



**New Features for Sybase Mobile SDK and
Runtime**

Sybase Unwired Platform 2.1

ESD #2

DOCUMENT ID: DC60009-01-0212-02

LAST REVISED: March 2012

Copyright © 2012 by Sybase, Inc. All rights reserved.

This publication pertains to Sybase software and to any subsequent release until otherwise indicated in new editions or technical notes. Information in this document is subject to change without notice. The software described herein is furnished under a license agreement, and it may be used or copied only in accordance with the terms of that agreement.

Upgrades are provided only at regularly scheduled software release dates. No part of this publication may be reproduced, transmitted, or translated in any form or by any means, electronic, mechanical, manual, optical, or otherwise, without the prior written permission of Sybase, Inc.

Sybase trademarks can be viewed at the Sybase trademarks page at <http://www.sybase.com/detail?id=1011207>. Sybase and the marks listed are trademarks of Sybase, Inc. ® indicates registration in the United States of America.

SAP and other SAP products and services mentioned herein as well as their respective logos are trademarks or registered trademarks of SAP AG in Germany and in several other countries all over the world.

Java and all Java-based marks are trademarks or registered trademarks of Oracle and/or its affiliates in the U.S. and other countries.

Unicode and the Unicode Logo are registered trademarks of Unicode, Inc.

All other company and product names mentioned may be trademarks of the respective companies with which they are associated.

Use, duplication, or disclosure by the government is subject to the restrictions set forth in subparagraph (c)(1)(ii) of DFARS 52.227-7013 for the DOD and as set forth in FAR 52.227-19(a)-(d) for civilian agencies.

Sybase, Inc., One Sybase Drive, Dublin, CA 94568.

Contents

New Features Overview	1
Mobile Workflow Development	1
Mobile Analytics	2
OData SDK Client Development	3
Sybase Unwired WorkSpace - Mobile Business	
Object Development	4
Object API Client Development	5
New APIs	6
Removed APIs	9
Unwired Platform Runtime	10
Changes to Data Export APIs	12
Documentation Set Changes	12

Contents

New Features Overview

Sybase® Unwired Platform 2.1 ESD #2 includes these new features in its Mobile SDK and Runtime components.

The Sybase Unwired Platform product is supporting enterprises in their efforts to mobilize critical business processes while lowering the cost of mobile application development (TCD) and management (TCO) with tools increasing productivity and efficiency of the mobile developer and administrator. Sybase Unwired Platform 2.1 ESD #2 focuses on Hybrid Web Container enhancements and the new Mobile Analytics Kit (MAKit) libraries.

Mobile Workflow Development

Describes new or changed features for Mobile Workflow (Hybrid Web Container) development.

Integration With Afaria for Device Provisioning

Three new public APIs are available to enable provisioning using the Afaria® server.

- saveLoginCertificate
- saveLoginCredentials
- CertificateStore.prototype.getSignedCertificateFromAfaria

Documented in *Developer Guide: Mobile Workflow Packages*.

- *Certificate.js*

Improvements to the Mobile Workflow Forms Editor

These new features and enhancements have been added to the Mobile Workflow Forms Editor:

- Asynchronous error handling – Enables you to build screens in the mobile workflow application that will allow end users to take corrective actions. Errors will show up as messages in the notification box, similar to regular notifications.
- Conditional Start screen – enables conditional navigation for Server-initiated mobile workflow applications.
- Separation of actions from menus – allows custom JavaScript code to call actions without having to add menu items and remove them. This feature also enables custom JavaScript code to be tied to a Menu with a custom action type.
- Ability to choose themes when you generate the files for the mobile workflow package. You can choose JQM standard themes for the generated application or enter a name for a custom theme.

New Features Overview

- Zoom, Pinch, and Pan support for iOS.
- Sybase Unwired WorkSpace is now based on Eclipse 3.7, which provides performance improvements for Unwired WorkSpace.

Documented in *Sybase Unwired WorkSpace - Mobile Workflow Package Development*.

Shared Storage

This extends the storage API, which enables two or more mobile workflow packages, including different versions, to share data, such as personalization information.

Documented in *Developer Guide: Mobile Workflow Packages*:

- *SUPStorage.js*
- *SUP Storage*
- *Shared Storage*

Larger Image Handling

This improves the handling of larger image sizes for capture picture and upload on the device. You can also use the new syntax to create thumbnail images.

- A new **MessageValue** type of FILE is added to the Workflow message. The value for **MessageValues** of this type will be a URI from the **getPicture** function.

Documented in *Developer Guide: Mobile Workflow Packages*:

- *getPicture Function*
- *Using the getPicture Function for Larger Image Sizes*

Update to the GA version of jQuery Mobile

jQuery Mobile version 1.0 is now supported and provides improved performance and more controls for custom coding.

Mobile Analytics

The Mobile Analytics Kit (MAKit) provides graphical controls with data visualization and analytics capabilities for mobile devices. It offers an intuitive and compelling user interface that lets you easily view enterprise data. Powered by an optimized analytics engine, MAKit can accomplish sophisticated data analysis on the mobile device, which avoids frequent time-consuming queries to remote servers. MAKit is a feature of the Sybase Unwired Platform.

MAKit is a cross-platform library. It provides native support for iOS devices. To support non-iOS devices, MAKit provides an HTML5 version that works with the Sybase Unwired Platform Hybrid Web Container. The data visualization suite currently includes five basic charts: column, bar, pie, line and bubble, together with some variations of these basic charts. In addition to these charts, MAKit also supports a table control.

Mobile Analytics Kit - iOS

MAKit - iOS, which lets users graphically view data and modify chart values to examine what-if scenarios, is distributed as a static library on the iPhone or iPad. MAKit provides easy-to-use APIs that allow application developers to retrieve data from Sybase Unwired Platform, CSV files, or local SQLite® databases.

To get you up-to-speed quickly, the following documents are available on Product Documentation:

- *Mobile Analytics Kit Tutorial: iOS Metadata-Driven Development*
- *Mobile Analytics Kit Developer Guide: iOS*
- *Mobile Analytics Kit Code Examples: iOS*

Mobile Analytics Kit - HTML5

MAKit - HTML 5 provides a set of easy-to-use APIs and metadata that allow application developers to build analytical applications that visualize the data retrieved in the Hybrid Web Container. To get you up-to-speed quickly, the following documents are available on Product Documentation:

- *Mobile Analytics Kit Tutorial: HTML5*
- *Mobile Analytics Kit Developer Guide: HTML5*
- *Mobile Analytics Kit Code Examples: HTML5*

OData SDK Client Development

Describes new or changed features for OData SDK client development.

Support for ETags for iOS

An ETag is an opaque identifier assigned by a Web server to a specific version of a resource found at a URL. If the resource content at that URL changes, a new and different ETag is assigned. ETags can be quickly compared to determine if two versions of a resource are the same or different. ETags can be used for:

- Cache validation, which allows a client to make conditional requests. The Web server does not need to send a full response if the content has not changed.
- Optimistic concurrency control, as a way to help prevent simultaneous updates of a resource from overwriting each other.

Documented in the *Developing iOS Applications* section of *Developer Guide: OData SDK*

- *SDMConnectivity*
- *SDMParser*

Also documented in Javadoc and Doxygen.

Sybase Unwired WorkSpace - Mobile Business Object Development

Describes new or changed features for Mobile Business Object development.

JCo Version 3.x Is Installed with Sybase Unwired WorkSpace

JCo libraries version 3.x are now installed with Unwired WorkSpace . Make sure your result checkers are updated to use the correct library versions.

Code Generation Available for Android in Unwired WorkSpace

Code Generation changes include support for the Android platform in Sybase Unwired WorkSpace MBO development. In the previous release, code generation was offered only from the command line.

Documented in *Sybase Unwired WorkSpace - Mobile Business Object Development*

- *Generating Object API Code*

BigString and BigBinary Datatypes

To handle large objects (such as graphics), the Large Attribute APIs include the new datatypes, BigString and BigBinary, that leverage the new streaming Object APIs.

Documented in *Mobile Data Models: Using Mobile Business Objects* and *Sybase Unwired WorkSpace - Mobile Business Object Development*

- *Datatype Support*

No Data Source Binding Required if Using DCN Cache Group Policy

In Unwired WorkSpace, you can create an MBO using a DCN cache group policy without data source binding. The MBO must reside in a cache group that uses the DCN policy.

Load Parameters Replaced With Load Arguments

Previous releases of Unwired WorkSpace used load parameters, which could be added arbitrarily to an MBO. In the current release, load parameters are replaced with load arguments, and can no longer be added arbitrarily. Instead they must be part of the MBO definition.

Documented in *Sybase Unwired WorkSpace - Mobile Business Object Development*

- *Load Arguments*

Operation Parameters Separated into Operation and Client Parameters

You can map client parameters to operation arguments to determine how the client passes information to the enterprise information system during operation replay.

Documented in *Sybase Unwired WorkSpace - Mobile Business Object Development*

- *Mobile Business Object Operation Properties*

Result Checker Changes

Result checkers no longer use the `resultCheck` interface, but now extends the abstract class `OperationHandler` and implement necessary methods. For example, `SAPOperationHandler` or `SoapOperationHandler`.

Documented in *Mobile Data Models: Using Mobile Business Objects*

- *Default SAP Result Checker Code*
- *Default SOAP Result Checker Code*

Documented in *Sybase Unwired WorkSpace - Mobile Business Object Development*.

- *Adding a Result Checker*

Mobile Business Object Package Deployment Mode Enhancements

Sybase Unwired Platform include enhanced server-side validation of the deployment archive to ensure only client-side compatible changes are deployed in UPDATE mode. Unwired WorkSpace - Mobile Business Object Development supports REPLACE mode, which is used in the development and testing environment.

Documented in *Sybase Unwired WorkSpace - Mobile Business Object Development*.

- *Configuring a Mobile Deployment Package for the Target Unwired Server*
- *Deployment Mode and Target Version*

Auto-deployment Support

Save a mobile application project's deployment unit to a model file, which can be deployed to Unwired Server using command line utilities.

Documented in *Sybase Unwired WorkSpace - Mobile Business Object Development*

- *Automated Deployment of Unwired WorkSpace Projects*

Sybase Unwired WorkSpace Is Based on Eclipse 3.7

Unwired WorkSpace is now based on Eclipse 3.7, which provides performance improvements for Unwired WorkSpace as well as support for the WebKit engine on all platforms.

Object API Client Development

Describes new or changed features for native client Object API development.

Code Generation Available for Android in Unwired WorkSpace

Android now supports code generation through the code generation wizard in Sybase Unwired WorkSpace. In the previous release, code generation was offered only from the command line.

New Features Overview

Documented in *Developer Guide: Android Object API Applications*

- *Generating Java Object API Code*

Object API Development Supported with Data Orchestration Engine (DOE)

DOE-based applications, working in conjunction with Sybase Unwired Platform, allow system designers to model and consolidate SAP® mobile content in the middle tier, while separately layering distribution rules over this content. Native Client Object API supports DOE on these platforms:

- Android
- iOS
- Windows and Windows Mobile

Documented in *Mobile Data Models: Using Data Orchestration Engine*

- *Getting Started with DOE-Based Application Development*
- *Development Task Flow*

Documented in *Developer Guide: Android Object API Applications*, *Developer Guide: iOS Object API Applications*, and *Developer Guide: Windows and Windows Mobile Object API Applications*

- *Development Task Flow for DOE-based Object API Applications*

New APIs

The following are new interfaces or methods.

- *Application APIs*

Sybase Unwired Platform now supports and requires clients to use the Application APIs to manage mobile application registrations, application connections, and context. These APIs are provided in the Application (or SUPAApplication) class.

- *ApplicationCallback APIs*

Sybase Unwired Platform supports a new ApplicationCallback interface that is invoked by events of interest to a mobile application.

- *Large Attribute APIs*

Sybase Unwired Platform supports new large attribute APIs to allow clients to import large messages containing binary objects (BLOBs) from the server or send a replay message without using excessive memory or throwing exceptions. Clients can also access or modify a large attribute without reading the entire attribute into memory. In addition, clients can execute queries without having large attribute values automatically filled in the returned MBO lists or result sets.

- *Change Log APIs*

Sybase Unwired Platform supports new change log APIs that allow a client to retrieve entity changes from the back end. If a client application already has a list view constructed,

it simply needs to add, modify, or delete entries in the list according to the change logs. These APIs are supported for replication based synchronization applications on the Android, BlackBerry, and Windows and Windows Mobile platforms.

- *Encryption Key Management APIs*

New methods in the connection profile support managing the encryption key for the local client database.

- *Asynchronous Operation Replay APIs*

Asynchronous Operation Replay allows users to submit changed data outside a synchronization session without waiting for EIS execution. When an application calls `submitPending` on an MBO on which a create, update, or delete operation is performed, an operation replay record is created on the device local database.

- *Change Notification APIs for Push Synchronization*

Sybase Unwired Platform now supports using a messaging channel to send change notifications from the server to the client device. Clients receive device notifications when a data change is detected for any of the MBOs in the synchronization group to which they are subscribed. By default, change notification is disabled. You can enable the change notification through setting properties in the synchronization group.

Application APIs

Sybase Unwired Platform now supports and requires clients to use the Application APIs to manage mobile application registrations, application connections, and context. These APIs are provided in the `Application` (or `SUPApplication`) class.

This functionality was earlier released for only Android devices in Sybase Unwired Platform 2.1 ESD #1. Before, registering an application connection was only needed for Object API applications using messaging-based synchronization. Use these APIs in your client application at the time of application initialization.

Documented in *Developer Guide: Android Object API Applications*, *Developer Guide: BlackBerry Object API Applications*, *Developer Guide: iOS Object API Applications*, and *Developer Guide: Windows and Windows Mobile Object API Applications*

- *Initializing an Application*
- *Application APIs*

ApplicationCallback APIs

Sybase Unwired Platform supports a new `ApplicationCallback` interface that is invoked by events of interest to a mobile application.

Documented in *Developer Guide: Android Object API Applications*, *Developer Guide: BlackBerry Object API Applications*, and *Developer Guide: Windows and Windows Mobile Object API Applications*

- *ApplicationCallback API*

Developer Guide: iOS Object API Applications

- *Application Callback API*

Large Attribute APIs

Sybase Unwired Platform supports new large attribute APIs to allow clients to import large messages containing binary objects (BLOBs) from the server or send a replay message without using excessive memory or throwing exceptions. Clients can also access or modify a large attribute without reading the entire attribute into memory. In addition, clients can execute queries without having large attribute values automatically filled in the returned MBO lists or result sets.

These new classes support large attributes:

- `BigBinary` (or `SUPBigBinary`)
- `BigString` (or `SUPBigString`)

Documented in *Developer Guide: Android Object API Applications*, *Developer Guide: BlackBerry Object API Applications*, and *Developer Guide: Windows and Windows Mobile Object API Applications*

- *Large Attribute APIs*

Change Log APIs

Sybase Unwired Platform supports new change log APIs that allow a client to retrieve entity changes from the back end. If a client application already has a list view constructed, it simply needs to add, modify, or delete entries in the list according to the change logs. These APIs are supported for replication based synchronization applications on the Android, BlackBerry, and Windows and Windows Mobile platforms.

Documented in *Developer Guide: Android Object API Applications*, *Developer Guide: BlackBerry Object API Applications*, and *Developer Guide: Windows and Windows Mobile Object API Applications*

- *Change Log API*

Encryption Key Management APIs

New methods in the connection profile support managing the encryption key for the local client database.

Documented in *Developer Guide: Android Object API Applications*, *Developer Guide: BlackBerry Object API Applications*, and *Developer Guide: Windows and Windows Mobile Object API Applications*

- *ConnectionProfile*
- *Encrypt the Database*

Developer Guide: iOS Object API Applications

- *SUPConnectionProfile*

- *Encrypting the Client Database*

Asynchronous Operation Replay APIs

Asynchronous Operation Replay allows users to submit changed data outside a synchronization session without waiting for EIS execution. When an application calls `submitPending` on an MBO on which a create, update, or delete operation is performed, an operation replay record is created on the device local database.

When `synchronize` is called, the operation replay records are uploaded to the server. The method returns without waiting for the backend to replay those records. The `synchronize` method downloads all the latest data changes and the results of the previously uploaded operation replay records that the backend has finished replaying. If you choose to disable asynchronous operation replay, each `synchronize` call will wait for the backend to finish replaying all the current uploaded operation replay records

Documented in *Developer Guide: Android Object API Applications*, *Developer Guide: BlackBerry Object API Applications*, and *Developer Guide: Windows and Windows Mobile Object API Applications*

- *Asynchronous Operation Replay*

Change Notification APIs for Push Synchronization

Sybase Unwired Platform now supports using a messaging channel to send change notifications from the server to the client device. Clients receive device notifications when a data change is detected for any of the MBOs in the synchronization group to which they are subscribed. By default, change notification is disabled. You can enable the change notification through setting properties in the synchronization group.

When the server detects changes in an MBO affecting a client device, and the synchronization group of the MBO has change detection enabled, the server will send a notification to client device through messaging channel. By default, a background synchronization downloads the changes for that synchronization group. The application can implement the `onSynchronize` callback method to monitor this condition, and either allow or disallow background synchronization.

Documented in *Developer Guide: Android Object API Applications*, *Developer Guide: BlackBerry Object API Applications*, and *Developer Guide: Windows and Windows Mobile Object API Applications*

- *Push Synchronization Applications*

Removed APIs

The following are removed interfaces or methods.

Messaging Client APIs

The Messaging Client APIs (`SUPMessageClient` interface) are removed. If your application uses the `SUPMessageClient` interface, you must rewrite it to use functionality from `SUPApplication`.

Unwired Platform Runtime

Describes new or changed features for the Unwired Platform Runtime.

JCo Version 3.x Is Installed with Unwired Server

SAP® JCo libraries version 3.x are installed with Unwired Platform Runtime. Make sure your result checkers are updated to use the correct library versions.

Automatic Registration Support for Native Object API Applications

Unwired Server now enables administrators to leverage automatic registration (for user on-boarding) with new Sybase Unwired Platform 2.1 ESD #2 client runtime-based native (synchronization-based) applications.

Documented in *System Administration*

- *Automating Application Registration*

Object API Clients Are Registered and Managed as Application Connections

Sybase Unwired Platform Runtime now supports and requires registering application connections for Object API client application connections for both replication-based and messaging-based synchronization applications. This functionality was earlier released for only Android devices in Sybase Unwired Platform 2.1 ESD #1. Before, registering application connection was only needed for Object API applications using messaging-based synchronization.

Specific settings of those applications are automatically provisioned to the client.

Administrators can employ automatic or manual activation of application connections.

Documented in *System Administration*

- *Setting Up Application and User Connections*
- *Application Connection Activation Options*

Documented in *Sybase Control Center for Sybase Unwired Platform*

- *Setting Up Application and User Connections*
- *Application Connections*
- *Application Connection Templates*
- *Managing and Searching for Applications*

Asynchronous Operation Replay

Asynchronous Operation Replay allows users to submit changed data outside a synchronization session without waiting for EIS execution.

Documented in *Sybase Control Center for Sybase Unwired Platform*

- *Viewing Asynchronous Operation Replays*
- *Configuring Asynchronous Operation Replay Queue Count*

Mobile Business Object Package Deployment Mode Enhancements

Sybase Unwired Platform includes enhanced server-side validation of the deployment archive to ensure only client-side compatible changes are deployed in UPDATE mode. REPLACE mode is only available in Unwired WorkSpace - Mobile Business Object Development, and expected to be used in the development and testing environment.

Targeted Change Notifications for Replication-based Synchronization

Sybase Unwired Platform Runtime now uses the Application Connection to deliver push notifications.

Documented in *System Administration*

- *Setting up Push Synchronization for Replication*

Documented in *Sybase Control Center for Sybase Unwired Platform*

- *Creating Replication Subscription Templates*
- *Configuring Replication Subscription Properties*

Afaria Provisioning Available for Hybrid Web Container for Android, iOS, and BlackBerry

For the Hybrid Web Container, the certificate is retrieved through an API, but the provisioning file is automatically retrieved from Afaria or from a local file. Documented in *System Administration*:

- *Provisioning With Afaria*
 - *Prerequisites for Provisioning an Application Using Afaria*
 - *Preparing the Provisioning File*
 - *Provisioning the Unwired Server Public Key*
 - *Creating a Provisioning File*
 - *Provisioning Settings*
 - *Provisioning Configuration Data and Certificates*

Changes to Data Export APIs

There are new and deprecated methods in the management client API for exporting the access history of monitored objects.

The deprecated `exportOperationStatistics` method now only returns RBS operation replay statistics. Use the new methods, `exportReplicationOperationStatistics` and `exportMessagingOperationStatistics`, to export RBS / MBS operation statistics.

Documented in:

- *Developer Guide: Unwired Server Management API* – search for:
 - *Monitoring Data Export*

Documentation Set Changes

Describes changes to the Sybase Unwired Platform documentation set.

The Sybase Unwired Platform documentation set includes these new documents to support Sybase Mobile SDK.

- **Mobile Data Models: Using Data Orchestration Engine** – this guide provides end-to-end information for creating DOE-based applications, and who in your organization is responsible for which tasks.
- **Mobile Data Models: Using Mobile Business Objects** – this guide provides information about how to develop mobile business objects (MBOs) to fully maximize their potential, concepts you should know before developing MBOs, and how to use the Sybase Unwired Platform Server API to customize MBO behavior. The audience is mobility architects and advanced developers who are familiar working with APIs, but who may be new to Sybase Unwired Platform.
- **Mobile Analytics Kit: iOS (PDF only)** – contains the three guides that support developing graphical controls with data visualization and analytics capabilities for iOS devices.
- **Mobile Analytics Kit: HTML5 (PDF only)** – contains the three guides that support building analytical applications that visualizing the data retrieved in the Hybrid Web Container.