Hardware Specifications

IMPROMED®

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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	i7 - 11700 w/ TPM Motherboard	i7 - 12700 w/ TPM Motherboard
Operating System	Windows® 10 Pro (64-bit)	Windows 10 Pro (64-bit) or Windows 11 Pro (64-bit)
Memory	32GB DDR4-2400	64GB DDR4-3200
Storage	2 x 500B SSD RAID 1	2 X 1TB SSD RAID 1
Networking	Gigabit Ethernet	Gigabit Ethernet
Video	Onboard 1920 x 1080	Onboard 1920 x 1080
Optical Drive	DVD-R/W	DVD-R/W
Power Supply	500 W	650 W
Monitor	22” LCD/LED	22” LCD/LED
Battery Backup	1000 VA BBU	1000 VA BBU
Devices	USB keyboard and mouse	USB keyboard and mouse

IMPROMED HARDWARE SPECIFICATIONS

Domain servers 1 – 15 users (no terminal services)		
	Good	Best
Processor (Hyper-threaded)	i7 - 11700 2.5GHz w/ TPM Motherboard	INTEL Xeon E-2356G
Operating System	Server 2019 Standard	Server 2022 Standard
Memory	64GB DDR4 -3200 Non-ECC	64GB DDR4-3200 ECC
Storage	2 x 1TB SSD Onboard RAID 1	4 x 1TB 12Gb/s HDD RAID 5 w/ PCIe RAID Controller
RAID Controller	Onboard	PCI-e w/ cache & BBU
Networking	Gigabit Ethernet	Dual Gigabit Ethernet (PAIRED)
Video	Onboard	On Processor
Optical Drive	SATA DVD-R/W	SATA DVD-RW
Power Supply	500 W	650 W
Monitor	19” LCD/LED	22” LCD/LED
Battery Backup	1000 VA	1500 VA
Virtual Machines (VM)	VDC1 & VSQL	VDC1 & VSQL
Recommended VM Replication Server	Yes	Yes

VM Replication, unlike simple SQL data replication, requires both host servers are running the same operating system.

IMPROMED HARDWARE SPECIFICATIONS

Domain servers 15 – 25 users		
	Good	Best
Processor (Hyper-threaded)	Xeon e5-2620v3	Single Xeon SILVER 4208
Operating System	Server 2019 Standard	Server 2022 Standard
Memory	64GB DDR4 -3200 Non-ECC	128GB DDR4-3200 ECC
Storage	4 x 1TB 12Gb/s HDD RAID 5	4 x 2TB 12Gb/s HDD RAID 5
RAID Controller	PCIe RAID Controller	PCIe RAID Controller
Networking	Dual Gigabit Ethernet (PAIRED)	Dual Gigabit Ethernet (PAIRED)
Video	On Processor	On Processor
Optical Drive	SATA DVD-RW	SATA DVD-RW
Power Supply	550 W	2x 920 W Redundant
Monitor	19” LCD	22” LCD/LED
Battery Backup	1500 VA	1500 VA
Virtual Machines (VM)	VDC1 & VSQL (or VTS)	VDC1 & VSQL (or VTS)
Backup DC as a VM on a replication server recommended	Yes	Yes
RDS (Terminal Services) as a VM on a replication server recommended	Yes (VDC2 \ VTS)	Yes (VDC2 \ VTS)

VM Replication, unlike simple SQL data replication, requires both host servers are running the same operating system.

IMPROMED HARDWARE SPECIFICATIONS

Domain servers 35+ users		
	Good	Best
Processor (Hyper-threaded)	Dual Xeon e5-2620v3 2.4ghz lga2011	Dual XEON SILVER 4208 LGA3647 2.1GHZ
Operating System	Server 2016	Server 2022
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 1230 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 as a backup domain controller)	Yes (VDC2 as a backup domain controller)
RDS (Terminal Services) as a VM on a replication server recommended	Yes (VDC2 \ VTS)	Yes (VDC2 \ VTS)

VM Replication, unlike simple SQL data replication, requires both host servers are running the same operating system.

IMPROMED HARDWARE SPECIFICATIONS

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

Virtual machine configuration 64 GB baseline recommendations (Server 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 48 GB RAM, 4 Processors, 400 GB Fixed VHDx
Virtual SQL server (VSQL)	Static/Start-up 40 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)	VTS Baseline memory allocation 12GB
Remote access	Impromed Support must have remote access to the host server with Administrator rights

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.

✓ = Compatible X = Incompatible ✓X = Limited Capabilities*

Operating systems recommended for different environments

Operating system versions	Server environments			
	Non-dedicated servers	Standard servers	Terminal servers	Virtual hosted servers
Windows 10 Professional	✓	X	X	X
Windows 11 Professional	✓	X	X	X
Windows Server 2016	X	✓	✓	✓
Windows Server 2019	X	✓	✓	✓
Windows Server 2022	X	✓	✓	✓

Operating system versions for Impromed software

Impromed versions (may be labeled Infinity)	Windows server		
	2016	2019	2022
3.5 - 4.1	X	X	X
4.2 - 4.6	X	X	X
4.7 - 5.1	✓X	✓X	X
5.2 - 6.0	✓	✓	✓X
18.10.0 - 21.12.0	✓	✓	✓
22.21.0 and higher	✓	✓	✓

***Limited Capabilities** indicates specified versions of Impromed and Impromed Equine may run in limited functionality on Windows servers.

✓ = Compatible ✗ = Incompatible ✓ = Limited Capabilities*

Impromed Equine versions (may be labeled Triple Crown)	Windows server		
	2016	2019	2022
3.0	✓	✓	✗
3.2 - 6.0	✓	✓	✓
18.10.0 - 21.12.0	✓	✓	✓
22.21.0 and higher	✓	✓	✓

***Limited Capabilities** indicates specified versions of Impromed and Impromed Equine may run in limited functionality on Windows servers.

If a version of Windows Server is not listed, Impromed platforms do NOT support it.

Legacy Server Operating Systems

Any client running Microsoft Windows Server 2012R2 or older will not be able to purchase any Microsoft server related licensing. They must be running Microsoft Windows Server 2016 / 2019, provided by Covetrus, to purchase additional Windows CALS and Terminal Services.

Workstation Specifications

Desktops		
	Good	Best
Processor	i5 - 9400 9th Gen w/ TPM Motherboard	i7 - 12700 12th Gen w/ TPM Motherboard
Operating System	Windows 10 Pro (64-bit)	Windows 10 Pro (64-bit) or Windows 11 Pro (64-bit)
Memory	8GB DDR4-2400	16GB DDR4-3200
Storage	250GB SSD	500GB SSD
Networking	Gigabit Ethernet	Gigabit Ethernet
Video	1920 x 1080 or better onboard	1920 x 1080 or better onboard
Monitor	22” LCD/LED	22” LCD/LED
Wireless	No	No

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

IMPROMED HARDWARE SPECIFICATIONS

Tablet / Laptop / Notebook		
	Good	Best
Processor	i5 9th Gen w/ TPM	i7 12th Gen w/ TPM
Operating System	Windows 10 Pro (64-bit)	Windows 10 Pro (64-bit) or Windows 11 Pro (64-bit)
Memory	8GB DDR4-2400	16GB DDR4-3200
Storage	250GB SSD	500GB SSD
Networking	Gigabit Ethernet (Except Tablets)	Gigabit Ethernet (Except Tablets)
Video	On Processor	On Processor
Monitor	12.1” / 15.4” / 15.4”	12.1” / 17” / 17”
Wireless	802.11AC	802.11AX

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

Workstation Operating Systems Compatibility

✓ = Compatible ✗ = Incompatible ✗ = Limited Capabilities

Impromed versions (may be labeled Infinity)	Workstation operating system	
	Windows 10 Pro	Windows 11 Pro
3.5 - 4.1	✗	✗
4.2 - 5.1	✓	✗
5.2 - 6.0	✓	✗
18.10.0 - 21.12.0	✓	✓
22.21.0 and higher	✓	✓
Impromed Equine versions (may be labeled Triple Crown)		
3.0	✓	✗
3.2 - 6.0	✓	✗
18.10.0 - 21.12.0	✓	✓
22.21.0 and higher	✓	✓

Covetrus recommends 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.

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.

✓ = Compatible X = Incompatible EOL = Microsoft ending support in 2024

Software versions	SQL Version			
	2014 EOL	2016	2017	2019
4.6 and older	X	X	X	X
4.7 - 4.8	X	X	X	X
5.0 - 5.1 / 3.0 (Equine)	✓	✓	X	X
5.2 / 3.2 (Equine) - 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.

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.

✔ = Compatible X = Incompatible EOL = Microsoft ending support 2024

Operating system versions	SQL Version			
	2014 EOL	2016	2017	2019
Windows 10 Professional	✔	✔	✔	✔
Windows 11 Professional	X	X	✔	✔
Windows Server 2016	✔	✔	✔	✔
Windows Server 2019	✔	✔	✔	✔
Windows Server 2022	X	X	✔	✔

⚠ **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.

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

Data backups

We recommend three external USB hard drives: one daily (data backup), two weekly (complete system backup). One of the weekly backups should be taken off premise. Covetrus Local Backup and Covetrus Online Backup can be used as an effective solution to facilitate local and online backups. Refer to "Data Backup" on page 20 for more information about backup solutions.

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
- 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 iX1500 and S1300i.

Software Specifications

Word Processor		
	Good	Best
Microsoft	2016 Home & Student or higher	2021 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
- Impromed Database Manager
- Impromed Easy Updater Service - Limited to the latest releases and qualified editions

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 versions).
- 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

Data Backup

It is your responsibility to backup your Impromed data and electronic documents. Reasons for backing up your data includes loss of data from a natural disaster, human error, computer and system failure. Covetrus provides backup solutions, but we do recommend you work with your local IT professional to come up with a disaster recovery plan and best practices for backing up your data.

Covetrus Backup Solutions

Covetrus does provide some backup solutions that can be used to backup your Impromed data. Again, please work with your local IT professional to come up with the backup solution that works best for your business.

Impromed Database Manager

Covetrus provides daily maintenance of the Impromed database with a SQL backup and check with the Impromed Database Manager (IDM). The backup can contain periodic updates throughout the day. The check is generally done outside of business hours for a veterinary business and validates the integrity of the data. For more information about the IDM, contact Impromed Support at 800.925.7171.

Data Backup

The Covetrus Data Backup provides an automated service to store your data remotely. For more information about this backup solution, contact Sales at 888.280.2221.

Support Tools

Use the Impromed Support Tools to run and verify manual backups. For more information, contact Impromed Support at 800.925.7171.

Replication

The Impromed/Impromed Equine Admin Tools provide an additional sense of security by ensuring data is replicated to a backup server. During a complete server loss, this secondary server can be used by all of the remaining workstations. For more information, contact Hardware Sales at 855.478.7920 opt 4.

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:	

IMPROMED HARDWARE SPECIFICATIONS

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:	

IMPROMED HARDWARE SPECIFICATIONS

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.)

Appendix B: 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.

Advantages for virtual/hosted server solutions

- 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.

Disadvantages for virtual/hosted server solutions

- 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.