TELEDYNE | Teledyne LABS

Networking Guidelines

keywords: chromatography, PeakTrak, software, networking

Overview

This technical note provides guidelines for connecting a Teledyne LABS system to a Local Area Network (LAN). They assume that the system has the most recent version of software. To determine the most recent version, refer to the software download web site at www.teledynelabs.com/support/software-firmware.

Before beginning the process of connecting a system to the network, contact your local IT (Information Technology) department for assistance. The IT representative should review these guidelines before starting and be present through this process to ensure all steps are interpreted correctly. These guidelines, along with their knowledge of the network constraints, will determine if the system can be successfully connected to the network.

Connecting the System to a Network

Before you begin, you may find it helpful to note the required settings on the "Networking Checklist form" below.

The instrument can use either a static IP address or a dynamic address assigned from a DHCP server. When accessing the instrument remotely, the instrument is accessed by IP address, not name, so using a static IP or a DHCP connection with a static or infinite reservation is preferred. If DHCP is used without a static or infinite reservation, the IP address may change, causing the instrument to be unavailable. If this happens, the new IP address can be determined by selecting **Help** at the top of the system Main screen and selecting **About PeakTrak**.

To Use a Static IP

1. Obtain a static IP address along with the associated netmask and gateway address for the system.

   - This must be supplied by the IT department. This is the easiest and most reliable method to connect the system to a network.

   - Verify that the address assigned is accessible from any PC that will require access to the system remotely. Due to network design, it could be possible that the instrument and the PC are on different sub networks that may lack visibility to the other network of interest.

2. On the system's Main screen, select **Tools** > **Configuration**, then select the **Network** tab.

3. At the top of this page, ensure that the **Network** type is set to **Static IP**.

4. Enter the **IP Address**, **Gateway**, and **Subnet Mask** addresses.

   - The DNS field is not required to control the system over the network and may be left blank. However, the DNS server information may be required on some networks to enable network printing or saving data files to the network. If the DNS is needed, it must be supplied by the IT department.

5. Select **OK** at the bottom of the window. If you are prompted to do so, turn off the system, wait 1 minute, then turn the system back on.

   - To verify a successful connection to the network, follow the steps in "To Connect with a PC."

To Use DHCP

If your site prohibits fixed IP addresses, you may use DHCP for connection. If the DHCP server supports static or infinite reservations the IP address assigned to the system will remain constant. For a static reservation, the IT department will need to know the MAC address of the system. This can be found by selecting **Help** at the top of the system Main screen, selecting **About PeakTrak**, and then locating the MAC address field.

> **Note**
>
> *DHCP does not allow access to the system by name, but only by IP address.*

To configure DHCP:

1. Select **Tools** > **Configuration**, then select the **Network Configuration** tab.

2. At the top of this tab, select **DHCP** for **Network** type.

3. Select **OK** at the bottom of the Configuration window. If you are prompted to do so, turn off the system; wait 1 minute, then turn the system back on.

4. At the top of the Main screen, select the **Help** button and the **About PeakTrak** selection. The IP address will be listed. Write this down since this address is used to identify the system on the network. It can also be entered into a web browser to control the system remotely.

To Connect with a PC

1. Go to a PC that has network access to the system. (See the instructions above for details.)

2. Open a compatible web browser such as Microsoft Edge, Firefox, or Google Chrome. Not every version has been tested for each browser, but the latest versions of these browsers operated correctly at the time of testing.

3. Enter the IP address into the browser address field and press **Enter**. This will display the PeakTrak user interface.

Saving Files to the Network

When this option is configured, the instrument will automatically save a run report to a share on a network server when the run has finished. This file will be in addition to the data normally saved on the instrument.

You may find it helpful to note the required settings on the "Networking Checklist" form below.

1. Connect the system to the network as described above.

2. Make sure that these network requirements are met:

   ° A network share on a Microsoft Windows server that is part of a domain.

   ° Operating System 2 or newer installed (required by Windows Server 2008 R2 and newer). This may be verified on the **Help** option in the **About PeakTrak** menu.

   ° A non-Novell network. Such networks are not compatible.

3. Make sure the time zone, date, and time are properly set to the local time on the system. Failure to perform this step will prevent connection to the network. The system clock must be set to within five minutes of server time to save files to the network.

   ° The date and time are set on the system by selecting **Tools** from the top level menu, then by selecting **Configuration**.

   ° Select the **Instrument Configuration** tab. On this tab, select the **Time Zone** and **Set Date** and **Time**.

   ° The system may automatically synchronize the time with the server. When this is happening, **Set Date/Time** may be grayed out and unavailable. In this case, be sure that the proper **Time Zone** is set.

   ° Select **OK** at the bottom of the window. If you are prompted to do so, turn off the system, wait 1 minute, then turn the system back on.

4. Obtain login credentials from your IT department. These are be the credentials that the system needs to log into the network. The credentials are typically a username and password.

5. Your IT department will need to set up a shared drive on the server for the files.

6. Verify that the shared drive is accessible from the network connection that the system will use. This can be done by connecting a PC to the connection and verifying that the drive can be viewed.

7. When the PC is connected, determine or verify the domain name by right clicking on the computer icon on Windows and select **Properties**. The domain name should be listed; write it down.

8. The Domain Controller setting may not be needed in all applications. For the initial setup, leave this field blank. The system will attempt to automatically determine the proper settings for the network. If all subsequent steps are followed and the system is unable to save the file, return to this step and attempt to determine the server name. To determine these Domain Controller, on the PC use the **Run** or **Command Prompt** command, which is typically located in the **Start** menu, or under **Programs** > **Accessories** > **Command Prompt**. Type **echo%logonserver%** and press **Enter**. The name of the server(s) should be returned. This information should be written down to be entered into the system. Some versions of the software have inputs for KDC and admin servers instead of the **Domain Controller**. On those instruments, enter the domain controller address for both the **KDC Server** and **Admin Server** fields.

9. Enter the information determined in the last step into the **Tools** > **Configuration** > **Networking** screens on the system.

   ° If using a static IP address, you must enter the **IP Address** of the DNS server. If using DHCP, this step is not needed.

   ° Chose a **File Type** to enable saving files. If **Disabled** is selected, no files will be saved.

   ° Some versions of the PeakTrak software support saving files into user folders within the network share. If **Save in User Folders** is available and checked, the file will be saved into a folder within the share corresponding to the user currently logged into the instrument. This folder must be manually created and must exactly match the name of the user on the instrument. Do not include the name of the user in the **Network Share** field.

   ° Enter the domain determined with a PC in the previous step. This is usually in a form such as "networkname.company.com".

   ° Enter the **Domain Controller**. If entering a name, use the fully qualified name including the domain name, for example, *dc.example.com*.

- If applicable, enter the name of an NTP time server in the **Time Server** field to automatically synchronize the instrument time with the server time.

- Enter the name of the **Network Share** drive, such as *//servername/sharename/foldername*. The server name can be a name or an IP address. If using a name, enter a fully qualified name including the domain name such as server.example.com. The folder name is optional. Even though Windows systems use backslashes in the network share, the instrument software expects forward slashes and will convert them internally when needed to allow the share to work.

- Enter the **User Name**, such as *Mysystem*.

- Enter the **Password** associated with the user name, such as *Iluvmy system8*.

10. Press the **OK** button to save the settings and close the Configuration window. Some versions will test the connection automatically and display a success or failure message. If no message is displayed, a short run will need to be performed so that a file is generated and saved to the share.

Connecting a Network Printer

You may find it helpful to note the required settings on the "Networking Checklist" form below.

The system supports network printing only if a LPR or JetDirect printer is used.

Note

- *Windows shared printers are not supported.*
- *The system supports network printing only if a LPR or JetDirect printer is used.*

Contact the IT department to verify the type of printer used and its URL.

1. Set up the system connection on the network as described above.

2. Enter the proper **Connection URL** into **Configuration** > **Network Configuration** .

   - For an LPR printer, enter the URL using the format lpd://*ip_address/queue_name*.

   - For a JetDirect printer, enter the URL using the format socket://*ip_address:port*.

The available printer models and features change rapidly, so Teledyne does not make recommendations regarding which models to purchase. PeakTrak does not support loading drivers for specific printers; rather, Teledyne uses a driver which is more generic and works with many types of printers.

There are a few requirements for using printers with the equipment.

1. It must be connected via an Ethernet network. This may be a direct connection cable or through an office network.

2. It must support JetDirect or LPR networking.

3. It must support PostScript or PCL (PCL5e) formatting.

Care must be taken to ensure that the selected printer meets the requirements above. Many desktop type printers may support networking but not PostScript or PCL formatting.

Errors and Error Messages

Potential errors or error messages are listed below with an explanation of possible causes and solutions.

Files automatically saved to the network are empty.

- This may be due to an incompatibility between the Windows server software and the operating system. Some versions of the equipment line are available with a different operating system that may correct this issue. These units with the different operating system are designated as "Operating System version: 2" on the **Help** > **About PeakTrak** screen.

The file was unable to be saved to the network share because the share name is incorrect in the Configuration window or the share is no longer available.

- This message is displayed when the instrument can't find the share on the server when trying to save a file.

- This message only occurs if the system is able to establish communication with the server.

- Verify the informat entered into the **Network Share** field on the **Configuration** window.

- Check with the network administrator to make sure this share exists and is correct.

The file was unable to be saved to the network share because the folder name within the share is incorrect in the Configuration window or the share is no longer available.

- This message is displayed when the instrument can't find the folder in the share on the server when attempting to save a file.

- This message only occurs if the system is able to establish communication with the server.

- Check the **Network Share** field on the **Configuration** window.

- Verify with the network administrator that the share is correct and that it exists. This message may appear in conjunction with the network share error message.

The file was unable to be saved to the network share because the user name or password is incorrect.

- This message is displayed when the server does not recognize the **Username** or **Password**.

- Verify that the **Username** and **Password** are correct.

- If the **Username** and **Password** are entered correctly, check with the network administrator to make sure that the **Username** and **Password** are correct.

The file was unable to be saved to the network share because of the following error: [*x*].

- This occurs if the network error is unrecognized by the system.

The file was saved to the network share but appears to have been corrupted in the process. Please check the file on the network share.

- The system performs an error check on the saved file. The message indicates that the saved file was corrupted.

The file was unable to be saved to the network share because the instrument clock is not synchronized with the server clock. Please restart the instrument to synchronize the clocks.

- This occurs if the system and network times differ by more than 5 minutes.

- Verify that the system is set to the proper **Time Zone**.

- Follow the steps listed in the procedure to set the system to the correct local time zone, date and time. The system will need to be rebooted for the time changes to be effective.

The file was unable to be saved to the network share because the instrument cannot contact the domain controller. Please check the domain and DNS settings in the Configuration window.

- Verify that the network cable is connected.

- Verify that the **Domain** and **DNS Server** entries on the **Configuration** window are correct.

- The network servers may be having problems.

The file was unable to be saved to the network share because the instrument cannot contact the server. Please check the server name in the Share Name entry and the DNS settings in the Configuration window.

- Verify that the network cable is connected.

- Verify that the **Domain** and **DNS Server** entries on the **Configuration** window are correct.

- The network servers may be having problems.

The file was unable to be saved to the network share because the given user does not have permission to access the share or folder within the share.

- Check with the network administrator to make sure that the permissions are correct.

Networking Checklist

Select **Tools** > **Configuration** > the **Network Configuration** tab.
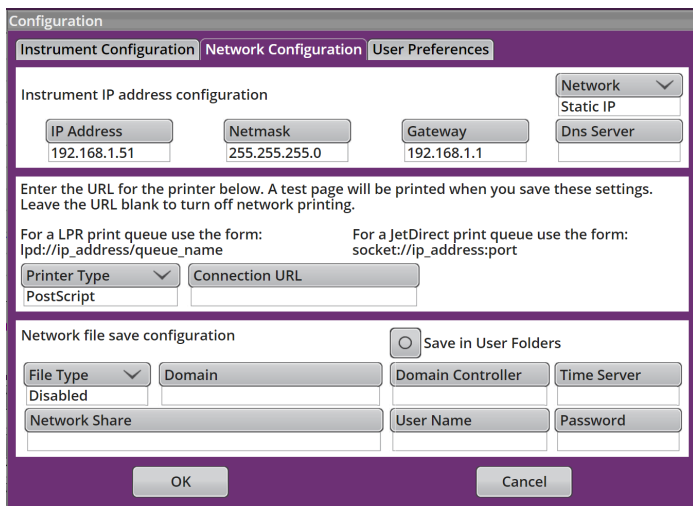
Figure 1. The Network Configuration tab.

Network Settings:

1. Network type: Static or DHCP (circle one) For Static you need the following four settings

    a. IP Address _____

    b. NetMask _____

    c. Gateway _____

    d. DNS Server _____

Network Printer Settings:

1. Printer type: PostScript or PCL (circle one)
   Note: PCL = PCL5e

2. Connection URL   _____

Network File Save Settings:

1. File Type:

    a. Disabled (will not save to network)

    b. Text (XML Data)

    c. PDF

    d. PDF and Text (only available on some versions)

    e. Run Monitor (a text file indicating a run was performed)

2. Domain: _____

    Name of the domain

3. Domain Controller:_____

    IP address or fully qualified name of domain controller

4. Network Share:

    _____

    Name of file storage location

5. Username: _____

    Network share access username

6. Password: _____

    Network share access password

7. Time Server: _____

    Address of an NTP time server

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