System Requirements

June 2020

eMDs

practice partner

Copyright notice

Copyright © 2020 eMDs, Inc. All Rights Reserved.

Publication date

June 2020

Product

Practice Partner, Release 11.2.1

Corporate address

eMDs, Inc.
10901 Stonelake Blvd.
Austin, Texas 78759
512-257-5200

Revision history

Date	Page	Description
06/02/2014	12	Added information that the Oracle client and server versions must match and must both be 11.2.0.4.
04/16/2015	9	Removed bullet point for Safari on iPad. WebView is not supported on tablets.
02/29/2016	10	Added Microsoft SQL Server 2012 as a supported database software platform.
04/25/2016	various	Also changed references to McKesson to eMDs.
05/10/2016	various	Updated instances of "Web View" (two words) to "WebView" (one word).
06/09/2016	7, 9	Added new supported versions of Windows (10) and Zetafax (version 17).
11/16/2016	25	Updated the best practices information for anti-virus solutions.
01/03/2017	29	Added a new UNCPATH.FL section.

Date	Page	Description
04/26/2017	various	Removed references to **Windows Server 2008** and **Windows Server 2008 R2 Standard** as they no longer are supported by Microsoft. Updated references to **Windows Server 2008 R2** to **Windows Server 2008 R2 SP1 or SP2**.
10/11/2017	5	Added a note stating that no RemoteApp feature is supported for any operating system.
11/13/2017	5	Added Windows 2012 R2 as a supported operating system for several servers/workstations.
01/04/2018	various	Added Windows Server 2016 Standard as a supported operating system for several servers/ workstations.
02/02/2018	12, 14	Updated the Application Server, Database Server (SQL or Oracle), and Thin Client Server sections.
02/19/2018	various	Added a note for network cards stating to clear the **Internet Protocol Version 6** check box in the properties of your network adaptor.
05/03/2018	5, 26	Updated supported operating systems for application server. Added a note for NTFS.
05/08/2018	14, 15	Changed minimum requirement for RAM (Memory) from 2GB to 8GB for WebView Server and Thin Client Workstation/Laptop/Tablet.
05/15/2018	5	Clarified that the Windows 10 Home operating system is not supported.
06/14/2018	29	Added a new Server Message Block 1 (SMB1) section.
07/03/2018	25	Updated the Anti-virus Solutions section.
10/10/2018	8	Added new Adobe Acrobat Reader section.
10/29/2018	5	Updated the introduction to the Operating Systems section.
01/25/2019	1, 6, 10	Added note about support for Windows Server 2008 and Microsoft SQL Server 2008 being discontinued in 2020. Updated the supported operating systems for the Database Server. Updated the database software platform requirements in the Database Software Compatibility section.
02/01/2019	5	Updated the Operating Systems section with recommendations for Windows 10 Professional.

Date	Page	Description
02/05/2019	9	Removed Windows Vista Business as a supported operating system. Added Internet Explorer 11 as a supported browser for WebView.
02/08/2019	1	Added new notes for Replace Drive and Windows Server 2016 and 2012.
03/04/2019	10	Added Microsoft SQL 2016 as a recommended database software platform.
05/08/2019	26	Noted that all users must belong to the domain.
05/17/2019	24	Added a new Connectivity and general requirements section.
05/24/2019	29	Added a new Offline file caching section.
06/04/2019	20	Updated the disk storage requirements for Practice Partner upgrades.
01/06/2020	1	Added a new Touch screens section.
01/09/2020	1	Added a new Workgroups section.
01/14/2020	various	Added Windows Server 2019 Standard as a supported version.
01/22/2020	various	Added note that Windows Server 2019 Standard is supported only for c-tree and SQL.
02/06/2020	1	Added a new Microsoft patching section.
03/04/2020	cover	Updated the cover page with new product logo.
04/15/2020	10	Added Oracle 19c as a recommended database software platform, removed Oracle 11g R2 as a recommended database software platform, and removed Microsoft SQL 2008 and Oracle 11g R2 as supported database software platforms.

Date	Page	Description
06/12/2020	11, 12, 14, 16, 17, 18, 25	Updated requirements in the following sections:
		Application Server
		Database Server (SQL or Oracle)
		Thin Client Server
		Interface Workstation
		Interface Server
		Standard Workstation/Laptop (Fat Client Configuration)
		Practice Partner Best Practices
		Also updated Windows 7 and Windows 8 references to Windows 10 throughout the document.

Table of contents

Chapter 1 - System Requirements

This document provides the system requirements for Practice Partner release 11.2.1.

Important notes

The following notes pertain to certain tasks, operating systems, and servers.

Touch screens

At this time, testing on touch screens has not been performed and your results may vary in application functionality.

Replace Drive

Do not use Replace Drive in a GPO setting as this will cause brief disconnects and users will experience errors. See the following KB article for more information: https://supportcenter.emds.com/richmond/articles/SocialKB_Import/Using-Replace-Drive-in-GPO-causes-Code-15-errors.

Microsoft patching

You must stay current on Microsoft patches. Items like .NET must be current as the application is highly dependent on them.

Workgroups

Workgroups are NOT supported.

Windows Server 2016 and 2012

Windows Server 2016 and 2012 may experience performance issues. See the following KB article for more information: https://supportcenter.emds.com/richmond/articles/SocialKB_Import/Server-2012-and-2016-performance-issues.

In this chapter

This chapter contains the following topics.

Recommended Configurations

The table below provides the eMDs Practice Partner infrastructure recommendations. These recommendations are based on a mix of industry standard technologies and proven experience of our customers. These recommendations also are based on the minimum requirements listed in this document. Adding additional resources to some equipment may change the recommended configuration.

These recommendations are for production environments only. Additional infrastructure requirements may be necessary for reporting, failover, testing, or training environments.

Recommendations are based on a maximum of five concurrent Practice Partner sessions per provider. For customers with multiple databases, the number of providers is calculated per database instance.

These requirements are specific to Practice Partner 11.2.1. Although eMDs tries to anticipate future hardware and software needs and compatibilities, recommended/required configurations may change with future versions.

Number of Providers	Database	Requirements
1-10	c-tree Server	• Application server. • Thin client server technology, for users connecting remotely (from home, over a WAN, through a VPN, and so on) or through wireless devices. • A separate thin client server, if the total number of thin client users exceeds 10. - For fewer than 10 thin client users, the application server can be used as a thin client server.
10-15	c-tree Server, Microsoft SQL	• Application server. • A database server, for Microsoft SQL. • Thin client server technology, for users connecting remotely (from home over a WAN, through a VPN, and so on) or through wireless devices. • A separate thin client server, if the total number of thin client users exceeds 10. - For fewer than 10 thin client users, the application server can be used as a thin client server.

Number of Providers	Database	Requirements
15-20	Microsoft SQL, Oracle	- Application server. - Database server. - Thin client server technology, for users connecting remotely (from home, over a WAN, through a VPN, and so on) or through wireless devices. - A separate thin client server, if the total number of thin client users exceeds 10. - For fewer than 10 thin client users, the application server can be used as a thin client server.
20+	Oracle	- Application server. - Database server. - Thin client server technology, for users connecting remotely (from home, over a WAN, through a VPN, and so on) or through wireless devices. - A separate thin client server, if the total number of thin client users exceeds 10. - For fewer than 10 thin client users, the application server can be used as a thin client server.

Optional Servers

The following table describes optional servers.

Server	Description
Interface workstation/server	Customers often have interfaces to external systems, such as laboratories. Depending on the configuration of the customer and the number of interfaces that will be run, an interface workstation or server may be necessary.
Fax server	For smaller customers, the fax board may be installed on one of the existing servers in the environment, typically the application server. For larger customers doing a significant volume of faxing, a separate fax server may be required. This server cannot be virtualized.
WebView server	If you are using the WebView product, you also must have a separate server to run the web services. This must be its own server and cannot contain patient data as the server must be configured to reside in the network's DMZ or have an encrypted tunnel to the Internet to facilitate web traffic. This server can be virtualized.

Operating Systems

The following table lists the operating systems that are supported and not supported. Please note that this is not an exhaustive list of unsupported products and the Microsoft End of Lifecycle should be considered. The supported products are those eMDs test at the time of release. This can change due to Microsoft End of Lifecycle.

To keep up to date with Lifecycle for Microsoft products, click this link: https://support.microsoft.com/en-us/lifecycle/search/1163.

Supported	Not Supported
32- and 64-bit server operating systems, unless otherwise specified. eMDs strongly recommends 64-bit operating systems for database servers and thin client servers.	Small Business Server products
	Home operating systems, such as Windows 10 Home
	• Windows 10 • Windows 2003 • Windows 2003 R2 • Windows XP

The following table lists the recommended and supported operating systems for use with Practice Partner 11.2.1.

NOTE: NO RemoteApp feature is supported for any operating system.

Server/Workstation	Recommended Operating Systems	Supported Operating Systems
Application Server	• Windows Server 2012 R2	• Windows Server 2019 Standard (c-tree and SQL only) • Windows Server 2016 Standard • Windows Server 2012 R2 • Windows Server 2012 (Datacenter, Essentials, and Foundation) For information on limitations for Windows Server Essentials and Foundation, eMDs recommends that you refer to your Windows Server documentation.

Server/Workstation	Recommended Operating Systems	Supported Operating Systems
Database Server	• Windows Server 2012 R2 or higher eMDs recommends running a 64-bit operating system for database servers with 64-bit database server software.	• Windows Server 2019 Standard (c-tree and SQL only) • Windows Server 2016 Standard • Windows Server 2012 R2 • Windows Server 2012 • Redhat Linux 6/7 (Oracle database only)
Thin Client Server	• Windows Server 2012 R2 or higher • Citrix MetaFrame 6.0	• Windows Server 2019 Standard (c-tree and SQL only) • Windows Server 2016 Standard • Windows Server 2012 R2 • Windows Server 2012 • Citrix MetaFrame 4.5
WebView Server	• Windows Server 2012 R2 or higher	• Windows Server 2019 Standard (c-tree and SQL only) • Windows Server 2016 Standard • Windows Server 2012 R2 • Windows Server 2012
WebView Workstation	• Windows 10 Professional	• Windows 10 Professional or Enterprise
Interface Workstation	• Windows 10 Professional	• Windows 10 Professional or Enterprise
Interface Server	• Windows Server 2012 R2 or higher	• Windows Server 2019 Standard (c-tree and SQL only) • Windows Server 2016 Standard • Windows Server 2012 R2 • Windows Server 2012

Server/Workstation	**Recommended Operating Systems**	**Supported Operating Systems**
Fax Server	• Windows Server 2012 R2 or higher	• Windows Server 2019 Standard (c-tree and SQL only) • Windows Server 2016 Standard • Windows Server 2012 R2 • Windows Server 2012
Standard Workstation/Laptop/Tablet	• Windows 10 Professional	• Windows 10 Professional or Enterprise
Thin Client Workstation/Laptop/Tablet	Because thin client workstations, laptops, and tablets do not run any Practice Partner software, any operating system capable of running the appropriate thin client software is acceptable. Some thin client devices come with a limited amount of on-device storage. Practice Partner has not been tested to run in this configuration. Thin client devices that access Practice Partner must do so through a thin client server.	

Third-Party Software Compatibility

eMDs sells several third-party software solutions that integrate with the Practice Partner software. Customers already may own this software or can purchase it through other vendors. To ensure proper operation, the following sections list the system requirements and specific software versions that are compatible with Practice Partner 11.2.1.

Adobe Acrobat Reader

Practice Partner 11.2.1 supports Adobe Acrobat Reader DC Version 2018.

Crystal Reports

Practice Partner 11.2.1 supports Crystal Reports version 13.0.

Dragon NaturallySpeaking

Practice Partner 11.2.1 supports Dragon NaturallySpeaking versions 9.5, 10.0, and 10.1.

The following table describes eMDs' system recommendations for Dragon NaturallySpeaking. Refer to Dragon NaturallySpeaking documentation for complete system requirements.

Recommendation	Description
Operating System	Windows 10 Professional
Memory	4GB RAM 6GB RAM for Intel Dual Core+ processors For Macbooks, at least 4GB RAM allocated to the Windows desktop alone.
Disk Space	10-35MB for a set of user files, depending on the speech model and vocabulary you select.
Microphone	ScanSoft-approved USB noise-canceling headset microphone with Dragon NaturallySpeaking installed locally on your workstation. Specific headsets: • Nuance PowerMic II • Philips SpeechMic III • Plantronics Calisto Bluetooth • Sennheiser headset For Macbooks, you must use a Nuance PowerMic II shared to Parallels Desktop v8.
Remote Desktop	Do not use Remote Desktop with Dragon NaturallySpeaking.
Citrix	Do not use Citrix with Dragon NaturallySpeaking.

ExitCare

Patient Records can be integrated with ExitCare version 6.3.0.6 or later.

Before you install ExitCare, ensure that your system meets the minimum requirements listed in the ExitCare documentation.

Midmark ECG

Practice Partner 11.2.1 supports Midmark ECG version 8.1. ECG devices now are supported on 64-bit operating systems.

Midmark Spirometer

Practice Partner 11.2.1 supports Midmark Spirometer version 8.1. Spirometry devices now are supported on 64-bit operating systems.

Patient Education

The following table lists the minimum workstation requirements for Patient Education.

Component	Requirement
operating system	• Windows 2008
web browser	Microsoft Internet Explorer 8 or later

WebView

The following table describes the browser requirements for Practice Partner WebView.

Requirement	Description
Browser requirements	• Microsoft Internet Explorer 8, 9, 10, or 11 • Firefox 3.5 and higher • Google Chrome WebView is not supported on tablets.

ZetaFax

Practice Partner 11.2.1 supports ZetaFax versions 17 and 2014.

Database Software Compatibility

The following table describes the database software platform requirements for eMDs Practice Partner 11.2.1.

To keep up to date with Lifecycle for Microsoft products, click this link: https://support.microsoft.com/en-us/lifecycle/search/1163.

Requirement	Description
Database software platform	Recommended platforms: • FairCom c-tree Server v7.12 • Microsoft SQL 2016 • Oracle 12cR2 or 19c (strongly recommended for new upgrades) Supported platforms: • Microsoft SQL 2012 • Microsoft SQL Server 2012 • Oracle 12cR1 Oracle12cR2 is not supported on Windows 2008 releases.

Express Editions of the database software are not supported. Additionally, unregistered or unlicensed copies of the database software are not supported.

Hardware Requirements

The hardware requirements allow customers flexibility in their deployment of Practice Partner. For specific formulas in determining how much hard drive space you need, see the Disk Storage Requirements section.
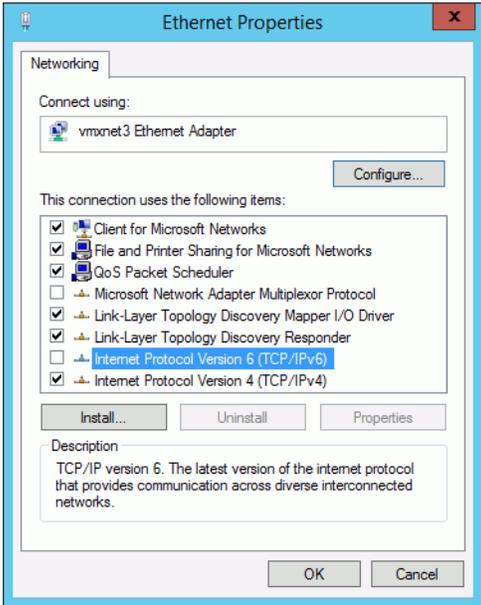
The requirements listed are for production environments only. Increased or additional resources may be necessary for additional environments, such as training or testing.

The requirements are for the Practice Partner software only. If you decide to run additional services (for example, DNS or Active Directory on your application server or Microsoft Office on your thin client server), you will need to add additional CPUs and/or RAM.

Application Server

The following table lists the hardware requirements for application servers.

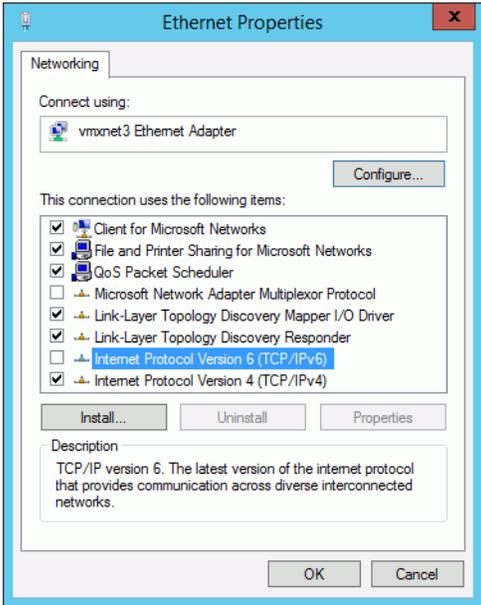| Component	Minimum Requirement
CPU (Processor)	8 or more cores at 2.3GHz or higher
RAM (Memory)	16GB If there are other components (for example, interfaces) on this server, you will need to add more memory.
Storage Array Type	RAID-10 for at least the Partner Data Drive

Component	Minimum Requirement
Network Card (NIC)	1Gbps In the properties of your network adapter, clear the **Internet Protocol Version 6** check box; otherwise, you may experience slowness in your application.

For smaller customers, these specifications will support up to 10 thin client users and the Practice Partner application folder.

Database Server (SQL or Oracle)

The following table lists the hardware requirements for 64-bit SQL and Oracle database servers.

Component	Minimum Requirement
CPU (Processor)	8 or more cores at 2.3GHz or higher
RAM (Memory)	SQL: 64G Oracle: eMDs recommends 256G or more (there is no upper limit)
Storage Array Type	RAID 10 or RAID 01 Log storage can be any RAID (RAID 5)
Optical Drive	DVD-ROM

Component	Minimum Requirement
Network Card (NIC)	1Gbps In the properties of your network adapter, clear the **Internet Protocol Version 6** check box; otherwise, you may experience slowness in your application.

Oracle and SQL servers require multiple RAID arrays. One array is for the database files; the other is for either transaction logs (SQL) or archive logs/redo logs (Oracle). eMDs recommends a third array for the operating system.

For Oracle, the client and server versions both must be 11.2.0.4.

These specifications are for a single production database. Additional databases (testing, training, production) require, at a minimum, an increase in RAM. Contact eMDs Support for further information.

Sample database server (fewer than 300 users)

- 2 x Quad Core Intel Xeon 2.5GHz

- 64GB RAM

- 2 x 73GB SAS RAID 01 (Operating System and Logs)

- 2 x 146GB SAS RAID 01 (Logs and Pagefile)

- 4 x 300GB SAS RAID 10 (Database Files)

Thin Client Server

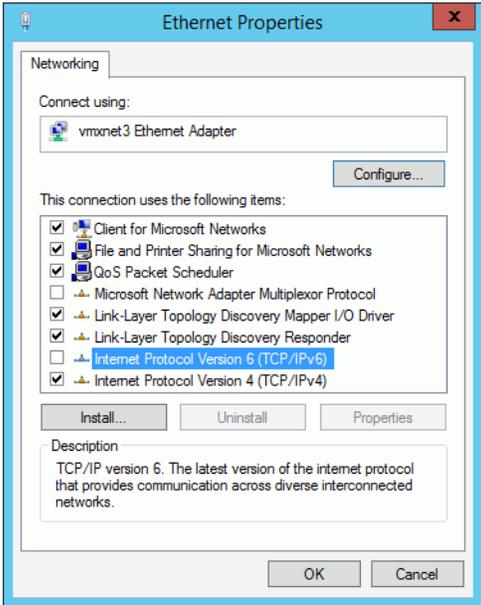The following table lists the hardware requirements for thin client servers.

Component	Minimum Requirement
CPU (Processor)	Dual Quadcore at 2.3GHz or higher
RAM (Memory)	16GB If there are other components on this server (for example, remote client interfaces), you will need to add more memory.
Network Card (NIC)	1Gbps In the properties of your network adapter, clear the **Internet Protocol Version 6** check box; otherwise, you may experience slowness in your application.
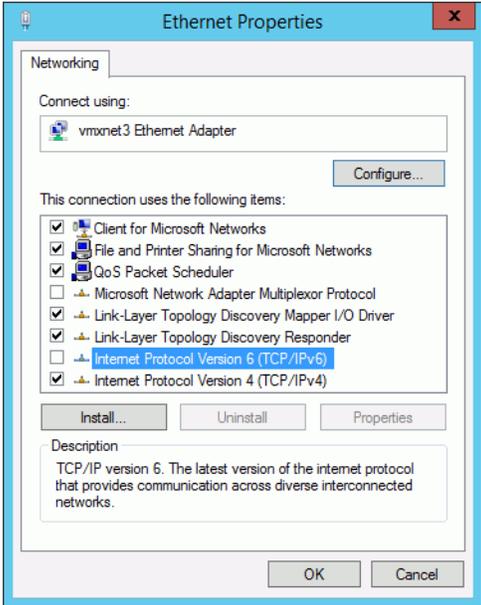
Thin client servers are designed to support 25 sessions of Practice Partner only. For each additional 25 sessions of Practice Partner, add 8GB of RAM and two more CPU cores.

WebView Server

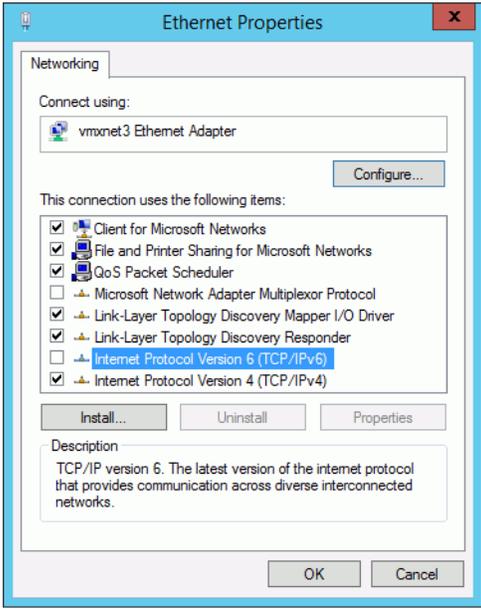The following table lists the hardware requirements for WebView servers.

Component	Minimum Requirement
CPU (Processor)	Intel Dual Core 2.0GHz
RAM (Memory)	8GB
Optical Drive	DVD-ROM

Component	Minimum Requirement
Network Card (NIC)	1Gbps In the properties of your network adapter, clear the **Internet Protocol Version 6** check box; otherwise, you may experience slowness in your application.

Thin Client Workstation/Laptop/Tablet

The following table lists the hardware requirements for thin client workstations, laptops, and tablets.
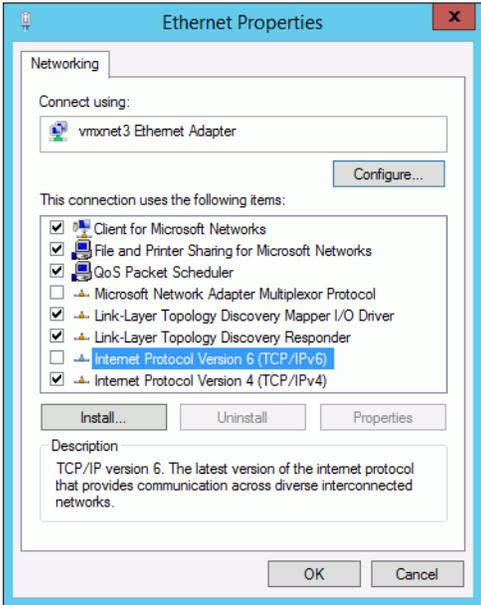
Component	Minimum Requirement
CPU (Processor)	Intel Dual Core 1.6GHz (1.0GHz for tablets)
RAM (Memory)	8GB

Component	Minimum Requirement
Network Card (NIC)	100Mbps (or 802.11g for wireless) In the properties of your network adapter, clear the **Internet Protocol Version 6** check box; otherwise, you may experience slowness in your application.
Video Resolution	1024x768 (1200x800 for widescreen displays)

Interface Workstation

The following table lists the hardware requirements for interface workstations.
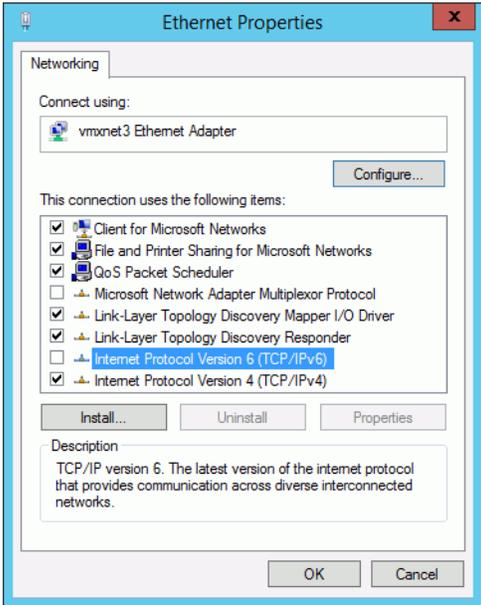
Component	Minimum Requirement
CPU (Processor)	Dual Quadcore at 2.3GHz or higher
RAM (Memory)	8GB

Component	Minimum Requirement
Network Card (NIC)	1Gbps In the properties of your network adapter, clear the **Internet Protocol Version 6** check box; otherwise, you may experience slowness in your application.

Interface Server

The following table lists the hardware requirements for interface servers.

Component	Minimum Requirement
CPU (Processor)	Dual Quadcore at 2.3GHz or higher
RAM (Memory)	8GB

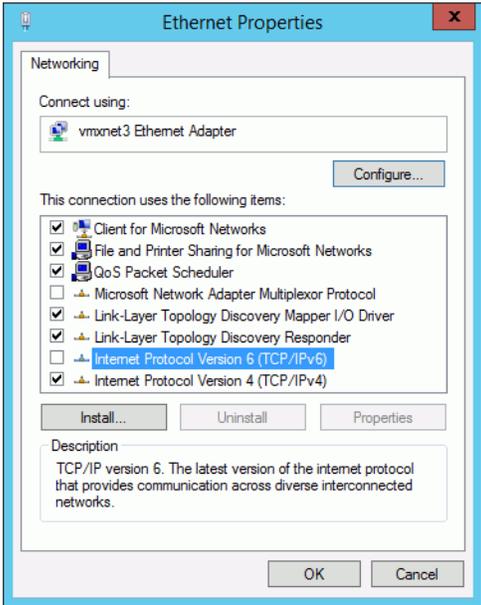| Component	Minimum Requirement
Network Card (NIC)	1Gbps In the properties of your network adapter, clear the **Internet Protocol Version 6** check box; otherwise, you may experience slowness in your application.

Interface servers are necessary when running more than 10 total interfaces. Additional CPUs or RAM are necessary for more interfaces to be run.

For this many interfaces...	Use an interface...
up to 9	workstation.
10+	server.

Standard Workstation/Laptop (Fat Client Configuration)

The following table lists the hardware requirements for standard workstations and laptops using a fat client configuration.

Component	Minimum Requirement
CPU (Processor)	Dual Quadcore at 2.3GHz or higher
RAM (Memory)	8GB

Component	Minimum Requirement
Network Card (NIC)	100 Mbps In the properties of your network adapter, clear the **Internet Protocol Version 6** check box; otherwise, you may experience slowness in your application.
Video Resolution	1024x768 (1200x800 for widescreen displays)

Disk Storage Requirements

The following table lists the disk storage requirements.

Disk Component	Recommended Storage
Base Practice Partner installation	10GB For large multi-provider/specialty single-database installations, more and more data becomes shared between providers so the total amount of space is not linear.
Practice Partner upgrades	The application server's drive should have enough storage space to contain the PPart folder. For c-tree sites, the upgrade can temporarily increase the PPart folder's size significantly. eMDs recommends allocating 1.5 times the size of the PPart root. For additional space savings, review the knowledgebase article named 'Recovering space after Backup and prior to the 11.2 upgrade'. Microsoft SQL and Oracle sites only: • The application server's drive should have enough storage space for the PP_Small file group or table space. The upgrade can increase the size to two times its original size for PP_Small.
ePrescribing (formulary files)	150GB ePrescribing formulary files can be relocated to a less expensive drive configuration. Contact your implementation consultant or Practice Partner Support for information regarding this configuration option.
Black-and-white imaging	2GB per provider per year 1GB per provider per year for 50+ providers in a single database No single formula can account for every circumstance. If you will be doing a large amount of scanning (for example, full patient charts for every patient in your clinic), discuss your storage needs with Practice Partner Support.
Color imaging	5GB per provider per year

Disk Component	Recommended Storage
Database growth	2GB per provider per year
	1 GB per provider per year for 50+ providers in a single database
	Oracle and SQL database types need additional storage for transaction logs, archive logs, and/or mutliplexed redo logs. This section only covers storage needed for Practice Partner application data.
SAN technology	Make sure that the LUNs are on disk groups that are of the same recommended RAID level as direct attached storage.

Storage Examples

The following examples represent how much storage to allocate when you build your Practice Partner infrastructure. If you have any questions or concerns, contact the eMDs support team to discuss your specific needs.

Example 1

Situation	Storage Solution
• 3-year server life expectancy • 50 providers • SQL database type • ePrescribing • Black-and-white imaging	• 10GB of space for base Practice Partner installation on an application server • 150GB of space for the ePrescribing formulary files on an application server • 150GB of space for SQL database files on a SQL server • 150GB of space for scanned images on an application server or a separate storage device

Example 2

Situation	Storage Solution
• 3-year server life expectancy • 3 providers • c-tree Server database type • ePrescribing • Black-and-white imaging	• 10GB of space for base Practice Partner installation on an application server • 150GB of space for the ePrescribing formulary files on an application server • 18GB of space for c-tree Server database files on an application server • 18GB of space for scanned images on an application server or a separate storage device

Peripherals

The following table lists the recommended printers, scanners, and fax boards.

Peripheral	Comments	Recommended Models
Printer	eMDs recommends TCP/IP-enabled, PCL5-compatible printers. For customers using thin client technology, eMDs recommends the Uniprint software. For more information, go to http://www.uniprint.net.	• HP P2035N (for light-duty work, such as prescriptions) • HP P4515N (for medium-to heavy-duty work, such as charts and reporting)
Scanner	eMDs requires TWAIN-compatible scanners. Any scanner that you purchase must include the necessary TWAIN driver software for use with the scanner. Direct scanning from the Zoom application requires a scanner attached directly to a PC. For customers using thin client technology, eMDs recommends the Remote Scan software. For more information, see http://www.remote-scan.com.	• HP ScanJet 5000/7000 • Fujitsu 6130
Fax Board	For small clinics, you can install the fax board on the application server or thin client server. For customers that do a larger amount of faxing, eMDs recommends a dedicated fax server.	• Brooktrout TruFax Series • Brooktrout TR1034 Series

Connectivity and general requirements

- Ensure that the following URLs are added to your trusted sites: https://microservice.emds.com/ and https://erx.emdscloud.com

- WLAN access in all administrative areas

- End-to-end network round-trip time of 120 ms or less from user workstations

- Network (packet) loss of 1% or less from user workstations

- Available network capacity (upload AND download) per 100 users at peak utilization: 5 Mbps

Practice Partner Best Practices

eMDs provides both requirements and recommendations for Practice Partner best practices.

Required best practices

The following table lists the required best practices for using Practice Partner.

Topic	Comments
Practice Partner Application Folder	The Practice Partner application folder must be on its own logical partition.
	The logical drive on your application server must be a drive letter that is not reserved by any workstation (P: is the recommended drive letter).
	The drive letter where the application folder resides on the application server must be available to be mapped on every Practice Partner computer.
Backups	Backups are required. eMDs recommends a tape rotation with periodic offsite backups.
	eMDs Practice Partner does not install, support, or maintain backup solutions. This is the responsibility of the customer.
	eMDs Practice Partner cannot be held responsible for data loss incurred due to incomplete or corrupt backups.
Anti-virus Solutions	An anti-virus solution must be installed with the eMDs-recommended configurations.
	The application folder and client folder must be excluded from real-time/on-access scanning. eMDs recommends scheduled scans when users are not in the system.
	Windows Defender is installed for versions 8.0 and above and is recommended by eMDs. Ensure that exclusions are set. eMDs recommends turning off Windows Defender during installation, otherwise it may interact with files and some files may not get installed.
	Any anti-virus that does not allow for exclusions should not be installed. If asked by Support, you must be able to show the exclusions.

Topic	Comments
Oracle or SQL Database Platforms	Customers using the Oracle or SQL database platforms must have qualified DBA services. This can be a full-time employee of the organization or a contractor. eMDs does offer a variety of DBA service solutions as additional service contract fees.
Teamed Network Interface Cards	The use of teamed network interface cards (NICs) is not supported.
Domain/Active Directory Infrastructure	Practice Partner requires a domain/Active Directory infrastructure. All users must belong to the domain.
New Technology File System (NTFS)	NTFS is required due to the necessity to set file permissions. **NOTE**: NTFS has a built-in compression feature called NTFS compression. Do not use this feature on the **ppart** folder as it can cause performance issues.
Microsoft Security	The following Microsoft security features and software must be disabled during installation. • User Account Control (UAC) • Data Execution Prevention (DEP) • Windows Firewall **NOTE for UAC**: Installing patches with the Update Manager should be run 'AS ADMINISTRATOR'; otherwise, UAC should be OFF or you will see an error.

Recommended best practices

The following table lists the recommended best practices for using Practice Partner.

Topic	Comments
Windows Pagefile	The Windows pagefile should be on its own disk controller and should be two times the amount of RAM in the machine.
Domain Name Servers (DNS)	DNS should be on the same subnet as the Practice Partner servers.
Hardware	eMDs highly recommends hardware from experienced and trusted vendors such as HP, Dell, and IBM. eMDs strongly discourages White-box servers.

Topic	Comments
Operating System Partition	Provision enough space on your operating system partition for growth. eMDs recommends 32GB+ for your operating system partition.
Firewalls	Customers should have a hardware-level firewall protecting their network.

Special Considerations

Clustering

Practice Partner does not support clustering. The application server cannot be clustered.

Oracle or SQL servers may be able to be clustered. This is an untested platform and it is the responsibility of the IT personnel to implement, maintain, and, if necessary, remove from the environment if it is found to be problematic.

Encryption

Practice Partner can use third-party encryption tools to secure patient data. eMDs' tested encryption solution for Practice Partner is Microsoft's BitLocker tool included as part of Windows 2008 and higher. If you would like to use this solution, documentation is provided on [Salesforce](#). Other tools may work but it is the responsibility of the customer's IT personnel to implement these solutions. These other third-party solutions are not tested by eMDs.

Virtual Machines

eMDs supports the use of virtual servers to run the Practice Partner application. Virtual servers must be implemented only by IT staff familiar in their implementation, configuration, and administration. Hardware resources allocated to virtual servers must be equal to the resources required for physical hardware. eMDs does not recommend virtualizing database servers running Oracle or Microsoft SQL. eMDs recommends VMWare vSphere 4.0 (or higher) or Microsoft Hyper-V for hypervisors.

eMDs currently is evaluating workstation virtualization (such as VMWare View) and is not currently supported with Practice Partner.

Thin Client Server Limitations

Use of a thin client server has certain limitations. If you have any questions about these limitations, contact Practice Partner Support.

Midmark ECG

Midmark ECG is supported in a standalone environment, meaning that you create and save results using Midmark's software. You then can export the results from Midmark and import them into Practice Partner's database. By assigning the patient IDs in the Midmark software, Practice Partner will automatically import the report into the appropriate patient chart. In order for this configuration to function, a workstation must have a serial port; some tablet PCs do not have a serial port and therefore would not work. If the computer doesn't have a serial port, you can purchase a Midmark Serial to USB adaptor.

Midmark Spirometer

Midmark Spirometer is supported and can be used in real time. To use Midmark Spirometer in real time, you must have the serial version of Midmark Spirometer and the workstations must have serial ports; some tablet PCs do not have a serial port and therefore would not work. If the computer doesn't have a serial port, you can purchase a Midmark Serial to USB adaptor.

Dragon NaturallySpeaking

You can use the Dragon NaturallySpeaking speech recognition product in a thin client environment. You must install Dragon locally. Using the 'show dictation box' feature in Dragon, you can dictate directly into Practice Partner running on the thin client server. Certain integration features are not compatible and do not function, but this method does allow for speech recognition capabilities within Patient Records.

For workstations using Dragon NaturallySpeaking with Practice Partner, eMDs recommends 4GB of RAM.

UNCPATH.FL

This file contains the share information necessary for the Practice Partner services to run. Valid entries either are **LOCAL** or the UNC path to the PPART share, such as **\\servername\share**. This UNC path will be the same as fat client workstations map. UNCPATH.FL should not have the actual PPART folder within it.

Permissions for this share must be set so that the local SYSTEM user has full control to the share.

For the services to behave properly, DNS/Active Directory must be functioning correctly so that permissions and hostname resolution work.

The following list offers a list of items to check when troubleshooting services:

- Permissions to the share (SYSTEM)
- DNS resolution of hostname
- LOCAL vs. UNC pathing

Server Message Block 1 (SMB1)

Currently, Practice Partner uses SMB1 in communication and it is necessary. Verify that SMB1 is in the registry and that Microsoft patches do not turn it off. To enable SMB1, refer to the Microsoft articles based on your operating system.

Offline file caching

Issue

When you open the Patient Records client, an error displays stating that the scheduler configuration does not match or the demographic settings do not match.

Cause

Offline file caching is enabled in Windows. When offline file caching is enabled, the operating system stores a local copy of ppart.ini and potentially other configuration files in C:\Windows\CSC\v2.0.6.

The client reads these cached copies instead of the configuration files in the PPART application folder. This is a setting in the Windows operating system and not a setting in Practice Partner, Medisoft EMR, or Lytec EMR. Since C:\Windows\CSC\v2.0.6 is a protected system folder, ownership of that folder must be changed before it can be cleaned out.

Solution

IT personnel must disable offline file caching and purge the contents of C:\Windows\CSC\v2.0.6. Refer to instructions at https://social.technet.microsoft.com/Forums/en-US/24346edb-80ed-49a7-b7b5-aecebff7b725/how-to-delete-the-offline-file-cache-or-reset-the-offline-file-cache-in-windows-10?forum=win10itpronetworking.

Glossary

This section defines terms used in the System Requirements book.

Application Folder

Every Practice Partner installation has an application folder. This folder contains (but is not limited to):

- configuration files
- client software installation files
- interface files
- temporary files
- image files (unless specifically configured otherwise)

Application Server

All customers will have an application server. This server is where the Practice Partner application folder resides. Practice Partner network services also are installed on this server. For customers using the c-tree Server database type, this is where your database files will reside.

Database Server

Customers running Oracle or SQL for their database type also will have a database server. This server runs the RDBMS software and is where the majority of the patient data will be stored. This is in addition to an application server, as the application server still will be required to house the application folder.

Standard Workstation

A standard workstation also may be referred to as a fat client or thick client. The Practice Partner software is installed on the computer itself. Standard workstations must be on a LAN to the application server (and database server, if applicable).

Thin Client Server

A thin client server is a shared resource that runs applications, as opposed to having the software installed locally on PCs. It provides advantages in ease of management and potentially cost savings in software licenses and client hardware. For large organizations, there may be several thin client servers in the network. Thin client servers can use Terminal Services by itself or also run the Citrix software. Use of Terminal Servers and/or Citrix is referred to as thin client server technology. Thin client servers are required when users are connecting from remote locations (through a WAN or broadband) or through a wireless connection. Thin client servers also can be used on a LAN to simplify administration. Make note of the thin client server limitations in this document.

Thin Client Workstation

A think client workstation refers to a device whose purpose is to connect to a thin client server. This can be a workstation, tablet, or a purpose-built thin client device such as a Wyse Terminal. The Practice Partner application software is installed on a thin client server. Information that passes across the network from the end user is keystrokes, mouse movements, and screen images.

Index