

ICM

Intermec Connection Manager

User Guide

Intermec Technologies Corporation

Worldwide Headquarters

6001 36th Ave.W.

Everett, WA 98203

U.S.A.

www.intermec.com

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Document Change Record

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007	03/2012	Revised to update information on geofencing naming convention.
006	02/2012	Revised to support version 2.00: <ul style="list-style-type: none">• Updated screen shots from Windows Mobile 6.5 to Windows Embedded Handheld 6.5.• Added support for CN70, CN70e, and CK70 Flexible Network Radio.• Added Signal Strength WWAN Carrier Switching.• Added Geolocation based WWAN Carrier Switching.• Added procedure to configure ICM using Intermec Settings.• Added procedure to set the roaming method.• Added procedure to uninstall ICM from your mobile computer.
005	3/2011	Revised to support version 1.90: <ul style="list-style-type: none">• Added the CS40, CN70, CN70e, and CK70.• Added Windows Mobile Device Center as a method for connecting a PC running Windows Vista or Windows 7 to a mobile computer.• Added a procedure describing how to change the Windows Mobile 6.5 screen appearance to be able to see the Intermec Connection Manager icon.
004	2/2010	Revised to support version 1.80: <ul style="list-style-type: none">• Added support for the CN50.• Removed support for the 700 Series.• Added a What's New? section.• Reorganized and rewrote for clarity.

Version Number	Date	Description of Change
003	9/2009	Revised to include the following information: <ul style="list-style-type: none"> • Updated procedures on how to install Intermec Connection Manager. • Updated Frequently Asked Questions, and Troubleshooting sections. • Added information about Intermec Licensing. • Added License Error Message descriptions table.
002	06/2009	Revised to support the CN4 Mobile Computer, and added a FAQ and troubleshooting section.
001B	03/2008	Revised to support the CN3 Mobile Computer.
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Before You Begin

This section provides you with safety information, technical support information, and sources for additional product information.

Global Services and Support

Warranty Information

To understand the warranty for your Intermec product, visit the Intermec website at www.intermec.com and click **Support > Returns and Repairs > 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 website at www.intermec.com to download our current manuals (in PDF).

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

Send Feedback

Your feedback is crucial to the continual improvement of our documentation. To provide feedback about this manual, please contact the Intermec Technical Communications department directly at TechnicalCommunications@intermec.com.

Telephone Support

In the U.S.A. and Canada, call **1-800-755-5505**.

Outside the U.S.A. and Canada, contact your local Intermec representative. To search for your local representative, from the Intermec website, click **About Us > Contact Us**.

Service Location Support

For the most current listing of service locations, go to www.intermec.com and click **Support > Returns and Repairs > Repair Locations**.

Who Should Read This Manual

This document is written for the person who is responsible for managing network communications for the CN3, CN3e, CN4, CN4e, CN50, CS40, CN70, CN70e, and CK70 Mobile Computers.

This user's guide describes how to install, configure, use, and troubleshoot Intermec Connection Manager.

Related Documents

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

To download documents

- 1** Visit the Intermec website at www.intermec.com.
- 2** Click the **Products** tab.
- 3** Use the **Products** menu to navigate to your product page. For example, to find the CS40 computer product page, click **Computers > Handheld Computers > CS40**.
- 4** Click the **Manuals** tab.

1

Learning About Intermec Connection Manager

This chapter introduces you to Intermec Connection Manager and contains the following topics:

- **Introducing Intermec Connection Manager**
- **What's New?**
- **Understanding Intermec Licensing**
- **Installing Intermec Connection Manager**

Introducing Intermec Connection Manager

Intermec Connection Manager (ICM) is a software application and API interface that provides seamless network roaming for Intermec mobile computers.

ICM works in the background to automatically establish and maintain connections. When a network changes status, a message is sent to all applications that are connected to the ICM API.

ICM supports these mobile computers:

- Microsoft® Windows® Mobile 6.1:
 - CN3
 - CN3e
 - CN4
 - CN4e
- Microsoft Windows Embedded Handheld 6.5:
 - CS40
 - CN50
 - CN70
 - CN70e
 - CK70

ICM allows network roaming between these IP connections:

- Wired Ethernet (802.3). If you are roaming using wired Ethernet, use ICM version 1.70 or later. Earlier versions may cause two networks to be active at the same time.
- Wireless LAN (802.11)
- GPRS/EDGE/UMTS/HSPA (WWAN)
- CDMA/1xRTT/EV-DO (WWAN)

You can download Java and C++ demo applications that describe how to use the API from the Intermec website at www.intermec.com.

What's New?

This version of the user's guide supports the latest version of ICM (version 2.00) and includes these changes:

- Added support for CN70, CN70e, and CK70 Flexible Network Radio.
- Added Signal Strength WWAN Carrier Switching.
- Added Geolocation based WWAN Carrier Switching.
- Added a procedure to configure ICM using Intermec Settings. For more information, see **“Using Intermec Settings to Configure Intermec Connection Manager” on page 15.**
- Added a procedure to set the roaming method. For more information, see **“Setting the Roaming Method” on page 18.**
- Added a procedure to uninstall ICM from your mobile computer. For more information, see **“Uninstalling Intermec Connection Manager” on page 21.**

Understanding Intermec Licensing

You can run ICM without a license for the first 60 days:

- For the first 30 days, a demonstration pop-up message appears when ICM starts up.
- For day 31 to day 60, a demonstration pop-up message appears each day.
- After day 60, a license error pop-up message appears periodically throughout the day.

To use ICM after the 60 day trial, you must purchase a runtime license. For help, contact your Intermec sales representative.

You can distribute purchased licenses to Intermec computers through electronic license key distribution. The administrator activates license keys through Intermec SmartSystems™ Foundation, which is available at no charge from www.intermec.com/SmartSystems.

For other methods of license distribution, contact your Intermec sales representative.

You can use Intermec Settings or the SmartSystems console to view the current license status or to check-in a license.

Installing Intermec Connection Manager

Before installing ICM, you need to download it from the Intermec website to your PC.

To download ICM

- 1** Go to the Intermec website at www.intermec.com.
- 2** Select **Products > Computers > Handheld Computers**.
- 3** Select your computer from the list, for example, **CN50**.
- 4** Click the **Downloads** tab.
- 5** Download the ICM .exe file to your PC.

After you download ICM, you can install it by:

- using SmartSystems Foundation.
- transferring files.
- using a memory card.



Note: After you install ICM, the application remains active until you uninstall it. For help, see “[Uninstalling Intermec Connection Manager](#)” on page 21.

Using SmartSystems Foundation to Install Intermec Connection Manager

You can download SmartSystems Foundation from www.intermec.com/SmartSystems.

To install ICM using SmartSystems Foundation

- 1** On your PC, double-click the Intermec Connection Manager .exe file. The file automatically loads onto the SmartSystems console.
- 2** Go to the Discovered Devices screen. The Intermec Connection Manager appears in the Software Vault.
- 3** Drag the Intermec Connection Manager icon onto a computer or a group of computers in a folder you want to install ICM on.

Transferring Files to Install Intermec Connection Manager

Before installing ICM, you need to establish a connection between your PC and your mobile computer using Microsoft ActiveSync (Windows XP or earlier) or Windows Mobile Device Center (Windows Vista or Windows 7). ActiveSync and Windows Mobile Device Center are free applications available from the Microsoft website at www.windowsmobile.com/getstarted. For help, see your mobile computer user's manual.

To install ICM by transferring files

- 1 On your PC, double-click the Intermec Connection Manager .exe file. The file is extracted on your PC as a .cab file.
- 2 Go to the location of the .cab file. The default location is **C:\Program Files\Intermec\SmartSystem\ss_lib\Software**.
- 3 Copy the .cab file to your mobile computer.
- 4 On your mobile computer, double-tap the .cab file. ICM is installed on your mobile computer.

Using a Memory Card to Install Intermec Connection Manager

To install ICM using a memory card, you must first determine what kind of memory card your mobile computer uses. For help, see your mobile computer user's manual.

To install ICM using a memory card

- 1 On your PC, double-click the Intermec Connection Manager .exe file. The file is extracted on your PC as a .cab file.
- 2 Go to the location of the .cab file. The default location is **C:\Program Files\Intermec\SmartSystem\ss_lib\Software**.
- 3 Insert your memory card into your PC and copy the .cab file to the card.
- 4 When the .cab file transfer is complete, insert your memory card into your mobile computer.



Note: Unless the .cab file is read-only, it is deleted from the memory card after the installation is complete.

- 5 Open the memory card to view the contents and double-tap the .cab file. ICM is installed on your mobile computer.

2

Configuring and Using Intermec Connection Manager

This chapter explains how to properly set up and use Intermec Connection Manager and contains these topics:

- **Understanding the Intermec Connection Manager Icon**
- **Configuring Intermec Connection Manager**
- **Using Intermec Connection Manager**
- **Updating Intermec Connection Manager**
- **Uninstalling Intermec Connection Manager**

Understanding the Intermec Connection Manager Icon

After you install ICM, an icon appears in the system tray.

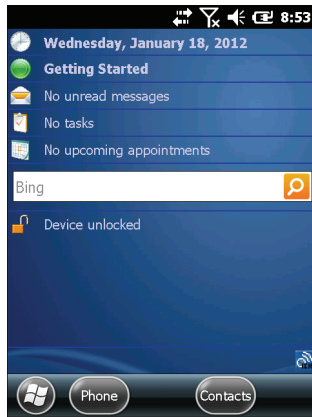
If you are running Microsoft Windows Embedded Handheld 6.5 or later, you may need to change the default screen appearance to see the Intermec Connection Manager icon.

To change the Windows Embedded Handheld 6.5 default screen appearance

- 1 Tap **Start > Settings > Home > Items**.








- 2 Clear the **Windows Default** check box and tap **OK**.



Intermecc Connection Manager Icon

Intermecc Connection Manager Icon: This icon provides access to the Intermecc Connection Manager menu and shows the ICM status.

Intermecc Connection Manager Icon Descriptions

Icon	Description
	Roaming is disabled (default).
	Wired Ethernet (802.3) is connected.
	WWAN is connected.
	Wireless LAN (802.11) is connected.
	No network connection is currently established.



Note: While ICM is running, do not change network settings with iConnect (Wireless Center) or NDISTray. Doing so may cause ICM to stop functioning properly.

Configuring Intermec Connection Manager

You can configure ICM using:

- the ICM configuration screen.
- registry settings.
- Intermec Settings.

Using the Configuration Screen to Configure Intermec Connection Manager

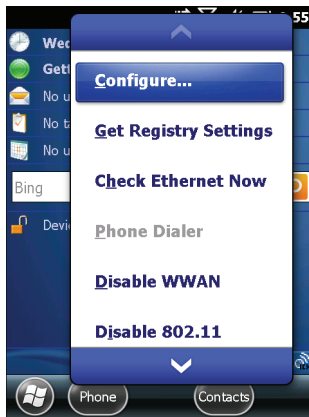
You can configure ICM settings from the configuration screen. This screen contains the **Keepalive**, **Thresholds**, **Carriers**, and **Logins** tabs.

To configure ICM from the configuration screen

- 1 From the system tray, tap the Intermec Connection Manager icon.

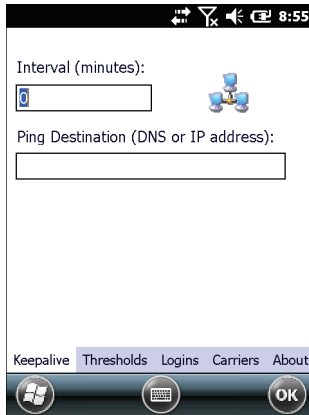


Note: The appearance of the icon depends on the network connection status. For more information, see [“Understanding the Intermec Connection Manager Icon”](#) on page 8.




Intermec Connection Manager Menu

2 Tap **Configure**. The configuration screen appears.



3 Select a settings tab and enter the appropriate information for each setting. For help, see the next table.

Intermec Connection Manager Settings

Settings Tab	Description
Keepalive	<p>Lets you configure the keepalive settings:</p> <ul style="list-style-type: none"> Interval: The amount of time between ping packets. Setting the ping interval prevents the session from timing out and keeps route entries updated. This value varies depending on your carrier. You may need to change this value depending on your mobile operator. Setting the interval to 0 minutes, disables this option. Ping Destination: The destination can be a static IP or DNS address. If the Ping Destination is left blank, ICM uses the IP address of the gateway to which it is attached. <p> Note: Keepalive ping packets are included on your WAN data bill. So, keep in mind that although the Keepalive ping packet and its response packet are small (less than 100 bytes each), your wireless provider may charge you for a minimum packet size.</p>
Thresholds	<p>Lets you disable roaming or a specific roaming option when the battery life reaches a specified level. By default, roaming is disabled when the battery level reaches 20%.</p>

Intermec Connection Manager Settings (continued)

Settings Tab	Description
Carriers	<p>Lets you configure settings for signal strength and geofencing roaming methods. ICM allows automatic switching between two WWAN carriers. You can only use these options when ICM is running on a CN70, CN70e, or CK70 with a flexible WWAN radio. The list of carriers that display is dynamic depending on the WWAN carriers the device supports. Currently the FCC supported carriers are ATT, Verizon, Sprint and Generic UMTS. ETSI devices do not support carrier switching since they only support Generic UMTS networks.</p> <ul style="list-style-type: none">• Primary Carrier: The primary carrier is the lowest cost WWAN carrier, not the lowest cost network. The primary carrier is used at ICM startup.• Secondary Carrier: The secondary carrier is used as the fallback carrier when the Signal Strength roaming method is set. When the Geofencing roaming method is set, the secondary carrier is used as a supported geo region and is not weighted.• Geofencing Regions File: This button selects the geofencing regions file definition. This button uses the standard Windows Mobile Open File Dialog. Supported file formats include Google© KML and GeorSS-Simple© XML files. Once a file is selected, a label on this screen displays the path and file selected. The label default is the root of the device “\”.
Logins	<p>Lets you configure your WWAN settings:</p> <ul style="list-style-type: none">• APN: The access point name (APN) you want to use.• Username and Password: The username and password used by Password Authentication Protocol (PAP) or Challenge-Handshake Authentication Protocol (CHAP) to validate users before letting them access the network server.

Using Registry Settings to Configure Intermec Connection Manager

You can use the Get Registry Settings feature to configure ICM by reading a group of registry settings. This feature allows registry changes to take effect without rebooting the mobile computer.

To configure ICM Using Registry Settings

- 1 Use the following registry key to configure ICM Registry settings.
For registry values, types, and descriptions, refer to the next table.

HKKEY_LOCAL_MACHINE\SOFTWARE\Intermec\itcRoamingAgent

- 2 From the system tray, tap the Intermec Connection Manager icon.
- 3 Tap **Get Registry Settings**. ICM reads the registry settings and applies any changes.

Registry Values, Types, and Descriptions

Value	Type	Description
StartupState	REG_DWORD	0 (default): Disable roaming when ICM starts. 1: Enable roaming when ICM starts.
Keepalive Ping	REG_DWORD	Specifies the interval of the keepalive ping, in minutes. A value of 0 (default) disables the keepalive ping.
KeepAliveDest	REG_SZ	Specifies the IP address or host name to use for the keepalive ping destination. The default setting is an empty string, which causes ICM to use the IP address of the gateway to which it is attached.
RoamThreshold	REG_DWORD	Specifies the percentage of battery life at which roaming is disabled. Default = 20.
EthernetThreshold	REG_DWORD	Specifies the percentage of battery life at which the Ethernet roaming option is disabled. Default = 20.

Registry Values, Types, and Descriptions (continued)

Value	Type	Description
80211Threshold	REG_DWORD	Specifies the percentage of battery life at which the 802.11 roaming option is disabled. Default = 20.
WwanThreshold	REG_DWORD	Specifies the percentage of battery life at which the WWAN roaming option is disabled. Default = 20.
APN	REG_SZ	WWAN login information. Default = none.
wwanUsername	REG_SZ	WWAN login information. Default = none.
wwanPassword	REG_SZ	WWAN login information. Default = none.
EnableWWAN	REG_DWORD	0: Disable the WWAN roaming option. 1 (default): Enable the WWAN roaming option.
Enable80211	REG_DWORD	0: Disable the 802.11 roaming option. 1: Enable the 802.11 roaming option. The default setting is 1.
EnableEthernet	REG_DWORD	0: Disable the Ethernet roaming option. 1 (default): Enable the Ethernet roaming option.
LogLevel	REG_DWORD	Valid values are 1 (default) through 5. The higher the level, the more detail written to the log.
MenuDisabled	REG_DWORD	0 (default): Enable the ICM menu from the icon in the system tray. 1: Disable the ICM menu from the icon in the system tray.
PrimaryCarrier	REG_SZ	Specifies the carrier that is used as the primary carrier. Default = Generic UMTS

Registry Values, Types, and Descriptions (continued)

Value	Type	Description
SecondaryCarrier	REG_SZ	Specifies the carrier that is used as the secondary carrier. Default = Generic UMTS
RoamingMethod	REG_DWORD	Specifies the roaming method that is used. Valid values are 1 (Standard), 2 (Signal Strength), 3 (Geofencing) Default = 1 (Standard)

Using Intermec Settings to Configure Intermec Connection Manager

You can configure ICM settings from Intermec Settings. Intermec Settings in ICM supports the typical SmartSystems features such as local configuration through Intermec Settings, remote configuration through the SmartSystems Server Intermec Settings, Backup Settings and Restore Settings.

To configure ICM using Intermec Settings, ICM must be running. The ICM menus are grayed out if ICM is not running, or if the system tray icon menu is disabled.

ICM Intermec Settings Menus

Options	Parameters You Can Configure
Enable Networks	<ul style="list-style-type: none"> Roaming enabled WWAN enabled 802.11 enabled Ethernet enabled
Carrier Roaming Options	Roaming method (standard (default), signal strength, or geofence) Carrier switching <ul style="list-style-type: none"> Primary carrier (ATT, Sprint, Verizon, or Generic UMTS) Secondary carrier (ATT, Sprint, Verizon, or Generic UMTS) Geofencing definitions <ul style="list-style-type: none"> Regions file path

ICM Intermec Settings Menus (continued)

Options	Parameters You Can Configure
Keepalive	<ul style="list-style-type: none">• Ping interval• Ping destination
Shutdown Thresholds	<ul style="list-style-type: none">• Roaming threshold• Ethernet threshold• 802.11 threshold• WWAN threshold
WWAN GSM Credentials	<ul style="list-style-type: none">• APN• Username• Password
Log Level	Select log level (1, 2, 3, 4, or 5)
About	All information in the about section is read-only (IMEI/ESN, IMSI, phone number, operator ID, ICM version, WWAN Toolkit, version, ICM copyrights).

Using Intermec Connection Manager

Before using ICM, make sure you understand the roaming priority.

Understanding Network Connection Roaming Priority

ICM automatically switches connections based on network availability.

Intermec Connection Manager Switching Priority

Priority	Description
1	Ethernet: if you are on external power or using an Ethernet adapter.
2	802.11: based on your configured SSID or profiles.
3	WWAN

Enabling Roaming

You can enable roaming as soon as you configure ICM.



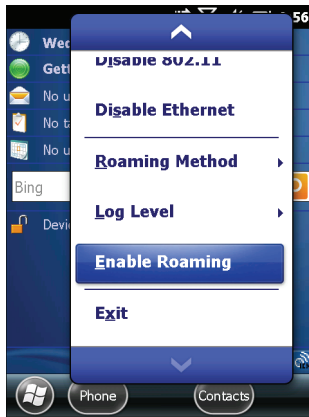
Note: Before using ICM, make sure that you have valid network connections including SSID and WWAN connections.

To select roaming options

- 1 From the system tray, tap the Intermec Connection Manager icon.
- 2 Tap one of these options:
 - **Enable WWAN**
 - **Enable 802.11**
 - **Enable Ethernet**
- 3 Repeat Steps 1 and 2 as necessary.

To enable roaming

- 1 From the system tray, tap the Intermec Connection Manager icon.
- 2 Select **Enable Roaming**.



When roaming is enabled, the Intermec Connection Manager icon indicates the type of connection you are using. For more information, see [“Understanding the Intermec Connection Manager Icon”](#) on page 8.

Setting the Roaming Method

After you enable roaming, you can set the roaming method. For more information about the settings for the signal strength and geofencing roaming methods, see [“Intermec Connection Manager Settings” on page 11](#) and [“Understanding Geofencing Naming for WWAN Carrier Switching” on page 19](#).

To set the roaming method

- 1 From the system tray, tap the Intermec Connection Manager icon.
- 2 Tap **Roaming Method**.
- 3 Tap one of these options:
 - **Standard**
 - **Signal Strength**
 - **Geofencing**



Understanding Geofencing Naming for WWAN Carrier Switching

Before using the geofencing roaming method, you need to understand how to name the geofence region ID. The ID must:

- be unique.
- include only alphanumeric characters.
- begin with the correct carrier prefix.

ICM supports four carriers: ATT, Generic UMTS, Sprint, and Verizon.

Intermec Connection Manager Geofencing Naming Convention

Prefix	Carrier	Example
ATT	ATT	ATTMyGeofence1
GEN	Generic UMTS	GENMyGeofence1
SPR	Sprint	SPRMyGeofence1
VER	Verizon	VERMyGeofence1

For more information, see the *Location Services Resource Kit User's Manual*. The Location Resource Kit is available from the Intermec website at <http://www.intermec.com/products/devresourcekit/index.aspx>.

Using WWAN Voice and Modem Dialing

You can use WWAN voice and modem dialing with ICM version 1.5 and later. When using these features, keep in mind that:

- to handle voice calls, you need to enable both roaming and WWAN connections.
- some WWAN radios suspend data traffic while a voice call is in progress. When the voice call ends, the data session continues.
- ICM does not support analog modems.
- data-only WWAN radios do not support phone calls.

Checking Your Ethernet Connection

You can set ICM to attempt to establish an Ethernet connection on its next cycle.

To check your Ethernet connection

- 1 From the system tray, tap the Intermecc Connection Manager icon.
- 2 Select **Check Ethernet Now**. ICM attempts to establish an Ethernet connection on its next cycle.

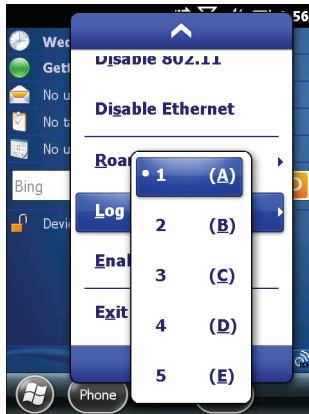
If ICM detects an Ethernet adapter but the cable is not attached, it stops checking for a connection until you remove and reinsert the computer into a dock, or you tap **Check Ethernet Now** again.

Setting the Log Level

ICM has 5 levels of logging, with 5 being the highest. The higher the level is set, the more detail you receive in your log. The default is 1.

To set the log level

- 1 From the system tray, tap the Intermecc Connection Manager icon.
- 2 Select **Log Level**.
- 3 Select a log level from 1 to 5.



Logged information is stored in the file ItcCnMgr.log which is written to the root of the object store “\”. When the log size reaches 1 MB, ItcCnMgr.log is renamed to ItcCnMgr2.log and a new ItcCnMgr.log is started. ItcCnMgr2.log is overwritten each time ItcCnMgr.log reaches 1 MB.

For help understanding the information in the log, contact Intermecc Technical Support. For help, see “[Global Services and Support](#)” on [page vii](#).

Updating Intermecc Connection Manager

Your configuration settings are maintained through an update.



Note: You do not need to exit Intermecc Connection Manager to perform an update.

To update ICM

- Download the latest version of ICM from the Intermecc website and install it. For help, see “[Installing Intermecc Connection Manager](#)” on [page 4](#).

Uninstalling Intermecc Connection Manager

After you install ICM, the application remains active until you uninstall it. You can uninstall the application from your desktop PC and your mobile computer.



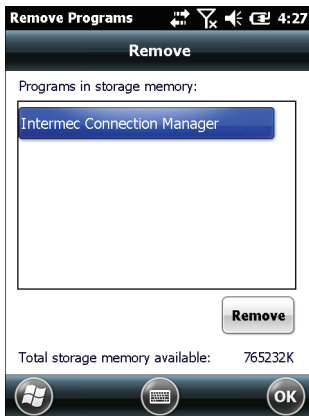
Note: You do not need to exit Intermecc Connection Manager before you uninstall the application.

To uninstall ICM from your desktop PC

- 1 On your PC, select **Start > Control Panel > Add or Remove Programs**.
- 2 In the **Currently installed programs list**, select **Intermecc Connection Manager**.
- 3 Click **Remove**. ICM is uninstalled from your PC.

To uninstall ICM from your mobile computer

- 1 Tap Start > Settings > System > Remove Programs.**
- 2 Select Intermec Connection Manager and tap Remove.**



- 3 Tap OK.**

3

Frequently Asked Questions and Troubleshooting

If you encounter any problems while using Intermec Connection Manager, use this chapter to find a possible solution. This chapter contains these sections:

- **Frequently Asked Questions**
- **Troubleshooting**
- **License Error Messages**

Frequently Asked Questions

Use this section to help answer questions you may have about ICM.

Frequently Asked Questions

Question	Answer
How do I configure ICM to use PAP authentication?	<p>ICM does not control authentication. The mobile computer should be able to negotiate the proper authentication method without configuration. However, some carriers configure their servers so that if the client attempts an unsupported authentication method, the server drops the connection instead of negotiating another authentication method.</p> <p>In these cases, Intermec tries to work with the carrier to configure their servers properly. You can try to force a certain authentication method on the computer:</p> <ul style="list-style-type: none">• If your computer is running Windows Mobile 6.1 or earlier, tap Start > Settings > the System tab > WAN Info.• If your computer is running Windows Mobile 6.5 or later:<ol style="list-style-type: none">1 Start Intermec Settings.2 Tap Communications > WWAN Radio > Edit WWAN Connections.3 If the name of your connection does not appear under Connections, tap Connections, select your connection from the list, and tap OK.4 Tap Edit Connections Fields.5 Select an option for Authentication Mode.
How might someone expect a device running ICM to function in an area where a faint 802.11 network and a WWAN are available?	<p>This is commonly called fringe coverage, and sometimes it causes ICM to switch frequently between two networks as the 802.11 connection is detected then lost over and over again in a weak coverage area. The problem with this is that when the 802.11 connection is lost, it may take up to 60 seconds to reconnect to a WWAN connection.</p> <p>This leaves the user in a frequently disconnected state. If you are in a fringe coverage area for a long period of time, you should disable 802.11 roaming, and enable it once you are no longer in the fringe coverage area. This allows the ICM to utilize the WWAN connection rather than switching between WWAN and an unreliable 802.11 network connection.</p>

Frequently Asked Questions (continued)

Question	Answer
Can I use other utilities with ICM to control or monitor the network device?	<p>No. When ICM is running it has complete control of the network devices. Do not use any other programs that change network settings, load/unload the Ethernet or 802.11 modules, or establish a WWAN connection or a connection to the WWAN radio.</p> <p>For example, you cannot use iConnect, NDISTray, WWAN Toolkit, 80211API, 80211PM, Network Tools from the Communications Resource Kit, or Microsoft Connection Manager.</p>
When the computer reaches a power threshold setting, why does ICM sometimes drop and reconnect a roaming option several times?	<p>The threshold settings are based on the percent of battery life remaining and that percentage is calculated based upon the current usage. Therefore, the percentage increases when a network device is turned off. This can result in ICM disabling and enabling a roaming option repeatedly until the percentage with the device turned off drops below the threshold.</p>
The first roam to 802.11 or Ethernet displays this message “Establishing Connection: This network card connects me to: The Internet (or work via a VPN), or Work.” Can this notification be suppressed?	<p>Before using ICM, configure the network card:</p> <ul style="list-style-type: none">• If your computer is running Windows Mobile 6.1 or earlier, tap Start > Settings > the Connections tab > Network Cards, and select an option for My network card connects to.• If your computer is running Windows Mobile 6.5 or later:<ol style="list-style-type: none">1 Tap Start > Settings > Connections > Wi-Fi.2 From the horizontal scroll at the top of the screen, tap Network Adapters.3 Select an option for My network card Connects to.


Troubleshooting

Use this section to help you troubleshoot ICM.

Troubleshooting

Problem	Solution
When ICM is running, tapping Start > Phone does nothing, and the phone icon on the navigation bar indicates No Service . What is wrong?	<p>ICM takes control of the phone from the OS, so you cannot rely on the built-in tools included in the OS. Use the ICM menu or the ICM API to use the phone or determine the status of the WWAN network.</p> <p>You can keep ICM from suppressing the phone application by creating this registry value before running ICM:</p> <pre>HKEY_LOCAL_MACHINE\SOFTWARE\Intermec\ WWANToolkit\PhoneApplication</pre> <p>This registry value can be any data type and the actual value is ignored. The presence of the PhoneApplication registry value enables the phone application, and the phone icon on the navigation bar should work as expected.</p>
ICM reports a WWAN connection, but the application fails to connect to the server.	<p>Try to validate the connection outside of the application using one of these methods in order:</p> <ul style="list-style-type: none"> • If the application does not lockout access to other programs, attempt to access the network with a different program, such as Internet Explorer. Note that your network might be configured with limited access, so make sure you attempt to access a server that is not blocked. • Try to ping the device from the server. Note that some WWAN networks block ICMP packets. Also, some carriers proxy the ICMP packets and respond on behalf of your device rather than sending the ICMP packets to the device. • (CN3 and CN4 only) In File Explorer, go to the \Windows directory, tap ftpdce.exe on the device, and try to connect to the device using FTP from the server.
The ICM log file indicates RAS error 619.	<ul style="list-style-type: none"> • If your SIM card is configured with an APN (Access Point Name), make sure the correct name was specified in ICM.
I can connect with my GPRS device using Microsoft Connection Manager but not ICM.	<p>If your SIM card is configured with an APN (Access Point Name), user name and/or password, you must input this information in the ICM settings. ICM does not attempt to retrieve information you might have input in Microsoft Connection Manager. Before running ICM you should remove any entries that you added in Microsoft Connection Manager.</p>

Troubleshooting (continued)

Problem	Solution
802.11 sometimes does not reconnect after a CN3 or CN4 is suspended.	Use the ISpyWiFi application to repair the connection: <ol style="list-style-type: none"> 1 On the Today screen, tap the iConnect icon. 2 Select Status > Wireless > Advanced > the Supplicant tab > Reconnect.
Applications that request connections through Microsoft Connection Manager, such as Internet Explorer, cannot access the Internet.	Configure the network card: <ul style="list-style-type: none"> • If your computer is running Windows Mobile 6.1 or earlier using an 802.11 or Ethernet connection: <ol style="list-style-type: none"> 1 Tap Start > Settings > the Connections tab > Network Cards. 2 From the My network card connects to list, select the Internet. • If your computer is running Windows Mobile 6.5 or later using an 802.11 or Ethernet connection: <ol style="list-style-type: none"> 1 Tap Start > Settings > Connections > Wi-Fi. 2 From the horizontal scroll at the top of the screen, tap Network Adapters. 3 From the My network card Connects to list, select The Internet.
	 <p>Note: If your computer is using a WWAN connection, do not change the factory configured network selected for programs that connect to the Internet (Start > Settings > Connections > Connections > Advanced > Select Networks).</p>

Troubleshooting (continued)

Problem	Solution
<p>I have Geofencing enabled and my Geofencing Regions file is loaded. Why are my carriers not switching?</p>	<p>Try one of the following solutions:</p> <ul style="list-style-type: none">• Make sure Location Services Resource Kit 1.20+ is installed for Geofencing capabilities. Some 70 Series computers with flexible WWAN radios include Location Services runtime as a pre-installed package called IDL_LS. To check the IDL_LS package version, tap Start > Settings > System > About > Packages. If the version is not the version you want to test, install the package file, IDL_LS.cab.pkg, in the “Runtime\WCE600\WM6.5\Armv4i” subfolder of the Location Services Resource Kit installation folder. You can only install a package whose version is higher than what is currently installed on the mobile computer. You can download Location Services Resource Kit from the Intermec website.• Make sure the Location Services Server is activated. To activate the Location Services Server:<ol style="list-style-type: none">1 Start Intermec Settings on your mobile computer by tapping Start > Settings > System > Intermec Settings.2 Tap Location Services.3 Tap Server.4 If the Enable Server is disabled, tap Enable and then tap OK.5 Exit Intermec Settings and reboot your mobile computer.

License Error Messages

When a license error occurs, ICM displays a license error popup message containing an error code. Each error has a unique error code and a brief description.

For more information about error messages, contact Intermec Technical Support. For help, see [“Global Services and Support” on page vii](#).

License Error Messages

Error Message	Description
LICENSE MANAGER CLIENT NOT FOUND! ERROR CODE:0xC16B0000.	The SmartSystems Reference Client cannot be found on the Intermec computer.
LICENSE MANAGER SERVER NOT FOUND! ERROR CODE:0xC16B0001.	The SmartSystems Server cannot be located on the network.
LICENSE VAULT NOT FOUND! ERROR CODE:0xC16B0002.	The SmartSystems Reference Client installation is either corrupted or cannot be found on the Intermec computer.
REQUESTED FEATURE NOT FOUND! ERROR CODE:0xC16B0003.	A valid license cannot be found.
REQUESTED VERSION > AVAILABLE! ERROR CODE:0xC16B0004.	The requested software version license is not valid for the software version currently installed on the Intermec computer.
LICENSE HAS EXPIRED! ERROR CODE:0xC16B0005.	The software version license available for the Intermec computer has expired.
REQUESTED QUANTITY > AVAILABLE! ERROR CODE:0xC16B0006.	The quantity of licenses requested by Intermec computers exceeds the number of licenses available.
LICENSE HAS INVALID HOSTID! ERROR CODE:0xC16B0007.	The license received by the Intermec computer has an invalid host identifier.
LICENSE HAS INVALID SIGNATURE! ERROR CODE:0xC16B0008.	The license received by the Intermec computer has an invalid signature.

License Error Messages (continued)

Error Message	Description
LICENSE STATUS NOT OKAY! ERROR CODE:0xC16B0009.	The internal date of the Intermec computer has been manipulated rendering the license invalid.
INVALID LICENSEINFO POINTER! ERROR CODE:0xC16B000A.	This is an internal license manager error. Please contact Intermec for technical support.
CLIENT COMMUNICATIONS FAILURE! ERROR CODE:0xC16B000B.	The SmartSystems Reference Client on the Intermec computer encountered an error communicating with the SmartSystems Foundation Server.
SERVER COMMUNICATIONS FAILURE! ERROR CODE:0xC16B000C.	The SmartSystems Foundation Server encountered an error communicating with the SmartSystems Reference Client on the Intermec computer.
CLIENT RETURNED FAILURE CODE! ERROR CODE:0xC16B000D.	This is a client license error. Verify the SmartSystems Reference Client installation on the Intermec computer. If this error persists, please contact Intermec for technical support.
SERVER RETURNED ERROR CODE! ERROR CODE:0xC16B000E.	This is a server license error. Verify the SmartSystems Foundation Server installation. If this error persists, please contact Intermec for technical support.
LICENSE CHECKOUT HAS NOT YET OCCURRED! ERROR CODE:0xC16C0000.	The Intermec computer cannot detect a license checkout.
PLEASE CONTACT INTERMEC PRODUCT SUPPORT! ERROR CODE:UNKNOWN.	This is an unknown error. Please contact Intermec for technical support.



Worldwide Headquarters
6001 36th Avenue West
Everett, Washington 98203
U.S.A.

tel 425.348.2600

fax 425.355.9551

www.intermec.com

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