



DataWedge User Guide

For DataWedge v1.0

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Overview

DataWedge provides a convenient mechanism for non-scanning-aware applications to receive data from scanned barcodes. The following characteristics of DataWedge can be setup in the Registry:

- Scanner to use (if more than one available)
- Type of reads to use (Foreground, Background, or Monitor)
- Decoders to enable (Start from All or None then enable or disable individual decoders)
- Format in which to send data (Prefix, Suffix, Text/Binary, Auto Enter after, Auto Tab after).

DataWedge can be manually launched or automatically launched on system startup. Because it executes in the background, an icon is displayed in the system tray to indicate that DataWedge is running. See Figure 1. On Pocket PC devices, the system tray is only visible when the “Today” screen is displayed.

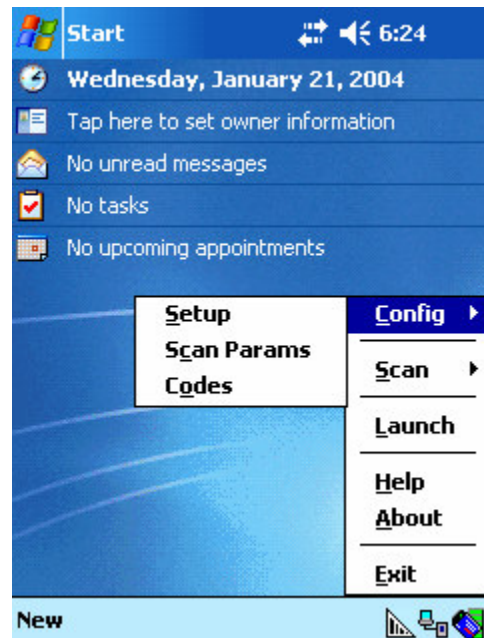


Figure 1

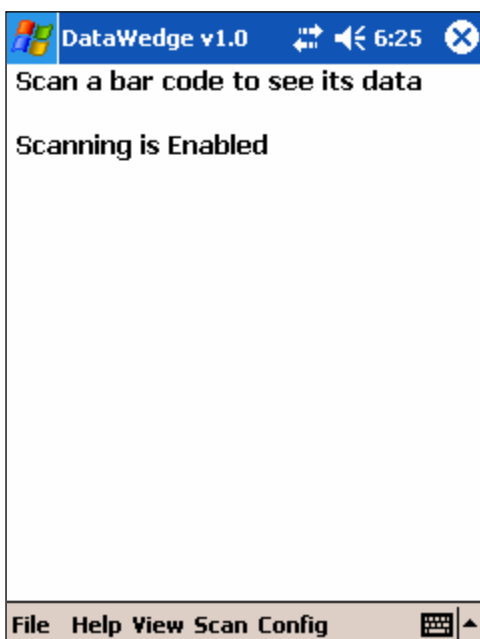


Figure 2

In normal use, DataWedge presents no User Interface (UI) and all scanned barcodes are sent to the foreground application via keyboard messages. DataWedge can display a main window by tapping the icon on the system tray and then tapping “Launch” or by launching DataWedge when it is already running. See Figure 2. DataWedge can display various dialogs to allow configuration of program options. DataWedge includes a Test Window that displays the scanned barcodes rather than sending them as keyboard messages.

DataWedge can be pre-configured via the registry to adjust its barcode scanning options or the manner in which the data is transmitted. In particular, the types of barcodes that will be captured can be adjusted. Additionally, the prefix (the data sent before the barcode data) and the

suffix (the data sent after the barcode data) can be adjusted.

Note: The User Interface of this application may look different when run on different terminals with different screen sizes.

Menu Functions

Config	Presents a secondary menu to allow selection of a configuration type to view or modify.
Setup	Displays the Setup Dialog to allow DataWedge options to be viewed or modified.
Scan Params	Displays the Scan Params Dialog to change scanning parameter options.
Codes	Displays the Codes Dialog to enable or disable code types and set options for each type.
Scan	Presents a secondary menu to allow selection of the scanning function to perform.
Enable	Allow scanning to occur due to the trigger. Scanning is allowed by default when the application starts.
Disable	Prevent scanning from occurring due to the trigger. Scanning is prevented on entry to any sub-dialog and allowed again on return back to the Test Window or back to the hidden state (no UI).
Launch	Brings up the Test Window to allow scanning operation to be tested locally.
About	Displays the About Box, showing application name, version, etc.
Exit	Exits the application.

Setup Dialog

The Setup Dialog allows configuration of DataWedge options.

Two data entry fields are used to display and allow entry or editing of prefix and suffix strings. The prefix string, if present, is transmitted before the data for any barcode scanned. The suffix string, if present, is transmitted after the data for any barcode scanned.

The following checkboxes are used to display and allow modification of various DataWedge options:

Allow escapes in prefix/suffix (default = disabled)

Enabling this option allows escape sequences to be embedded in prefix and suffix strings. Escape sequences allow non-textual data to be transmitted as part of the prefix or suffix string. All escape sequences begin with the backslash “\” character. The supported escape sequences are:

\b	Backspace
\f	Form feed
\n	New line (line feed)
\r	Carriage return
\t	Tab
\xHH	ASCII character represented in Hexadecimal notation (e.g \x3F) Note: consult a standard ASCII chart for suitable values.
\vHH	Virtual key code represented in Hexadecimal notation (e.g \x3F) Note: consult the Microsoft Windows header file WinUser.h for suitable values.

Send barcode data (default = enabled)

Disabling this option prevents the actual barcode data from being transmitted. The prefix and suffix strings, if present, will still be transmitted.

Don't treat barcode as text (default = disabled)

Enabling this option causes barcodes to be read as binary data and transmitted in hexadecimal notation with 2 hexadecimal digits per binary byte of data.

Send ENTER key after suffix (default = disabled)

Enabling this option causes an ENTER key (VK_RETURN virtual key code) to be transmitted following all other data (prefix, barcode, and suffix).

Send TAB key after suffix (default = disabled)

Enabling this option causes a TAB key (VK_TAB virtual key code) to be transmitted following all other data (prefix, barcode, and suffix).

Send keys only to Pocket IE (default = disabled)

Enabling this option turns on AutoPIE mode which is discussed later in this document.

All options changed in the Setup Dialog are saved in the registry and hence will persist across a warm boot of the device. If it is desired to persist these options across a cold boot, then the Registry should be captured and placed into a .REG file.

Test Window

The Test Window displays a scrolling list of the actions performed while it is open. This includes information about barcodes scanned as well as changes made as a result of certain menu functions. The Test Window is typically used to test configuration changes and ensure that barcodes are being scanned and transmitted

in the desired manner. When the Test Window is hidden, DataWedge again sends all scanned barcodes to the current foreground application via keyboard messages.

AutoPIE Mode

DataWedge supports an AutoPIE mode that is designed to integrate with Microsoft Pocket Internet Explorer (PIE) on Pocket PC 2002 or Pocket PC 2003 devices ONLY.

When AutoPIE mode is enabled, DataWedge looks to see if Pocket Internet Explorer is running and if there is an empty data entry field on the currently displayed web page. If PIE is not running or there is no empty data entry field on the currently displayed web page, then scanning is NOT enabled. This can result in improved battery life as well as less user confusion, since the scanner will not come on, even if the trigger is pressed, when there is nowhere for the data to go. While scanning is not enabled, DataWedge periodically re-checks to see if the conditions necessary to enable scanning have changed.

If DataWedge finds that PIE is running and that there is at least one empty data entry field on the currently displayed web page then DataWedge makes PIE the foreground window, sets the input the focus to the first empty data entry field, and then enables scanning. While scanning is enabled, DataWedge periodically re-checks to make sure that the conditions necessary to enable scanning remain present. If the condition cease to be met, then scanned is disabled. When a barcode is scanned, DataWedge re-checks to make sure that PIE is running and that there is at least one empty data entry field on the currently displayed web page. If so, then DataWedge makes PIE the foreground window, sets the input the focus to the first empty data entry field, and then sends the data (prefix, barcode, and suffix) as keyboard messages. DataWedge then repeats the check to determine if scanning should be enabled again.

The net effect of enabling AutoPIE mode is that scanning is only enabled when PIE is running and there is an empty data entry field on the currently displayed web page. Further, when data is transmitted, steps are taken to ensure that it arrives at an appropriate destination. AutoPIE mode therefore increases the effectiveness of scanning into web-based applications.

To select AutoPIE mode, either select the "Send Keys only to Pocket IE" check box in the Setup Dialog or by add an appropriate Registry setting as defined in the next section.

Registry Settings

DataWedge		Root Key = [HKEY_CURRENT_USER\Software\Symbol\DataWedge]	
Name	Type	Description	Default
AutoPIE	dword	Permits the enabling or disabling of AutoPIE mode 0 = disable AutoPIE mode 1 = enable AutoPIE mode	0 = disable
Scanner	dword	This string entry sets the scanner to use, if multiple scanners are available. Where the x in "SCNx:" is the scanner number	SCN1
All	dword	Permits the enabling or disabling of all barcode types at once. 0 = disable All types 1 = enable All types	default for selected scanner
code	string	In addition to using the defaults or the "All" entry, individual barcode types can also be enabled or disabled. This is done using the same format, but with the barcode type name instead of the "All" keyword. For example, PDF417=1, enables the scanner for PDF417 decoding, while PDF417=0 disables it. The possible barcode types are: UPCE0, UPCE1, UPCA, MSI, EAN8, EAN13, CODABAR, CODE39, D2OF5, I2OF5, CODE11, CODE93, CODE128, PDF417, TRIOPTIC39, RSS14, RSS14, RSSEXP, WEBCODE	default set for selected scanner
Prefix	string	Allows the adjustment of the prefix string (the data sent before the barcode data).	none
Suffix	string	Allows the adjustment of the suffix string (the data sent after the barcode data).	none
AutoTab	dword	Sets whether or not a TAB key (VK_TAB virtual key code) should be sent after the barcode (and after any selected suffix). 0 = do not send TAB key 1 = send TAB key	0 = do not send
AutoEnter	dword	Sets whether or not an ENTER key (VK_RETURN virtual key code) should be sent after the barcode (and after any selected suffix). 0 = do not send ENTER key 1 = send ENTER key	0 = do not send
Binary	dword	Sets whether or not a conversion of barcode data from ASCII to UNICODE should take place before sending barcode data. 0 = convert barcode data to UNICODE 1 = don't convert barcode data. Note: DataWedge requires UNICODE data to produce keystrokes. If binary mode is selected, the binary data will be formatted as a HEX string (2 characters per byte) and then converted to UNICODE to be sent. The application will thus receive keystrokes representing the HEX encoding of the binary data.	0 = convert
Type	dword	Sets the type of scan used to obtain barcodes. 0 = use foreground reads 1 = use background reads 2 = use monitor reads See the description of the ScanSamp2 application for details about how the various scan types operate.	1 = background
Data	dword	Sets whether or not barcode data should be sent. 0 = don't send barcode data 1 = send barcode data Note: If this entry is set to 0, only the prefix and suffix (if present), and any terminator (e.g. AutoTab or AutoEnter) will be sent.	1 = send data

The following default values are used if no registry settings are present.

- Scanner=SCN1:
- scanner default decoders
- Prefix=""
- Suffix=""
- AutoTab=false
- AutoEnter=false
- Binary=false
- Data=true
- Type=Background

Params Dialog

The Params Dialog is used to change scanning parameter options and affects future barcodes scanned. The following parameters can be altered:

Code ID - Selects the code type reporting prefix to be added to the data to indicate the type of barcode scanned. The possible values are:

Symbol	A Symbol-defined single-character prefix.
AIM	A standards-based three-character prefix.
None	No prefix. This is the default.

Scan Type - Selects the type of scan to be performed. The possible values are:

Foreground	The scan will take place in the foreground, as the primary user activity. Foreground reads combine only with other foreground reads and preempt background reads.
Background	The scan will take place in the background, but only if no foreground reads are pending.
Monitor	No scanning will be requested, but if scanning is initiated by another application, a monitor read will receive a copy if the code type is appropriate.

Feedback parameters - These buttons invoke sub-dialogs to control various types of feedback. The same settings can be controlled for each type.

Good Decode	WAV File - sound of decode beep Beep - length of decode beep Freq - beeper frequency (tone) LED - length of time LED remains on upon decode
Start	WAV File - sound of decode beep Beep - length of decode beep Freq - beeper frequency (tone) LED - length of time LED remains on upon decode
Intermediate	WAV File - sound of decode beep Beep - length of decode beep Freq - beeper frequency (tone)

	LED - length of time LED remains on upon decode
Activity	WAV File - sound of decode beep Beep - length of decode beep Freq - beeper frequency (tone) LED - length of time LED remains on upon decode
Fatal	WAV File - sound of decode beep Beep - length of decode beep Freq - beeper frequency (tone) LED - length of time LED remains on upon decode
Nonfatal	WAV File - sound of decode beep Beep - length of decode beep Freq - beeper frequency (tone) LED - length of time LED remains on upon decode

Codes Dialog

The Codes Dialog is used to enable or disable code types and set options for each type and affects future barcodes scanned. The list of code types will vary based on the capabilities of the scanner. The Upc/Ean General entry is actually a set of general purpose parameters that apply to all UPC and EAN code types.

Checking or unchecking the check box next to a code type enables or disables it, respectively.

When a code type is selected (highlighted) the following buttons can be used to affect the code type.

Param Invoke the Code Parameters Dialog for the selected code type.

Length Invoke the Code Lengths Dialog for the selected code type.

Code Parameters Dialog

The Code Parameters Dialog is used to set parameters that control the decoding of barcodes of specific code types. The set of parameters and possible values varies by code type.

Code Lengths Dialog

The Code Lengths Dialog is used to allowable barcode lengths for specific code types.

Lengths are specified as a Minimum Length and a Maximum Length. If both length values are set to zero, then any (variable) length is selected. If both length values are non-zero, then three possible results can occur. If the Minimum Length is less

than the Maximum Length, then a range is selected which includes are values between the two lengths, inclusive. If the Minimum Length is greater than the Maximum Length, then the two length values indicated by Minimum Length and Maximum Length are selected. If the Minimum Length is equal to the Maximum Length, then only that single length is selected.

Not all code types support all combinations. Some code types (e.g. UPC, EAN) always have fixed lengths and hence ignore the length settings specific. Other code types may impose limits on the possible lengths. The Code Lengths Dialog does not attempt to enforce these code type-specific restrictions.

Installation

Download Package

The download package for DataWedge contains the following components:

Component	Folder	Description
DataWedge User Guide.PDF		User Guide
DataWedge.exe	\Bin\PPC	Executable for Pocket PC devices
DataWedge.exe	\Bin\WCE	Executable for Windows CE devices
DataWedge.cpy	\Application	CPY file used to copy the executable into the Windows folder
DataWedge.reg	\Application	REG file used to persist program options
Startup\DataWedge.run	\Application	RUN file use to automatically launch the application at startup

Install Procedure

To install DataWedge so that it is launched automatically after a cold boot, do the following:

1. Unzip the DataWedge download package into a temporary folder on your PC.
2. If installing on a **Pocket PC** device, copy “\Bin\PPC\DataWedge.exe” from your PC to the \Application folder on the device

If installing on a **Windows CE** device, copy “\Bin\WCE\DataWedge.exe” from your PC to the “\Application” folder on the device.
3. Copy “\Application\DataWedge.cpy” and “\Application\DataWedge.reg” from your PC to the \Application on the device.
4. Copy “\Application\Startup\DataWedge.run” from your PC to the “\Application\Startup” folder on the device.
5. Cold boot the device.