
			(Sheet 1 of 4)

Table 4-1 Overall Migration Tasklist for Active Access Clients (Continued)

Step #	Task	Optional/Mandatory	Note to the User
12	Migrate Lists and List Levels Chapter 11, *Migrating Lists and List Levels*	Mandatory	The Lists and List Levels from Windows Access are not migrated as they do not have a direct mapping to any of the Pivotal Client elements. Thus, you will have to perform certain manual workaround tasks so that the features become functional in Pivotal Client.
13	Migrate Active Forms. Chapter 10, *Migrating Active Forms*	Mandatory	You can perform this step at any point after upgrade. It is not necessary that it has to be performed in the specified order. However, to write a Client Task for the migrated form, ensure that you have installed Pivotal Application Foundation Libraries 6.0 before migration. After migrating Active Forms, you need to check the migrated forms. For more information on changes to the migrated forms, see *What Happens During Active Forms Migration?* on page 10-2
14	Import Application Migration RTR Files Chapter 13, *Importing Application Migration RTR Files*	Mandatory	Import the listed RTR and CSV files in the specified order to enable application migration.
15	Enable Pivotal Integration 6.0 for Microsoft Outlook Features. Chapter 15, *Enabling Pivotal Integration 6.0 for Microsoft Outlook*	Mandatory	You perform this step only if you want to include the Pivotal Integration 6.0 for Microsoft Outlook features.
16	Configure the Import Utility. Chapter 16, *Configuring the Import Utility*	Optional	
17	Implement Territory Management Features. Chapter 17, *Implementing Territory Management Features*	Mandatory	
18	Set up the Tree View Control. Chapter 18, *Setting Up the Tree View Control*.	Optional	Perform this step only if you have a Tree View Control in the current system.
19	Create Navigation Structure. *Pivotal Toolkit 6.0 Toolkit Guide*	Mandatory	
20	Apply Customization Changes on the Offline System *Apply Customization Changes* on page 20-2	Mandatory	
Blackout period begins			
21	Prepare the Production System for Migration. *Pre-Upgrade Tasks* on page 5-5	Mandatory	
			(Sheet 2 of 4)

Table 4-1 Overall Migration Tasklist for Active Access Clients (Continued)

Step #	Task	Optional/Mandatory	Note to the User
22	Upgrade the Production System. Chapter 7, *Upgrading the Pivotal r5.9 Systems*	Mandatory	Perform the pre-upgrade tasks and upgrade the Production System by installing the Pivotal 6.0 software.
23	Add the user to the security group. *Adding the User to the Security Group* on page 7-8	Mandatory	
24	Migrate the Webstore. *Migrating the WebStore* on page 7-8	Optional	
25	Specify the Portal Server details. *Specifying the Portal Server* on page 7-9	Mandatory	
26	Perform Upgrade from Offline. *Upgrade From Offline* on page 20-3	Mandatory	This step moves the Business Module changes to the Production System.
Enterprise Data Migration on the Offline System			
27	Migrate User Data. Chapter 21, *Migrating User Data*	Mandatory	
28	Migrate Tasks and Appointments. Chapter 22, *Exchange Data Migration*	Mandatory	Ensure that you enable Pivotal Integration 6.0 for Microsoft Outlook features before you migrate the tasks and appointments.
29	Migrate User Searches. Chapter 23, *Migrating User Searches*	Mandatory	You can perform this step at any point after upgrade. It is not necessary that it has to be performed in the specified order.
30	Migrate ED for Territory Management Features. Chapter 24, *Migrating the Enterprise Data for Territory Management*	Mandatory	
31	Test the navigation and migrated data	Mandatory	
Enterprise Data Migration on the Production System			
32	Migrate User Data. Chapter 21, *Migrating User Data*	Mandatory	
33	Migrate Tasks and Appointments. Chapter 22, *Exchange Data Migration*	Mandatory	Ensure that you enable Pivotal Integration 6.0 for Microsoft Outlook features before you migrate the tasks and appointments.
34	Migrate User Searches. Chapter 23, *Migrating User Searches*	Mandatory	You can perform this step at any point after upgrade. It is not necessary that it has to be performed in the specified order.
			(Sheet 3 of 4)

Table 4-1 Overall Migration Tasklist for Active Access Clients (Continued)

Step #	Task	Optional/Mandatory	Note to the User
35	Migrate ED for Territory Management Features. Chapter 24, *Migrating the Enterprise Data for Territory Management*	Mandatory	
36	Test the navigation and migrated data	Mandatory	
37	Tickle tables to send ED changes to Satellites and Mobiles. Chapter 25, *Tickling the Changed ED Tables*	Mandatory	
Blackout period ends			
			(Sheet 4 of 4)

Tasklist for Migrating Windows Access Clients

Table 4-1 on page 4-2 lists the tasklist for migrating Windows Access clients to Pivotal CRM 6.0.

Table 4-2 Overall Migration Tasklist for Windows Access Clients

Step #	Task	Optional/Mandatory	Note to the User
1	Back up the Production System. *Setting up the Upgrade Environment* on page 5-2	Mandatory	
2	Perform pre-upgrade tasks *Pre-Upgrade Tasks* on page 5-5	Mandatory	
3	Upgrade satellites and mobiles. Chapter 6, *Upgrading Satellites and Mobiles*	Mandatory	Install the Pivotal 6.0 software on the satellites and mobiles. Pivotal SyncStream 6.0 is backward compatible with the Pivotal SyncStream r5.9 server, and hence even after the upgrade, the synchronization with the Production System will continue as before.
4	Upgrade the Offline System. Chapter 7, *Upgrading the Pivotal r5.9 Systems*	Mandatory	Upgrade the Offline System by installing the Pivotal 6.0 software.
5	Add the user to the security group. *Adding the User to the Security Group* on page 7-8	Mandatory	
6	Migrate the Webstore. *Migrating the WebStore* on page 7-8	Optional	
7	Specify the Portal Server details. *Specifying the Portal Server* on page 7-9	Mandatory	
8	Initiate automatic Business Module migration. Chapter 8, *Automatic Business Module Migration*	Mandatory	
9	Import `BM Upgrade for Pivotal CRM 6.0.rtr` *Importing the BM Upgrade for Pivotal CRM 6.0.rtr* on page 8-5	Mandatory	
10	Import the language dictionary strings *Importing Langauge Dictionary Strings* on page 8-6	Mandatory	
11	Install Pivotal Application Foundation Libraries 6.0. Chapter 9, *Installing Application Foundation Library*	Mandatory	
			(Sheet 1 of 4)

Table 4-2 Overall Migration Tasklist for Windows Access Clients (Continued)

Step #	Task	Optional/Mandatory	Note to the User
12	Import Application Migration RTR Files. Chapter 13, *Importing Application Migration RTR Files*	Mandatory	Import the listed RTR and CSV files in the specified order to enable application migration.
13	Migrate Windows Forms and associated Agents. Chapter 12, *Migrating Windows Forms and Agents*	Mandatory	You can perform this step at any point after upgrade. It is not necessary that it has to be performed in the specified order. You can convert a Windows Form to a Pivotal Client Form using Pivotal Toolkit 6.0 HotFix 2 or later. However, this conversion process does not convert the Pivotal Agents logic associated with the Windows Form. With Pivotal CRM 6.0 SP5 Windows Form Migration process also triggers the Agent Conversion process, that converts Pivotal Agents associated to the Windows Form to Client Tasks. Hence, to perform Agent Conversion, you must upgrade to Pivotal CRM 6.0 Service Pack 5 and install Pivotal CRM 6.0 Agent Conversion Tool. For more information about converting Agents, see *Pivotal CRM 6.0 Agent Conversion Quick Reference and Agent Conversion Technical Reference*.
14	Convert Agents that are not associated with a Windows Form to Client Tasks	Optional	Pivotal CRM 6.0 Agent Conversion Tool enables you to convert Agents to Client Tasks. For more information about converting Agents, see *Pivotal CRM 6.0 Agent Conversion Quick Reference* and *Agent Conversion Technical Reference*.
15	Make changes to the generated code to get the required business logic.	Optional	Although the generated code replicates the functionality of the original Agent, the generated code may have some limitations. This is because the Windows Client platform is different from the Pivotal Client platform. Hence, you may need to rework on the generated code to make it work as required. For more information about changing the generated code, see For more information about converting Agents, see *Pivotal CRM 6.0 Agent Conversion Quick Reference*.
16	Enable Pivotal Integration 6.0 for Microsoft Outlook Features. Chapter 15, *Enabling Pivotal Integration 6.0 for Microsoft Outlook*	Mandatory	You perform this step only if you want to include the Pivotal Integration 6.0 for Microsoft Outlook features.
17	Configure the Import Utility. Chapter 16, *Configuring the Import Utility*	Optional	
			(Sheet 2 of 4)

Table 4-2 Overall Migration Tasklist for Windows Access Clients (Continued)

Step #	Task	Optional/Mandatory	Note to the User
18	Implement Territory Management Features. Chapter 17, *Implementing Territory Management Features*	Mandatory	
19	Set up the Tree View Control. Chapter 18, *Setting Up the Tree View Control*.	Optional	Perform this step only if you have a Tree View Control in the current system.
20	Create Navigation Structure. *Pivotal Toolkit 6.0 Toolkit Guide*	Mandatory	
21	Apply Customization Changes on the Offline System *Apply Customization Changes* on page 20-2	Mandatory	
Blackout period begins			
22	Prepare the Production System for Migration. *Pre-Upgrade Tasks* on page 5-5	Mandatory	
23	Upgrade the Production System. Chapter 7, *Upgrading the Pivotal r5.9 Systems*	Mandatory	Perform the pre-upgrade tasks and upgrade the Production System by installing the Pivotal 6.0 software.
24	Add the user to the security group. *Adding the User to the Security Group* on page 7-8	Mandatory	
25	Migrate the Webstore. *Migrating the WebStore* on page 7-8	Optional	
26	Specify the Portal Server details. *Specifying the Portal Server* on page 7-9	Mandatory	
27	Perform Upgrade from Offline. *Upgrade From Offline* on page 20-3	Mandatory	This step moves the Business Module changes to the Production System.
Enterprise Data Migration on the Offline System			
28	Migrate User Data. Chapter 21, *Migrating User Data*	Mandatory	
29	Migrate Tasks and Appointments. Chapter 22, *Exchange Data Migration*	Mandatory	Ensure that you enable Pivotal Integration 6.0 for Microsoft Outlook features before you migrate the tasks and appointments.
30	Migrate User Searches. Chapter 23, *Migrating User Searches*	Mandatory	You can perform this step at any point after upgrade. It is not necessary that it has to be performed in the specified order.
			(Sheet 3 of 4)

Table 4-2 Overall Migration Tasklist for Windows Access Clients (Continued)

Step #	Task	Optional/Mandatory	Note to the User
31	Migrate ED for Territory Management Features. Chapter 24, *Migrating the Enterprise Data for Territory Management*	Mandatory	
32	Test the navigation and migrated data	Mandatory	
Enterprise Data Migration on the Production System			
33	Migrate User Data. Chapter 21, *Migrating User Data*	Mandatory	
34	Migrate Tasks and Appointments. Chapter 22, *Exchange Data Migration*	Mandatory	Ensure that you enable Pivotal Integration 6.0 for Microsoft Outlook features before you migrate the tasks and appointments.
35	Migrate User Searches. Chapter 23, *Migrating User Searches*	Mandatory	You can perform this step at any point after upgrade. It is not necessary that it has to be performed in the specified order.
36	Migrate ED for Territory Management Features. Chapter 24, *Migrating the Enterprise Data for Territory Management*	Mandatory	
37	Test the navigation and migrated data	Mandatory	
38	Tickle tables to send ED changes to Satellites and Mobiles. Chapter 25, *Tickling the Changed ED Tables*	Mandatory	
Blackout period ends			
			(Sheet 4 of 4)

5

Before you Begin

System Requirements

For system requirements, see the *Pivotal CRM 6.0 Installation and Deployment Guide*.

Upgrade Paths

You can migrate to Pivotal CRM 6.0 only from Pivotal r5.9. Pivotal CRM versions prior to r5.9, must first be upgraded to r5.9, and then migrated to 6.0. For more information about upgrading to Pivotal CRM 6.0, see Chapter 7, *Upgrading the Pivotal r5.9 Systems*.

Backing up Production System Data

Back up the Production Business Module, Enterprise Data, and FilePath data.

To back up Production System data

1. On the administrative computer, click **Start**, point to **Programs**, point to **Pivotal**, and then click **eRelationship Enterprise Manager**.
2. In the Servers pane of the **eRelationship Enterprise Manager** window, right-click the Production System, and then click **Audit System**.

   If any discrepancies between the Business Module and Enterprise Data are reported, right-click the Offline System and then click **Apply Customization Changes**.
3. In the Servers pane of the **eRelationship Enterprise Manager** window, right-click the Production System, and then click **Backup System**.
4. Select the **Save Business Module**, **Save Enterprise Data**, and **Save File Path** check boxes.

The Business Module, Enterprise Data, and File Path data for the Production System are backed up.

Setting up the Upgrade Environment

An upgrade environment can be a Development Environment or an Offline System. An upgrade environment is essential during migration, so that the Production System remains undisturbed.

Pivotal CRM 6.0 Reference System

Create a reference system with out-of-the-box Pivotal CRM 6.0. The reference system is used to transport some table fields that exist in Pivotal CMS 6.0, but not in Pivotal r5.9 systems. For more information on installing Pivotal CRM 6.0, see *Pivotal CRM 6.0 Installation Cheat Sheet*.

Development Environment

The Development Environment is set up using a duplicate of the Production System. The Development Environment enables a customizer to test the customization changes, including the changes to mobile and satellite systems, without disturbing the Production System. *Figure 5-1* on page 5-3 illustrates a Development Environment.

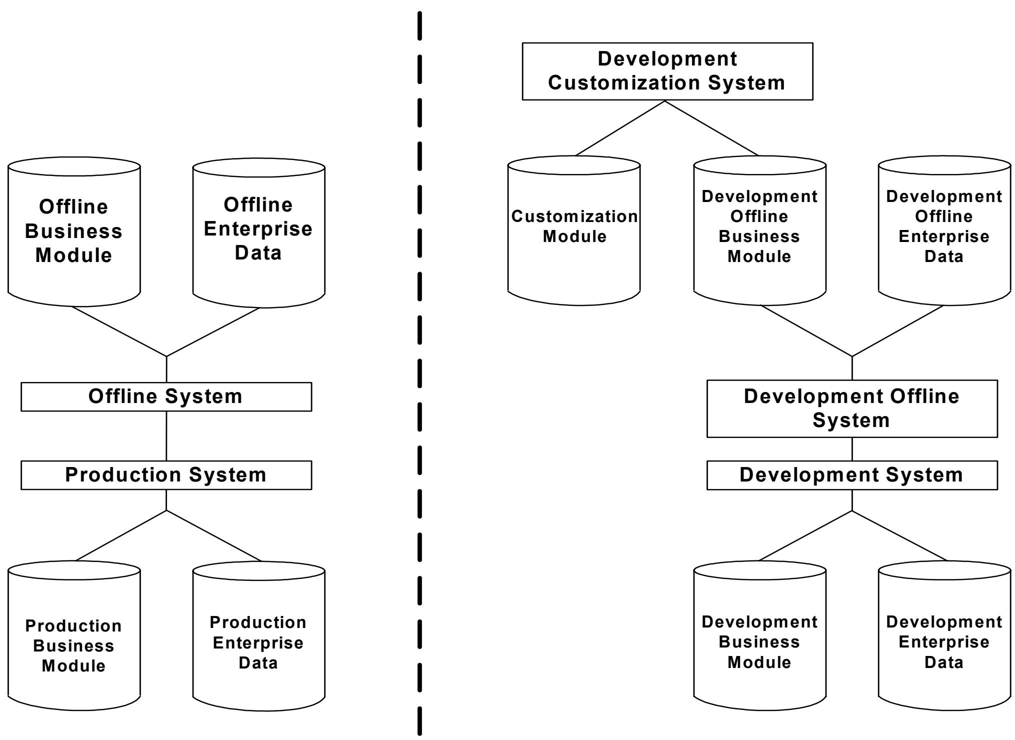


Figure 5-1 Development Environment

Important Note

If you use a Development Environment for migration, the Development Environment has to be a mirror image of the Production Environment.

After successfully migrating the Development Environment, to migrate the Production Environment, use the following steps:

- Replicate the Development Offline BM to Offline BM.
- Migrate the Production ED.
- Migrate the Production replicas.

You need to migrate the Production ED from the scratch, as it would have changed.

Offline Customization System

If no mobile or satellite systems are deployed in the Production System, then an Offline Customization System can be used to perform the migration. *Figure 5-2* on page 5-4 illustrates the Offline Customization System.

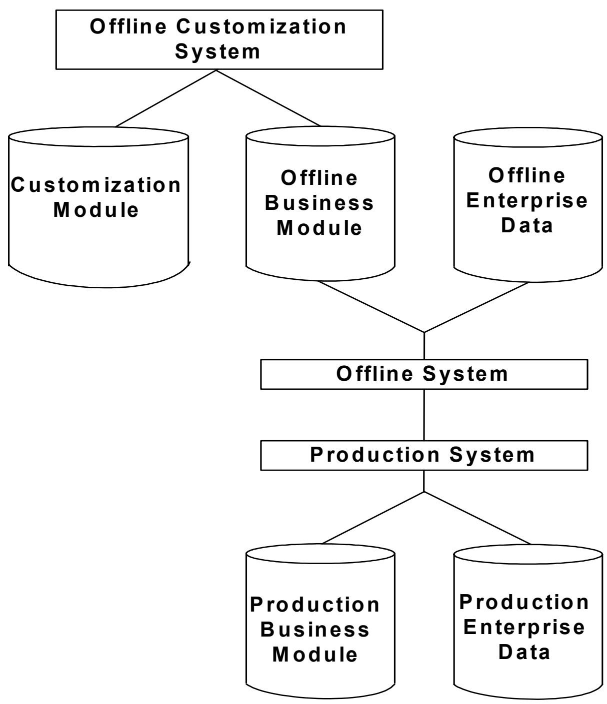


Figure 5-2 Offline Customization System

Note: For more information about setting up a deployment server, see the *Pivotal CRM 6.0 Installation and Deployment Guide*.

In addition to Offline Customization System set up a Reference System, which is a replica of the Offline Customization System. It is necessary to create a Reference System which acts as a reference point for the customizers, if they want to manually compare the system that is being migrated, with the original system.

Note: It is essential to create a Reference System of the Production Business Module and Enterprise Data in the form of Relationship Data Files (RDFs) before beginning upgrade tasks.

Pre-Upgrade Tasks

Perform the following tasks before you start the upgrade process:

- Create RTRs of the User_Choice_Choices and User_Choice_Name table fields.
- Import any pending r5.x RTR files.
- Clear the Sys_Tickling table.
- Purge Orphaned Records.
- Find Invalid Record IDs.
- Lock the Production System.
- Uninstall the Pivotal Toolkit r5.9 on the Customization System.
- Stop the DSM, OSM, and ANM services on the mobiles, satellites, and master systems.
- Stop the Lifecycle Server.
- Stop the Database Services.
- Convert to Unicode.

Note: Ensure that you perform synchronization before locking the Production System.

Create RTRs

In the Pivotal CRM 6.0 reference system, create RTRs of the User_Choice_Choices and User_Choice_Names tables fields.

To create an RTR

1. In the Pivotal CRM 6.0 reference system, open the Customization System.
2. In the Customization System, on the **eTab**, click **Transporter**, and then click **Elements by Table**.
3. In the **Transporter Elements by Table** window, expand **Business Module Elements**.
4. Expand **User_Choice_Choices**.
5. Expand **Fields** and select all the fields.
6. Right-click **Fields** and select **Export to File**.
7. In the **Export Transported Elements to File** dialog box, browse to a location, type a name for the RTR file and click **Save**.

8 Follow 4 to 7 to export the table fields of the User_Choice_Names table.

The table fields are exported.

Importing Pending r5.x RTR

Ensure that you import any pending r5.x RTRs before migrating to Pivotal CRM 6.0. Import of r5.x RTRs on a Pivotal CRM 6.0 is not supported.

Clearing the Sys_Tickling Table

The Sys_Tickling table stores information about the records that need to be tickled. This table has to cleared before the Pivotal Integration 6.0 for Microsoft Outlook feature is enabled. The Sys_Tickling table must be cleared to ensure that a batch tickle acts against the new Rn_Appointments and Rn_Interaction data structure that is created by enabling Pivotal Integration 6.0 for Microsoft Outlook features.

To clear the Sys_Tickling table, you must:

- *Trigger the batch record tickle.*
- *Purge the tickle records.*

To trigger the batch record tickle

1 Click **Start**, point to **Programs**, point to **Pivotal**, and then click **eRelationship**.

2 In the **Pivotal Login** dialog box, select the Offline or Production System name from the **System** drop-down list.

3 Click **OK**.

4 On the **eTab**, click **Pivotal Agents**.

5 Click **List of Agents**.

6 In the **Agents** window, expand **Record Tickling**.

7 Click **Batch Record Tickle**.

8 In the **Batch Record Tickle** message box, click **OK**.

9 In the **Batch Record Resolution** message box, click **OK**.

The batch record tickle is completed.

To purge the tickled records

1 In the Offline or Production System, on the **eTab**, click **Pivotal Agents**.

2 Click **List of Agents**.

3 In the **Agents** window, expand **Record Tickling**.

4 Click **Purge Tickle Records**. This will delete all the tickle notifications.

5 In the **Purge Tickle Records** message box, click **OK**.

The records in the Sys_Tickling table are deleted.

Purging Orphaned Records

An orphaned record in the database is one that links, through a many-to-one relationship, to another record in the database that has been deleted after the link was established. The Purge Orphans Agent automatically detects and deletes orphaned records in the Business Module database.

To purge orphaned records from the Business Module

1. In the Customization System for the Current System, select **Purge Orphans** from the Personal Assistant drop-down list on the eRelationship status bar.
2. Click **Continue**.
3. In the message box displayed, do one of the following:
   a) Click **Report** to generate a report listing the main orphan records such as Forms, Active Forms, Business Objects, Reports, Queries, Lists, Graphs, Diagrams, Table Fields, Indexes, **iTab** Menu items, Search Sources, Active Searches, Active Search Result Lists, LetterExpress, and Outlook Maps.
   b) Click **Purge Orphans** to continue purging the records.
   c) Click **Cancel** to cancel the agent.
4. Examine the generated reports.
5. Click **OK** when the Agent has finished purging orphaned records.
6. The `Purge Orphans` Agent generates a list of items that are not deleted. Verify that the listed items are required in your system. Manually delete items that are not required.

Finding and Resolving Invalid Record IDs

Invalid record IDs are broken links from one database element to another. Unlike orphan records, invalid record IDs involve a wider range of database elements. For example, if a table field is added to a form and is then deleted from the table, the field remaining on the form references an invalid ID.

To find and resolve invalid IDs

1. In the Customization System for the Current System, click **Transporter** on the **eTab** and then click **Find All Invalid IDs**. A complete list of invalid record IDs is displayed.
2. To export the list, click **Transporter Log** on the **eTab** and then click **Reports**.
3. In the **Reports - Transporter Log** dialog box, click **Transporter Log** to generate a report of the invalid IDs.
4. In the toolbar of the report, click **Export** to export the list of invalid IDs to a file.

5 Select **MS Word** from the **Format** drop-down list, and then click **OK**.

6 Browse to the required location, specify the file name, and then click **Save**.

7 Use the best judgment and customization experience to resolve all invalid IDs in the Business Module suitably.

Locking the Production System

Lock the Production System before migrating the system. This ensures that no synchronization happens during the migration.

To lock the Production System

1 On the administrative computer, open **eRelationship Enterprise Manager**.

2 In the **Servers** pane, expand **Data Synchronization**, and then expand the registered DSM server until you see the name of the Production System.

3 Right-click the name of the Production System, and then click **System Properties**.

4 On the **System** tab, click **Lock** under **Locking System**.

5 Read the warning message, and then click **Yes**.

6 When Locking System displays a locked status, click **OK**.

Pivotal Production System is locked.

Uninstalling Pivotal Toolkit r5.9

Uninstall Pivotal Toolkit r5.9 before you install Pivotal CRM 6.0.

To uninstall Pivotal software

1 Click **Start**, point to **Control Panel**, and click **Add or Remove Programs**.

2 In the **Add or Remove Programs** window, select Pivotal Toolkit r5.9 and click **Remove**.

Pivotal Toolkit r5.9 is uninstalled.

Stopping the DSM, OSM, and ANM Services

Stop the DSM and ANM services on the mobiles, satellites, and the master system.

To stop the services

1. In the Servers pane of **eRelationship Enterprise Manager** window, expand the registered DSM server until you see the name of the Main Production System.
2. Right-click the name of the Main Production System, and click **Stop**.
3. Close **eRelationship Enterprise Manager**.

   The synchronization is stopped.

To stop the DSM on a mobile system

1. Right-click the **Mobile Synchronization Status** icon in the system tray.
2. Click **Exit**.
3. Double-click the **Data Synchronization Manager** icon in the system tray.
4. Click **Yes** on the confirmation boxes that are displayed.

The DSM is stopped.

Follow this procedure to stop these services on all the Pivotal CRM Systems.

To stop other Pivotal Services

1. On the DSM server, click **Start**, point to **Programs**, point to **Administrative Tools**, and then click **Services**.
2. If you have installed the DSM watcher, right-click **Pivotal DSM Watcher** service, and then click **Stop**.
3. If you have already installed OSM, right-click the **Pivotal Synchronization with MS Outlook** service on the computer running the OSM service and click **Stop**.

The Pivotal Services are stopped.

Stopping the Lifecycle Server

Stop the Lifecycle Server before installing Pivotal Business Server 6.0.

To stop Pivotal Business Server

1. In the **Component Services** window, expand **Component Services**, expand **Computers**, expand **My Computer**, and then expand **COM+ Applications**.
2. Right-click **Pivotal Lifecycle Server** and click **Shut down**.

Stopping the Database Services

Stop the SQL Server database services before you upgrade the database.

To stop the database services

1. On the DSM server, click **Start**, point to **Programs**, point to **Administrative Tools**, and then click **Services**.
2. If you have installed the DSM watcher, right-click a SQL Server service and click **Stop**.

   Repeat this step for all the database services.

The database services are stopped.

Converting to Unicode

If you intend to convert a non-Unicode Pivotal system to Unicode, it is recommended that you convert the system before migrating to Pivotal CRM 6.0. For more information on converting to Unicode, see the *Pivotal LifeCycle Engine 5.9 Upgrade and Migration Guide*.

PART A

Migrating the Business Module

8

Automatic Business Module Migration

What Changes After Migration?

The Business Module undergoes a few changes after the automatic migration. *Table 8-1* on page 8-2 lists the objects that are migrated.

Table 8-1 Changes to Business Module after automatic migration

From (r5.x)	To (6.0)
Active Searches	Queries
Query Permissions	Group_Searches table
Active Search Results List	Search Results List
Refinements	Search Filters
COM_Objects Table	Code_File table
Active Access Security Permissions	Client Security Permissions
LAN Security Permissions	Client Security Permissions

Active Searches

Active Searches are migrated to Queries in Pivotal CRM 6.0. After migration, all the Active Searches are listed as Queries. During the process of converting an Active Search to a Query, it is possible that the Active Search that is being migrated has the same name as an already existing Query. To avoid any conflicts, an Active Search name that conflicts with a query name is suffixed with Search_Migrated. For example, consider that a system has an Active Search by name All Companies and a Query with the same name. During migration, the Active Search name is automatically changed to All Companies_migrated to prevent any conflicts with the All Companies Query.

All the Active Searches are stored in the Search table and the Queries are stored in the Saved_Lookups table. During migration, all the records in the Search table are migrated to the Saved_Lookups table. For more information on Active Searches migration, see Appendix A, *Migrating Records from Search Table to Saved_Lookups Table*.

Active Search Permissions

Active Search permissions are stored in the Group_Searches table. When the Active Searches are migrated, every Active Search record in the Group_Searches table is duplicated and this record is updated with the appropriate Groups_Tables_Id. The Groups_Table_Id maps to a record in the Group_Tables table and the Login_Type is changed to Client. The duplicated record is also updated with the new Saved_Lookups_Id that corresponds to the migrated Active Search.

For more information on migrating permissions, see Appendix A, *Migrating Active Search Permissions*.

Query Permissions

Query permissions are stored in the Action_Object_Permissions table in Pivotal CRM r5.x. In Pivotal CRM 6.0, Query permissions are stored in the Group_Searches table. While migrating, these records have to be moved from the Action_Object_Permissions table to the Group_Searches table. After moving the records, the Saved_Lookup_Id in the Group_Searches table is replaced with the ID of the migrated search and the Search_Id is set to `NULL`. For more information about migrating Query permissions, see Appendix A, *Migrating Query Permissions*.

Active Search Results List

Active Search Results List that is used in Active Access is termed as Search Results List in Pivotal CRM 6.0. In Pivotal CRM 6.0, the Active Search Results List Business Object is replaced with the Search Results List Business Object. New columns are added to the Search_Results_List table that stores information about a Search Results List, and Search_Results_List_Field table that stores information about the fields in a Search Results List.

The Search Results List enhances the functionality of the Active Search Results Lists. Customizer can use a Results List to define fields from related tables, besides the table on which the Search Results List is based. A customizer can select a field from tables that have direct or nested relationship with the table on which the Search Results List is based.

Search Results List Permissions

The permissions for the Search Results List are migrated from the Active Access connection type to the Client connection type. The changes are made in the Group_Search_Results_List table. For more information on Search Results List permissions, see Appendix G, *Migrating Permissions*.

Refinements

Refinements in Pivotal CRM r5.x system are used as filters to refine the Search Results List. In Pivotal CRM 6.0, the refinements that are defined under a Search Results List are migrated to Queries. During migration, if there is an identical query based on the same table as the refinement, the refinement is not migrated. For more information on refinements migration, see Appendix G, *Migrating Refinements*.

COM_Objects Table

In Pivotal CRM r5.x systems, information about the assemblies is stored in the COM_Objects table. The disadvantage of this table is that a separate record is maintained for every COM class that an assembly contains. This results in a large number of records for a single assembly.

In the Pivotal CRM 6.0 system, information about client, server, and general assemblies is stored in the Code_File table, with each record containing information about all the COM classes within that assembly. Due to this, there are no duplicate records for an assembly.

During BM upgrade, the records in the COM_Objects table are migrated to the Code_File table. The COM_Objects table is retained for backward compatibility.

Initiating the Business Module Migration

The migration process starts when you launch the Customization System with 6.0 Pivotal Customization Module and r5.9 Business Module. To migrate the system, launch the Customization System.

To migrate the Business Module by launching the Customization System

1. Click **Start**, point to **Programs**, and click **Pivotal Toolkit**.
2. In the **Pivotal Login** dialog box, select the name of the Customization System from the **System** drop-down list.
3. Click **OK**.
4. A confirmation box is displayed, asking you if you want to upgrade the Business Module. Click **Continue**.
5. The **Security Permissions** dialog box with security permission options is displayed. This dialog box enables you to select the security permissions to migrate to Pivotal CRM 6.0. Select the permissions based on the number of users who use a particular user interface. For example, if most of the users within an organization use Active Access, then migrate the Active Access permissions. You can choose not to migrate any permissions. In this case, the permissions for both Active Access objects and Windows Access objects have to be set manually.

   Select the permission to migrate and click **OK**.

Note: If you choose not to migrate any permissions, only the security permissions are not migrated. The rest of the changes that happen during automatic Business Module migration take place.

6. The Business Module migration is started. A progress bar with a message is displayed to indicate the migration status. When the migration is complete, Pivotal Toolkit is displayed.

The Customization System is launched and the Business Module is migrated. For more information on changes that occur after automatic Business Module migration, see *What Changes After Migration?* on page 8-2.

Migration Log

The `SednaMigration.log` file is created in `..\Program Files\CDC Software\Pivotal Toolkit` folder. This log provides the details about the automatic Business Module migration.

Importing the BM Upgrade for Pivotal CRM 6.0.rtr

`BM Upgrade for Pivotal CRM 6.0.rtr` contains various changes to the Business Module to make it Pivotal CRM 6.0 compatible. Import `BM Upgrade for Pivotal CRM 6.0.rtr` to include these changes to the Pivotal CRM System.

To import the BM Upgrade for Pivotal CRM 6.0.rtr

1. In the Customization System, click **Transporter** on the **eTab**.
2. Click **Import Elements from File**. Browse to the location where the `BM Upgrade for Pivotal CRM 6.0.rtr` file is stored, select the file and click **Open**.
3. Click **Continue** in the **Importing Elements from .rtr** dialog box.
4. Click **OK**.
5. Click **Close**.

The `BM Upgrade for Pivotal CRM 6.0.rtr` file is imported.

Setting permissions for the Exchange_Migration_Form

The Exchange_Migration_Form is used internally by the Exchange Server Data Migration Utility to migrate tasks and appointments. Hence, Scriptable permission has to be provided on to this form. For more information about migrating tasks and appointments, see Chapter 22, *Exchange Data Migration*.

To provide permission on the Exchange_Migration_Form

1. In the Customization System, click **Security**, and then click **Manage Security**.
2. Expand the appropriate security group, and click **Client** connection type.
3. In the **Client Permissions** window, click **Client Forms** tab.
4. Double-click **Rn_Interactions** table.
5. In the list of Client Forms for the Rn_Interactions table, double-click **Scriptable** permission for the **Exchange_Migration_Form**.
6. Click **OK**.

The Scriptable permission is set for the form.

Changing the Singular and Plural Names for Tables

Singular and Plural names are used Pivotal CRM System to display the names of tables in singular or plural. For example, in Pivotal Client 6.0, the names of the tables in the global search are displayed in plural. During migration, the Singular and Plural names for the migrated tables are automatically populated with the names of the tables. You can optionally, change these names.

To change Singular and Plural names for tables

1. On the **eTab**, click **Tables**, and then click **Tables by Name**.
2. In the **Tables by Name** window, click the table name.
3. In the **Table** dialog box, change the Singular and Plural names in the **Singular Name** and **Plural Name** boxes respectively.
4. Click **Save**.
5. Repeat the procedure for other tables.

The Singular and Plural Names for the table are changed.

Importing Langauge Dictionary Strings

Import the `rlangdict.csv` file to get the Pivotal CRM 6.0 LD Groups/ Strings into the migrated Pivotal r5.9 system.

To import rlangdict.csv

1. Click **Start**, point to **Programs**, point to **CDC Software**, then point to **Pivotal CRM**, and then click **Pivotal Toolkit**.
2. In the **Pivotal Login** dialog box, select the Customization System from the **System** drop-down list.
3. On the **eTab**, click **Pivotal Agents**, and then click **List of Agents**.
4. In the **Agents** window, expand the **Language/Import and Export** node.
5. Click **Import System Strings**.
6. Click **OK**.
7. Browse to the folder where you have unzipped the Pivotal Toolkit installer zip, browse to the `Language Dictionary` subfolder folder, select `rlangdict.csv` and click **Open**.
8. In the **Message - Import System Strings** dialog box, click **OK**.

The `rlangdict.csv` file is imported.

Apply Customization Changes

After migrating all the data, you need to apply the customization changes.

To apply customization changes

1. Click **Start**, point to **Programs**, point to **Pivotal**, and then click **Pivotal Administrative Console**.
2. In the **Pivotal Administrative Console** window, expand **Data Synchronization** and then expand the machine name.
3. Right-click the Customization System, and click **Apply Customization Changes**.
4. In the **Maintain User Database** dialog box, click **OK**.

Security Permissions

In Pivotal CRM 6.0, the Active Access and LAN connection types are being replaced with the Client connection type. This means that the security permissions for all objects under the Active Access and LAN connection types are migrated to the Client connection type. For example, if you migrate the Active Access permissions, the permissions for the objects such as, tables, reports, and queries under the Active Access connection type are migrated to the Client connection type.

There may be some permissions that exist in Active Access or LAN connection types, that may not exist in the Client connection type. Similarly, a Client connection type can have new permissions that may not exist in the Active Access or LAN connection types. These permissions have to be set manually. For information on setting the permissions manually, see *Manually Setting the Permissions* on page 8-10.

Comparing Security Permissions

Compare the object permissions in the Active Access and LAN connection types with the object permissions in the Client connection to:

- Check if the permissions have been migrated properly for the connection type that you chose to migrate. For example, if you chose to migrate Rich Client permissions during migration, the permissions that originally existed in the Active Access connection type must be transferred to the Client connection type.
- Generate a list of permissions that need to be set. For example, if you chose Rich Client permissions to be migrated, compare the permissions for LAN connection type and Client connection type. This comparison results in a list of permissions that are set in LAN connection type, but not in the Client connection type. You can set these permissions manually. For information on setting the permissions manually, see *Manually Setting the Permissions* on page 8-10.

In Pivotal CRM 6.0, you can generate XML files for object security permissions. Compare the XML files to compare the security permissions between objects. The permissions XML files can be used to:

- Compare security permissions on the same set of objects on a Pivotal CRM, that belong to different security groups.
- Compare security permissions on the same set of objects on two different Pivotal CRM, that belong to the same security group.

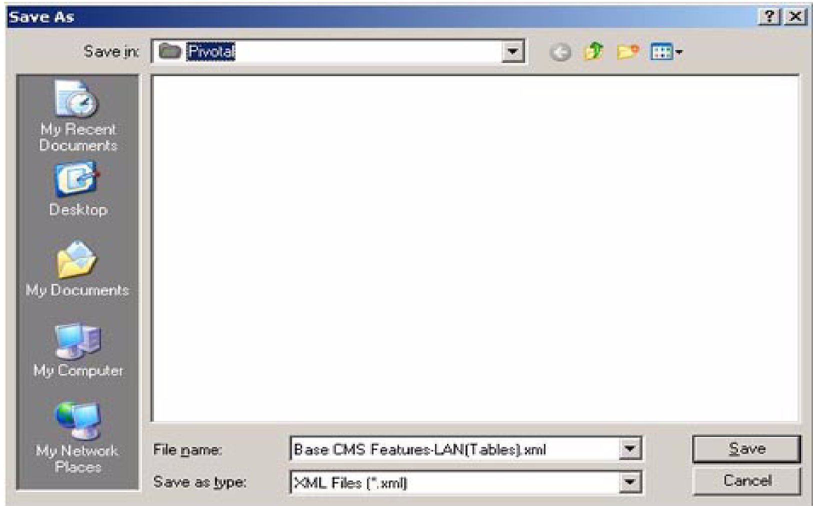
For example, you can generate an XML file containing the security permissions for the Tables object under the `Base CMS features` security group for the LAN connection type and another XML file with the permissions for the Tables object under the `Base CMS Features` group for the Client connection type. These two XML files can be compared using a third-party comparison utility.

To compare security permissions

1. Generate permissions XML file.
2. Compare the XML files.

To generate the permissions XML file

1. Click **Start**, point to **Programs**, and click **Pivotal Toolkit**.
2. Select the Customization System name from the **System** drop-down list.
3. On the **eTab**, click **Security**, and then click **Manage Security**.
4. The **Security** window is displayed with the list of security groups. Expand a security group. For example, expand `Base CMS Features` group.
5. Click a connection type. For example, click **LAN**. The permissions for various objects are displayed in a tabular format.
6. To generate the permissions XML file, click **Generate Security Document**.
7. In the **Object Selection** dialog box, you can select the objects for which you want to generate a permissions XML file and click **OK**.
8. In the **Save As** dialog box, browse to the location of your choice and click **Save**. The files are saved in the `Documents and Settings\<username>\Local Settings\Application Data\Pivotal` folder by default.



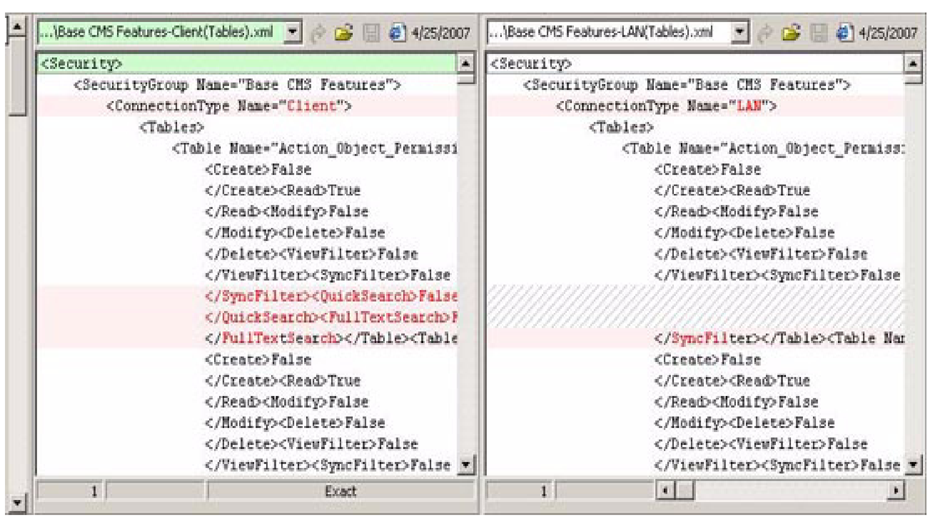
Note: If a permissions XML file is generated for a single object, the object name is appended to the XML file name. For example, `Base CMS Features-LAN(Tables).xml`. If the XML file is generated for all the objects, the file name has ALL appended.

9 Repeat step 4 to 8 to generate a permissions XML file for another connection type. For example, generate a permissions XML file for the Client connection type under the `Base CMS Features` group.

The permissions XML file is generated.

To compare the permissions XML files

>> Compare the two XML files by using a third-party comparison utility. This comparison displays the differences between the two XML files. The comparison displays the differences in security permissions.



By comparing the security XML files, a customizer can:

- Identify objects that exist in one security document but not in the other.
- Identify security permissions that have changed between two security groups.

Manually Setting the Permissions

You need to manually set the permissions that are not migrated. You also need to set the View Filter and Sync Filter properties for satellite and mobiles. These filters enable you to control the flow of data to and from the Master system.

To manually set permissions

1. Click **Start**, point to **Programs**, and then click **Pivotal Toolkit**.
2. In the **Pivotal Login** dialog box, select the Customization System from the **System** drop-down list.
3. In Pivotal Toolkit, on the **eTab**, click **Security**, and then click **Manage Security**.
4. In the **Security** window, expand the security group for which you want to set the permissions, and click **Client**.
5. In the **Client Permissions** window, click the tab of the objects whose permissions you need to set. For example, click **Tables**.
6. In the list of tables, scroll to the tables whose permissions are not set. Double-click the cell below the permissions to set or cancel the permissions.
7. Repeat the procedure for all the objects.
8. Click **OK**.

The permissions are set.

Setting Filters

Set the following filters:

- *Sync Filters*
- *View Filters*

Sync Filters

A Sync filter defines the subset of table records synchronized from the parent system to a child system. Sync filters can provide the following benefits:

- Reduce synchronization time (fewer records to send from the parent system to a child system).
- Limit the size of the record set sent to a new child system (for example, if you define a Sync filter as: Create_Date > 10/10/01, only records dated after October 10th, 2001 are synchronized).

You can only define a Sync filter in the Mobile Permissions window.

Note: Sync filters are only applied to those records sent from the parent system to a child system. All new records created on a child system (including records outside of the Sync filter range) are synchronized with the parent system.

Testing Sync Filters on a Development System

It is recommended that you test Sync filters in a Development System before you deploy them in a Production System. Development Systems support mobile synchronization, while Offline Systems do not. You cannot use Offline Systems to test Sync filters. If you customize on an Offline System, you must upgrade the Production System from the Offline System and test mobile user security on the Production System.

To add a Sync Filter to a table

1. Open the **Permissions** window for the Mobile connection type in the desired security group, and click the **Tables** tab.
2. Right-click a row, and then click **Add Sync Filter** to define a new query in the Filter editor.

Note: Click **Edit Sync Filter** to edit the query in the Filter editor.

3. Click **Save**, and close the Filter editor.

   A funnel icon displays in the appropriate cell of the **Permissions** window.

Note: While the system automatically displays a funnel icon for the corresponding table in all **Permissions** windows, the Sync filter only applies to systems using the Mobile connection type.

View Filters

You can set view filters to limit the records a user can see. If you do not define a view filter, users with table permissions can view all records in that table. While you can only create and edit a view filter in the LAN Permissions window for a LAN connection type, the system automatically applies that filter to all connection types in the security group.

Example

If you define a view filter for the Contact table which restricts users (such as an account manager) to viewing only those contacts in their territory, then users can only view their own contacts, and account managers can only see those contacts in their own territory. If you do not define a view filter, users can view all contact records on their system, provided that they have Read permissions for the Contacts table.

To add a view filter to a table

1. Open the **Permissions** window for the LAN connection type in the desired security group.
2. On the **Tables** tab, right-click a row representing the appropriate Business Object, and then click **Add View Filter** and define a new query in the Filter editor.

> **Note:** Click **Edit View Filter** and make your changes to the query in the Filter editor to edit an existing filter.

3. Click **Save** when you are finished, and close the Filter editor.

   A funnel icon displays in the appropriate cell of the **Permissions** window.

> **Note:** It is recommended that you do not modify data filters if mobile users are active in a group. If you modify a security group that is active, the change in the Business Module is synchronized with all child systems. However, existing records that pertain to the change are not resurveyed until you tickle them or resend a new Enterprise Data.

The customizers can use Custom SQL to enhance the filters. You can only edit filters for an appropriate connection type. For example, you can only edit a view filter in the LAN **Permissions** window.

> **Note:** View and Sync filters are not applied to Action Objects directly, but instead to the records those Action Objects act upon. Once you create a view filter, the funnel icon is displayed automatically for that table in all other connection types.

For more information on filters, see the *Pivotal Toolkit 6.0 Toolkit Guide*.

9

Installing Application Foundation Library

Overview

The Pivotal Foundation Library 6.0 enables customizers to implement client-side and server-side application logic on the Pivotal Business Server using .NET technology. Customizers can implement the application logic by writing Client and Server Tasks.

Components

Pivotal Foundation Library related files are available in the `Toolkit\Application Foundation Library` folder, when you unzip the `TK60.zip` file.

Table 9-1 on page 9-2 details the contents of the Pivotal Foundation Library 6.0.

Table 9-1 Contents of the Pivotal Foundation Library 6.0

Folder	Contents	Description
`Code Files\Client`	`Foundation.Data.dll`	Contains the constants that are used to name the elements in the Business Module, that are used by the Pivotal Application Foundation Library. This is a resource assembly without any functionality.
	`Foundation.Common.dll`	Contains utility functionality that is used by the client and Server Tasks.
	`Foundation.Client.dll`	Contains global Client Scripts and the base class for all other Client Tasks.
	`Foundation.Client.Proxy.dll`	Contains the base class for all other Server Task proxy classes.
		(Sheet 1 of 3)

Table 9-1 Contents of the Pivotal Foundation Library 6.0 (Continued)

Folder	Contents	Description
Code Files\Server	Foundation.Data.dll	Contains constants to name the elements in the Business Module, that are used by the Pivotal Application Foundation Library. This is a resource assembly without any functionality.
	Foundation.Common.dll	Contains utility functionality that is used by the client and Server Tasks.
	Foundation.Server.dll	Contains application Server Tasks and two base classes for all other Server Tasks. It also contains shared application Server Tasks that provide functionality for all the other Server Tasks in the Pivotal Application Foundation Library.
	Foundation.Server.BusinessRuleServices.dll	Contains Server Tasks to implement shared business rules.
	Foundation.Server.InteractionServices.dll	Contains Server Tasks to implement Pivotal Integration 6.0 for Microsoft Outlook functionality that is used by other Server Tasks, except for those provided with Foundation.Server.dll.
	Foundation.Server.TerritoryServices.dll	Contains Server Tasks to implement Territory assignment and reassignment that is used by other Server Tasks.
Source Code		Contains the source files for the Application Foundation Library.
RTR and CSV	Foundation Library.csv	Contains all extra Language Dictionary (LD) strings used by the assemblies.
	Foundation Library.rtr	Contains all Pivotal Application Foundation Library code files, Client Tasks, Server Tasks, and assemblies.
	Cms Support.rtr	Contains the Client Scripts and code files for the AppServer Rules listed in CMS Support folder. The Client Scripts and AppServer Rules are modified to use the supported legacy APIs. For more information about supported and unsupported APIs, see Appendix C , *Changes to Pivotal r5.9 APIs*.

(Sheet 2 of 3)

Table 9-1 Contents of the Pivotal Foundation Library 6.0 (Continued)

Folder	Contents	Description
Templates	Application Client Task.zip	Contains C# project template to create a Form Client Task.
	Application Server Task.zip	Contains C# project template to create a Form Server Task.
Cms Support/ Client Scripts	Global ClientShareFunction.txt Global_Email.txt Global_Search.txt	Global Client Scripts that are modified for backward compatibility. These scripts delegate the calls to a Client Task implemented in 6.0.0.0 Pivotal Application Foundation Library.
Cms Support/ Server ASRs	CoreBRLib.dll CoreUTLib.dll	VB Core DLLs that delegate the calls to Server Tasks implemented in of 6.0.0.0 Pivotal Application Foundation Library. These DLLs are modified for backward compatibility.
	CMSTerritoryMgmt.dll PHubTerritoryMgmt.dll	Dlls that delegate the calls to CoreBRLib.dll for the territory assignment. The DLLs are modified to use the supported legacy APIs. For more information about supported and unsupported APIs, see Appendix C , *Changes to Pivotal r5.9 APIs*.
		(Sheet 3 of 3)

Installing the Components

Install Pivotal Application Foundation Library 6.0 on the Administrative Computer by running ..Toolkit\Application Foundation Library\Installer\Setup.exe. Pivotal Application Foundation Library 6.0 is installed in the C:\Program Files\CDC Software\Pivotal CRM\Foundation Library folder.

After installing Pivotal Application Library 6.0, import:

- Foundation Library.rtr
- Cms Support.rtr
- Foundation Library.csv

Transporter Files

Foundation Library.rtr file contains Code Files, Client Tasks, and Server Tasks and the Cms Support.rtr file contains the modifed Client scripts and AppServer Rules.

To import the transported files

1. Click **Start**, point to **Programs**, point to **CDC Software**, then point to **Pivotal CRM**, and then click **Pivotal Toolkit**.
2. In the **Pivotal Login** dialog box, select the Customization System from the **System** drop-down list.

3 Click **OK**.
4 On the **eTab**, click **Transporter**.
5 Click **Import Elements from File**.
6 Browse to the location where the `Foundation Library.rtr` file is stored and click **Open**.
7 Click **Continue** in the **Importing Elements from Foundation Library.rtr** dialog box.
8 Click **OK**.
9 Click **Close**.

The `Foundation Library.rtr` file is imported. Repeat step 6 to step 9 to import the `Cms Support.rtr` file.

Foundation Library.CSV

`Foundation Library.csv` file contains the Language Dictionary Strings used by Pivotal Applications Foundation Library 6.0.

To import Foundation Library.csv

1 Click **Start**, point to **Programs**, point to **CDC Software**, then point to **Pivotal CRM**, and then click **Pivotal Toolkit**.
2 In the **Pivotal Login** dialog box, select the Customization System from the **System** drop-down list.
3 On the **eTab**, click **Pivotal Agents**, and then click **List of Agents**.
4 In the **Agents** window, expand the **Language/Import and Export** node.
5 Click **Import System Strings**.
6 Click **OK**.
7 Browse to the location where the `Foundation Library.csv` file is stored and click **Open**.
8 In the **Message - Import System Strings** dialog box, click **OK**.

The `Foundation Library.csv` file is imported.

Apply Customization Changes

After migrating all the data, you need to apply the customization changes.

To apply the customization changes

1 Click **Start**, point to **Programs**, point to **Pivotal**, and then click **Pivotal Administrative Console**.
2 In the **Pivotal Administrative Console** window, expand **Data Synchronization** and then expand the machine name.
3 Right-click the Customization System, and click **Apply Customization Changes**.

4 In the **Maintain User Database** dialog box, click **OK**.

Installing C# Project Templates

The C# project templates provide the basic template to create Client and Server Tasks. The `Application Client Task.zip` file contains the C# project template for creating C# form Client Task and the `Application Server Task.zip` file contains the C# project template for creating C# Form Server Task.

To install C# project templates

>> Copy `Application Client Task.zip` and `Application Server Task.zip` files to `C:\Documents and Settings\<User Name>\My Documents\Visual Studio <2005 or later>\Templates\ProjectTemplates` folder.

The C# project templates are installed.

Note: The Pivotal platform cannot update CodeFile properly. Hence, ensure that you copy all the client assemblies to `C:\Documents and Settings\<User Name>\Local Settings\Apps\SmartClientContainer.<Machine Name>.swg.cdc.root\exe\PivotalCRM\<Pivotal System Name>`

To create a Form Client Task using the Cms Form Client Task template

1 In Microsoft Visual Studio 2008, click **File**, point to **New** and then click **Project**.

2 In the **New Project** dialog box, select **Cms Form Client Task** template under **My Templates** list. *Figure 9-1* on page 9-7 illustrates this window.

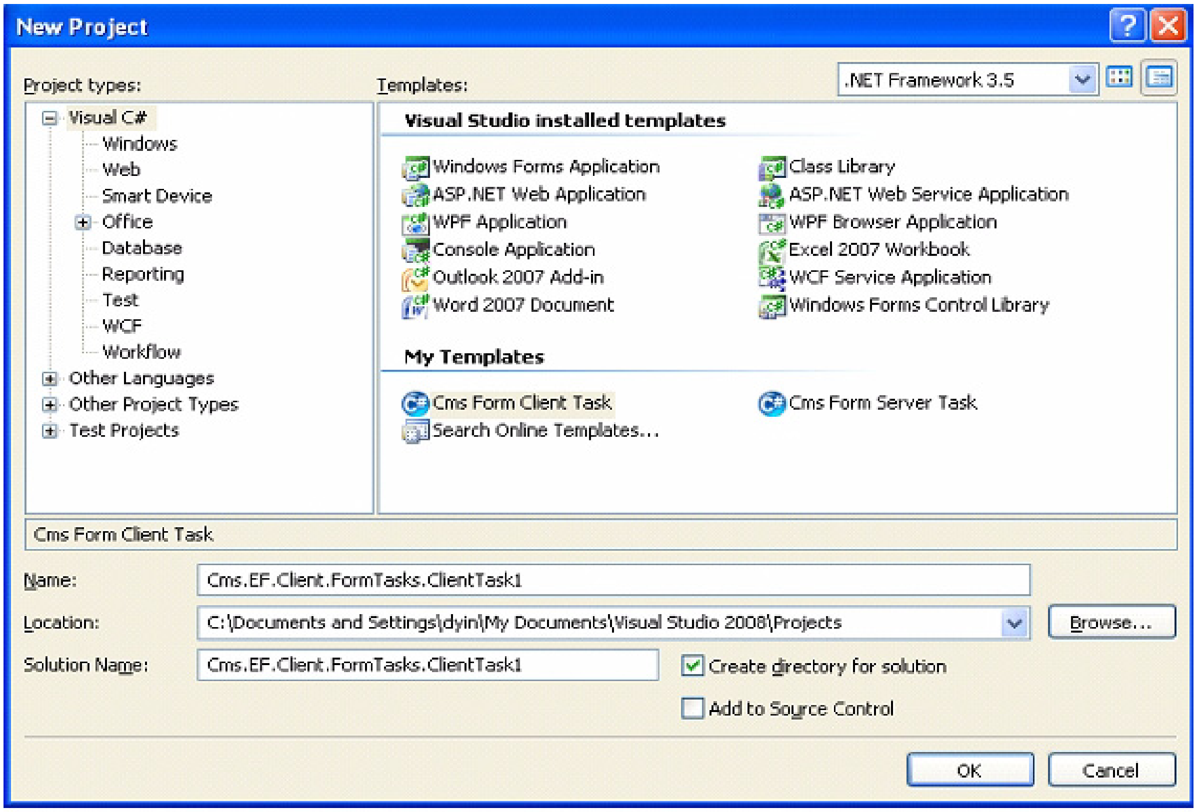


Figure 9-1 Selecting project templates in Visual Studio

3 In the **Name** box, type a name for the project.

4 In the **Location** box, browse to the folder where the project is to be saved.

5 Select the **Create directory for solution** check box.

6 In the **Solution Name** box, type a name for the solution that is different from the project name.

7 Select **Add to Source Control** if you want to add the solution to a source control database.

8 Click **OK**.

The Form Client Task is created.