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Pocket PowerBuilder

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Building Database and Synchronization Applications with Pocket PowerBuilder

This live, interactive seminar will begin shortly

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Building Mobile Applications with
Pocket PowerBuilder



Thomas Lamb
Moderator
Past President
Sybase International User Group

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Building Mobile Applications with Pocket PowerBuilder



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Presenter

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**How Pocket PowerBuilder simplifies the creation of
‘occasionally connected’ mobile applications that
synchronize data with any of the leading enterprise
databases.**

- **Smart Client Development Overview**
- **Pocket PowerBuilder Key Features**
- **Developing Database Applications with Pocket**

PowerBuilder

Creating Remote Databases

The Power of DataWindows

Using the Pocket PowerBuilder Synchronization Wizard

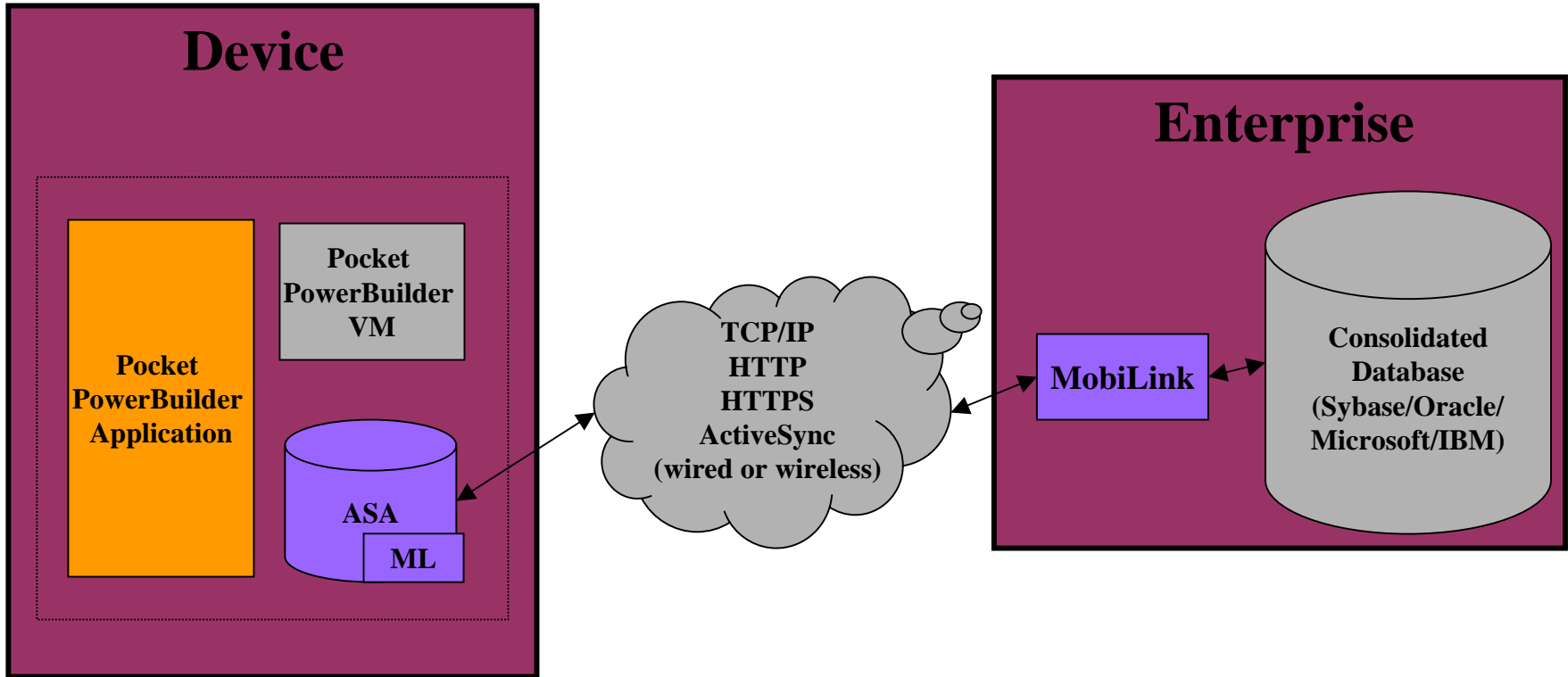
Setting up Synchronization Server

Application Testing and Deployment

- **Summary**

Three main architectures for Mobile Applications

- **Wireless Internet (online only)**
 - Online access to Web content
 - Typically used for consumer applications
 - Limited user interface and capabilities
- **Smart Client**
 - Incorporates mobile database technology for persistent data storage
 - Updates to data are synchronized to enterprise systems
 - Allows for offline access to important data
 - Works best in 'occasionally connected' environment
- **Messaging**
 - Store and forward delivery of data
 - Can be used on its own, or in addition to other architectures



Window concepts are different

- **NO MDI (Multiple Document Interface)**
- **“main!” and “response!” Windows Only**
- **No mouse**
 - Seldom Use “drag and drop”
 - Seldom Use “mouse move”
 - Left & Right Click events mapped to “tap” & “tap-hold” gestures
 - Don’t usually double click on PPC (even with icons)**



Menu Concepts are Different

- **Space Limitations**

Width is 6 items MAX

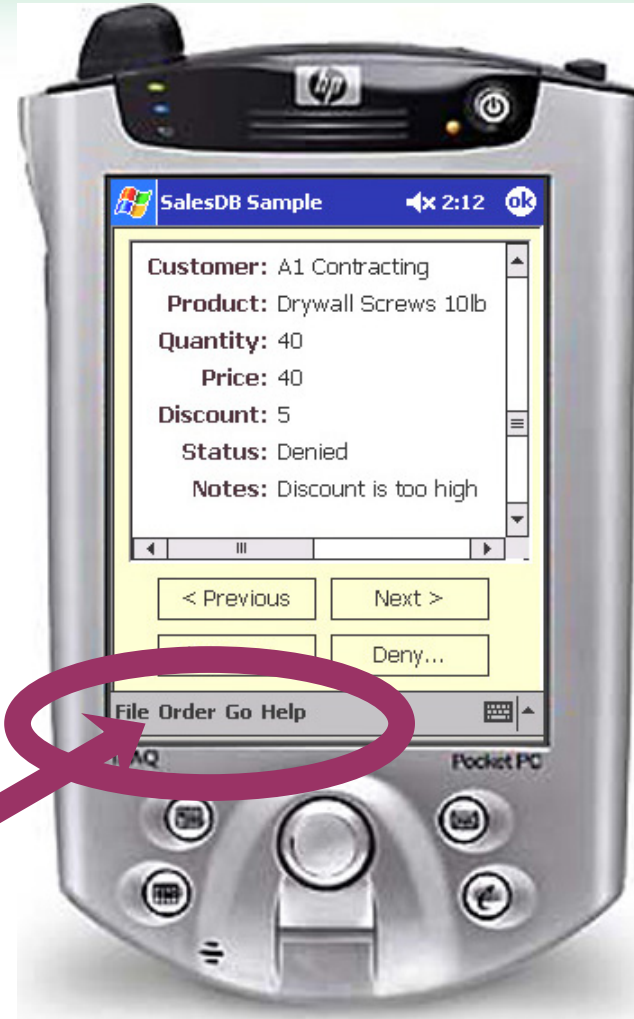
- **Some Event Differences**

Top level items don't get a
"menu event"

Sub-Menus DO...

- **Keyboard Accelerators**

No Keyboard !



**Menu At
Bottom**

Upper-Right Corner Window Controls Changed for PDA Standards.

ok

Close the window,
or the entire application

X

Smart-Minimize,
to minimize the window
or entire application.





Window Title

**SIP
Keyboard**

- ✓ **Smart Client Development Overview**
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PowerBuilder

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- **Summary**

For occasionally connected application development, Pocket PowerBuilder has three key features:

- **Productive 4 GL IDE**
- **DataWindow Technology**
- **Tight integration with SQL Anywhere Studio**

- **Supports complete development cycle**
- **Visual development with minimal coding**
- **Painters for database creation and application development**
 - Database Painter
 - DataWindow Painter
 - Synchronization ...
- **Complements PowerBuilder for Windows CE deployments**
 - Similar look and feel, but separate IDE
 - Ability to export PB projects and import them into Pocket PowerBuilder
- **Rich Set of components**
 - Command Button, Picture Button, CheckBox, Radio Button, Static Text, List View, Tree View, List Box, DropDown List Box, Edit Mask, Single Line Edit, MultiLine Edit, Progress Bar, Scroll Bars, Line, Oval, Rectangle, Tabs, and many, many more!

- **Single component for displaying and manipulating data**
- **Built in SQL for selects, updates, inserts and deletes**
- **Available in many formats**
 - Freeform
 - Graph
 - Grid
 - Group
 - Tabular
- **Reuse existing PowerBuilder DataWindows with little effort**



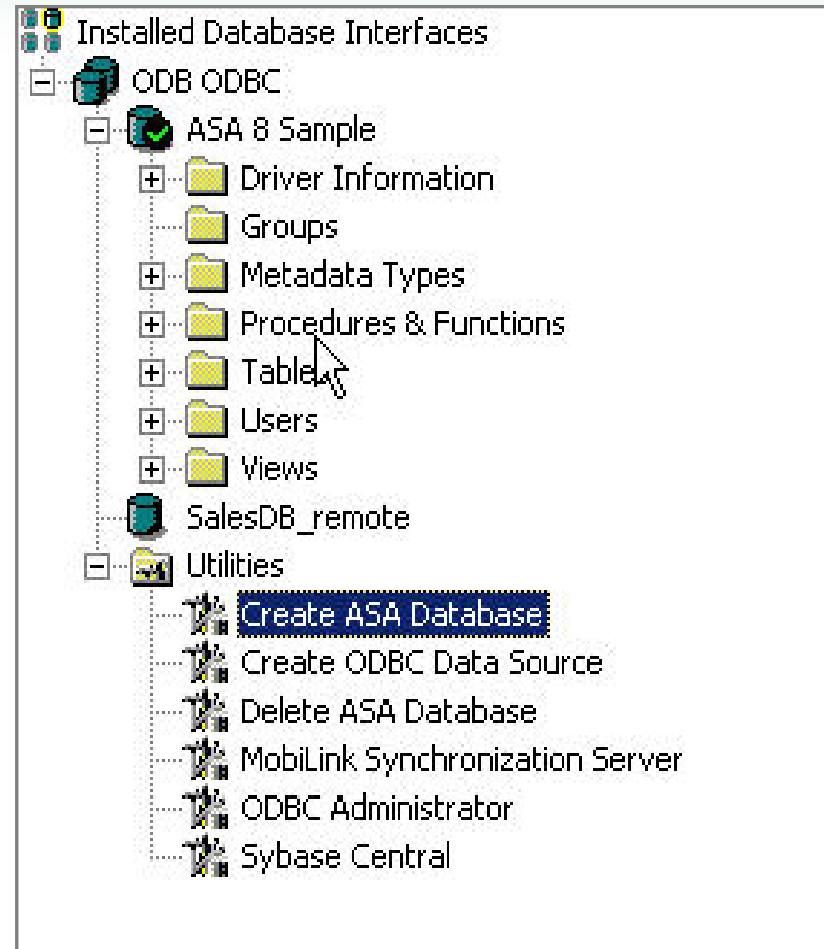
- **Adaptive Server Anywhere mobile database**
 - Uses full data storage capabilities of Adaptive Server Anywhere on Windows CE client
 - Database access via ODBC
 - Development version comes with Pocket PowerBuilder
 - **MobiLink data synchronization**
 - MobiLink bi-directional data synchronization used to integrate with other enterprise databases (Sybase ASE and ASA, Oracle, MS SQL Server, IBM DB2)
 - MobiLink Synchronization Wizard for simplified synchronization development
- BONUS: A royalty-free runtime version of ASA is included with Pocket PowerBuilder**
- For use with standalone applications that do not require any synchronization

- ✓ **Smart Client Development Overview**
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- **Developing Database Applications with Pocket PowerBuilder**
 - Creating Remote Databases
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 - Application Testing and Deployment
- **Summary**

Occasionally Connected Applications have three main benefits:

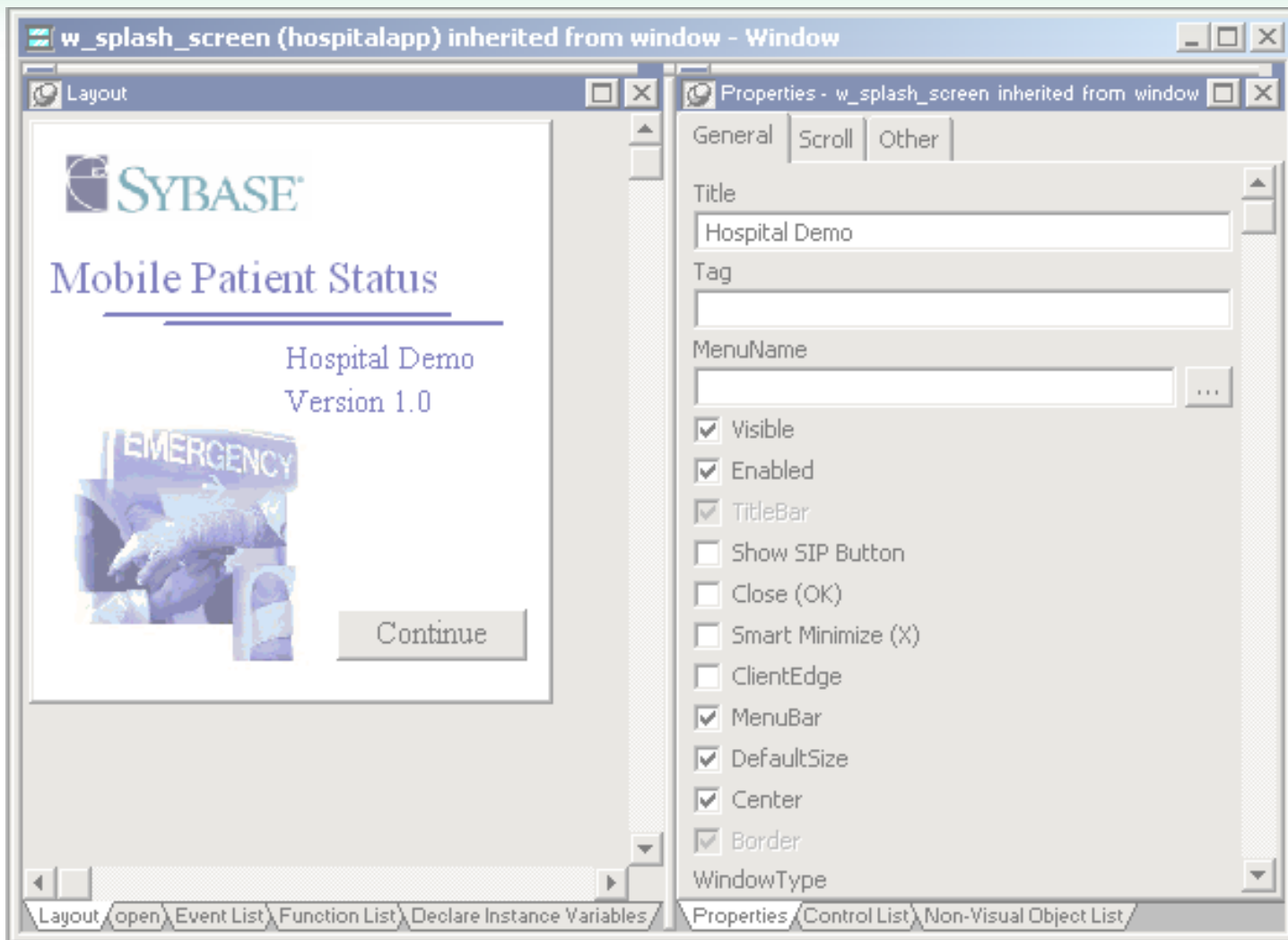
- **Guaranteed access to critical data**
- **High performance as wireless connectivity issues does not hinder performance**
- **Extended battery life since wireless connectivity is minimized**

- **Sybase Adaptive Server Anywhere is used at the remote database**
- **The DBPainter allows you to create new ASA databases from scratch...**



- **... BUT, in most cases you will want to create your remote database to reflect an existing consolidated database**
- **The remote database is typically a subset of your enterprise database**
 - Smaller schema
 - Less data (MobiLink synchronization can take care of this)
- **To accomplish this you have three options**
 1. SQL Anywhere Studio has migration assistants for ASE, Oracle, IBM and Microsoft
 2. PowerDesigner can reverse engineer a database and create an ASA database with the same schema
 3. You can use any other database design tool that comes with your enterprise database or otherwise

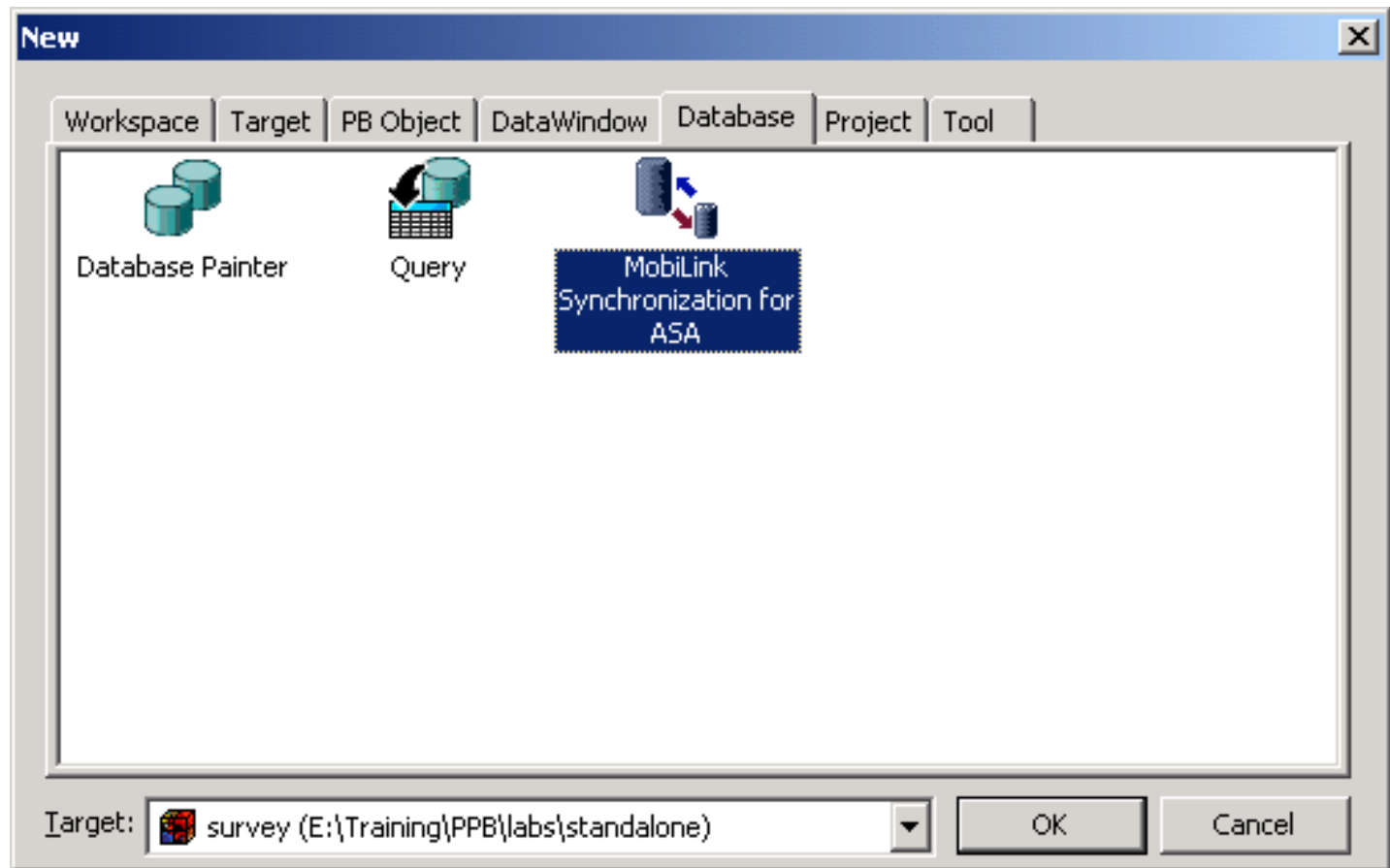
- **Once there is a remote database, the application can be developed**
- **Application is developed using remote database – not consolidated!**
- **Use typical development procedures to accomplish this**
- **Pocket PowerBuilder has some key features that simplify the process**
 - 4GL IDE
 - DataWindows
 - Synchronization Wizard
 - Project deployment and debugging



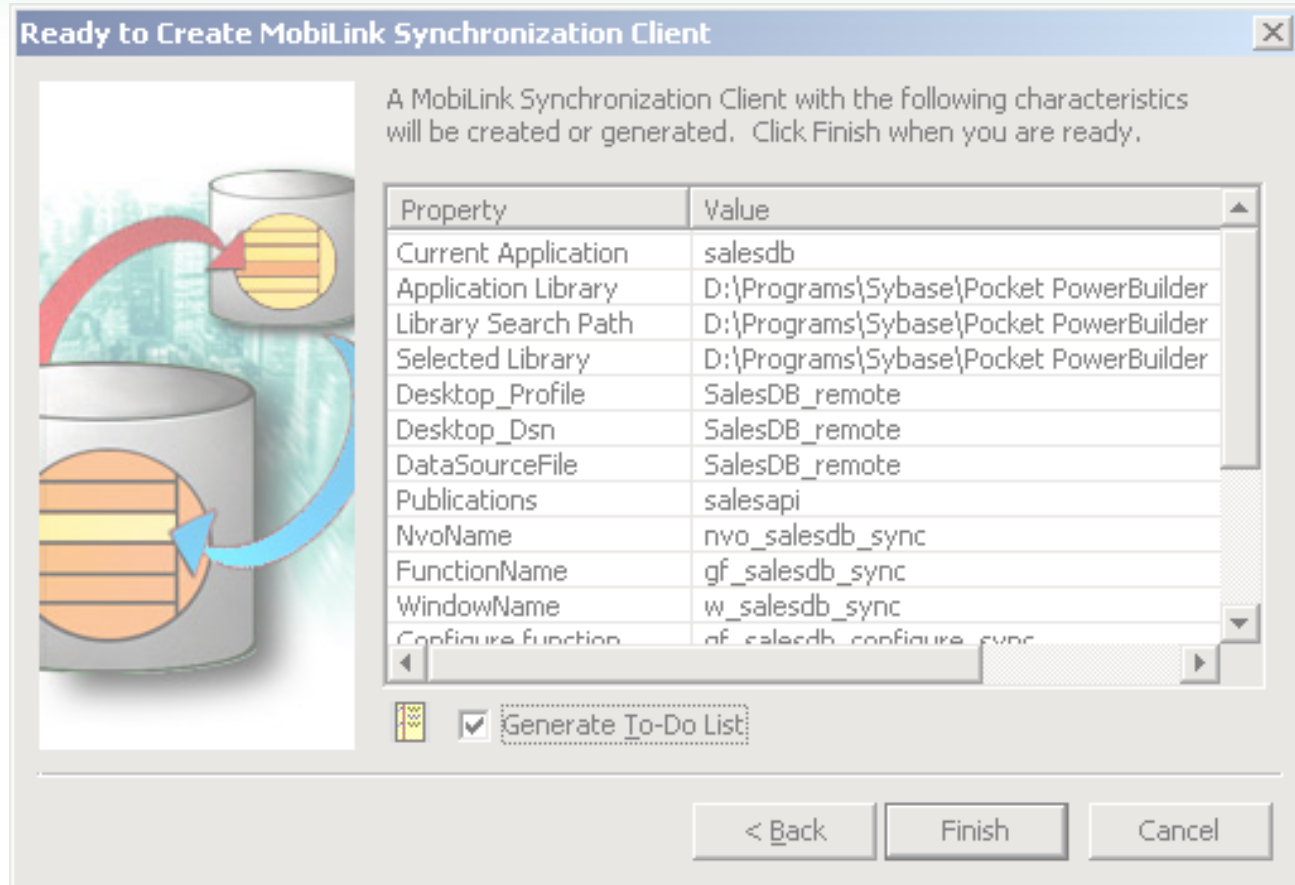
You need to specify:

- **Information on how to connect to the remote database**
- **Which publications are going to be used**
- **How status information is going to be displayed to the application user**
- **Which MobiLink client options are required**
- **How much control the application user will have at runtime**

- **Pocket PowerBuilder provides a MobiLink wizard for integration with the MobiLink Client (*dbmlsync*) within your application!**



Develop a client/server application to start...



...Then add Synchronization using the Synchronization Wizard!

- **The MobiLink Synchronization Wizard handles ALL aspects of the client-side database synchronization**
 - Remote database connection
 - Publications for synchronization
 - Synchronization server connection information
 - Synchronization client options
 - User interface generation
- **Everything that the Wizard generates is fully modifiable later on by the application developer!**
- **ASA 8.0.2 build 4251 or greater**
 - Developer versions ships with Pocket PowerBuilder 1.0
- **Tested with ASA 9.0**

- **MobiLink Server can be configured and started from Database Painter**
- **Use Sybase Central to create synchronization scripts**
- **Scripts can be automatically generated using `-za` switch on MobiLink server, and `'SendColumnNames=on'` on the MobiLink client**

The screenshot shows the 'MobiLink Synchronization Server Options' dialog box. It is divided into three main sections: 'Required information', 'Diagnostic information', and 'Other options'. In the 'Required information' section, 'MobiLink version' is set to 'Adaptive Server Anywhere 8.0' and 'QDBC connection string' is 'dsn=pbdsample'. In the 'Diagnostic information' section, 'Log messages to a file' is unchecked, 'Log file' is 'c:\dbmlsrv.txt', and 'Display all messages in server console' is unchecked. The 'Verbose level' is set to 'Minimal'. In the 'Other options' section, 'Automatic script generation (requires SendColumnName)' and 'Automatic addition of users' are both checked. There is a 'Usage' button next to the 'Other command line options' text box. At the bottom, there are 'OK', 'Cancel', and 'Help' buttons.

MobiLink Synchronization Server Options

Required information

MobiLink version: Adaptive Server Anywhere 8.0

QDBC connection string: dsn=pbdsample

Diagnostic information

Log messages to a file

Log file: c:\dbmlsrv.txt

Display all messages in server console

Verbose level:

None Minimal Full Custom:

Other options

Automatic script generation (requires SendColumnName)

Automatic addition of users

Other command line options: Usage

OK Cancel Help

- **Test EVERY part of your application:**

Device

Application

Network(s)

Synchronization

Integration with back-end

...

Can occur in three ways:

1. On the Desktop

Does not use the same VM, therefore not accurate representation of device

Good for quick testing early on

2. On a device Emulator

Uses Windows CE VM, but not for the same chipset as physical device

Pocket PC 2000 Emulator is not recommended – many bugs

Pocket PC 2002 Emulator is decent

Pocket PC 2003 Emulator is a bit better, but still ‘clunky’

3. On the device itself

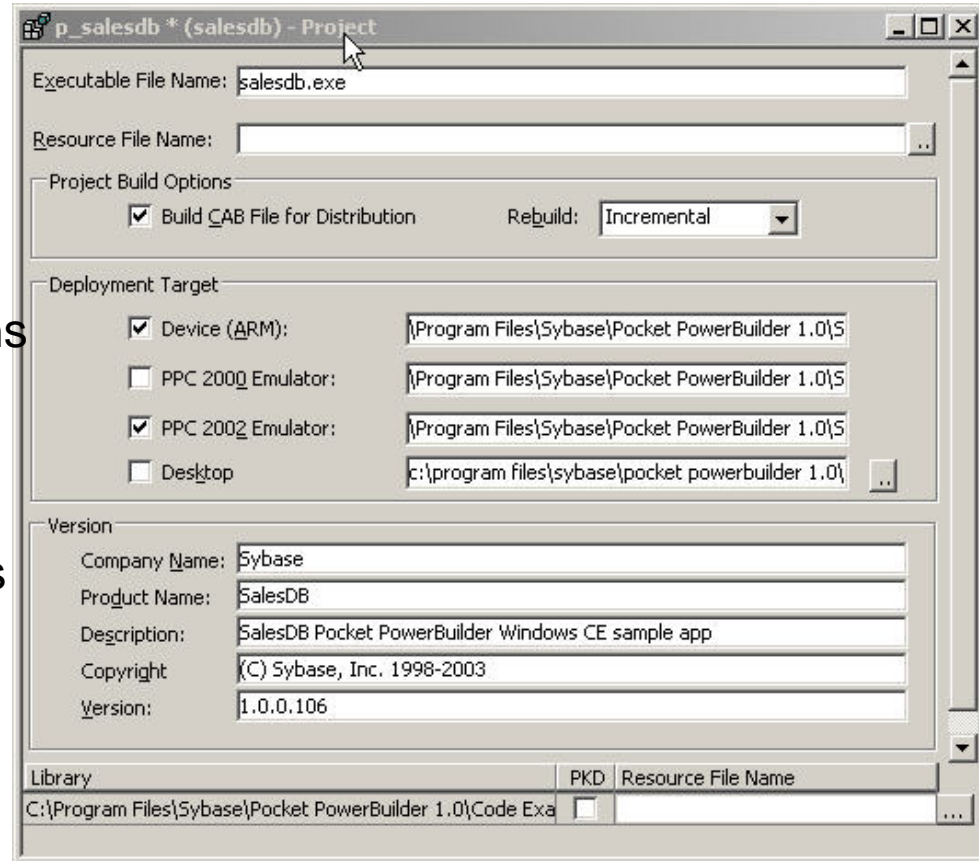
Best way to determine if application will work correctly at deployment

Can also test network connectivity at this point

- Pocket PC applications are often distributed as CAB files**

Pocket PC SDK comes with 'cabwiz' which is a utility to package applications into self installing CAB files

This technology has been incorporated into Pocket PowerBuilder for easy application packaging



- **Automated central software distribution**
 - Including file distribution and collection
 - Complete device-level hardware and software inventory
- **Support mission-critical mobile environment**
 - Self-healing configurations
 - Remote control – reach out and help somebody
- **Security management**
 - Keep virus protection, OS up to date
 - Guard against unauthorized software, configuration
- **Optimized for mobile, remote, embedded**
 - Simple for administrator and end-user
 - Offline operation, suspend & resume, minimal bandwidth use
 - Manage desktops, laptops, PDAs

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- **Summary**

- **Pocket PowerBuilder provides the features that are required to develop enterprise smart client applications**
- **PowerBuilder users can use their existing skills and application code to develop Windows CE applications**
- **Windows CE applications are similar, but yet quite different than desktop applications, so design your applications accordingly**
- **Database development is facilitated by Painters and Wizards to increase productivity**

- **ISUG Technical Journal**
<http://www.isug.com>
- **Pocket PowerBuilder Product Site**
<http://www.sybase.com/pocketpowerbuilder>
- **Pocket PowerBuilder CodeXchange**
<http://pocketpb.codexchange.sybase.com>
- **SQL Anywhere Studio Product Site**
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