ImproMed®
hardware & software
specifications

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Introduction

ImproMed hardware standards are determined by evaluating currently available hardware. We've provided two options for each hardware standard—good and best. Good hardware will get you through the immediate future. Best hardware will be more likely to last longer in to the future. Covetrus® reserves the right to modify or change the recommended hardware specifications at any time without prior notice.

Covetrus provides support for ImproMed (Infinity) and ImproMed Equine (Triple Crown) practice management software. When necessary, versions will be listed to ensure that the requirements needed are accurate for all supported versions of the software.

Covetrus recommends business-class computers and printers. Covetrus hardware offers approved and tested models. Discount store, home quality and (non-professional) custom-built machines are not recommended. Before making the decision to buy a custom-built machine from a non-commercial company, please ensure they are properly certified and that they use only the highest quality, business class components.

Using home-based components is highly discouraged. Purchasing business-class machines will increase reliability, performance and productivity within your office. Covetrus cannot reasonably guarantee compatibility with every printer brand and model. Please consult with our hardware sales team for information.

If your business is storing large quantities of binary information (images, forms, and take-home instructions) within the database, Covetrus recommends the use of a dedicated server. Storing large quantities of binary information within a database requires the server to use more resources to manage the database and may yield less than desirable operating performance when using a non-dedicated server.

ImproMed server specifications

Non-dedicated servers 1 – 10 users		
	Good	**Best**
Processor	Core i5 3.0 GHz 6th Gen	i7 3.2GHz 9th Gen
Operating System	Windows® 10, Server 2012R2	Windows 10, Server 2016 or 2019
Memory	32 GB DDR3	64 GB DDR4
Storage	2x 500 GB RAID1 HDD/SSD	2x 1 TB RAID1 HDD/SSD
Networking	1 Gb	1 Gb
Video	Onboard	Onboard
Optical Drive	SATA DVD	SATA DVD-RW
Power Supply	500 W	500 W
Monitor	19" LCD	22" LED
Battery Backup	650 VA BBU	1000 VA BBU
Devices	USB keyboard and mouse	USB keyboard and mouse

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Domain servers 1 – 15 users (no terminal services)	Good	Best
Processor (Hyper-threaded)	i7 3.0 GHz 6th Gen	Quad Core Xeon 3.7 GHz
Operating System	Server 2016	Server 2019
Memory	32 GB DDR4	64 GB DDR4
Storage	2x 1 TB RAID1 HDD/SSD	4x 1 TB RD5 SAS 12 GB/s
RAID Controller	Onboard	PCI-e w/ cache & BBU
Networking	1 Gb	Dual 1 Gb Paired
Video	Onboard	Onboard
Optical Drive	SATA DVD	SATA DVD-RW
Power Supply	500 W	500 W
Monitor	19" LCD	22" LED
Battery Backup	650 VA	1000 VA
Virtual Machines (VM)	VDC1 w/ SQL	VDC1 & VSQL
Recommended VM Replication Server	Yes	Yes

ImproMed® hardware & software specifications

Domain servers 15 – 25 users	Good	Best
Processor (Hyper-threaded)	6C Core Xeon 3.0 GHz	8C Xeon 2.1 GHz
Operating System	Server 2016	Server 2019
Memory	64 GB DDR4	128 GB DDR4
Storage	4x 1 TB RD5 SAS 12 GB/s	4x 2 TB RD5 SAS 12 GB/s
RAID Controller	PCI-e w/ cache & BBU	PCI-e w/ cache & BBU
Networking	Dual 1 Gb Paired	Dual 1 Gb Paired
Video	Onboard / PCI-e card	Onboard
Optical Drive	SATA DVD-RW	SATA DVD-RW
Power Supply	500 W	2x 920 W Redundant
Monitor	19" LCD	19" LED
Battery Backup	1000 VA	1500 VA
Virtual Machines (VM)	VDC1 & VSQL	VDC1 & VSQL
Recommended VM Replication Server	Yes (VDC2)	Yes (VDC2)
Terminal Services on a 2nd server	Yes (VDC2 \ VTS)	Yes (VDC2 \ VTS)

ImproMed® hardware & software specifications

Domain servers 35+ users	Good	Best
Processor (Hyper-threaded)	Dual 6C Xeon 3.0GHz	8C Xeon 2.1GHz
Operating System	Server 2016	Server 2019
Memory	128 GB DDR4	256 GB DDR4
Storage	4x 2 TB RD5 SAS 12 GB/s	4x 2 TB RD5 SAS 12 GB/s
RAID Controller	PCI-e w/ cache & BBU	PCI-e w/ cache & BBU
Networking	Dual 1 Gb Paired	Dual 1 Gb Paired
Video	Onboard / PCI-e card	Onboard
Optical Drive	SATA DVD-RW	SATA DVD-RW
Power Supply	2x 850 W Redundant	2x 920 W Redundant
Monitor	19" LCD	19" LED
Battery Backup	1500 VA	1500 VA
Virtual Machines (VM)	VDC1 & VSQL	VDC1 & VSQL
Recommended VM Replication Server	Yes (VDC2)	Yes (VDC2)
Terminal Services on a 2nd server	Yes (VDC2 \ VTS)	Yes (VDC2 \ VTS)

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⚠️ **For VM replication, both servers MUST have the same host operating system.**

Virtual machine configuration baseline recommendations (Server 2012R2, 2016 & 2019)	
Virtual domain controller (VDC1)	Static/Start-up 8 GB RAM, 2 Processors, 100 GB Fixed VHDx
Virtual domain controller w/ SQL (VDC1)	Static/Start-up 22 GB RAM, 4 Processors, 400 GB Fixed VHDx
Virtual SQL server (VSQL)	Static/Start-up 22 GB RAM, 4 Processors, 400 GB Fixed VHDx
Backup domain controller (VDC2)	Static/Start-up 8 GB RAM, 2 Processors, 100 GB Fixed VHDx
Virtual terminal server (VTS)	Static/Start-up 22 GB RAM, 4 Processors, 250 GB Fixed VHDx
Remote access	ImproMed Support must have remote access to the host server with Administrator rights

📄 **Review Appendix B: Enterprise Edition Specifications for ImproMed Enterprise Specifications.**

Server operating systems compatibility

Covetrus requires all operating systems to be on the most recent major release. Specified legacy versions of ImproMed may run in limited functionality on newer operating systems while waiting to upgrade to new versions of ImproMed.

⚠️ **If a version of an operating system is not listed, ImproMed platforms do NOT support it.**

Legend	Compatible	Incompatible	Limited Functionality

Operating systems recommended for different environments

Operating system versions	Server environments			
	Non-dedicated servers	Standard servers	Terminal servers	Virtual hosted servers
Windows 8.1 Professional				
Windows 10 Professional				
Windows Server 2012 R2				
Windows Server 2016				
Windows Server 2019				

Operating system versions for ImproMed software

ImproMed versions	Windows server		
	2012 R2	2016	2019
3.5 - 4.1			
4.2 - 4.6			
4.7 - 5.1			
5.2 - 19.20 and higher			
ImproMed Equine versions			
3.0			
3.2 - 19.20 and higher			

Your version of ImproMed may be labeled Infinity. ImproMed Equine may be labeled Triple Crown.

ImproMed® hardware & software specifications

Workstation specifications

Desktops		
	Good	**Best**
Processor	i5 2.5 GHz 4th Gen	i5 2.8 GHz 9th Gen
Operating System	Refer to: Workstation operating systems compatibility	Refer to: Workstation operating systems compatibility
Memory	8 GB DDR3	16 GB DDR4
Storage	500 GB HDD	250 GB SSD
Networking	1 Gb	1 Gb
Video	Onboard	Onboard
DVD	Yes	No
Monitor	22" LCD	22" LED
Wireless	No	No

ImproMed recommends these components as a minimum specification. Adding additional memory can prepare the practice for future releases.

ImproMed® hardware & software specifications

Tablet / Laptop / Notebook	Good	Best
Processor	i5 2.5 GHz 4th Gen	i5 2.8 GHz 9th Gen
Operating System	Refer to: **Workstation operating systems compatibility**	Refer to: **Workstation operating systems compatibility**
Memory	8 GB DDR3	16 GB DDR4
Storage	500 GB HDD	250 GB SSD
Networking	1 Gb (except tablets)	1 Gb (except tablets)
Video	On CPU	Dedicated
DVD	Yes	No
Monitor	12.1" / 15.4" / 15.4"	12.1" / 17" / 17"
Wireless	802.11N	802.11AC

⚠ **If you are looking to use ImproMed or ImproMed Equine Mobile edition, please contact Covetrus Hardware Sales for specifications and review.**

Smart devices (iPads and tablets) - Terminal services only	
Apps	Remote Desktop Client (supports a terminal server environment)
Adapters	Built-in Wireless
Display	10" Touch Screen or larger

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Workstation operating systems compatibility

Legend	Compatible	Incompatible

ImproMed versions	Workstation operating system	
	Windows 8.1 Professional	Windows 10 Professional
3.5 - 4.1		
4.2 - 5.1		
5.2 - 19.20 and higher		
ImproMed Equine versions		
3.0		
3.2 - 19.20 and higher		

Your version of ImproMed may be labeled Infinity. ImproMed Equine may be labeled Triple Crown.

⚠ • **Covetrus requires all operating systems to be on the most recent major release.**
• **If a version of an operating system is not listed, ImproMed platforms do NOT support it.**

ImproMed® hardware & software specifications

Microsoft® SQL

As a Microsoft Gold Independent Software Vendor, Covetrus, Inc. has the rights to distribute Microsoft SQL Server Standard Runtime at a reduced cost to its customers.

Microsoft SQL Server has updates and needs to be maintained in order to remain secure with the latest features provided by Microsoft. To ensure the integrity of the program, the Software must have its own SQL instance. Because of this close integration there exists the possibility of conflicts and the need to troubleshoot and repair certain aspects of the operating system. Below we have included tables that show what versions of SQL Server are compatible with Software and Operating Systems.

Covetrus recommends all SQL versions to be on the most recent major release.

Legend	Compatible	Incompatible

Software versions	SQL Versions				
	2012	2014	2016	2017	2019
4.6 and older	Incompatible	Incompatible	Incompatible	Incompatible	Incompatible
4.7 - 4.8		Incompatible		Incompatible	Incompatible
5.0 - 5.1 / 3.0 (Equine)				Incompatible	Incompatible
5.2 / 3.2 (Equine) - 19.20 and higher					

Your version of ImproMed may be labeled Infinity. ImproMed Equine may be labeled Triple Crown.

All SQL versions listed are standard and above. ImproMed and ImproMed Equine are not supported using any SQL Express release.

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In the table below, the service pack numbers correspond to the Operating System, not the SQL service packs. After installing any SQL, please make sure to install any available service packs.

Legend	Compatible	Incompatible

Operating system versions	SQL Versions			
	2012	2014	2016	2019
Windows 8.1 Professional				Incompatible
Windows 2012 Server and 2012 R2				Incompatible
Windows 10 Professional	Incompatible			
Windows Server 2016	Incompatible			
Windows Server 2019	Incompatible			

⚠ **For database replication, both servers MUST have identical SQL versions between the servers.**

Networking specifications

Network outlets

All desktops and domain servers should have their own network outlets. Each network device (server, workstation, printer, print server and/or router) should have their own dedicated line to the main network switch the server is connected to. If there are multiple network ports on the server, each one needs an independent line to the main network switch.

Switches

Gigabit switch along with Cat 5e or Cat 6 cables. Make sure you have enough ports on your switch to support all computers, routers, printers, and print servers.

Routers

Industry standard routers along with a Cat 5e or Cat 6 cable. If multiple locations are being used, please use VPN Routers.

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Wireless	
Wireless Router	Wireless performance depends on the practice environment (Wireless interference reference: **https://www.actiontec.com/wifihelp/wifi-networking/interference-affecting-wireless-network/**). Please use the standards for an 802.11N Network. Wireless routers should be rated for 802.11AC with a minimum rating of AC1700.
Wireless Antenna	
Display	

Covetrus does not support or recommend any desktop workstations using wireless connections. Wireless mesh networks are supported with terminal connections only.

Additional hardware specifications

Document Printers
Business grade printers with driver support for Windows Server Operating Systems. ImproMed and ImproMed Equine work best when using PCL based drivers.

Print Servers
Use Print Servers when possible so printers are not directly connected to the workstations using them. If the Print Server is NOT built into the printer, please ensure the printer functions can be supported using a print server by checking with the printer manufacturer (i.e. DYMO printers do not work with most common USB print servers because of their power save feature).

Label printers

- Zebra ZD410
- DYMO 450
- PetDetect (TSP700II)
- ID Cards (P310, SD260, SP35)

If any label printer is selected outside of the above models, additional charges for label formats and testing may occur.

Signature pads
- Topaz LBK462-HSB-R (USB)
- Topaz LBK462-B-R (Serial)*
- Topaz LBK462-BSB-R (USB Virtual Serial)*

*Works with Virtual/Hosted Solutions

Bar code scanner with stand
Hand held or hands free operation, used for point of- sale, document processing, inventory control, and card reading
- 650 nanometer laser reader, long range, and short range capability

Cash drawer
Serial only. Requires a serial cable between the computer and cash drawer.

Scanners
Direct to PDF, for example, either the FUJITSU Scansnap iX500 and S1300i.

Software specifications

Word Processor		
	Good	**Best**
Microsoft	2010 Home & Student or higher	2019 Home & Business

Please make sure that all word processing software is installed on the workstation if any integration with ImproMed software is desired.

Collaboration Tools
We recommend using any reputable third party solution managed by your IT professional.

Anti-Virus
Anti-Virus only, Internet security suites are not recommended. Scans should run local drives only and installed on all servers and workstations.

Here is a sample of our firewall exclusions:

- SQL Server Services
- SQLSVR.exe (the actual program exe that runs SQL)
- SQLBrowser.exe (the SQL Browser service announcing the server name to computers on the network)
- External Integrations that run on other computers
- ImproMed Universal Lab reader
- DICOM integration
- VetLogic Data uploader
- ImproMed Database Manager

Some basic antivirus application exclusions to not be scanned, should include, but not be limited to:

- The practice management software install directory
  (i.e. [C:\Program Files (x86)\Impromed] (Note this may be different for older version).
- Frequently accessed Files for the application i.e. the ImproMed Global share:
  \\ServerName\iDocs
- The SQL Database Path i.e. C:\ImproMed
- The SQL Database Backup Location i.e. C:\iBackup

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Appendix A: Hardware worksheet

Please verify your hardware meets the following criteria:

☐ **Workstation specifications** are compatible with your Software version.

☐ You have installed the correct **Microsoft SQL** Version that works with the Windows Operating System installed on your server(s) and workstation(s).

☐ **Server specifications** meet or exceed the recommended requirements.

☐ Verify all of your **software specifications**, **networking specifications**, and **additional hardware specifications** items meet or exceed the requirements listed on the previous pages. For ease, please use this and the following pages for writing down your existing server and workstation specifications.

Server Information	
Type:	
Provider:	
Speed:	

Support Contact for Local / Third Party Hardware

Internet Information	
Processor:	
Memory:	
Drives:	
Display:	
Adapters:	
Power Supply:	
Operating System:	
Input Devices:	
Battery Backup:	
SQL Version:	

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Workstations	
Processor:	
Memory:	
Drives:	
Display:	
Power Supply:	
Adapters:	
Operating System:	
Input Devices:	
Battery Backup:	

Workstations	
Processor:	
Memory:	
Drives:	
Display:	
Power Supply:	
Adapters:	
Operating System:	
Input Devices:	
Battery Backup:	

Workstations	
Processor:	
Memory:	
Drives:	
Display:	
Power Supply:	
Adapters:	
Operating System:	
Input Devices:	
Battery Backup:	

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Tablet PC / Laptop / Notebook	
Laptop / Notebook	
Processor:	
Drives:	
Table PC Display:	
Laptop Display:	
Docking Station:	

Backups

Printers

Networking	
Switch:	
Router:	
Cabling:	
Patch Panel:	

Please list as much information as possible for the following:

Additional Software (QuickBooks, Microsoft Office, etc.)

Integrations (DICOM, Labs, etc.)

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Appendix B: Enterprise edition specifications

Many times multi-location businesses have a corporate or home office which manages key aspects of the overall business. This corporate office has specific needs that revolve around centralized reporting and processes which help support the individual locations or franchises. The needs of the corporate office will greatly differ from the needs of the group's veterinary practices.

ImproMed Enterprise Edition is a software specifically designed to meet the needs of both your corporate office and the individual veterinary location (franchise). Designed in two modules, Corporate and Franchise, each module is specifically developed to cater to the needs of its users while working seamlessly together.

The Corporate Module addresses key business needs like pricing, purchasing, consolidated reporting, and provides a centralized platform for managing key aspects of your multi-location group. It is a business management software for the corporate office. The Franchise Module provides the individual veterinary practice everything it needs to run a practice locally through the use of ImproMed practice management software. It is your veterinary medical management software. ImproMed has designed the ImproMed Enterprise Edition to ensure your corporate office can manage your business while your franchises can manage patient care. This separation of duties ensures each part of your organization is optimized.

⚠ **Corporate Server: Please call ImproMed Sales for recommendations on a server for a large scale deployment.**

📄 **Click each link for minimum requirements for Franchise server specifications and workstation specifications.**

ImproMed® hardware & software specifications

Legend	Compatible	Incompatible

Enterprise Operating Systems Compatibility

Enterprise versions	Windows server		
	2012 R2	2016	2019
5.2 (Infinity)			
6.0 (ImproMed)			

⚠ **If a version of an operating system is not listed, ImproMed platforms do NOT support it.**

Network Recommendations

Internet	
IP Addresses	All Corporate and Franchise locations need Static IP Addresses
Speed	Download Speeds can vary / Upload starting at 5 Mbps
VPN	Please refer to **Point-to-Point VPN** for more details

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Appendix C: Hosted server solution

Internet Information	
Type	Business Class
Speed	• Minimum upload at host for 10 remote desktop connections is 3 Mbps • For each additional 4 remote connections, add an additional 512 kbps • Remote location download speed is a minimum 10 Mbps
Networking requirements	1. Hardware/point-to-point VPN 2. Print Servers for all printers 3. Proper DNS resolution across VPN

Virtual/hosted solution

Configuration Notes

☐ Verify the servers used in the data center can access one another.

☐ ImproMed Customer Support will require an administrative desktop login for each server.

☐ Printers should be installed on the Terminal Server at the data center over the VPN.

☐ VHD size for virtual or data center servers should be at least 100GB:

  ☐ 30GB for OS plus 20GB Shares and growth plus 5 x initial DB size (DB + IBU {2 x DB} plus Replication snapshot {1 x DB size} plus DB Growth estimate {1 x DB Size}).

  ☐ VHD that can be scaled should start at this and be increased dynamically as needed.

Below are the advantages and disadvantages for virtual/hosted server solutions.

Advantages

• Data is located off-site to prevent failure due to in-hospital issues.

• Virtual systems are "scalable" and easily upgraded if the host setup has enough resources to spare.

• Office staff is not needed to do maintenance on the server.

• Dedicated server support team (24/7 Support of the connection to this system is required).

• Updates are faster as RDP will be needed for connections; therefore, fewer stations will need client applications updated.

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Disadvantages:

- Loss of internet connection means loss of access to data and ability to do business.

- An off-site server will not be supported opening Software locally on the stations. It has to be over RDP.

- Owners are not in possession or control of their data/server.

  ◊ You are leasing server space and required software, if provided, by the cloud service; you own nothing.

  ◊ NO local access to backups. If a copy of your data is needed, you have wait for it to be uploaded and/or downloaded to a place where it can be accessed.

  ◊ Physical security of your client's information is no longer in the owner's hands; you have to rely on the service hired to ensure security of personal information.

- Limits the amount of support ImproMed is able to provide.

- COST - For the redundant setup a data center typically provides, (duplicating servers across states and time zones) most offices cannot justify the cost.

- The backup solution will need to be reviewed with ImproMed prior to the installation.

Multi-Site/Multi-Practice

- Covetrus will not support running practice management software locally on a computer when the server is in another physical location (i.e. over a VPN).

- Connection Speeds - Typically performance issues with RDP are a result of insufficient UPLOAD speeds at the offices.

Point-to-point VPN

Covetrus recommends the use of Point-to-Point VPN between the server and the local office.

- This will help with printer connection.

- This helps with paperless/paper-light setups for scanned files and share access.

- Proper DNS resolution across VPN includes the ability for computers at the remote location to resolve the server name to IP address at the hosted location.

- Needed for all integrations including labs, lab requests, DICOM, etc.