

Application Note

Unistream USC Series OS Upgrades

Summary

Fit USB Stick (DOK) or SD Card to PLC (not to computer)

Start Unilogic

Start REMOTE UPDATE with FORCE ticked

Set Unilogic project IP address

Set VNC to enabled

Download new project

Fit USB Stick (DOK) or SD Card to PLC (not to computer)

The preferred method is to use an SD card but fit either to the PLC before starting the update, by fitting the SD card or the USB stick to the PLC the OS update will start automatically after the file transfer is complete.

Start Unilogic

Start the software and open a new project then connect to the PLC. If the software indicates that an OS upgrade is required then go to Unistream Management and choose REMOTE UPDATE.

Start REMOTE UPDATE with FORCE ticked

Set the target to either USB (DOK) or SD card but make sure to tick the FORCE box. This ensures that all files are replaced. This process will take 5-10 minutes and when complete there will be an error on the PLC as the factory installed demo program is now of the wrong revision level.

Set Unilogic project IP address

In the Solution Explorer under PLC Communications > Physical > Panel Ethernet set the required IP address of the USC PLC, the factory default is 192.168.1.4. Do not change this as the USL panel is set to 192.168.1.5 so other settings may result in communication loss.

Set VNC to enabled

In a new project VNC is disabled by default stopping communication with the USL display so in the Solution Explorer go to Password Management and enable VNC either with or without a password.

Download new project

Download the new project which will correct the error message on the PLC. The OS upgrade is now complete.

A more detailed procedure is available on the following pages.

Application Note

From time to time Unitronics issue upgrades to the operating system which are normally paired to a new version of Unilogic, if you upgrade Unilogic then you must upgrade the PLC & HMI OS to a matched version, note that the version numbers of Unilogic and the OS are not always the same.

Once the OS upgrade has completed it is necessary to download an upgraded version of the user program or a blank project to the PLC. **Please ensure that this project has VNC enabled and the correct IP address otherwise you will lose communication from the HMI.** VNC is disabled by default, in the Solution Explorer go to Password Management and enable VNC. The panel IP address of a new project is unlikely to be correct and is set in PLC Communications > Physical

The preferred upgrade method is to use the Remote Upgrade option from the Unistream Management menu and download files to either an SD card or a USB stick fitted to the PLC BEFORE starting the upgrade process. This will ensure that the upgrade process starts automatically as soon as the files have downloaded and does not require decoding blinking LEDs or pushing CONFIRM buttons.

This application note only applies to the USC Series of Unistream controllers, that is the series without an HMI display.

Model used: USC-B5-B1
Default IP address: 192.168.1.4
Default Subnet Mask: 255.255.255.0
Default Gateway: 192.168.1.1

If you are using a Unitronics USL display (USL-050-B10 or USL-070-B10) then the following addresses are also used.

Default IP address: 192.168.1.5
Default Subnet Mask: 255.255.255.0
Default Gateway: 192.168.1.1

You may also use the Unistream USP, US5 or US7 Series as a display for the USC PLC.

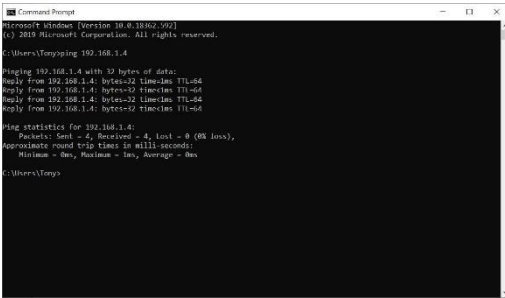
*Note that most laptops will have two IP addresses, one for the WiFi connection and one for the cable connection. Make sure that your computer has the same subnet settings as the USC for whichever physical method of connection you are using. eg 192.168.1.xxx. The following application note is based on Windows 10 settings, there may be some variation in the images depending on which version of Windows you are using. **Make sure that the above default addresses DO NOT clash with existing network addresses***

USB Snippet

The Unistream USB driver installs as an R-NDIS network adaptor NOT as a virtual serial port so if you are connected to the PLC using a USB cable you will see an additional Ethernet adaptor when you go to the Windows Network and Sharing Centre

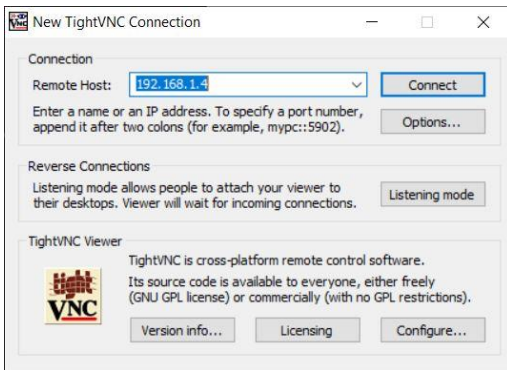
Remove the battery insulating tag from the battery compartment and insert an SD card (if required, **it IS recommended**) into the card socket to the left hand side of the PLC. Power up the PLC, the Run light should be solid orange then within approximately one minute it should turn solid green.

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Connect the PC to the PLC with an Ethernet cable or connect the PLC to a wireless access point. Check the PC-PLC connection by opening a Command Box (type 'cmd' into the Taskbar Search box) and pinging the PLC default IP address. You should see a reply similar to the one to the left indicating that there is a device with that IP address. Disconnect the PLC and run the test again, if there is no reply then this confirms that the PLC has been assigned that address.

If there is a reply this may indicate that the PLC default addresses are already in use by some other device.



Open your chosen VNC viewer app and connect to IP address 192.168.1.4. TightVNC is an example of a VNC Viewer and images from this app are used where needed in this application note.

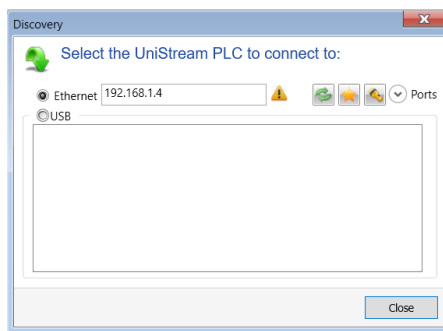
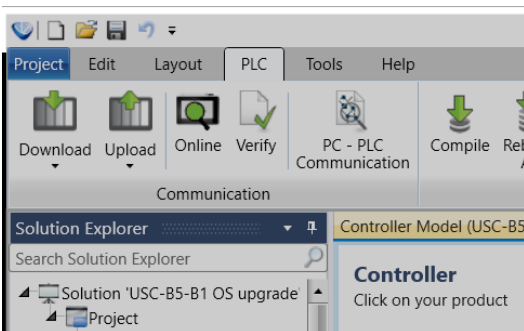


The factory default program loaded into the PLC will produce an image like this.

We are now ready to upgrade the PLC and HMI operating system..

Unilogic programming software

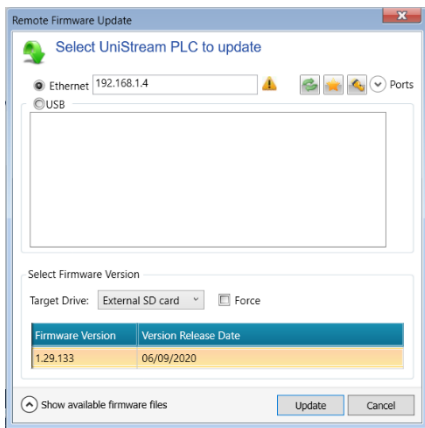
Open the version of Unilogic currently on your computer, open a new project and select the PLC type that you are using. You can connect to the PLC either via Ethernet or via USB. Select the PLC tab from the main ribbon, then select PC-PLC Communication which opens the following dialog box.



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Note the small warning triangle to the right of the Ethernet IP address, this indicates that an OS upgrade is needed. Select Unistream Management from the main ribbon then Remote Update which opens the following dialog box.

Note also that setting the IP address of the PLC here DOES NOT affect the IP Address that is downloaded to the PLC, the address that is sent to the PLC can be seen in the Solution Explorer under PLC Communications > Physical > Panel Ethernet.



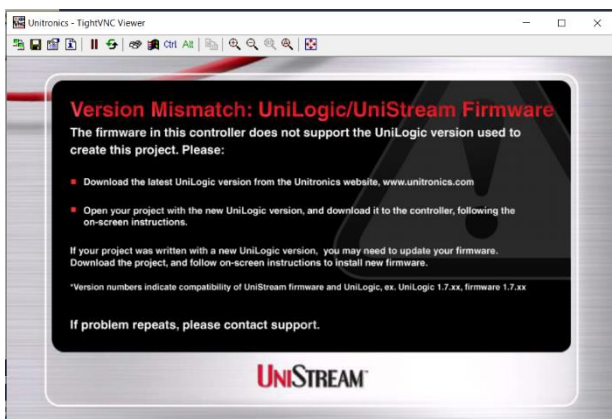
This dialog box is set to download the files to the SD card in the PLC, note that this is an optional extra and is not fitted as standard. Use a micro SD card with a capacity of 32Gb or smaller.

If there is no SD card then you may select to download files to a DOK (USB stick) either attached to your PC or the PLC.

In either case also select the FORCE box and finish with UPDATE.

This will result in files being unpacked and transferred to the storage device, it will take 5-10 minutes to complete.

The HMI will disconnect and the PLC RUN LED will blink orange. This will continue for 5-10 minutes and then the HMI will reconnect with an error message and the RUN LED and ERROR LED will both blink. **This is normal** and is because the application program (written by the user) is now incompatible with the new OS version. Download your application program again from the new UniLogic version or download a blank program.



This error message on the screen indicates that the user program needs updating.

Before downloading a new program ensure that you have set VNC to enabled and set the IP address of the panel to 192.168.1.4

The PLC & HMI may require the power to be cycled once the program is downloaded.

Upgrading the Panel OS

As there is now a separate HMI screen this also has an operating system, the version level does not appear to be as critical as that of the PLC but the OS may be upgraded simply by plugging a USB stick with the new OS files into the USB port. The upgrade is then initiated by disconnecting from the PLC, select System > Upgrades > Upgrade panel. This process will also take 5-10 minutes.

See below for LED status.

Application Note

LED Indications			
LED Colour & State			
RUN	ERROR	USB	Indication
		Green On	This LED turns steady green: <ul style="list-style-type: none"> when a USB drive is detected with valid Action file(s), indicating that you can press CONFIRM to begin running them. when the files on the USB ran successfully.
		Green blink	USB Action in progress.
Green blink		Green On	USB Action requires reset; press CONFIRM to restart system
	Red blink	Off	USB drive detected, but contains corrupt Action file(s)
	Red blink	Green ON	USB Action ran with error – disconnect the USB drive to dismiss the error.

LED Indications		
I/O LEDs	Colour	Indication
Digital Input	Green	Input state
Analog Input	Red	On: Input value is in Overflow
Relay and Transistor Output	Green	Output state

Status LEDs	Color & State	Indication	
RUN	Green	On	Run mode
		Blink	This indication is in conjunction with the USB LED. See table below, USB Actions Indications, for details
	Orange	On	Start-up mode
		Blink	Stop mode
ERROR	Red	On/Blink	The Error LED can give indications in conjunction with the RUN and/or USB LED. See the next tables Error Indications and USB Actions Indications for details
USB	Green	On	A USB drive is detected that contains valid action file(s).
		Blink	USB Action in progress
BATT. LOW	Red	On	Battery is low or missing
FORCE	Red	On	I/O Force on

Error Indications	LED, Colour & State			Indication
	RUN	ERROR	USB	
		Red blink	Off	One or more of the Actions in the USBF.xml file is corrupt – disconnect the USB drive to dismiss the error
		Red blink	On	One or more of the Actions in the USBF.xml Action has failed – disconnect the USB drive to dismiss the error
		Red blink	On	HW Configuration Mismatch – the HWC in the UniLogic application does not match the Uni-I/O modules physically connected to the PLC
	Orange blink	Red blink		Application Invalid or Version Mismatch (UniLogic version is not supported by device firmware)
		Red On		Uni-I/O Error (check wiring connections)
	Orange blink	Red On		OS/Application error

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 June 2020