

## Infrastructure: Local/Client Hosted

This section describes the infrastructure required to optimally run Profile in your organisation. It is advised that you check with your hardware vendor or IT consultant if you have any questions about the suitability of your hardware or are operating any other programs outside of Profile. Intrahealth is not responsible for the sale or support of hardware or peripherals.

All hardware/infrastructure requirements should be in place at least 1 week prior to Profile being installed.

### Server

Intrahealth recommends a **dedicated** robust server to run the Intrahealth application server.

The minimum server requirements (+/- Firebird – or SQL Server on dedicated machine) are as follows:

<b>Number of users:</b>	up to 10	up to 100
<b>Processor:</b>	1-2 Cores/Processors; 1.5+GHz	2 Cores/Processors; 2+GHz
<b>RAM:</b>	4 GB	8 GB
<b>Hard Disk Drive:</b>	50 GB*	160 GB*
<b>Operating System:</b>	Microsoft Windows 2012 Server	Microsoft Windows 2012 Server

The recommended server requirements (SQL Server on dedicated machine) are as follows:

<b>Number of users:</b>	up to 10	up to 100
<b>Processor:</b>	1-2 Cores/Processors; 2+GHz	2-4 Cores/Processors; 2+GHz
<b>RAM:</b>	8 GB	12-16 GB
<b>Hard Disk Drive:</b>	160 GB* (10k-15k disks/SSD)	250 GB* (10k-15k disks or SSD)
<b>Operating System:</b>	Microsoft Windows 2016 Server	Microsoft Windows 2016 Server

The recommended server requirements (SQL Server on the Application Server machine) are as follows:

<b>Number of users:</b>	up to 10	up to 100
<b>Processor:</b>	1-2 Cores/Processors; 2+GHz	2-4 Cores/Processors; 2+GHz
<b>RAM:</b>	12 GB	12-16 GB
<b>Hard Disk Drive:</b>	200 GB*	250 GB* (10k-15k disks or SSD)
<b>Operating System:</b>	Microsoft Windows 2016 Server	Microsoft Windows 2016 Server

\* The database Hard Disk size should be a minimum of 4 times the expected database size after two years – recommended is 5-6 times. This leaves space for backup files, copies, backup/restore sequences, etc.

## **POWER/PERFORMANCE:**

Multiple processors will yield better performance when SQL Server is running on the Application Server, or Enterprise mode of Intrahealth Server is installed.

Fast hard drives are only required if Firebird or SQL Server are operating on the Application Server.

64 bit OS does not offer any performance gains unless SQL Server 64 bit is also used.

## **SQL SERVER**

When installed on the Application Server machine, a minimum of 8GB of RAM is recommended.

If # of users is >25, a dedicated SQL Server with similar requirements as the Application Server is recommended.

SQL Server, 2005, 2008R1, 2008R2, 2012, 2012 R2 and 2016 are supported.

Currently 2012R2 is recommended.

Minimum requirement for Application Server Machine (Profile V 7.8 to 7.X) is .NET v4 or higher

Minimum requirement for Application Server Machine (Profile V8 or higher) is .NET v4.5

Minimum requirement for IIS machine (for Accession and Mobile Web Services) is IIS v8 or higher

If a dedicated SQL Server machine is required, consult your Hardware/IT Supplier for information.

## **FIREBIRD**

Please ensure you download Firebird from our Self Service Centre, to ensure that you install a supported version.

## **OTHER RECOMMENDATIONS/REQUIREMENTS**

Terminal Services or Citrix – if used to deliver Profile through thin clients, they **must** run on a separate physical machine to avoid performance issues.

Virtual Servers – there are no known issues – currently VMware is by far the most popular option. All virtual server options should be tested – particularly if not VMWare.

The clinic should operate a Windows Domain (active directories). An appropriate firewall and an anti-virus protection agent are used.

Intrahealth recommends Windows 2016 Server.

## Workstations

Intrahealth recommends that each consulting room has a workstation along with an appropriate number of workstations for the reception area.

The minimum workstation specifications to optimally run the Profile rich client application are:

<b>Processor:</b>	Intel Core i3
<b>RAM:</b>	4 GB
<b>Hard Disk Drive:</b>	20 GB Free
<b>Operating System:</b>	Windows 7/Windows 10
<b>Screen Size:</b>	1280 x 720

The recommended workstation specifications to optimally run the Profile rich client application are:

<b>Processor:</b>	Intel Core i5-i7
<b>RAM:</b>	4-8 GB
<b>Hard Disk Drive:</b>	20 GB Free
<b>Operating System:</b>	Windows 10
<b>Screen Size:</b>	1920 x 1080 or larger

### (LEGACY) OPERATING SYSTEMS

- 16 Bit: Windows 95, Windows 98, Windows Millennium and XP are NOT Supported.
- Windows XP (32 or 64 Bit) is no longer supported as of October 1, 2013.
- 32 Bit: Windows NT Server and Windows 2000 Server are NOT supported – if issues are encountered, upgrading Windows is the required action.

Intrahealth recommends Windows 7 or 10. Profile EMR is Windows 7, Windows 8 and Windows 10 Certified.

### SCREEN SIZE

Profile will use as much screen “real estate” as is available.

Large screens are recommended – however – it is important to consider the local environment and visual acuity of staff – some high resolution screens may be physically small and have very small text. Users may “zoom” the image which defeats the large resolution, and produces a fuzzy image.

### MOBILE DEVICES

Profile Native Application is supported on Windows Tablets (Intrahealth Tested on Microsoft Surface 3).

Other mobile device connectivity may be available via Citrix. Check with your mobile device hardware supplier for Citrix Compatibility. Please note: Unlike the native App, this approach will display the full Profile screen on your device and is not considered optimal for workflow.

Native Apps: As of 2016 Intrahealth is developing Native Apps for tablets. Please check with Intrahealth for supported platforms, availability, supported functionality and cost.

## VOICE RECOGNITION

Profile supports Dragon Dictate

If other voice recognition software is considered, check with Intrahealth first.

Intrahealth takes no responsibility for unexpected compatibility issues.

## TERMINAL SERVER/CITRIX

The Terminal Services or Citrix Server must be capable of delivering the required level of performance.

Check with Intrahealth about current clients/processor recommendations for your version of Profile.

## Backup Device and Media

Intrahealth is NOT responsible for any aspect of the backup process. The clinic must arrange for their hardware provider or IT consultant to provide setup, maintenance and “check” services. Regular “end to end” checking that effective backups are being made is recommended – Intrahealth is NOT responsible for backup failures even if a Profile issue may play a part (eg. Failed backup schedule) – the clinic must have processes in place to detect a backup failure as soon as it occurs (regardless of cause).

If the hardware provider or IT consultant requires training with Profile, the currently used database, or standard/recommended backup setup and maintenance it is the clinic’s responsibility to arrange this and ensure it occurs.

Intrahealth reminds the clinic that there may be data other than Profile data which requires regular backup (administration and accounting information, company/business documents, Exchange or other email databases, etc).

Intrahealth strongly recommends that an appropriate backup device and media are purchased.

Examples of backup devices are:

- Media Burner (CD/DVD)
- Cloud backups (offsite backups)
- Tape Backups
- External Hard Drives

Profile/Intrahealth cannot damage your database. Damage occurs with power cuts, Operating System failure, viruses, bugs in the database, hard drive or hardware (RAID/Motherboard/RAM) failures, etc. If databases become damaged, repair is seldom an option and usually expensive. Restoring from the last successful backup is the ONLY option. If damage has been undetected for several days, successful backups may have been overwritten by failed backups – it is therefore important that backups should be stored such that daily backups for 1-2 weeks might be accessed, and monthly/annual backups are made, which are kept for that interval, or kept forever. See the Profile manual for more information on backups.

It is highly recommended that your hardware provider or IT consultant is familiar with the requirements of backups, and the database which the clinic uses. Databases are data storage tools chosen, and under

the care of the clinic (and hardware provider or IT consultant). Profile can be used with several different databases depending upon clinic needs – check with Intrahealth to determine the database recommended for your clinic.

## Scanning

Scanning documents into digital format has become more and more popular as organisations shift towards a paperless environment.

Intrahealth recommends a multi feeder scanner that can scan at least 20 pages per minute. It is also essential that the scanner can scan in black and white and the documents kept to a reasonable size (50kb or less) to reduce the growth of the database.

PDF and TIFF formats (which support multiple page documents) are recommended. Ensure that the scanner will support one or both of these formats.

## Network Connectivity

### WIRED NETWORK

- Intrahealth recommends using 1GB Network Cards in each PC, with a 1GB Ethernet Switch and network operating in full duplex mode.
- Beware of half duplex networks – operating in this mode can significantly impact network performance even on 1GB networks.
- Clinics should use either Category 5E (CAT5E) or Category 6 variety of Ethernet cables.

### WIRELESS NETWORKS

- Intrahealth strongly recommends AGAINST wireless networks for security and performance reasons.
- Poor performance and dropout are frequently seen – even if performance is initially OK, changes in neighbouring wireless activity (or appliance interference) may occur at any time.
- Profile is entirely dependent upon the network – if there are problems, Profile will be directly impacted.
- If reliability or performance issues are discovered on wireless networks, Intrahealth will require the wireless network is replaced before other investigation is performed.

## Internet Connectivity / Wide Area Network Access

Some organisations may require access to the internet or to remote locations. Following is a guideline only – network capabilities, connectivity options (eg. Citrix), Profile function and ISP offerings change regularly. Organisations considering remote connectivity should seek advice from Intrahealth and

should test/confirm connectivity meets Production requirements before making final infrastructure decisions.

The amount of “bandwidth” that your organisation will require will be dependent on the amount of “traffic” that is going between the organisations or how much information is being downloaded or accessed from the internet. The latency of the broadband connection should be as low as possible.

For an organisation that is only accessing the internet, Intrahealth suggests an ADSL/Cable/Fiber connection with minimum download speed of 1mbps and an upload speed of 512kbps (download of at least 5Mb and an upload speed of 1Mb is recommended).

An organisation that has remote sites would require a minimum of 5Mb symmetrical connection (10Mbit is recommended).

Profile will be affected by high latency connections (where a message waits a long time for a response) – low latency connections (<25ms) are recommended.

If you are experiencing slow performance of the Profile client at the remote site, Terminal Services or Citrix should be considered as they may perform better with the available bandwidth and latency performance.

## Infrastructure Support

Due to the highly critical nature of your IT infrastructure, it is essential that you have a local IT infrastructure support agreement in place with your Hardware Supplier. You should consider: operating hours, hardware warranties, response times, number of staff and other services that may be of benefit e.g. Windows training.