



## **Complete Requirements:**

Office Server & Remote Hosted Hardware and Networking Specifications

## Introduction

Please read the entire contents of this document thoroughly. This document is intended to serve as a reference for the purchase of Medscribbler installed on Windows based, compatible hardware and any required third party software. Failure to implement these specifications may result in an unsuccessful installation. This document is provided as a listing of requirements but should not be considered complete installation or configuration instructions. The information contained within this document is subject to change without notice.

Purchasing a total EMR solution includes not only the services of the Medscribbler application experts, but local IT specific expertise. In the event of a hardware device failure, a third-party vendor or manufacturer may agree to repair or replace the broken hardware, but Scriptnetics under the Medscribbler Support program will assist local IT to reload your software. Restoring backup data is a local IT specific task, unless Medscribbler Cloud is purchased with Scriptnetics computer management. If the data restoration services are not able to be performed by local independent vendors, the costs are typically not covered under a Medscribbler purchase, but Scriptnetics in most cases can greatly assist in quickly getting the system back up and running.

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## I. Important considerations

Medscribbler Applications include: Clerical, Clinical, Administrator, Transcription and Demographic Importer. Optional and included applications include: Lab interface, EZclaim interface, Telephone reminder system and Medical dictionary updater. For self hosted practice environments a dedicated file server should be used but a high end PC could be considered for a smaller practice if it too was dedicated to the Medscribbler database. The file server or high end PC with the Medscribbler database should not be considered for use as a workstation, except in emergencies.

The system must be equipped with a backup system that provides a simple yet fail-safe method for performing and verifying routine security copies of data. Software compression is not recommended during backup. In an effort to minimize unnecessary confusion, complication, and human error, Medscribbler requires that a complete system backup be performed on a daily basis. Additionally, a report (either printed or on-screen) showing the backup results is highly recommended. If you have any questions regarding the use of your backup, please contact your hardware vendor or local IT support. The Medscribbler included backup should be considered only "the first line of defense" for backups and the security of your electronic medical records. Please refer to the section titled Information regarding data backup at the end of this document for additional information regarding your backup.

Windows Terminal Services included with Windows Server does not support handwriting and other features of Medscribbler. Terminal Server does not need to be installed to operate any version of Medscribbler. The handwriting is NOT functionally supported by Terminal Services. Microsoft Windows Terminal Services itself is limited in its abilities to handle many of the other features of Medscribbler. Instead install the Medscribbler client on the remote computers and point the client computer by a VPN connection to the Medscribbler server computer on the LAN or WAN.

Multi-site installations require that offices are connected using dedicated data services. DSL, Frame Relay, T, OC, wireless 3G or other networking services and should be procured locally. Workplace business systems should not be loaded with extraneous software that will affect network load. Medscribbler is designed to optimize network load and can often overcome network abuse or poor local service. Correcting poor or abused networks is not covered in the free Medscribbler support.

The computer systems to run the Medscribbler electronic medical record system should contain only the software needed to run the medical practice, additional software loaded by the end users can cause problems with trouble free operation of the connected computers. Scriptnetics does not support the use of additional software on these systems and in the event they cause problems the customer should remove them. Examples of this software are (but not limited to): bit torrent, Norton and McAfee virus checkers, instant messaging and VOIP.

## II. Single site requirements

The definition of a "single site" system is one where the Medscribbler file server and all the computers connected to it are in one physical location. The Internet or other WAN application is not necessary for the clinicians or clerical staff to connect to the patient files. Medscribbler is part of the office LAN. There may be incidental access only that is from a remote location like a clinician's home.

The following information is provided to detail the exact requirements for each individual computer component of the system followed by sections on other hardware considerations..

### File server configuration:

Recommended	Minimum
Microsoft Windows Server 2008 standard	Microsoft Windows Vista
Dual core processor	2.0 Ghz CPU
4GB RAM	4GB RAM
HDD - 25GB per clinical user	HDD - 25GB per clinical user
removable backup media	removable backup media
hardware RAID	software RAID

### Clinical user: tablet PC, laptop and desktop

Recommended	Minimum	
	With handwriting, voice and remote access mobility	NO handwriting, voice or remote access mobility (office only)
Tablet PC with active digitizer, outdoor display and under 4.1 lbs	Tablet PC with active digitizer, outdoor display	Laptop with outdoor display or desktop with a 19in widescreen display
Windows 7 Professional	Windows Vista Business	Windows Vista
Dual Core CPU	Single Core CPU	Single Core CPU
4GB RAM	4GB RAM	2GB RAM
extra battery and charger	extra battery and charger	extra laptop battery
extra tablet pens	extra Tablet pens	

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### Clerical user

Recommended	Minimum
Microsoft Windows 7	Microsoft Windows Vista
4GB Ram	2GB Ram
Gigabyte network card	Network card
21 inch widescreen monitor	19 inch monitor

## III. Remote hosted requirements

The definition of a remote hosted system is one where the Medscribbler file server is located somewhere other than the same physical location as some or all the Medscribbler client Workstations, Notebooks and other peripherals for more than incidental use. An example would be a practice with two offices where the same clinicians worked in both locations. Another example would be a home care practice where the clinicians never worked from an office.

There are two types of remote hosted systems, one where the administration of the Medscribbler file server is handled by Scriptnetics and the other where the administration is handled by the purchaser themselves. The Scriptnetics managed administration is under the monthly Medscribbler Cloud purchase and includes: the Microsoft computer server, daily backup service, network bandwidth, network management and VPN services and software. The purchaser administered system needs network bandwidth service, network management and VPN installation and management. This may be done at the purchaser's location or may be contracted out to a server hosting service of the purchaser's choosing. It is strongly advised this type of set-up be managed by Microsoft certified IT specialists.

Scriptnetics does not support the use of the additional remote access except through a Medscribbler Cloud contract. Management of network bandwidth and VPN services are not covered under Medscribbler's free Support plan. In many cases Scriptnetics can assist to correct simple problems or give advice.

See section on Remote sites or mobile users (self hosted) under Networking requirements

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## IV. Ancillary Product Requirements

### Scanners:

Allow photos, documents, lab results, paper records, etc. to be scanned into the medical record. The right scanner is important to move the continuing stream of paper coming into the practice to a digital format.

A scanner should be a dedicated sheet feed scanner (not a multi-function.) The scanner software should allow batch scanning to a folder and be able to set the quality or dpi of the scans. It does not need to be twain compliant.

For network speed, scanned images of the paper documents need to be stored as individual JPEG's of 100dpi black and white for a file size no larger than a few hundred kilobytes. A significant number of scanners are unable to scan down to this size. A PDF format can also be used for small file size but Medscribbler only allows Tablet computer pen annotations on jpeg's. The key is scanners must be able to produce quality scans of small size. Medscribbler automatically re-sizes the display of these files to match the display capability of the computer screen.

Scanners are like printers and have consumables, rollers and feeders, that may need replacement bi-monthly or sooner for multiple Medscribbler users on the same scanner. Consider a service contract with a scanner supplier or IT consultant who understands scanners.

Scriptnetics can help with the original set-up of a scanner.

### Printers:

Normally a practice will have a minimum of two printers. One should be a dedicated prescription printer and one should be a regular printer.

An ink-jet printer is recommended for prescriptions as many states require printer ink to "embed" itself in the paper. Laser ink is not certified in many states as it can be modified easily the ink only sits on the paper surface. Special laser printers are available that use special "embedded" ink. Thermal printers developed by some companies for the medical prescription market are also recommended and supported by Medscribbler. Careful note should be made of the printer specifications concerning the paper sizes it supports. Mandatory state prescription paper specifications or the type of security paper or plain paper size being considered, may not match the printer paper capabilities. Medscribbler in most cases can utilize most inexpensive ink-jet printers for this prescription task.

For form, patient information, letter and other general printing any office type printer is sufficient for Medscribbler.

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**Auto-reminder system:**

Medscribbler has a module available with the ability to use the computer and a modem to auto-dial patients from the scheduler to remind them of an upcoming appointment. The Medscribbler auto-reminder can also log patient responses to the reminder. The installation of this type of system requires special modems and configuration on an office by office basis. It requires on-site installation. A few may have the in-house IT experience to install this feature themselves; others should contact Scriptnetics directly for cost estimates.

**Other items:**

- Backup hardware: see Information regarding data backup
- Internet Router and Firewall: see Networking requirements
- 56k external modem: see Networking requirements
- VPN or Remote Desktop: see Networking requirements
- VEC Infinity foot pedal: for use in transcription

## V. Networking requirements

### Single site and Medscribbler Cloud:

Recommended	Minimum
Network: TCP - IPv6	Network: TCP - IPv4
Network Cards: 1000MB (Gigabyte)	Network Cards: 10MB
LAN Wireless Network: 802.11n or 802.11g router (WPA)	LAN Wireless Network: 802.11a/b router (WEP)
Managed Switch	Hub (may be included in router)
(Internet provider modem, static IP for Medscribbler Cloud and remote access)	(Internet provider modem, static IP for Medscribbler Cloud or DNS service)

### Remote sites or mobile users (self-hosted):

A dedicated network and Internet service from a local Internet Service Provider, ISP, is required. This includes a minimum requirement of 100 Kbps per user for upload speed from the computer where Medscribbler Server is installed. Typically, an advertised 2mbps Internet connection is the download speed and gives only 250 to 500 Kbps upload. The functional upload speed is often closer to 150 to 350 Kbps. Therefore, calculate the plan from the ISP by user and upload in the ISP plan.

Additionally, Internet service providers that charge by the download quantity typically do so to contain the cost of the equipment to maintain speed in their network. A typical remote or mobile Medscribbler clinical user accessing a central file server for a normal month will download just over 2GB of data.

*Note: Medscribbler has been optimized for network use, any slowness is indicative of network, and / or computer "problems," and / or network mis-configuration. Medscribbler has also been designed to overcome as many of these "problems" that are outside its direct control as is possible. With careful planning and a common set-u, most Medscribbler network installations run smoothly.*

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## VI. Wireless Networking Recommendations

Due to the numerous variables that affect wireless connectivity, proper recommendations cannot be made without the evaluation of the wireless network's physical environment. Wireless connections are subject to interference from building materials, floor plans and layouts, closed doors, and other networks in surrounding offices. An appropriate number and quality of wireless access points for these factors is essential to Medscribbler performance.

Because of the complexity of building an adequate wireless environment in a medical office, including the implementation of adequate data security, we highly advocate a consultation with a certified wireless expert. If budget constraints prevent you from contracting these services or you are a "do it yourself'er" Scriptnetics can make suggestions in most cases to get a solo or small practice up and running adequately. Multi-location or mobile use in most cases will require an IT specialist. When implemented properly, wireless networks greatly increase productivity and efficiency.

## VII. Network cabling specifications

In order for your devices to communicate with each other and the server on a network, cabling is required. This cabling connects network compatible devices (such as P.C. workstations and printers) through a networking device (a hub, switch or router) back to the file server, where your database resides. The proper network cable is essential for dependable communication between your PC's and the server, allowing you to send, store, receive and print data. The quality of the cable and the proper placement of it within walls and ceilings can dramatically impact the speed at which your network performs.

Cabling should be completed by a qualified cabling service well in advance of your scheduled hardware installation date. It is better to contract a cabling specialist rather than a general electrician. It is possible to do it yourself, or to use a less qualified electrician, especially for a small office. Following, are some hints:

1. stringing cabling across lighting fixtures or near electrical wiring can cause interference leading to overall performance degradation.
2. use shielded CAT 6a network wire, while more expensive it gives better network speed even on legacy systems.
3. for future growth or office re-arrangement add many extra drops (plug connections), this also helps with convenience and safety having the jacks as close to the computer's location as possible. A shorter patch cable, is required to connect the computer to the wall jack.
4. all cabling should be installed and tested prior to computer and Medscribbler installation. Testing is essential to ensure that the cabling material itself is intact, and the jacks function correctly. A testing device, a "toner," may be purchased or simply connect each line one by one to the Internet modem through a cable using a configured Tablet PC or laptop. Make sure the wireless connection is turned off and it is connecting by the cable. Use an Internet speed application to determine if all cables are up to speed. Check for interference or loose connections if not.

## VIII. Information regarding data backup

When you purchase the Medscribbler file server, you should also purchase a tape backup unit or another type of backup system.

Data backup software will provide a degree of security and convenience. It is your responsibility to monitor the integrity of your backups and to consult with your chosen hardware vendor or local hardware technician on the proper procedures. As such, Medscribbler is not responsible for your backup.

In addition to purchasing a quality backup unit or program, it is absolutely essential that you purchase an adequate amount of media for rotation. You should never use the same tape, disk or USB drive two days in a row. Medscribbler strongly recommends that you purchase enough backup media to allow a backup each day of the week on a different media.

Medscribbler includes a backup system as a first line of security only. Microsoft Windows also includes a backup system that can be utilized for the second line of security. Together these can provide a minimum system if managed properly.

In the event that your data is damaged or corrupt, backups are your only source of protection. Because data storage media can be lost or destroyed by flood, fire, vandalism or theft, Medscribbler highly recommends that data backups be stored off-site. There should be an off premises rotation of these media. Those who desire additional safety will make an archival backup at the end of the month, and rotate through several monthly backups. Archival backups are also stored off premises, sometimes in a bank safe-deposit box.

Currently on-line backup services have proven not to work very well with the amount of data required to be stored for a medical practice and are not recommended.

## Addendum

### Typical solo doctor single site new hardware

**1 x Dell PowerEdge T310**

Dual Core Intel® Xeon® X3430, 2.4 GHz, 8M Cache  
4GB Memory (2x2GB), 1333MHz, Dual Ranked UDIMM,  
Windows Server® 2008, X64, Standard Edition, Includes 5 CALs  
RAID Hard Drive Controller - RAID 1  
2 x 250GB 7.2K RPM SATA 3Gbps 3.5-in Cabled Hard Drive  
16X DVD+/-RW Drive, Internal  
Dual Gigabit Network Adapter  
Monitor

Approximate cost: \$ 2000

**1 x Back-up system**

Iomega® REV® Backup drives and removable disks

Approximate cost: \$ 500

**2 x Fujitsu Lifebook t2020**

Windows Vista Business, (upgradeable to Windows 7)  
Intel core2 ULV su9400,  
4GB (2x2GB),  
120GB (5400rpm) SATA HDD,  
Intel wifi 5300,  
Digital battery charger with ac adapter (x1 only)  
Extra main lithium ion battery  
Extra pen stylus set (pack of 2)

Approximate cost: \$ 4850

**1 x Dell Workstation**

Dual Core Processor Core i5-650,3.2GHz Processor  
Windows 7 professional, 64 bit  
3GB, 1333MHz, DDR3  
Microsoft® Office Home and Business 2010  
No Pre-installed Anti-Virus/Security Software  
Dell E Series E2210 22in Wide Monitor,  
320GB2 SATA 3.0Gb/s  
Integrated Video

Approximate cost: \$ 1350

**1 x Fujitsu ScanSnap Scanner**

**1 x Samsung multifunction copy/print laser**

**1 x HP Deskjet Color Inkjet Printer**

**1 x D-Link DIR-825 Xtreme N Dual Band Gigabit Router**

**1 x APC's BR1200 RS 1200VA 780Watt Back-UPS x 2**

**1 x Medscribber and Windows Server BU software**

Approximate cost: \$ 495

Approximate cost: \$ 300

Approximate cost: \$ 45

Approximate cost: \$ 130

Approximate cost: \$ 350

Approximate cost: FREE

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