



**Tutorial: Mobile Workflow Package
Development**

Sybase Unwired Platform 1.5.5

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Introduction to Getting Started Tutorials

Getting started tutorials enable users of all levels to try Sybase® Unwired Platform with minimal setup. You can also use the tutorials to demonstrate system functionality and train users.

Overview of Getting Started Tutorials

The getting started tutorials demonstrate how to develop, deploy, and test mobile business objects, device applications, and message-based mobile workflow packages.

- Learn mobile business object (MBO) basics, and create a mobile device application:
 - *Tutorial: Mobile Business Object Development*
 - *Tutorial: BlackBerry Application Development using Device Application Designer*
 - *Tutorial: Windows Mobile Device Application Development using Device Application Designer*
- Create native mobile device applications:
 - *Tutorial: BlackBerry Application Development using Custom Development*
 - *Tutorial: iPhone Application Development using Custom Development*
 - *Tutorial: Windows Mobile Application Development using Custom Development*
- Create a mobile workflow package:
 - *Tutorial: Mobile Workflow Package Development*

The getting started tutorials demonstrate a cross section of basic functionality, which includes creating MBOs that can be used in replication-based or message-based synchronization; and using various Sybase Unwired WorkSpace development tools, independent development environments, and device types.

Table 1. Tutorial summary

Tutorials	Mobile business objects (MBOs)	Synchroni- zation types	Development tools	Device types
Tutorial: Mobile Business Object Development	Create new MBOs	Replication-based	Sybase Unwired WorkSpace	N/A
Tutorial: BlackBerry Application Development using Device Application Designer	Reuse MBOs	Replication-based	Device Application Designer	BlackBerry

Tutorials	Mobile business objects (MBOs)	Synchronization types	Development tools	Device types
Tutorial: BlackBerry Application Development using Custom Development	Create new MBOs	Replication-based	Sybase Unwired WorkSpace	BlackBerry
Tutorial: iPhone Application Development using Custom Development	Create new MBOs	Message-based	Sybase Unwired WorkSpace	iPhone
Tutorial: Windows Mobile Application Development using Device Application Designer	Reuse MBOs	Replication-based	Device Application Designer	Windows Mobile
Tutorial: Windows Mobile Device Application Development using Custom Development	Create new MBOs	Message-based	Sybase Unwired WorkSpace	Windows Mobile
Tutorial: Mobile Workflow Package Development	Create new MBOs	Message-based	Mobile Workflow Forms Editor	Windows Mobile

Understanding the Unwired Platform Development Environment

Learn more from the getting started tutorials by understanding basic development environment concepts. Sybase Unwired Platform provides an Eclipse development environment.

Development in Eclipse

Sybase Unwired WorkSpace is a plug-in to your Eclipse development environment that provides tools for creating mobile applications.

Unwired WorkSpace includes back-end integration tools that connect Unwired Server to enterprise data sources, allowing you to create mobile business objects (MBOs) from the back-end business data model.

Developers can perform MBO code generation at any time and use this MBO model code along with the user interface code that users write in a native integrated development environment (IDE). This makes the code available to transition from the Unwired WorkSpace MBO development tool to the fully extensible and open development environment provided for device platforms from third-party vendors. Optionally, use the Device Application

Designer to create prototype device applications for BlackBerry and Windows Mobile devices.

Developers can use the Mobile Workflow Forms Editor to develop message-based mobile workflow packages for Windows Mobile and iOS devices.

Understanding Fundamental Mobile Development Concepts

Learn more from the getting started tutorials by understanding basic mobile development concepts.

Learn more about these concepts:

- *Fundamentals*
- *Sybase Unwired WorkSpace – Mobile Business Object Development*

Mobile Business Objects

Mobile business objects help form the business logic for mobile applications.

A mobile business object (MBO) is derived from a data source (such as a database server, Web service, or SAP® server). MBOs are deployed to Unwired Server, and accessed from mobile device application clients. MBOs include:

- Implementation-level details – metadata columns that include information about the data from a data source.
- Abstract-level details – attributes that correspond to instance-level properties of a programmable object in the mobile client, and map to data source output columns. Parameters correspond to synchronization parameters on the mobile client, and map to data source arguments. For example, output of a SQL SELECT query are mapped as attributes, and the arguments in the WHERE clause are mapped as synchronization parameters, so that the client can pass input to the query.
MBO operations include parameters that map to data source input arguments. Operation parameters determine information a client passes to the enterprise information system (EIS).
- Relationships – defined between MBOs by linking attributes and parameters in one MBO, to attributes and parameters in another MBO.

You can define MBOs using either a top-down approach—first designing attributes and parameters, then binding them to a data source; or a bottom-up approach—first specifying a data source, then automatically generating attributes and parameters from it.

A mobile application package includes MBOs, roles, and data source connection mappings, and other artifacts that are delivered to the Unwired Server during package deployment.

Synchronization Methods

Developers can use either replication-based or message-based synchronization to move data and transactions between device application clients and Unwired Server.

The choice depends on the target device platform, application requirements, target platform, and the nature of data changes and activity between Unwired Server and clients, for example, mobile workflow forms always use message-based synchronization.

Unwired Server manages and maintains data freshness between multiple data sources and device application clients through synchronization.

Application Types

Sybase Unwired Platform supports two choices for application type. First is the native application type, and the other is the container-based business workflow type.

The native application model enables the developer to write custom code (C#, Java, or Objective-C, depending on the platform) to create a device application. The native application model is supported on BlackBerry, iOS, Windows Mobile, and Windows platforms. The choice depends on the functionality desired in the application, and the need to access third-party and platform-provided APIs. Optionally, use the Device Application Designer to create prototype device applications for BlackBerry and Windows Mobile devices.

The business workflow model offers a fast and simple way to build applications that support simple business workflows, such as approvals and requests. The workflow model is supported on iOS, Windows Mobile, and Windows platforms.

Data Sources

A data source is the enterprise information system where data is retrieved from and transactions are executed. A connection profile is a design-time connection to a data source. Connection profiles are created to specific data source by providing connection information such as host, port, login, and password among others. The connection profiles are used to define MBOs and operations, and mapped to existing, or used to create new, server connections when the package is deployed to Unwired Server..

Unwired Platform hides the interaction complexity with datasource-specific protocols, such as JDBC™ for database and SOAP for Web services.

Unwired Platform currently supports multiple EIS connection types. See *Supported Third-Party Software and Hardware* for information.

Switching Between Developer Profiles

Switch between basic and advanced developer profiles in the Mobile Application Diagram.

If you do not see an Unwired Workspace feature (wizard, property, or Workspace Navigator item) that you expect or need, switch to the advanced developer profile, or modify developer

profile settings. To use backend data sources other than those supplied by Sybase Unwired Platform, you must switch to the advanced developer profile to see the Server Connection Mapping page when deploying the Mobile Business Object package.

1. Right-click in the Mobile Application Diagram and select **Switch Developer Profile > Basic/Advanced**.
2. You can also select **Window > Preferences > Sybase, Inc. > Mobile Development > Developer Profile** to directly view or modify the developer profile preference settings. Basic is the default developer profile.

Task Flow

The Sybase Mobile Workflow tutorial explains how to develop, deploy, and run a mobile workflow package on a Windows Mobile emulator.

Task	Goals	Procedures required to achieve the goals
Getting Started	Install Sybase Unwired Platform, create a connection profile, start the server and Unwired WorkSpace, and create a Mobile Workflow Application project.	<ul style="list-style-type: none"> • <i>Getting Started</i> on page 9 • <i>Installing Sybase Unwired Platform</i> on page 9 • <i>Installing Synchronization Software</i> on page 9 • <i>Adding E-mail Users</i> on page 10 • <i>Starting Unwired Server</i> on page 12 • <i>Connecting to Sybase Control Center</i> on page 12 • <i>Starting Sybase Unwired WorkSpace</i> on page 12 • (Optional) <i>Learning the Basics</i> on page 13 • <i>Creating the sampledb Connection Profile</i> on page 15 • <i>Creating the Mobile Workflow 101 Mobile Application Project</i> on page 17 <hr/> <p>Note: These procedures are prerequisites for all the other tutorials. Perform them only once.</p>
Developing a Database Mobile Business Object	Create and deploy a database mobile object.	<ul style="list-style-type: none"> • <i>Creating the TravelRequest Database Table</i> on page 19 • <i>Creating the TravelRequest Mobile Business Object</i> on page 21 • <i>Deploying the WorkFlow101 Mobile Application Project</i> on page 21

Task Flow

Task	Goals	Procedures required to achieve the goals
Developing a Mobile Workflow Application	Create a mobile workflow form, generate the files, register the device in Sybase Control Center (SCC), assign the mobile workflow package to a user, and view the mobile workflow form on the emulator.	<ul style="list-style-type: none">• <i>Creating a Mobile Workflow Form</i> on page 25• <i>Generating Code for a Mobile Workflow Package</i> on page 29• <i>Configuring Connection Settings</i> on page 32• <i>Registering the Device in Sybase Control Center</i> on page 31• <i>Assigning the Mobile Workflow Package to a User</i> on page 33• <i>Setting Up a New E-mail Account on the Emulator</i> on page 35• <i>Viewing and Running the Mobile Workflow Form on the Emulator</i> on page 36

Getting Started

Goal: Install and learn about Sybase Unwired Platform and its components.

These tasks are required, unless otherwise noted, for all tutorials, but you need to perform them only once.

1. *Installing Sybase Unwired Platform* on page 9
2. *Starting Unwired Server* on page 12
3. *Connecting to Sybase Control Center* on page 12
4. *Starting Sybase Unwired WorkSpace* on page 12
5. (Optional) *Learning the Basics* on page 13
6. *Creating the sampledb Connection Profile* on page 15

Installing Sybase Unwired Platform

Goal: Install Sybase Unwired Platform.

Install these Sybase Unwired Platform components:

- Data Tier
- Unwired Server
- Unwired WorkSpace
- Device Application Designer

If Unwired Platform is already installed and any of these components are missing:

1. Start the Sybase Unwired Platform installer.
2. Follow the instructions in the installation wizard. When prompted, select **Custom Install**.
3. Select the required components, and complete the installation.

For complete installation instructions, see the *Sybase Unwired Platform Installation Guide* and *Release Bulletin* at <http://sybooks.sybase.com/nav/base.do>.

Installing Microsoft ActiveSync

Goal: Install and configure Microsoft ActiveSync so you can deploy and run a mobile application on a Windows Mobile emulator.

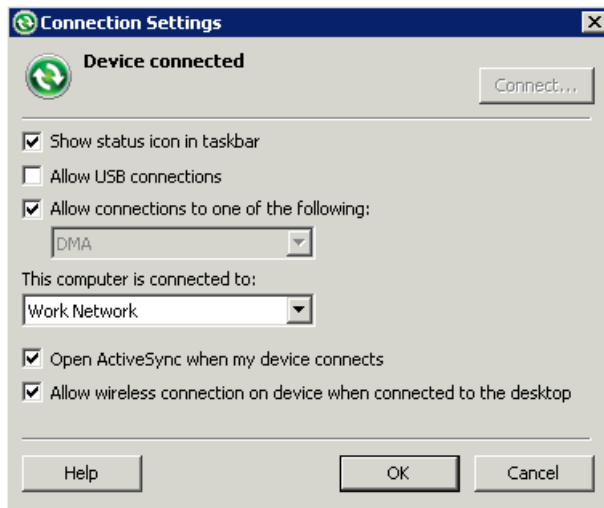
Note: Microsoft ActiveSync is for Windows XP. If you are using Windows Vista, Windows 7, or Windows 2008, install Virtual PC 2007 SP1 and Windows Mobile Device Center to manage

synchronization settings. Download the Windows Mobile Device Center from <http://www.microsoft.com/windowsmobile/en-us/downloads/microsoft/device-center-download.aspx>.

1. Download Microsoft ActiveSync from <http://www.microsoft.com/windowsmobile/en-us/help/synchronize/device-synch.msp>. Save it to your local machine. Windows XP requires ActiveSync version 4.5.
2. In Windows Explorer, double-click **setup.msi**.
3. When installation is complete, restart your machine.

ActiveSync starts automatically, and its icon appears in the Windows toolbar.

4. Double-click the **ActiveSync** icon.
5. Select **File > Connection Settings**.
6. Select **Allow Connections to One of the Following**, then select **DMA**.
7. Under This Computer is Connected to, select **Work Network**.



8. Click **OK**.

Adding E-mail Users

Goal: Set up e-mail user accounts so you can test the mobile workflow on the emulator.

Prerequisites

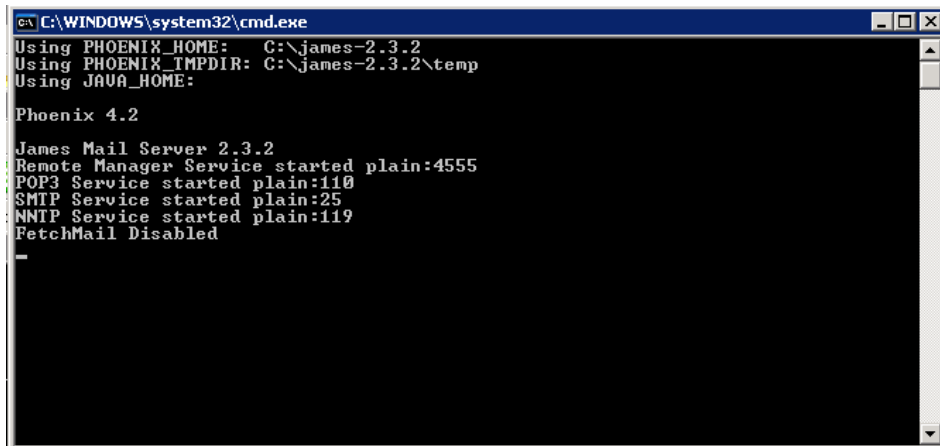
The James Mail Server requires a Java Runtime Environment of Java version 1.4 or higher installed to run the James application. A JRE must be downloaded and installed before James can run. In addition, the environment variable `JAVA_HOME` must be set to the JRE home directory before running James.

Task

This procedure uses an open source POP3 e-mail server called James Mail Server, but you can use any e-mail server.

1. Go to <http://james.apache.org/>.
2. Download the james-binary-2.3.2.zip file.
3. Unzip the file, for example, to C:\james.
4. Go to C:\james\james-2.3.2\bin and execute run.bat.

You see the James Mail Server window.



```

C:\WINDOWS\system32\cmd.exe
Using PHOENIX_HOME: C:\james-2.3.2
Using PHOENIX_TMPDIR: C:\james-2.3.2\temp
Using JAVA_HOME:

Phoenix 4.2

James Mail Server 2.3.2
Remote Manager Service started plain:4555
POP3 Service started plain:110
SMTP Service started plain:25
NNTP Service started plain:119
FetchMail Disabled
  
```

Note: The IIS default SMTP server might be occupying the port to which James connects. If you have trouble connecting to the James Mail Server, shut down the IIS SMTP server.

5. Launch a command prompt window and, at the C: prompt, enter: `telnet localhost 4555`.
6. In the James Remote Administration window, enter:
 - Login ID: root
 - Password: root
7. Add the e-mail users using the `adduser` command, for example:


```

adduser user1 pass123
adduser manager1 pass1234
adduser multiplexer pass12345
      
```
8. Enter `quit` when you are finished adding e-mail users.

Starting Unwired Platform Services

Goal: Start Unwired Server and the sample database.

In Windows, select **Start > Programs > Sybase > Unwired Platform<version> > Start Unwired Platform Services** .

Starting Sybase Unwired WorkSpace

Goal: Start Unwired WorkSpace.

1. In Windows, select **Start > Programs > Sybase > Unwired Platform<version> > Unwired WorkSpace**.

Sybase Unwired WorkSpace opens, and displays the Welcome page with links to product information, and to the product.

2. To read more about Sybase Unwired WorkSpace concepts and tasks, select **Help > Help Contents** from the main menu.

Connecting to Sybase Control Center

Goal: Open the Web-based Sybase Control Center administration console to manage Unwired Server and its components.

From Sybase Control Center, you can:

- View servers and their status
- Start and stop a server
- View server logs
- Deploy a mobile application package
- Set role mappings

1. Select **Start > Programs > Sybase > Sybase Control Center**.

Note: If Sybase Control Center does not launch, make sure that the Sybase Unified Agent service is started. See the Installation Guide for details.

2. Log in using the default login:

- User Name – supAdmin
- Password – s3pAdmin

Logging in to Sybase Control Center (SCC) allows you access to Unwired Platform administration features that you have been authorized to use. Administrators of any Sybase product can log into SCC. However, only users assigned to the Super

Administrator or Domain Administrator roles for Unwired Platform can log in to Unwired Server from Sybase Control Center.

Logging in to SCC only allows you access to the SCC interface. If Unwired Server has not been authenticated, you will not be able to see or administer any resources.

3. Select **Help > Online Documentation** for additional information on configuring, managing, and monitoring Unwired Server.

Learning the Basics

Goal: Learn about Sybase Unwired WorkSpace and how to access help.

Prerequisites

Start Unwired WorkSpace.

Task

1. From the Welcome page, select any of the links to familiarize yourself with the Unwired WorkSpace environment.

To close this page, click the **X**. You can reopen this page by selecting **Help > Welcome**.

2. Select **Start Development** to access the Sybase Unwired WorkSpace development environment. Look at the area (window or view) that you will be working in to access, create, define, and update mobile business objects (MBOs).

View	Description
WorkSpace Navigator	This view displays mobile application project folders, each of which contains all project-related resources in subfolders, including MBOs, data source references to which the MBOs are bound, personalization keys, and so on. Use this view to review and modify MBO-related properties.
Enterprise Explorer	A window that provides functionality to connect to various enterprise back-end systems; for example, database servers, SAP servers, and Sybase Unwired Server.

View	Description
Mobile Application Diagram	<p>A graphical editor where you create and define mobile business objects.</p> <p>Use the Mobile Application Diagram to create MBOs (including attributes and operations), then define relationships with other MBOs. You can:</p> <ul style="list-style-type: none"> • Create MBOs in the Mobile Application Diagram using Palette icons and menu selections – either bind or defer binding to a data source, when creating an MBO. For example, you may want to model your MBOs before creating the data sources to which they bind. This is sometimes called the top-down approach. • Drag items from Enterprise Explorer and drop them onto the Mobile Application Diagram to create the MBO – quickly creates the operations and attributes automatically based on the data source being dropped on the Mobile Application Diagram. This is sometimes called the bottom-up approach. <p>Each new mobile application project generates an associated Mobile Application Diagram.</p>
Palette	<p>Access the Palette from the Mobile Application Diagram. It provides controls, such as the ability to create MBOs, add attributes and operations, and define relationships, by dragging and dropping the corresponding icon onto the Mobile Application Diagram or existing MBO.</p>
Properties view	<p>Select an object in the Mobile Application Diagram to display and edit its properties in the Properties view. You cannot create an MBO from the Properties view, but generally, most development and configuration is performed here.</p>
Outline view	<p>Displays an outline of the file that is currently open in the editor area, and lists structural elements. The contents are editor-specific.</p>
Problem view	<p>Displays problems, errors, or warnings that you may encounter.</p>

3. To access the online help, select **Help > Help Contents** from the main menu bar.

4. Expand any of the documents that appear in the left pane. Some documents are for Sybase Unwired Platform, while others are for the Eclipse development environment.

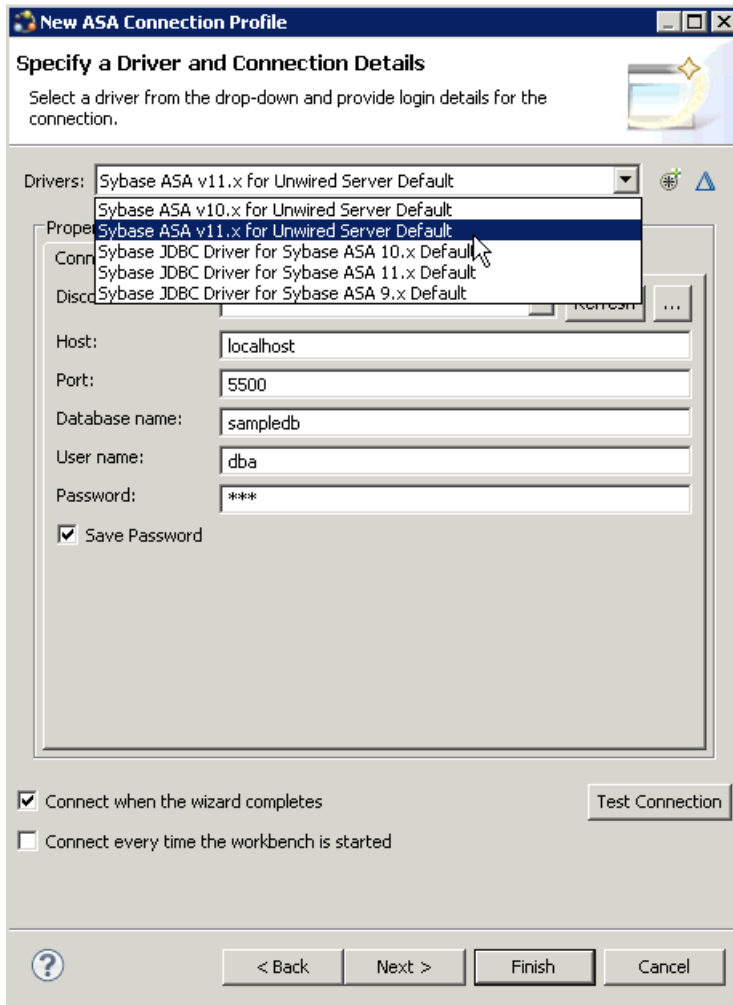
Creating the `sampledb` Connection Profile

Goal: Create a database connection profile and test the sample database connection.

Installing Sybase Unwired Platform also installs a sample database `sampledb`, which you can use to create and test mobile business objects (MBOs). Starting Sybase Unwired Platform Services automatically starts the database, depending on your license type. A default connection profile (My Sample Database) is included with the installation, and provides access to the `sampledb` database. This tutorial shows you how to create and use a new connection profile named `sampledb`.

This task is required for all tutorials, but you need to perform it only once. If the `sampledb` connection profile already exists, you do not need to perform this task.

1. From the Enterprise Explorer, right-click the **Database Connections** folder and select **New** to open the Wizard Selection Page.
2. Select **Sybase ASA**, enter `sampledb` as the name, and click **Next**.
3. Select **Sybase ASA v11.x for Unwired Server Default** as the driver and keep the default settings, including `dba` as the **User name** and `SQL` as the **Password**. Select **Save Password**.



4. Click **Test Connection**.

If Test Connection fails, verify Unwired Platform Services, including the sampledb database, are running.

- a) Select the Windows **Start > Settings > Control Panel** menu.
- b) Select **Administrative Tools**, then select **Services**.
- c) Depending on your installation options (for example, license type, whether or not you installed a cluster, and so on) determines which Sybase services are running.

UDF Discovery Service	Enables discovery of UDF devices on your system.	Started
Sybase Messaging Service	Sybase Messaging Service	Started
Sybase Unified Agent 3.0		Started
SybaseUnwiredPlatformfredh1xpDatabase1	SUP_CDB	Started
SybaseUnwiredPlatformfredh1xpSampleDatabase1	SUP_SampleDB	Started
SybaseUnwiredPlatformfredh1xpServer1	SUP Server	Starting
System Event Notification	Tracks system events such as Windows login.	Started

Note: If the sampledb database is not running, you can install and start it from the command line. To install it, use the command **sampledb install auto/manual**. For example:

```
C:\Sybase\UnwiredPlatform\Servers\UnwiredServer\bin> sampledb
install auto
```

To start it from the command line, run the command **sampledb start**. For example:

```
C:\Sybase\UnwiredPlatform\Servers\UnwiredServer\bin> sampledb
start
```

5. In the Ping Succeeded message, click **OK**.
6. Click **Finish**.

View the sampledb connection profile from Enterprise Explorer by expanding the **Database Connections** folder.

Creating the Mobile Workflow 101 Mobile Application Project

A mobile application project is the container for the mobile business objects that form the business logic of mobile applications.

Before you can create mobile business objects, you must create a mobile application project.

1. From the main menu bar, select **File > New > Mobile Application Project**.
2. Enter MobileWorkflow101 as the name.
3. Click **Finish**.

Developing a Database Mobile Business Object

Goal: Create a database mobile business object and deploy it to Unwired Server.

Develop the database mobile business object by:

1. *Creating the TravelRequest Database Table* on page 19.
2. *Creating the TravelRequest Mobile Business Object* on page 21.
3. *Deploying the WorkFlow101 Mobile Application Project* on page 21.

Creating the TravelRequest Database Table

Goal: Create the database table that will be used to create a Travel Request mobile business object.

Prerequisites

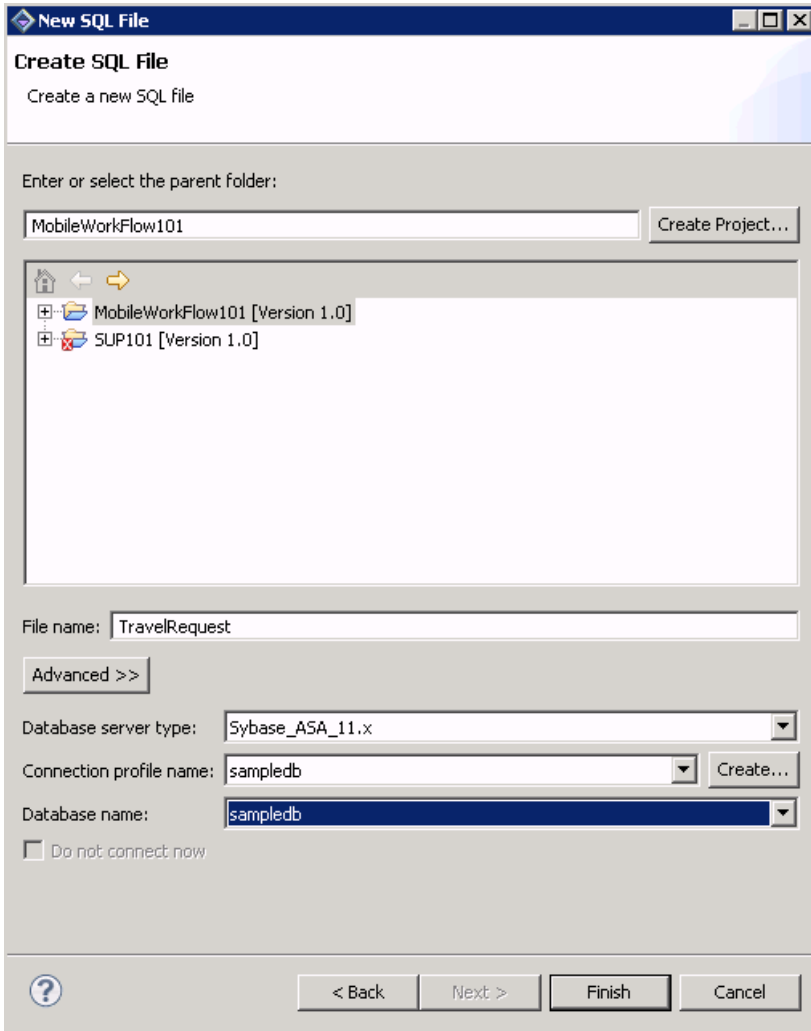
Complete *Creating the sampledb Connection Profile* on page 15.

Task

This task shows you how to create a SQL file that you can use to create a new database table, which is then used to create a mobile business object.

1. From the main menu, select **File > New > Other**.
2. Select **SQL Development > SQL File**, and click **Next**.
3. Enter or select the values shown and click **Finish**:

Field	Value
Parent folder	Select the MobileWorkflow101 project.
File name	Enter TravelRequest .
Database server type	Select Sybase_ASA_11.x .
Connection profile name	Select sampledb .
Database name	Select sampledb .



4. In the `TravelRequest.sql` editor, copy and paste this code:

```
CREATE TABLE TravelRequest (
    trvl_Id                integer NOT NULL DEFAULT
autoincrement
    ,trvl_Date             date NULL
    ,trvl_Loc              varchar(20) NULL
    ,est_Cost              float NULL
    ,purpose                varchar(200) NULL
    ,trvl_Status           varchar(20) NULL
    ,st_Cmmnt              varchar(200) NULL
    ,PRIMARY KEY CLUSTERED (trvl_Id)
);
```


5. Select **File > Save**.
6. Close the `TravelRequest.sql` file.
7. In the `MobileWorkflow101` project, right-click the `TravelRequest.sql` file you created and select **Execute SQL Files**.
This creates a database table called `TravelRequest`.
8. Expand the **sampledb** database you created, then expand the **Tables** folder.
You should see the new `TravelRequest` table. If you do not see it, right-click the **Tables** folder and select **Refresh**.

Creating the TravelRequest Mobile Business Object

Goal: Use the `TravelRequest` database table to create a mobile business object.

Prerequisites

Complete *Creating the TravelRequest Database Table* on page 19.

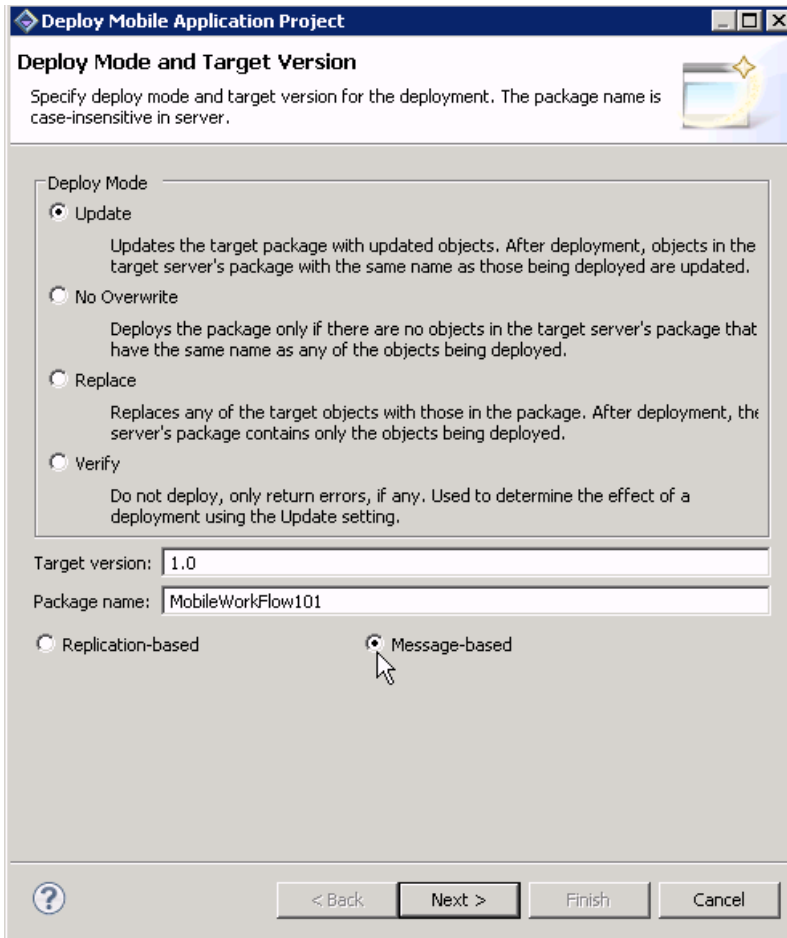
Task

1. Expand the **sampledb** database, then expand the **Tables** folder.
2. Drag and drop the `TravelRequest` table onto the `MobileWorkflow101` Mobile Application Diagram.
3. In the Quick Create wizard, accept the defaults and click **OK**.
4. Select **File > Save**.

Deploying the WorkFlow101 Mobile Application Project

Goal: Deploy the project that contains the `TravelRequest` mobile business object to the server.

1. Right-click in the `MobileWorkflow101` Mobile Application Diagram, and select **Deploy Project**.
2. In the first page of the Deploy Mobile Application Project wizard, select **Message-based**, accept the defaults for the other options, then click **Next**.



3. In the Contents page, select the **TravelRequest** mobile business object, and click **Next**.
4. In the Package Jars window, click **Next**.

Note: You see the Package Jars window only if you are using the Advanced developer profile. See *Switching Between Developer Profiles* on page 4 for information.

5. In the Target Server page, from the list of available servers, select **My Unwired Server** and click **Connect**.
Once connected, accept the default domain and security configuration settings, and click **Next**.
6. In the Server Connection Mapping page, click **Finish**.
7. In the Deployment status window, click **OK**.
8. When the deployment completes, click **File > Close**.

9. In the Enterprise Explorer, expand Unwired Servers, right-click **My Unwired Server**, and select **Refresh**.
10. Expand **Domains > default > Packages**. The server package *MobileWorkflow101* into which you deployed the MBOs appears in the Packages folder. The TravelRequest mobile business object appears in the Mobile Business Objects folder.

Developing the Mobile Workflow Package

Goal: Develop and deploy a mobile workflow package.

1. *Creating a Mobile Workflow Form* on page 25.
2. *Generating Code for a Mobile Workflow Device Application* on page 29.
3. *Registering the Device in Sybase Control Center* on page 31.
4. *Configuring Connection Settings* on page 32.
5. *Assigning the Mobile Workflow Package to a User* on page 33.
6. *Setting Up a New E-mail Account on the Emulator* on page 35.
7. *Viewing and Running the Mobile Workflow Application on the Emulator* on page 36.

Creating a Mobile Workflow Form

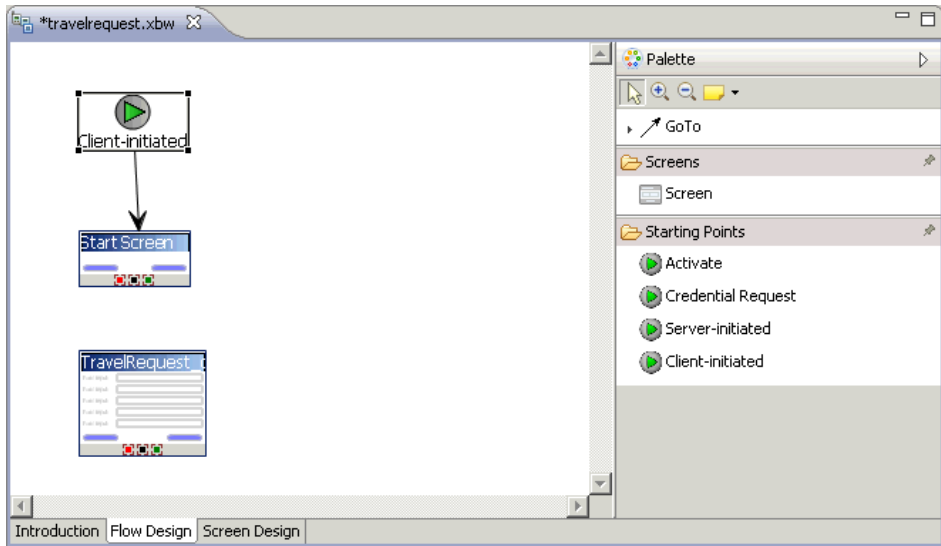
Goal: Create a mobile workflow form using the TravelRequest mobile business object.

Prerequisites

Complete *Deploying the WorkFlow101 Mobile Application Project* on page 21.

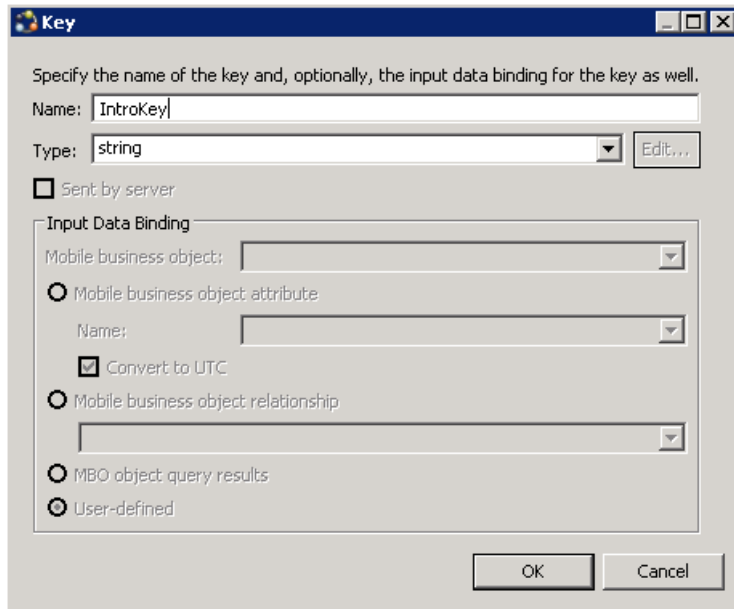
Task

1. From the main menu, select **New > Mobile Workflow Forms Editor**.
2. Select **MobileWorkflow101** as the parent folder and enter `travelrequest.xbw` as the file name.
3. Click **Next**.
4. Select **Can be started on demand from the client** and click **Finish**.
5. In the Mobile Workflow Forms editor, click **Flow Design**.
You see the Start icon with the Start Screen connected to it.
6. In Workspace Navigator, expand **MobileWorkflow101 > Mobile Business Objects > TravelRequest > Operations**.
7. Drag and drop the **create** operation onto the Flow Design page.
A `TravelRequest_create` screen is automatically created.



8. Add a **GoTo** connection from the Start Screen to the TravelRequest_create screen:
 - a) In the Palette, click **GoTo**.
 - b) Click the **Start Screen**, and while holding the mouse down, drag the connection to the **TravelRequest_create** screen.
9. Double-click the **Start** screen, which opens the Screen Design page.
10. From the Palette, select the **HtmlView** control and click the Start screen.
11. Click **Flow Design** to return to the Flow Design page.
12. Click the Client-initiated starting point so you can view its properties in the Properties view.

If the Properties view does not appear, right-click the Flow Design page and select **Show Properties View**.
13. The Properties view shows all of the keys that were automatically created for each parameter in the **create** method of the TravelRequest mobile business object.
14. Create a new key for the Start screen:
 - a) In the Properties view, in Keys, click **New**.
 - b) Enter these values:
 - Name – IntroKey
 - Type – string

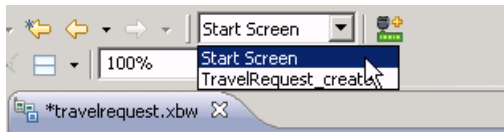


- c) Click **OK**.

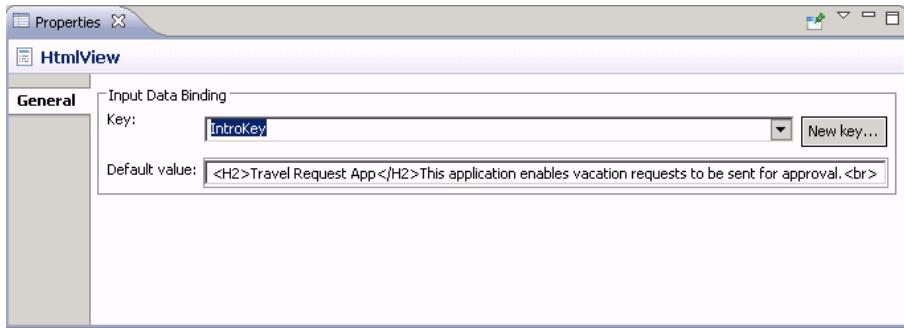
The new key, IntroKey, appears in the list of keys in the Properties view.

15. Define the default value for the new key:

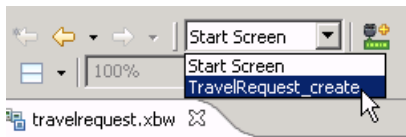
- a) Click the **Screen Design** tab.
- b) If necessary, select **Start Screen**.



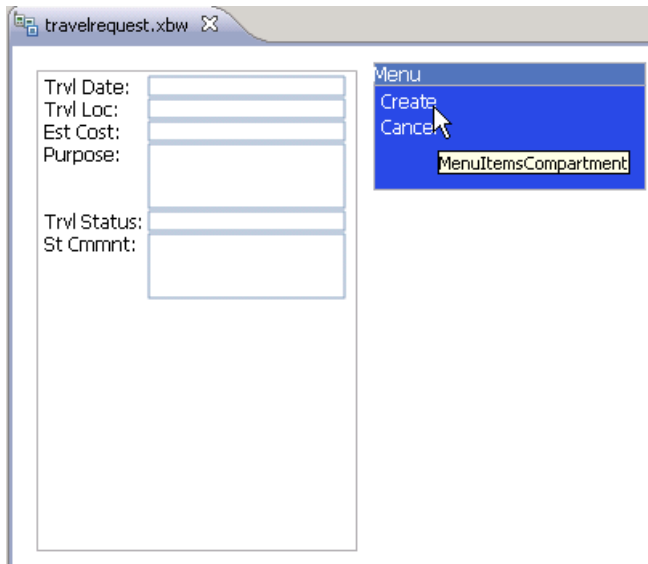
- c) Select the **HtmlView** control to view the properties in the Properties view.
- d) In Input Data Binding, from Key, select **IntroKey**.
- e) In Default value, enter: `<H2>Travel Request App</H2>`This application enables vacation requests to be sent for approval.



16. Select **TravelRequest_create**.

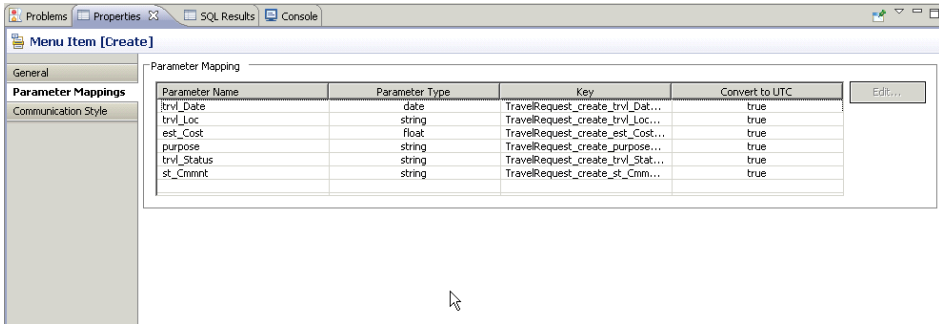


17. On the Menu, select the **Create** operation to view its properties.



18. In Properties, click **Parameter Mappings**.

The parameter mapping table shows the mobile business object parameters for the operation and the keys that are used for those parameters.



19. Select **File > Save**.


Generating Code for a Mobile Workflow Package

Goal: Generate the files for the Mobile Workflow package and deploy them to the Unwired Server.

Prerequisites

- Complete *Developing a Database Mobile Business Object* on page 19.
- Complete *Creating a Mobile Workflow Form* on page 25.
- If Microsoft ActiveSync is not running, start it now. (Windows XP)
- If Windows Mobile Device Center is not running, start it now. (Windows Vista, Windows 7, Windows 2008)

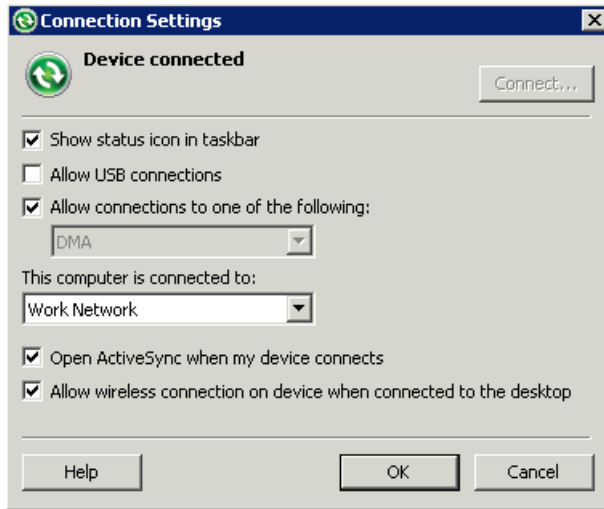
Task

1. In the Mobile Workflow Application Designer, click .
2. In the New Mobile Workflow Package Generation wizard, enter:

Option	Description
Favorite configurations	(Optional) Select a configuration.
Code Generation and Deployment	
Generation folder	Select the folder in which to save the .zip file containing the mobile workflow package and its generated files.
Deploy to an Unwired Server	Deploy the mobile workflow package to an Unwired Server.

Option	Description
Unwired Server Profile	Select the Unwired Server profile with which to associate the mobile workflow package and, if you are using static authentication, extract the user name and password credentials.
Deploy the Sybase messaging client to a connected Microsoft Windows Mobile device or emulator	<p>Deploy the Sybase messaging client to the Windows Mobile emulator.</p> <hr/> <p>Note: This option requires Microsoft ActiveSync 4.5 (if you are using Windows XP) or Windows Mobile Device Center (if you are using Windows Vista, Windows 7, or Windows 2008) to be installed and connected.</p>
Windows Mobile device type	Select Windows Mobile Professional .
Perform silent install	Perform the deployment on the device without necessitating user input.
Deployment timeout (minutes)	Enter the number of minutes allowed before the deployment times out.
Start Device Emulator Manager	Start the Device Emulator Manager, which is used to connect and cradle the selected device.

3. Click **Start Device Emulator Manager**.
4. Once the Device Emulator Manager starts, right-click the device you want to use for testing and select **Connect**.
5. Once the emulator launches, in the Device Emulator Manager, right-click the connected device and select **Cradle**.
Once you cradle the device, it will connect to ActiveSync or Windows Mobile Device Center.
6. Ensure the device is connected in Microsoft ActiveSync or Windows Mobile Device Center and click **OK**.



7. In the Mobile Workflow Package Generation wizard, click **Finish**.

The files for the mobile workflow package are generated and stored in the specified location as a `.zip` file.

The mobile workflow package appears in the Workflows folder under Unwired Server.

Registering the Emulator in Sybase Control Center

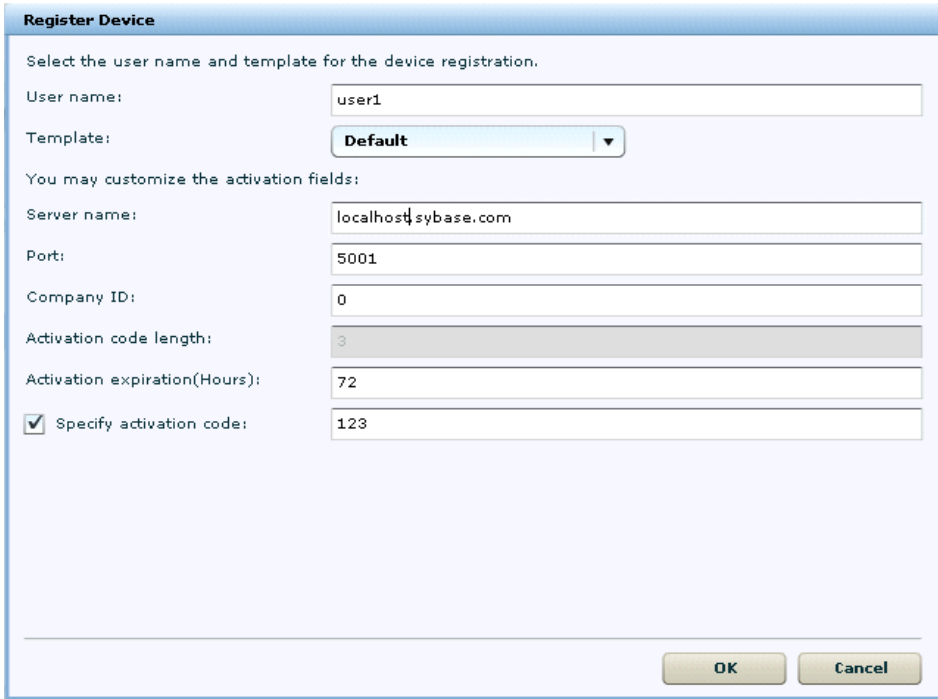
Goal: Use Sybase Control Center to register the emulator.

Prerequisites

Complete *Connecting to Sybase Control Center* on page 12.

Task

1. Log in to Sybase Control Center using the `supAdmin/s3pAdmin` user name and password.
2. In Sybase Control Center, select **View > Select > Unwired Server Cluster Management View**.
3. Expand the **Servers** folder in the left pane, and select **Device Users**.
4. In the right pane, click **Devices**.
5. Click **Register**.
6. In the Register Device window, enter the required information:
 - User name
 - Server name
 - Port



The image shows a 'Register Device' dialog box with a blue title bar. The main text reads 'Select the user name and template for the device registration.' Below this are several input fields: 'User name:' with 'user1', 'Template:' with a dropdown menu set to 'Default', and a section titled 'You may customize the activation fields:'. This section includes: 'Server name:' with 'localhost\$sybase.com', 'Port:' with '5001', 'Company ID:' with '0', 'Activation code length:' with '3', 'Activation expiration(Hours):' with '72', and a checked checkbox 'Specify activation code:' with '123'. At the bottom right are 'OK' and 'Cancel' buttons.

Note: "localhost" should be the actual name of your machine.

After a moment, in Status, the emulator should appear as "online." Click **Refresh** if the Status does not update.

Configuring Connection Settings

Goal: Configure the connection settings on the emulator.

Note: This tutorial uses a Windows Mobile 6.0 Professional Edition emulator. If you use a different emulator version, user interface will vary slightly from this tutorial.

1. On the emulator, select **Start > Programs > Sybase Settings**.
2. In the Sybase Settings screen, click **Connection**.
3. In the Connection screen, enter the connection settings:



Note: "localhost" should be the name of your machine.

4. Click **Done**.

Assigning the Mobile Workflow Package to a User

Goal: Use Sybase Control Center to register the travelrequest mobile workflow to user1.

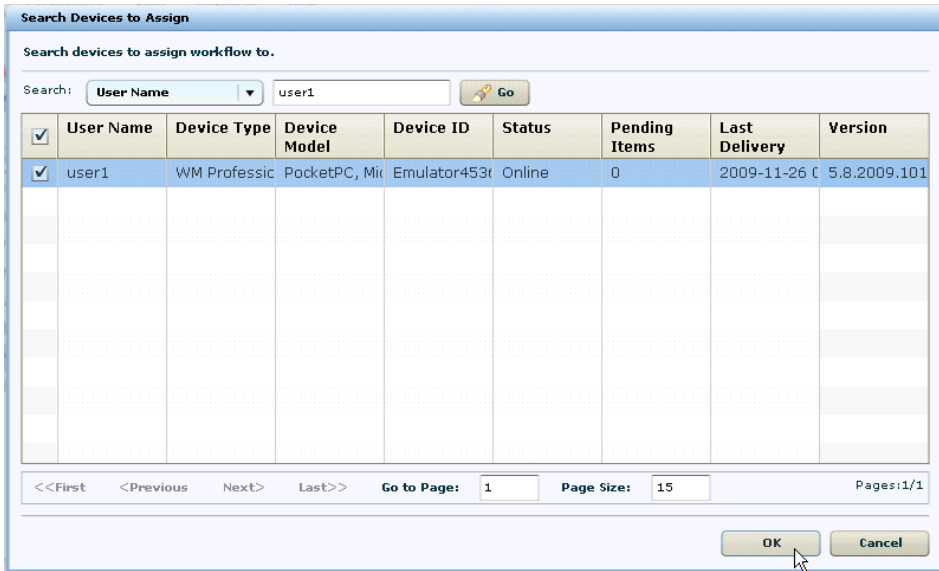
Prerequisites

Complete *Registering the Emulator in Sybase Control Center* on page 31

Task

1. In Sybase Control Center, in the SUP Cluster Management View, under Workflows, select **travelrequest**, then select **Devices**.

2. Select **Assign Workflow**.
3. Under "Search devices to assign workflow to," enter user1 as the user name and click **Go**.
4. Select user1, and click **OK**.



You see an Assign Successful message.



Setting Up a New E-mail Account on the Emulator

Goal: Set up an e-mail account on the emulator for user1.

1. In the main screen of the device emulator, click **No unread messages**.
2. Select **New E-mail Account**
3. Enter the e-mail address for user1.



4. Enter the password you used when you set up the e-mail account for user1.
5. Click **Finish**.
6. From the menu, select **Send/Receive**.
 - a) If a connection cannot be established, click the **Settings** link.
 - b) Click the **Advanced** folder.
 - c) In Select Networks, choose **My Work Network**.

7. In the Outlook e-mail inbox, click **Menu** and select **Workflows**.

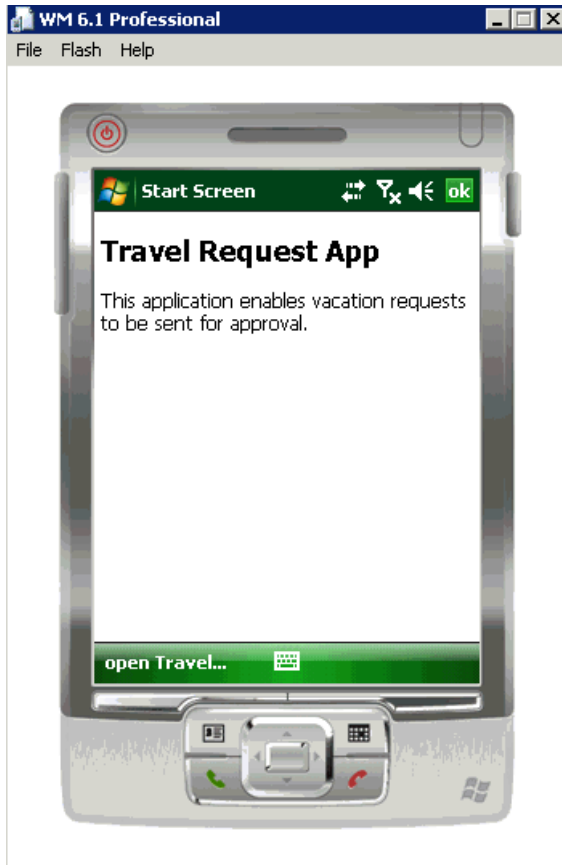
Viewing and Running the Mobile Workflow Form on the Emulator

Goal: Run the travelrequest mobile workflow form on the emulator.

1. In the Outlook e-mail inbox, click **Menu** and select **Workflows**.



2. Click the **travelrequest** icon.



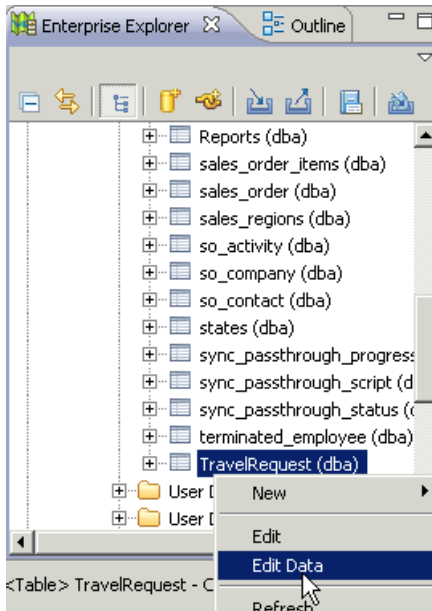
3. Click **Open TravelRequest**.
Enter your travel request information.



4. Click **Create.**

The mobile workflow form closes on the emulator, and the TravelRequest database table is updated on the backend.

- 5. Go to Unwired WorkSpace and in Enterprise Explorer, expand the **sample** database, then expand the **Tables** folder.**
- 6. In Tables, right-click the **TravelRequest** table and select **Edit Data**.**



7. In the Table Data Filter dialog, accept the defaults and click **OK**.

The TravelRequest table opens and you can see the new row.

The screenshot shows the data view of the TravelRequest table. The table has six columns: No., trvl_Id [INT], trvl_Date [DATE], trvl_Loc [VARCHAR(20)], est_Cost [FLOAT(4)], and purpose [VARCHAR(200)]. The first row contains the values 1, 4, 2009-10-27, San Francisco, 999.0, and Mobile Workflow Training. Below the first row, there is a row with the text '<New row...>' in the first column, indicating a new row has been added.

No.	trvl_Id [INT]	trvl_Date [DATE]	trvl_Loc [VARCHAR(20)]	est_Cost [FLOAT(4)]	purpose [VARCHAR(200)]
1	4	2009-10-27	San Francisco	999.0	Mobile Workflow Training
<New row...>					

Learn More about Sybase Unwired Platform

Once you have finished, try some of the other samples or tutorials, or refer to other development documents in the Sybase Unwired Platform documentation set.

Getting Started Tutorials

Try out some of the other getting started tutorials to get a broad view of the development tools available to you.

Advanced Tutorials

Tutorials are available that demonstrate how to use some of Sybase Unwired Platform advanced features.

Check the Sybase Product Documentation Web site regularly for updates: <http://infocenter.sybase.com/help/index.jsp?topic=/com.sybase.infocenter.pubs.docset-SUP-1.5.5/doc/html/title.html>.

Samples

Sample applications are fully developed, working applications that demonstrate the features and capabilities of Sybase Unwired Platform.

Check the Sybase Web site regularly for updates. Navigate to the Sybase Web site, then select *Products > Sybase Unwired Platform > Use tab*: <http://www.sybase.com/products/mobileenterprise/sybaseunwiredplatform?htab=USE>.

Online Help

See the online help that is installed with the product, or the Product Manuals Web site.

Check the Sybase Product Documentation Web site regularly for updates: <http://infocenter.sybase.com/help/index.jsp?topic=/com.sybase.infocenter.pubs.docset-SUP-1.5.5/doc/html/title.html>.

Developer References

See the Developer References to learn about using the API to custom code device applications using the API.

- *Developer Reference for BlackBerry*
- *Developer Reference for iOS*
- *Developer Reference for Mobile Workflow Packages*
- *Developer Reference for Windows and Windows Mobile*

Check the Sybase Product Documentation Web site regularly for updates: <http://infocenter.sybase.com/help/index.jsp?topic=/com.sybase.infocenter.pubs.docset-SUP-1.5.5/doc/html/title.html>.

Learn More about Sybase Unwired Platform

Javadocs are also available in the installation directory.

Programmer References

See the Programmer References to learn how to use the Administration API and Server API to extend functionality.

- *Reference: Administration APIs* – integrate your own administrative tools with Unwired Platform to monitor and manage Unwired Platform.
- *Reference: Custom Development for Unwired Server* – customize some Unwired Server features.

Check the Sybase Product Documentation Web site regularly for updates: *<http://infocenter.sybase.com/help/index.jsp?topic=/com.sybase.infocenter.pubs.docset-SUP-1.5.5/doc/html/title.html>*.

Javadocs are also available in the installation directory.

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