

# Platform Requirements for ABELMed EHR-EMR/PM Clinical and Administrative Software

Computers running ABELMed EHR-EMR/PM MUST meet or exceed the recommended specifications. **In order to reduce your total cost of ownership, and allow maximum life and re-use of older hardware, ABEL ONLY SUPPORTS THE THIN CLIENT APPROACH using Microsoft Terminal Services for both local server-based systems as well as ASP.** With this approach ABELMed runs on a server(s) running Microsoft Terminal Services. Client machines also run the ABELMed application on the server, not locally. Such "thin" client machines can be Windows Terminal appliances, low end computers, or even older PC's.

**Important Warning: In order to avoid purchasing inadequate hardware always refer to the current Platform Requirements on the ABEL Web site. Printed copies can become out of date.**

Component	Recommended for ABELMed v9 or greater	Details
Server for 1-2 Physicians/Providers *	<p>Intel X3440 (quad core 2.53GHz 8MB cache) , 8 GB RAM, 2x 250 GB HD (RAID1), DVD</p> <p>Microsoft Windows Server 2008 R2 (64 Bit) Foundation, or Standard Edition with appropriate number of CALs</p> <p>Windows Remote Desktop Services CALs 2008 R2</p> <p><b>Note that only 64 bit operating systems are supported from Windows Server 2008R2.</b></p>	<p><b>Desk top operating systems such as XP, Vista and Windows 7 are inappropriate to use on servers and hence are NOT supported. Client machines may use any of the aforementioned operating systems.</b></p> <p>Faster processors generally give better performance. Faster models are released every few months. The fastest processors are usually higher priced however are recommended for better performance. Intel Xeon 3000 series processors (with 8 or 12MB of L2 cache) are a good value for small practices. Slower processors are not recommended.</p> <p>Larger hard drives are released every few months and in general the more storage capacity the better. If you are loading several software packages, or are storing digital images or x-rays on the system, larger drives with storage capacities in the range of 500-1000 GB are recommended.</p>
Server for 3-5 Physicians/Providers *	<p>Intel E5520 (quad core 2.26GHz 8MB cache) , 10-16 GB RAM (depending on number of users), 2x 500 GB HD w/RAID1, DVD</p> <p>Microsoft Windows Server 2008 R2 (64 Bit) Standard Edition with appropriate number of CALs for each workstation</p> <p>Windows Remote Desktop Services CALs 2008 R2</p> <p><b>Note that only 64 bit operating systems are supported from Windows Server 2008R2.</b></p>	<p>See above.</p> <p>Intel Xeon or AMD Opteron are both appropriate processors for larger servers. Intel XEON 5000 series processors with at least 8MB of cache are a good choice.</p> <p>Additional separate hard drives for SQL data and transaction logs can improve database performance.</p> <p>When the Terminal Server and application server roles are combined on a single physical server then larger drives with storage capacities in the range of 1-2 TB may be more appropriate.</p>
Additional Application / Terminal Server(s) for 6 or more Physicians/ Providers *	<p>Server with dual or quad core processor(s), 120GB HD (RAID 1). For RAM requirements please see the details column.</p> <p>Windows Server 2008R2 with Terminal Services and appropriate number of Terminal Services and Windows CAL's</p> <p><b>Note that only 64 bit operating systems are supported from Windows Server 2008R2.</b></p>	<p>At about 6 physicians it is recommended that additional server(s) be introduced, separating the database and application/terminal server roles. ABEL typically recommends one database server meeting the specs above, and one or more application/terminal servers hosting the ABELMed application. When DB/File server and Terminal server(s) are separate physical servers then disk space on the terminal server is not as critical, even 40GB of storage will be adequate. We recommend that you mirror the disk for redundancy to mitigate the risk of disk failure.</p> <p><b>Adequate RAM for the number of users is imperative. Allow at least 500MB per instance of the application for good performance.</b></p>
Thin client / terminal	<p>Any Windows PC with remote desktop client or Winterminal appliance (See Details column)</p> <ul style="list-style-type: none"> <li>• Windows 7</li> <li>• Windows Vista</li> <li>• Windows XP</li> <li>• Windows embedded.</li> </ul>	<p>Several options are available for thin client workstations:</p> <ul style="list-style-type: none"> <li>• Many older network enabled Windows PC's using Windows 98 or later can act as dumb terminals by running the Remote Desktop Client</li> <li>• New PC's, notebooks, or tablets even those running consumer/home operating systems can act as dumb terminals by running the Remote Desktop Client</li> <li>• Windows terminal appliances can be used as clients instead of using full PC's</li> </ul>
Tablets & Notebooks	<p>Centrino 1.5 GHz (or Pentium M), 512 MB RAM, 40 GB HD.</p> <p>Windows 7 Professional Vista Business or Ultimate, or Windows XP Tablet Edition SP2</p>	<p>For those who wish to use wireless networks 802.11g or n is the appropriate standard. <b>WPA2 is the minimum standard acceptable for wireless security.</b></p>
Display	19" LCD with 1280x1024x16 bit color	
Backup Unit (on server)	Online offsite backup services or External hard disks (USB or SATA).	<p>Remote backups via the Internet are recommended. External hard drives can also be used, but we recommend a drive for each day of the week as a minimum so that recent backups are not overwritten. At least some backups should be stored offsite.</p> <p>Although CD burners work for data backups, they are not ideal as backup units since their capacity (700MB) does not allow full disk backups to be done easily on a single volume. DVD's would have sufficient capacity for a very small practice, but ease of use of the software and the knowledge required of the backup operator should also be taken into consideration.</p>

\*ASP customers do not require a local file server

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Component	Recommended for ABELMed v9.03 or greater	Details
Database (on server)	See Details column.	MS SQL Server is required for ABELMed PM-EMR. This comes in several versions. MS-SQL Server Workgroup Edition is appropriate for most offices. ABEL can bundle RUNTIME licenses of MS SQL Server 2005 Workgroup Edition with ABELMed. You can also purchase MS SQL Server with your hardware from your hardware vendor. You will also require MS SQL Server client access licenses (CALs) for each workstation. The supported editions of MS SQL Server are; -Workgroup Edition (2005/8) -Standard Edition (2005/8) Requires MS Windows 200x Server -Enterprise Edition (2005/8) Requires MS Windows 200x Server
Office Productivity	MS Word 2007 MS Access 2007	Word is used for Word Processing & Prescriptions. (Word 2002 min) Access can be useful for reports & maintenance. (Access 2002 min)
Browser	Internet Explorer 7 or 8	
Adobe Reader	Current version	Adobe Reader (free download <a href="http://www.adobe.com">www.adobe.com</a> ) is required to read user manuals.
Network Interface Card	1 Gbps NIC	In all situations where computers share information on a network, each PC will require a network card or built in network interface.
Switch or Hub	1 Gbps switch	In a typical small business network the cables converge at an Ethernet switch. Gigabyte speed switches are recommended. A port is required for each computer.
Cable	Cat 5e or 6 Ethernet (See Details column.)	Ethernet cable will be required in your office running from each computer to a switch or hub. The switch is normally located centrally in your office, possibly in a wiring closet.
Communication software (on server)	A high speed Internet connection is strongly recommended for support purposes.	A high speed Internet connection is strongly recommended for support purposes. ABEL provides support via the Internet using ABEL provided tools, the customer just requires high speed Internet access and the Internet Explorer browser.
Laser Printer	Any printer with appropriate Windows Drivers (32M RAM recommended)	HP 2015, HP2020, 3005, 4000 series are known to work. Inkjet printers are not recommended for various speed and compatibility reasons.
Label Printer	DYMO Labelwriter 400 Thermal Label Printer	A number of customers have had problems with some of the other label printers. The DYMO 400 series has worked with all revisions tested.
Scanner	Recommended for EMR	ABELMed works with TWAIN compliant scanners. The speed for scanning the first page is an important factor when choosing a scanner, possibly more important than the pages per minute (ppm) statistic. The Fujitsu fi-5110c and the Canon DR-2050c have both worked very well for us.
Uninterruptible Power Supply (UPS)	Any UPS matching the power required by your system.	A good UPS is strongly recommended on your server to keep it running through short power outages, and allow time for a proper shutdown in the event of longer outages. Look for a UPS with good surge suppression and power regulation to protect your server from spikes and fluctuations in the power.
Sound Card & Speakers	Optional	A sound card with speakers or headphones are required for the ABELMed training videos and to view demo video clips.
Voice Dictation	See Details column.	A Microphone and Dragon Naturally Speaking software (ver. 8/9/10 tested) is required for voice dictation. <b>Dragon v10- Medical edition is recommended.</b>
Antivirus Software	See Details column.	AntiVirus Software, configured to check for definition updates on a daily basis, is strongly recommended for every PC connected to the Internet.
Firewall / Router	See Details column.	A router or security appliance is strongly recommended for all Networks with a high speed Internet connection. A software Firewall would be adequate for computers with a dialup Internet connection.