



## CLARITY IN NETWORK

Clarity Software

ENG

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Sections of the manual connected only to the **Clarity Full** version are marked with the  icon.

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To facilitate the orientation in the **Clarity in Network** manual and **Clarity** chromatography station, different fonts are used throughout the manual. Meanings of these fonts are:

*Open File* (italics) describes the commands and names of fields in **Clarity**, parameters that can be entered into them or a window or dialog name.

WORK1 (capitals) indicates the name of the file and/or directory.

ACTIVE (capital italics) marks the state of the station or its part.

Chromatogram (blue underlined) marks clickable links referring to related chapters.

The bold text is sometimes also used for important parts of the text and the name of the **Clarity** station. Moreover, some sections are written in format other than normal text. These sections are formatted as follows:

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**Note:** Notifies the reader of relevant information.

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**Caution:** Warns the user of possibly dangerous or very important information.

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**Marks the problem statement or trouble question.**

**Description:** Presents more detailed information on the problem, describes its causes, etc.

**Solution:** Marks the response to the question, presents a procedure how to remove it.

# 1 Clarity in Network

Clarity might be used in network and following chapters describe different approaches of such usage.

## 1.1 Clarity in network overview

Clarity is not a client-server (C/S) solution, nonetheless it can be configured for use in multi-user and multi-instrument networked environment.

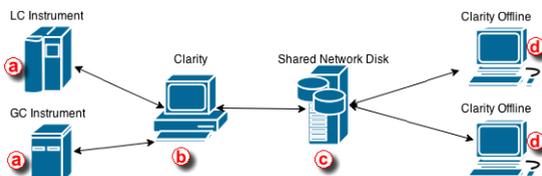
### What does the solution "Clarity in network" offer?

- Instrument control, real-time signal monitoring and run control - possible only through the local Clarity station, i.e. Clarity must be connected to respective chromatography instrument. Each Clarity needs to be set locally (including \*.cfg and \*.psw files).
- Using the *System - Directories*, the location of the Clarity data/projects can be set anywhere within the network (typically on a shared server backed up drive). The data can be then accessed from any Clarity station on the network, including the Clarity Offline stations intended only for evaluation of data from another computers.
- Clarity Offline allows users to prepare methods and evaluate acquired data.
- With Clarity Offline users are able to work with acquired data on additional computers in the laboratory or at home.
- File access conflicts may occur when accessing the same file (e.g. method) but from different Clarity stations.

### What does the solution Clarity in network not offer?

- Central management of users.
- Central management of documents such as chromatograms, calibrations and methods.
- Direct control of acquisition, i.e. run/stop/abort from other Clarity stations.
- Direct control of instruments from other Clarity stations.
- Watch real time signal being acquired by detectors from other Clarity stations.

## 1.2 Multiple Clarity stations in a network



Clarity in network is a solution that consists of at least one Clarity, at least one Clarity Offline and a reliable computer network as the most basic setup.

Simplified scheme of the possible configuration is displayed in the diagram above. LC and GC instrument (a) is controlled via Clarity (b). Chromatograms, calibrations and methods are all saved (using directory configuration) on a shared network disk (c). Clarity Offline (d) could then be used for evaluation of acquired chromatograms and preparation of methods which are saved (using directory configuration) on the shared network disk. Clarity (b) is able to send those pre-prepared methods to corresponding instruments.

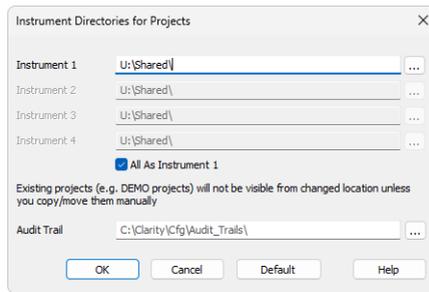
Note that this shared network disk is then accessible to all computers within this computer network therefore a much wider configuration can be implemented than the one described above.

Following step-by-step guide will help you configure the Clarity in network solution.

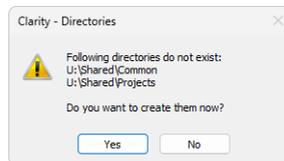
**Note:** Note that it is possible to have more than one Clarity (b) in the network. Shared Network Disk (c) can be on the same PC as well and not as a separate unit as seen in the picture above.

### **Procedure A - Firstly we will configure Clarity (b) which will acquire data and save them to the shared network disk.**

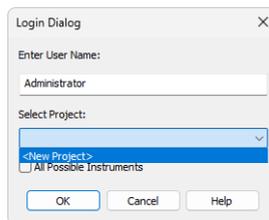
1. In the main *Clarity* window, go to *System - Directories...* or use the icon .
2. *Instrument directories for Projects* dialog will open.
3. Choose Instrument that will share all the created files; chromatograms, calibrations, methods, sequences, reports etc..
4. Use the  to browse for shared network disk. Once you locate it, click *OK*. Path to the shared network disk is now filled in the corresponding Instrument.
5. In case you want all Instruments to have the same directory, check the option *All As Instrument 1*. This will copy the directory path for the rest of the instruments as it is set for *Instrument 1*.



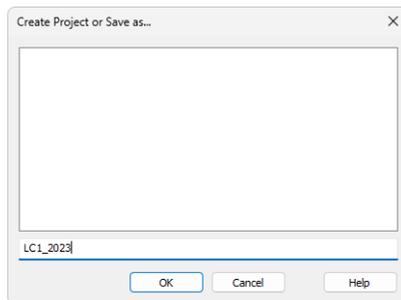
6. To save the configuration click the **OK** button.
7. Configuring the directory for the first time will result in the following message. Click **Yes** to allow the creation of necessary structure. Upon clicking **Yes**, **COMMON** and **PROJECTS** folders are created with default documents necessary for correct functionality.



8. When you try to login for the first time with the new directory configuration, you will be asked to create a new project.



9. Fill project name and click **OK**.

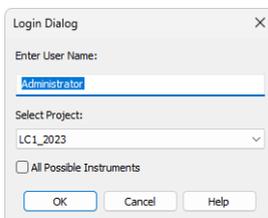


10. Anything created/measured within this project is saved on the shared network disk and therefore is accessible to other Clarity stations.

### **Procedure B - Secondly we will configure Clarity Offline which will be used for data evaluation from shared network disk.**

We need to configure directory from which Clarity Offline will open chromatograms, calibrations and methods saved on the shared network disk.

1. Configure the directory according to step 1-6, described above.
2. When you login, select the appropriate project (the one you filled in step 9) using the drop-down box and click *OK*.



If you have followed the steps correctly, your Clarity in network is configured. If you are not sure, you can test it by measuring some chromatogram and evaluate it on Clarity Offline. Once you see measured chromatogram in the Data directory you know it has been configured correctly.

## 1.2.1 Migrating Clarity Project into a Network

This step by step guide will help you to move your Clarity project with measured chromatograms, calibrations, prepared methods and other files into a shared network disk or a shared server back upped drive.

This guide assumes that you have already set up directory for Clarity in network therefore you have all the necessary structure prepared - if not, refer to **Procedure A** described in the chapter "**Multiple Clarity stations in a network**" on pg. 2.

### We will migrate our Clarity project into shared network disk.

Principle behind migrating Clarity project into a different location is straightforward. It is necessary to move the whole project directory (e.g. WORK1) as well as the project file itself (e.g. WORK1.PRJ). Clarity has function called *Archive* which performs this migration automatically.

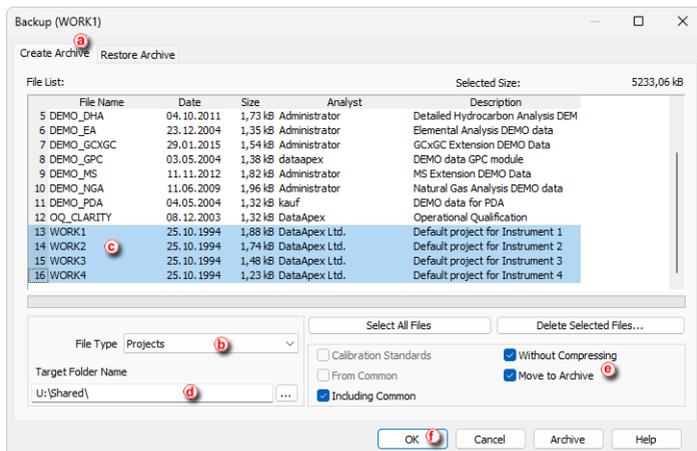
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**Note:** It is possible to copy the project directory and the project file manually using e.g. *Windows File Explorer*.

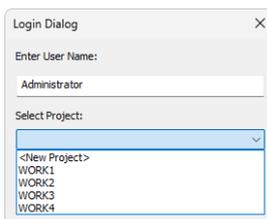
1. Login to *Instrument* with a project you do NOT want to move (e.g. some demo project), go to menu *File - Archive...*
2. *Backup* dialog opens on the *Create Archive* tab .
3. Because we want to migrate whole project, change *File Type* using the drop down list  to *Projects*.
4. Section *File List* now contains all projects in Clarity. Select the project(s) to be migrated (e.g. WORK1 to WORK4) .
5. As a *Target* select the destination of the shared network disk using the  at .
6. Check the options for *Without Compressing* and *Move to Archive* .
7. When everything is set as described above, you can click the *OK*  button which migrates selected projects to the U:\SHARED\ and closes *Backup* dialog.

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**Note:** When moving projects to the new location for the first time it is recommended to check *Include Common* to move files such as report styles as well.

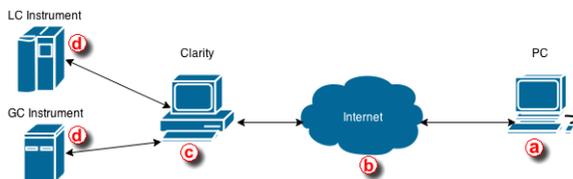


- Now *Login* to the Instrument which has set directory in the network. Notice that in your Clarity *Login Dialog* the *Select Project* drop down list offers your migrated projects only - this is because there are no other projects.



- Your Clarity project has been successfully migrated and you can start working.

## 1.3 Remote control of Clarity over a network



This step by step guide will help you to connect remotely to a PC with Clarity © installed from your home or office (a). It will allow you to connect remotely to that PC and take control over the whole computer and thus control Clarity and connected instruments. The connection is realized over the internet or a local computer network. Connection over the local computer network is more secure since the transferred data never enter the internet.

### Requirements:

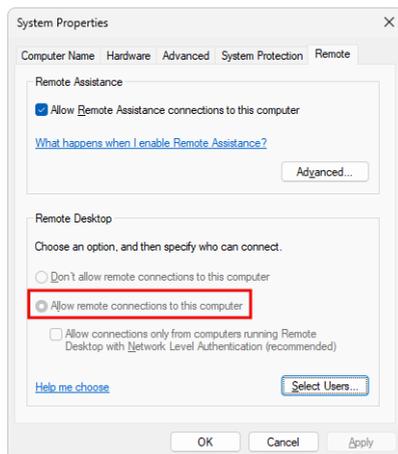
- (a) PC needs to have Remote Desktop Connection installed
- (b) Internet connection or a reliable computer network
- (c) PC with Clarity needs to have Remote Desktop Connection installed

*Note:* Remote Desktop Connection is a standard application installed in Windows operating systems.

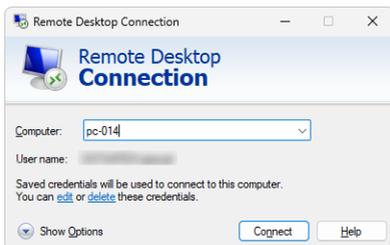
### This description is for setting up a remote connection in Windows 7 Professional. Dialogs may vary depending upon the edition of Windows 7.

- To allow remote connections on the PC you want to connect to © follow the steps below:
  1. Navigate to *System Properties* dialog, *Remote* tab. (Accessible from *Control Panel - System and Security - Allow remote access*, Windows administrator rights are required.)
  2. Select *Allow remote connections to this computer*. Optionally, you can check the additional checkbox depending on you company policies.
  3. Click *Select Users*.
  4. In the *Remote Desktop Users* dialog box, click *Add*.
  5. In the *Select Users or Groups* dialog box, do the following:
    - To specify the search location, click *Locations* and then select the location you want to search.
    - In *Enter the object names to select*, type the name of the user that you want to add and then click *Check Names*. This will check whether the user exists. If not, it will trigger a not found dialog. Check the name once again. Note that this user must have a profile on this computer. If the user name is correct, click *OK*. (Alternatively, you can use *Advanced* and then *Find Now* in the next dialog to get full list of available users.)

- The name will be displayed in the list of users in the Remote Desktop Users dialog box. Click OK and then click OK again.
6. In case *Remote Desktop* options are grayed out your computer is probably in a domain and due to domain policies you may not be able to change the settings. Contact your network administrator to resolve the situation.



1. Allow Remote Desktop connections through a Windows Firewall on the remote PC ①. If you're having trouble connecting, Remote Desktop connections might be getting blocked by the firewall, make sure the port for Remote Desktop (usually 3389) is open. Here's how to change that setting on a Windows PC.
  - Navigate to *System and Security* in *Control Panel*.
  - Click *Allow a program through Windows Firewall*.
  - Click *Change settings* and then check the box next to *Remote Desktop*.
  - Click OK to save the changes.
2. Look up the name of the remote computer ②. This can be typically found in *System* section, exact location varies based on used OS.
3. Set a password for your user account ③. Your user account must have a password before you can use Remote Desktop to connect to another computer. This is crucial, otherwise you will not be able to connect.
4. Start *Remote Desktop* from the computer you want to work from.
  - Open *Remote Desktop Connection*, find it by using Window search option or start menu.
  - In the *Computer* field, type the name of the computer that you want to connect to, and then click Connect. (You can also type the IP address instead of the computer name.)
  - Note that the remote PC cannot be in sleep mode or hibernating.



Once you successfully connect to the remote PC you can work as if you were sitting in the lab and working with Clarity. The remote desktop will be presented in the normal window. To terminate the session, close the window.

**This solution then enables you to:**

- Control instruments that are directly connected to Clarity.
- Monitor data acquisition.
- Evaluate chromatograms in Clarity.
- Work on other projects and leave the remote session open and check once in a while if everything is running smoothly.

**Possible situations that may arise using the Remote Desktop Connection:**

- If you remotely connect to a PC where you are currently logged in, you will be automatically put through and you can start working.
- However, if you try to connect to a PC when there is logged in someone else, e.g. another analyst, he will be asked if he allows the remote connection to put through. If he declines the remote connection you will not be able to connect.
- PC that you are connecting to must be turned on, it is not possible to connect to a PC that is off.