Intermec

Developer's Guide

Intermec Developer Library (IDL) Resource Kit

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Document Change Record

This page records changes to this document. The document was originally released as Revision 001.

Revision	Date	Description of Change
002	1/2007	Included new information: • Revised list of supported Intermec computers to include CK32, CN3, CV30 • Added Windows Mobile 2003 to the list of supported platforms • Added procedure for extending paths to IDL library and include files in Visual Studio 2005 • Added programming tips for Intermec computers • Added descriptions and procedural information for the AutoRun utilities, including AutoCab, AutoCopy, and AutoReg, and for PreShell and PostShell • Described tips for using the GAC when deploying applications

Contents

Before You Begin

This section provides you with an explanation of safety icons that appear in this guide, technical support information, and sources for additional product information.

Safety Icons

This section explains how to identify and understand cautions and notes in this document.

A caution alerts you to an operating procedure, practice, condition, or statement that must be strictly observed to prevent equipment damage or destruction, or corruption or loss of data.

Note: Notes either provide extra information about a topic or contain special instructions for handling a particular condition or set of circumstances.

Global Services and Support

Warranty Information

To understand the warranty for your Intermec product, visit the Intermec web site at **www.intermec.com** and click **Service & Support** > **Warranty**.

Disclaimer of warranties: The sample code included in this document is presented for reference only. The code does not necessarily represent complete, tested programs. The code is provided "as is with all faults." All warranties are expressly disclaimed, including the implied warranties of merchantability and fitness for a particular purpose.

Web Support

Visit the Intermec web site at **www.intermec.com** to download our current manuals (in PDF). To order printed versions of the Intermec manuals, contact your local Intermec representative or distributor.

Visit the Intermec technical knowledge base (Knowledge Central) at **intermec.custhelp.com** to review technical information or to request technical support for your Intermec product.

Telephone Support

These services are available from Intermec.

Services	Description	In the USA and Canada call 1-800-755-5505 and choose this option
Order Intermec products	• Place an order. • Ask about an existing order.	1 and then choose 2
Order Intermec media	Order printer labels and ribbons.	1 and then choose 1
Order spare parts	Order spare parts.	1 or 2 and then choose 4
Technical Support	Talk to technical support about your Intermec product.	2 and then choose 2
Service	• Get a return authorization number for authorized service center repair. • Request an on-site repair technician.	2 and then choose 1
Service contracts	• Ask about an existing contract. • Renew a contract. • Inquire about repair billing or other service invoicing questions.	1 or 2 and then choose 3

Outside the U.S.A. and Canada, contact your local Intermec representative. To search for your local representative, from the Intermec web site, click **Contact**.

Who Should Read This Guide

This Developer's Guide is written for the person who is responsible for developing applications to use with Intermec computers and peripherals.

This document provides you with general information about using the Intermec Developer Library Resource Kits to develop applications.

Before you work with the Resource Kits, you should be familiar with:

- General programming techniques for .NET, C/C++, or Java
- Your Intermec computers and peripherals
- Development tools such as Microsoft Visual Studio 2005 or eMbedded Visual C++
- Concepts for software design

Related Documents

The Intermec web site at **www.intermec.com** contains our documents (as PDF files) that you can download for free.

To download documents

1. Visit the Intermec web site at **www.intermec.com**.
2. Click **Service & Support** > **Manuals**.
3. In the **Select a Product** field, choose the product whose documentation you want to download.

To order printed versions of the Intermec manuals, contact your local Intermec representative or distributor.

About This Guide

This Developer's Guide describes a set of best practices for using the Intermec Developer Library (IDL) Resource Kits to develop applications for your Intermec computers and peripherals. The sections in this Developer's Guide include:

What Are the IDL Resource Kits?
Explains what the Resource Kits are and includes a list of supported computers and development environments.

What You Need to Get Started
Describes what you need to know and what software you need to install on your development PC before using the Resource Kits.

Which Resource Kits Do You Need?
Explains each Resource Kit and the functionality it provides.

Installing Resource Kits
Walks you through the web download procedure for installing Resource Kits on your development PC.

About Resource Kit Documentation
Describes how to access the standalone and online help systems for the Resource Kits.

Developing Applications
Includes descriptions of these development-related activities:

- Connecting the Intermec computer to your PC
- Building and running a sample program
- Accessing Resource Kit components in your application
- Programming tips for Intermec computers
- Building and running your application
- Packaging your application for deployment
- Launching your application automatically
- Deploying your application
- Contacting Intermec Product Support
- Finding additional Intermec resources

What Are the IDL Resource Kits?

The Resource Kits are the basic tools you use to develop applications for Intermec computers and peripherals. Each Resource Kit contains components for a specific area of application functionality, and includes documentation, tutorials and sample code.

The Resource Kits cover these functional areas:

- Bluetooth: Managing communications between Bluetooth-enabled Intermec computers and other devices
- Communications: Configuring network and 802.11 functionality, including security and profile management
- Data Collection: Using bar code scanners, imagers, and magnetic stripe readers, and manipulating collected data
- Device: Configuring and managing hardware-specific settings such as audio beeps, screen backlight behavior, and keyboard mapping
- Device Management: Configuring SmartSystems-enabled Intermec devices from your application via the Intermec SmartSystems™ API.
- Mobile Gadgets: Adding features such as ink capture or custom buttons to mobile applications
- Printing: Communicating with and configuring print reports for Intermec receipt printers
- RFID: Managing and configuring Intermec RFID readers, and reading from and writing to RFID tags
- Antares Migration: Compiling a Trakker Antares (or other character-based) application for use on newer Intermec computers

For more information on the functionality each Resource Kit includes, see **"Which Resource Kits Do You Need?" on page 16.**

Supported Platforms

In general, Resource Kits support Intermec computers based on these platforms:

- Windows Mobile 2003
- Windows CE 4.2 and 5.0
- Windows Mobile 5.0
- Windows XP and XP Embedded
- Sun Java 2 Micro Edition (J2ME) Personal Profile version 1.1

Resource Kits support these Intermec computers:

- 700 Series Color Mobile Computer
- CK30, CK31 and CK32 Handheld Computers

- CK60 Mobile Computer
- CN2A and CN2B Mobile Computers
- CN3 Mobile Computer
- CN30 Mobile Computer
- CV30 Fixed Mount Computer
- CV60 Vehicle-Mount Computer

For Java development, the Resource Kits are compatible with Java Virtual Machines (JVMs) that are Java 2 Micro Edition (J2ME) compliant and support Connected Device Configuration (CDC) 1.0 and Personal Profile 1.0 or later. Intermec recommends that you use an Intermec certified JVM on Intermec computers. Intermec has certified several versions of IBM WebSphere Everyplace Micro Environment for various platforms.

Some functionality depends on the options installed in your Intermec computer or its peripherals. For more information, see the user's guide for the Resource Kit, or see the user's manual for your Intermec computer.

.NET and C/C++ Support

Most Resource Kits support .NET and C/C++ development environments. Each kit includes .NET and C/C++ libraries, samples, and documentation. For more information, see the user's guide for each Resource Kit.

Note: The Antares Migration Resource Kit supports C/C++ development only.

Java Support

The Data Collection and RFID Resource Kits include Java components that provide the same functionality as their .NET equivalents. The Device Resource Kit includes Java tools for getting power status and for warm and cold booting the computer.

For other Resource Kits, support for Java applications is currently under development.

All Java Resource Kit components were developed and tested against J2ME CDC/Personal Profile 1.0.

What You Need to Get Started

This section explains what you should know and what software you need to install before you start using the Resource Kits to develop applications. The software you need to install depends on the programming language you plan to use.

All developers should be familiar with their Intermec computers and peripherals, and with connecting the computer to the development PC and downloading files.

You can visit the Intermec web site at **www.intermec.com** to download PDF versions of our current manuals. For more information, see **"Related Documents" on page ix.**

For .NET Developers

You should already be familiar with the .NET Framework and .NET Compact Framework. For more information, see the MSDN documentation.

Before you install Resource Kits, make sure the following software is installed on your development PC:

- Microsoft Visual Studio .NET 2003 or Visual Studio 2005.
- Microsoft ActiveSync 3.7 or later (4.1 or later for Windows Mobile 5.0 devices or when using Visual Studio 2005).

For C/C++ Developers

Before you install Resource Kits, make sure the following software is installed on your development PC:

- Microsoft eMbedded Visual C++ (eVC) version 4.2 or later, or Visual Studio 2005, is required for most devices. eVC version 3.0 is required for building C/C++ applications for Pocket PC 2002 devices.
- Microsoft ActiveSync 3.7 or later (4.1 or later for Windows Mobile 5.0 devices or when using Visual Studio 2005) to download applications to the devices.
- Platform SDK(s) for the device(s) you are using. The next table lists Intermec computers and the corresponding required platform SDKs.

Intermec Computers and Required Platform SDKs

Intermec Computer	Required Platform SDK	Development Environment
700 Series Color	Microsoft Pocket PC 2003 SDK	eVC++ 4.0 with Service Pack 4
CK30A, CK30B	Intermec iCE-Standard SDK	eVC++ 4.0 with Service Pack 4
CK30C, CK31	Intermec iCE-Premium SDK	eVC++ 4.0 with Service Pack 4
CK32	Microsoft Windows Mobile 5.0 SDK for Pocket PC	Visual Studio 2005
CK60 (Windows Mobile 5.0)	Microsoft Windows Mobile 5.0 SDK for Pocket PC	Visual Studio 2005
CK60 (Windows CE)	Intermec iCE50-CK60-A4I SDK	Visual Studio 2005 with Service Pack 1

Intermec Computers and Required Platform SDKs (continued)

Intermec Computer	Required Platform SDK	Development Environment
CN2A	Intermec CN2A SDK, or Intermec iCE-Premium SDK	eVC++ 4.0 with Service Pack 4
CN2B	Microsoft Pocket PC 2003 SDK	eVC++ 4.0 with Service Pack 4
CN3	Microsoft Windows Mobile 5.0 SDK for Pocket PC	Visual Studio 2005
CN30	Microsoft Windows Mobile 5.0 SDK for Pocket PC	Visual Studio 2005
CV30	Microsoft Windows Mobile 5.0 SDK for Pocket PC	Visual Studio 2005
CV60 (Windows CE)	Intermec CV60 SDK	eVC++ 4.0 with Service Pack 4
CV60 (Windows XP or XPe)	Microsoft Platform SDK (included with Visual Studio 2005)	Visual Studio 2005

Where to Get Platform SDKs

Platform SDKs can be downloaded for free from the Intermec Developer Library web page. Follow the next procedure to download these SDKs.

To download platform SDKs

1. Go to www.intermec.com/idl. The Intermec Developer Library web page appears.
2. In the Tools column, click **Download Now** under "Step 1: Platform SDKs." The Platform SDK web page appears.
3. Follow the instructions to download the platform SDKs you need.

Note: If you install the Intermec CK60 platform SDK before installing Visual Studio 2005, you will need to uninstall and reinstall the CK60 platform SDK in order for Visual Studio 2005 to offer it as a platform choice for C++ applications.

For Java Developers

Before you install Resource Kits, make sure you have installed an Intermec Certified JVM on your Intermec computer. Intermec offers these CD-ROMs that include certified JVMs:

- For the 700 Color, CK30, CK31, CN2A and CN2B: *IBM WebSphere Micro Environment for Intermec Computers* (P/N 073603)
- For the CK60, CN30, CN3, CV30, and CK32: *IBM WebSphere Micro Environment for Intermec Computers v2.0* (P/N 235-203-001).

For more information on these products, consult your Intermec sales representative.

Note: The CV60 with Windows XP or XP Embedded supports Java with J2SE from Sun. Java development is not supported by the CV60 with Windows CE.

You should already be familiar with the Java class packages supported by the JVM. For more information, see the JVM documentation.

Before you install Resource Kits, make sure the following software is installed on your development PC:

- Java development environment. Any Java development environment can be used to develop Java applications targeted for a JVM running on the Intermec computer, but you should be careful to use only those Java class packages supported by the JVM. For more information, see the JVM documentation.

Caution

Java Standard Edition (J2SE) classes, such as Swing, will not run on the Intermec computer. So, while your Java application may appear to run well when tested in a desktop environment with a J2SE JVM, it can fail when run on the Intermec computer.

- Microsoft ActiveSync 3.7 or later (4.1 or later for Windows Mobile 5.0 devices) to download applications to the devices.

Which Resource Kits Do You Need?

This section explains the specific application functionality that each Resource Kit provides. Use this section to determine which Resource Kits you need.

About the Bluetooth Resource Kit

The Bluetooth Resource Kit provides APIs and a utility program for integrating Bluetooth devices, including communications, discovery and association with Bluetooth peripherals.

Use the Bluetooth Resource Kit to:

- Enable/disable the computer's Bluetooth radio. Battery life is extended if you enable the Bluetooth radio only when you need it.
- Set up Bluetooth virtual COM ports for applications to use to access Bluetooth devices.
- Register Bluetooth scanners with the Intermec Data Collection Engine.
- Discover Bluetooth devices and bond them with the Intermec computer.
- Download Bluetooth setup information from a host so a customer does not need to set up each computer from the keyboard.

- Retrieve the list of Bluetooth devices that are known by the Intermec computer.
- Allow users to select a Bluetooth device by device type and subtype. For example, you can set up categories for Route Printer, Depot Printer, Load Printer, and Scanner.
- Check that a Bluetooth device is in range and available.
- Execute device type-specific tests to allow the user to identify a selected device.
- Configure remote Bluetooth device parameters such as friendly name and discoverability.
- Auto-select the first available device within a group so the user does not need to select a device from a list.
- Decode Bluetooth Class of Device (COD) information returned by a Bluetooth device.
- Query a device about the Bluetooth services it provides.
- Manage the Bluetooth services provided by the local device.
- Manage the Bluetooth connectable and discoverable states of the local device.

About the Communications Resource Kit

The Communications Resource Kit provides developer control over the various network and communications radios and connections.

On all Intermec computers, use the Communications Resource Kit to:

- Configure the 802.11 radio, network and security settings.
- Configure profiles for wireless security.
- Transmit and receive messages from input connections or via TFTP.
- Get connection status.
- Communicate with the Intermec 6920 Server via NRINet.
- Exchange data with an Intermec Application Server via UDP Plus.

For the 700 Color and CK60 computers, this Resource Kit also provides functionality to:

- Load and unload Ethernet and 802.11 network drivers.
- Get the currently loaded network device (Ethernet or 802.11).
- Enable and disable the startup of the FTP server on bootup.
- Check the availability of the 802.11 network.

About the Data Collection Resource Kit

The Data Collection Resource Kit includes tools and libraries for integrating bar code scanning, imaging, and magnetic stripe card reading into your data collection application, providing complete control over how and what data is collected.

Use the Data Collection Resource Kit to:

- Turn bar code scanners on/off.
- Enable/disable scanners.
- Control, configure, and read data from bar code scanners.
- Cancel a pending read from a bar code scanner.
- Set filters to filter and edit data coming from bar code scanners. For example, you can set a filter string to only send Code 39 data to your application and exclude data encoded in other symbologies.
- Use the virtual wedge to wedge data from bar code scanners as keyboard input. This allows applications without any scanner support to receive scanner data.
- Enable read-ahead mode, in which data is queued until the application is ready to read it. Read-ahead mode decouples reader device performance from the application performance; that is, data is read as fast as the user can scan it, independent of the connection processing load.
- Set decoding and attribute options for bar code symbologies.
- Enable the Data or Read LEDs of the scanner.
- Create scanner groups to manage and configure many scanners simultaneously.
- Capture pictures and signatures from imagers.
- Read data from magnetic stripe card readers.

About the Device Resource Kit

The Device Resource Kit provides tools for controlling and configuring device/computer specific features such as the keyboard maps, sound, display features and other hardware specific functionality.

Use the Device Resource Kit to:

- Generate audio beeps and clicks of varying pitches, durations, and volume levels.
- Reboot or suspend the computer.
- Retrieve power status.
- Remap keys on the 700 Color and CK60 keypads, or the CV30 external keyboard accessories.

- Save the registry or manage registry persistence on selected Intermec computers.
- Control the keypad light and the screen backlight.
- Get the type of Intermec computer at runtime.
- Switch the serial dock port for the 700 Color computer.
- Enable the display heater in the CV60.
- Launch programs on the Intermec computer.

About the Device Management Resource Kit

The Device Management Resource Kit includes components you can use to get and set configuration information on SmartSystems-enabled Intermec computers.

The SmartSystems Foundation allows you to monitor, configure, and manage SmartSystems-enabled Intermec computers and other devices from a host PC. For more information on SmartSystems Foundation, visit **www.intermec.com/smartsystems**.

About the Mobile Gadgets Resource Kit

The Mobile Gadgets Resource Kit includes user interface, ink capture, and other miscellaneous controls for producing mobile data collection applications.

Use the Mobile Gadgets Resource Kit to:

- Capture "ink," such as signatures or simple line drawings, drawn by the stylus on the screen.
- Display a picture button in your application. A picture button allows text and .bmp or .jpg files to be displayed at the same time on a button control.
- Implement ATM (Automated Teller Machine)-style formatted numeric input in your application.
- Display and input data based on a format mask on 700 Color computers.
- Load images from bitmap and icon files.

About the Printing Resource Kit

The Printing Resource Kit provides tools for developing mobile printing solutions. It includes support for line and graphics printing, and secure printing via Intermec's proprietary NPCP protocol.

Use the Printing Resource Kit to:

- Print via RS-232, Bluetooth, IrDA, and network connections.
- Support secure printing via NPCP, guaranteeing report integrity.

- Produce text based reports with various font styles such as boldface, compressed, doublewide, italic, strikeout and underline.
- Set up orphan control and automatic header and footer sections of a report.
- Print bitmaps.
- Detect and handle printer warning and error conditions. Note that not all printers are capable of returning warning and error information.
- Provide printing status information to the user, such as start of report, start of page, end of page, page number, last page and printing complete.

About the RFID Resource Kit

The RFID Resource Kit assists developers integrating RFID readers into their supply chain solutions. This kit includes the RFID legacy APIs, Intermec RFID BRI specifications, RFID libraries for .NET and Java, and several other resources.

Use the RFID Resource Kit to:

- Read, write, update and access RFID tag data.
- Get and set RFID reader attributes.
- Use the BRI (Basic Reader Interface) protocol to communicate with RFID readers.
- Use the older, deprecated T6 protocol to communicate with RFID readers.

About the Antares Migration Resource Kit

The Antares Migration Resource Kit provides an easy path for migrating programs developed with the Intermec PSK and EZBuilder applications to newer Intermec computers. Use this Resource Kit to convert character-based applications designed for Intermec Trakker terminals (such as Trakker Antares, JANUS, or the 6400) for use on the CK30, CK31, CV30, or CV60 (with Windows CE) computers.

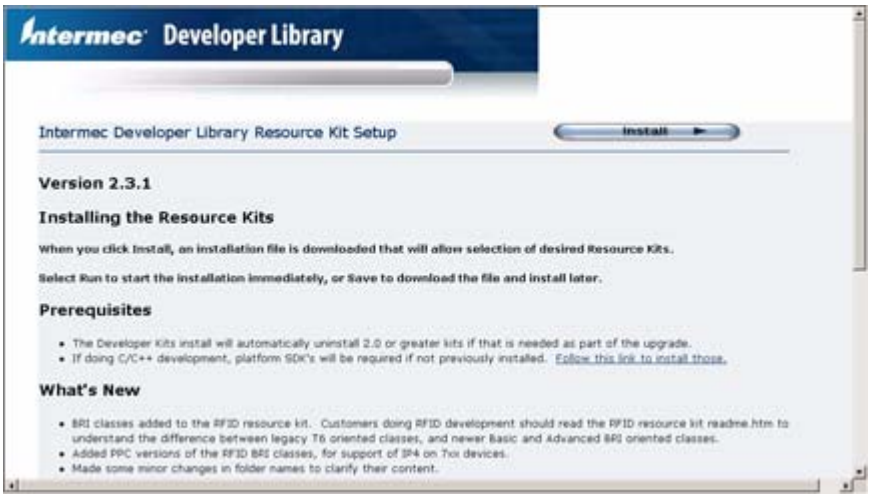
Note: This Resource Kit supports quick migration of Antares applications for a limited number of Intermec computers. Intermec recommends that you use other Resource Kits to develop and migrate applications for long term support on all platforms.

Installing Resource Kits

After you determine which Resource Kits you need, follow the next procedure to download the kits to your development PC.

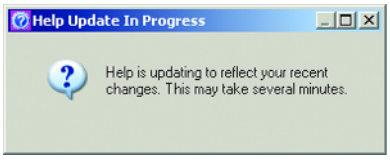
To install Resource Kits

1. Go to www.intermec.com/idl. The Intermec Developer Library web page appears.
2. In the **Tools** column, click **Download Now** under "Step 2: Resource Kits." The Resource Kit Setup screen appears.



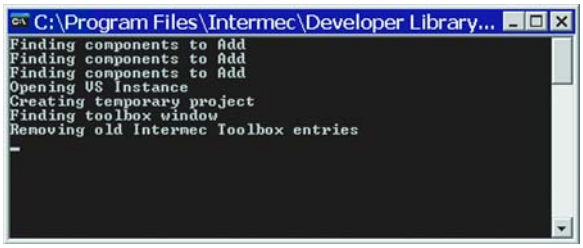
3. Follow the prompts to select and install Resource Kits. After the web install is complete, a message box appears.
4. Click **Finish** to complete the installation.

   If your integrated development environment (IDE) is eMbedded Visual C++, Visual Studio .NET 2003, or Visual Studio 2005, this message appears:



   When the Help Update is finished, the progress message disappears.
5. If your IDE is Visual Studio 2005, this message appears:

6 Click **Yes** to add the Resource Kit components to the Visual Studio toolbox, or click **No** to continue without adding the components to the toolbox. If you choose **Yes**, this screen appears:



When the process is complete, the window closes automatically.

Installing Resource Kit Documentation Only

When you install a Resource Kit, you also install its documentation. You can choose to install only the documentation for a Resource Kit to learn more before you decide to install the kit. Follow the next procedure to install Resource Kit documentation only.

To install Resource Kit documentation

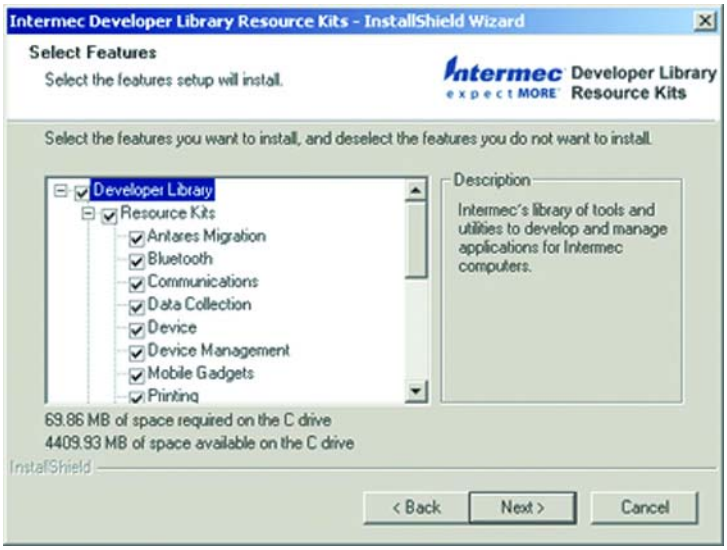
1 Go to www.intermec.com/idl. The Intermec Developer Library web page appears.

2 In the Tools column, click **Download Now** under "Step 2: Resource Kits." The Resource Kit Setup screen appears.

3 Click **Install**. A File Download message appears.

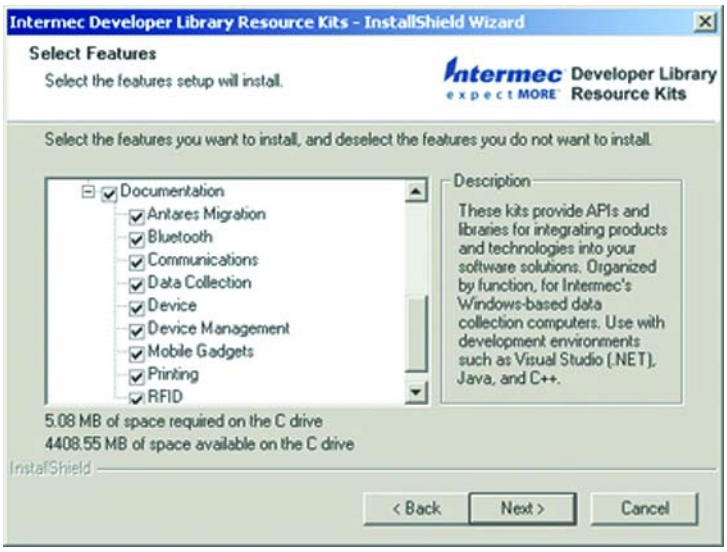
4 Click **Open**. The web install process begins and the Welcome screen appears.

5 In the next two screens, follow the prompts to accept the license agreement and choose a destination location for the files. The Select Features dialog box appears.



6 Uncheck the **Resource Kits** check box.

7 Scroll to the lower part of the list to see the documentation choices. By default, all documentation is selected.



8 Uncheck the **Documentation** check box to deselect all choices.

9 Check the check box for each Resource Kit whose documentation you want to install.

10 Click **Next** and follow the remaining prompts to install only the documentation.

After Installing Resource Kits

Once the installation is finished, you can access the Resource Kit components and documentation from within your development environment.

Shortcuts to documents, Example folders, and other information can be found in your desktop PC **Start** menu, in **All Programs** > **Intermec** > **Resource Kits**. You can also double-click the IDL Resource Kits icon on your desktop to browse the Resource Kit installation.

Each Resource Kit folder includes a shortcut to its ReadMe file and user's guide. All Example programs include ReadMe files that explain content and installation.

Restoring or Removing All Resource Kits

After you install Resource Kits, you can restore or remove them using the Add/Remove Programs control panel applet.

Follow the next procedure if you want to remove all installed Resource Kits or if you need to restore default locations and components for all installed Resource Kits.

To restore or remove all Resource Kits

1. In the **Start** menu, choose **Settings** > **Control Panel**. The Control Panel appears.
2. Double-click **Add/Remove Programs**.
3. Choose Intermec Developer Library Resource Kits and click **Change/Remove**. The setup program begins and the Welcome screen appears.
4. Click the button for the option you want:
   - Click **Repair** to restore all Resource Kits to their default locations and components.
   - Click **Remove** to uninstall all Resource Kits.
5. Click **Next**. The Resource Kits are restored or removed.

Adding or Removing One or More Resource Kits

If you only need to remove one or more, but not all, of the installed Resource Kits, follow the next procedure.

To add or remove one or more Resource Kits

1. In the **Start** menu, choose **Settings** > **Control Panel**. The Control Panel appears.
2. Double-click **Add/Remove Programs**.
3. Choose Intermec Developer Library Resource Kits and click **Change/Remove**. The setup program begins and the Welcome screen appears.
4. Click **Modify** and then click **Next**. The Select Features dialog box appears.
5. To remove Resource Kits, uncheck the check boxes for the Resource Kits you want to remove.

   To add Resource Kits, check the check boxes for the Resource Kits you want to add.
6. If you are adding Resource Kits, continue with the next step.

   If you are removing Resource Kits, scroll down and uncheck the check boxes for the documentation you want to remove. This step must be done separately because you can also install the documentation separately without installing the Resource Kit.
7. Click **Next**. The selected Resource Kits are added or removed.

Note: After you remove Resource Kits, the icons in the Visual Studio Toolbox must be removed manually. To remove the icons, right-click the icon and choose **Delete** from the pop-up menu.

Installing New Versions of Resource Kits

To install new versions of Resource Kits, repeat the procedure described in "Installing Resource Kits" on page 21. If required, the installation process uninstalls previous versions of the Resource Kit you are updating.

About Resource Kit Documentation

Resource Kits include several kinds of documentation, including ReadMe files with late-breaking information and user's guides with API reference material.

Shortcuts to the ReadMe file for each Resource Kit can be found in your desktop PC **Start** menu, in **All Programs** > **Intermec** > **Resource Kits** > ***Resource Kit Name*** > **ReadMe**.

.NET Documentation

The .NET documentation for each Resource Kit is integrated into Visual Studio when you install the kit. In Visual Studio, choose **Help** > **Contents** and then choose the Resource Kit user's guide in the left-hand Contents pane.

The integrated help is also available in the **Start** menu at **All Programs** > **Intermec** > **Resource Kits** > ***Resource Kit Name*** > **User's Guide**. You do not need to have Visual Studio running to read the documentation if you use this method.

C/C++ Documentation

The C/C++ documentation for the Resource Kits is integrated into eVC4 and Visual Studio. For eVC4, Resource Kit help topics appear in the Help Index and Search tabs but not in the Contents.

The integrated help is also available in the **Start** menu at **All Programs** > **Intermec** > **Resource Kits** > ***Resource Kit Name*** > **User's Guide**.

Note: If you install or remove a platform SDK after installing the Resource Kits, be sure to run the IDL Sync Utility so that the eVC4 Help system is updated properly. The shortcut to the Sync Utility is in the **Start** menu at **All Programs** > **Intermec** > **Resource Kits** > **IDL Sync Utility**.

Java Documentation

The Java Help for Resource Kits that support Java development is available in the **Start** menu at **All Programs** > **Intermec** > **Resource Kits** > ***Resource Kit Name*** > **Java Help**.

For additional information, see the *Java Development Guide* in the **Start** menu at **All Programs** > **Intermec** > **Resource Kits** > **Java Development Guide**.

Developing Applications

This section includes general information on using the Resource Kits to develop applications.

Connecting the Intermec Computer to Your PC

In order to deploy applications to the Intermec computer, you need to establish an ActiveSync connection between the computer and your PC. For information about using ActiveSync on your PC, see the ActiveSync Help. For information about using ActiveSync on the Intermec computer, see the user's manual for your Intermec computer.

Building and Running a Sample Program

An easy way to verify that the Resource Kits are properly installed and functional is to build and run one of the sample programs.

To build and run a sample program

1. Choose a Resource Kit and browse to its Examples folder.
2. Open the ReadMe file for the example and follow the instructions for building and running the example.

For .NET Developers

When you deploy a .NET application from Visual Studio, you need to select the appropriate device platform.

For C/C++ Developers

Make sure you select the appropriate platform and device in the dropdown lists in your IDE.

For Java Developers

Copy the sample application JAR file and shortcut to the Intermec computer. For instructions, see the ReadMe file for the sample.

Note: An Intermec-certified JVM must be installed on the Intermec computer before you deploy the application. To learn more about getting an Intermec certified JVM, see **"Java Support" on page 13.**

Accessing Resource Kit Components in Your Application

This section describes how to access Resource Kit components in your application. For reference information about specific components, see the user's guide for the Resource Kit.

For .NET Developers

When you install the Resource Kits, the Intermec .NET assemblies are placed in Microsoft-defined folders, where the assemblies will be found and easily added as references in Visual Studio.

Many Intermec assemblies are installed into the Visual Studio Toolbox when you install the Resource Kits. Simply drag-and-drop from the Toolbox to add them to your project, and a reference is added to your project automatically.

Note: Because of certain installation issues, Intermec components may not appear in the Visual Studio 2005 toolbox after you install Resource Kits. To add components to the toolbox manually, right-click the toolbox and select **Choose Items**, and then browse to the assemblies.

To find Intermec assemblies not in the Visual Studio Toolbox so you can add them to your project:

1. In Visual Studio, open the Solution Explorer.
2. Right-click the **References** folder and choose **Add Reference** from the pop-up menu. The Add Reference dialog box appears. In the **.NET** tab, the available assemblies for Intermec computers are grouped together with names starting with Intermec.

The Add Reference dialog box only shows the assemblies available for the project type you have open. You can find the actual location of the .dll files in the **Path** column of that same Add Reference dialog box.

When you deploy your application using Visual Studio, the assemblies in the References folder in Solution Explorer are also deployed automatically.

Note: If you convert from a Visual Studio 2003 project to a Visual Studio 2005 project, you need to add the references again, as the location has changed and the names have been modified to delineate between CF Version 1 and CF Version 2 assemblies.

For C/C++ Developers

Paths to the Intermec include files and library files are handled differently by eMbedded Visual C++ and Visual Studio 2005.

Extending C++ Paths in VS2005

When you install Resource Kits, paths to the platform SDKs are extended to include paths to the Resource Kit components. On a developer PC with multiple users, VS2005 creates separate copies of the paths for each user. Additionally, the file containing those paths cannot be accessed until you create a new, unmanaged C/C++ project, or convert a VS.NET project into an unmanaged C/C++ project.

Follow the next procedure to update the paths for all applications built for a specific platform in VS2005.

To extend C++ paths in VS2005

1. In VS2005, choose **Tools** > **Options**. The Options dialog box appears.
2. In the directory tree, expand **Projects and Solutions** and choose **VC++ Directories**.

3 In the **Platform** drop-down list, choose the platform SDK for your application.

Note: VS2005 does not support iCE-Standard or iCE-Premium.

4 In the **Show Directories for** drop-down list, choose **Include files**.

5 Double-click the space below the last directory in the Include files list. An entry field and a build button (marked with "...") appear.

6 Enter the path to the Intermec include files (typically \Program Files\Intermec\Developer Library\Include). You can also click the build button to browse to the directory.

7 Click **Open**. The paths are added to the list.

8 In the **Show Directories for** drop-down list, choose **Library files**.

9 Double-click the space below the last directory in the Library files list. An entry field and a build button appear.

10 Enter the path to the Intermec library files (typically \Program Files\Intermec\Developer Library\Lib\ and then choose the appropriate platform). You can also click the build button to browse to the directory.

11 Click **Open**. The paths are added to the list.

12 Click **OK**.

Extending C++ Paths in eVC4

The paths for the Intermec include files and library files for C/C++ are automatically integrated into eVC4. To use a C/C++ function, simply add an #include statement for the header file in your source code file, and add the library file name in eVC4 Project Settings. Refer to the function reference information in the Resource Kit user's guides for the names of the header and library files for the function.

Note: If you install a platform SDK after installing the Resource Kits, you should run the IDL Sync Utility so that the eVC4 directory settings for the platform are updated properly to include the Intermec paths. The utility is at **Start** > **All Programs** > **Intermec** > **Resource Kits** > **IDL Sync Utility**.

For Java Developers

To use Resource Kit Java classes in your application, you must specify the Resource Kit JAR file path (including the file name) in the classpath project property in the development environment; otherwise, the compiler will not be able to resolve the references.

If you selected the default install path for the Resource Kits, the JAR files are located at C:\Program Files\Intermec\Developer Library\JavaLib. Each Resource Kit has corresponding JAR files in this folder (for example, DataCollection.jar). For additional information, see the Java Development Guide in the **Start** menu at **All Programs** > **Intermec** > **Resource Kits** > **Java Development Guide**.

Programming Tips

This section includes tips and tricks for developing applications to run on your Intermec computer.

Managing Device Settings

Be aware that changes made via Intermec SmartSystems or Wavelink Avalanche can modify registry values. If your application needs to update any device settings, you should use the SmartSystems APIs in the Device Management Resource Kit rather than updating the registry directly. Otherwise your changes will be lost when the Intermec computer connects to the SmartSystems or Avalanche console.

Locking Down Handheld Computers

If you need to prevent users from accessing unauthorized applications, use iLaunch or iBrowse in your solution. For more information, go to www.intermec.com/idl and click on Utilities in the Tools column.

Updating Applications Remotely

Intermec SmartSystems and Wavelink Avalanche both provide the ability to update software applications on Intermec computers. For more information, see **"Deploying Your Application" on page 39.**

Managing Power and Battery Life

The battery life of your Intermec computers is greatly impacted by the screen backlight timeout and brightness level settings. Likewise, the Auto-Shutoff setting, which defines the amount of time of user inactivity before the Intermec computer suspends, can also affect battery life.

Backlight timeout values, brightness levels, and Auto-Shutoff settings can be adjusted via SmartSystems. Intermec recommends that you work with your users to test potential settings for battery performance and best screen readability. For example, if your users are working in an artificial light setting, a brightness level of 50% provides good readability, while users working in bright natural light need a brightness level of 75% to 100%.

Applications should avoid "busy waits" – polling loops used solely to wait for time to elapse or for resources to become available. Busy waits interfere with the operating system's ability to manage system power automatically. There is a wealth of mechanisms that allow a process or thread to "block" while waiting for a resource.

Intelligent use of peripherals is important. Whenever possible, a peripheral should be powered up only when it is needed. For example, instead of initializing a scanner device at application startup, only turn on the scanner at the point when it is needed, and immediately turn it off when it is no longer needed. It may be convenient to leave devices turned on at all times, but doing so severely decreases battery life.

Managing Application Persistence Through a Cold Boot

For your application to persist across cold boots, it must be installed in non-volatile storage. For a list of options, see "Choosing a Target Location" on page 33.

Capturing Keystrokes On a CK30

Because the CK30 does not have a touch screen, navigation and actions are triggered by keystrokes. This section explains how to capture keystrokes on the CK30.

For .NET Developers

Override OnKeyDown in each Windows Form, similar to the following example:

```
protected override void OnKeyDown(KeyEventArgs e)
{
    if (e.KeyCode == Keys.Escape || e.KeyCode == Keys.E)
    {
        . . .
        e.Handled=true;
    }
    else if (e.KeyCode == Keys.D1)
    {
        . . .
        e.Handled=true;
    }
    else if (e.KeyCode == Keys.D2)
    {
        . . .
        e.Handled=true;
    }
    else if (e.KeyCode == Keys.D3)
    {
        . . .
        e.Handled=true;
    }
    base.OnKeyDown(e);
}
```

For C/C++ Developers

Override PreTranslateMessage in each dialog class in an MFC application as described next.

1. Open the header file (.h) for the dialog class and add the following prototype in the section marked "protected":

```
virtual BOOL PreTranslateMessage(LPMSG lpMsg);
```

2 Open the source file (.cpp) for the dialog class and add the same function, as in the following example:

```
BOOL CSampleDlg::PreTranslateMessage(LPMSG lpMsg)
{
    if (lpMsg->message == WM_KEYUP)
    {
        switch(((int)(lpMsg->wParam)))
        {
           // VK_ values are defined in Windows header file
              winuser.h
            case VK_F1:
                . . .
                break;
            case VK_F2:
                . . .
                break;
            case VK_F3:
                . . .
                break;
            case VK_ESCAPE:
                . . .
                break;
            }
        }
    }
    if( lpMsg->message == WM_KEYDOWN)
    {
        switch(((int)(lpMsg->wParam)))
        {
            case VK_RETURN:
                return TRUE;
                break;
        }
    }
    return CDialog::PreTranslateMessage(lpMsg);
}
```

For Java Developers

You can listen for key events that are fired when a key is pressed or released in a AWT component that has keyboard focus. Additionally, you can have a AWT button in your Java application that accepts both mouse and keyboard inputs. The next code snippet allows you to execute application exit logic either when the Close button is clicked or when the Enter key is pressed while the Close button has focus.

Note: On the CK30, you may set focus to a UI control by using the TAB key.

```
java.awt.Button btnClose = new Button("Close");
btnClose.addActionListener(new java.awt.event.ActionListener() {
    // Invoked when the button is clicked.
    public void actionPerforme (java.awt.event.ActionEvent e)
    {
// Execute application exit logic
    }
});

// Add a key listener for the key events fired when btnClose
   has focus.
btnClose.addKeyListener(new java.awt.event.KeyListener() {
    // Invoked when a key is pressed.
    public void keyPressed(java.awt.event.KeyEvent e)
    {
        if (e.getKeyCode() == java.awt.event.KeyEvent.VK_ENTER)
        {
            // Execute application exit logic
        }
    }

    public void keyReleased(java.awt.event.KeyEvent e) {}
    public void keyTyped(java.awt.event.KeyEvent e) {}
});
```

Building and Running Your Application

Refer to the documentation for your development environment for information about building an application and deploying it to a device.

For .NET Developers

When you deploy a .NET application from Visual Studio, you need to select the appropriate device platform.

For C/C++ Developers

Make sure you select the appropriate platform and device in the drop-down lists in the IDE.

For Java Developers

Deploying a Java application to an Intermec computer typically involves manually copying JAR files and setting up an application shortcut to run the Java application. For more details, refer to the Java Development Guide in the **Start** menu at **All Programs** > **Intermec** > **Resource Kits** > **Java Development Guide**.

Packaging Your Application for Deployment

For very simple applications the application executable may be the only file that needs to be deployed; more typically, you will have a set of files to install.

- For Windows XP or XPe applications, you can create a Windows Installer (.msi) file.
- For Windows Mobile and Windows CE applications you need to create a .cab file. See the Microsoft documentation for more information.

Visual Studio 2005 includes support for .msi and .cab projects.

Choosing a Target Location

When packaging your application, one of the decisions you must make is to select the target location for the application on the Intermec computer. Intermec computers support these target locations:

- The object store, which is RAM that looks like a disk. In some Intermec computers, everything in the object store is deleted when the computer is cold booted. In other computers, the object store is a DiskOnChip® flash so all items in it survive a cold boot.
- Persistent Storage Manager (PSM), an area of storage embedded in a section of the system flash memory. This storage area is not erased during a cold boot. It may, however, be erased if the image is reflashed.
- The flash file store, an area of storage embedded in a section of the system flash memory. This storage area is not erased during a cold boot. It may, however, be erased if the image is reflashed.
- Storage cards. Many Intermec computers support a storage card such as a CompactFlash or Secure Digital card. The folder representing the storage card may be named "\Storage Card", "\SD Card", or "\SDMMC Disk", depending on the Intermec computer. For specific information, see the user's manual for your Intermec computer.

Note: Not all computers support the same target locations. For more information, see the user's manual for your Intermec computer.

For .NET Developers: Using the Global Assembly Cache (GAC)

This section lists some things to remember when deciding whether or not to use the GAC for .NET assemblies.

Unique advantages of placing assemblies in the GAC:

- Only one copy of a .dll shared by multiple applications needs to be placed in the GAC.
- Applications can reside anywhere on the computer independent of the location of dependent assemblies.
- After you place the required assemblies in the GAC, you only need to install the application on the computer.
- The GAC automatically cleans itself of unused files.

Unique disadvantages of placing assemblies in the GAC:

- Automatic cleanup requires removing all applications tied to an older .dll, then running the application using the newer version of the .dll.
- Manual deletion of unused GAC files can lead to GAC registry corruption.
- Visual Studio deploys referenced assemblies automatically, leading to multiple copies of the same assemblies on the computer if the end user is not careful.

Unique advantages of not placing assemblies in the GAC:

- Deleting the application directory easily cleans up the application.
- Not using the GAC mimics how Visual Studio distributes the application during the development phase; all required assemblies are placed in one location.

Unique disadvantage of not placing assemblies in the GAC:

- The application must be in the same directory as its associated assemblies, which may allow for file duplication.

Launching Your Application Automatically

To have your application start automatically when the Intermec computer starts up, place the application or a shortcut to your application in the \Windows\Startup folder on the computer.

If you have several programs that must run in a specific order as the computer starts up, you may be able to use the AutoRun system that allows you to customize the way programs load. For more information on AutoRun, see the next section.

Some Intermec computers provide additional utilities you can run at boot time with the AutoRun system:

- Use AutoCab to automatically install .cab files on the Intermec computer. For more information, see **"About the AutoCab Utility" on page 36.**
- Use AutoCopy to move files from one location to another. For more information, see **"About the AutoCopy Utility" on page 37.**

- Use AutoReg to add registry information to the Windows CE registry. For more information, see "About the AutoReg Utility" on page 38.

Note: See the user's manual for your Intermec computer to determine which AutoRun utilities are supported.

If you require advanced control of the startup process, some computers provide PreShell and PostShell systems for starting applications before or after the Microsoft Shell is launched. For more information, see "About the PreShell and PostShell Programs" on page 38.

About the AutoRun Program

Use AutoRun to configure application launch sequences. The startup sequence for Intermec Windows CE and Windows Mobile computers searches the available media for AutoRun (Autorun.exe) in a 2577 folder and executes this program from the first media on which it is found. The search order is as follows:

- Secure Digital (SD) or Storage Card
- Object Store – may be non-volatile storage or RAM
- Disk on Chip – may map as Object Store
- Flash File Store – may map as Object Store

Note: Not all computers support all of these media. For more information, see the user's manual for your Intermec computer.

AutoRun is configured through the AutoRun data file (Autorun.dat), which must be in the same folder as the AutoRun program. Autorun.dat launches the .cab installation utility, AutoCab, and then launches customer programs listed in the Autouser.dat file.

Note: Do not modify Autorun.dat. You should only modify Autouser.dat to include your applications.

AutoRun Commands

AutoRun supports these script commands in Autouser.dat:

- EXEC: Launches a specified program, waits for it to complete (up to 10 minutes).
- CALL: Processes a specified file of commands and returns.
- CHAIN: Processes a specified file of commands and does not return.
- RUN: Loads a specified program and executes it.
- LOAD: Loads a specified program and executes it.

AutoRun handles quoted file names for the first parameter which allows you to specify path names or file names that contain white space. Note that only one set of quotes per command is supported, as seen in this example:

Example of AUTOUSER.DAT File

```
RUN "Flash File Store\Apps\some.exe" arg1, arg2, arg3
CALL "Flash File Store\2577\usercmds.dat"
```

About the AutoCab Utility

Use the AutoCab program (AUTOCAB.EXE) to extract files, registry settings, and shortcuts from Windows CE and Windows Mobile .cab files. AutoCab processes all .cab files in the "\CabFiles" folder relative to the current location of AutoCab, unless the location is overridden by command line arguments. AutoCab can be invoked by AutoRun, or run as a stand-alone program to install a .cab file or a folder of .cab files.

- AutoCab only installs the .cab file if the .cab file was not previously installed by AutoCab. To track the .cab file installation, AutoCab marks the file with the System attribute. This attribute is ignored if the computer is performing a cold boot on a non-persistent file system.
- AutoCab preserves the .cab file after installation if the ReadOnly attribute is set. If not set, the .cab file is deleted automatically after installation.

Note: See the user's manual for your Intermec computer to determine if the computer supports AutoCab.

AutoCab Commands

```
AutoCab [-ChkRst=][-File=][-Force][-Log=][-Move=][-
Quiet=][-Show=][-Signal=]
```

Command	Description
-ChkRst=	Set to 1 to configure AutoCab to check for the Reset flag after all .cab files are installed. This file is created by .cab files that want a warm reset after installation. Default is 0 (do not check for flag).
-File=	Specifies the .cab files to extract. Note that the specified files need not end with the .cab extension.
-Force	Forces the specified .cab files to extract regardless of whether it was previously extracted.
-Log=	Set to 1 to create a log file in the same folder that AutoCab is running. Useful for debugging .cab installation. Default is 0 (disabled).
-Move=	Set to 1 to force source .cab file deletion, even when read-only bit set on file. Default is 0 (disabled).
-Quiet=	Set to 0 to allow AutoCab to display user message box on errors. Useful for debugging .cab installation. Default is 1 (keep quiet).
-Show=	Set to 0 to prevent showing any installation progress interfaces. Also prevents user from canceling installation. Set to 1 (default) to show normal installation. Set to 2 to show Intermec installation progress interface (user can see what is installing but cannot cancel it).
-Signal=	Set to string name of signal to use at the completion of .cab installation before a reboot occurs (if enabled). AutoCab uses WaitForSingleObject on this name. Default is disabled.

Notes

If <PathName> references a single .cab file, that file is processed. If <PathName> references a directory, all the .cab files in that directory are processed.

If <PathName> is a wild card pattern, all files matching that pattern are processed. If <PathName> is omitted, InstallCab processes all the .cab files in directory "\CabFiles."

Examples

Install all .cab files in the \Flash File Store\XYZ directory, regardless:

```
AutoCab -FILE="\Flash File Store\XYZ\*.cab" -FORCE
```

Install only one .cab file and use Intermec .cab installation display:

```
AutoCab -FILE="\myCab\app.cab" -Show=2
```

About the AutoCopy Utility

AutoCopy (Autocopy.exe) copies or moves files from one location to another. It has no user interface and is configured through command line arguments as described next.

Note: See the user's manual for your Intermec computer to determine if the computer supports AutoCopy.

AutoCopy Commands

```
AutoCopy [-D["W"]] [-L["X"]] [-M[D]] [-Q[Y]] [-S["Z"]]
```

Command	Description
-D	Indicates the destination file name and must be fully qualified. W is a string value.
-L	Indicates a fully qualified file name for logging to enable. Default is disabled. X is a string value.
-M	Moves file to a destination rather than copies the file. D is an integer value (1 indicates enabled, 0 (default) is disabled).
-Q	Indicates if a message box should appear when an error occurs. Default is disabled. Y is an integer value.
-S	Indicates a source file name and must be fully qualified. Z is a string value.

Notes

The return code from the process uses the standard error codes defined in Winerror.h.

Examples

Use AutoCopy to copy the Audio control panel from the Flash File Store to the Windows directory:

```
autocopy.exe -S"\Flash File Store\System\Audio.cpl" -
D"\Windows\Audio.cpl"
```

Use AutoCopy to move the Audio control panel from the Flash File Store to the Windows directory:

```
autocopy.exe -M1 -S"\Flash File Store\System\Audio.cpl" -
D"\Windows\Audio.cpl"
```

About the AutoReg Utility

AutoReg (Autoreg.exe) adds registry information to the Windows CE registry. It has no user interface and is configured through command line arguments.

Note: See the user's manual for your Intermec computer to determine if the computer supports AutoReg.

AutoReg Commands

```
AutoReg [-D] [-HKey] [-Q] "filename"
```

Command	Description
-D	Deletes the registry file after successfully loading it. This allows for systems that have hives implemented.
-H	Saves the registry path, and all child entries, to the specific .REG registry file.
-Q	Indicates whether a message box should appear when a fatal error occurs.
filename	Fully qualified file name to read from or write to, encased in double quotes to support spaces in paths or file names.

Notes

The return code from the process uses the standard error codes defined in Winerror.h.

Examples

Use AutoReg to install this registry information:

```
autoreg.exe "\Flash File Store\install.reg"
```

Use AutoReg to install this registry information, and delete the file afterwards:

```
autoreg.exe -D "\Flash File Store\install.reg"
```

Use AutoReg to extract registry information to a file:

```
autoreg.exe -HHKEY_LOCAL_MACHINE\Software\Intermec\Version
"\version.reg"
```

In this example, the input file format is the standard registry format which should ease the creation of the input file since there are many publicly available utilities to generate a registry file besides Notepad. One example of a tool is the Microsoft Remote Registry Editor.

About the PreShell and PostShell Programs

Some computers provide PreShell and PostShell systems for starting applications before or after the Microsoft Shell is launched.

Using PreShell

PreShell (Preshell.exe) is launched prior to the Microsoft Shell and must execute a SignalStartup call before the Microsoft Shell launches.

PreShell searches the "\Flash File Store\SYSTEM" folder for an executable of the same name. If one exists, that application is launched. This application can do what a customer desires prior to launching the Microsoft Shell. You can use PreShell to make your application the shell of the system. If desired, do not exit the custom shell nor call SignalStarted.

Using PostShell

PostShell (Postshell.exe) can launch an application after the Microsoft Shell has launched. For example, some utility applications can take advantage of "hooking" the startup for maintenance.

PostShell searches the "\Flash File Store\SYSTEM" folder for an executable of the same name. If one exists, that application is launched. This application can do what a customer desires and is launched after the Microsoft Shell starts initialization.

Note: The Microsoft Shell does not require complete initialization before this application begins, which may cause some application or system issues. These issues are expected and are considered normal for those developing PostShell applications. The application must test if the APIs it requires are available.

Deploying Your Application

There are multiple ways to get your application to an Intermec computer:

Using ActiveSync

Microsoft ActiveSync supports serial, USB, Ethernet, IrDA, and 802.11 connections. Files can be copied using File Explorer on a desktop or a laptop PC. Using ActiveSync is a good option if you have only a few Intermec computers that use your application, as connections are made to one computer at a time.

Using Storage Cards

Many Intermec computers support a storage card such as a CompactFlash card or Secure Digital card. You can copy your application install file to the card, install the card in the Intermec computer, then use File Explorer to navigate to the install file and run it.

Some Intermec computers also support the AutoCab utility, which runs on warm and cold boots and extracts all .cab files that reside in a "\CabFiles" folder on the computer. By placing your .cab file in the "\CabFiles" folder, you do not need to manually run the .cab file to install it. For more information, see **"About the AutoCab Utility" on page 36.**

Using the FTP Server

Many Intermec computers have a built-in FTP server that connects to a network via Ethernet, 802.11, or WAN (wide area network). The FTP server allows connections to the Intermec computer for file transfers or computer management functions. You can also create FTP scripts to automate the process of copying files to the Intermec computer. Using the FTP server is a good option if you have a large number of Intermec computers using your application.

See the user's manual for your computer to determine if it supports FTP Server and for details about using FTP Server.

Using SmartSystems Server

If your Intermec computer has the SmartSystems client loaded on it, you can use the SmartSystems console to drag-and-drop your application onto your Intermec computers.

The console is part of SmartSystems Foundation, which is available from the Intermec web site for free. To learn more about SmartSystems Foundation, go to **www.intermec.com/smartsystems**.

To use SmartSystems console to install an application

1. Use the Bundle Tool to create a SmartSystems bundle for your application and install it into the software vault. For more information, see the online help.
2. From the SmartSystems console in the Software Vault, drag-and-drop the application onto each Intermec computer that needs the application.

For more information on using the SmartSystems console, see the SmartSystems online help.

Using Wavelink Avalanche

If your Intermec computer has the Avalanche Enabler loaded on it, you can use the Wavelink Avalanche™ device management system to install applications to the computer.

Each time the Avalanche Enabler is activated (typically on a warm boot), the Intermec computer attempts to connect to the Avalanche Agent. When the computer connects to the agent, the agent determines whether or not an update is available and immediately starts the software upgrade, file transfer, or configuration update.

To use Avalanche to remotely manage the Intermec computer

1. Install software packages and updates for the Intermec computer using the Avalanche Administrative Console.
2. Schedule the Intermec computer updates or manually initiate an update using the Avalanche Administrative Console.

For more information on using Wavelink Avalanche, contact your local Intermec representative or visit the Wavelink web site at **www.wavelink.com**.

Getting Support

For the latest information on working with Resource Kits, visit the Intermec Developer Support web site at **www.intermec.com/developersupport**.

You can also visit Intermec Knowledge Central at **intermec.custhelp.com**. Knowledge Central is a technical knowledge base that includes information on operating and managing all Intermec products.

Additional Resources

You can visit the Intermec web site at **www.intermec.com** to download PDF versions of our current manuals. For more information, see **"Related Documents" on page ix.**

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