Create Simple Mobile applications using ABAP web services and .net

Applies to:
SAP ECC 6.

Summary
Create simple mobile applications using ABAP web services and .net technology which deliver sap mobile applications with low cost, high performance and fully customized.

Author(s): Mostafa El-Barbary
Company: IBM WTC – Egypt Branch
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Author Bio
Mostafa El-Barbary is working as Senior Technical Consultant (ABAP - BW - BO) with IBM WTC - Egypt Branch.
He has total 7 years experience in IT industry including Analysis, architecture, design and development.
He has got experience on various SAP implementation projects include ABAP and BW Implementation/Support Projects.

Introduction
Web services are self contained and self describing application functionalities that can be processed through open standards.

Web services
- Act like a black-box that may require input and deliver a result.
- Work on top of any communication technology stack.
- Can be published, discovered and invoked based on open technology standards.
- Work in synchronous and asynchronous scenarios.
- Facilities integration within an enterprise as well as cross enterprises.
Mobility and Mobile applications

The Major Constraints of Mobility

- **Mobile devices have finite energy source**
  - Battery power is limited
- **Mobile devices have resource constraints and are not standardized**
  - Processor speed
  - Memory size
  - Storage capacity
  - Form factor
- **Mobile devices are inherently less reliable**
  - Vulnerable to loss or damage.
  - Security concerns.
  - Transactional safety.
- **Variety of device connectivity**
  - Low bandwidth, gaps in coverage
  - Performance and reliability of networks is highly variable
- **Mobile users work autonomously**
  - Have and change their own local copy of the business data.
  - Work in distributed locations.
- **Mobile users have interdependencies**
  - Are assigned to the same organization.
  - Share the same business data
- **Mobile users have business-context and profile**
  - Use only business data or information which is needed.
  - Need real-time data.
  - Access business data whenever and wherever needed.
  - Work in a connected or disconnected mode (= occasionally connected).

Major Goals

- **Deliver SAP mobile applications with:**
  - Low cost
    - No more platforms or frameworks required.
    - No hardware required for platforms and frameworks.
  - High performance
    - No additional tiers between mobile app. and sap Netweaver.
  - Fully customized and needed functionality
• Develop only needed business scenarios that you will pay for it.
• Simplicity

Solution Overview

Mobile Application

Business Process

BP Helper and Web service Interface

Web Service

Server BP

Call SBP

SBP

FMs

BAPIs

Business Process (BP)

The Business Process is the smallest unit of development. The other modules provide the support and infrastructure needed to allow quick and efficient development of business processes. The developer only needs to concentrate on the processing needed to collect and validate information needed by that business process. The BP is responsible in displaying Mobile device.

Web Service

The Web Service providing middle tier access for mobile business processes. It also provides for caching of server-side data, authentication and authorization.

The web service is developed with ABAP based on function module.

Server Business Processes (SBP)

The Web Service is responsible for server side validation and processing acting as the middle tier and the processing of the business task.

Server Business Processes were created to interface between web service and BAPIs.

It is group of function modules and BAPIs that do a business process and each function module do a specific task in the function module.
Example

1. Create server business process

To create server business process we create a function module that contains the business process functionalities in group of BAPIs or FMs or both.

1. Go to se37

   ![Function Module](image)

<table>
<thead>
<tr>
<th>Function Module</th>
<th>ZFI_POST_FI_DOC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Display</td>
<td>Change</td>
</tr>
<tr>
<td></td>
<td>Create</td>
</tr>
</tbody>
</table>

2. Create a new function module "ZFI_POST_FI_DOC".
3. Add the function module business functionalities that may include bapi to post accounting document passing to it only needed parameters.

2. Create web service

1. Go to transaction se80

   ![Object Navigator](image)

2. From enterprise services create new web service
3. Create business process

1. Create new mobile application using Microsoft visual studio 2005
1. Add ABAP web services to the newly created project.

2. Add ABAP web services to the newly created project.

3. Create the BP helper class.
private void get_doc_header()
{
    Header.BusAct = "RFBU";
    Header.Username = txtuserName.Text;
    Header.CompCode = txtCompCode.Text;
    Header.PstngDate = "19901212";
    Header.DocDate = "19901212";
    Header.DocType = txtDocType.Text;
}

private void get_doc_gl()
{
    ACC_GL.ItemnoAcc = "0000000001";
    ACC_GL.GlAccount = txtAccNum1.Text;
    ACC_GL.DeCreInd = txtCDInd1.Text;
    ACC_GL_arr[0] = ACC_GL;
    ACC_GL = new Bapiacg109();
    ACC_GL.ItemnoAcc = "0000000002";
    ACC_GL.GlAccount = txtAccNum2.Text;
    ACC_GL.DeCreInd = txtCDInd2.Text;
    ACC_GL_arr[1] = ACC_GL;

4. Create the BP GUI interface
5. Try the solution.

**Related Content**

- Calling a web service in ABAP that validates an email id
  - [Web Services Development in ABAP](#)