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Application Note – Unitronics OPLC- Recovery from OS corruption

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Innovative Solutions for Industry

Contents

Symptoms

OS or binary library corruption can result from power failure during critical upgrade operations such as an OS upgrades.   The symptoms may be the complete loss of the display with a beep every three seconds, or two beeps followed by silence with no display. Recovery is relatively easy and can be achieved by using either the Visilogic software or the UniLoader/Download Manager.

Vision Series Boot procedure.

When a Vision OPLC is switched on it generally goes straight into run mode, however, this may be prevented by holding the screen while powering up the device. The OPLC now goes into a special screen and a 10 second countdown starts before it reverts to run mode. During this time tap the screen twice to stop the countdown. Put the device into this mode before using the UniDownloader or UniDownload Manager.

VisiLogic software

When using VisiLogic V9.3.0 (or any version) you must download system files that are released with that version:
- Boot
- BinLib
- O/S

Use a COM port to download the BOOT and the BinLib (not Ethernet).

The first thing to establish is if the OPLC will communicate with a PC. Ethernet only provides limited download capability and cannot be used for the Boot or BinLib files. Plug the PC into Port1 of the PLC and use the **Connections>Communications & OS** to attempt to Get OPLC information. The default communication settings are 115200 8N1, please use these.

Try to recover the PLC as follows:

1. Turn OFF the PLC and disconnect I/O expansions, Ethernet cards etc.
2. Touch and hold the screen.
3. Power ON while touching the screen, the device will come up in boot mode.
4. Touch **twice** in Bootstrap screen to stop the countdown.
5. Open VisiLogic and Update the O/S from the web in the Help menu and download to the PLC by using COM port RS232, 115200 baud rate and **6sec** time out.
6. Download an empty application to the controller

If you still facing the same problem, please make a **UDC** file and try the download from there.

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*** Avoid system incompatibility - Please note ***
The system files in V9.X.X are not compatible with V7.X.X or V8.X.X
Make sure that you are using the O/S, BinLib & Boot that correct for your version of VisiLogic.

The path to the OS, Boot & BinLib files are of this form

C:\Program Files\Unitronics\Unitronics VisiLogic_C\Data\Os Vision\V350

Where Unitronics VisiLogic_C is the last version of the software installed, if using the version swapper then you may have other directories of your own naming which contain previous versions.

Visilogic - How to make UDC file

UDC files contain application and system files which you can download via the UniDownloader/ Downloader Manager tools to your PLC (Visio/M91/JAZZ) without the need for VisiLogic/U90Ladder software.

In the first instance we make a .vdf file of the application. Open your project and go to "Create Project Files....."
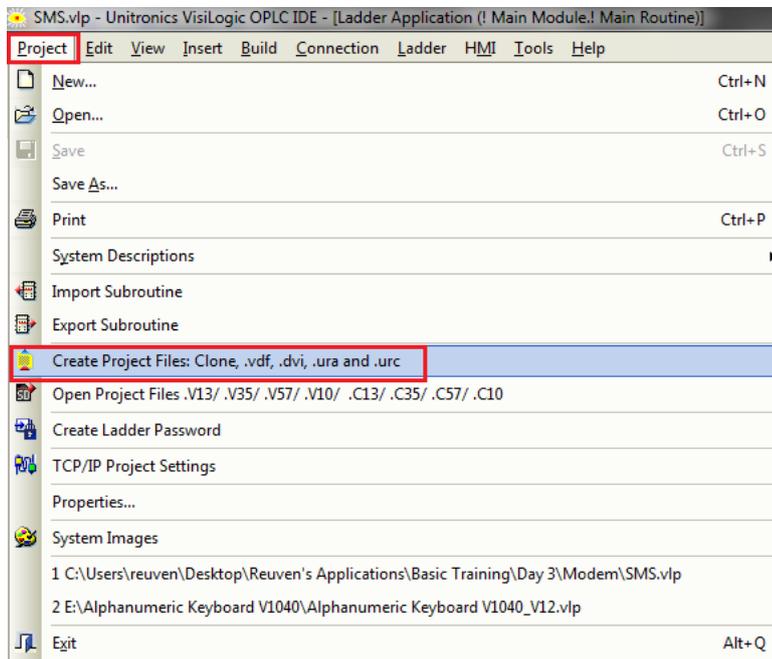
Choose the Downloader File Tab>Click on "Create File">Name it and save on you PC

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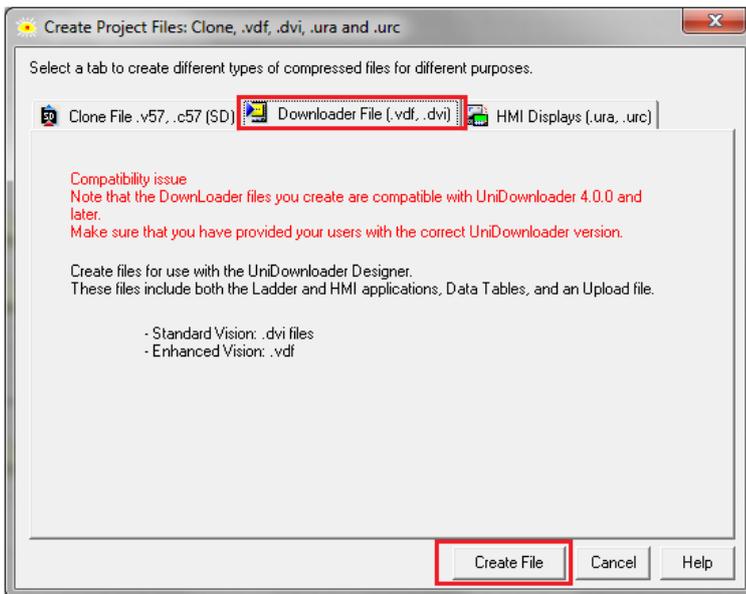
When the Project File is ready (in this case .vdf file), go to "Tools">UniDownload Designer"
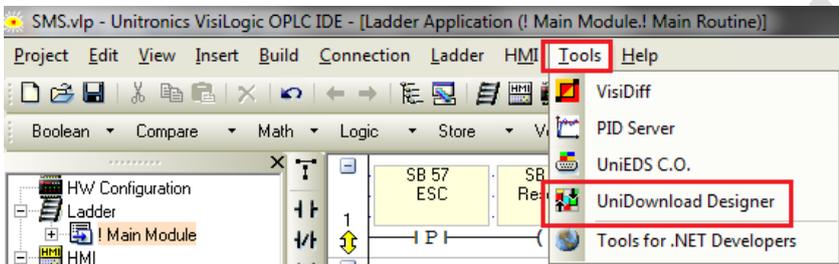
In UniDownload Designer choose the correct model and browse the files as below and click on "Make File"
UniDownloader & Downloader Manager tools are available to download from our website under the support page.

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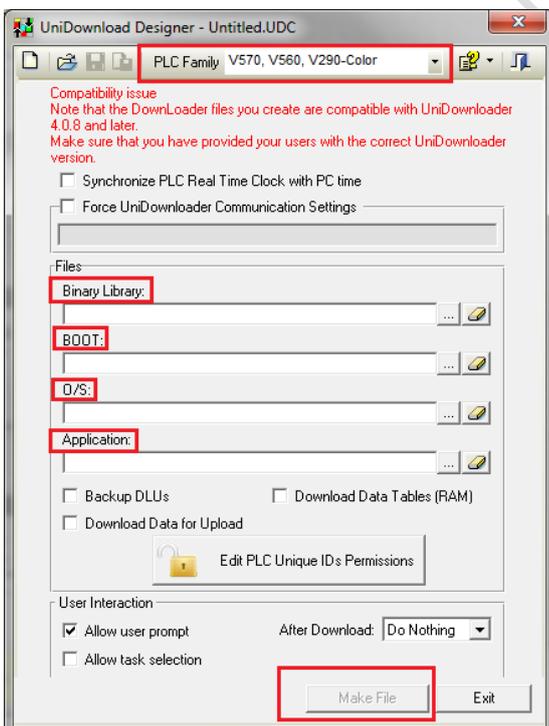
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UniDownloader/Download Manager

Essentially the same piece of software where the UniDownload Manager has a more professional front end than the UniDownloader but they both download .utc files to an OPLC or U90 type controller. UTC files consist of the binary libraries, the boot file, the OS and the application files together with some options. The file is downloaded in compressed form.

Turn OFF the PLC and disconnect I/O expansions, Ethernet ports etc.
Touch and hold the screen
Power ON while touching the screen.
Touch **twice** in Bootstrap screen to stop the countdown.
Launch UniDownloader, open the UDC file, make sure the Connection Settings are correct (COM1 RS232, 115200 baud rate and **6sec** time out) then Click Run:
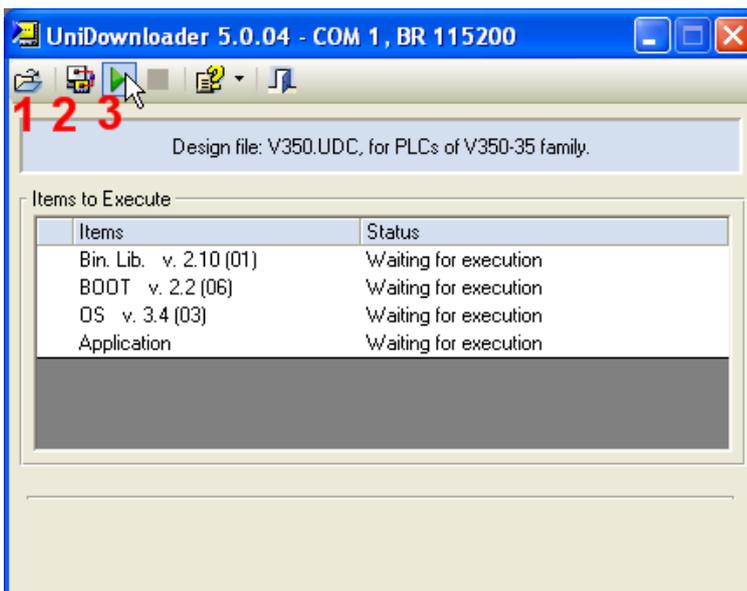
This operation may take 10-15 minutes to complete, please make sure that when it has finished you **download a blank application file!**

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Power-up Modes: Trouble-shooting

You can force the controller to boot up into bootstrap or Stop mode (hard reset) by turning on the power supply while pressing specific keypad keys.

Mode	Features	Possible Actions	EX-RC1	V120/130	V230/260	V280	V350/290/530/570/V1040 (touchscreen)
Bootstrap	• The controller's LCD is on. • PC-PLC communications are enabled, but PC must be connected to COM 1.	-Via Vision Communication PC Settings, you can: • Check which OS is currently installed in the controller. • Download a new OS Enhanced Vision also supports download via COM2, Ethernet, or CANbus - (Enhanced only) Enter Boot Info Mode	Move all DIP switches to 1	**<I> + <ESC>**	**<I> + <Right Arrow>**	**<I> + <Right Arrow>**	1. Turn the PLC off. 2. Enter Bootstrap mode by touching the screen and maintaining contact while turning the power on. • Bootstrap version **V2.00 and up** - If no action is taken, the PLC enters Run mode after several seconds. - If during Bootstrap mode, you press the screen **twice**, the PLC remains in Bootstrap mode. • Bootstrap version **previous to V2.00** - If no action is taken, the PLC remains in Bootstrap mode. - If during Bootstrap mode, you press the screen **twice**, the PLC enters Run mode.
Stop (O/S)	As in Bootstrap, but Info mode can be entered.	As above, but all Info mode actions are supported. Exit Stop Mode by entering Information Mode, and then selecting System>Working Mode> Reset.	Move all DIP switches to	**<I>**	**<I>**	**<I>**	1. Turn the PLC off. 2. Enter Bootstrap mode by touching the screen and maintaining contact while turning the power on. 3. Enter Stop mode by pressing the screen **once**. **Note ♦** Visions embedded with Bootstrap versions previous to 2.00 cannot enter Stop mode.

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Bootstrap, default LCD contrast	Contrast range is 0-100, this option automatically sets Contrast to 50.	**\<I\> + \<ESC\> + \<+/-\>**	**\<I\> + \<Right Arrow\> + \<+/-\>**	
Stop (O/S, default LCD contrast	Contrast range is 0-100, this option sets Contrast to 50.	**\<I\> + \<+/-\>**	**\<I\> + \<+/-\>**	

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