

# M. A. T. Frequently Asked Questions (FAQ's)

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For more information refer to the following websites:

<http://msdn.microsoft.com/netframework/programming/netcf/cffaq/>

<http://www.microsoft.com/downloads/details.aspx?FamilyID=111fe6d5-b0e1-4887-8070-be828e50faa9&DisplayLang=en>

<http://blogs.msdn.com/fzandona/archive/2006/05/16/599485.aspx>

<http://blogs.msdn.com/fzandona/archive/2006/05/25/607609.aspx>

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## OS Related Questions

<b><i>What is Windows Mobile?</i></b>
Windows Mobile is an umbrella term covering Pocket PCs and Smartphones. Reference <a href="http://en.wikipedia.org/wiki/Windows_Mobile">http://en.wikipedia.org/wiki/Windows_Mobile</a> for more information. In most of the inquiries that Compsee receives, a reference to "Windows Mobile" typically means "Windows Mobile for Pocket PC".
<b><i>Is Windows Mobile the same thing as Pocket PC?</i></b>
Not exactly. See the answer to the previous question.
<b><i>Does MAT utilize Windows Mobile for Pocket PC?</i></b>
No.
<b><i>Is Windows Mobile the same thing as Windows CE?</i></b>
No.

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***What is the difference between Windows CE and Windows Mobile for Pocket PC?***

Windows CE is a generalized embedded operating system for devices such as handhelds, thin clients, logic controllers, and advanced consumer electronics. Pocket PC is a software platform for use on personal digital assistant (PDAs) with a specific hardware configuration. The Pocket PC platform includes standardized interface, applications, and hardware to ensure software compatibility. For information, visit the [Pocket PC](#) site.

There is often a bit of confusion in the Windows embedded world about the difference between Pocket PC, Pocket PC 2002, Windows CE 3.0 and Windows CE.

Windows CE is the core Operating System. It has gone through several versions since inception, but the versions that Compsee has built for products are 4.1, 4.2 and 5.0.

Starting with version 4.0, Microsoft began calling it CE.NET, so all three versions -- 4.0, 4.1 and 4.2 -- are considered to be [CE.NET](#). By Windows CE 5.0, Microsoft dropped the .NET name.

The confusion lies in the concept of a *Platform*. A platform is simply a custom implementation of Windows CE based on an adaptation kit from Microsoft, and is typically provided only to large-scale hardware manufacturers like HP, Compaq, Sony and the like. The Pocket PC, for example, must be purchased directly from Microsoft and has large volume and time commitments to get consideration (usually more than 25,000 devices per year for at least 3 years).

A device running one of these Platforms may have a user interface that looks significantly different than a device running the core OS, and many platforms add specific features and applications not available through the core OS.

Some platforms and their core OS's are listed in the table below.

Applications written for a specific platform may or may not run on a device with just the core OS. For example a Pocket PC application will not run on a Windows CE 3.0 device if the application uses any of the Pocket PC Platform-specific APIs or controls.

<u>Platform</u>	<u>Underlying Windows CE OS</u>
Palm-Sized PC (PsPC)	2.0
Hand-held PC Pro (HPC Pro)	2.11
Hand-Held PC 200 (HPC2000)	3.0
Pocket PC (PPC)	3.0
Pocket PC 2002 (PPC2K)	3.0
Windows Mobile 2003	4.2
Windows Mobile 5.0	5.0
Windows Mobile 5.0 SE	5.0
Compsee MAT	4.1, 4.2, 5.0

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<b><i>What is Windows CE .NET?</i></b>
Windows CE .NET was the name Microsoft chose for version 4.x of the Windows CE operating system.
<b><i>Can the user load OS upgrades, patches, etc.?</i></b>
Yes. OS updates and upgrades are performed using the System Update utility.
<b><i>What's the difference between an OS update and an OS upgrade?</i></b>
An OS update is an OS version that is the same as the installed OS on MAT but with new features and bug fixes. An OS upgrade is an OS version that is different than the MAT installed OS. OS upgrades require the purchase of a new license. Updates do not.
<b><i>Can I upgrade my MAT from Pro to Pro Plus?</i></b>
<b><i>Can I upgrade my MAT from CE 4.1 to CE 4.2?</i></b>
<b><i>Can I upgrade my MAT from CE 4.1/4.2 to CE 5.0?</i></b>
It is technically possible, but a new license MUST be purchased. It is also technically possible to downgrade a MAT from a newer OS to an earlier version; however, a new license MUST be purchased in this case as well.
<b><i>After updating or upgrading the OS, will I have to reload all of my application programs and data files?</i></b>
Yes. Applications and data files that are not part of the OS will have to be reloaded following an OS update or upgrade. Be sure to save important files to another location, e.g. SD Card, before performing the update/upgrade.
<b><i>I have a MAT that I have loaded with all of my application programs and data files. Now I have a second unit that is not yet configured. Since it took a considerable amount of time to set up the first unit, I'd rather not have to manually set up the second unit. Is there a better way?</i></b>
Yes. We provide a cloning utility that allows taking a snapshot of one MAT's files and loading them onto subsequent units.
<b><i>What's the difference between the Pro and Pro Plus OSs?</i></b>
The Pro Plus OS contains everything the Pro OS has plus the file viewers: Microsoft Excel Viewer, Microsoft Image Viewer, Microsoft PDF Viewer, Microsoft PowerPoint Viewer, Microsoft Word Viewer. In addition, there is a slight increase in price for the Pro Plus OS.
<b><i>How can I tell if I have the Pro or Pro Plus OS installed on my device?</i></b>
The quickest way to tell is to select Start->Programs and look for a "File Viewers" folder. If the folder is present your device has the Pro Plus OS installed.

***How does MAT's Internet Explorer compare with Pocket Internet Explorer on Pocket PCs?***

There are two flavors of Internet Explorer commonly distributed on PDA type devices: Internet Explorer for CE and Pocket Internet Explorer (PIE).

From the names of the two flavors it is easy to see which is distributed where. Internet Explorer for CE can be on CE handhelds whereas Pocket Internet Explorer is found on all Pocket PCs and some CE devices. The primary difference is that PIE is a stripped down version intended for memory constrained devices.

CE devices can include a version of Pocket Internet Explorer that has HTML functionality equivalent to that of Microsoft Internet Explorer version 3.2 or they can include the full-featured Internet Explorer for CE.

- Pocket PC contains PIE
- Pocket PC 2002 contains PIE
- Windows Mobile 2003 contains PIE
- Windows Mobile 5.0 contains IE Mobile
- Windows CE 3.0 contains IE 4.0 for CE
- Windows CE .NET contains IE 5.5 for CE
- Windows CE 4.1 contains IE 5.5 for CE
- Windows CE 4.2 contains IE 6.0 for CE
- Windows CE 5.0 contains IE 6.0 for CE
- PIE is roughly IE 3.2 equivalent
- IE Mobile is the new name for Pocket Internet Explorer
- IE 5.5 for CE is roughly IE 5.5 equivalent
- IE 6.0 for CE is roughly IE 6.0 equivalent

***What version TCP/IP stack does MAT include?***

MAT ships with TCP/IPv4.

***What standard Windows CE application programs come pre-installed on MAT?***

The standard MAT includes a Microsoft Windows CE Pro license and comes with a host of programs including, but not limited to, the following: ActiveSync, Flash Update Application, Inbox, Windows Messenger, WordPad, Internet Explorer 5.5, Transcriber Handwriting Recognition, Windows Media Player.

The optional MAT configuration includes a Microsoft Windows CE Pro Plus license and has all of the above applications plus the following: Microsoft Excel Viewer, Microsoft Image Viewer, Microsoft PDF Viewer, Microsoft PowerPoint Viewer, Microsoft Word Viewer.

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***I've seen some references on the web to Microsoft code names. What are these and how do they relate to MAT?***

Prior to releasing a major OS or software change to the public, Microsoft assigns code names to the product for use by the internal team. Sometimes the general public is included in beta testing these products, so the names begin to be used. Once the product is released, the code name is replaced with the official product name. Here are some come ones that come up occasionally.

<u>OS Version</u>	<u>Code Name</u>
Windows Embedded CE 6.0 (expected 2007)	Photon
Windows CE 5.0	Macallan
Windows CE .NET 4.2	McKendric
Windows CE .NET 4.1	Jameson
Windows CE .NET 4.0	Talisker
Windows CE 3.0	Cedar

<u>Platform Version</u>	<u>Code Name</u>
Windows Mobile 5.0 SE (2006Q4)	Crossbow
Windows Mobile 5.0	Magneto
Windows Mobile 2003	Ozone
Pocket PC 2002	Merlin
Pocket PC	Rapier

Reference this web page for other Microsoft related code names:  
<http://www.phm.lu/Documentation/Windows/Codenames.asp>

## Application Development Questions

***My application used to work fine on my MAT with CE 4.1 installed, then I upgraded to 4.2 (and bought a new license). Now, when I try to execute the program, the MAT gives an error message that says "Not a valid Windows CE application". What's wrong?***

Nothing is really "wrong". Just different. Your application was developed using native code, which is processor type dependent. The MAT's 4.1 OS was built using an ARMV4I build switch whereas the 4.2 OS was built as ARMV4 (for compatibility with some 3rd party software). Your original application was built to match the 4.1 OS type (ARMV4I). All you need to do is recompile your application using the ARMV4 processor, and the app will run fine. By the way, you'll need to install the SDK to support the MAT 4.2 OS.

***What is the .NET Compact Framework?***

The .NET Compact Framework is a subset of the .NET Framework that is designed to run on resource-constrained devices, providing support for managed code and for XML Web services. The .NET Compact Framework greatly reduces the development cost of writing applications and services that run on devices such as the Pocket PC. Because the .NET Compact Framework is a subset of the .NET Framework developers use to write desktop and server applications, they already have all the necessary skills to write applications for Pocket PC devices.

***What are the key benefits of using the .NET Compact Framework?***

One of the biggest barriers to writing device applications today is that most devices require developers to learn different APIs and use different programming tools than they would use for desktop applications. Because the .NET Compact Framework uses the same .NET Framework programming model and the same Visual Studio development tools that developers are already using on desktops and servers, it greatly reduces the cost of developing device applications and increases developer productivity. These gains, in turn, enable companies to use smart devices in new ways that enhance their business. The .NET Compact Framework is also the only mobile development platform with native support for XML Web services.

***How can I determine the version of the .NET Compact Framework that is installed on a device?***

Each version of the .NET Compact Framework is released with a different Win32 File Version number (this is a separate version number from the Assembly Version, which should be the same across all releases of the Version 1 .NET Compact Framework, including Service Packs).

In order to see what version is installed, chose Start->Run and enter the file name CGACUTIL. You will get a message box showing you the Win32 File Version of the .NET Compact Framework installed on the device.

1.0

RTM = 1.0.2268.0

SP1 = 1.0.3111.0

SP2 = 1.0.3316.0

2.0

RTM = 2.0.5238.0

SP1 = 2.0.6129.0

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<b><i>What's the difference between "native code" and "managed code"?</i></b>
Native code (aka "unmanaged" code") is written in C/C++ and utilizes the Win32 API, MFC, or ATL. Managed code is written in Visual Basic or C# and utilizes the .NET Compact Framework. Reference <a href="http://en.wikipedia.org/wiki/Managed_code">http://en.wikipedia.org/wiki/Managed_code</a> for further information.
<b><i>How can MAT be programmed?</i></b>
Embedded Visual C++ 4.0, Visual Basic, C#, JScript, VBScript, HTML, XML
<b><i>What programming tools do I need to program MAT?</i></b>
Depends on your preferred development environment. For native code development, Microsoft offers Embedded Visual C++ 4.0 free of charge. Also from Microsoft are Visual Studio 2003 and Visual Studio 2005. Both include support for Visual Basic and Visual C#. In addition, Visual Studio 2005 is a more versatile tool and can be used for native code development as well.
<b><i>What version of Embedded Visual C++ do you recommend?</i></b>
eVC++ 4.0 with Service Pack 4.
<b><i>Can I use Visual Basic 6.0 to program MAT?</i></b>
No. Visual Basic 6.0 is used for desktop application development. For mobile devices Visual Studio 2003 or Visual Studio 2005, which includes Visual Basic, must be used. Note that applications developed using the Visual Studio and the .NET Compact Framework will execute on desktops as well as MAT providing the ultimate in portability.
<b><i>Do Windows Mobile (Pocket PC) applications run natively on Windows CE devices?</i></b>
<p>Pocket PC applications do not necessarily run on Windows CE devices, but Windows CE devices can be built to run Pocket PC applications natively.</p> <p>Running an application natively refers to running an application without recompiling it for a different environment. Windows CE devices can run Pocket PC applications if:</p> <ul style="list-style-type: none"> <li>▪ The application is designed for the same CPU architecture; and</li> <li>▪ The application calls the same API set as the Pocket PC 2003 SDK. Windows CE supports the same SDK APIs from CESHELL and AYGShell.</li> </ul>
<b><i>What is XML?</i></b>
<p>XML is the Extensible Markup Language. It is designed to improve the functionality of the Web by providing more flexible and adaptable information identification.</p> <p>It is called extensible because it is not a fixed format like HTML (a single, predefined markup language). Instead, XML is actually a 'metalanguage' —a language for describing other languages—which lets you design your own customized markup languages for limitless different types of documents. XML can do this because it's written in <a href="#">SGML</a>, the international standard metalanguage for text markup systems (ISO 8879).</p>

***What is HTML?***

HTML is the [HyperText Markup Language \(RFC 1866\)](#), a small application of [SGML](#) used on the Web.

It defines a very simple class of report-style documents, with section headings, paragraphs, lists, tables, and illustrations, with a few informational and presentational items, and some hypertext and multimedia. See the question on [extending HTML](#). There is also an [XML version of HTML](#).

***Is MAT Java capable?***

Yes, using a 3rd party Java Virtual Machine (JVM). We recommend licensing bSquare's JEM-CE.

***What is JScript 5.5?***

The JScript 5.5 feature for Microsoft® Windows® CE .NET provides a run-time engine for parsing and translating Microsoft JScript® code on Web pages and in other host applications.

Microsoft® JScript® 5.5 is a general-purpose, object-based scripting language that is based on the ECMA 262 language specification (ECMAScript Edition 3). With a few exceptions, to maintain backwards compatibility, JScript is a full implementation of the ECMA standard.

JScript will be familiar to anyone who uses the C, C++, or Java programming language. In Microsoft® Windows® CE .NET, Microsoft Internet Explorer provides the host for JScript interpretation, however you can use JScript in any application that is capable of hosting VBScript.

Detailed documentation on using JScript, including a language reference, tutorials, and samples, is available at this [Microsoft Web site](#).

***What kind of database support does MAT have?***

MAT provides SQL Server CE 2.0 support. Microsoft® SQL Server™ 2000 Windows® CE Edition 2.0 (SQL Server CE) extends Microsoft SQL Server to Microsoft Windows CE-based mobile devices, while providing developers with a consistent programming model for rapid application development. SQL Server CE delivers essential relational database functionality in a small footprint: a robust data store; an optimizing query processor; and reliable, scalable connectivity capabilities.

Reference the SQLCE.CHM help file found in Visual Studio .NET 2003.

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## Hardware Related Questions

<b><i>What is the durability of the touch screen?</i></b>
The touch screen is rated to survive a 2.4N force from a plastic stylus scrubbed 3 times per second for a total of 50,000 cycles.
<b><i>Where are the wireless card and internal antenna inside the MAT?</i></b>
The antenna is located underneath the display area at the north end of the unit, well away from the hand area.
<b><i>Does the MAT use USB 2.0?</i></b>
MAT will be capable of USB Full Speed (12Mbps) and USB Low Speed (1.5Mbps) as implemented in the USB 1.1 specification. MAT will not be capable of High Speed (480Mbps) as implemented in USB 2.0. However, USB 2.0 based hosts are capable of interfacing to Full Speed and Low Speed devices.
<b><i>Does the MAT use ActiveSync type download?</i></b>
Yes. ActiveSync 3.8 or later is recommended. By default, MAT is configured to make the ActiveSync connection via USB; however, it can be configured to connect via RS232.
<b><i>Will the keypad wear-out?</i></b>
Yes, but not for a long time. The overcoat used is matte silicone dip. The abrasion life cycle is min. of 50 cycles using Normal Tool Tester running on Continuous Cycle at weight load of 175 grams. One Abrasion Cycle is approximately equal to 10,000 finger actuations.  The Estimated Typical life of the keys will range in between 500K–700K finger actuations.
<b><i>How many single battery chargers can be ganged together using one power supply?</i></b>
Compsee offers 2 different power supplies for use with the single changer. The smaller power supply is rated for 1.5A and the larger supply is rated for 5.0A. When using the small supply, only 2 chargers can be connected together. When using the large supply, up to 8 can be linked.
<b><i>How long can the battery packs remain in storage?</i></b>
This varies greatly on how they are stored. The temperature at which they are stored affects the long-term capacity of the battery. The cells should be stored at room temperature or less if possible.  The batteries are shipped in a 30-50% charge state. Storing the packs in this manner will not adversely affect battery pack capacity; however, a high battery voltage (above 4.1V) during storage can lead to an accelerated deterioration of the capacity.  As a general rule, battery packs stored for an extended period should be charged once per year to prevent over-discharge.
<b><i>How long does it take to fully charge the battery pack?</i></b>
It depends on which battery pack you have. There are two different packs available: 2200mAh and 4400mAh. A 2200mAh pack will require up to 4hrs charge time while the 4400mAh will require up to 7 hrs charge time.

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<p><b><i>How long can the main battery be left out of the MAT without causing a reboot?</i></b></p> <p>The MAT contains an internal lithium polymer back-up battery rated at 120mAh capable of maintaining the unit's volatile memory for over 2 hours. As the back-up battery ages, the time it can maintain the volatile memory goes down, so we only specify a maximum of 1 hour memory retention.</p>
<p><b><i>How long does it take to fully charge the back-up battery?</i></b></p> <p>It takes 2 hrs of uninterrupted charge time.</p>
<p><b><i>When does the backup battery get charged?</i></b></p> <p>Whenever external AC power is applied or with the Main battery installed and the MAT is in one of the following power modes: Full Power, Idle, or Standby. The back-up battery will not charge with only the Main battery installed and the MAT in Suspend.</p>
<p><b><i>Will the battery pack wear out? If so, what is the expected life?</i></b></p> <p>Yes, the battery pack will wear out. Per industry standard practice the lifetime is stated at the point the battery pack will only hold 80% of the original full charge. This occurs after 300 discharge/charge cycles.</p>
<p><b><i>Will the internal back-up battery wear out? If so, what is its expected life?</i></b></p> <p>The internal back-up battery is a lithium polymer type battery and as such has a limited lifetime. Per industry standard practice the lifetime is stated at the point the battery will only hold 80% of the original full charge. This occurs after 300 discharge/charge cycles.</p> <p>Because the specified 1-hour memory retention time is based on less than 50% of the battery, the actual useful life of the back-up battery is more than 1000 discharge/charge cycles. Assuming a worst-case discharge/charge cycle frequency of once per day, this is more than 3 years of use.</p> <p>A discharge/charge cycle is defined as depleting the battery from full charge to less than 75% charge, then fully recharging. This 25% drop in capacity equates to 30 minutes of back-up time. If the main battery is replaced quicker than 30 minutes, the back-up battery does not use a life cycle, thereby extending the life of the back-up battery.</p> <p>Although worst-case usage gives a back-up battery life of 3 years, in actual practice, we expect the useful life to be considerably longer: on the order of the product lifetime of 7 years.</p>
<p><b><i>What is the recommended for cleaning the MAT? Are there any limitations on caring for the MAT?</i></b></p> <p>Only a lightly damp cloth should be used for wiping down the unit.</p> <p>DO NOT:</p> <ul style="list-style-type: none"> <li>▪ use spray cleaners directly on the keypad or use a saturated cloth for cleaning the unit.</li> <li>▪ clean the MAT 203/204 using alcohol, acetone, mineral spirits or any other petroleum or alcohol based product.</li> <li>▪ clean the Laser Window or Display Screen Window with soap, abrasives, or any alcohol or petroleum based solution.</li> <li>▪ leave the unit in the rain or direct sunlight or immerse the unit in water or any other liquid.</li> </ul>