

AppCenter for CE.NET v1.10

Odyssey Software, Inc.

Copyright © 2001-2005

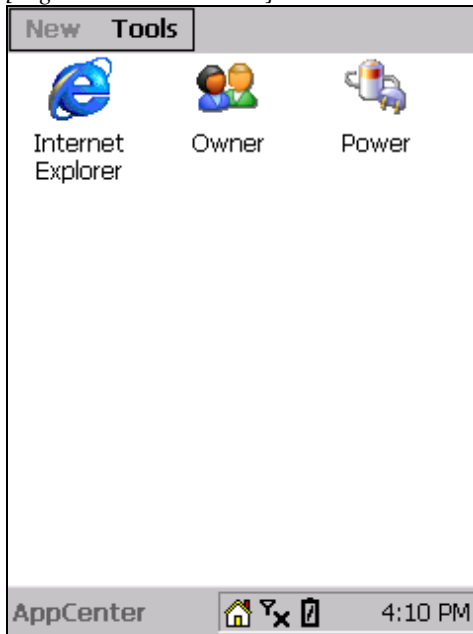
Document Contents:

1. What is AppCenter?
 - A. What is it used for?
 - B. Who is it intended for?
 - C. Overview: Admin Mode and User Mode, debug mode, how it works
2. How to use it – End User
3. How to use it – Administrator
 - A. Setup
 - B. Menu Options
 - C. Window Names and Debugging
 - D. System Windows entry
 - E. Cold Reset
 - F. Device Specific .REG file
4. Tips and Tricks
 - A. Add AppCenter to Hardware button
 - B. Allow Control Panels to be launched
 - C. Approving new applications not shown in the browse “[...]”
 - D. Approving applications that have sub-applications
 - E. Approving MFC applications
 - F. Approving eConnect
 - G. Approving the Terminal Services Client
 - H. Approving .NET Compact Framework applications
 - I. Approving Unresponsive applications
5. AppCenter Installation (Cold Reset support)

Section 1 - What is AppCenter?

AppCenter is an end-user administration application that will lock the user out of executing “unauthorized” applications on a CE.NET device as specified by an administrator. AppCenter presents the user with a launch platform of approved applications in icon form. Any “unauthorized” application that attempts to start up (either automatically or by user control) will immediately be terminated. AppCenter can also disable the Start Menu, and the SIP (on screen keyboard) from the user.

[Fig. 1 – Launch Screen]



A. What is it used for?

AppCenter is intended for end-user devices where only certain applications should be allowed. It can be used to lock them out of critical areas of the CE.NET device. A typical scenario would be a kiosk application where the end-user should run ONLY the specified information application and nothing else.

B. Who is it intended for?

AppCenter is intended for use by developers and designers who are creating full-device applications where access to other parts of the CE.NET device should be restricted.

C. Overview: Admin Mode, User Mode, Debug Mode

AppCenter works in two main modes: Administration Mode and User Mode. While in User Mode, users are presented with the AppCenter Launch Screen that lists all the approved applications in icon form. From this they can launch any of the approved applications. This Launch Screen or AppCenter itself cannot be closed or shut down.

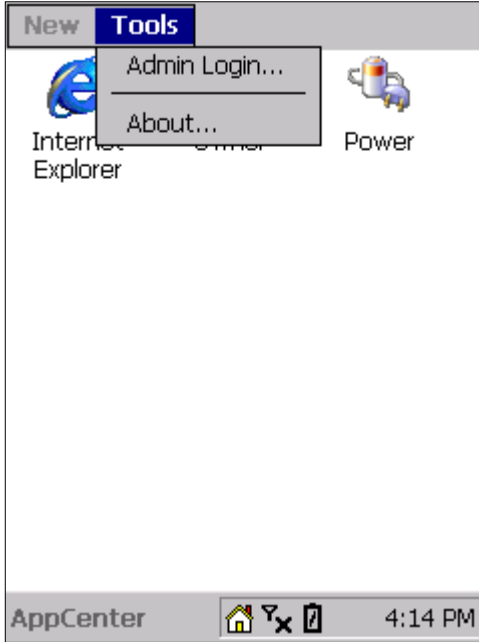
In Administration Mode, the administrator can add to or remove items from the list of approved applications, specify options to hide the Start Menu or SIP, or turn on Debug mode (see section below). Administration Mode is password protected from the end-user.

Section 2 - How to use it – End User

From the end user’s point of view, they are provided with a Launch Screen from which they can choose which application to launch.

This Launch Screen is always active, so the user can easily switch back to it at any time. The Start Menu will be available if the Administrator approves it.

[Fig. 2 – Launch Screen]



The “Tools” menu at the top of the Launch Screen has “About...” and “Admin Login...” as choices.

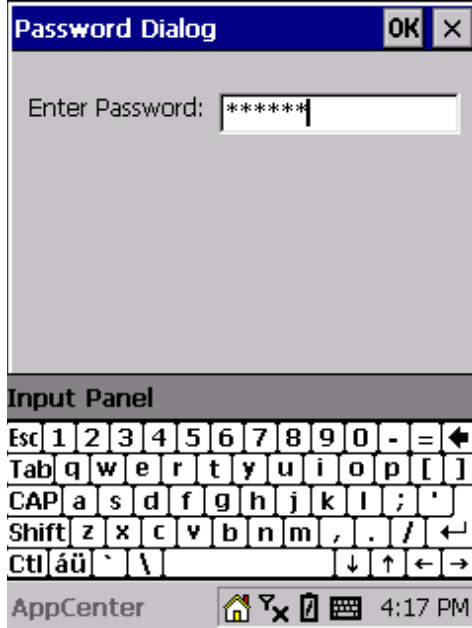
[Fig. 3 – About Screen]



The “About...” menu shows version information about AppCenter.

The “Admin Login...” is used to switch into Administrator mode. If the user does not have the correct password, they will be denied access and sent back to the Launch Screen.

[Fig. 4 – Admin Password Screen]







The user is also presented with a number of icons in the taskbar. The Administrator will configure AppCenter to determine which icons will be visible.

Home 

The user can click this icon to return to the main AppCenter Launch Screen at any time.

AirBeam Safe Status 

If the icon is a plus sign , AirBEAM is connected. If the icon is a minus sign , AirBEAM is not connected. If the icon is blank , AirBEAM is roaming. The icon is question marks  if AirBEAM status is unknown.

Signal Strength 

The icon shows an antenna with 1-5 bars underneath. One bar indicates poor signal strength. Five bars indicates excellent signal strength. If an X shows instead of any bars, there is either no network card or the device is out of range.

Battery Level 

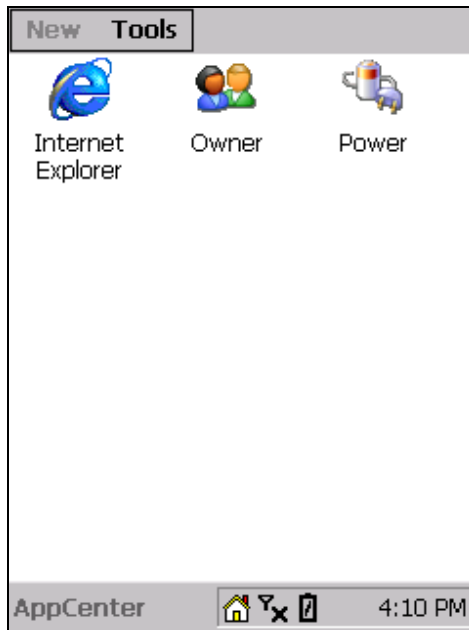
If the battery icon has three bars inside, there is 70% or more of the battery life left. Two bars indicate 40-70%, one bar indicates 20-40% and an empty battery indicates less than 20% battery life left. A lightning bolt within the battery icon indicates the battery is charging. A question mark within the battery icon indicates the battery status can't be determined.

Section 3 - How to use it – Administrator

A. Setup

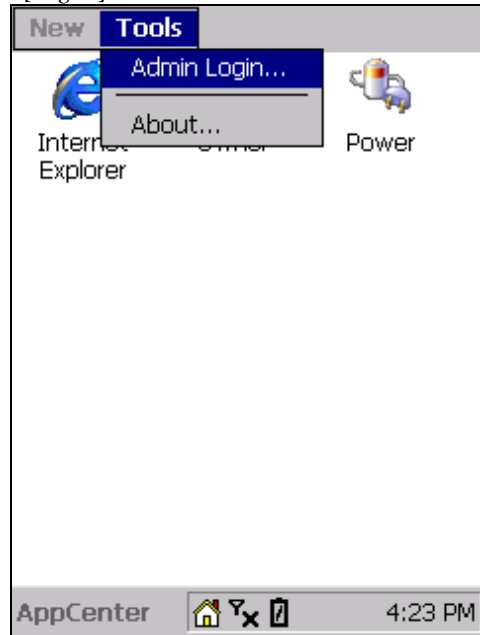
1) Run AppCenter.

[Fig. 5]



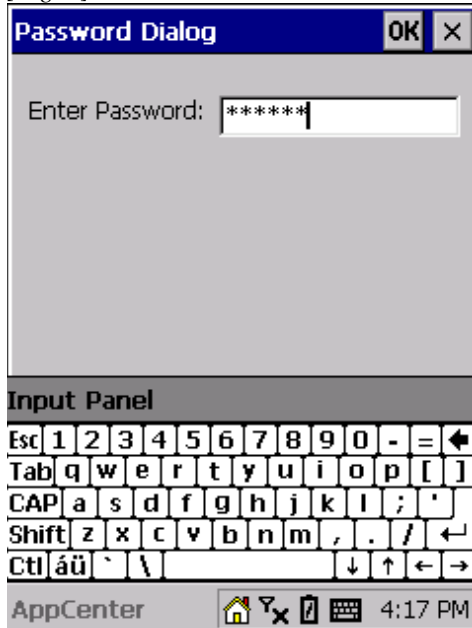
2) Enter Admin Mode to configure applications and system settings.

[Fig. 6]



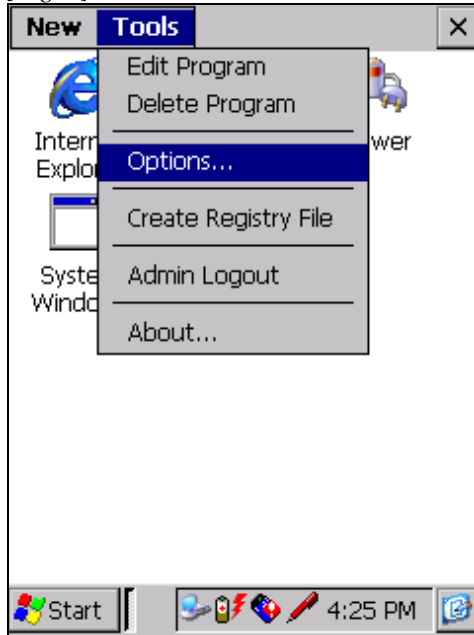
3) Enter Admin password then tap “Ok”. The default password is ‘symbol’. The password is not case-sensitive.

[Fig. 7]



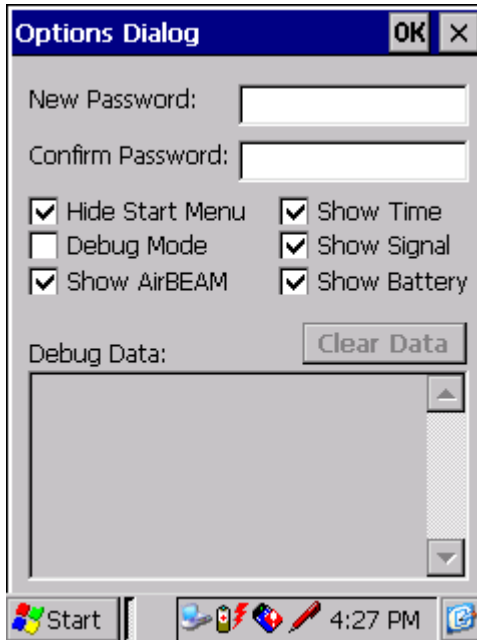
- 4) From the Admin screen, select “Options” from the Tools menu to configure system settings.

[Fig. 8]



- 5) From here you can Change the Admin Password and configure AppCenter to hide the Start Menu when in user mode. You can also choose which indicators to display in the taskbar, including AirBEAM Safe Status, Signal Strength, Time and Battery Level.

[Fig. 9]



Home – User can click on this to return to Launch Screen.

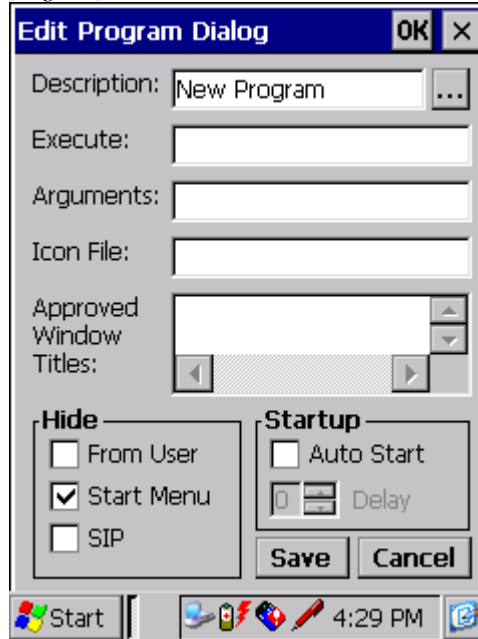
AirBeam Safe Status – Indicates whether AirBEAM is connected or not, roaming, or disabled. The default is for the icon to be enabled.

Signal Strength – Indicates the wireless network signal strength. The default is for the icon to be enabled.

Battery Level – Indicates battery strength. The default is for the icon to be enabled.

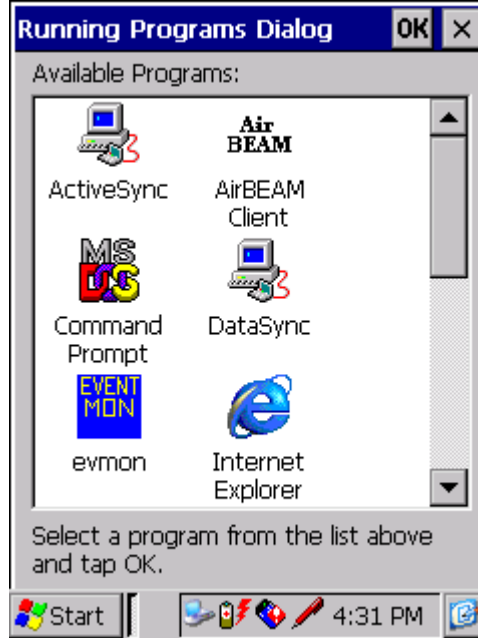
- 6) The “Create Registry File” option will save the current AppCenter configuration, including the Admin password, to a file called AppCenter.reg in the /Application folder on the device. This will save the current AppCenter configuration in the event that the device is cold reset. See the *AppCenter Installation* section for more information on cold reset support.
- 7) Tap the “New” menu to add a new application to the approved list.

[Fig. 10]



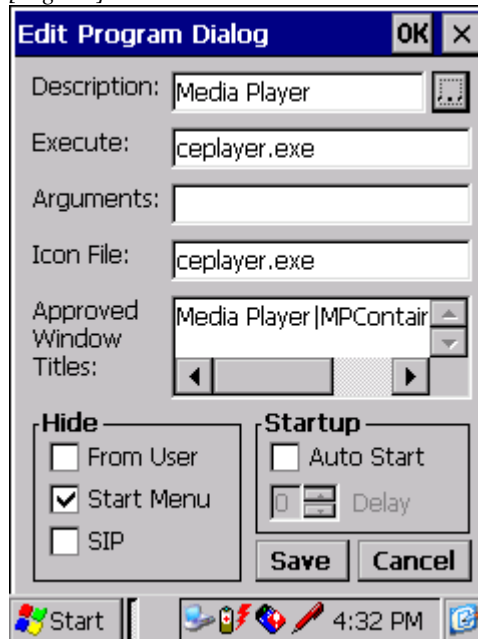
- 8) Tap the “[...]” button to view available programs (see section on *Approving new applications not shown in the browse “[...]”* for additional information), and then tap the icon to approve the application. Note you can also manually fill in the data on the screen, however the “[...]” button makes it easier.

[Fig. 11]



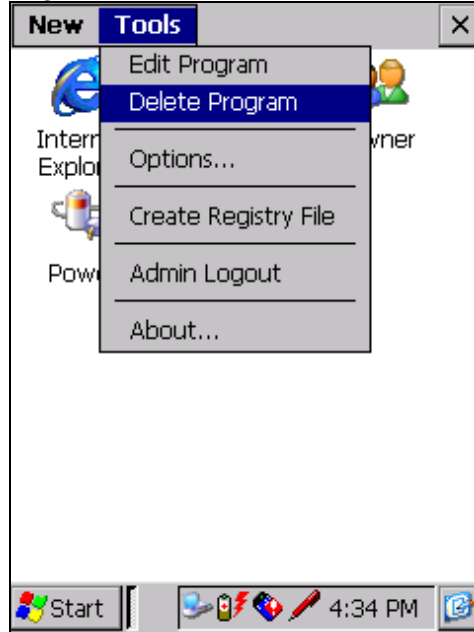
- 9) The “Execute”, “Icon File” and “Approved Window Titles” will populate automatically. Make any adjustments then tap “Save” to accept this information, or “Cancel” to close the window without saving.

[Fig. 12]



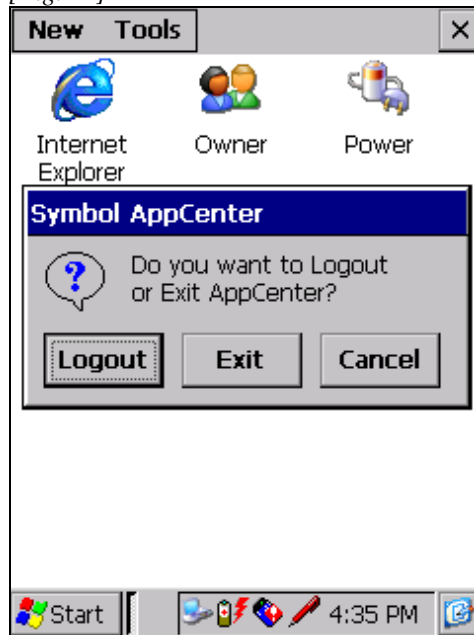
- 10) Tap the “New” menu to add additional programs.
- 11) If you need to remove or delete an approved application tap to highlight the entry you wish to delete, then select Delete Program from the Tools menu.

[Fig. 13]



- 12) To return to User Mode, tap the “X” button on the Admin Screen then select “Logout” on the dialog that appears. To terminate AppCenter select “Exit” from the dialog.

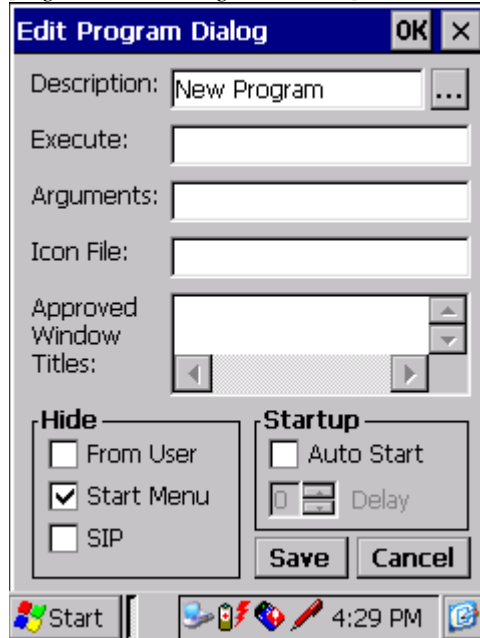
[Fig. 14]



B. Menu Options

New Menu – To add a new application to AppCenter, use the *New Menu*.

[Fig. 15 – New Program Screen]



Description – Name of Program. By clicking on the “[...]” Wizard button, a list of available applications will be displayed. Select one of these applications. Note the easiest way to add applications to AppCenter is to start them before going into AppCenter startup then selecting them with the “[...]” button.

Note that the “[...]” button will display all executables (*.exe), eVB applications (*.vb) and shortcuts (*.lnk) in the following directories and their subdirectories:

- \Program Files
- \Windows\Startup
- \Windows\Start Menu
- \Windows\Programs

If the application you wish to add to AppCenter is not in one of the above directories, create a shortcut to your application and place the shortcut into one of the above directories.

Information on overriding these defaults can be found in the ***Approving new applications not shown in the browse “[...]”*** section of the Tips and Tricks section of this document.

Execute – Path to executable file corresponding to the application listed in the “Description” field. This is filled in automatically when the “[...]” Wizard button is used.

Arguments – Include any command line arguments required for running the selected application.

Icon File – Path to the icon for the selected application, typically the same as the “Execute” field. This is filled in automatically when the “[...]” Wizard button is used.

Approved Window Titles – This is a list of screen and dialogue box titles that the selected application can have. Each entry contains the Title and Class of the window, separated by a vertical bar, for example “Internet Explorer|explorer”.

When defining a New application, selecting the icon from the list of available programs using the “[...]” button will auto-fill the “Approved Window Titles” list with the selected application's title and class (using the Title|Class format). For more advanced needs, see the section titled *Window Names and Debugging*.

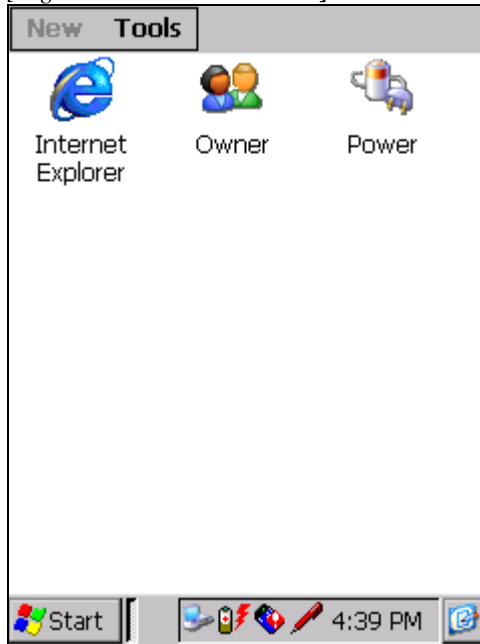
Hide – this allows the Administrator to control whether the Start Menu, Menu Bar, SIP (pop-up on screen keyboard), or the approved application itself from user while the selected application is active.

Checking the “From User” checkbox will remove the selected application from the AppCenter User Mode screen without actually removing it from the configuration, so that it may be added back in at a later time.

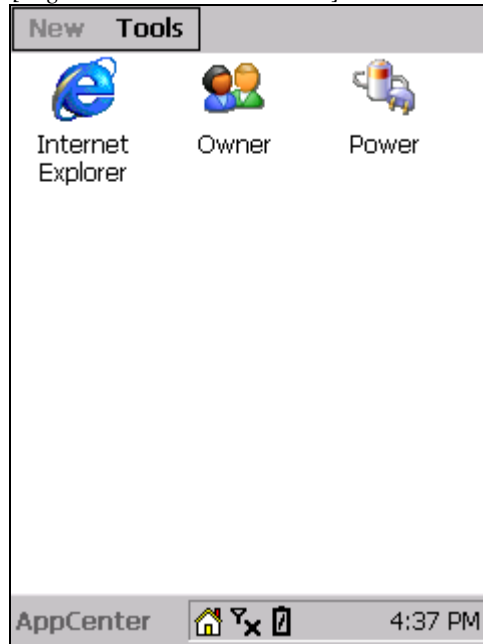
Applications must be written to make use of all available screen space for the Hide Menu Bar to be effective.

Examples of several “Hide” options

[Fig. 16 – Start Menu Visible]



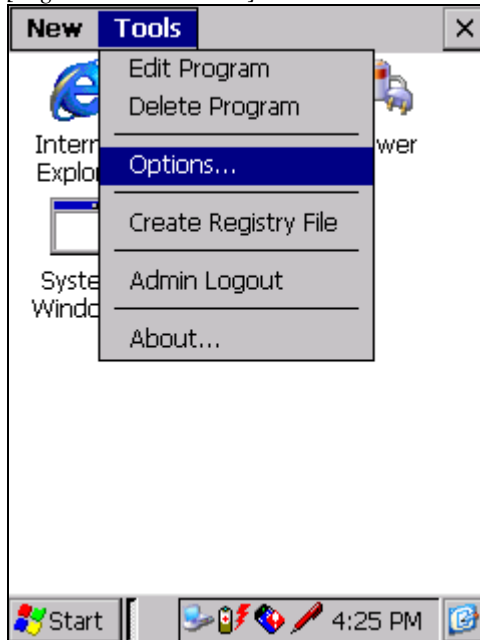
[Fig. 17 – Start Menu Hidden]



Auto Start – AppCenter can automatically start up a selected application upon reboot of a device (similar to placing a shortcut to an application in the \Windows\Start Menu\Startup folder). Delay specifies, in seconds, how long of a delay to wait before starting up the application. The default value is zero (0).

Tools Menu –

[Fig. 18 – Tools Menu]



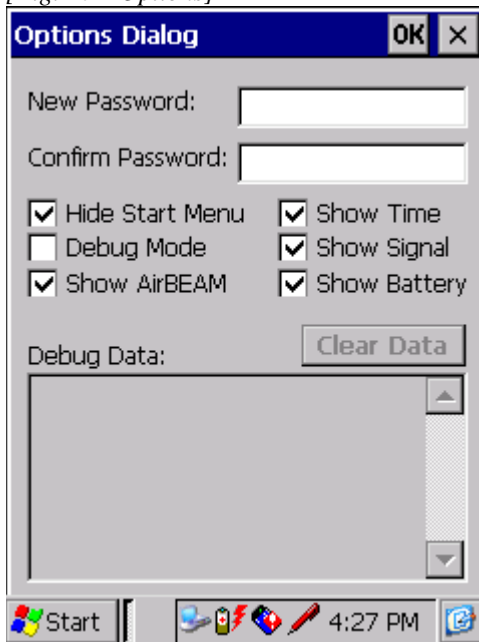
“About...” shows version information about AppCenter.

[Fig. 19 – About Screen]



“Options” – This screen allows you to change the Admin password (the password needed to enter Administrator mode), hide Start Menu, and turn on debug mode (see below).

[Fig. 20 – Options]



“Create Registry File” – This option will create a .REG file on the device with all the preferences from the existing AppCenter application. This .REG file can be copied to other devices or used in Cold Reset support. See section *AppCenter Installation (Cold Reset support)* for more information. The .REG file can be found in "\Application\AppCenter.reg".

“Admin Logout” – returns AppCenter to User Mode.

“Edit Program” – Select this after highlighting (single-click) an application in the approved list to modify its settings. You can also configure an application in the approved list by double-clicking it while in Admin mode.

“Delete Program” – Select this after highlighting (single-click) an application in the Approved Window list to delete it from AppCenter. Note this does not remove that application from the device.

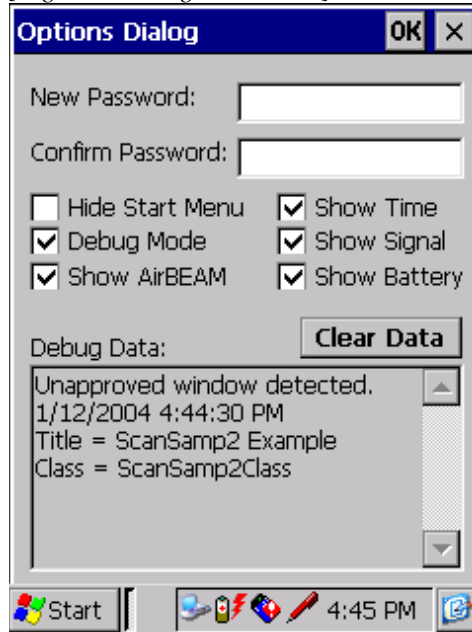
C. Window Names and Debugging

If you are unsure of what to fill in for the “Approved Windows Titles” or would like to see what applications are being launched during a user session, you can turn on Debug mode. This records information about unapproved applications that are launched.

Following the procedure below will help ensure that your applications are configured properly for AppCenter.

- 1) From Admin mode turn debug mode on and clear any existing debug data.
- 2) Make sure all current items can be run in user mode without generating any debug data.
- 3) Add one new program item.
- 4) From User Mode, launch the program added above. Exercise all program features.
- 5) From Admin mode check the debug data for any unapproved windows. Add these window/class strings to the new program item. Feel free to consolidate multiple strings using wild cards as long as the resultant string will only match windows for the new program.
- 6) Clear the debug data.
- 7) Repeat steps 4-6 until no more unapproved windows show up in the debug data. Make sure you have used all program features.
- 8) Repeat starting at step 3 if you want to add additional program items.
- 9) Export the AppCenter configuration to a .REG file using the Tools menu.

[Fig. 21 – Debug Mode Data]



The following formats are supported for approved windows:

Title or Title or Title *	Match title. Any class allowed.
Title Class	Match title and match class.
Class	Match blank title and match class.
	Match blank title and any class.
* Class	Any title allowed. Match class.
abc* xyz*	Match any title starting with "abc" and match any class starting with "xyz"

The following characters have special meaning when used in an approved window string. These characters should be preceded by a backslash if the user wants them taken literally. i.e. if your window title has a \ in it you should enter \\. Enter \\ for a | character, etc.

- | - First occurrence divides Title from Class.
- * - Wildcard. Match up to the first occurrence of *.
- Characters after * are ignored.
- ? - Reserved for future use.
- \ - Indicates next character should be taken literally.

Debugging Control Panel Applets

In order to debug control panel applets you will need to allow the Start-Settings menu to display.

To allow the Start Menu->Settings to appear, add
Settings|Worker

This must be approved in order to give the user the ability to launch the individual control panel applets. More information on configuring Control Panel applets can be found in the *Tips and Tricks* section of this document.

D. The System Windows entry in the Admin Screen

This is where screens and applications that cannot be configured by the above procedure are specified, such as control panel applications, System applications, and System dialog windows.

The “Approved Window Titles” section of this configuration is set with several default values. **These entries are read-only and cannot be modified:**

- *|wceload – (required for CAB file installations)
- |Welcome
- |static – (for static dialog boxes)
- Connect to|Dialog
- Pocket PC Networking|Dialog
- Scan Keyboard Wedge|ScanWedge
- ActiveSync|ActiveSync
- |worker
- Application Error|Dialog

NOTE: To approve additional System applications or dialog windows it is recommended that you create an entry called “System Windows 2” to contain the specific applications and dialog boxes required for your deployment. eConnect is an example of an application that you might place in your “System Windows 2” entry. (Information on configuring *AppCenter for eConnect* can be found later in this document.) To hide the “System Windows 2” icon while in user mode be sure to check the Hide From User checkbox when creating your “System Windows 2” approved application.

E. Cold Reset

It is possible to have AppCenter re-install itself upon a cold reset, for devices that support this feature. See section 5, “AppCenter Installation (Cold Reset support)” for information on how to do this.

F. Device Specific .Reg files

AppCenter may only be run on a Symbol approved platform. Each installation must be accompanied with a Symbol-supplied device specific .REG file. See the installation instructions at the end of this document.

Section 4 - Tips and Tricks

A. Add AppCenter to Hardware button

To make it easier to launch AppCenter or to bring it back to the foreground, you can add it to one of the hardware buttons (“Hotkeys”) on the device (typically set to things like Calendar, Address Book, Tasks, etc).

For devices that have hardware buttons:

- + Select Start->Settings->Control Panel->Keyboard
- + Select the Program Buttons tab
- + Select the Button you wish to set AppCenter to and change the Button Assignment to AppCenter

It is recommended that the remove the default settings (typically set to Calendar, Address Book, Tasks, etc) for the buttons so that these applications cannot be launched while AppCenter is running.

The Hotkey assignments will usually be set while in Admin mode, or before AppCenter is loaded on a device. The registry settings for these Hotkey assignments should be placed in a REG file in the /Application folder so on a cold reset the values will be restored.

B. Allow Control Panels to be launched

The Settings and individual settings applets can be made available while AppCenter is running using two different methods.

1) The first method enables the Start-Menu->Settings menu option to be enabled so the control panel applets can be launched from there. The Start Menu must also be enabled for this function to work. This method is enabled by creating a System Windows type entry and adding the desired applets. It is recommended that you create an approved application called “System Windows 2” for this purpose.

The following entries should be placed in the Approved Window Titles section.

To allow the Start Menu->Settings to appear, add

Control Panel|CONTROLEXE_MAIN

This must be approved in order to give the user the ability to launch the individual control panel applets.

To add the Power control panel, add

Power Properties|Dialog

To add the Stylus control panel, add
Stylus Properties|Dialog

To add the Volume control panel, add
Volume & Sounds Properties|Dialog

To add the Clock (Date and Time) control panel, add
Date/Time Properties|Dialog

2) The second method of enabling control panel applets within AppCenter is to create a launch icon for the specific applets that you want the user to launch. It is possible to add an icon to the Launch window for specific Control Panels that have an associated .cpl or .exe file. To do this, browse to the specific .cpl or .exe file from the browse “[...]” button after selecting the *New* menu option.

For applets that do not have a corresponding EXE or CPL file the list below will detail the steps necessary to approve each applet.

These settings will work on all platforms unless noted.

Password

Execute: \windows\ctlpnl.exe
Arguments: \windows\cplmain.cpl,3
Icon File: \windows\cplmain.cpl,-6000
Windows: Password Properties|dialog

Owner Info

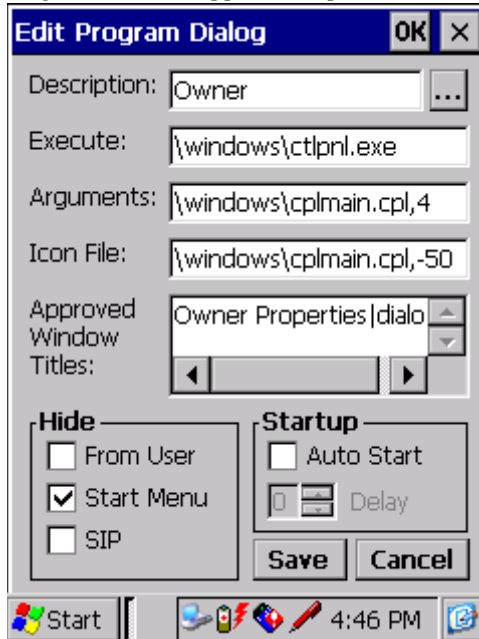
Execute: \windows\ctlpnl.exe
Arguments: \windows\cplmain.cpl,4
Icon File: \windows\cplmain.cpl,-5040
Windows: Owner Properties|dialog

Power

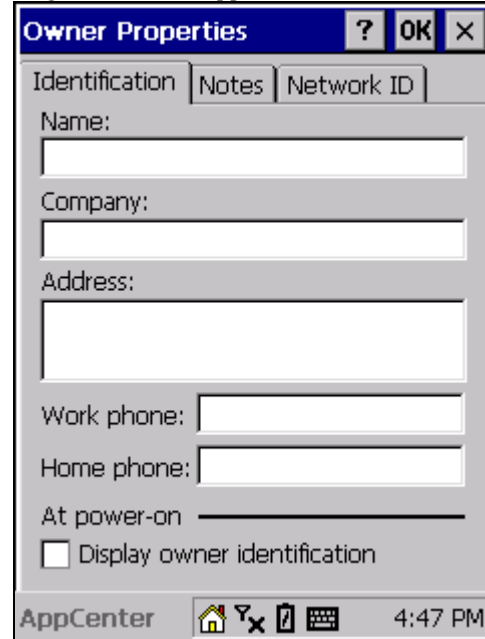
Execute: \windows\ctlpnl.exe
Arguments: \windows\cplmain.cpl,5
Icon File: \windows\cplmain.cpl,-5050
Windows: Power Properties|dialog

The following example demonstrates the settings for the Owner control panel applet.

[Fig. 22 – Owner applet example]



[Fig. 23 – Owner applet screen]



C. Approving new applications not shown in the browse “[...]”

Note that the “[...]” button will display all executables (*.exe), eVB applications (*.vb) and shortcuts (*.lnk) in the following directories and their subdirectories:

- \Program Files
- \Windows\Startup
- \Windows\Start Menu
- \Windows\Programs

If the application you wish to add to AppCenter is not in one of the above directories, create a shortcut to your application (*.exe or *.vb) and place the shortcut into one of the above directories.

NOTE: The list of directories to be searched and which extensions to display can be modified from the default values by accessing values in the device registry under:

```
HKEY_LOCAL_MACHINE\Software\Symbol\AppCenter\
```

The following values can be modified. Note these values are only accessible through the registry.

BrowseFolders override the folders searched when browsing for an approved app. Default value is:

```
\Windows\Start Menu|\Windows\Startup|
\Windows\Programs|\Program Files
```

BrowseExtensions override the file extensions searched when browsing for an approved app. Default value is: exe | vb

BrowseAllShortcuts defaults to true (1). If set to false (0), only shortcuts whose target file extension is in the BrowseExtensions setting will be added to the browse listview.

D. Approving applications that have sub-applications

Some menu-driven applications launch other “sub-applications” or windows that also need to be added to the approved window list. An example of an application like this is the Symbol Demo, which launches a number of applications from a button menu such as “Setup”, “Scanner”, “MSR Example”, the File Explorer, etc. Each of these applications must be approved since they will launch as independent applications.

Adding all the information can be done by

- 1) Add the main (menu) application to AppCenter.
- 2) Run AppCenter in debug mode (see above).
- 3) Launch the main (menu) application, and then launch all the sub-applications. Each sub-application will be shut down immediately by AppCenter.
- 4) The “Debug Data” of AppCenter will show information for each application.

Record the “Title” and “Class” data for each one. They will look like:

```
Title = Button Launch Task
Class = ButtonLaunchTask
```

```
Title = Scan Sample 2
Class = ScanSmp2
```

```
Title = Msr Samp
Class = MSRSAMP
```

Etc.

- 5) Go into the configuration of the main (menu) application and add the above data into the “Approved Window Titles” in the form Title|Class, each on a separate line, i.e.:

```
Demo|ButtonLaunchTask
Button Launch Task|ButtonLaunchTask
Scan Sample 2|ScanSmp2
Msr Samp|MSRSAMP
Etc.
```

- 6) Be sure to turn off debug mode.

E. Approving MFC applications

MFC applications may change the Class name of the windows within an application. The operating system will assign window class names that are unique each time the MFC application is run. In order to enable them for AppCenter, in the “Approved Window Titles” of the AppCenter configuration of any MFC application, use the program Title followed by '|' or '|*'. AppCenter will now detect this behavior and create this setting for you when setting up a new approved application.

For example:

```
PocketQuery|  
or  
PocketQuery|*
```

F. Approving eConnect

eConnect™ is a Control Panel applet that enables the terminal to automatically connect to the corporate network using TCP/IP using a Symbol Ethernet cradle. Since eConnect is a Control Panel applet it requires a slight modification to the standard approved application settings.

If you are adding eConnect to a System Windows type of approved application you need to include two Approved Window Titles entries:

```
Settings - eConnect|Dialog  
eConnect - Connection Detected|Dialog
```

It is recommended that you create an approved application called “System Windows 2” for this purpose.

If you need to launch eConnect from user mode you will need to establish eConnect as an approved application. You will want to use the Approved Window Titles entries above and set the Execute entry on the approved application setup screen to:

```
\Windows\eConnect.cpl
```

The Icon File entry should be set to:

```
\Windows\eConnect.exe
```

G. Approving the Terminal Services Client

When using Terminal Services Client under AppCenter, the following approved windows should be used. Replace “MyServer” with the name of the machine you are connecting to.

```
Terminal Services Client|*  
MyServer - Terminal Services Client|*
```

To use Terminal Services Client with a full screen under AppCenter the following steps are required:

1. Set up TSC in AppCenter to use the "Hide Menu Bar" feature.
2. The remote application should display in the upper left corner of the screen.
3. Do not check the "Limit size of server desktop to fit on this screen" checkbox when connecting to the server.

H. Approving .NET Compact Framework applications

.NET Compact Framework applications have an AppCenter class name that is controlled by .NET. This class name must be used when setting the “Approved Windows Titles” entry of the application. The class name is “#NETCF_AGL_BASE_”. To approve all .NET Compact Framework applications for AppCenter you can enter the following for the “Approved Window Titles” entry:

```
*|#NETCF_AGL_BASE_
```

To approve specific .NET Compact Framework applications you will need to define all the individual window titles along with the #NETCF_AGL_BASE_ class name.

```
WindowTitle1|#NETCF_AGL_BASE_  
WindowTitle2|#NETCF_AGL_BASE_
```

.NET Compact Framework applications can be quite slow on initial loading. If you are having difficulty running your application and are seeing UnresponsiveApp|UnresponsiveApp in the debug window, please see Section 4 - *Approving Unresponsive applications*.

If you are still having problems and find that the debug screen shows data for a window with no title or class name, you will need to define an additional approved window. The entry “|*” will approve all windows with no title but any class name.

I. Approving Unresponsive applications

AppCenter may sometimes declare applications that do not display a form immediately upon execution as unresponsive. Previous versions of AppCenter required adding "UnresponsiveApp|UnresponsiveApp" to the approved window list in order to properly configure the application.

The amount of time that AppCenter now waits before declaring an application as unresponsive has been increased to five seconds. Many applications were being declared unresponsive because of the amount of time they took to load and initialize. If you previously needed to enter the string "UnresponsiveApp|UnresponsiveApp" in the approved windows list for your application, you can try removing it and replacing it with the window title and class names for your application. Or you can delete and recreate the program entry to let AppCenter detect the title and class for you.

A new registry setting named "UnresponsiveAppTimeout" controls how long AppCenter waits before declaring an application as unresponsive. The default is 5 seconds. The minimum allowed setting is 1 second. If your application takes longer than 5 seconds to load, you should increase this value in order for AppCenter to work correctly. The setting is located at HKEY_LOCAL_MACHINE\SOFTWARE\Symbol\AppCenter. There is no user interface for this setting.

Section 5 – AppCenter Installation (Cold Reset support)

- 1) Copy the appropriate AppCenter.exe for your device platform to the /Application folder.
- 2) Copy AppCenter.lnk to the /Application folder.
- 3) Copy the AppCenter.cpy file to the /Application folder. It should contain the following two lines.
`\application\AppCenter.lnk > \windows\startup\AppCenter.lnk`
`\application\AppCenter.exe > \windows\programs\AppCenter.exe`
- 4) Copy device specific Symbol supplied .REG file to /Application folder. These files can be found in the PlatformReg folder.
- 5) Copy any AppCenter saved preferences .REG file to the /Application folder.
- 6) This file can be created from Admin mode to save the current settings. The file will be saved to the /Application folder automatically.
- 7) Cold reset the device.

NOTE: There are certain device/OS combinations that do not process the Windows/StartUp folder correctly. The most notable being the MC9000 running CE 4.1. For this device there is one more additional step required to have AppCenter launch on startup. Place the included AppCenter.RUN file in the /Application/StartUp folder before cold booting. It also recommended that the StartMenu.run file be removed from the /Application/StartUp folder.