## 1. Database Server

<table>
<thead>
<tr>
<th>Component / Number of users</th>
<th>1–10 users</th>
<th>11–25 users</th>
<th>26–50 users</th>
<th>51–99 users</th>
<th>100+ users</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processor – Recommended*</td>
<td>4 Cores @1.6 GHz+</td>
<td>8 Cores @1.6 GHz+</td>
<td>8 Cores @2.26 GHz+</td>
<td>8 Cores @2.26 GHz+</td>
<td>16 Cores @2.26 GHz+</td>
</tr>
<tr>
<td>Processor – Minimum*</td>
<td>2 Cores @1.6 GHz+</td>
<td>4 Cores @1.6 GHz+</td>
<td>4 Cores @1.6 GHz+</td>
<td>4 Cores @1.6 GHz+</td>
<td>8 Cores @1.6 GHz+</td>
</tr>
<tr>
<td>Single Thread score of Processor*</td>
<td>1450 or above</td>
<td>1450 or above</td>
<td>1450 or above</td>
<td>1450 or above</td>
<td>1450 or above</td>
</tr>
<tr>
<td>Memory / RAM – Recommended</td>
<td>16 GB (frequency: DDR4 - 2933)</td>
<td>32 GB (frequency: DDR4 - 2933)</td>
<td>64 GB (frequency: DDR4 - 2933)</td>
<td>64–128 GB (frequency: DDR4 - 2933)</td>
<td>128–160 GB (frequency: DDR4 - 2933)</td>
</tr>
<tr>
<td>Memory / RAM – Minimum</td>
<td>8 GB (frequency: DDR4 - 2400)</td>
<td>16 GB (frequency: DDR4 - 2400)</td>
<td>32 GB (frequency: DDR4 - 2400)</td>
<td>64 GB (frequency: DDR4 - 2400)</td>
<td>128 GB (frequency: DDR4 - 2400)</td>
</tr>
</tbody>
</table>

### Disk Configuration
- RAID level 1+0 is recommended for optimal performance
- Minimum required is RAID level 5

### Hard Drive – Total Storage
(Should be capable of adding more storage)
- 500 GB SSD SAS-3 (12 Gbps)
- 1 TB SSD SAS-3 (12 Gbps)
- 1.5 TB SSD SAS-3 (12 Gbps)
- 2 TB SSD SAS-3 (12 Gbps)
- 3 TB SSD SAS-3 (12 Gbps)

- Recommended Storage for IMS Database drive - PCIe NVMe 3.0 SSD

### Operating System
- Windows® Server 2012 Standard
- Windows® Server 2016

### Network Adapter (1 Gbps)
- 2 Adapter
- 2 Adapter
- 4 Adapter
- 4 Adapter
- 4 Adapter

### Internet Connectivity
- The server must be connected to the Internet via a high-speed Internet connection (minimum 10 Mbps).

### Notes
- This server should only host IMS software database server.
- To match HIPAA compliance requirements, you can choose any disk encryption method supported by Microsoft Windows Operating Systems.
### HARDWARE SPECIFICATIONS

#### 2. Citrix/2X/Terminal Server (for remote connections)

<table>
<thead>
<tr>
<th>Component / Number of users</th>
<th>1–10 remote users</th>
<th>11–25 remote users</th>
<th>26–50 remote users</th>
<th>51–99 remote users</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processor – Recommended*</td>
<td>8 Cores @1.6 GHz+</td>
<td>8 Cores @2.26 GHz+</td>
<td>8 Cores @2.26 GHz+</td>
<td>16 Cores @2.26 GHz+</td>
</tr>
<tr>
<td>Processor – Minimum*</td>
<td>4 Cores @1.6 GHz+</td>
<td>4 Cores @1.6 GHz+</td>
<td>8 Cores @1.6 GHz+</td>
<td>8 Cores @2.26 GHz+</td>
</tr>
<tr>
<td>Single Thread score of Processor*</td>
<td>1450 or above</td>
<td>1450 or above</td>
<td>1450 or above</td>
<td>1450 or above</td>
</tr>
<tr>
<td>Memory / RAM – Recommended</td>
<td>16 GB DDR4 - 2933</td>
<td>32 GB DDR4 - 2933</td>
<td>64 GB DDR4 - 2933</td>
<td>128 GB DDR4 - 2933</td>
</tr>
<tr>
<td>Memory / RAM – Minimum</td>
<td>12 GB DDR4 - 2400</td>
<td>24 GB DDR4 - 2400</td>
<td>48 GB DDR4 - 2400</td>
<td>96 GB DDR4 - 2400</td>
</tr>
</tbody>
</table>

**Disk Configuration**
- RAID level 1+0 is recommended for optimal performance
- Minimum required is RAID level 5

**Hard Drive – Total Storage**
(Should be capable of adding more storage)
- 160 GB SSD SAS-3 (12 Gbps)
- 250 GB SSD SAS-3 (12 Gbps)
- 320 GB SSD SAS-3 (12 Gbps)
- 500 GB SSD SAS-3 (12 Gbps)

**Operating System**
- Windows® Server 2012 Standard (along with Terminal Server and Client Access License) or
- Windows® Server 2016

**Network Adapter (1 Gbps)**
- 2 Adapter
- 4 Adapter
- 4 Adapter

**Internet Connectivity**
- Business-class broadband Internet connection with 150 Kbps bandwidth per user required for online services.

**Note:**
- The cores mentioned here are physical cores.
- If the server is based on virtual environment, consider the following factors for configuring the servers:
  - Number of physical processor/core vs virtual core assigned
  - Number of other VM that are setup on the same host
- We do not recommend excessive virtual cores on actual physical processor

#You can check the single-thread score of the CPU using the following link. [https://www.cpubenchmark.net/singleThread.html](https://www.cpubenchmark.net/singleThread.html)
## HARDWARE SPECIFICATIONS

### 3. Web Applications Server

<table>
<thead>
<tr>
<th>Component</th>
<th>Minimum Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processor</td>
<td>Quad-core (4 cores, 1.6 GHz+ or later)</td>
</tr>
<tr>
<td>Memory / RAM</td>
<td>8 GB</td>
</tr>
<tr>
<td>Hard Drive</td>
<td>80 GB</td>
</tr>
<tr>
<td>Operating System</td>
<td>● Windows® Server 2012 Standard</td>
</tr>
<tr>
<td></td>
<td>● Windows® Server 2016</td>
</tr>
<tr>
<td>Internet Connectivity</td>
<td>● Broadband Internet connection (10Mbps)</td>
</tr>
<tr>
<td></td>
<td>● Static IP address</td>
</tr>
<tr>
<td></td>
<td>● Port 80 and 443 should be open</td>
</tr>
<tr>
<td>Network Adapter</td>
<td>2 Adapter</td>
</tr>
<tr>
<td>Sybase License</td>
<td>1 Sybase license is required to allow Web Server to connect to IMS DB server</td>
</tr>
</tbody>
</table>
# HARDWARE SPECIFICATIONS

## 4. Workstations

<table>
<thead>
<tr>
<th>Component</th>
<th>Minimum Specifications</th>
<th>Recommended Specifications*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processor</td>
<td>Intel® i5, 2.70 GHz+</td>
<td>Intel® i7, 2.40 GHz+</td>
</tr>
<tr>
<td>Memory / RAM</td>
<td>4 GB</td>
<td>8 GB</td>
</tr>
<tr>
<td>Hard Drive</td>
<td>120 GB</td>
<td>250 GB SSD</td>
</tr>
<tr>
<td>Operating system</td>
<td>Windows 7 / Windows 8</td>
<td>Windows 7 / Windows 8 / Windows 10</td>
</tr>
<tr>
<td>Wired Network</td>
<td>1000 Mbps Ethernet or higher</td>
<td>1000 Mbps Ethernet or higher</td>
</tr>
<tr>
<td>Wireless (Wi-Fi)</td>
<td>802.11G or higher</td>
<td>802.11N or higher</td>
</tr>
<tr>
<td>Router / Firewall</td>
<td>Secure encrypted connectivity for communication between facilities is required using an IPsec VPN enabled router.</td>
<td></td>
</tr>
</tbody>
</table>

The following ports are used for sending and receiving claims through IMS.
- ENS Professional: 3566
- ENS Institutional: 22
- AVAILITY: 9922
- REALMED: 22

*Recommended for workstations using services like scanning, Dragon dictation, Word Processing, hardware interfaces etc.

The following factors can impact system performance:
- Firewall/antivirus software (even if virus scan is not running, it will scan each file that is downloaded and opened or scanned and saved)
- Insufficient RAM memory
- Hard drive encryption
- Multiple network hops
- Slow network / more traffic on network
- Low space on system partition or working partition
- Background process for services like backup and monitoring.
- Absence of proper system maintenance.
## HARDWARE SPECIFICATIONS

### 5. Peripheral Hardware Specifications

<table>
<thead>
<tr>
<th>Printers</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Printer</strong></td>
<td>● PCL5 - compatible network printer (All-in-one devices should not be used as a scanner but can be used for printing.)</td>
</tr>
</tbody>
</table>
| **Label Printer** | Dymo LabelWriter 450 Turbo (Single ribbon only. Double ribbon not supported)  
Zebra ZD410  
● Over the RDP/2x/Citrix sessions, it is mandatory that printer redirects through manufacturer’s driver.  
● If not using manufacturer's driver then TS Printer is required for proper printer redirection over the remote session. |
| **CHDP Printer** | Windows compliant laser printer. We recommend the OKI MICROLINE® 420  
(This unit can work on multiple drivers. Install IBM Pro printer roman 3 drivers. We recommend this for a busy practice.) |
| **Rx Printers** | Brother LaserJet 2170N network printer (to use with non-padded Rx scripts), if you would like to print Rx pads. |

<table>
<thead>
<tr>
<th>Display Devices</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Resolution</strong></td>
<td>Minimum required resolution of the display devices is 1024x768</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Scanners and Imaging</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Scanner</strong></td>
<td>Any Twain-compatible scanner is compatible with IMS</td>
</tr>
</tbody>
</table>
| **Card scanner** | DocketPORT DS687 - Duplex  
DocketPORT PS467 - Simplex |
| **Barcode scanner** | Any plug-n-play barcode scanners |
## Hardware Specifications

### Signature Pad

- For use with locally hosted server:
  - Topaz model: T-LBK755SE-BBSB-R
  - Topaz model: T-LBK755SEBH or T-LBK750SEBH
  - Topaz SignatureGem SE 4X5
  - Topaz SignatureGem SE 4X3
  - Topaz SignatureGemSE 4X3 TM-LBK755-BHSB

- For use with remotely hosted server:
  - Topaz model: T-LBK755SE-BBSB-R
  - Topaz model: T-LBK755SEBH and the T-LBK750SEBH
  - Requires serial cable kit. Topaz part number A-CSA4-2

### Note:
- If you disconnect the signature pad from its USB power port, reconnect it to the same USB power port.

### Web Camera
- Any Plug-n-Play webcam, USB 2.0 or higher

### Medical Devices

#### Vital Signs
- Welch Allyn – Spot Vital Signs – Lxi
- Midmark

#### FeNO (Fractional Nitric Oxide)
- Niox Device

#### Laser Device and Advanced Image analysis system
- Hamilton Thorne

#### EKG
- Midmark

#### Immunoassay Analyzer
- Immulite 1000
- Immulite 2000 XPi
- Roche Cobas e411
- Tosoh AIA - 360
- Tosoh AIA - 900

#### Spirometry
- Midmark
- Morgan Scientific (Spirometer model is the pneumotrac 6800 with ComPAS software)

#### Glucose Meter Interface
- IDI (Intelligent Diabetic Interface)

#### Ultrasound Machines
- Any ultrasound machine that can generate DICOM files and have internet access

#### Fluoroscopic/X-ray devices
- Any fluoroscopic device that can generate DICOM files and have internet access
### Network

| Router / Firewall | Discretion of local IT technician  
For better performance, we recommend Gigabyte switches and routers (10/100/1000) |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Networking</td>
<td>Hardwiring your office to the Internet is always the best solution. However, if you seek the convenience of wireless PCs, you do have the option of using them through a Terminal Services connection to a computer that is hardwired to the Internet. Setting up a simple remote connection will give you the flexibility of wireless internet with the dependability of a hardwired Internet connection.</td>
</tr>
<tr>
<td>URLs to be whitelisted</td>
<td></td>
</tr>
</tbody>
</table>
- services.meditab.com  
- api.medpharmservices.com  
- portal.medpharmservices.com  
- mps.auth0.com  
- *.googleapis.com  
- *.google.com  
- static.opentok.com |

### Backup

You are responsible for keeping your data safe and secure. In the unfortunate event that it's compromised, data recovery may be difficult and costly. Backing up your files is the best thing that you can do to protect your office's data, safeguard your patients' information, and preserve your paperless environment. And your understanding of the backup process is crucial to successful data recovery.

We strongly encourage that you hire an IT professional to handle your backups. Have a qualified IT technician reach out to our technical support team so that we can help you come up with a unique and customized disaster recovery plan for your office.

**SaaS Hardware specifications:** [https://www.imsclientconnect.com/download/Saas_HW_specification_19122018.pdf](https://www.imsclientconnect.com/download/Saas_HW_specification_19122018.pdf)