

# GhostPractice System Requirements

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To operate the GhostPractice software, we have provided the following server specifications and operating system requirements. Please note that compliance is measured against our minimum requirements to run GhostPractice and higher specifications may be required.

## Server Specifications

### *Minimum Server Specifications (less than 10 users)*

<b><u>No of Users: 1 – 10</u></b>	<b><u>Minimum:</u></b>	<b><u>Recommended:</u></b>
Processor	Intel Core i5 series	Intel Core i5 series or better
Memory	6 GB RAM	8+ GB RAM
Operating System / Software	Windows 10 Pro or higher, .NET framework 3.5 and 4.8 or higher	
SQL Server	Express 2014 with Advanced Services	Express 2017 with Advanced Services
Storage	200+ GB free space (data and backups)	500+ GB free space (data and backups)
Network	Workgroup (Peer-to-Peer)/Domain Network	Windows Domain Network + High Speed Internet + Remote Access

### *Minimum Server Specifications (10 or more users)*

<b><u>No of Users: 10+</u></b>	<b><u>Minimum:</u></b>	<b><u>Recommended:</u></b>
Processor	Intel Core i5 series	Multi-core Xeon series or better
Memory	8 GB RAM	16+ GB RAM
Operating System	Windows Server 2012 R2 with latest service packs, or higher, .NET framework 3.5 and 4.8 or higher	
SQL Server	Standard 2014	Standard 2017
Storage	500+ GB free space (data and backups)	700+ GB free space (data and backups)
Network	Workgroup (Peer-to-Peer)/Domain Network	Windows Domain Network + High Speed Internet + Remote Access
Notes: With SQL Server Express, Advanced Services is required. With Express, only 1 GB of RAM will be utilized. SQL Server Physical and Virtual Memory should be increased depending on the number of users connecting to the server. The OS can be in a virtualized environment, but dynamically assigned Memory is not recommended for optimal performance for SQL.		

Microsoft has restrictions within different Operating System editions. It is important to consider this for your long-term planning when establishing your infrastructure.

## Microsoft SQL Server

GhostPractice runs on the Microsoft SQL Server software, version 2014 and above. There is a free MS SQL Server Express version which may be suitable for smaller firms, but it has performance, database capacity and RAM limitations. The full version of MS SQL has no limits to RAM nor database size and is recommended for larger firms.

We cannot predict when you will exceed the MS SQL Express database limit\*. GhostPractice includes archiving which will allow you to manage the size of the reports database. It may become necessary to upgrade to the full version of MS SQL once you have reached either the SQL database capacity or the performance limits inherent in the MS SQL Express version\*. We cannot accept responsibility for any future changes in Microsoft policies and you are responsible for ensuring compliance with Microsoft licensing requirements for all Microsoft products.

*\* MS SQL Express limits the size of each database to 10GB and limits the use to 1GB of RAM.*

We recommend that you **do not** run MS Exchange on the same server computer as GhostPractice, this includes different virtual machines using the same physical drive. MS Exchange competes for system resources and this cannot be managed when running Microsoft SQL on the same server computer. Performance issues include RAM usage and high disk I/O readings which is not always detectable from the GhostPractice / Microsoft SQL environment.

## Workstations and Related Software Requirements

<b>All Workstations:</b>	<b>Minimum:</b>	<b>Recommended:</b>
Processor	Intel Core i3 series	Intel Core i5 series or higher
Memory	4 GB RAM	6+ GB RAM
Operating System	Windows 10 Pro or newer, .NET framework 3.5 and 4.8 or higher	
Storage	2 GB free space (for program installation only, excludes temporary storage)	
Display Settings	1024 x 768 (or equivalent widescreen resolution with minimum height of 768) or higher	
Office Suite	Microsoft Office 2013 (or later) is required	
Network	Windows Domain Network & High-Speed Internet & Remote Access. Wireless connections can be used but is not recommended.	

**Please note:** GhostPractice integrates with Microsoft Excel, Word, and Outlook for Windows. GhostPractice requires .NET framework 3.5 and 4.8 or higher. If this is missing, you or your IT provider will need to install this feature from Windows installation media.

For Office integrations, Interop Assemblies are required, and typically come installed with a full business-ready copy of MS Office. Office 64-bit versions support large file uploads up to 1GB in size.

During GhostPractice software upgrades, users need sufficient privileges. If this has not been setup, the updates will need to be attended to manually by you or your IT provider.

## Network

GhostPractice requires one domain user or local administrator account with 'log on as local service' rights to the server on which GhostPractice is installed. All workstations will need network access to the server to use GhostPractice on the LAN. Each network user should have a unique Windows login name. Each workstation needs to be able to authenticate uniquely on the server. GhostPractice services and components require modern IIS components.

### **Domain Login**

Available Option: GhostPractice can authenticate against the domain log-ins, if that is a requirement for the firm.

## Remote Access Considerations

Access via the GhostPractice Application Server comes in different forms.

### **Full Remote Access to GhostPractice**

This is dependent on certain Microsoft / 3<sup>rd</sup> party licensed products. GhostPractice Licensing remains the same. You, or your IT provider will need to implement:

1. Current Microsoft server software that allows for multiple remote desktop connections (Microsoft Essentials for example does not allow for more than two remote desktop connections).
2. VPN (Virtual Private Network)

### **GP Mobile/Web (optional):**

1. A server that is accessible from the Internet.
2. A server with a public IP address, static or a dynamic.
3. Ports may be opened and forwarded on the firewall.

To successfully deploy the web service to the server, the Internet connection and domain name availability will largely dictate the requirements. (Eg: Static vs. Dynamic IP or whether you own your own domain name or make use of a dynamic domain). Please advise your IT support provider to contact us for the specific configuration details.

## Backups

Please ensure that an effective, regular, and reliable backup plan is in place by the date of your Go-Live. Please consult with your IT vendor if you are not sure whether this is in place or not. If required, we can liaise with your IT service provider regarding the GhostPractice backups and safe storage of data. However, the ownership of the data is yours, and remains your responsibility to ensure that an adequate backup solution is in place to safeguard your firm's data and business continuity. GhostPractice will not be responsible for data maintenance as well for the database backups that take place on your server.

### ***Consider the following:***

1. What is the existing backup plan?
2. What is the ideal time for GhostPractice to run database backups through scheduled tasks?
3. Are your backups stored on a different drive than the one hosting the databases?
4. Do you take backups off-site (so that they cannot be stolen along with the server)?
5. Do you test your recovery readiness by doing regular test-restores of backups?
6. Are you running regular database integrity checks on your server?

## Remote Support

We may occasionally request that your IT vendor allow us to connect to your server remotely so we can help you administer GhostPractice. It is important to note that this service will only be used if necessary, and only with your full consent and prior knowledge. Lastly, it would be helpful if you can please let us know what your internal procedures are for allowing us to connect remotely with end user workstations for support purposes.