Description: Guide to setting up Pocket devices with Pocket GENESIS.
OS Requirement: Win 2000 Pro/Server, XP Pro, Server 2003.
General Requirement: Pocket PC, Active Sync, Genesis32 and Pocket Genesis CD, License for Pocket Genesis.

Introduction

Pocket GENESIS is the first and most complete suite of robust automation tools for Windows Mobile and Pocket PC Personal Data Assistants (PDA), smart phones or data collection devices. With Pocket GENESIS applications, you can visualize your enterprise from an iPaq, Treo, T Mobile Dash or Motorola MC series with a custom Human Machine Interface (HMI) connecting to SCADA servers on desktops or servers. Windows Mobile devices are ideal for mobile operators and maintenance personnel who need real-time access to and control of the state of operations.

Pocket GENESIS can connect via the Web, intranet or wireless to virtually any enterprise automation application you have. It is fully compliant with the latest OPC specifications for Data Access, Alarm and Events, and Historical Data Access and will integrate with any vendor's system that is compliant to these open standards.

You create HMI displays for your handheld device on the desktop, and then synchronize display files to your handheld. Pocket GENESIS adds the features you need to rapidly create custom operator interfaces to your data sources. With Pocket GENESIS' rapid deployment environment someone with even rudimentary programming skills can create and manage portable applications in minutes. Displays allow users to visualize systems in graphical displays, view complex trending/historian systems, and perform alarm management on their mobile device.

Pocket GENESIS consists of the applications:
1. **Pocket GraphWorX** – provides real-time visualization processes and systems through advanced HMI/SCADA and graphics capability.
2. **Pocket AlarmWorX** – provides real-time alarm visualization and acknowledgment capabilities using OPC Data Access and Alarm and Events Plug and Play standards.
3. **Pocket TrendWorX** – plots real-time and historical data in numerous trend chart display formats, including XY plots and new stackable plots.
4. **Pocket Recipe Viewer** – display any of your recipes or formulas you use, and allow you to change the recipe or create new ones from your mobile device.
5. **Pocket DataSpy** – provides analysis and diagnostics of OPC real-time data. It tests and monitors OPC data, alarms, and data quality.

6. **Pocket GenBroker** – enables OPC over TCP/IP between GENESIS32 desktop applications and your Windows Mobile device, and enables device licensing compliance.
7. **Pocket Store and Forward –** automatically connects to available networks and performs data synchronization.
8. **Security Login** – allows you to restrict which users can perform certain actions.

These Pocket GENESIS applications are based on their corresponding ICONICS GENESIS32 applications. GraphWorX32, AlarmWorX32 and TrendWorX32 are used on a desktop PC as development tools. After the application is configured on the desktop PC, the completed files are downloaded to the target Pocket PC or Windows CE device.

ActiveSync Installation

Pocket GENESIS installs a set of mobile applications into your synchronization folder. In order to install Pocket GENESIS, you must first install Microsoft's ActiveSync (4.2 or greater).

To install ActiveSync:
1. Open the ActiveSync folder inside the Tools folder on the Pocket GENESIS CD and run the ActiveSync "SETUP.MSI" file. This launches the ActiveSync wizard, which guides you through installing ActiveSync and setting up your handheld device.
2. Reboot PC after the Active Sync installation finished.

Desktop installation

The desktop PC acts as the application manager for the Windows Mobile device. If the Pocket GENESIS installer does not detect that the GENESIS32 components are already installed on your desktop, it will add them during the installation.

To install Pocket GENESIS:
1. Connect your Windows Mobile device to your desktop PC.
2. Insert the Pocket GENESIS CD into your CD-ROM drive. If Autorun doesn't start, double-click "RUNME.BAT" on the CD-ROM.
3. When the introductory screen appears, click the "Installation" link.
4. After the splash screen displays, you will see the Welcome dialog box. Click "Next" to continue.
5. Accept the terms of the license agreement and click "Next".
6. Select either a "Complete" (default), a "Custom", or an "Other" installation in the dialog box, then click "Next".

NOTE: Space is at a premium on Pocket PC devices. The installer indicates the space each component requires and how much space is available on your handheld.

However you can still select which Pocket GENESIS components install to your handheld by making the appropriate selections in Microsoft ActiveSync. Therefore ICONICS recommends that you install all programs to your desktop.

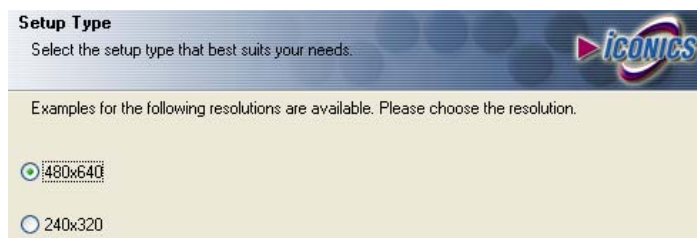7. Choose the right resolution, then click "Next".

Fig 1: Appropriate resolution of the Pocket device

NOTE: The two choices are 480x640, which is the value most Windows Mobile 5 and 6 devices have, or 240x320 which was used by Pocket PC 2003 and 2003SE devices.

8. You will be asked to confirm your selection. Click "Install" to begin.
9. Click the checkboxes to select or deselect the components in the list and use the "Change" button to select or deselect internal components which will also alter the amount of space required.
10. Select the components you desire, then click "Next".
11. Each handheld application may have additional components, such as help files, contained within.
12. The Installer launches and posts a dialog box asking if it can install applications to the default directory. Click "Yes" to continue.
13. The ActiveSync installer will then post an alert box reminding you to check your Windows Mobile device in order to complete any additional steps in the setup. Click "OK" to continue.
14. The Pocket GENESIS installer completes the installation and posts the final Setup Complete dialog box. Click "Finish".
15. Attach your handheld to your computer and use ActiveSync to synchronize Pocket GENESIS programs to your portable device to complete the installation, or right click on the ActiveSync icon in the System Tray and select the Synchronize command.

Network configuration

Since you will be using ICONICS GenBroker communications, you will need to configure and connect to a network. Employing a network of applications, GenBroker uses OPC over TCP/IP channels to achieve real-time and secure communications between Web browser clients and Web servers. GenBroker also enables your Pocket PC to access security and licensing information from remote Security and License Server.

To configure for networking, on your CE device:
1. Select Start → Settings → Connections → Network cards.
2. In the "Network Adapters" tab, select the Ethernet Driver (e.g. Dell Axim X51 WLAN Wireless Adapter).
3. If your network supports DHCP select "Use server-assigned IP address" to obtain an IP address via DHCP, otherwise specify an IP address manually.
4. If you wish to synchronize with a particular computer over the network, go to the "Name Servers" tab and enter that computer's IP address under "DNS Server" and "WINS".
5. Click "OK" to return to the "Network Configuration" dialog box.
6. If you wish to add a username and password, go to the "Identification" tab and enter the corresponding information.
7. Click "OK" to complete the configuration process.

To connect to the network:
1. Physically connect your CE device to the network. See the CE device's user manual for more instructions on how to do this.
2. To test the connection from a desktop PC on the network, select Start → Programs → Command Prompt.
3. At the command prompt, type "ping [IP]", where "[IP]" is the numeric IP address given to the CE device (e.g. "ping 192.168.1.60").
4. If the connection works, you will receive the following message: "Reply from [IP]" (where "[IP]" is the IP number given to the CE device). If the connection does not work, you will receive the following message: "Request Timed Out".

NOTE: For more details on how to set up ActiveSync synchronization between your device and desktop PC over the USB cable or WiFi look at the ActiveSync documentation or see the application note entitled *Pocket GENESIS – Connecting a Pocket PC to a Desktop PC.*

Configuring the Desktop

The desktop is the only part of Pocket GENESIS that has to be configured for network activation. If the file download tool is installed properly, it will be listed in the ActiveSync Manager.

To view the list of ActiveSync modules, do the following:
1. Select Start → Programs → Microsoft ActiveSync on the desktop
2. Tap the Tools →Options button.
3. Tap the "Sync Options" tab of the Windows Options dialog box in the Microsoft ActiveSync Options dialog box.
4. Enable the "Files" ActiveSync module in the ActiveSync Manager by tapping the "Files" box, if required. Or you can follow the Synchronization Setup Wizard where you can specify the computer name.
5. Try to synchronize by clicking on the "Sync" button.

Pocket GENESIS Download Configuration

GraphWorX32, TrendWorX32, and AlarmWorX32 have their own version of the file download tool. To enable Pocket GENESIS downloads:

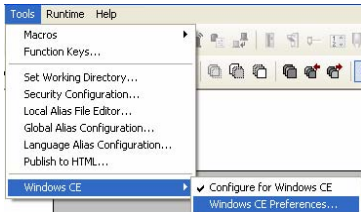1. In the GENESIS32 application select Tools → Windows CE → Windows CE Preferences as shown below.

Fig 2: Configuring for Windows CE

2. Click the "Download On Save" check box in the Windows CE Preference dialog box.
3. Enter the destination directory for the handheld by entering the path name in the "Download Directory" field. You can also click the "Browse" button to select the destination directory. Click on the "Browse" button to open the "Browse for Folder" dialog box. A warning message box will be displayed when the file download ActiveSync module is inactive.
4. To establish a connection with the Windows Mobile device, click "OK".

NOTE: Use the Windows CE Preferences dialog box to configure other settings for Windows Mobile. You can set the resolution of the target device by clicking the Resolution button. This displays a list of resolutions from 200 x 320 up to 1024 x 768.
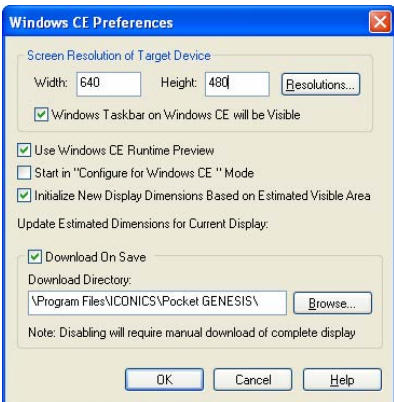

Fig 3: Pocket GENESIS Windows CE Preferences dialog box

5. When you have finished configuring a display file and would like to save it to Windows Mobile, choose "Save As" from the "File" menu. This opens the "Save As" dialog box.
    a. In GraphWorX32, enter the file name and select either "GraphWorX32 Displays for WinCE (*.GDC)" or "GraphWorX32 Templates for WinCE (*.GDC)" from the "Save as Type" box.
    b. In AlarmWorX32, enter the file name and select "AWXview32 CE File (*.ACE)" from the "Save as Type" box.
    c. In TrendWorX32, enter the file name and select "TWXviewerCE File (*.TCE)" from the "Save as Type box".
6. Click "OK" after you have selected the appropriate file format. The Import File dialog box will appear, and the files will be downloaded to your Windows Mobile device.

Starting Pocket applications

Once you have downloaded your GraphWorX32, AlarmWorX32, or TrendWorX32 configuration files from your desktop PC to your Windows Mobile device, run the applications on your handheld. Open the Pocket GENESIS client applications you wish to run, and then select File → Open. Browse for the desired .GDC, .ACE, or .TCE file. An example using Pocket GraphWorX32 is provided in the following sections.

To open a Pocket GraphWorX32 display on your Windows Mobile or Pocket PC device:
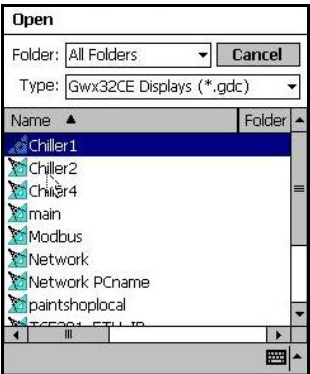1. Tap File → Open.
2. Browse a Pocket GraphWorX32 (.gdc) file.

Fig 4: Open dialog box of Pocket GENESIS.
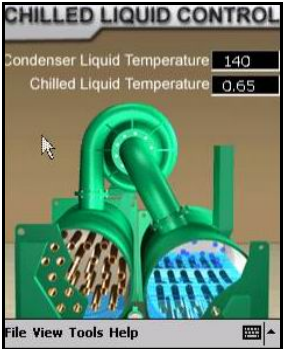
The display file opens in Pocket GraphWorX with OPC data displayed.

Fig 5: Pocket GENESIS display with real time OPC data