



Troubleshooting AB Tutor Control Connection problems

Version 1.0

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Overview

This document will help you diagnose connection problems between AB Tutor Control and the remote Student machines running the AB Client program. Most connection problems are down to your internal network setups. (e.g. firewalls, routers, switches or DNS/DHCP configurations)

Below are some common problems to do with connections between the AB Tutor Control program and remote clients and what to check for to try to solve them. Also, there is a section below on how to test for connectivity issues and ways to resolve them on your networks.

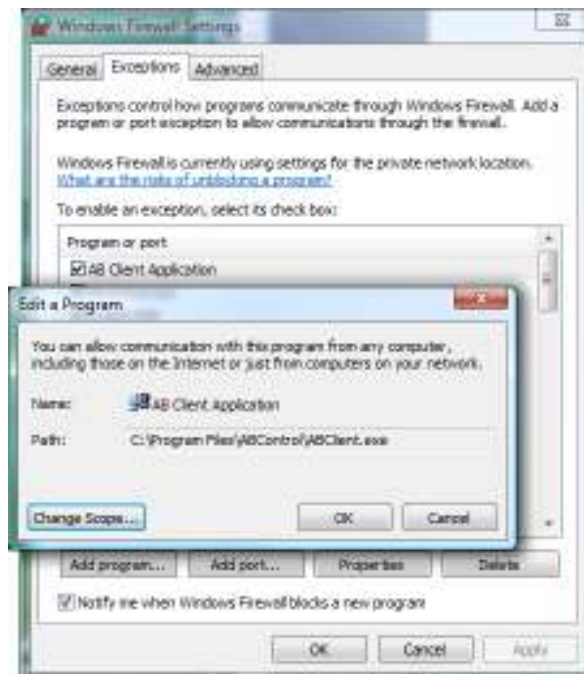
Common Problems

Failed to find a computer during a Scan (Find '<All>')

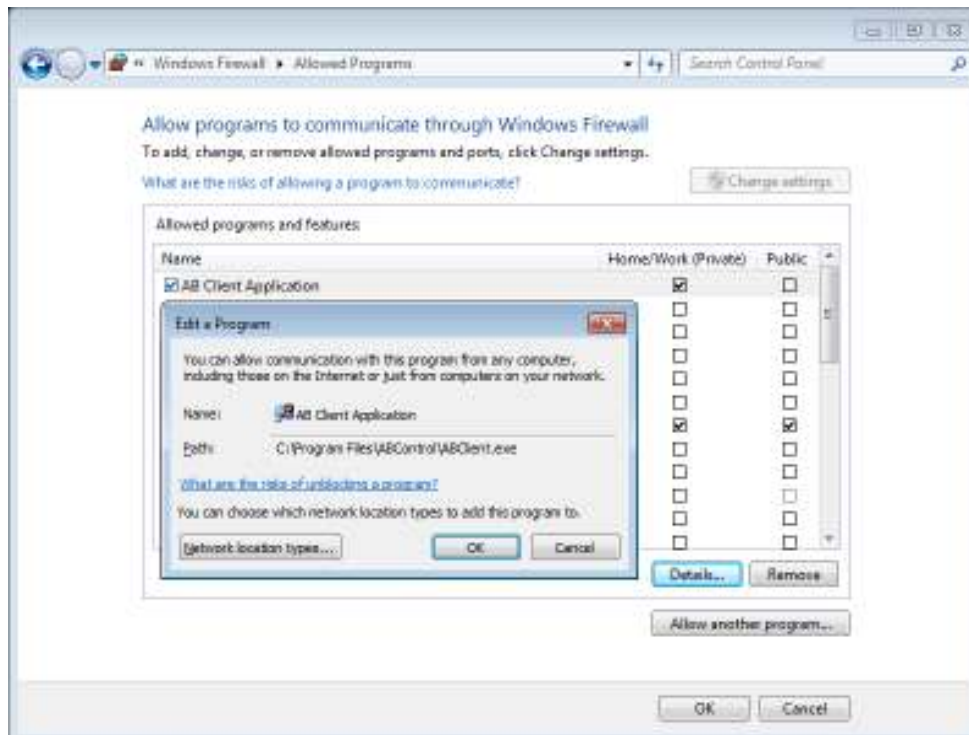
When AB Tutor Control performs a full Scan to find remote machines, it broadcasts a simple and small UDP message on your network. This message is then picked up by any running remote client programs and they then send back a reply saying "yes – I here and this is my IP address and computer name". AB Tutor will then add this computer name to the list ready for you to connect directly to it.

If a machine does not appear in the list then check the following:

- The remote machine is turned on and not in Sleep or Hibernate mode
- The remote machine has a copy of the ABClient program installed and the service is running (see 'Control Panel' – 'Administrative Tools' – 'Services' and find a service named 'AB Client Manager')
- If the Windows firewall is enabled, make sure the ABClient.exe program has been added as an exception. (This should be done by default by the ABTCSETUP6.MSI Windows installer)



Or on Windows 7 machines:

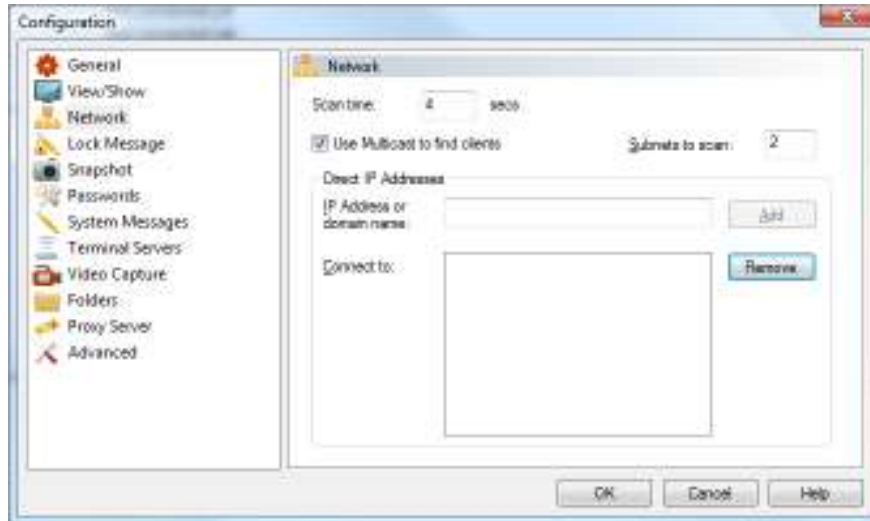


- If using a third-party firewall (e.g. AVG or Symantec), make sure the ABClient.exe program has been added as an exception.
- AB Tutor Control uses UDP port 5151/5152 to broadcast and TCP port 5151/5152 to communicate directly, make sure your switches, routers or hardware firewalls do not block access through this port.
- On larger networks you may need to leave more time to receive a response from all machines. Either 'Scan' again for increase the scan time under 'Tools' – 'Settings' – 'Network')

Please see the section on TELNET tests below to verify if you have a valid connection to the remote machines.

I can scan and find computers within my subnet but not in other subnets on our network.

- By default, AB Tutor Control will broadcast a message only within the local subnet. To send a message outside your local subnet you need to use Multicast. (See 'Tools' – 'Settings' – 'Network'). Also make sure the subnets to scan is set to 2 or more.



- You must also make sure your network and routers/switches are configured to enable 'Multicast' messages through them. Describing how to configure your routers is beyond the scope of this document and our support.

If you are still not able to find machine across your subnets, then you will need to connect via Groups.

- Launch AB Tutor Control and select 'Groups' Manage Groups'
- Create a new Group called 'Entire Network'
- Add all the Computer names to which you want to connect, to this Group.
 - If you have Active Directory, you can add the computers quickly by selecting the 'Active Directory' tab and browsing for the group/groups containing the computer names, multiple select them and press the 'Add to Member' button
 - You can also export your current set of Groups/computers to file (Press the 'Export' button). Then locate this file and manually build the groups by editing it with a simple text editor. The file is in XML format and can be interpreted very easily. Once you have manually added all the computers, press the 'Import' button to reload the groups from this file.
- If you want to protect this 'Entire Network' group so only you as an administrator will see it, then click on the 'Security' tab, right click the mouse in the 'Allow access' box and select 'Add username'. Then enter your Windows login username to this list.

Unable to connect to host: The attempt to connect timed out without establishing a connection (10060)

Common causes of this error are:

- A firewall is blocking the connection to/from the remote machine on port 5151. Check your Windows firewall on both the Tutor and remote machine.
- The IP address of the machine you are connecting to is invalid
- The computer name you are connecting to has a different IP address registered on the Tutor machine. This can occur when your DHCP server allocates a new dynamic IP address to a computer name but your DNS server has not been told about it. So, then your Tutor machine asks the DNS server for the IP address assigned to the remote

computer name, then the wrong IP will be returned. See the section below on diagnosing this problem.

Please see the section below on methods of testing connectivity.

I can scan and find a computer, but when I connect I get a connection failed error

Common causes of this error are:

- A firewall is blocking the connection to/from the remote machine on TCP port 5151 but UDP port 5151 is ok. Check your Windows firewall on both the Tutor and remote machine. Also check the firewall setting in your third-party firewall software (e.g. AVG or Symantec)
- An internal problem has occurred with the ABClient program. See the section on checking for errors in the ABClient program below

Unable to resolve host name: The requested name is valid. But no data of the requested type was found (11004)

Common causes of this error are:

- The computer name specified in the Group is invalid or does not exist.
- Check the computer name is typed correctly in the Group
- Check the name exists in your DNS / DHCP server
- Try the PING test below to see if your network recognizes the machine name and returns a valid IP address

I seem to be connecting to computers in a different classroom

This will only occur if you are selecting a Group of computers and connect to them but when you view the remote machine it show a screen from a computer in a completely different part of the school. Another symptom is that you suddenly can a computer saying 'invalid connection password'

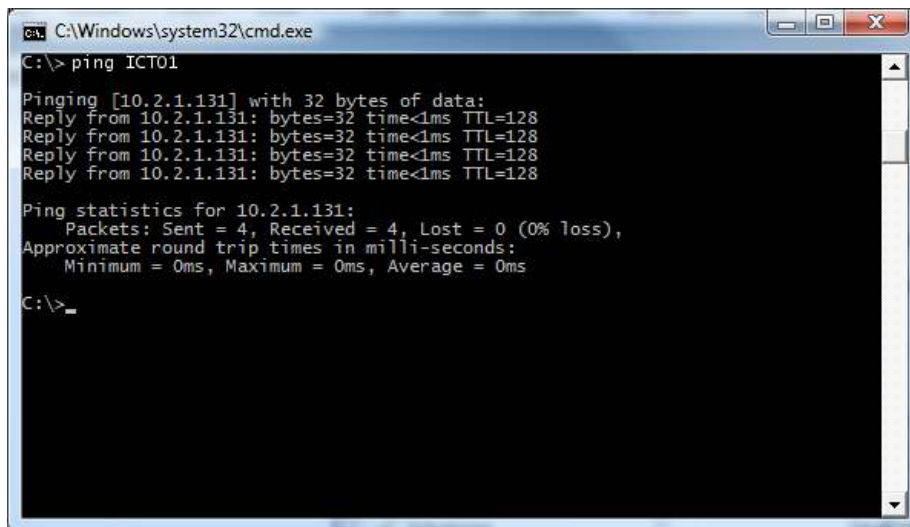
- This is almost always a problem with your DNS / DHCP server not synchronizing properly. See **Check DNS / DHCP problems** below.
- If you get an invalid connection password, then what could be happening is that the IP address returned by your DNS server for the computer you are trying to connect to actually belongs in a different classroom or location when a different connection password has been applied. Again see **Check DNS / DHCP problems** below.

Methods of Testing Connectivity

Simple PING test

This test will simply check that you have a network connection to the remote machine (i.e. it's turned on and is connected to the network)

- Launch the Windows command prompt ('Start' – 'Run' – enter '**cmd.exe**' and press OK)
- Enter: **ping <computer name>** and press ENTER (where <computer name> is the actual name – in our example ICT01 - or IP address of the remote computer)



```
ca. C:\Windows\system32\cmd.exe
C:\> ping ICT01

Pinging [10.2.1.131] with 32 bytes of data:
Reply from 10.2.1.131: bytes=32 time<1ms TTL=128
Reply from 10.2.1.131: bytes=32 time<1ms TTL=128
Reply from 10.2.1.131: bytes=32 time<1ms TTL=128
Reply from 10.2.1.131: bytes=32 time<1ms TTL=128

Ping statistics for 10.2.1.131:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\> _
```

If you get a reply saying the “**Destination host unreachable**” then that machine is either switched off or is not connected to the network.

If you get a reply saying “**Ping request could not find <computer name>. Please check the name and try again**” then your network does not recognise that computer name. You should check the spelling of the name or that the computer has been correctly registered in your DNS and DHCP server.

More comprehensive test using TELNET

TELNET is a connection utility that comes with Windows. On Windows Vista or Windows 7 machines this utility may need to be activated.

To enable telnet on Windows Vista/Windows 7

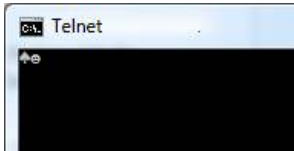
- Open the Windows *Control Panel*.
- Then go into *Programs and Features*.
- Then in programs and features there should be a part that says ‘Turn windows features on or off’.
- Click ‘*Turn windows features on or off*’ then on the list that appears simply check the box beside: ‘*Telnet Client*’.

- Then click OK.
- You may need to reboot.

Using telnet

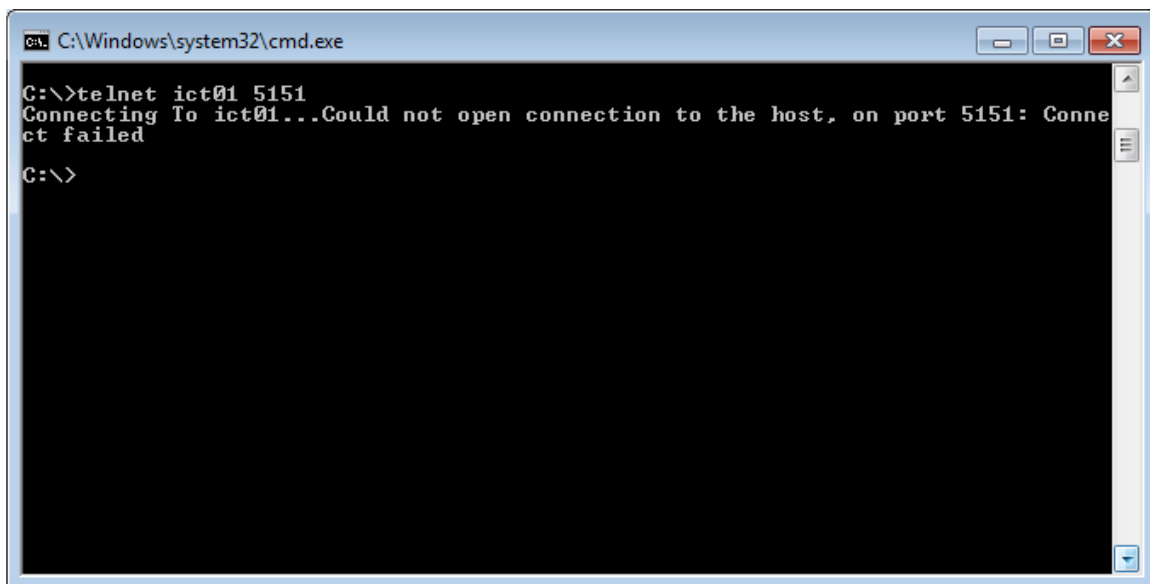
- Login on to the computer where AB Tutor Control is installed
- Launch the Windows command prompt ('Start' – 'Run' – enter '**cmd.exe**' and press OK)
- Enter: **telnet <computer name> 5151** and press ENTER (where <computer name> is the actual name or IP address of the remote computer)

If everything is working fine, then you will see the following reply.



Press the RETURN key 9 or 10 times until you get the 'Connection to host lost' message.

If you get the following reply, then this shows that there is a problem connecting to this machine on TCP port 5151



```
C:\Windows\system32\cmd.exe
C:\>telnet ict01 5151
Connecting To ict01...Could not open connection to the host, on port 5151: Connection failed
C:\>
```

Check the following:

- The remote machine is turned on and not in Sleep or Hibernate mode
- The remote machine has a copy of the ABClient program installed and the service is running (see 'Control Panel' – 'Administrative Tools' – 'Services' and find a service named 'AB Client Manager')
- If the Windows firewall is enabled, make sure the ABClient.exe program has been added as an exception. (This should be done by default by the ABTCSETUP6.MSI Windows installer)
- If using a third-party firewall (e.g. AVG or Symantec), make sure the ABClient.exe program has been added as an exception.

- Try entering the IP address of the remote machine to rule out problems with your DNS/DHCP server (Enter: telnet <IP Address> 5151 and press ENTER)

Checking DNS / DHCP problems

If you connect to a computer that you think is in one location but is actually connecting to a computer in a different class, then you have a DNS/DHCP problem on your network.

Also, if you can connect to a computer after a Find <All> Scan, but if you try to connect to that computer via a Group and it fails, then again this points to a problem with your DNS / DHCP servers.

To investigate this:

- Login on to the computer where AB Tutor Control Tutor program is installed
- Launch the Windows command prompt ('Start' – 'Run' – enter '**cmd.exe**' and press OK)
- Enter: **ping <computer name>** and press ENTER (where <computer name> is the actual computer name of the remote computer)
- Note the IP address returned
- Now go to the actual computer you have just pinged
- Logon (with admin level rights)
- Launch the Windows command prompt ('Start' – 'Run' – enter '**cmd.exe**' and press OK)
- Enter: **ipconfig** and press ENTER

```

C:\WINDOWS\system32\cmd.exe
C:\>ipconfig

Windows IP Configuration

Ethernet adapter Local Area Connection:

    Connection-specific DNS Suffix  . : 
    IP Address . . . . . : 10.2.1.122
    Subnet Mask . . . . . : 255.255.0.0
    Default Gateway . . . . . : 

C:\>_
  
```

- Note the IP address returned (usually under 'IP Address' or 'IPv4 Address' for your Local Area Connection)

If the IP address from the Tutor Control machine and this IP address are different, then you have a problem with the DNS / DHCP servers not synchronising correctly.

You may be able to solve this by:

- Go back to the Tutor machine and open up the Command Prompt Window
- Type: **ipconfig /flushdns** and press ENTER
- Then type: **ping <computer name>** and see if the IP address returns the correct one found on the actual remote machine.

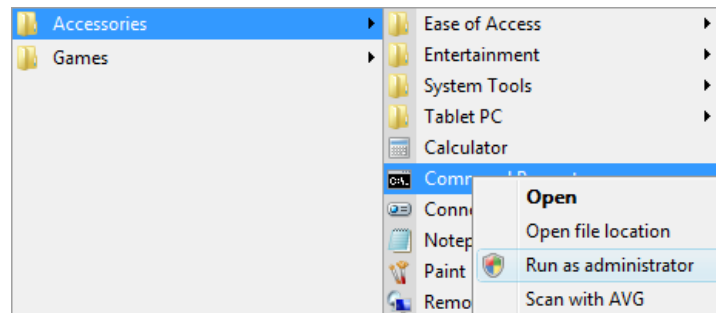
If the IP addresses are still different, then you need to refer to your DNS/DHCP server to get them to re-sync.

Check no other programs are using ports 5151/5152

It has been known that other software providers have opted to use ports 5151 for their own application. To check for this:

- Login on to the remote computer to which you are having problems connecting
- Launch the Windows command prompt ('Start' – 'Run' – enter '**cmd.exe**' and press OK)

Note: On Windows Vista or Windows 7, you must run the cmd.exe program with elevated privileges. (Run as Administrator)



- Enter: **netstat -a -b** and press ENTER
- Analyse the output and look for any application that uses TCP or UDP ports 5151

You should only see 2 entries:

```
TCP 0.0.0.0:5151 LISTENING [ABClient.exe]
UDP 0.0.0.0:5151          [ABClient.exe]
```

If you find another application using ports 5151, please report it to AB Consulting

Check for Errors in the ABClient program

If the ABClient program detects errors with the connections, it reports these messages to a log file. These log files are located in a sub-folder called '**log**' located from the ABClient install folder (Usually: 'C:\Program Files\ABControl\Log')

This folder will contain a file called **debug.log** and on Windows Vista/7/2008 machines there will be other files called DebugUserModeX.log (where X is a number from 1 upwards and represents the ID number of the user's Windows session)

The **debug.log** file is usually where you will see errors to do with connections. It's a simple text file and so can be edited with any text editor.

To increase the detail of error messages output to these log files:

- Create a new text file called '**debug.ini**' located in the '**log**' folder (If you are using Windows Vista/7/2008, then you will need to create this file in a temp folder and copy to the 'C:\Program Files\ABControl\Log' folder)
- Add the following lines:

```
[debug]
level=2
```

- Save and close
- Restart the '**AB Client Manager**' service (See 'Control Panel' – 'Administrative Tools' – 'Services')

Try to connect to this machine again, then go to the machine, locate the '**debug.log**' file and open in a text editor.

A typical error may be:

```
26 Aug 2010, 15:53:12, [4204], TcpListener on port 5151 failed (Unable to bind listening socket: Only one usage of each socket address (protocol/network address/port) is normally permitted. (10048))
```

This indicates that 2 programs on the machine are trying to listen on port 5151 for a connection, but only 1 is allowed. Maybe another program is using the port or maybe the ABClient program has been started incorrectly and 2 copies are running!

If in doubt, zip and e-mail this debug.log file to support@abconsulting.com so we can check the file for errors.

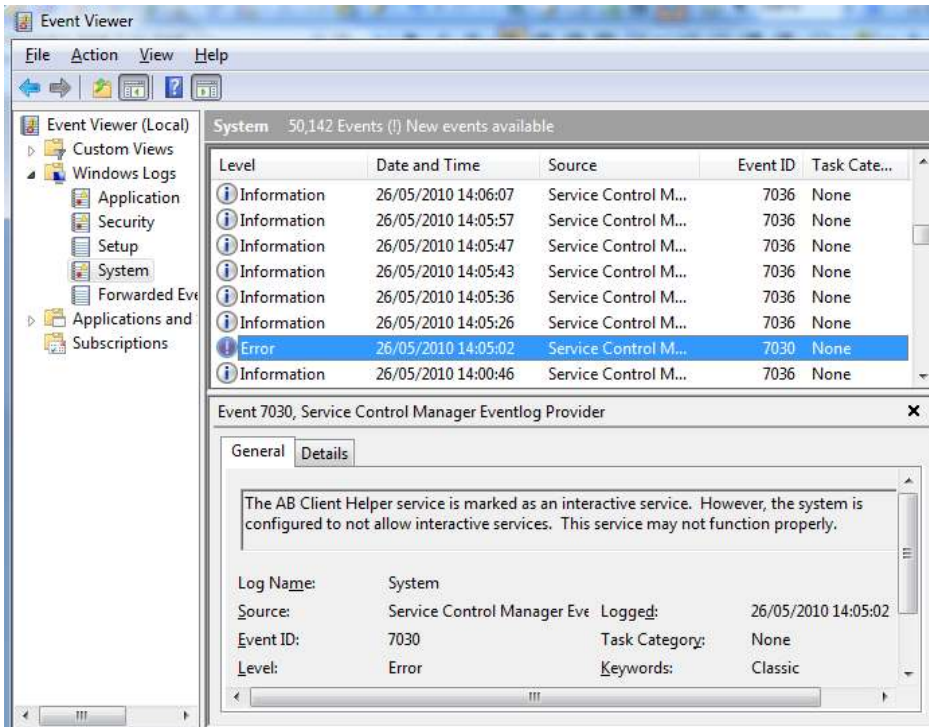
Check the Windows Event log for errors

Windows logs various system events that can also help locate problems.

To launch the Windows Event Viewer:

- Select 'Start' – 'Run' – enter '**eventvwr.exe**' and press OK)
- Click on **System** in the left hand tree view
- Right click on **System** and either select '**Find...**' (or 'View' then 'Find...' on XP)
- Enter '**AB Client**' in the '**Find What**' (or 'Description' on XP)
- Keep clicking 'Find next' until you find something other than information

Note: If you see the following error on Windows Vista/7/2008 then this can be ignored.



The following event log shows that the ABClient program has terminated unexpectedly. The **debug.log** file may give clues as to what has happened here.

