



ISV/Software Solutions  
Networking Infrastructure Solutions  
Licensing Solutions

Suncoast Solutions© considers your hardware needs at startup and well into the future. Our recommendations represent an initial starting position, at which point growth in both your current census and users of the system should be determined. In addition, when purchasing new equipment, purchase the best hardware available, rather than equipment soon to be obsolete, or which doesn't handle your expected growth. Also, remember to review the Microsoft Product Life Cycle to assess the lifespan of your software operating systems and applications. We will be happy to provide further consultation or discuss these recommendations with you at any time prior to purchase and installation.

### Sample Solutions Architecture Diagram

Machine Function	Configuration
<p>Administrative, Database &amp; File Server</p>	<ul style="list-style-type: none"> <li>• Progress Database Software (Workgroup or Enterprise)</li> <li>• Production and Training databases</li> <li>• To maximize performance, Solutions should be on a dedicated server</li> <li>• Operating System: Windows 2003 Server sp 1, Windows 2008 Server 32/64 bit (Solutions V6), Windows 2008 R2</li> <li>• Hardware specs below</li> <li>• Fault Tolerance specs below</li> <li>• Remote access for remote support. See remote specs below.</li> </ul>
<p>File Server (optional)</p>	<ul style="list-style-type: none"> <li>• Progress Client Networking</li> <li>• Suncoast Application Library (mapped by clients)</li> <li>• Operating System: Windows 2003 Server sp1, Windows 2008 Server (Solutions V6), Windows 2008 R2</li> <li>• Hardware specs below</li> <li>• Fault Tolerance specs below</li> <li>• Remote access for remote support. See remote specs below.</li> </ul>
<p>Replication Server (POS) (optional)</p>	<ul style="list-style-type: none"> <li>• Super/HyperBase databases (*)</li> <li>• Host Replication Agents (4GL)</li> <li>• Mapped drive to Suncoast Application Library</li> <li>• Operating System: XP sp3+, Vista, Windows Server 2003 or 2008</li> <li>• Hardware specs below</li> <li>• Replication (POS) Configuration, Connectivity Methods below</li> <li>• Remote access for remote support. See remote specs below.</li> </ul> <p>NOTE: Replication server requires the use of 5+ Progress client networking and database user licenses for the agents. Superbase/Hyperbase are stored on database server.</p> <p>(*) SuperBase is a copy of production less transaction data (no accounting, time sheets, assessments...). This database contains demographic data only.</p> <p>(*) HyperBase is a copy of production that contains ALL patient data on active patients.</p>

Machine Function	Configuration
Application Server (optional)	<ul style="list-style-type: none"> <li>• Recommend Thin Client technology over slow LAN/WAN</li> <li>• Terminal server 2003, 2008 (Solutions V6)</li> <li>• Citrix Presentation Server 4.0/4.5</li> <li>• Follow vendor specific requirements, then add 150 MB RAM and 300 MB hard disk per concurrent user</li> </ul>
Report Server (optional)	<ul style="list-style-type: none"> <li>• Report server requires the use of 1+ Progress client networking and database user license</li> <li>• Additional hardware may be required</li> </ul>
Solutions Intelligence (optional)	<ul style="list-style-type: none"> <li>• Business Intelligence Tool</li> <li>• Hosted solution available from Suncoast</li> </ul>
Desktop	<ul style="list-style-type: none"> <li>• Standard desktop configuration</li> <li>• Operating System: Windows XP sp3+, Vista (Solutions V6), Windows 7</li> <li>• Hardware specs below</li> </ul>
Mobile Solutions (Laptop/Tablet)	<ul style="list-style-type: none"> <li>• Progress Personal Database Software</li> <li>• Suncoast Mobile Database</li> <li>• Suncoast Mobile Application Library</li> <li>• Operating System: XP sp3+, Vista (Solutions V6), Windows 7</li> <li>• Hardware specs below</li> <li>• Remote Access for remote support. See remote specs below.</li> </ul>
Concurrent Users	Hardware Specifications Administration, DB & File Server
< 25 Users	<ul style="list-style-type: none"> <li>• 1+ CPU 2.0+ GHz Dual-Core</li> <li>• 4+ GB RAM</li> <li>• 2+ 146+ GB disk RAID 1 (OS, files, data &amp; BI)</li> <li>• 1+ 146+ GB disk to store backups &amp; AI</li> <li>• 1+ 100+ MB NIC</li> <li>• DVD ROM Drive</li> <li>• Windows Standard Server</li> <li>• *Optional Replication Server</li> </ul>
25 - 50 Users	<ul style="list-style-type: none"> <li>• 2+ CPU 2+ GHz Dual-Core</li> <li>• 4+ GB RAM</li> <li>• 2+ 146+ GB disk RAID 1 (OS)</li> <li>• 2+ 146+ GB disk RAID 1 (files, data &amp; BI)</li> <li>• 1+ 146+ GB disk to store backups &amp; AI</li> <li>• 2+ 100+ MB NIC</li> <li>• DVD ROM Drive</li> <li>• Windows Standard Server</li> <li>• *Optional Replication Server</li> </ul>

**Concurrent Users****Hardware Specifications Administration, DB & File Server**

51 - 99  
Users

- 2+ CPU 2+ GHz Dual-Core
- 4+ GB RAM
- 2+ 146+ GB disk RAID 1 (OS)
- 4+ 146+ GB disk RAID 10 (files, data & BI)
- 1+ 146+ GB disk to store backups & AI
- 2+ 1 GB NIC team to switch
- DVD ROM Drive
- Windows Standard Server
- \*Required Replication Server

100 - 149  
Users

- 2+ CPU 2+ GHz Quad-Core
- 6+ GB RAM
- 2+ 146+ GB disk RAID 1 (OS)
- 4+ 146+ GB disk RAID 10 (files, data & BI)
- 1+ 146+ GB disk to store backups & AI
- 2+ 1 GB NIC team to switch
- DVD ROM Drive
- Windows Advanced/Enterprise Server
- \*Required Replication Server
- \*Optional File Server

150 - 299  
Users

- 2+ CPU 2.3+ GHz Quad-Core
- 8+ GB RAM
- 2+ 146+ GB disk RAID 1 (OS)
- 2+ 146+ GB disk RAID 1 (code)
- 6+ 146+ GB disk RAID 10 (code, data, & BI)
- 2+ 146+ GB disk RAID 0 (backups & AI)
- 2+ 1 GB NIC team to switch
- DVD ROM Drive
- Windows Advanced/Enterprise Server
- \*Required Replication Server(s)
- \*Optional File Server
- \*Optional SAN or Direct Attached Storage

300 - 500  
Users

- 4+ CPU 2.5+ GHz Quad-Core
- 12+ GB RAM
- 2+ 146+ GB disk RAID 1 (OS)
- 2+ 146+ GB disk RAID 1 (code)
- 8+ 146+ GB disk RAID 10 (code, data & BI) [size storage accordingly]
- 2+ 300+ GB disk RAID 0 (backups & AI)
- 2+ 1 GB NIC team to switch
- DVD ROM Drive
- Windows Advanced/Enterprise Server
- \*Required Replication Server(s)
- \*Optional SAN or Direct Attached Storage
- \*Optional File Server

## Concurrent Users

500 - 1000  
Users

## Hardware Specifications Administration, DB & File Server

- 4+ CPU 2.5+ GHz Quad-Core
- 24+ GB RAM
- 2+ 146+ GB disk RAID 1 (OS)
- 4+ 146+ GB disk RAID 1 (files)
- 8+ 300+ GB disk RAID 10 (files,data & BI) [size storage accordingly]
- 2+ 300+ GB disk RAID 0 (backups & AI)
- DVD ROM Drive
- Windows Standard Server
- \*Required Replication Server(s)
- \*Required File Server(s)
- \*Optional SAN or Direct Attached Storage

1000+ Users

- Contact Support.

## Hardware Specifications for Separate Replication & Report Server

Replication & Report Server focus on:

- CPU
- RAM
- Network
- Minimal hard disk impact
- Similar to DB server w/ a leaner disk subsystem

## Desktop & Laptop Configuration

- 1+ CPU 1.5+ GHz
- 1 GB RAM (XP), Recommend 2 GB+ RAM for Vista and Windows 7 (Solutions V6)
- 40+ GB disk
- 10+ MB NIC
- Minimum resolution (1024 x 768)
- 15" SVGA monitor
- Keyboard & mouse
- Requires .Net 3.5+ Framework (Solutions V6)
- Java V6 16+

Note:

- \*Laptops add 56k modem or wireless PC card modem; HP compatible PCL5si or Postscript drivers
- \*Suncoast Solutions is a Fujitsu reseller and can assist with your hardware needs.

## Virtualization Compatibility

- VMware ESX, ESXi
- Citrix XenServer
- Microsoft Hyper-V
- Allocate 300+ MB memory for kernel or manufacturer's recommendation
- Do not over commit memory or processor resources
- Aim for 50% processor load or less

\*Note: the recommended hardware resources based on the hardware specifications and usage must be allocated.

## Third Party Interfaces & Software Licensed Products

### SOFTWARE LICENSES

- Progress provision, client networking, network database, personal database & application server licenses
- Test/DR Licenses are required for Testing or Disaster Recovery Systems
- Virtualization (optional), i.e. VmWare ESX, Microsoft Hyper-V, Citrix XenServer
- Storage: HP SAN, Fujitsu Eternus, IBM, EMC
- Thin Client: Terminal server, Citrix server
- I32 Forms Designer (runtime) - forms developer (optional)
- HCPCS, CPT, ICD9 and zip code data files
- pcANYWHERE 10+ or WebEx Remote Access
- Microsoft Access, Word and Excel (optional)
- Adobe PDF Viewer

### INTERFACES

#### INSURANCE CLAIMS INTERFACE

- GHN-Online
- Availity

#### FINANCIAL, AP, GENERAL LEDGER INTERFACES

- AP: All AP Interfaces
- GL: All GL Interfaces
- Payroll Interfaces
  - CYMA
  - Multiview
  - ADP
  - Ceridian
  - All Payroll Interfaces

#### PHARMACY INTERFACE - One-way demographic data interface.

- Hospice Pharmacia
- Hospiscript
- Wise Hospice Options
- Carepoint

#### MEDICATION INTERFACE - Drug database contains a wealth of information on traditional and alternative medications.

- First DataBank Drug Database

#### TIME/ATTENDANCE INTERFACE - Interface to document time and attendance, real time through wireless and wire phones.

- CellTrak
- Carewatch
- Sandata

#### FAX INTERFACE

- GFI Faxmaker V12

#### OTHER INTERFACES

- HL7 Compatible
- Peoplesoft

### EXPORTS

- Deyta
- HPCANYS
- OCS (Home Health)
- SHP (Home Health)
- All Reports

#### PORTALS - Assists physicians in decision making, review, referrals, and signage of verbal orders and certifications.

- Physician
- Solutions Intelligence/Business Intelligence

## Client/Server Remote Access Configuration

- Client/Server based application that uses Windows Forms
- Data communication is handled through the TCP/IP protocol when running client/server
- Name resolution of the database server is handled through DNS and host file entries
- Remote connectivity can be handled in several ways:
  - Client connects to modem pool through a dialup connection
  - Client connects over LAN/WAN with < 10 MB bandwidth, e.g. T1
  - Client accesses WAN by establishing a VPN across Internet
- When using thin client technology, allocate at least 300 MB of disk and 150 MB of memory per concurrent user.
- The recommended solution when running Solutions client/server over a dialup, internet, dedicated client, and other slow connections, is through thin client technology, such as Terminal Server or Citrix.
- Alternate solution to thin client technology is to install Solutions and Progress client networking on a remote server where only the data is passed over the connection. This solution should be thoroughly tested to scale as the available bandwidth may not accommodate the number of users and the usage.

## Remote Support

Supported Solutions:

- WebEx
- pcAnywhere
- Citrix/Terminal Services
- Client-less VPN

## Replication (POS) Configuration

Connectivity Methods

- Over phone lines, you may use Microsoft's standard Dialup Networking tools. Windows server configured with RAS and a modem pool (Digi & Equinox) using a rolling number system thereby alleviating busy signals.
- Windows server configured to connect to Internet Provider using VPN. Laptops would establish connection through the VPN using the local IP address.
- Docking stations on the network.
- Wireless b or g connectivity with encryption (WPA or WPA2)

Note: Once the user has established a connection and is authenticated on the network, the transfer of data is handled by messages sent over TCP/IP. Name resolution of the database server is handled through DNS or host file entries.

## Fault Tolerance

To protect data and minimize downtime:

- Raid 1+ & 0+1 (No Raid 5 on disk that stores the production databases)
- DVDRW
- Tape device & backup software
- External device e.g., save data to external disk
- Progress online backups
- Disaster Recovery Systems
- Extra components e.g., dual power supply, spare drives
- Progress After Imaging (5% performance impact)
- Progress Open Edge Replication (real-time DR solution)

## Security

- Ensure that data in motion is protected through the use of secure communication protocols such as VPN or SSL.
- Ensure that data at rest is protected by encryption on all mobile devices/servers, to prevent data breaches due to loss or theft.

The Department of Health and Human Services has issued guidance on rendering unsecured health information unusable, unreadable, or indecipherable to unauthorized individuals.

We strongly encourage you to visit the HHS website as they provide specific guidance, re:

- a) valid encryption processes for data at rest
- b) valid encryption processes for data in motion
- c) media sanitation

The link to the HHS website is:

<http://www.hhs.gov/ocr/privacy/hipaa/administrative/breachnotificationrule/brguidance.html>

**Last Updated: 09.24.10**