



**Mobility XE Client**

Windows Vista  
Windows XP  
Windows 2000  
Windows Mobile

**Mobility XE Server**

Windows Server 2003  
Windows 2000 Server

A large graphic of a wireless signal, consisting of four concentric, curved lines that increase in size from left to right, set against a dark blue background.

**NetMotion**  
**MobilityXE**

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NetMotion Mobility XE *Quick Start Guide*

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## NetMotion Wireless, Inc.

701 N 34th Street, Suite 250  
Seattle, WA 98103 USA  
+1.206.691.5500

## NetMotion Technical Support

A Technical Note Library and other support resources are available on our web site at [www.netmotionwireless.com](http://www.netmotionwireless.com).

# Getting Started with NetMotion Mobility XE

NetMotion Mobility XE is standards-compliant, client/server-based mobile VPN software that extends the enterprise network to the mobile environment. It gives mobile users on both wide area and local area wireless networks reliable, secure access to enterprise applications and information.

Using Mobility XE, TCP/IP network applications can operate without modification over a wireless connection. When a mobile device goes out of range or suspends operation, Mobility XE maintains the session status and resumes the session when the device returns to service. If the mobile device returns to service at a different point on the network or connects from a new location, Mobility XE relays data to the new address, even if it is on a different subnet or a different network. Mobility XE addresses the problems of slow, unreliable links over IP-based wireless networks, adding features that include bandwidth optimizations, compression, and encryption.

Mobility XE also extends the centralized system management capabilities of wired networks to wireless connections, integrating with existing network security and providing tools that a system administrator can use to configure, manage, and troubleshoot remote connections.

This guide outlines the basic procedures for installing the Mobility server and Mobility client software in a test or pilot system, and establishing an initial connection.

For a discussion of Mobility XE deployment in a production environment, see the *NetMotion Mobility XE System Administrator Guide*.



## Installation Roadmap

These are the basic steps for installing a Mobility XE system:

1. Install a Mobility warehouse and Mobility server (see [page 3](#) for details).
2. Install the Mobility client (see [page 6](#)).
3. Connect to the Mobility server over the LAN (see [page 9](#)).
4. Troubleshoot the connection. Resolve any network, DNS, or authentication problems (see [page 10](#)).
5. Connect to the Mobility server over a wireless network (WLAN or WWAN) (see [page 12](#)).
6. Final configuration and testing, including user authentication, allocation of IP addresses to Mobility clients, customization of server or client settings (see [page 13](#)).

For a discussion of network design considerations, see “Designing a Mobility XE Network” in Chapter 3 of the *NetMotion Mobility XE System Administrator Guide*.

For information about upgrading to Mobility XE from an earlier version of NetMotion Mobility, see [page 14](#).

## System and Product Requirements

### The Mobility XE server requires:

- Processor: x86-compatible Pentium 4, 2.0 GHz (minimum), or equivalent.
- Operating system: Microsoft Windows 2000 Server (Service Pack 3 or later required, Service Pack 4 recommended), or Microsoft Windows Server 2003 (Service Pack 2 recommended).
- RAM: 2 GB, minimum.
- Disk space: 500 MB free, minimum.
- Browser: Internet Explorer version 6.x with JavaScript enabled, or equivalent.
- For RSA SecurID user authentication: RSA Authentication Agent version 6.0 or higher.

### The Mobility warehouse requires:

- Processor: x86-compatible Pentium 4, 2.0 GHz (minimum), or equivalent.
- Operating system: Microsoft Windows 2000 Server (Service Pack 3 or later required, Service Pack 4 recommended), or Microsoft Windows Server 2003 (Service Pack 2 recommended).
- RAM: 2 GB, minimum.
- Disk space: 3-5 GB free.

### The Mobility XE client for Windows Vista, Windows XP, Windows XP Tablet, or Windows 2000 requires:

- Operating system: Microsoft Windows Vista, Microsoft Windows XP (Service Pack 2 required), Microsoft Windows Tablet, or Microsoft Windows 2000.
- Disk space: About 5 MB free.

### The Mobility XE client for Windows Mobile requires:

- Processor: StrongARM 1100 or compatible processor (e.g., XScale).
- Operating system: Microsoft Windows Mobile 2003 for Pocket PC, Microsoft Windows Mobile version 4.2 and above, Microsoft Windows Mobile 5.0 for Smartphone, or Microsoft Windows Mobile 5.0 for Pocket PC.

For a list of supported devices, see [Technical Note 1515](#) at [www.netmotionwireless.com](http://www.netmotionwireless.com).

- Storage memory: Approximately 3 MB free on Windows Mobile for Pocket PC devices, or 6.5 MB free on Windows Mobile for Smartphone.
- ActiveSync installation requires ActiveSync v. 4.1 or greater.

### To integrate Mobility XE into a wireless network environment, you must have one of the following:

- A wireless LAN adapter installed on a mobile device and wireless access points installed on the wired network.
- A wireless WAN device installed on the mobile system and available wireless WAN service (for example, an account with a service provider).
- A mobile device with a network adapter that provides NDIS and IP support.

## Installing the Mobility XE System

A Mobility XE server system comprises two components: the Mobility server, and a Mobility warehouse for storage of configuration settings and policies. Both components are required, although a pool of servers share a single warehouse. The Mobility warehouse can be collocated with a Mobility server, or reside on a separate system. In order to complete Mobility server installation and configuration, the server must be able to connect to a Mobility warehouse.

The Mobility server operates as a system service. To install or configure it, you must be logged in with administrator privileges on the system. Before installing new software, it is good practice to perform a system backup.

If you are installing from a Mobility XE product CD, the setup program (Cdsetup2.exe) starts automatically when you insert the CD in the CD-ROM drive. If you are installing from a download, run the self-extracting executable file on the PC where you want to install the Mobility server or Mobility warehouse software.

In the Server Setup dialog box:

To install...	Choose this option:
Mobility warehouse and Mobility server on the same PC.	<b>Mobility XE System</b>
Mobility warehouse on a PC that will not host a Mobility server.	<b>Mobility XE Warehouse only</b>
Mobility server that will connect to a Mobility warehouse residing on a different PC.	<b>Mobility XE Server only</b>

### Mobility Warehouse Installation

When you install a Mobility XE system or stand-alone Mobility XE warehouse, the Mobility warehouse portion of the Setup program prompts you to enter a password for the administrative accounts it creates. The password must be at least 8 characters long. Retain these credentials; you will need to enter them to administer the warehouse, or when you configure a Mobility server to register with this warehouse.

### **Mobility Server Installation**

In a Mobility XE System installation, Mobility server setup begins automatically after the warehouse is installed.

### **Initial Mobility Server Configuration**

After you install the Mobility server software and restart the server system, the Mobility Configuration Wizard guides you through the initial steps to configure the web-based user interface, connect the server to a Mobility warehouse, determine how IP addresses will be assigned to Mobility clients, and configure user authentication options.

The Mobility server's default settings may be acceptable for most configuration options, but you will need to provide the following information about your network:

- ▶ Warehouse settings—The name (in the form of a fully-qualified domain name) or IP address of the Mobility warehouse that stores the configuration settings and client policies for this server, and administrative credentials for access to the warehouse. If you are installing the Mobility server on the same system as the warehouse, this will be the server's name or IP address.
- ▶ Server's external address settings—The IP Address and port that a Mobility client device will use to connect to this Mobility server through your existing firewall, router, or NAT. On a network that uses network address translation (NAT), a Mobility client that is connecting to the Mobility server from outside the firewall may need to use an IP address that is not assigned to a physical or logical network interface on the server.
- ▶ Virtual IP address scheme—In addition to a normal, point-of-presence IP address, each Mobility client has a virtual IP address, assigned by the Mobility server, that the server uses for communications requested by applications running on the mobile device. These virtual IP addresses can come from one of three places:
  - ▶ DHCP
  - ▶ A pool of IP addresses reserved for allocation to Mobility clients
  - ▶ Individually assigned static IP addresses

If the LAN on which the Mobility server resides has a DHCP server, the simplest option is to allow the Mobility server to acquire virtual IP addresses from DHCP. If you plan to eventually deploy Mobility XE using an address pool or static virtual IP addresses for Mobility clients, you can configure these options after you have verified that your initial installation is working correctly.

If the LAN does not have a DHCP server, see the Mobility Configuration Wizard online help for information about configuring a pool of virtual IP addresses.

- ▶ **User authentication method**—If you choose NTLM authentication to a Windows domain (this is the default), the wizard will prompt you to identify users that are allowed access to Mobility XE services. You can specify a global domain group whose members have Mobility privileges, or you can add users to the local NetMotion Users group. You will need to authorize at least one user in order to test a client connection.

NTLM authentication is the best option for an initial test or pilot installation. You can reconfigure Mobility XE to use RADIUS or RSA SecurID for user authentication once you have confirmed that your installation is working correctly.

The Mobility server is initially licensed for up to 100 Mobility client devices during a 30-day trial period. Contact your NetMotion Wireless partner or sales representative if you need to extend your trial period. To connect more than 100 devices during the evaluation period, or to eliminate the time limitation, you will need to add client device licenses. Client Policy Management requires a separate license.

For detailed information about options in the Configuration Wizard or about adding licenses, see the Mobility server online help.

## Installing the Mobility Client

### Windows Vista, Windows XP or Windows 2000

To install the Mobility client software from the product CD, choose **Mobility XE Client** in the Mobility installation program. This program (Cdsetup2.exe) starts automatically when you insert the Mobility CD in the CD-ROM drive. It detects the operating system and installs the correct version of Mobility client. If you are installing from a download, run the self-extracting executable file on the device where you want to install the Mobility client software.

The Setup program prompts you to identify the Mobility server the client will connect to. Enter the fully-qualified server name or IP address. For an initial installation, do not select the “Acquire server address from DHCP” option. The DHCP server must be configured to provide this information.

During installation, the Mobility client creates a ‘virtual adapter’, a software-only driver that appears as a network interface on the client device. The Setup program may display messages warning you about installing unsigned drivers. You can safely dismiss the warnings to continue with Mobility client installation.

**Note:** If you plan to deploy the Mobility client on Windows Mobile devices (Pocket PC or Smartphone), connecting for the first time from a laptop or desktop Mobility client will provide more troubleshooting tools in case you need them.

### Windows Mobile

There are two ways to install the Mobility client software on a device running Windows Mobile:

- ▶ Install from a partner PC, using ActiveSync with Windows XP or Windows 2000, or Windows Mobile Device Center (WMDC) with Windows Vista. With Windows XP or Windows 2000, this option requires that a partnership be established between the Windows Mobile device and a desktop computer.
- ▶ Install from a .cab file without using ActiveSync or WMDC.

**To install the Mobility client using ActiveSync or WMDC:**

- ▶ On a PC with ActiveSync or WMDC installed, run the Mobility installation program and choose **Mobility XE client for Windows Mobile Client (ActiveSync)**. The setup program automatically detects the mobile device processor and operating system, and installs the correct version of Mobility client on the Windows Mobile device.

When the Setup program prompts you to identify the Mobility server the client will connect to, enter the fully-qualified server name or IP address. For an initial installation, do not select the “Acquire server address from DHCP” option. The DHCP server must be configured to provide this information.

**Note:** This installation requires ActiveSync v.4.1 or greater on Windows XP or Windows 2000. It requires Windows Mobile Device Center on Windows Vista.

**To install the Mobility client from a .cab file:**

1. On the [NetMotion Wireless web site](http://www.netmotionwireless.com) (www.netmotionwireless.com) or the NetMotion Mobility XE product CD, locate the .cab file that contains the correct Mobility client files for the operating system and processor of your mobile device.

See [Technical Note 1515](#) on our web site for a current list of tested devices, supported processor types, and supported Windows Mobile versions.

The following table shows which .cab file to choose for common Windows Mobile operating systems:

<b>Operating system version</b>	<b>CAB file</b>
Windows Mobile for Pocket PC 2003 (4.20.1081) (the About box on the mobile device displays "Microsoft Pocket PC")	nmc_PPC2003.cab
Windows CE 4.2 with ARM processor (the About box does not display "Microsoft Pocket PC" or "Windows Mobile").	nmc_CE42.ARM.cab
Windows CE 4.2 with LXE ARM processor (the About box does not display "Microsoft Pocket PC" or "Windows Mobile")	nmc.CE42_LXE.ARM.cab
Windows CE 5.0 with ARM processor (the About box does not display "Microsoft Pocket PC" or "Windows Mobile")	nmc.CE50_ARMV4I.cab
Windows Mobile 5.0 powered Pocket PC	nmc.WM50.PocketPC.cab
Windows Mobile 5.0 powered Smartphone	nmc.SP50.Smartphone.cab
Windows Mobile 5.0 powered Pocket PC for use with Orange SPV devices only	nmc.O.WM50.PocketPC.cab
Windows Mobile 5.0 powered Smartphone for use with Orange SPV devices only	nmc.O.SP50.Smartphone.cab

2. Copy the .cab file to a folder on the Windows Mobile device, or to a memory card you can insert into the device. If you want to retain the .cab file on the mobile device after installation, change the file properties to read-only.
3. On the Windows Mobile device, run the .cab file to install the Mobility client. The Setup program will prompt you to enter a fully-qualified domain name or IP address for your Mobility server (this is the default), or to choose to acquire the server's IP address from DHCP. For an initial installation, do not select the "Acquire server address from DHCP" option. The DHCP server must be configured to provide this information. You will see a confirmation dialog box when setup is finished.
4. Reset the Windows Mobile device when prompted to do so. If your system does not support auto-reset, reset the device manually to make the necessary changes to your Windows configuration. The setup process is not complete until the device has been reset.

The Mobility client is configured by default to connect at startup to the Mobility server you specify during installation. To change the Mobility client software configuration or to customize Mobility client installation on a Windows CE device, see the *NetMotion Mobility XE System Administrator Guide*.

## Connecting with Mobility XE

For an initial connection, connect the Mobility client to the same wired network as the Mobility server. If you need to do any troubleshooting, a LAN connection may circumvent such potentially complicating factors as access points, firewalls, or routers.

When a Mobility client connects to a Mobility server, a logon dialog box opens, prompting the user to enter a user name, a password, and the domain in which these credentials are valid. The Bypass button will only appear if the system administrator allows the client device to bypass Mobility XE.










On Windows Vista, Windows XP, or Windows 2000, the Mobility client logon is integrated into the Windows login procedure. You will only see a Mobility Logon dialog box if Mobility XE requires different credentials than your Windows login, or if the user name or password you entered are invalid.

For information about other Mobility client connection options, see the online help or the NetMotion Mobility XE *System Administrator Guide*.

## Troubleshooting the Connection

On the Mobility client, the Mobility XE icon in the system tray reflects the status of the connection between the client and the Mobility server.

<b>When the icon is:</b>	<b>The client is:</b>
 Green	Connected to a Mobility server.
 Yellow	Establishing a Mobility server connection.
	The Mobility client's IP address or network adapter has changed. The client may be roaming to a new subnet, or returning from out of range.
	Unable to reach the Mobility server. The client has established a connection but communication has been interrupted.
	Disconnected from the Mobility server.
	Bypassing Mobility. All Mobility XE features are disabled.
	Waiting for a network interface.

Verify that the Mobility client can:

1. Connect to the Mobility server.
2. Establish an application session to internal and external hosts by name, such as an external web page (e.g. Google) and a file server on your local network.

If the Mobility client is unable to establish a session with an application service, try the following to resolve the problem before proceeding:

- ▶ Client cannot connect

On the Mobility client, double-click the Mobility XE icon in the system tray. If the status is “Connecting” but the client never connects to the Mobility server, the client is probably unable to reach the server. See [Technical Note 2137](#) for information about troubleshooting this situation.

- ▶ Login prompt reappears

If the Mobility Logon dialog box reappears, the client has reached the server but the credentials have failed. Verify that the credentials you entered are valid and that the user is in a group that has permission to connect to the Mobility server. For NTLM authentication, the user must be a member of either the domain group you specified during server installation, or the local “NetMotion Users” group on the server.

Mobility authenticates users against the Windows domain to which they belong. In the case of a user created locally on the Mobility server, the name of the domain is the machine (NetBIOS) name of the server.

- ▶ Unable to connect to host by name

If the Mobility client can connect to the Mobility server but the application is unable to connect to other network resources, it might be a name resolution problem. Try connecting to a host by IP address rather than name. Try both internal and external hosts. If you can establish a session to web sites but not local servers, DNS may be working, but not WINS.

It is unusual to have DNS/WINS problems on a LAN if you are using DHCP to provide virtual IP addresses for your Mobility clients. The DHCP server may not be providing DNS or WINS information, or there may not be a route to your DNS or WINS servers.

## Connecting Over a Wireless Network

Once the Mobility client can connect over the LAN, move the client to the wireless LAN or WWAN network.

All Mobility XE traffic uses UDP port 5008 by default. If Mobility traffic from outside your LAN traverses a firewall, you will need to:

- ▶ Configure NAT or port forwarding on the firewall, directing this traffic to the Mobility server.
- ▶ Configure the Mobility client to connect to the external address of the server.
- ▶ Confirm that you entered the firewall address in the External Server Addresses list (see [page 4](#)).

## Confirm Connectivity Through the Firewall

Mobility XE includes a utility that sends an echo request over UDP port 5008 to the server and reports whether or not the Mobility server is reachable. To test Mobility client connectivity:

1. On the Mobility client, select the Mobility XE icon in the system tray. On the shortcut menu, select Properties.
2. Select the Status tab.
3. On the Status tab, select Diagnostics.
4. In the Mobility Diagnostics dialog box, select the Include connectivity test and Open in default editor check boxes. Then select Create Report.

There are two common reasons for the connectivity test to fail:

- ▶ The firewall is not allowing UDP 5008 traffic to go through.
- ▶ Routing is misconfigured on the Mobility server. This is usually because the server has a second network interface card, and the IP stack does not have a route for Mobility client traffic.

## Final Configuration and Test

Once you have established a WLAN or WWAN connection to a Mobility server and are running your TCP/IP applications, try the following activities and note what happens to the Mobility XE icon:

- ▶ Leave and re-enter a wireless coverage area
- ▶ Suspend and resume the mobile device
- ▶ Move to a wireless LAN access point on a different IP subnet
- ▶ Stop the network adapter and eject, remove, or unplug the device

When you have confirmed that Mobility XE is working correctly, you can add Mobility clients, modify IP address allocation to Mobility client devices, change the way the Mobility server authenticates users, or otherwise customize the configuration as required for your production network environment. See the NetMotion Mobility XE *System Administrator Guide* or Mobility server online help for more detailed information.

## Upgrading Mobility XE

To upgrade an existing Mobility XE installation, choose the **Mobility XE Server only** setup option—do not reinstall the Mobility warehouse. The Mobility server must have access to the primary warehouse, both during the software upgrade and after the upgraded server is restarted, to successfully complete the upgrade process.

It is good practice to perform a system backup before installing new software. The NetMotion Mobility XE *System Administrator Guide* describes procedures for backing up the Mobility warehouse.

During the upgrade, the Setup program stops the service and clients that were connected to the server continue to try to connect. When the upgrade is complete, restart and log in to the Mobility server. If there are sufficient valid licenses, the clients will reconnect automatically.

**Note:** The security and feature enhancements in Mobility XE affect the compatibility of this version with earlier releases. For more detailed information about upgrading Mobility XE, see Technical Notes [2206](#), [2147](#), and [2167](#) at [www.netmotionwireless.com](http://www.netmotionwireless.com).

## Upgrading Server Pools

Mobility XE version 7.20 servers will coexist with older Mobility XE servers in a server pool; you do not need to upgrade all servers in a pool at the same time. However, after upgrading the first server in a pool, it is best to upgrade the remaining servers within a reasonable time period (not exceeding several weeks). If you add a Mobility XE version 7.x server to pool that includes 6.x servers, all licenses will be converted to time-limited 30-day trials unless you first install enough Level-3 licenses for each server in the pool.

**Note:** Do not add a Mobility XE version 6.01 or older server to a pool that includes Mobility XE version 6.5 or later servers. The older server will not function correctly, and the event log will display “Object class violation” errors.

## For More Information About Mobility XE

For detailed information about Mobility XE installation, configuration, and management, see the product documentation:

- ▶ The online help for the Mobility server provides “how-to” procedures, explanations of specific settings and configuration options, and troubleshooting tips for the Mobility server, warehouse, and client components. Online help for client options is installed on the client.
- ▶ The NetMotion Mobility XE *System Administrator Guide* provides an overview of Mobility XE architecture, network design considerations, setup, configuration, maintenance, troubleshooting issues, and detailed reference information for network administrators who deploy and support Mobility XE software.
- ▶ There is also a ReadMe file with last-minute information pertinent to this release.

### Technical Support

The NetMotion web site ([www.netmotionwireless.com](http://www.netmotionwireless.com)) has Technical Notes, answers to frequently asked questions, troubleshooting tips, and links to other Mobility XE technical information.

If you need further technical assistance, contact your NetMotion Mobility XE reseller or solution provider. Please be prepared to provide the following information:

- ▶ Exact error message and/or symptoms you observed
- ▶ Version of Mobility server and Mobility client software
- ▶ Operating system versions, including applied service packs
- ▶ Wireless network hardware vendor and model
- ▶ Mobility XE event logs and/or Setuplog.txt files on client and server