

Technical Support Bulletin 1

Windows® 2000 and Windows® XP Computer Systems

February 22, 2006

SUBJECT: Troubleshooting Computer Systems

Scope

Troubleshooting Computer System problems on Windows® 2000 and Windows® XP computer systems

Overview

This document is designed to assist in troubleshooting software issues that may be caused by systemic issues.

Problem

Some of the Software issues that have been reported on instrument computers or downstream computers have been found to have been caused by systemic conflicts or problems. Some of the symptoms of the problem include:

- Software not installing properly
- Software only accessible by one user
- Software not launching when double clicking on the icon
- “Access denied” error message when launching the program
- Solid Yellow light on Instrument (Genetic Analysis Instruments)

Solution

Over time, the following issues have contributed to these problems:

- Limited or the wrong type of Admin privileges when installing the software.
- Software conflict (i.e. 3rd party firewall software not configured properly, more than one instance of the software is running, etc.).
- Certain Anti-Virus software packages (settings or software itself).
- Infected system (Viruses found on scan).
- Expired password

Not all of these issues require re-imaging of the computer or local IT support and can be checked by whoever is encountering the problem.

Software Conflicts

Software conflicts can either be caused by the same software not fully closing (or opening) from the last instance when it was used, or by 2 pieces of software that are conflicting with each other.

Software is Running or More than One Instance of the Software is Already Running

Sometimes, the computer may fail to fully close the software from the last time it was opened, giving it the impression that it's still running. To check it:

- 1) Open the Task Manager (Ctrl + Alt + Del) and check the Applications tab. If more than 1 instance is running, check for the minimized window at the bottom of the screen and open the software.
- 2) If the Applications tab is blank, click on the Processes tab. Look for more than one instance of the software executable. If you see more than one, restart the computer. Do not attempt to End Process as this can corrupt certain files on the system.

Software Conflicts between 2 Software programs

Usually these can be determined almost immediately if the software fails to function after installing another piece of software. If you are uncertain if anything was installed, check with your local IT department as some software packages can be installed or updated remotely. If you find that it is a software conflict, uninstall the software that is causing the conflict. In extreme cases, this may require re-imaging of the system.

In some cases, we have found that certain Anti-Virus software packages interfere with software installation and/or the ability to run the software. In these cases, turning off the packages is not sufficient to fix the problem, either due to software conflict or certain parts of the software are still running in the background and cannot be shut off. In these cases, the computer has to be removed from the network by unplugging the network cable and the Anti-Virus software uninstalled prior to uninstalling and reinstalling the Applied Biosystems Software package. Alternatively, install the Applied Biosystems Software packages prior to installing any Anti-Virus software. If there are any conflicts, please be prepared to uninstall the Anti-Virus software.

Changing the Computer Name

If you or your IT department needs to change the computer name to meet internal specifications, the name should be changed prior to the installation of any Applied Biosystems' software packages. If the name is changed after the software is installed, certain pathways will become "broken" causing difficulties with launching the software. If this should happen, it is recommended that you change the computer name back to what it was. If you cannot do so, then all of the Applied Biosystems' software packages should be completely removed and re-installed. This may require re-imaging of the instrument computer, and the re-making of Projects, Analysis Protocols, etc. in the Analysis software packages.

Memory

It has been found that certain types of RAM may conflict with our software. It is not an issue with the Dell® computers sold by Applied Biosystems, but customers purchasing their own systems should be aware of this as not all computers use the same type of memory.

When attempting to install older software packages on newer systems (i.e. GeneScan® Software), users may experience a message stating that there is not enough memory to perform the installation, even though the computer system memory requirements far exceed the optimal requirements for the software package. On systems containing up to 1.5 Gb of RAM, we have found that in most cases, re-adjusting the amount of memory in the page file will allow for installation and running of the software on the newer system, provided that the new system meets or exceeds the other system requirements.

To change memory in the paging file:

- 1) Right click on My Computer, select Properties, and click on the Advanced Tab.
- 2) Windows® 2000 Users: Select Performance Options and in the Virtual Memory section, select the Change button.

Windows® XP Users: Older software packages (i.e. GeneScan® Analysis Software, Genotyper® Analysis Software, ABI PRISM® Sequencing Analysis Software v.3.7, SeqScape® Software v.2.0 or lower) have not been tested on Windows® XP. Installation and usage on this platform is not supported.

- 3) Adjust the minimum to 500 Mb and maximum to 750 Mb and click on Set. Click OK on all Windows until clear.
- 4) Restart the computer and launch the software.

Networking

Although Applied Biosystems does not officially support networking, we do recognize that many of our customers do network the instrument computers. Networked computers that are not configured correctly may cause problems with launching the software (it can also cause problems with the actual data collection process, but for this bulletin, we are focusing on issues that will interfere with the actual

launching of the software). These problems could be due to firewalls, failure of certain drivers to launch, networking software conflicts, or network interrupts.

Firewalls: If your computer is running Windows® XP, Service Pack 2, please refer to the User Bulletin regarding firewall settings (User Bulletin: Data Collection Software v.3.0 and Windows® XP Service Pack 2, p/n 4365331). If you are running third party firewall software, unplug your computer(s) from the network, then turn off the firewall. After the run is complete and analysis is finished, turn the firewall back on prior to re-connecting to the network. In cases where there is a software conflict, your local IT group should remove it from the system. There have been some cases that suggest a possible workaround might be to put a physical firewall/router between the computer and the network, but this is not supported by Applied Biosystems (in some cases, this workaround has also fixed issues with the Data Collection software being interfered with by network activities, such as pinging the computer across the network).

Failure of Drivers/Files to Launch: In some cases where the computer has been unplugged from the network, certain drivers or files failed to work, as seen in the system log, resulting in a solid yellow light on the instrument at start up. It is unknown at this time what the relationship is between these files/drivers and the computer/instrument set up. Re-establishing the network connection and restarting the computer will fix the problem, but now the sending of the firmware and keeping the instrument/computer connection open is now tied into the institution's network, which opens the system up to a number of potential data collection problems that may be network related (i.e. virus attack, server going down, pinging, etc.). If you encounter this problem, some things to try:

1. Problem might be due to an IRQ conflict. Unplugging the computer from the network while Data Collection is open may cause the services to fail (i.e. Data Service, Instrument Service, etc). If the Service Console services go to yellow, this may be an indicator. If this should happen:
 - a. Unplug the cable from the second network card leading to the customer's network.
 - b. Transfer the Ethernet cable connecting the instrument and the computer from the onboard Ethernet port to the Ethernet card.
 - c. Right click on My Network Places and select Properties.
 - d. Open the Properties on Local Area Connection and Local Area Connection 2 (Right click and select properties), select TCP/IP and record the settings for both. After they are recorded, swap the settings between LAN and LAN2 so that the TCP/IP settings for the instrument are on LAN2. Reboot the system.

If this works, the local IT department may have to go into the Device Manager and check the IRQ settings and change them for the network cards if they are the same.

2. If this does not work, then there may be a software conflict between the network software and the Data Collection/Analysis software. If that is the case, current suggestions are to either remove the networking software or to re-image the computer and keep it off the network

Checking Administrative Privileges (Windows® 2000 and Windows® XP Operating Systems)

All Applied Biosystems software packages require that the user have local administrative privileges for installation. Sometimes, this level of permission can get confused with:

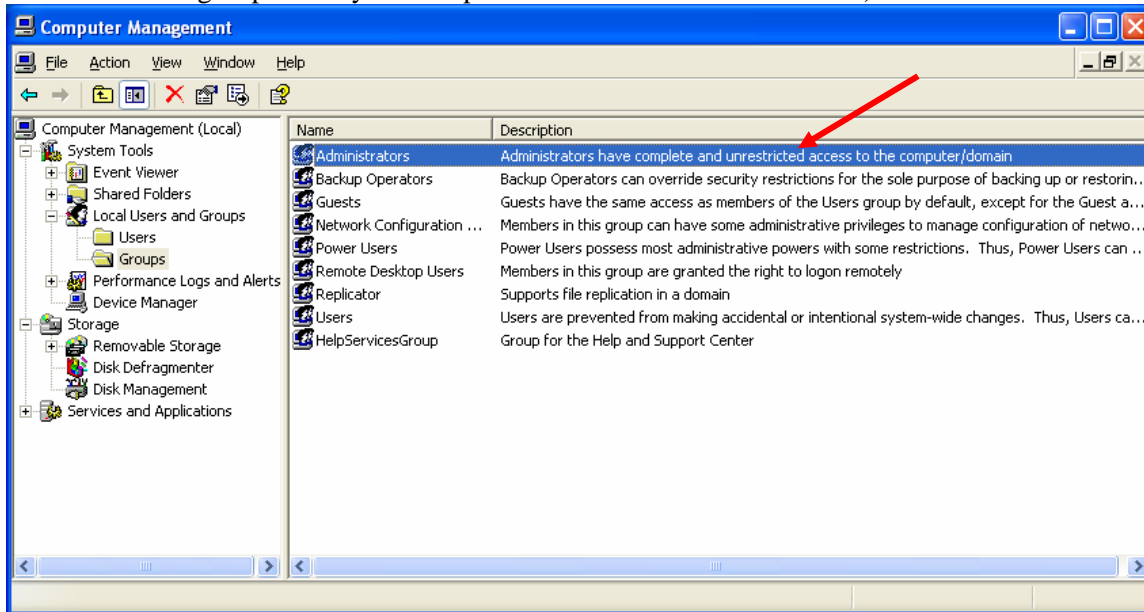
- Having Admin privileges with restrictions:
- Having network admin privileges but not local.
- Having no admin privileges at all.

Due to the importance of this pre-requisite for installation, we strongly urge customers to verify what kind of privileges they have on the computer prior to installing software.

To check Administrative Privileges:

1. Right click on My Computer and select Manage (in Windows® XP, My Computer may be in the start menu, but you can still right click on it).

- Open Local Users and Groups and select Groups (selecting Users may not give you the information you need since it does not necessarily populate all the Users there).
- Look for whatever group that has the term "...complete and unrestricted access to the computer/domain" in the description field next to it and double click. (Sometimes IT groups will change the permissions for the "Administrators" group and create another group for themselves, so it is important to check the Description field to determine which group actually has the permissions to install the software).



Check if the login used to get on to the computer appears there or if there is a message stating the user does not have the necessary privileges to access that info. If the user name used for login does not appear in the list or the login name used does not have full local administrative privileges, then they need to log on to the computer with a User login that does. If you do not know the password for a User ID with that level of permission, please contact your local IT department. If you are logged in with a User Name that appears in that group and still experiencing problems, then please check the security settings.

Checking the Security Settings for the Software

All of the analysis software packages have a program in the installer to enable all users on the computer to be able to access and use the software. However, systemic settings can prevent the program from enabling all user access. To check if all users have access:

- Double click on My Computer, select the drive containing the Applied Biosystems software and select AppliedBiosystems folder.
 - Windows® XP only: Go to Tools-->Folder Options and select the View tab. Scroll down to "Use simple file sharing [Recommended]" and deselect the box*
- Highlight the AppliedBiosystems folder, right click and select Properties.
- Click the security tab to view which groups have access to the folder. There should be a group that either says "Everyone", or "Power Users" and "Users". If the user is part of the group, open the AppliedBiosystems folder, select the folder for the software having a problem and repeat. If it does not, check the group that does appear there to see if the User is part of the group (see checking admin privileges for details on that).

If the User Name is not on the list:

- Make sure you are logged in with Admin privileges (see above).
- Follow steps 1–3 in checking Security Settings.
- Click Add and select the User who you want to give access to. If a message comes up denying permission to do so, have the customer contact the local IT group. If it allows you to do so, restart and log in as the new user.

Checking for Viruses, Stalled Programs, Spyware/Adware

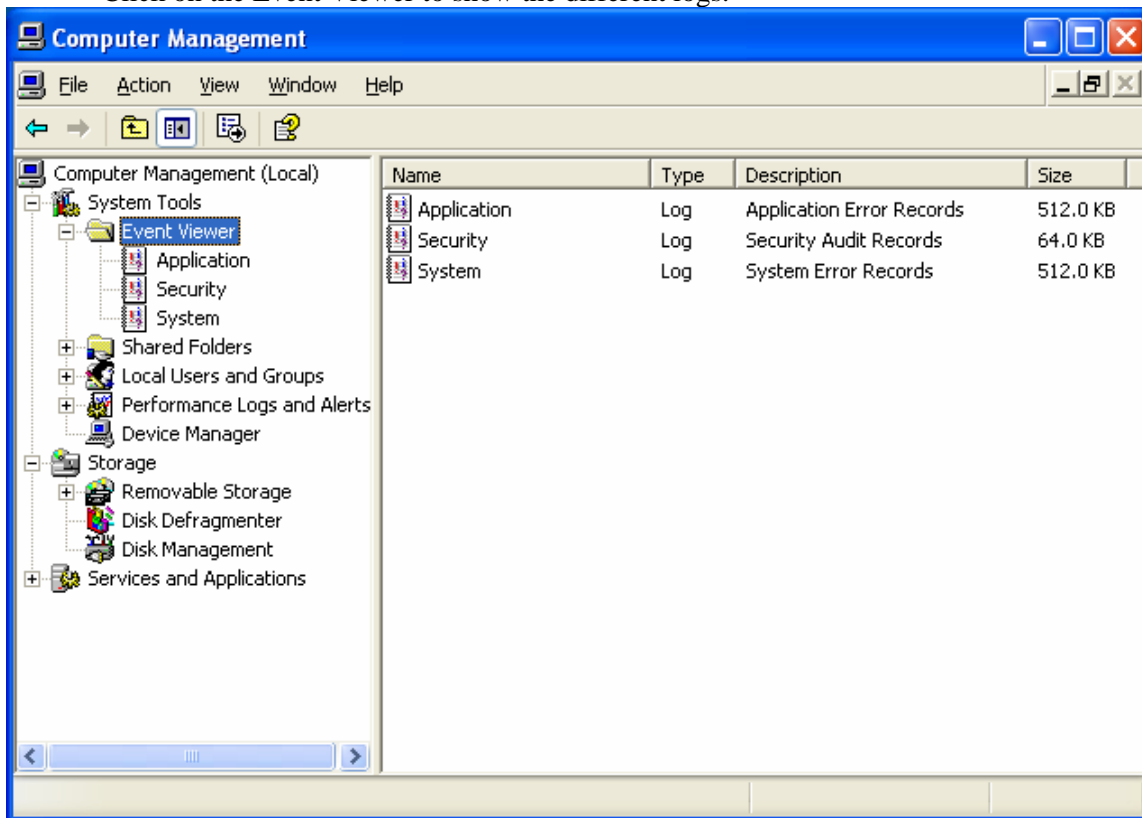
In some of the cases that have come up, the software has not launched due to some drivers not working, viruses infecting key systems, network being down, etc. If you have Anti Virus Software, update the virus definitions and do a check on the system. Symantec® Anti Virus has been used successfully on our systems by our customers. There are also third party freeware applications available to check for Adware and Spyware (i.e. Ad-Aware, Spybot, etc).

In some cases, we have found that certain Anti-Virus software packages installed on the systems have interfered with software installation and the ability to run the software and turning off the packages was not sufficient to fix the problem. In these cases, the computer has to be removed from the network by unplugging the network cable and the Anti-Virus software uninstalled prior to uninstalling and reinstalling the Applied Biosystems Software package.

There are logs that are kept on the computer for everything that happens and are tracked by whether they were system, applications, or security issues. These logs can be accessed via the Event Viewer.

To access these logs:

- Go to My Computer→Manage→Event Viewer
- Click on the Event Viewer to show the different logs.



(Note: Occasionally, system error messages may come up saying:

The System Log is full.


The Application Log is full.


These are not specific to Applied Biosystems' software but refer to these system logs. To fix:

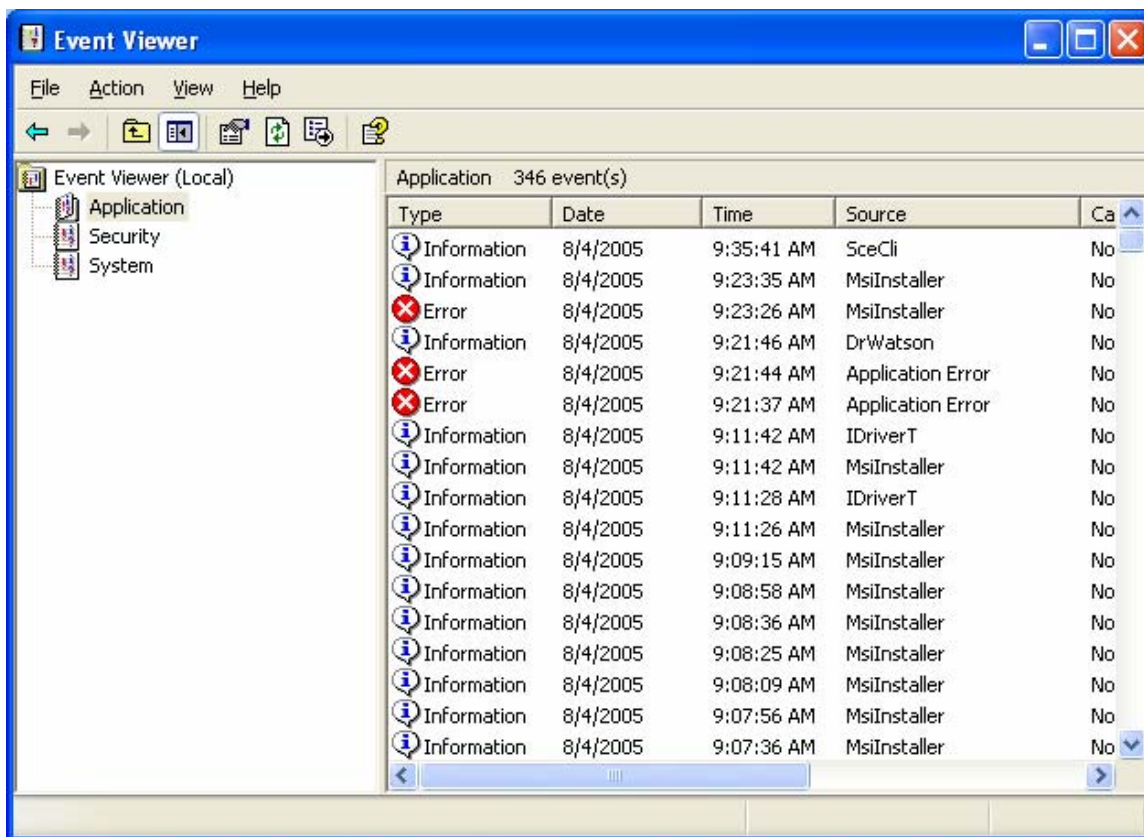
- 1. Select the Log that appeared in the error message (i.e. Application).*
- 2. Go to the Action menu and select "Save Log As" should the customer want to save this information.*
- 3. Go to the Action menu and select "Clear all Events". This will wipe the log clean and clear the error message.*

Alternatively, you could go to the Action menu and select Properties and increase the size of the log file and set it to overwrite events older than x number of days. It is recommended if you do this to

keep it at least at the minimum number of 7 days since anything less than that may not be informative if trying to find out when a problem started or how it started on the system.

System: System logs will let you know what drivers may not have loaded. When checking the logs, reboot the computer first, then go to the log and look for the  in front of the error message with the date and time stamp from when you're checking it. Double click on the error to get a more complete description. The error messages usually contain keywords such as "network" or "driver" that will let you know what systemic function the file is associated with.

Application: Application logs will tell you if there is something going on that is specific to an application. When checking the logs, reboot the computer first, then go to the log and look for the  in front of the error message with the date and time stamp from when you're checking it. Double click on the error to get a more complete description. The error messages usually contain keywords such as "virus" or "firewall" that will let you know what application type the file is associated with. In most cases, you will need to contact your local IT department to remove the virus and repair the damage, turn off the firewall software, etc. In cases where the damage is extreme, re-imaging may be required.



Solid Yellow Light on the Instrument

The solid yellow light on the instrument is usually caused by the instrument not communicating with the computer. If you encounter this, the Data Collection Software may be able to launch, but the Data Collection Software will not be able to communicate with the instrument. Some things to check on if you encounter a solid yellow light.

Loose Ethernet Cable/Plugged into the wrong Ethernet Port

Occasionally you may run into a situation where the cable has come loose. When checking the cables, jiggling the cable may not be sufficient to make sure it is secured. Remove the cable from both the instrument and the computer and place it back in to the proper ports. The network cards should have a link light on them, check to make sure it is on to verify that it is plugged in and working.

To check which port is the proper port on the computer:

1. Right click on My Network Places and select Properties.
2. Open the Properties on Local Area Connection and Local Area Connection 2 (Right click and select properties), select TCP/IP and record the settings for both. The LAN port set up to run the instrument should have “Use the following IP Address” selected and an IP address of 192.168.0.1 and a subnet mask of 255.255.255.0.

Generally, LAN 1 is the onboard Ethernet port and is located up by where the keyboard and mouse plug in, rear USB Ports are located, etc. LAN 2 is usually the Ethernet card and is located lower down in the back of the computer and takes up a card slot.

Expired Password

In some cases, a solid yellow light on an instrument may be caused by the Windows® Operating system password expiring. To check if the password has expired, log in to the computer using the computer User Name and Password (i.e. 3730User). Doing so will sometimes give you a message such as Password has expired or Password has too few characters. (Note: these User Names are not User logins, but logins that the instrument uses to retrieve information such as Firmware from the computer). To fix this:

Windows® 2000 and Windows® XP.

1. Right click on My Computer and select Manage (in Windows® XP, My Computer may be in the start menu, but you can still right click on it).
2. Open Local Users and Groups and select Users.
3. Right click on the Instrument User (i.e. 3100User, 3730User) and select Password. Choose the appropriate password. The amber light should start to flash within a few seconds of doing so and then go to a solid green light.
4. Right click on the Instrument User (i.e. 3100User, 3730User) and select Properties. Make sure that the Password Never Expires box is checked to prevent this from happening again.

Instrument	Data Collection	User Name	Password
3730 Series	All	3730User	3730User
3100	1.1, 2.0	DNA	DNA
3100 Avant	1.0, 2.0	3104User	3104User
3130 Series	3.0	3130User	3130User

Confirm that the FTP Service is running

1. Right click on My Computer and select Manage (in Windows® XP, My Computer may be in the start menu, but you can still right click on it).
2. Look for Computer Management (local) >Services and Applications >Services.
3. If FTP Publication Service is present, check the Status and Startup Type. The Status should be set to “started” and the Startup Type should be set to “Automatic”.
 - a. If the Status is not set to started, right click on the FTP Publication Service line and select Start.
 - b. If the Startup Type is not set to Automatic, right click on the FTP Publication Service line and select Properties. Under the General tab, select Automatic from the pull down menu for Startup Type, then click on Apply and OK.
 - c. If the FTP Publication Service is not present, go to step 4.
4. Restart the computer. If the FTP Publication Service is still not present, contact your local IT group for support. If the FTP Publication Service is present, confirm that the Status and Startup Type is correct. If not, repeat steps 1–4. If it is still not correct, contact your local IT group for support.

Confirm that IIS (Internet Information Services) is active [grey] and/or the FTP Home Directory is properly set [yellow].

- a) Right-click **My Computer** and select **Manage**.
- b) Look for **Computer Management (local) > Services and Applications > Internet Information Services**.
- c) If IIS is available, go to step h).
If IIS is unavailable, go to step d).
- d) From the Start Menu go to **Settings > Control Panel > Add/Remove Programs**
- e) Click **Add/Remove Windows Components**.
- f) De-select **Indexing Service**.
Select **Internet Information Services (IIS)**.
- g) Follow the instructions to complete the install.

- h) Look for **Computer Management (local) > Services and Applications > Internet Information Services**.
- i) Right-click **Default FTP Site** and select **Properties**.
- j) Select **Security Accounts**.
- k) Deselect the **Allow Anonymous Connections**.
- l) Select the **Home Directory** tab.
- m) Select **A directory located on this computer** option
- n) In the Local Path field, enter the appropriate path to the calib.ini file (The location of this file will vary by instrument and computer type. If you are uncertain as to where the calib.ini file is, go to Start→Search and perform a Search for it).
- o) Select the **Read** and **Log Visits** boxes.
- p) Close all windows.

**NOTE: In some cases, the local path in the home directory has been known to be altered or changed, causing the firmware to not be properly referenced.

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