



Agilent Technologies

Troubleshooting Communication Problems

G1946C/D LC/MSD Networked Data System

If you are seeing a "communication failed" error message while starting up the on-line instrument session, the following steps should assist you in testing your system and determining the cause of the communication problem. This procedure assumes that the system was installed per the Agilent Installation Manual recommendations, and that no additional hardware has been added.

Windows NT[®] Workstation (Service Pack 6a) or Windows 2000[®] Professional (Service Pack 2), are supported. The HP Kayak / Vectra computer LAN card must be listed as the #1 LAN Adapter, should be installed first, and communication to the LC/MSD verified before proceeding. A corporate or second LAN card may then be added. These steps assure that the CAG Bootp Server binds with the correct LAN adapter.

Verify that the CAG/Agilent Bootp program is running.

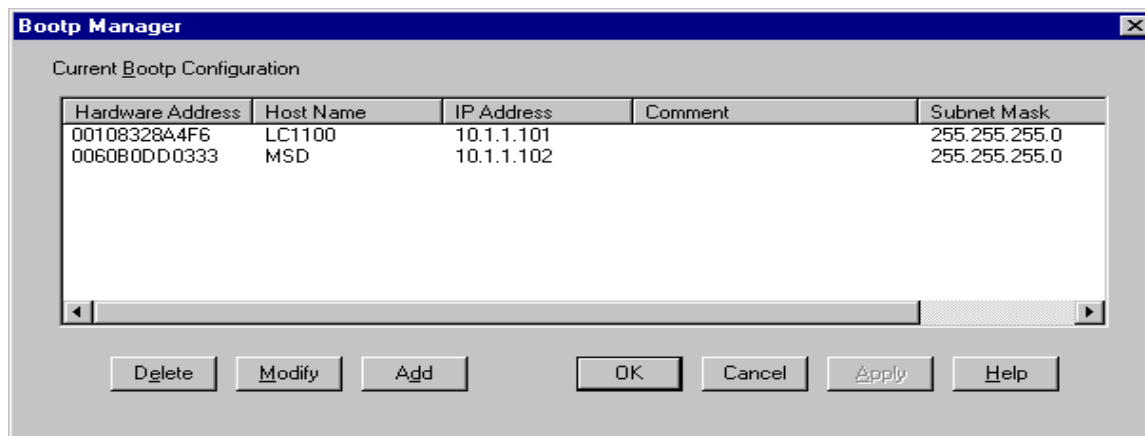
You must ensure that your Windows NT (or Windows 2000) program is started and you have pressed **Ctrl-Alt-Delete** and logged on to the local system. Restarting Windows[®] prior to logging in is recommended. The software program, CAG Bootp Server, starts when Windows is started, and remains as an Icon on the Windows task bar. If you don't see the CAG Bootp Server icon on the task bar, you may start Bootp manually with the following command:

C:\Program Files\Agilent\CAG Bootp Server\bootpwin.exe

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Bootp provides a Networking IP address when the instrument is powered on. In the event of a power failure, the instruments will typically startup before the **B**ootp program is started on the computer. When this happens, the instrument will not get an IP address.

1. From CAG Bootp Server, click on Configure menu then Bootp Manager item. The screen should look similar to:



Record your IP address information in the table listed below.

Hardware Address	Host Name	IP address	Subnet Mask
_____	_____	_____	_____
_____	_____	_____	_____

Click 'OK' or 'Cancel' to close the **Bootp Manager** Configure window.

2. In CAG Bootp Server, select **View** then **Clear**. Next, power cycle the 1100 LC. A successful reply in the Bootp window indicates a successful IP load for the LC. If there is no reply, then follow these steps:

- A. The Instrument Names and IP addresses in the BootP Manager should match the values in ChemStation Configuration Editor (for Instrument 1). The Configuration Editor may be launched from

Start...Programs...ChemStations...Configuration Editor, or by using the **Start...Run** utility and typing:
`c:\hpchem\hpced02.exe`.

- B.** Click on **Start...Programs...Command Prompt**; a new window should appear. Type: `ipconfig` (press Enter key) <-- Write down this information. The Subnet Mask returned by this command should match the values recorded in the table above for the LC and MSD Subnet Mask entries.

Type: `ping 10.1.1.100` (**Note:** this is a sample IP address only. Use your IP address returned from using the `ipconfig` command above.)

If the ping command times out and does not reply, then you may have an NT software or LAN card hardware problem.

- C.** If step #2B above was successful, then attempt the following:

Click on **Start...Programs...Command Prompt**, then from the window that appears, type

`ping 10.1.1.101` (**Note:** This is the IP for the LC from step 1 above, substitute your actual IP address here!)

If this returns four 'Reply from 10.1.1.101' lines, then your LC is communicating at the network layer. If the LC ping gives you four 'Request timed out' messages, you may have a LAN cabling or hardware setup configuration problem, or the CAG BootP may have bound to the wrong LAN card, (if there is more than one LAN card present).

3. Verify MSD LAN communication

Click on **Start...Programs...Command Prompt**. then from the window that appears, type

ping 10.1.1.102 (**Note:** This is the IP for the MSD from step 1 above, substitute your actual IP address here!)

If this returns four 'Reply from 10.1.1.102' lines, then your MSD is communicating at the network layer. If the MSD ping gives you four 'Request timed out' messages, you may have a LAN cabling or hardware setup configuration problem, or the CAG Bootp Server may have bound to the wrong LAN card,(if there is more than one LAN card present).

If only the MSD timed out, but the LC was successful, perform steps A-C next.

- A.** Ensure all ChemStation programs are closed. Press Ctrl-Alt-Delete, then click on the **Task Manager** button. In the **Applications** tab of the window that appears, use your mouse to select any ChemStation applications with "Running" or "Not Responding" status, and click **End Task** button. Select and verify the **End Task** request in the second window as well. Next, click on **Processes** tab, and look for a Process called **HPMSLN32.EXE**. If you see this item, then select it with the mouse and click **End Process**. Lastly, look for a process called **NTVDM.EXE** and end this process in the same manner listed above.
- B.** Reboot the Computer, log on to Windows NT, and ensure CAG Bootp Server is seen on the task bar. Use the Windows Explorer to check the Hosts file, **C:\winnt\system32\drivers\etc\hosts**. The file should not have an extension (suffix) , and should not be recognized as a "Text File" by Windows Explorer (or File Manager). Verify that the Instrument Names and IP addresses match the values in the BootP Manager and ChemStation Configuration Editor. If these are correct, then proceed to step C.
- C.** On the left side of the Agilent 1100 LC/MSD system, press the reset button. This button is located just rear of the large rough pump hoses, in a recessed hole marked '**RST**'. Use a small, non-conductive implement (e.g. a plastic pen) to press this button.

Wait 5 minutes after pressing this button, the MSD reloads all the smartcard interface firmware during this time.* If you start the online

session within 5 minutes after pressing the reset button, then the ChemStation software may not communicate with the instruments. If this happens, exit the ChemStation software and press the RST button again and wait the full 5 minutes before starting online software.

***The smartcard "heartbeat" indicator will stop blinking while the firmware is reloaded. The heartbeat indicator will start blinking again when the firmware load process is complete. Communication can be established with the instrument at this point.**

You should see a reply in the CAG Bootp Server window when the MSD is reset. Click on the **Instrument #1 Online** icon and see if it starts completely.

Overview Notes:

In general, if you can ping the Host, or computer's LAN card IP address, then the network software and hardware is working. Most communication problems occur after the addition of a second LAN card. If this is the case, then ensure you can restore communication to the Agilent instrumentation with the 1st LAN adapter. Remove the 2nd Adapter from the **Control Panel...Network...Adapters**, then restore communication with one LAN card to the LC/MSD. After this you should be able to add the 2nd LAN card back properly.

If the ping for both the LC and then MSD fail, but the Host IP ping worked, then you should check the cabling and the network hub. All the link lights should be green for any ports that have a LAN cable plugged into them. Remove any additional LAN card, other than the #1 Adapter, and unplug any corporate LAN cables in your network hub and reboot. Verify that the CAG Bootp Server is running and power cycle all of the 1100 LC modules. If you see a successful reply at CAG Bootp Server window, then press the **RST** button on the MSD and wait 5 minutes.

1. Use the **ipconfig** command to obtain LAN setting for the network card.
2. Use the **ping** command to isolate the problem.
3. Verify CAG Bootp Server is running, and properly configured. (It should display information!)
4. Start the Configuration Editor program, verify correct IP addresses are configured. C:\hpchem\hpced02.exe
5. Verify that the IO Libraries are installed, with the LAN Client configured.

Consult your manual Installing your Chemstation - LC Systems, available electronically from your ChemStation Family CD-ROM, in the \manuals\installing directory. This manual contains detailed instructions on installing and configuring your system. This manual will also list the computer hardware and operating software requirements pertaining to the particular revision of the ChemStation software you are using.