Mobility Client for Windows User's Guide

Version 5.0.1

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Note

Before using this information and the product it supports, read the information in "Notices" on page 41.

Third Edition (November 2003)

This edition applies to a client function of IBM WebSphere Everyplace Connection Manager version 5 release 0, modification level 1 (5724-E80). This edition applies to all subsequent releases and modifications until otherwise indicated in new editions.

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About this information

This document describes how to install, configure, and use the Mobility Client, a component of the IBM® WebSphere® Everyplace™ Connection Manager, from now on referred to as the Connection Manager. This document describes the Mobility Client for use on Microsoft® Windows® and Windows CE devices.

What's new in this release

New in Version 5.0.0.2 of the Mobility Client:

- Mobility Client support added for Windows Mobile 2003-based Pocket PC.
- Pocket PC 2000 support withdrawn for the Mobility Client.
- For Pocket PC devices, the base code, by default, includes encryption and IP network connectivity. FIPS 140-2 certified encryption, WTLS encryption, and additional network support are separately installable.

New in Version 5.0.1 of the Mobility Client:

- Support for Microsoft Connection Manager for Windows Pocket PC 2002 and Windows Mobile 2003

Chapter 1. Getting started

To get started using the Mobility Client, refer to these sections to complete the following tasks:

Software and hardware requirements

The Mobility Client requires:

- Connection Manager successfully configured to use mobile access services
- A mobile computer with sufficient resources (processor speed, hard drive, and memory) to run the operating system, manage modem communications, and run your other applications. Additional resource required for the Mobility Client is disk space, as described in "Disk space requirements."
- At least one modem or interface adapter for your network provider

You can install the Mobility Client on any of these operating systems:

- Windows 98
- Windows NT® Version 4 with Service Pack 4 or higher
- Windows 2000
- Windows Me
- Windows XP
- Any of the following Windows CE platforms with Microsoft ActiveSync version 3.1 or later installed:

Table 1. Mobility Client Windows CE devices

Device name	Microsoft Windows CE version	Processors
Handheld PC 2000	3.0	ARM or MIPS
Pocket PC 2002	3.10	ARM
Windows Mobile 2003-based Pocket PC	4.2	ARM

Note that the Mobility Client supports a silent installation. However, on Windows 2000 and Windows XP, you must configure the computer to accept unsigned device drivers and on Windows NT you must install and configure the NDIS driver after running the silent installation.

Disk space requirements

When you install the full Mobility Client image, it requires:

Windows 98, Windows NT Windows 2000, Windows XP, or Windows Me
5 MB to 7 MB

Windows CE
2 MB to 3 MB. The full 3 MB is required for the installation process from a desktop system, but the final image on the Windows CE device is smaller.

You can configure clients with a configuration file (artour.ini). If you provide a copy of artour.ini which has ConfigInstalled=0, the Connection folder and capability to configure the Mobility Client is not installed. Not installing the configuration component saves about 0.8 MB on Windows 98, Windows NT, Windows 2000, or Windows Me. In this case, no further configuration can be done on these Mobility Clients. See Chapter 3, "Configuring clients with a configuration file," on page 23 for a list of the artour.ini parameters and parameter descriptions.

Installing and configuring the Mobility Client

Limiting the number of protocols on your computer enhances network performance and reduces network traffic. On Windows 98, or Windows Me, unbind all protocols from the IBM Mobility Client Interface on your computer except TCP/IP.

Operating system upgrade considerations

When upgrading Windows 98, Windows NT, Windows 2000, or Windows Me operating systems to Windows XP, first remove the Mobility Client. Then, upgrade the operating system and install the Mobility Client.

Migration considerations

After you upgrade to the latest version of the Mobility Client, existing connections are preserved and optimization tuning parameters are automatically migrated after you start a connection.

Types of installations

On all Windows platforms except Windows CE, you can choose from among the following types of Mobility Client installations:

Typical
installs the entire product image.

Custom
lets you choose which networks to support and which forms of data optimization (compression, header reduction, filters, and encryption) to include, enabling you to create a smaller client image.

Preconfigured
lets you copy the artour.ini file that you want to use for configuration. See "Performing a preconfigured installation" on page 8 for the steps to perform a preconfigured installation. See also Chapter 3, "Configuring clients with a configuration file," on page 23.

Activating a modem through the network provider

Before your modem can make a connection, it must be activated by the network provider. Activation requirements vary by provider; consult the documentation provided with your modem for the process to use.

Installing a modem driver on the mobile computer

When you use the Create Connection wizard to configure connections that use modems, the wizard presents a list of installed modems from which to choose for the connection. Therefore, any modem you want to use to create a Mobility Client connection must be installed under Windows.

Installing a modem driver

Use the guidelines below to install a modem.

Installing a manufacturer's modem driver: If you have a modem driver from a modem manufacturer, follow the manufacturer's instructions to install the driver under Windows.

Installing a modem driver provided by Windows: If you do not have a modem driver provided by a modem manufacturer, but one of the modem drivers provided by Windows suits your needs, use the driver provided by Windows and follow the Windows modem installation instructions.

Note: Do not install a standard Windows 9600 bps modem until you have first tried to install one of the modems listed in "Installing a modem driver provided by Mobility Client."

Installing a modem driver provided by Mobility Client: If you do not have a manufacturer's modem diskette and your modem manufacturer and model is not listed under the Windows modem installation panel, you can install a modem driver provided with the Mobility Client. The modem drivers provided with the Mobility Client are:

Table 2. Mobility Client modem drivers

Modem model	Network type
ARDIS Air Modem	DataTAC
Connection Network Interface (CNI)	Mobitex
Dataradio MRM MobilMUX (CARMA-M)	Dataradio
Dataradio MRM MobilMUX (DBA)	Dataradio
Dataradio MRM Gemini	Dataradio
Dr. Neuhaus MOBYCOM Modem for DataTAC	DataTAC
Ericsson M2190 Modem for Mobitex	Mobitex
Ericsson Mobidem Modem for Mobitex	Mobitex
IBM Wireless Modem for ARDIS	DataTAC
IBM Wireless Modem for Mobitex — (MASC)	Mobitex
Maxon M200	Mobitex
Megahertz/3COM AllPoints Wireless PC Card for Mobitex	Mobitex
Mobile Integrated Technologies MTX450–1	DataTAC
Motorola InfoTAC for DataTAC (ARDIS)	DataTAC
Motorola InfoTAC for Mobitex	Mobitex
Motorola MRM 660, Mobitex Mode	Mobitex
Motorola Professional Messenger 100D	DataTAC

Table 2. Mobility Client modem drivers (continued)

Modem model	Network type
Motorola VRM 500 for Motorola Private Mobile Radio Network	DataTAC
Motorola VRM 600 for Motorola Private Mobile Radio Network	DataTAC
NORCOM NORMET Satellite Modem	Norcom
RIM AllPoints Wireless PC Card for Mobitex	Mobitex
RIM Modem for DataTAC	DataTAC

To access and install the modem drivers that are provided with the Mobility Client, you must first install the Mobility Client.

Follow these steps to install one of the modem drivers provided with the Mobility Clients:

1. Install the Mobility Client.
2. Double-click **Modems** on the Windows Control Panel (**Phone and Modem Options** on Windows 2000 or Windows XP).
3. On Windows 2000 or Windows XP only, select the **Modems** tab.
4. Click **Add** to install a new modem.
5. Check the box labelled **Don't detect my modem...,** then click **Next.**
6. Click **Have Disk** on the Install New Modem panel.
7. On the Install From Disk panel, type the directory path in which the Mobility Client is installed, then click **OK.** For example, the default installation directory is C:\Program Files\IBM\Mobility Client.

   The Install New Modem panel presents the list of modem drivers listed in Table 2 on page 3. These are the default drivers for packet modems used for connections you define using the Mobility Client Create Connection wizard.
8. Select the modem driver that most closely matches the modem you are using, then click **Next.**
9. Select the port on which you want to install the modem.

   Note: For external modems, you will need to know to which communications (COM) port you have the modem attached. For PCMCIA modems, you will need to know which port your PCMCIA device manager has assigned to your modem.

   Windows installs the modem driver on the port you selected.
10. Click **Finish** to end modem installation

Note: In addition to installing a modem under Windows from the Network Control Panel, you can also install a modem during the Mobility Client connection configuration process. On the network setup panels, the Mobility Client Create Connection wizard provides a link to the Windows modem installation dialogs.

Windows NT V 4.0 modem issues: When you install a PC card modem on Windows NT 4.0, you cannot select a COM port to use with the modem; the operating system assigns one for you. Therefore, for externally connected modems, insert the physical modem and then determine the COM port that was enabled for

the modem. You will use this information when you install the modem driver on your computer. For PCMCIA modems, use the PCMCIA card manager software to determine what COM port is assigned.

If you remove and reinsert multiple PCMCIA cards, the COM port assigned to the modem by the operating system might change. Before you make a Mobility Client connection, verify that the COM port number assigned to the modem on the Modem Properties panel matches the actual physical COM port of the modem. If it does not match, remove the modem driver and add it again using the correct COM port.

Installing the Mobility Client on Windows 98, Windows 2000, Windows Me, and Windows XP

1. Insert the installation CD into the CD drive.
2. If autorun is not enabled, use a web browser to open the readme.htm page in the root directory of the CD. Click the button for your language. Review the information in the readme.
3. Click **Start –> Run,** then enter: **\clients\Win32\WC_Win32.exe**.
4. Follow the setup wizard through the installation process. On Windows XP and Windows 2000 systems, when a message about a digital signature displays, click **Yes** to continue the installation. When the setup wizard is complete, click **Finish**.
5. Restart your computer only if you receive a message directing you to do so.

Installing the Mobility Client on Windows NT

Before you install the Mobility Client, log on as an Administrator user with full control privileges to the directories into which you will install the Mobility Client.

1. Insert the installation CD into the CD drive.
2. If autorun is not enabled, use a web browser to open the readme.htm page in the root directory of the CD. Click the button for your language. Review the information in the readme.
3. Click **Start –> Run,** then enter: **\clients\Win32\WC_Win32.exe.**.
4. Follow the setup wizard through the installation process. When the setup wizard is complete, click **Finish**.
5. The Network applet from the Control Panel automatically displays, along with a help file that details the following steps to configure the IBM Mobility Client interface. Click **Add**.
6. Select the **Adapter** tab, then click **Add**.
7. Click **Have Disk...** and type the path where you installed the Mobility Client, then click **OK**. The default path is C:\Program Files\IBM\Mobility Client.
8. Select **IBM Mobility Client Interface**, then click **OK**. Windows adds the IBM Mobility Client Interface to the list of network adapters.
9. Click **Close**. Windows updates your network configuration, then displays Microsoft TCP/IP Properties.
10. In the **Adapter** field, select **IBM Mobility Client Interface**.
11. Select **Obtain an IP address from a DHCP server**. If you are prompted about enabling DHCP, click **Yes**.
12. Click **OK**.
13. Restart your computer.

Installing the Mobility Client on Handheld PC 2000

To install the Mobility Client on Handheld PC 2000, follow these steps.

Attach a supported Windows CE device to a desktop computer running Windows 98, Windows NT, Windows 2000, Windows XP, or Windows Me with Microsoft ActiveSync Version 3.1 or higher.

On the desktop computer:

1. Insert the installation CD into the CD drive.
2. If autorun is not enabled, use a web browser to open the readme.htm page in the root directory of the CD. Click the button for your language. Review the information in the readme.
3. Click **Start –> Run,** then enter: **\clients\Win32\WC_HPC2000.exe**.
4. Follow the setup wizard through the installation process.
5. The ActiveSync Add/Remove Programs application is displayed. Click **OK**.
6. When the application downloading is complete, click **OK**, then click **Finish** to complete setup.

On the Windows CE device:

If you chose to install the Mobility Client in a directory other than the default, select that destination and click **OK**. The installation files are copied from the desktop computer to the Windows CE device.

Installing the Mobility Client on Pocket PC 2002 and Windows Mobile 2003

To install the Mobility Client on Pocket PC 2002 or Windows Mobile 2003, follow these steps.

Attach a supported Windows CE device to a desktop computer running Windows 98, Windows NT, Windows 2000, Windows XP, or Windows Me with Microsoft ActiveSync Version 3.1 or higher.

On the desktop computer:

1. Insert the installation CD into the CD drive.
2. If autorun is not enabled, use a web browser to open the readme.htm page in the root directory of the CD. Click the button for your language. Review the information in the readme.
3. Click **Start –> Run,** then enter: **\clients\Win32\WC_PocketPC.exe**.
4. Follow the setup wizard through the installation process.
5. The ActiveSync Add/Remove Programs application is displayed. Check the components you want to install, then click **OK**.
6. When the application downloading is complete, click **OK**, then click **Finish** to complete setup.

On the Windows CE device:

If you chose to install the Mobility Client in a directory other than the default, select that destination and click **OK**. The installation files are copied from the desktop computer to the Windows CE device.

The CAB files that get installed as part of the setup.exe process are:

client.PPCARM.CAB
This is the core program along with IP-based network support

client_fips.PPCARM.CAB
FIPS encryption support

client_wtls.PPCARM.CAB
WTLS network connection support

client_dataradio.PPCARM.CAB
Dataradio network support

client_datatac.PPCARM.CAB
DataTAC network support

client_dial.PPCARM.CAB
Dial network support

client_mobitex.PPCARM.CAB
Mobitex network support

client_norcom.PPCARM.CAB
Norcom network support

client_bp.PPCARM.CAB
Brazilian Portuguese language support

client_de.PPCARM.CAB
German language support

client_es.PPCARM.CAB
Spanish language support

client_fr.PPCARM.CAB
French language support

client_it.PPCARM.CAB
Italian language support

client_jp.PPCARM.CAB
Japanese language support

client_kr.PPCARM.CAB
Korean language support

client_sc.PPCARM.CAB
Simplified Chinese language support

client_tc.PPCARM.CAB
Traditional Chinese language support

Applying maintenance

Links to code fixes are available from the Connection Manager product Support web site for entitled customers who have a download key. Customers can register at the web site, provide the download key given to them, then download the code fixes. Download keys are available from the Level 2 Connection Manager IBM Software Support Center in the U.S.A. at 800-IBM-SERV (800-426-7378). Outside the United States, use the web site at techsupport.services.ibm.com/guides/contacts.html. to find the IBM Support Guide Software Support Global Contact List.

The code on the web site has the following format:

Mobility Client for Windows

There is one file which is approximately 6.5 MB. The file name is WC<*version*>Win32.exe, where <*version*> is the version number of the code. After downloading the file, click **Start –>Run *filename***, where *filename* is the name of the file you downloaded. Starting this file will automatically unzip the file and run setup. Make sure you specify the path to which you downloaded the file. On Windows XP and Windows 2000 systems, when a message about a digital signature displays, click **Yes** to continue the installation.

Mobility Client for Windows CE (Handheld PC 2000)

There is one file which is approximately 8 MB. The file name is WC<*xxx*>HPC2000.exe, where *xxx* is the number of the Connection Manager release. For example, WC501HPC2000.exe. After downloading the file, click **Start –>Run *filename***, where *filename* is the name of the file you downloaded. Starting this file will automatically unzip the file and run setup. Make sure you specify the path to which you downloaded the file.

For Handheld PC 2000, by default, the base code plus all network and encryption support is installed. English is installed by default and all other language support is separately installable.

Mobility Client for Windows CE (Pocket PC 2002 and Windows Mobile 2003)

There is one file which is approximately 4 MB. The file name is WC<xxx>PocketPC.exe, where xxx is the number of the Connection Manager release. For example, WC501PocketPC.exe. After downloading the file, click **Start –>Run *filename***, where *filename* is the name of the file you downloaded. Starting this file will automatically unzip the file and run setup. Make sure you specify the path to which you downloaded the file.

For Pocket PC 2002 and Windows Mobile 2003, by default, the base code, base encryption, plus IP driver network support is installed. All additional network support is separately installable. English is installed by default and all other language support is separately installable.

Additional encryption support is also separately installable. During installation, you can choose FIPS 140–2 certification and/or WTLS encryption support. FIPS 140-2 certification specifies requirements for cryptographic modules to ensure protection of sensitive information in computer systems. Connections between Mobility Client on Windows or Windows CE connecting to a Connection Manager on the AIX® version 5.2 or Trusted Solaris 8 operating systems are approved for FIPS 140-2 certification.

Performing a preconfigured installation

A preconfigured installation allows you to create client connections for the end user and to set up the proper Mobility Client configuration settings in advance. This is important especially if some Mobility Client configuration parameters need to be set to values other than the defaults. To perform a preconfigured installation, follow these steps:

Note: You cannot perform a preconfigured installation on Windows CE platforms.

1. Follow the installation instructions for the operating system on which you are working (probably on another machine). When prompted, select a **Typical** or **Custom** installation.
2. Configure the Mobility Client to capture the configuration parameters in the ARTOUR.INI file (located in the program installation directory).

3. Transfer the ARTOUR.INI file to the machine where you are going to perform a preconfigured installation.
4. On the machine where you are going to perform a preconfigured installation, type **setup** and follow the setup wizard through the installation process. When prompted, select a **Preconfigured** installation.
5. Specify the location of the ARTOUR.INI file you transferred in step 3.
6. Complete the installation wizard. All of the configured options you captured in step 2 on page 8 will be set on this new install.

Performing a silent installation on Mobility Client Windows 32-bit platforms

This section explains how to perform a silent installation of the Mobility Client on Windows 32-bit platforms.

Note: **Note to Microsoft Windows 2000 and Windows XP users:** To make the installation of the Mobility Client totally unattended, you may need to turn off File Signature Verification in the operating system. To check your current settings:

1. Right mouse click **My Computer**, then select **Properties**.
2. Select the **Hardware** tab, then click **Driver Signing**.
3. To turn off the prompt that displays when a driver is not signed, set the File Signature Verification setting to **Ignore**. If this setting is not **Ignore**, you will be prompted to respond Yes or No during installation of the Mobility Client NDIS driver.

The Mobility Client for Windows 32-bit platforms supports a silent or unattended installation. Perform the following steps to complete a silent or unattended installation.

1. Once you have downloaded the Mobility Client self-extracting installation package, use a zip program to uncompress the files in WC_Win32.exe into a directory. Inside that directory is setup.exe.
2. Issue the command **setup –r** to perform a manual installation and to record the steps necessary to install the Mobility Client.

   Follow the setup wizard through the installation process. You will select the options that you want for your silent installation. The **setup -r** command captures all of the necessary installation steps to a file called setup.iss. This file is stored either in \Windows or \WINNT, depending on your machine.

   Note: On Windows XP and Windows 2000 systems, when a message about a digital signature displays, click **Yes** to continue the installation.
3. Issue the command **setup -s -f1<***path to setup.iss***>** to install the Mobility Client on the target machine or machines. For example: setup -s -f1c:\temp\setup.iss. Note there is no space between the f1 flag and the beginning of the path statement. If you leave a space, the installation will fail with a -5 result code.

   This command returns you immediately back to the command prompt. To verify that the installation is proceeding, there is a brief visual cue that you can watch for during the installation. On the screen, watch for a message that says "Installing IBM Mobility Client Interface device driver." This indicates that the installation is proceeding.

To check on the installation results, InstallShield writes out to a file called setup.log. This file is stored in the same location as the setup.exe executable file

you ran in a previous step. A result code of 0 indicates a successful installation. Refer to installshield.com for any other result codes.

You may also want to check the Microsoft Windows Programs listing to make sure the IBM Mobility Client is listed to ensure the installation was successful. You should be ready to configure any new connections that may be required.

Creating a Mobility Client connection

Before you define a connection, you must have the following information:

- Is a password required?
- Is there a backup connection to try if this one fails?
- If you have a dial connection, what are the country code, area code, and telephone number of the Connection Manager?
- What is the IP address of the Connection Manager?
- If you want to select interfaces to use, make sure all network adapters and modems are installed.

After you have installed the Mobility Client, click **Start –> Programs –> IBM Mobility Client** to start it. If you specified a folder name while installing the client, **IBM Mobility Client** is replaced by that name.

When you define network connections, they are added to the **Connections** folder. If the **Connections** folder does not display, your configuration is not set up to define network connections.

To create a connection:

1. Be sure that you have the information you obtained when you activated your modem through the network provider and the administrative details from above.
2. Click or tap **Start –> Programs –> IBM Mobility Client–> Connections**.
3. In the **Mobility Connections** window icons exist for previously defined connections. To define a new connection, double-click or tap **Create Connection**. The **Create Connection** wizard guides you through the process of defining a new connection.

If you choose to setup an IP connection (IP, WiFi, GPRS, 1xRTT, Broadband), there is an interface choice called Default Local IP Interface. Because the Mobility Client does not specify a specific RAS connection or LAN interface to connect to the Connection Manager, it uses the best available IP interface when there is more than one available. This best available interface is named the Default Local IP Interface although it is not actually associated with any given interface. Best, in this case, is the interface with a route to the Connection Manager with the lowest metric. The faster the interface the lower the metric. As a result, the Default Local IP Interface cannot be combined with any other IP adapters for a given connection.

Removing the Mobility Client on Windows 98, Windows NT, Windows 2000, Windows Me, and Windows XP

To remove the Mobility Client

1. Click **Start –> Settings –> Control Panel**, then click **Add/Remove Programs**.
2. Select **Mobility Client**, then click **Add/Remove (Change/Remove)** (on Windows 2000 or Windows XP machines)..

3. On the InstallShield Wizard panel, click **Remove**, then click **Next**.
4. Click **OK** on the Confirm File Deletion panel.
5. For Windows NT, follow these additional steps to remove the IBM Mobility Client interface:
   a. Click **Network** from the Control Panel.
   b. Click the **Adapters** tab.
   c. Click **IBM Mobility Client Interface**, then click **Remove**.
   d. Restart your computer.

On Windows 98, Windows 2000, Windows Me, and Windows XP, the Mobility Client interface is automatically removed when you remove the Mobility Client.

Removing the Mobility Client on Windows CE

The procedures to remove the Mobility Client vary slightly among Windows CE device types.

Removing the Mobility Client for Windows CE on the desktop

To remove the Mobility Client for Windows CE package from the desktop machine:

1. Click **Start –> Settings –> Control Panel**, then click **Add/Remove Programs**.
2. For Handheld PC 2000 devices, select **Mobility Client for HPC 2000**, then click **Add/Remove (Change/Remove)** (on Windows 2000 or Windows XP machines).

   For Pocket PC 2002 or Windows Mobile 2003 devices, select **Mobility Client for Pocket PC**, then click **Add/Remove (Change/Remove)** (on Windows 2000 or Windows XP machines).
3. On the InstallShield Wizard panel, click **Remove**, then click **Next**.
4. Click **OK** on the Confirm File Deletion panel.

Removing the Mobility Client on Handheld PC 2000 devices

To remove the Mobility Client on Pocket PC devices:

1. Tap **Start** –> **Settings** –> **Control Panel**, then tap twice on **Remove Programs.**
2. Select **Mobility Client**, then tap **Remove**.

The IBM Mobility Client Interface is automatically removed when you remove the Mobility Client.

Removing the Mobility Client on Pocket PC 2002 and Windows Mobile 2003 devices

To remove the Mobility Client on Windows Mobile 2003 devices:

1. Tap **Start** –> **Settings**.
2. Tap the **System** tab on the **Settings** window.
3. Tap **Remove Programs**.
4. Select separately each installed IBM Mobility Client program in the list except the base code (IBM Mobility Client), then tap **Remove**. Then remove the base code, IBM Mobility Client. When all Mobility Client programs have been removed from the list, the Mobility Client is no longer installed on the device.

Chapter 2. Using the Mobility Client

This section describes the use of the Mobility Client on Windows 98, Windows NT, Windows 2000, Windows Me, Windows XP, and Windows CE.

Limitations of Mobility Client on Handheld PC 2000

If you run the Mobility Client over IP-based networks, do not configure the IBM Mobility Client Interface as the default interface. A default interface is the interface over which packets are sent if no host or network route is found for a given outbound IP packet. If you make the IBM Mobility Client Interface the default interface, the Mobility Client is unable to send Link Control Protocol (LCP) packets to the mobile access services.

Windows CE provides no means to create a host route for the Connection Manager IP address to which WLP packets are directed. Therefore, the default interface is used to route these packets to the Connection Manager. If the Mobility Client is configured as the default interface, the WLP packets are routed back to the Mobility Client instead of to the Connection Manager.

As a result, when you configure the IBM Mobility Client Interface for IP-based networks, leave the Default Gateway field blank. Instead, configure the subnet mask to route all packets for your network over the IBM Mobility Client Interface. Any packets routed to other networks will not be sent using the Mobility Client.

Configuring Microsoft Connection Manager

On Pocket PC 2002 and Windows Mobile 2003, when you create a connection and use the default interface called Automatically Connect, the Mobility Client works with the Microsoft Connection Manager to automate the network connection. When you create a connection and select which interfaces the Mobility Client should use, then you might need to take steps to make Microsoft Connection Manager work better with the Mobility Client. For example, you may need to modify the Microsoft Connection Manager setting when switching between Internet sites and intranet sites.

To better understand how the Microsoft Connection Manager works, go to the Microsoft Connection Manager screen:

1. Tap **Start** –> **Settings**.
2. Tap the **Connections** tab.
3. Tap the **Connections** icon.

There are three drop-down boxes listed on the main Microsoft Connection Manager screen:

- The first drop-down defines the settings to which an application will connect when you need information that is on the Internet. For example, these settings would be used by Pocket Internet Explorer if you browsed http://www.ibm.com. These are referred to as Internet Settings.
- The second drop-down defines where you will connect when you request intranet resources. For example, these settings would be used by Pocket Internet

Explorer if you browsed http://server/, which would display the local web page for the machine named **server** on your intranet. These are referred to as Work Settings.

- The third drop-down defines where your network card (Ethernet or 802.11b) and the Mobility Client connect.

Make changes to the default Microsoft Connection Manager settings to use the Mobility Client.

To browse Internet sites while connected using the Mobility Client:

1. Change the first drop-down box to use **Work Settings**.
2. Tap the **Modify** button of your Work Settings.
3. Tap the **Proxy Settings** tab.
4. Select the **This network connects to the Internet** box.

Additionally, if you want Internet Explorer to be able to start your Internet connection automatically when the Mobility Client is not connected, modify Work Settings and create a new connection using the same settings as the connection listed under your Internet Settings.

Starting a connection

To connect to the Connection Manager either:

- Click or tap **Start –> Programs –> IBM Mobility Client–>** then select the connection you want to use.
- Click or tap **Start –> Programs –> IBM Mobility Client –> Connections** to display the Mobility Connections window. This window contains an icon representing each connection you have defined. Double-click or tap twice on an icon to launch that connection.

To create a desktop icon to launch the connection:

- On Windows, right-click the connection icon and select **Add shortcut to desktop**.
- On Windows CE, select the connection icon, then select **Add shortcut to desktop** (**Add shortcut to Start menu** on Pocket PC devices) on the Connection menu.

Connecting to the Connection Manager

On the Mobility Connections window, double-click or double-tap the icon for the connection you want to start. The Connect window is displayed. Enter:

- Org Unit
- User ID
- Password

Depending on how your Mobility Client is configured, a field may be absent or not required.

Check **Save Password** if you want to save your password. When you save a password, you are not required to enter a password before connecting to the Connection Manager with that user ID. Saving a password also enables users who do not know the password to make a connection.

For dial connections, click or tap **Change** to change the settings of your dial connection. For example, if you move in and out of areas where it is not always necessary to dial an area code, you can use the **Change Settings** window to add or remove the area code prior to starting a connection.

After filling in the fields, click or tap **Connect** to connect to the Connection Manager. Click **Cancel** if you do not want to connect.

If the user ID and Connection Manager to which you are connecting are configured to perform RADIUS authentication and the Connection Manager is configured to challenge the user for the RADIUS user ID and password, another Connect window displays after the connection to the Connection Manager is established. Enter the user ID and password to connect with the RADIUS server in the second Connect window.

Connecting from the command line

If you know the name of the connection you want to start, you can also establish a connection to the Connection Manager from the command line. The command syntax is:

```
artdial /x /o:organizational_unit /u:userid /p:password Connection_name
```

where *organizational_unit*, *userid*, *password*, and *Connection_name* are values that you provide.

All command parameters are optional. If you do not specify any parameter values on the artdial command, the Mobility Client dial function retrieves the default value from the configuration file (artour.ini) and uses those values to initiate a connection without prompting you for logon information. If a value required for the connection is not specified on the command line and is not found in the configuration file, the dial function prompts you to enter the required information. The default for *Connection_name* is the most recently started connection.

If you specify the /x parameter, the dialer will exit whenever an error is encountered. This is useful when the dialer is being run by another program and there is not always an operator present to clear error messages on the screen.

For example, using the command `artdial /u:person1 /p:x1y1yz myconnection`, a connection is initiated using the user ID **person1**, password **x1y1yz**, and the parameters specified in a previously defined connection named **myconnection**. These values will override corresponding default values in the configuration file. If a default value exists for *organization*, the value is retrieved from the configuration file.

If default values do not exist in the configuration file for the command parameters, you will be prompted to enter values before the Mobility Client initiates a connection.

Logging off from the command line

You can also log off and stop the Mobility Client from the command line. The command syntax is:

```
artdial /d
```

When you specify the /d parameter, the dialer will log off (if logged in) and stop the Mobility Client.

Starting a connection when Windows starts

You can configure a specific connection to start automatically when Windows starts. A connection that is configured to start when Windows starts will be run as a service on Windows 98, Windows Me, Windows NT, Windows 2000, and Windows XP. Additionally, on Windows NT, Windows 2000, and Windows XP systems, the connection is listed in the Service Control Manager. Because it runs as a service, the connection is maintained even when you are not logged onto the system desktop. However, you must use the properties notebook to configure the service.

On Windows CE, the connection will be implemented as a CE INIT program using the appropriate Mobility Client APIs.

Only one connection can be configured to start when Windows starts. If the connection is lost, the Mobility Client attempts to restart the connection until it is reestablished.

To start a connection automatically when Windows starts:

1. The account you want to have started automatically must have been previously connected to the Connection Manager and saved the account password. If you have not done this, select the **Save password** check box on the Connect window and click or tap **Connect**.
2. Select the connection, then click or tap **Connection** –> **Properties**. The properties notebook is displayed.
3. On the **Attributes** tab, check the **Start connection when Windows starts** check box, then click or tap **OK**.
4. A window displays asking you if you want to start the connection now. If you select **Yes**, the Mobility Client stops any active connection and starts the new connection. If you select **No**, the connection is started the next time Windows starts.

The following icon represents the connection that is configured to start automatically when Windows starts:

Indicates that data is being sent or received over the connection

Indicates the connection is idle

The same icon without the dot in the upper left corner represents all other connections (connections that are not started automatically).

Changing the initial expired password

The first password that you receive for connecting to the Connection Manager is a temporary password. When you start a connection and log on for the first time, the **Change Password** window displays to prompt you to change your password. Type a new password in the **New Password** field, then type the same password again in the **Confirm New Password** field.

Viewing connection status

The Status window displays information about your connection to the Connection Manager, under these tabs:

General
Displays information about network status, the connection status of your device with the Connection Manager, and the IP addresses of your Mobility Client and the Connection Manager.

Statistics
Gives an indication of the number of bytes and packets transmitted and received, and the total connection time for the current connection. These statistics are for the current connection only and are not cumulative across multiple connections.

Network
Displays information about your current network connection with the Connection Manager. If your modem is able to provide this information, the Power Saver Mode field displays status indicators.

Short-hold
If short-hold mode is active, the Short-hold tab is displayed when you select to view status for your connection. This tab provides status information on and lets you redial the Connection Manager, if the initial dial attempt failed.

To view network status information for your active connection:

1. Right-click or tap the antenna icon in the status area of the taskbar on your desktop (in the status area of the Today screen on Pocket PC devices).
2. Select **Status** on the pop-up menu.

For more information about using the Status window, see the online help. For a description of how to access online help, see Chapter 4, "Getting online help," on page 39.

Modifying connection properties

After you create a connection, you can modify the connection configuration. To do this from the **Connections** window, right-click the icon representing that connection, and select **Properties**.

From the Properties window, you can change configuration details that you specified when you created a connection. For example,

- You can change properties settings such as the preferred encryption type.
- You can add a new backup connection to use if the connection you defined cannot be established.
- You can define additional networks for use with cross-network roaming.

You can also start an application automatically when the connection starts. To do this from the **Properties** window, click the **Backup** tab, then click **Browse** to identify the full path and name of the application that you want to start.

Using cross-network roaming

Using seamless cross-network roaming, the Mobility Client connection and applications persist when switching networks in a multi-network (both IP and non-IP) environment. Persistence allows switching physical networks, while preserving both the connection and application session.

For example, in shifting from home Digital Subscriber Line (DSL) to office LAN, cellular, or WiFi hotspot, users remain connected and encrypted from device to enterprise. Without roaming, those same users would lose their session and be forced to restart the application, re-authenticate to the firewall, obtain a new IP address, renew the Mobility Client connection, and restart the application.

Roaming is accomplished using a software layer that isolates the application from the physical network interface, implements a persistent IP network interface and routes application traffic through that new interface. This permits the Mobility Client to dynamically select networks and seamlessly roam without breaking session integrity.

The Mobility Client automatically roams from a higher priority network to a lower priority network when the higher priority network becomes unavailable. Unavailable can mean a network adapter has been removed, a cable has been disconnected, or in the case of some wireless networks the device has moved out of range. For IP-based networks, cable disconnect and 802.11 range events require the underlying operating system support a feature known as media sense. Windows ME, Windows 2000 and Windows XP support media sense.

When more than one network is configured as an available network connection, the Roaming window lets you view information about roaming between networks. To view information about roaming between networks:

1. Right-click or tap the antenna icon in the status area of the taskbar on your desktop
2. Click or tap Roaming... on the menu.

The Roaming window displays information about:

Configured networks
Displays a prioritized list of all networks configured for the active connection, the network name and its status.

Enabling/disabling automatic roaming
Automatic roaming lets the Mobility Client determine when to roam to the next available network in the list because the Active status of the connected network changes to Out-of-range or Unavailable. When this happens, the Mobility Client manages which network becomes the Active connection by automatically selecting the next Available in the prioritized list of configured networks. The Mobility Client automatically determines when a higher priority network in the list other than the one listed as Active becomes Available and roams to the higher priority network.

Setting the active connection
Lets you manually select a specific network from the list of configured networks to become the active connection. This option is only available when automatic roaming is disabled.

Excluding/including a network
Lets you manually exclude or include a network from the list of configured networks for roaming.

Suspending/resuming
On connections that support short-hold mode, you can manually set your connection to suspend or resume. This option is only available when automatic roaming is disabled.

For more information about using the Roaming window, see the online help. For a description of how to access online help, see Chapter 4, “Getting online help,” on page 39.

When you configure a connection for more than one IP network (IP, WiFi, GPRS, 1xRTT, Broadband), you can choose to prioritize the list of networks used or choose the Default Local IP Interface.

Default Local IP Interface

When you choose this option, the Mobility Client automatically roams between all available network adapters, using the best route available. When an adapter becomes unavailable, the Mobility Client determines the next best route and seamlessly connects using that route’s adapter.

When you install a new network adapter, there is no need to modify your connection in order for the Mobility Client to use it. The Mobility Client can roam between IP and point-to-point protocol (PPP) connections.

Prioritized List

You decide which network adapter the Mobility Client should use first when it is available. The Mobility Client automatically roams to the next adapter in the list when the current one becomes unavailable. When a higher priority adapter than the current connection becomes available, the Mobility Client automatically roams to it.

When you install a new adapter, you manually prioritize it for each connection in which you want the adapter used.

When existing IP connections are migrated from the Mobility Client Version 4 to Version 5, the Default Local IP Interface choice is selected. If you want to prioritize your networks, create a new connection and do not select the Default Local IP Interface.

Roaming limitations of cross-network roaming

Media sense is not available on Windows 98, Windows CE HPC 2000, and Pocket PC 2002. Additionally, media sense events are not used in Wireless WAN Networks such as GPRS and 1xRTT on any Windows operating systems. For these cases, a third-party developer can extend the Mobility Client to have knowledge of network connectivity events for a specific radio modem by developing a custom DLL designed for that modem. Many radio modem vendors supply a toolkit to allow users to programmatically obtain information such as signal strength and range events. By developing a status DLL that retrieves this information and passes it to the Mobility Client, the Mobility Client can be aware when a given network is no longer available. To create a status DLL, see the comments in the file artapi.h in the IBM Mobility Client API Toolkit.

Sharing the Mobility Client connection on Windows XP and Windows 2000

You can share the Mobility Client connection through Internet Connection Sharing in Microsoft Windows 2000 and Microsoft Windows XP. In this way, you can use Internet Connection Sharing to connect multiple local area network computers to your intranet using just one computer with a Mobility Client connection.

1. Open the **Device Manager** and delete the IBM Mobility Client Interface. The IBM Mobility Client Interface device is listed under **Network adapters** and is hidden by default. To make it visible, click **View --> Show hidden devices**.

2. Located in the installation directory, edit the netibmar.inf file. Change the line that reads:

   HKR, Ndi\Interfaces, UpperRange, 0, ″ndis5_ip″
   to
   HKR, Ndi\Interfaces, UpperRange, 0, ″ndis5″
3. Uncomment the line that reads:

   Characteristics = 0x01 ;NCF_VIRTUAL
4. Add a comment to the line that reads:

   Characteristics = 0x09 ;NCF_VIRTUAL and HIDDEN
5. Save the file and reinstall the driver using the updated netibmar.inf file.
6. Restart the machine.
7. Open the **Network and Dial-Up Connections** window.
8. Locate the Device name entry for the IBM Mobility Client Interface (the entry in the Name column may vary). Right-click and select **Properties**.
9. Click the **Sharing** tab, then select **Enable Internet Connection Sharing for this connection**, then click **OK**.
10. Make sure the correct local network shows up in the **For local network** box. Now you can setup Internet connection sharing. See Windows Help for more information.

Setting up a trace

You can set up a trace to record diagnostic information for the Mobility Client. For example, if the modem does not initialize, set up a trace to capture every message sent during the initialization process and store it in the trace file. IBM service personnel might request a trace file from you to help diagnose a problem.

To set up a trace, set the trace level, buffering, and maximum file size.

Trace levels

Off No tracing is performed. This is the default state for the Mobility Client.

Performance
This level is used to trace the performance of the Mobility Client as it is operating.

Low This level helps with debugging, with minimal impact to performance.

High This level is used when Low does not provide enough information. There is an impact on performance.

Buffering

Buffering the trace data in memory before writing it to the trace file reduces the impact of tracing on performance. You should turn buffering on for all problems except program exceptions. Turn buffering off only when debugging exceptions in the Mobility Client where the Mobility Client does not close normally.

Flush push button

When buffering is on, click **Flush** to write data from memory to the trace file.

Maximum file size

If you change the maximum file size of the trace file, restart the Mobility Client.

Default:

1400 kilobytes on Windows 98, Windows NT, Windows 2000, or Windows Me; 250 kilobytes on Windows CE

Range of Values:

1 kilobyte to 99,999 kilobytes

Use the **Maximum File Size** field to set the maximum size of your trace file. Trace messages are stored in a file named ARTTRACE.TXT. When the file reaches its maximum size, it is renamed to ARTTRACE2.TXT and a new ARTTRACE.TXT file is created for active trace data. Only two trace files are kept, the active trace file and the most recent previous file.

Starting a trace

To start a trace for the active connection:

1. Right-click the antenna icon in the status area of the taskbar on your desktop.
2. Select **Trace** on the pop-up menu.
3. In the Trace window:
   - Specify the trace level.
   - Turn buffering on or off.
   - Click or tap **Flush** if buffering is turned on.
   - Specify the Maximum trace file size.
   - Click or tap **OK** or **Apply** to start the trace.

Chapter 3. Configuring clients with a configuration file

The artour.ini file, which is installed in the Mobility Client directory on Windows and Windows CE platforms only, contains configuration information about your client and each connection you define. This file is modified when you create connections or modify their properties. It controls which fields and buttons are presented on the **Connect** window for each connection.

One way to propagate a common client configuration to many users is to create an artour.ini file that contains the desired configuration, and then distribute the file to your users. Each user will have the same global settings and connections defined.

The artour.ini file is a readable text file, containing many fields and their values. The file is divided into sections. Each section is preceded by a section heading enclosed in square brackets. The first section, which is preceded by the heading **[ARTOUR]**, contains global information about the configuration of this Mobility Client. Subsequent sections contain information about connections and their interfaces, and are preceded by headers containing the name of the connection or interface.

Some entries can exist for a connection or for an interface. The interface section is checked first, and if no entry is found, then the connection section is used.

For a description of these parameters, see:

- Table 3 for global parameters that affect each connection
- Table 4 on page 25 for each connection
- Table 5 on page 28 for all types of interfaces
- Table 6 on page 31 for interfaces using Mobitex modems
- Table 7 on page 31 for interfaces using GSM, PSTN, or AMPS modems
- Table 8 on page 33 for interfaces using Dataradio modems
- Table 9 on page 34 for interfaces using DataTAC modems
- Table 10 on page 36 for interfaces on Private IP connections
- Table 11 on page 38 for interfaces on Norcom Satellite connections

Table 3. Global parameters that affect all connections

Parameter name	Description
CurrentConnection	Identifies the name of the active or most recently used connection
Version	Version of the artour.ini file. For example, 11=V1R1.
Confirmations	1= request confirmation on user actions
ShowFlyoverBytes	1= show number of bytes sent and received in flyover text of Mobility Client icon in the tray
ShowFlyoverPackets	1= show number of packets sent and received in flyover text of Mobility Client icon in the tray
SignalDialogPos	Screen x,y coordinates for Signal dialog box
BatteryDialogPos	Screen x,y coordinates for Battery dialog box

Table 3. Global parameters that affect all connections (continued)

Parameter name	Description
TrayUpdateInterval	Minimum duration, in milliseconds, between flashes of the Mobility Client icon in the tray. The flash indicates network activity. The higher the value, the less often it flashes. A higher value can improve performance on a high bandwidth network. Default is 500 milliseconds. (0=don't flash).
DisableRoaming	1= prevent the automatic cross-network roaming from occurring for use of custom applications that are using the Mobility Client Toolkit. The default value is 0.
EnableChangePassword	1= show the *Change password* entry in the Mobility Client context menu in the tray area of your desktop.
EnableSavePassword	1= show the *Save password* check box on Connect panel
EnableAccountId	1= show the *User ID* input field on Connect panel
EnablePassword	1= show the *Password* input field on Connect panel
EnableDomain	1= show the *Organizational unit* input field on Connect panel
EnableChangeSettings	1= show the *Change* button on Connect screen to change connection dial settings
SaveAccountId	1= save the value entered for *User ID* in the connection section of the artour.ini file
SaveDomain	1= save the value entered for *Organizational unit* in the connection portion of artour.ini file
UserAuthorityLevel	1= user can modify the connection configuration
ConfigInstalled	This parameter determines whether the Mobility Client installer installs the configuration component (connection folder). 1= install configuration component. 0= do not install configuration component. You can use a setting of 0 if you are installing the Mobility Client based on a preexisting configuration file and have no need to perform any subsequent configuration. You might also want to use this setting if you have disk space constraints or to prevent users from configuring the Mobility Client.
UseDefaultAPIBehavior	1= the Mobility Client toolbar uses default rules to control the API; that is, the toolbar issues a shutdown to the Mobility Client after the last active interface closes and after an eMsg_Logoff event is received from a network driver. 0= the Mobility Client core continues to run after the last active interface closes. This setting might be useful if you are developing your own API program and want the Mobility Client to continue running.

Table 3. Global parameters that affect all connections (continued)

Parameter name	Description
EncryptionType	• 0= data is not encrypted • 1= RC5 data encryption • 2= DES data encryption • 3= Triple-DES encryption • 4= AES data encryption with a 128-bit key strength • 5= AES data encryption with a 192-bit key strength • 6= AES data encryption with a 256-bit key strength
AutoStartToolbar	1= the toolbar is automatically started when the Mobility Client is started
ServiceReconnectDelay	The number of seconds the Mobility Client waits after an unsuccessful connection attempt before retrying the connection. This parameter applies only to a connection that is configured to start when Windows starts. The default is 10 seconds.
ServiceAllowNonAdminExit	This parameter applies only to connections that are configured to start when Windows starts. 1= users can end their connection by clicking Exit from the taskbar icon, 0= the Exit option will be disabled. The default is 1.
ServiceAllowChangePasswordDefault	This parameter applies only to connections that are configured to start when Windows starts. 1= enables users to change their passwords from the Mobility Client taskbar icon, 0 = disables the capability to change a user's password for the connection from taskbar. The default is 1.
ServiceConnection	Identifies the connection that is started when Windows starts.
DisableTrayIcon	Prevents the tray icon from being created. The default value is 0 (the icon is created).

Table 4. Parameters that describe a connection

Parameter name	Description
SectionType	For connections, this parameter must have a value of CONNECTION.
SavePassword	1= save the password defined for the connection. When saved, users do not need to type a password to connect to the mobile access services.
AccountIdRequired	1= a user ID must be entered on the Connect panel if one is not already stored. If not entered, you cannot start a connection to the mobile access services. 0= a user ID is not required for this connection and is not used.
DomainRequired	1= an organizational unit must be entered if not already stored
NetworkDLL	Name of the dynamic linked library to load for this network

Table 4. Parameters that describe a connection (continued)

Parameter name	Description
Encryption	1= data encryption is enabled, 0= data encryption is disabled.
Compression	1= data compression is enabled, 0= data compression is disabled.
HeaderReduction	Specifies whether the Mobility Client attempts to negotiate IP header reduction with the Connection Manager. The Connection Manager analyzes IP, UDP, and/or the TCP header of a data packet, then strips and caches static fields in the header to reduce the packet size sent to the Mobility Client. When the value=1, header reduction is enabled and when the value =0, header reduction is disabled. The default value is 1 for all networks except IP connections.
PacketFiltering	This entry is deprecated with Mobility Client version 5. 1= packet filtering is enabled. This setting enables filtering of packets that match the port numbers specified for artour.ini parameters TCPIP_Ports2Filter and UDPIP_Ports2Filter. This setting also enables filtering of all non-ping ICMP and IGMP packets and determines whether TCP retries are sent over the network. 1=enabled. This setting reduces the number of TCP retries sent over slow networks. 0= disabled. This setting allows all TCP traffic to flow, including retries.
Authentication	1=authentication is enabled. This setting specifies that a password is required for a connection. 0= authentication is disabled.
EnablePacketJoining	1= enabled. This setting joins together several small packets to be sent in one transmission. Packets are then separated again at the mobile access services. 0= disabled. Small packets will be sent individually. Enabling this function can increase performance.
PasswordPort	TCP/IP port number on which the mobile access services listens for password changes. If this port number changes on the mobile access services, it must be changed to match on the Mobility Client. The default port is 8888.
BroadcastPort	The UDP port number on which the Mobility Client broadcast program listens for broadcast messages from the mobile access services. The default port is 9999.
BroadcastPgmName	Name of the broadcast program to start at completion of logon. This is the program that receives broadcast messages from the mobile access services. The default value is artbcast.exe.
NTServicePort	Port used to communicate with the NT artdhcp service. Default is 9898.
GWAddress	TCP/IP address of the mobile access services set by ARTour link protocol (ALP)
MobileAddress	TCP/IP address of the Mobility Client set by wireless link protocol (WLP)
SubnetMask	Subnet mask to use for Mobility Client IP interface. This value is set by the mobile access services every time the connection is established.
SentBytes	Number of bytes sent during this session

Table 4. Parameters that describe a connection (continued)

Parameter name	Description
SentPackets	Number of packets sent during this session
ReceivedBytes	Number of bytes received during this session
ReceivedPackets	Number of packets received during this session
Backup	Name of backup connection
AccountId	Value entered in *User ID* field of Connect window
OrgUnit	Value entered in *Organizational unit* field of Connect window
EncryptedPassword	Value entered in *Password* field, encrypted
LogoffWithExit	1= logoff packet will be sent to the Connection Manager when the Mobility Client disconnects. The Mobility Client must be connected and in range for the logoff packet to be sent. If the Mobility Client is in short-hold mode, then it is not considered connected and no logoff packet is sent.
AutoStart	Name of a command to execute after connection is established with the mobile access services
MaxFragmentAge	Maximum time, in seconds, to keep an unassembled packet fragment before it is discarded
PreferredInterface	Default interface to start for this connection
PrimaryWINS	Primary WINS server address. This value is set by the MNI on the mobile access services.
Secondary WINS	Secondary WINS server address. This value is set by the MNI on the mobile access services.
PrimaryDNS	Primary DNS server address. This value is set by the MNI on the mobile access services.
SecondaryDNS	Secondary DNS server address. This value is set by the MNI on the mobile access services.
DNSDomainName	Local DNS domain name
OneButtonConnect	1= dialer bypasses the Connect panel and instead displays the connection progress indicator only if accountID (*UserID*), Domain (*Organizational unit*), and *Password* were previously saved in the artour.ini file
HasShortCut	1= a shortcut has been created for this connection.
ShowSignalDialog	1= If your modem supports it, show the signal strength indicator for this connection in the tray area of your desktop.
ShowBatteryDialog	1= If your modem supports it, show the battery strength indicator for this connection in the tray area of your desktop.
CreateDefaultRoute	1= create a default route for this network when connecting to the mobile access services
EnableDNSCache	1= enable DNS caching on the Mobility Client. Note that this setting is disabled by default on Windows 2000, Windows Me operating systems. This setting does not apply to the Windows CE operating system.
DNSCacheSize	Specifies the maximum number of domains that can be cached. The default is 100. To disable DNS caching, set **EnableDNSCache** to 0.

Table 4. Parameters that describe a connection (continued)

Parameter name	Description
DNSCacheUpdateInterval	The interval, in seconds, at which the DNS cache is updated. The default is 1.
GatewaySuppliesDNS	1= use MNI-configured DNS and WINS servers, if available
ClearDNSServersForAdapters	List of network adapter names, separated by commas, which will have their DNS registry entries temporarily removed for the duration of the Mobility Client connection. The adapter names must match those found under the HKLM\Comm registry key in Windows CE. This setting only applies to the Windows CE operating system.
DefineRoutes	The set of routes to be configured which were sent to the Mobility Client from the Connection Manager the last time a connection was established.
TCP-Lite	1= the Mobility Client will allow the Connection Manager to configure TCP-Lite services.
MonitorInterval	The interval, in seconds, when the Mobility Client checks to see if a TCP-Lite session should be terminated. Default value is 15.
FilterOtherSourceAddresses	If set to 1, then outbound packets whose source address does not match the address of the Mobility Client as assigned by the Connection Manager are discarded. Default value is 0.
EnableWTLSTrace	Specifies if the WTLS trace file is generated. Default value is 0 (trace is turned off).
WTLSTraceFile	Specifies the fully qualified path and file name of the WTLS trace file. Default value is <installation path>\wtls_client.trc.
IPStackMTU	Valid only for Windows CE operating systems, this setting specifies the maximum transmission unit for the IP stack interface. The default value is 1440 bytes.
ConnectionTimeout	Specifies the amount of time in seconds from when the Mobility Client starts attempting to connect to the Connection Manager until a message displays indicating that the connection is still being attempted. The default value is 120. Setting this value to zero (0) disables the timer.

Below each connection section will be sections describing the interfaces for that connection. Each interface section is preceded by a heading with the connection name, such as **[ConnInt0]**. Some interface parameters apply to all interfaces; some network types have additional parameters specific to them.

Table 5. Parameters that describe an interface

Parameter name	Description
SectionType	For interfaces, this parameter must have a value of INTERFACE.
StopTimeout	Number of milliseconds the Mobility Client will wait for a normal shutdown response from a network driver before terminating the driver abnormally

Table 5. Parameters that describe an interface (continued)

Parameter name	Description
PowerSaverMode	1= It instructs modem to use power saver mode (if supported by the modem). 0= instructs modem to use normal mode
SerialPort	The Windows TAPI device name for this modem
ALPTimeout	This entry can exist for a connection or for an interface. The interface section is checked first, and if no entry is found, then the connection section is used. The amount of time, in seconds, that the Mobility Client waits for a response to wireless link protocol (WLP) requests before timing out. The WLP is used to start and maintain Mobility Client connections. For new connections created with Mobility Client version 5, the default value for this setting is 30 for all networks except IP, which is 15.
ALPRetries	This entry can exist for a connection or for an interface. The interface section is checked first, and if no entry is found, then the connection section is used. Number of times to retry sending a wireless link protocol request
ALPKeepAliveInterval	This entry can exist for a connection or for an interface. The interface section is checked first, and if no entry is found, then the connection section is used. Specifies an interval, in seconds, at which an LCP Echo packet is sent to the Connection Manager. It is useful when connected through an ISP that incorporates network address translation (NAT). For IP networks the default is 10. For all other networks the default is 0.
TCPIP_Ports2Filter	This entry can exist for a connection or for an interface. The interface section is checked first, and if no entry is found, then the connection section is used. List of TCP ports, separated by spaces, from which to filter packets.
UDPIP_Ports2Filter	This entry can exist for a connection or for an interface. The interface section is checked first, and if no entry is found, then the connection section is used. List of UDP ports, separated by spaces, from which to filter packets.

Table 5. Parameters that describe an interface (continued)

Parameter name	Description
ALPMaximumRTT	This entry can exist for a connection or for an interface. The interface section is checked first, and if no entry is found, then the connection section is used. The maximum amount of time, in seconds, that the Mobility Client waits for an wireless link protocol request to be sent and an acknowledgment to be received before a retry is allowed. This parameter is used for TCP optimization. On unreliable networks where packets are frequently dropped, you might want to reduce this number to ensure the requests are received. For all networks except non-PPP (point-to-point protocol) IP connections, the default value is 15 seconds. For non-PPP (point-to-point protocol) IP connections, the value is 1 second.
InterfaceDescription	Specifies the interface name or, for IP connections, the adapter name, or dial-up networking interface name.
Handshake	This setting indicates the type of modem flow control that should be used. 1= XON/XOFF, 0= hardware flow control
MaxPDUAge	Age at which packets queued in the network driver (for example, Mobitex) are discarded
ModemCapabilities	Value used to determine capabilities of modems, such as battery or signal strength capabilities.
RoamToWait	Specifies the number of seconds that the Mobility Client waits after the network is available before the Mobility Client will roam to it and make it the Active connection. If the connection is being established on the periphery of a network coverage area, this setting allows a period of time for the Mobility Client to make sure that the connection status does not go Out of Range or Unavailable before it attempts to roam to it. The default value is 0.
RoamFromThreshold	Specifies the number of seconds that the Mobility Client connection to a network has been in Active status and acts as a threshold value for determining which Wait interval to use when roaming from this connection to a lower priority network, if the status changes to Out of range or Unavailable. This setting helps determine if you are moving into or out of the coverage area of a network. If you are moving into coverage area, you may want to delay roaming from the network quickly because there could be a period of time when the status flips back and forth between active and inactive. This delay gives the network a chance to stabilize and establish the actual status. However, if you are moving out of a coverage area, as indicated that the network status has been active for a given period of time and then becomes inactive, then you may want to roam from that network more quickly. The default value is 0.

Table 5. Parameters that describe an interface (continued)

Parameter name	Description
RoamFromWaitUnderThreshold	Specifies the number of seconds that the Mobility Client waits before roaming from this connection to another Available network of a lower priority. When the network status has been Active for more than the amount of time specified in the **RoamFromThreshold** setting and then becomes Unavailable, this setting determines the number of seconds the Mobility Client waits until it will roam from this network to another of lower priority. The value of this setting should be less than the value of the **RoamFromWaitOverThreshold** setting. The default value is 0.
RoamFromWaitOverThreshold	Specifies the number of seconds that the Mobility Client waits before roaming from this connection to another Available network of a lower priority. When the network status has been Active for less than the amount of time specified in the **RoamFromThreshold** setting, then the connection may be in the periphery of a network coverage area and may need additional time to establish its actual status. This setting determines the number of seconds the Mobility Client waits until it will roam from this network to another of lower priority. The value of this setting should be more than the value of the **RoamFromWaitUnderThreshold** setting. The default value is 0.
RoamSuspendInactive	When an interface supports suspend/resume (short-hold mode), this value determines whether or not to suspend the connection when it is not the active interface. A value of 0=do not suspend, and a value of 1=suspend. The default value is 0.

Table 6. Parameters that describe an interface to Mobitex modems

Parameter name	Description
GWMAN	The Mobitex access number of the Connection Manager.
MascVersion	1= masc1, 2= masc2
ProtocolNumber	147 for all current modems
MpakQueueSize	Governs how many outstanding packets can be sent to the modem without acknowledgment. If the parameter is not present, the default value is 5. The range of values for the parameter can be 1 through 10.

Table 7. Parameters that describe an interface to GSM, PSTN, or AMPS modems

Parameter name	Description
BaudRate	Baud rate in bits per second

Table 7. Parameters that describe an interface to GSM, PSTN, or AMPS modems (continued)

Parameter name	Description
local_country_value	If the connection is in short-hold mode and the callback feature is enabled, this is the country code used by the mobile access services to call the Mobility Client when it has data to send.
local_ac	If the connection is in short-hold mode and the callback feature is enabled, this is the area code used by the mobile access services to call the Mobility Client when it has data to send.
local_co	If the connection is in short-hold mode and the callback feature is enabled, this is the company code used by the mobile access services to call the Mobility Client when it has data to send.
local_number	If the connection is in short-hold mode and the callback feature is enabled, this is the subscriber number or personal number of the mobile phone used by the mobile access services to call the Mobility Client when it has data to send.
force_local_cc	1= force the mobile access services to use the country code when dialing the Mobility Client 0= Mobile access services will use a set of default rules when dialing the Mobility Client. These rules are based on the dialing properties used for TAPI modems.
force_local_ac	1= force the mobile access services to use the area code when dialing the Mobility Client. 0= mobile access services will use a set of default rules when dialing the Mobility Client. These rules are based on the dialing properties used for TAPI modems.
short-hold-timeout	The amount of time, in seconds, that the connection should wait before entering short-hold mode. If there is no network traffic over the connection after the specified number of seconds has elapsed, the connection is placed in short-hold mode. A setting of 0 disables short-hold mode.
connection-timeout	The amount of time, in seconds, the Mobility Client waits after an unsuccessful attempt to connect to the mobile access services before timing out.
connect-retry-interval	The amount of time, in seconds, the Mobility Client waits after an unsuccessful attempt to connect to the mobile access services before attempting to reconnect.
connect-retries	The number of times the Mobility Client attempts to reconnect to the mobile access services after the initial connect attempt fails. Connection retries also occur when the Mobility Client comes out of short-hold mode and the initial dial attempt fails to connect to the mobile access services.
enable-callback	1= enable callback from the mobile access services to the Mobility Client when the timer for short-hold mode expires. 0= the connection enters short-hold mode on connection failure
auto-reconnect	1= Mobility Client should attempt to reconnect to the mobile access services on connection failure, even though the Mobility Client has no data to send. This is useful if you want to maintain a continuous connection. 0= enter short-hold mode on connection failure.

Table 7. Parameters that describe an interface to GSM, PSTN, or AMPS modems (continued)

Parameter name	Description
DialString	The number that the Mobility Client dials, in canonical form, to establish a connection with the mobile access services. For example, +1 (919) 254-6100
tapi_reply_timeout	The amount of time, in seconds, to wait for replies from TAPI before timing out. The default is 30.
wakeup_interval	The amount of time, in seconds, that the Mobility Client waits after the device is resumed before attempting to reestablish the connection. This gives the device time to restart before Mobility Client activity begins.
afterCarrierDelay	The amount of time, in seconds, that the Mobility Client waits after the carrier has been gained (a connection has been established) before it sends data. The default value is 0.
enable-addrinf-acks	Enables a simple request/acknowledgment exchange between the Mobility Client and the mobile access services immediately following establishment of a physical connection; this exchange confirms that the mobile access services are responding to the correct Mobility Client and that the mobile access services can communicate with the Mobility Client. The default value is 1.
addrinf_ack_interval	The number of seconds between retries of the request/acknowledgment exchange; if the Mobility Client does not receive the mobile access services' acknowledgment within the specified time period, the client retries up to 2 times. The default value is 5 seconds.

Table 8. Parameters that describe an interface to Dataradio modems

Parameter name	Description
ModemResponseTimeout	The amount of time, in milliseconds, the driver should wait for an unsolicited response from the modem before requesting a response
ModemConnectTimeout	The amount of time, in milliseconds, the driver should wait for a connection to the modem before terminating the connection attempt
ModemQueryTimeout	The amount of time, in milliseconds, to wait for a response to a modem query
ModemBufferSize	Maximum size of packets, in bytes, that will be sent to the modem. Values are: 256 if you have a CARMA-M modem, or 1024 if you have a DBA modem.
ModemSendRetries	The number of times to retry sending data to the modem before a packet is discarded.
ModemCharacterTimeout	The maximum amount of time allowed, in milliseconds, between bytes of data received from the modem.
InitStates	The list of modem initialization states, separated by spaces, for setting up a connection
LastBDLCAddress	BDLC address of most recently used base station

Table 9. Parameters that describe an interface to DataTAC modems

Parameter name	Description
UserHeader	Extended address or slot number of the mobile access services as defined to the DataTAC network
DatatacMTU	The maximum size of any packet the Mobility Client will try to send over the DataTAC network.
NetworkVersion	Version of the DataTAC network protocol implementation (4000=North America, 5000=Asia, 6000=Europe)
SendRetries	Number of times to retry sending a DataTAC packet before discarding it
SwitchToNative	AT® command strings used to switch the DataTAC modem from its dial interface mode into native mode, which is the mode that supports standard DataTAC commands in Native Control Language (NCL).
Timeout1	Number of seconds for shortest timeout value, used for most Native Control Language (NCL) modem commands to modem and some queue throttling. Default is 3.
Timeout2	Number of seconds for medium timeout value, used for AT commands to modem, NCL reboot, NCL switchoffModem, and NCL eventControl commands. Default=7
Timeout3	Number of seconds in longest timeout value, used to time out data packets. Default=1200
VRMSimulator	A VRM simulator simulates a Motorola Private Mobile Radio (PMR) network, which supports standard DataTAC commands in Native Control Language (NCL). 1= modem is an NCL simulator. 0= modem is not an NCL simulator.

Table 9. Parameters that describe an interface to DataTAC modems (continued)

Parameter name	Description
NCLInitSteps	A string of numbers listing the NCL initialization commands and their order for this modem. Available steps include: **0** Initial state, must always be first state in list. **1** Testing modem baud rate **2** NCL rebooting the modem **3** Pausing after NCL reboot of the modem (necessary to avoid losing the next cmd to the modem) **4** Setting receive mode **5** Enabling receive data event **6** Enabling range event **7** Enabling hardware event **8** Enabling control event **9** Setting flow control to RTS/CTS **10** Setting flow control to XON/XOFF **11** Enabling receiver **12** Enabling transmitter **13** Querying product ID **14** Querying RPM ID **15** Querying vendor ID **16** Querying software version **17** Setting modem baud rate **18** Pausing after setting baud rate **19** Enabling battery power saver mode **20** Querying group ID **21** Querying range status **22** Initialized - should always be last state in NCLInitSteps **36** NCL flushing modem queues **37** Disabling battery power saver mode (entering express mode)
CongestionTimeout	If the modem reports a congested state or the Mobility Client stops receiving responses from the modem, the Mobility Client halts packet transmission for the number of seconds specified on the *CongestionTimeout* parameter.
LastBaudRate	Last BAUD rate at which the modem was successfully initialized
PMR	1= this is a Motorola Private Mobile Radio (PMR) network. 0= this is not a PMR network. This value is set in the modem .PRO files and is dependent on the type of modem used.
MinimumRSSI	The RSSI value you want to use to map to 0% strength of the radio signal to your modem. A percentage value between 0% and 100% can then be displayed in the tray area of your desktop to indicate signal strength to the modem.
MaximumRSSI	The RSSI value you want to use to map to 100% strength of the radio signal to your modem. A percentage value between 0 and 100% can then be displayed in the tray area of your desktop to indicate signal strength to the modem.

Table 9. Parameters that describe an interface to DataTAC modems (continued)

Parameter name	Description
MaxOutstandingPackets	This entry is deprecated with Mobility Client version 5. The maximum number of packets the Mobility Client sends to the modem without receiving a response before considering the network congested. If no responses are received after transmitting this number of packets, the Mobility Client halts packet transmission for the number of seconds specified on the *CongestionTimeout* parameter. When this timer expires, the Mobility Client resumes packet transmission.
NumNullsToPrepend	Specifies the number of null characters that are prepended to messages sent to the modem. The default is 0.
QueuedPacketTTL	Specifies how long to maintain an outgoing packet which has not been written to the modem, before discarding it from the queue. This situation might occur if the modem were out of range of the network and unable to send packets for a long period of time. This setting does not affect packets queued within the modem. The Mobility Client logs an error message whenever a packet is discarded from the queue due to a time out situation.
KickIntoRange	When set to 1, the Mobility Client resets the radio modem receiver when the modem has been out of range for KickIntoRangeSecs. This action enables modems to recognize that they are back in range more quickly. This entry is not in the artour.ini file by default, and the default value is 1.
KickIntoRangeSecs	When KickIntoRange is set to 1, the radio modem receiver will be reset when the modem has been out of range for this number of seconds. This entry is not in the artour.ini file by default, and the default value is 30 seconds.
KickIntoRangeSteps	When KickIntoRange is set to 1, the radio modem receiver will be reset using these steps when the modem has been out of range for KickIntoRangeSecs seconds. The step numbers correspond to the available steps listed in the NCLInitSteps entry and must begin and end with step 22. This entry is not in the artour.ini file by default, and the default value is 22 42 43 44 22.
RespectRangeStatus	When set to 1, specifies that the Mobility Client will not attempt to send packets while out of range. The default value is 1, and if it is not present in file, is set to 1.
NCLExitSteps	Specifies a numeric list of shutdown commands to be sent to the modem when the client is exiting. The default is ″30 31 33″. Here are the available states: **30** Shut down the modem transmitter **31** Shut down the modem receiver **33** Final shutdown state, which must be the last state in the list, even if it is the only item in the list.

Table 10. Parameters that describe an interface on private IP connections

Parameter name	Description
GatewayAddress	IP address of the Connection Manager
SendPort	Port to which to send packets

Table 10. Parameters that describe an interface on private IP connections (continued)

Parameter name	Description
ReceivePort	Port on which to receive packets
UseLan	1= connection uses a LAN card, 0= connection uses Dial-Up Networking
Bandwidth	Connection throughput in bits per second. If greater than 33600, compression, header reduction, and other TCP optimizations are disabled.
RasPhoneBookEntry	Name of RAS phone book entry to use to connect to the mobile access services
RasNumberOfRetries	Number of times to retry failed RAS connection attempts
RasSecondsBetweenRetries	Number of seconds to pause before retrying RAS connection
RasUserid	User's RAS user ID
RasPassword	User's RAS password, encrypted
RasPhoneNumber	Phone number to dial to establish RAS connections
RasDomain	RAS domain name
RasCallbackNumber	If a RAS connection is defined, this setting is the number at which the server will call the Mobility Client back.
RasRetryReturnCodes	List of RAS return codes, separated by spaces, that will cause the driver to retry a connection. Defined in raserror.h in Microsoft Software Developer's Kit
StatusDLL	Status DLL for the connection. To create a status DLL, see the comments in the file artapi.h in the IBM Mobility Client API Toolkit.
SierraMinimumRSSI	This value is used only by Sierra modems. The RSSI value you want to use to map to 0% strength of the radio signal to your modem. A percentage value between 0% and 100% can then be displayed in the tray area of your desktop to indicate signal strength to the modem.
SierraMaximumRSSI	This value is used only by Sierra modems. The RSSI value you want to use to map to 0% strength of the radio signal to your modem. A percentage value between 0% and 100% can then be displayed in the tray area of your desktop to indicate signal strength to the modem.
NetworkMTU	The maximum size of any packet the Mobility Client tries to send over the public network. Consult the network provider for the optimum value. Default value is 1024. For examples: • Ethernet connections to broadband networks (DSL, ISDN, cable modem) : 1500 • CDPD: 576 • GPRS: 576
PreferredAdapterToUse	This entry is deprecated with Mobility Client version 5 and is replaced the entry InterfaceDescription. Specifies the network adapter that is used for roaming, if it is available. There is no default value.

Table 10. Parameters that describe an interface on private IP connections (continued)

Parameter name	Description
NoStaticARP	For IP-based network connections, the Mobility Client will create a static address resolution protocol (ARP) entry for the local router through which UDP packets are sent to the Connection Manager. This setting can prevent the loss of UDP packets sent to the Connection Manager. Set this parameter to 1 to prevent the creation of the static ARP entry. The default setting is 0.

Table 11. Parameters that describe an interface on Norcom satellite connections

Parameter name	Description
GatewayMAN	The Mobitex identifier that Mobitex uses to access the Connection Manager
TerminalMAN	Mobile access number of the Mobility Client
X121Address	X.121 address of the Mobitex Gateway used by Norcom

Chapter 4. Getting online help

The following types of help are available with the Mobility Client:

Context-sensitive help: allows you to get help for a field or a control on an input panel.

On Mobility Client for Windows

1. Click on the question mark (?) in the upper right corner of the panel. A large question mark appears next to the pointer.
2. Move the pointer over the field or control for which you want help (the question mark moves with the pointer), then click on the field. Help for that field or control is displayed.

On Mobility Client for Windows CE

On the panel on which you want help, tap **Start** –> **Help**. If there is only one field on the panel, help is displayed for that field. If multiple fields are on the panel, help is displayed with links to help for each individual field. Click the link for which you want help.

Help menu: from the help menu, select the following options:

- **Help topics** provides overview information, information about fields for which you are expected to provide input, and step-by-step instructions to complete tasks.
- **About** identifies the product version as well as copyright and trademark information.

Accessibility

Accessibility features help a user who has a physical disability, such as restricted mobility or limited vision, to use software products successfully. These interfaces include the major accessibility capabilities of the Connection Manager:

Mobility Client for Windows

- You can use a screen magnifier to magnify what is displayed on your screen.
- You can use screen-reader software and a digital speech synthesizer to hear what is displayed on all screens except the Status notebook pages.
- You can navigate the user interface by using the keyboard.

Mobility Client for Windows CE

- You can navigate the user interface by using the keyboard.

Navigating with the keyboard

By using accelerator keys and keyboard shortcuts, you can navigate through the Mobility Client for Windows and Windows CE to perform operations that can also be done through mouse actions. The Tab key can also be used to move from one field or element to another.

Accelerator keys

Accelerator keys are typically identified as an underlined letter on the user interface and are used to allow you to access an element on the interface from the keyboard. To trigger an accelerator key, press and hold the Alt key while pressing the underlined letter.

Accelerator keys can be included on a number of elements in the user interface, such as menu choices, push buttons, and labels for entry fields.

Using accelerator keys with menus: When you open a menu using the keyboard, it is not necessary to use the Alt key to trigger accelerator keys for the menu choices. For example, if you use **Alt** and **C** to open the Connection menu in the Mobility Client, you can simply enter **T** to activate the accelerator key for the Trace menu choice.

Keyboard shortcuts

Keyboard shortcuts are used to trigger an action directly. Keyboard shortcuts are useful for actions that are performed frequently.

Mobility Client for Windows: You can enable interaction with the context menu on the taskbar by turning on MouseKeys to control the pointer with the numeric keypad on your keyboard. See Windows online help for more information. You can also take advantage of other keyboard navigational features as specified for each of the Windows operating systems. See the Windows online help for more information.

To get help, use the Tab key to put focus on the field for which you want help, then press **F1**.

Mobility Client for Windows CE: You can take advantage of Windows CE keyboard navigational features as specified for the operating system. See the user's guide that was shipped with your Windows CE device for more information.

To get help for a panel or dialog, press **Ctrl** and **H**.

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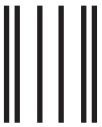

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