
PathLinks System Requirements

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This document describes MDI Achieve's recommendations for client networks running the PathLinks application. As PathLinks continues to mature, the recommendations provided are subject to change without notice. Please contact MDI Achieve before purchasing equipment to ensure that you have the most current information. MDI Achieve is under no obligation to support PathLinks installations that are not compliant with this document. If you have technical questions about PathLinks that are not answered in this document, please contact MDI Achieve Support at 800-869-1323.

Technical Description of PathLinks

PathLinks is a client/server application intended for use by Long Term Care facilities. The PathLinks client (developed in PowerBuilder® 10.5) is installed on a computer that has network access to a Sybase® database server, (MDI Achieve provides/installs/configures the Sybase software and Sybase licensing). Sybase runs on a Windows Server operating system and hosts the PathLinks database.

When a user launches PathLinks on their local workstation (or a Citrix® server), they establish a network connection to the Sybase database server using the "Sybase Adaptive Server Enterprise PC Client", which is automatically installed during the PathLinks client installation. Resident data is then added, removed or edited in the database via the PathLinks client.

Client Network Requirements

PathLinks operates successfully under most network topologies, *including wireless*. However, for performance reasons MDI Achieve recommends running PathLinks on a 100 or 1000 Mbps wired Ethernet network. MDI Achieve also recommends investing in high quality routers, switches or firewalls that are intended for business use, (rather than D-Link®, Netgear® or Linksys® equipment that is intended for home use or home office use).

- **Network:** Individual facilities should operate on a minimum 100 Mbps network, (TCP/IP).
- **Router/Firewall:** Dedicated hardware routers and firewalls should be used to direct traffic across your network and to provide Internet security. Also, as previously mentioned, your network should consist of high quality hardware intended for business use, (such as Cisco®.)
- **PathLinks Port:** The PathLinks client application communicates with the Sybase database server, (via the "Sybase Adaptive Server Enterprise PC Client"), on **TCP port 5000**.
- **Remote Support Tools:** MDI Achieve Support needs to connect to PathLinks workstations and servers at individual facilities to assist facility staff with application problems and questions. LANDesk® is the tool that we use in most cases. LANDesk is installed via our main website and completely uninstalls itself after every session. It is not possible for an MDI Achieve representative to reconnect without contacting a user at the facility. LANDesk requires Internet access on **TCP ports 80 and 443**.
- **WAN Connectivity:** In order to use the PathLinks application on a wide area network, Citrix must be used. This is because the PathLinks application uses the Sybase Open Client to communicate with the Sybase database server. And the Sybase Open Client is not intended for use on a WAN due to likelihood performance problems.

Sybase Database Server Requirements

General Requirements

- The PathLinks database server must be **dedicated** to PathLinks (*and ePREMIS[®], if applicable*) and must **not** be used for any other purpose, (such as PDC, BDC, mail server, file server, and so on.)
- The PathLinks client application must **not** be installed on the database server.
- The PathLinks database server must **not** run in a virtual environment, (such as VMware[®], and so on.)
- The PathLinks database server must **not** have more than 1 TB of available space.
- The PathLinks database server must meet or exceed the requirements outlined below.

Database Server Hardware Requirements

Recommended Database Server Hardware

- 4 GB Memory
- 1 RAID-1 (mirror) for the operating system
- 1 RAID-1 (mirror) for Sybase TEMPDB
- 1 RAID-5 or RAID-10 – locally attached 15,000 RPM Ultra320 SCSI drives, or SAS drives
- 10/100/1000 Mbps network card
- CD-ROM drive and standard input/output devices
- Processor(s) and available drive space – see table below

Note: Sybase database servers can use 32-bit or 64-bit hardware and operating systems.

Minimum Database Server Hardware

- 4 GB Memory
- 1 RAID-1 (mirror) – locally attached 10,000 RPM Ultra320 SCSI drives, or SAS drives
- 10/100 Mbps network card
- CD-ROM drive and standard input/output devices
- Processor(s) and available drive space – see table below

Beds	Facilities	Processor(s)	Memory	Available Space**
1 – 249	1 - 2	1 Intel Xeon @ 1.8 GHz or faster	4 GB	> 30 GB
250 - 849	3 - 5	2 Intel Xeon @ 2.0 GHz or faster	4 GB	> 50 GB
850 - 1649	6 - 12	2 Intel Xeon @ 2.33 GHz or faster	4 GB	> 75 GB
1650 - 2849	13 - 25	4 Intel Xeon @ 2.5 GHz or faster	4 GB	> 100 GB
2850+	26+	Contact MDI Achieve		

** The “Available Space” recommendations contained in the table above allow for growth.

Note: Drive space required at the time of a new install is approximately 10 GB. Drive space required for a server migration will depend on the size of your existing PathLinks database.

Database Server Software Requirements

Recommended Database Server Software

- Windows Server 2003[®] SP2 (32-bit or 64-bit) or Server 2008[®] SP2 (32-bit or 64-bit)
- Tape Backup Software

Minimum Database Server Software

- Windows Server 2000[®] SP4 – not recommended, because Microsoft’s “Extended Support” of Windows 2000 is scheduled to end on July 13th, 2010.

Client Workstation Hardware & Software Requirements

Recommended Workstation Hardware **

- Intel Pentium 4 or AMD Athlon XP
- 1 GB memory (*or more*)
- 10/100/1000 Mbps network card
- 17" monitor @ 1024 x 768 resolution
- CD-ROM drive or access
- Windows Compatible (Business Class) Laser printer w/PCL6 or PCL5e driver

Minimum Workstation Hardware **

- Pentium III or AMD Duron
- 512 MB memory
- 10/100 Mbps network card
- 17" monitor @ 1024 x 768 resolution
- CD-ROM drive or access

** Standard input devices are also required.

Recommended Workstation Software

- Windows XP SP3, XPe or Vista
- Microsoft Excel 2003 or 2007 (*financial users will need Excel only if they plan to use the GL Excel Report Writer*)
- Citrix XenApp Client (*only required if users will be accessing the PathLinks application via Citrix*)

Minimum Workstation Software

- Windows 2000 SP4
- Microsoft Excel 2000 (*financial users will need Excel only if they plan to use the GL Excel Report Writer*)
- Citrix XenApp Client (*only required if users will be accessing the PathLinks application via Citrix*)

Citrix Server Hardware & Software Recommendations

Citrix Presentation Server 4.5 (**not required to use PathLinks**) is MDI Achieve's preferred method of "publishing" the PathLinks client application on a Terminal Server, because the Citrix client uses less bandwidth than the Terminal Server client, and because Citrix efficiently processes print jobs, (printing problems on Microsoft Terminal Servers that are not running Citrix are not supported by MDI Achieve).

Recommended Citrix Server Hardware

- 1 to 4 Intel Xeon processors @ 2.5 GHz
- 4 to 16 GB memory
- 10/100/1000 Mbps network card
- 17" monitor @ 1024 x 768 resolution
- Ultra320 SCSI RAID
- CD-ROM drive or access

Note: Large organizations may require additional (load-balanced) Citrix servers.

Recommended Citrix Server Software

- Windows Server 2003 SP2
- Citrix Presentation Server 4.5
- Microsoft Excel 2003 SP3 (*financial users will need Excel only if they plan to use the GL Excel Report Writer*)

Note: Client printers should be mapped (automatically) when a Citrix user logs into a PathLinks server.

PathLinks Point-of-Care (POC) System Requirements

Whether POC will be running on a workstation, laptop or thin client, your equipments should be in-synch with the hardware recommendations in the *Recommended Workstation Hardware* section.

- If POC will be running on a workstation or laptop – Microsoft Windows XP SP3 is recommended.
- If POC will be running on a thin client – Microsoft Windows XPe (XP embedded) is recommended.

Important Technical Information about PathLinks

Citrix / Terminal Server

- The following string must be added to the PATH environment variable on Citrix/Terminal Servers, (assuming C:\Program Files\PathLinks is the PathLinks installation directory):
C:\Program Files\PathLinks\Pwrs\sys32;C:\Program Files\PathLinks\Resource;
- PathLinks Citrix servers must not host other applications, (publishing additional applications may result in performance issues).
- Concurrent Citrix sessions in Citrix Presentation Server 4.5 should not exceed 90.
- Concurrent Citrix sessions in Citrix MetaFrame XP should not exceed 35.
- Load balancing using a Citrix server farm is highly recommended for large organizations.
- MDI Achieve is not responsible for providing Citrix software or licenses.
- MDI Achieve does not support printing problems on Terminal Servers that are **not** running Citrix.
- MDI Achieve will defer to Citrix (in most cases) if our recommendations conflict with theirs, (contact MDI Achieve if you have questions or concerns).

Operating System Settings / Compatibility / Testing

- In Windows XP SP2 & SP3, Windows Vista, and Windows Server 2003 the Windows Firewall must be disabled, (or exceptions must be added by your IT staff).
- Sybase, PathLinks 8.1 (or newer), PathLinks IPU 8.1 (or newer) and PathLinks POC 8.1 (or newer) run successfully in 64-bit environments, (Case Mix Coach requires a 32-bit environment).
- Current Operating System Service Packs and all available Critical Updates (from Windows Update) are used during testing to qualify each PathLinks release. If your organization uses “Automatic Updates” to apply Windows Updates that have not been tested by MDI Achieve yet, then you may encounter compatibility issues.

Claims and MDS Transmission

- If a PathLinks workstation will be used to transmit claims in PREMIS, (the old version of Claims Management), then a telephone line and modem are required, (this only applies to the old version... the new version, ePREMIS, encrypts claims and transmits them over the Internet). MDI Achieve is not responsible for providing, and does not support, the telephone line or modem.
- If a PathLinks workstation will be used to transmit MDS submissions, then a telephone line and modem are required. MDI Achieve is not responsible for providing, and does not support, the telephone line or modem.

Additional Information

- Standardizing your computer equipment across facilities and setting up consistent user profiles will result in faster problem resolution by MDI Achieve Support.
- Due to the requirements of MDS 3.0, MDI Achieve will no longer support PathLinks on Sybase 11.9.2 beginning on September 1st, 2009. If you have questions about MDS 3.0, or migrating to Sybase a later version, or migrating to AOS (our hosted PathLinks solution), please contact MDI Achieve Support at 800-869-1323 or support@mdiachieve.com.

PathLinks Printing

- PathLinks printers must be Windows and HP compatible, “Business Class”, **Laser Printers** with *at least* 8 MB of on-board memory.
- PathLinks printers must use a PCL6 or PCL5e print driver.
- PathLinks printers must **not** use a “series” or “universal” driver.
- PathLinks printers must **not** be color printers.
- PathLinks printers must **not** be USB connected.
- PathLinks printers must **not** be Inkjet, DeskJet, multi-function or “low-end” printers, because users are likely to experience printing problems, such as incompatible print drivers, poor print quality and/or unacceptable performance/reliability.
- Depending on how your organization uses PathLinks, users that access the Physician’s Orders module might need a Label Printer.
- If your organization uses Create-A-Check to print checks from PathLinks, then you must have a second paper tray to support overflow check printing. For a list of Create-A-Check-supported HP printers and technical support, please refer to <http://www.piracle.com/>.

Note: *There is one entry related to Create-A-Check in the pathlink.ini file, but MDI Achieve does not support Create-A-Check.*

- Pre-printed MAR (Medication Administration Record) and TAR (Treatment Administration Record) forms are available for use with the Physician’s Orders module. These forms allow you to print the MAR or TAR on the front and have the sign-off sheet on the back.

You can order pre-printed MAR and TAR forms from American Solutions for Business:

- Call 800-328-4827, extension 1624
- Fax orders to 320-634-5873
- E-mail orders to mharald@americanbus.com