



Troubleshooting Slow Performance in PLATO Pathways

A white paper from PLATO Support Services

April 14, 2005

- PLATO® Pathways
- PLATO® courseware

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Troubleshooting Slow Performance in PLATO Pathways

■ Introduction

One of PLATO Support's most frequently asked questions is "Why is my PLATO® Pathways system slow?" In order to troubleshoot slow network performance in PLATO Pathways, an understanding of how the program works is necessary.

PLATO Pathways—How the program works

Server role

- Shares the necessary files, like courseware, audio, graphics, and databases
- Sends files to the workstations when requested

Workstation role

- Runs the PLATO Pathways program (program runs on each station when launched)
- Processes all of the data and returns information to the server

Network infrastructure role (cables, switches and/or hubs)

- Carry data back and forth from the workstations to the server
- Manage traffic between the workstations and the server

Therefore, the speed of PLATO Pathways is a function of how fast the workstation can process the files that are being sent back and forth to the server via the network infrastructure.

Please keep mind that the troubleshooting steps in this white paper should be completed by a qualified computer/network technician or administrator. Anyone who is not a qualified technician or administrator should consult with the appropriate personnel.

■ How to Troubleshoot Slow Network Performance

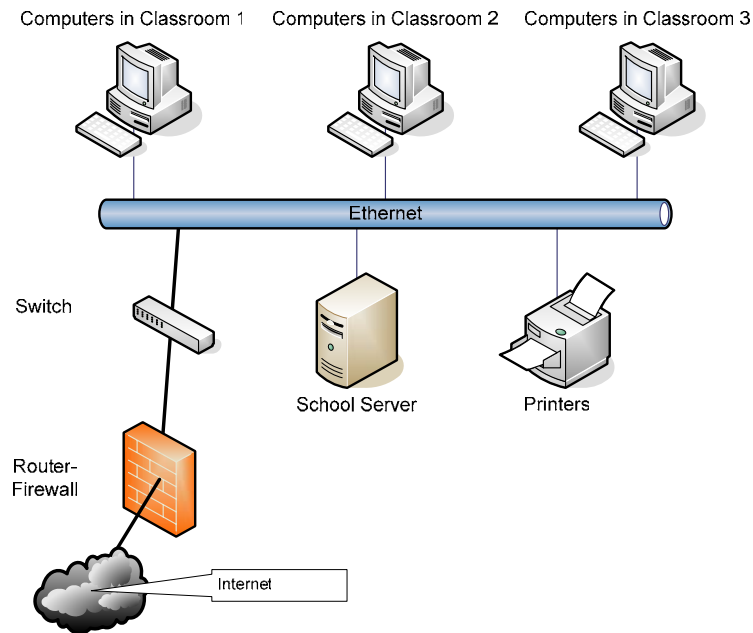
There are three main components of a network:

1. Workstations
2. Servers
3. Network switches or hubs

Any one of the three components that does not meet minimum specifications may cause slow performance in PLATO Pathways.

A typical Ethernet network is shown below. In this network, all servers and workstations connect to a switch. A network may have more than one switch.

Ethernet LAN Diagram



Following are step-by-step guidelines to help you troubleshoot your PLATO Pathways network.

Step 1: Make sure all computer hardware and networking equipment meets the system and configuration requirements for PLATO Pathways:

[System requirements for PLATO Pathways networks](#)

[Configuration requirements for PLATO Pathways networks](#)

For example, if the network has hubs instead of switches, slowness may occur. Hubs are no longer supported, and in general, operate much less efficiently than switches. Make sure all workstations, servers, and switches are running at 100 mbps. In some networks, it may be necessary to manually configure all computer network interface cards (NICs), server NICs, and switches for 100 mbps and Full Duplex to achieve maximum efficiency (as opposed to setting them to auto-detect).

Also, please note that wireless networking is not currently supported for PLATO Pathways (see [system requirements](#)).

You may also find the following support tip to be of value:

[25485 - Getting at the root of the problem: Preventing and resolving lock time outs, missing files, and database corruption](#)

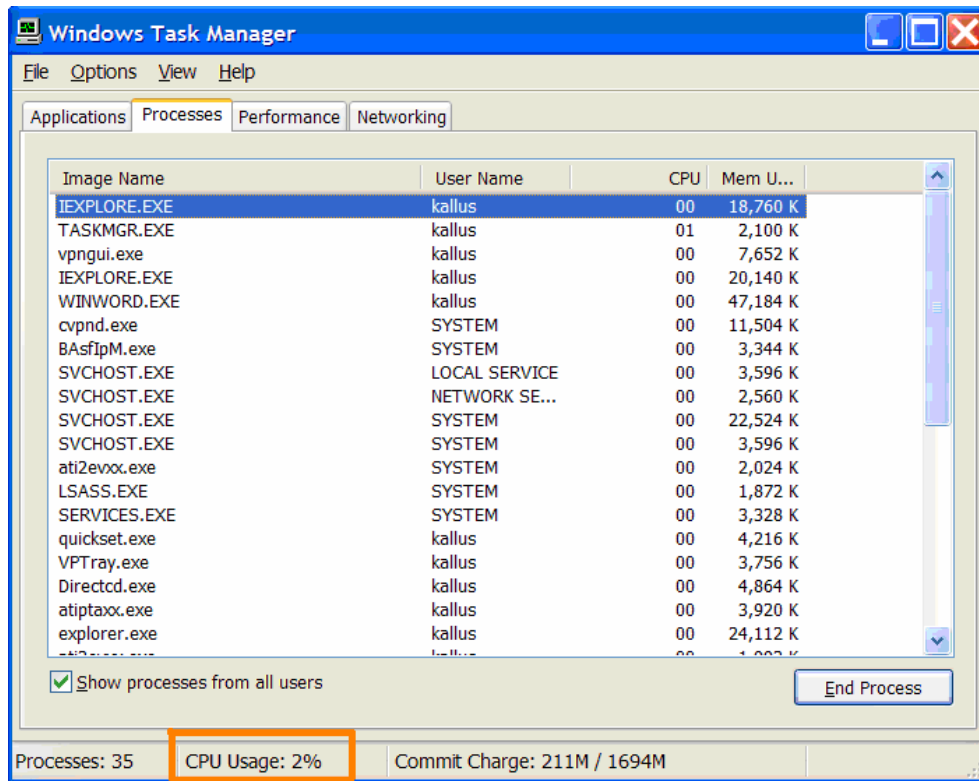
Step 2: Determine if virus scanning software is degrading network performance. Virus scanning software can actively scan files that are being used by the server and PLATO Pathways workstations. This may greatly reduce network performance. To determine if virus scanning software is a problem, temporarily disable it. If the performance of PLATO Pathways improves when the scanning software is disabled, you'll need to configure it to run with PLATO Pathways.

The support tip below provides instructions and explains which files and folders to exclude from scanning for PLATO Pathways. Therefore, it may be necessary to run nightly scans of the excluded files and folders and maintain accurate backups.

[23890 - How to configure your antivirus software](#)

Step 3: Find out what programs and services are running on the file server to determine if it is over-utilized. Examples of other programs that may be running simultaneously on the server are email programs and Microsoft Active Directory Services.

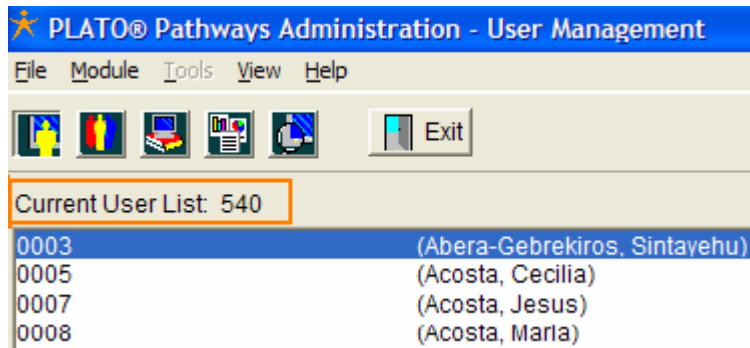
Depending on the specifications of the server, like amount of memory and processor speed, other programs and services may or may not cause over-utilization. Utilization of the server can be monitored in **Windows Task Manager**, shown below.



If CPU usage is consistently above 30-40%, the server may need to be upgraded. However, this can be hard to predict because other factors also affect CPU usage, such as the type of server and the programs and services that are running on it.

Please note that 3D screen savers on Windows servers have been found to increase server utilization dramatically. If a screen saver must be used instead of turning off the monitor, the blank screen saver can be used.

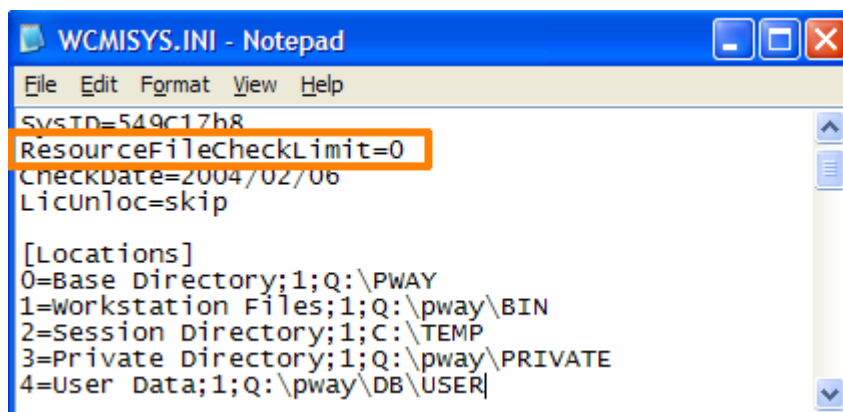
Step 4: Determine the number of users in the PLATO Pathways database. When you are signed on to PLATO Pathways as an administrator, the number of users can be found in the upper-left corner of User Management, as shown below:



In general, the more users you have on the system, the more time PLATO Pathways takes to process information at logon and especially when doing administrative tasks. If possible, delete all users that are not necessary.

WARNING: Deleting users will permanently remove them from the system. If user data may be needed in the future, run and print reports to obtain the necessary data before deleting students.

Step 5: If delays occur when launching courseware at the "Checking Resources" checkbox, change the *ResourceFileCheckLimit* from 0 to 1 in the PWAY\WCMISYS.INI file, as shown below.



The WCMISYS.INI file in the \PWAY folder is the system initialization file for PLATO Pathways. Changing the value from 0 to 1 in the *ResourceFileCheckLimit* line prevents PLATO Pathways from checking files when courseware is launching, which speeds up the launching of courseware.

. (You can temporarily change this setting back to “0” if needed to troubleshoot the launching of courseware in the future.)

Step 6: Search vendor specific web sites, such as Microsoft (<http://www.microsoft.com/>) and Novell (<http://www.novell.com/>), for updates and troubleshooting tips related to poor network performance. For example, Novell Inc. and Microsoft Corporation frequently provide updates, tweaks, and patches for their software. Below are examples from the PLATO Support knowledge base:

[25634 - Slow Performance Copying Files from Windows XP if using Novell Client 4.82 or 4.83](#)

[26230 - Disable Opportunistic Locking or File Caching To Avoid Slow Performance and Corruption](#)

[26467 - Slow Performance in Windows 2000 Networks or On Windows 2000 Workstations](#)

Step 7: Scan workstations for adware, spyware, and malware. Adware is software that delivers banners or ads. Spyware is software that collects information or monitors a user’s actions. Malware is any type of malicious software, like viruses. These three types of software can be installed unintentionally on a workstation while a user browses the Internet or installs free, downloaded programs. Since they run as background applications, they can use workstation or server resources and consume bandwidth.

To prevent adware, spyware, or malware from causing slow performance, follow these recommendations:

- Scan all servers and workstations for [adware, spyware, and malware](#) (free scanning programs are available for download from the Internet)
- Make sure all servers and workstations have current virus definitions installed
- Schedule periodic scans for viruses on all servers and workstations

■ Field Engineering Services

If you do not have your own network administrator to identify problems in your network and troubleshoot slow performance, consider having a certified PLATO Learning Field Engineer work with you onsite.

PLATO Learning’s highly trained Field Engineers provide the following fee-based services, customized to your needs:

- Onsite hardware, network, and software installation
- Onsite technical support
- Specialized technical consulting for PLATO Learning software-related issues

Call 800.44.PLATO or e-mail info@plato.com for more information and rates.

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