

Technical Note 0020

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Technical Note Description

This Technical note describes how to use the Command Line Interface (CLI) via Telnet with DM and NetVu DVRs, NVRs and Cameras so that useful outcomes can be achieved.

Product Models Covered

Gen 2 and Gen 3 Dedicated Micros and NetVu DVRs, NVRs and cameras.

How to to use the Command Line Interface (CLI) via Telnet

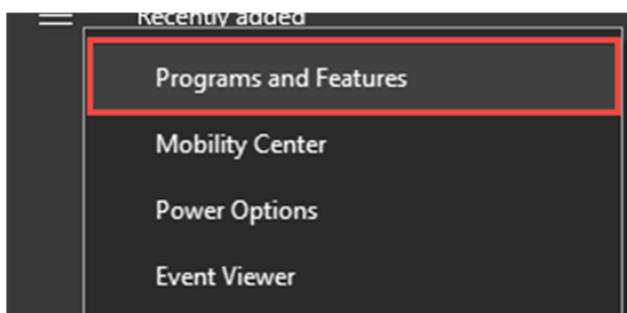
Telnet is a computer protocol that provides two-way interactive communication compatibility for computers on the internet and local area networks. Telnet has a command-line interface and is famous for being the original protocol from when the internet first launched in 1969.

When applied to Dedicated Micros and NetVu cameras, DVRs and NVRs Telnet is a simple way of achieving some really useful outcomes with the products, either locally or remotely, as it provides access to the Command Line Interface (CLI) of the product.

Enabling the Telnet Client in Windows 10 PCs

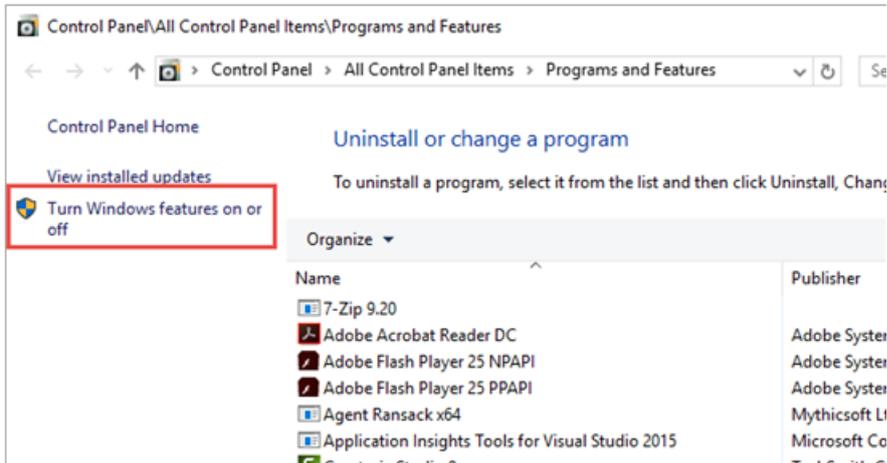
Windows 10 PCs may not have the Telnet Client enabled as default. To enable Telnet Client on Windows 10, follow these steps:

1. Right-click the **Start** button and select **Programs and Features**.

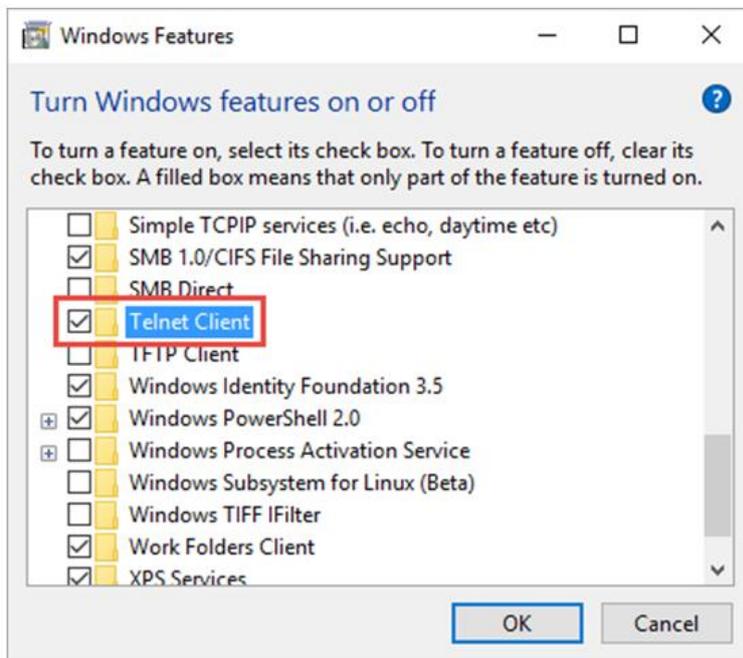


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2. Click **Turn Windows features on or off** from the left-hand menu.



3. The Windows Features dialog box appears. Select **Telnet Client** and click **OK**



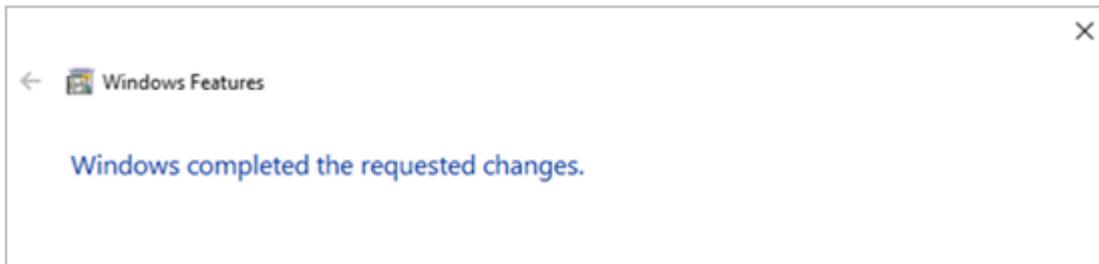
4. The Telnet Client installation begins.

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5. Once complete, a success message appears.

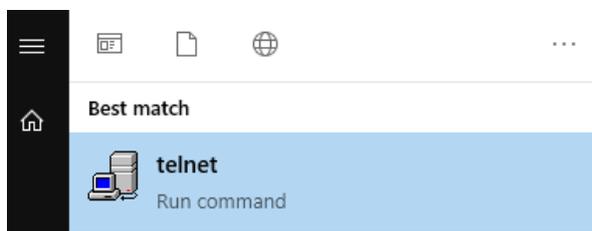


6. Click Close.

You are now ready to use the Telnet Client

Logging on

In order to log on to a camera, DVR or NVR you must run the TelnetClient Application. Click on the Windows start button and type Telnet

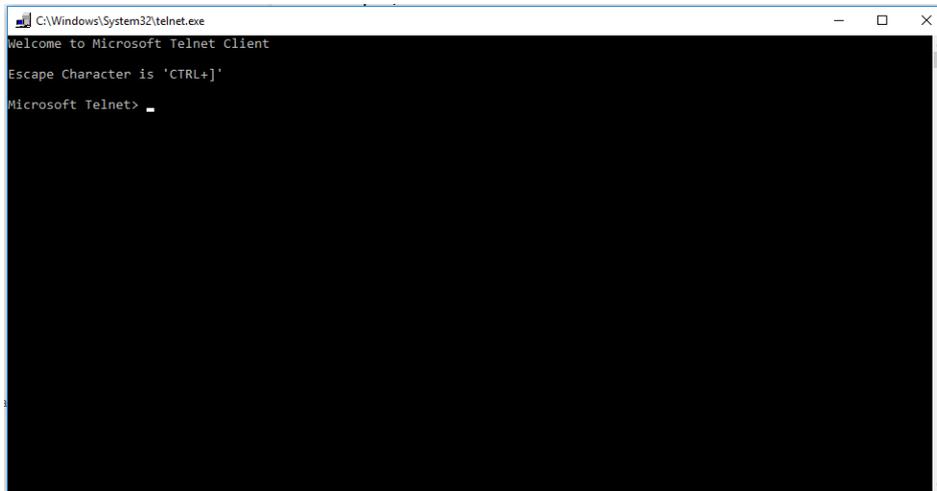


Click on the icon to run the telnet app.

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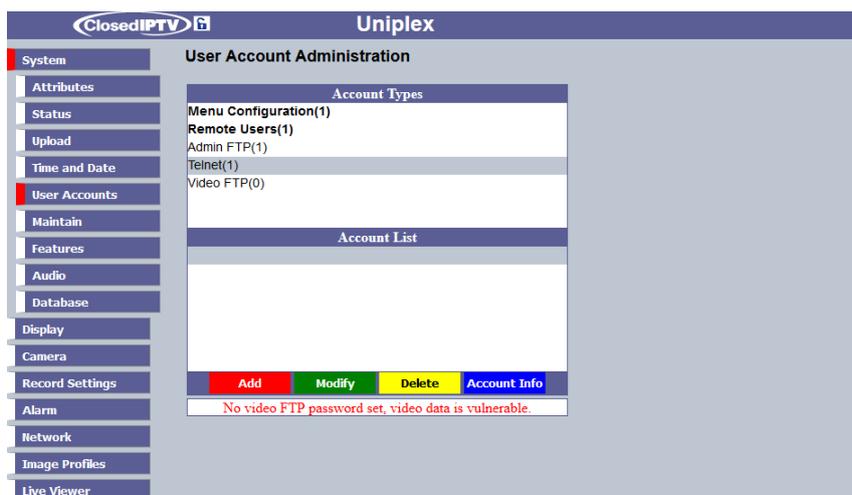
The following window will open:



You are now ready to log on to the camera/DVR/NVR

However, in order to do so a Telnet Username and Password must have been configured in the device that you are connecting to. This is particularly important if you are attempting a remote connection because if no passwords are set the camera/DVR/NVR will not communicate outside of its subnet (a security feature). For a remote connection you may also need port forwarding for the Telnet service configured in the router at the remote site. Port forwarding to port 23 of the product will be needed to support remote Telnet access.

Telnet usernames and passwords are set up in the following web page of the device:



If Telnet credentials are set in the camera/DVR/NVR then you can log in to it.

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To do this type OPEN (the IP address or domain name of the the device) and press ENTER

For example, if the IP address of a DVR was 192.168.1.1 then you would type

```
OPEN 192.168.1.1 <ENTER>
```

For a second or two the display will say “Connecting to” and then this will change to a request, first for a user name, and then for the password. Enter these, followed by ENTER each time.

The Telnet App display will then change to :

```
This engineering server will execute engineering and  
configuration commands
```

There are limited line editing capabilities. If the command is not recognised, the server will echo what you type. The command parser will also respond to MCI commands.

```
To exit type 'quit' or control D  
Type 'help' to list the Telnet commands  
Type '?' to list the disk commands  
Type 'EscM\help' to list the MCI commands
```

```
Uniplex >
```

The command prompt will usually be the Product Name of the product that you are connected to.

You are now ready to start using Telnet commands.

If the device connect, check the following:

- That you have connectivity with the device. Can you PING it?
- That Telnet Credentials are configured in the device
- That port forwarding is enabled in any router, through which the device is connected, is enabled, i.e. Is there a static port forward to port 23 of the camera/DVR/NVR

Using Telnet Commands

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A list of available Telnet commands can be viewed by typing **HELP** and then pressing **ENTER**

The list of the available Telnet commands will scroll up the telnet window, together with a brief explanation of each command. You can scroll up and down this list after it has stopped to view the available Telnet commands.

HELP or **HELP string** provides a useful list of commands

for example **help tlm**

produces the following result:

```
> tlmcmd           Send Telemetry commands to local controller
> tlmmode          Send all keys to telemetry, Ctrl-D to quit
> tlmdebug         Telemetry debug messages on (1), off (0)
> tlm_cam_status   Show a camera's current telemetry context
```

To use a command, type the command, followed by any qualifiers or variables needed and then press **ENTER**.

If the command is successfully executed you will get either a command prompt or the outcome of the command.

If the command is unsuccessful then you will get an error message.

Using Disk Commands

A number of commands concerning the hard disks of the Device are also available. A list of available disk commands can be viewed by typing **?** and then pressing **ENTER**

The list of the available disk commands will scroll up the telnet window, together with a brief explanation of each command. You can scroll up and down this list after it has stopped to view the available disk commands.

To use a command, type the command, followed by any qualifiers or variables needed and then press **ENTER**.

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If the command is successfully executed you will get either a command prompt or the outcome of the command.

If the command is unsuccessful then you will get an error message.

Useful Telnet Commands

The following Telnet commands are particularly useful in common situations.

ipcfg	Shows the Ethernet IP information of the device
version	Reports the software version number
engmode	Resets the system and reboots into engineering (not recording) mode
reset	Restarts the system - useful after loading software upgrade files.
arp	Displays system ARP cache - to see other devices detected on the same network as the device
svars	List all the current system variables, allowing the diagnosis of faults
fdisk	formats a hard disk
timezone	Shows timezone data
ciptnet	Makes a telnet connection to any camera in the camera (CIPTV) network. For example ciptnet -c1 opens a telnet connection to camera 1
tlmcmd	Send Telemetry commands to local controller
tlmmode	Send all keys to telemetry, Ctrl-D to quit
tlmdebug	Telemetry debug messages on (1), off (0)
tlm_cam_status	Show a camera's current telemetry context

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There are many other useful commands and these can be discovered using the **HELP** command, as previously described.

On older (gen2 and gen3) DVRs and NVRs it is possible to perform a SMART health check on the recorder hard disks.

The status can be checked from the TELNET command line using the command **DRIVE SMART DHx** where x is the drive name,

All units have at least one drive, DH0, so **DRIVE SMART DH0** will report the status of the first HDD.

The status also reports other errors such as high temperature etc, so even if the health is 100% OK then extreme values in any column may indicate impending drive failure.

Useful Disk Commands

The following Disk commands are particularly useful in common situations.

<i>CD PATH</i>	Changes the directory being viewed, for example CD frm_data
<i>COPY PATH PATH</i> a backup	Copies a file, for example COPY master.sfm master.old makes copy of the configuration of of the DVR/NVR
<i>DEL PATH</i>	Deletes a file, for example DEL user.db deletes the password file of the DVR/NVR
<i>DELTREE PATH</i>	Deletes a subdirectory tree
<i>DIR PATH</i>	Shows the contents of a directory, DIR shows the contents of the current directory.
<i>LIST PATH</i>	Lists the contents of a file
<i>RENAME PATH NEWNAME</i>	Rename a file, for example, RENAME master.sfm master.old makes a backup copy of the configuration of of the DVR/NVR
<i>UNZIP ZIPFILE TOPATH</i>	Unzips a file to a destination path, typically in software upgrades

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WRITE_SVARS Writes out system variables, for diagnosis

There are many other useful commands and these can be discovered using the ? command, as previously described.

In newer products, such as the NetVu Uniplex series NVRs or the latest FireVu products, the CLI can be used via the browser interface of the product itself, making the whole process much easier. For more details see the Uniplex Installation Manual or technotes, available for download here: <https://netvu.org.uk/manuals/>