

Pinnacle Download Procedure

There are several things to consider/check when downloading to a Pinnacle controller. For example, what you need to set your PC/Laptop IP address to depends on whether or not the controller is getting its IP address from a DHCP server (automatic IP) or not.

Here is a list of things that this document will go over:

1. Upgrading ScadaWorks.
2. The different types of downloads in ScadaBuilder.
3. Download issues and Windows settings.
 - a. Windows Firewall.
 - b. Network adapters.
 - c. Anti-Virus.
4. PC/Laptop IP address, node settings IP, and controller IP in loader mode.
5. ScadaBuilder version and loader version.
6. ScadaBuilder project settings.
7. ScadaBuilder dialog to change your PC/Laptop IP address.
8. Pinnacle IDE drive.

Upgrading ScadaWorks

The latest version can be downloaded here. This our recommended approach to fixing any problems since we not only add features but also fix any issues that come up during the course of customers using the software, as well as when testing at our office.

<http://www.iclinks.com/Download-Software/>

If you already have ScadaWorks installed then you can just re-install ScadaBuilder because the other part of the package (IsaGraf) will have no changes. If this is the case then re-install ScadaBuilder by running the setup.exe program located here in the downloaded zip file (be sure to extract the files before using them):

```
"InstallImage\program files\ICL\ScadaWorksInstaller\setup.exe"
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Make sure that ScadaBuilder is closed when re-installing. Check the version by going to Help/about, and if the version did not change after re-installing try uninstalling ScadaWorks first, then re-installing again.

Note that Uninstalling ScadaWorks **will not** uninstall IsaGraf 5.2. It will only un-install ScadaBuilder and the older (3.54) version of IsaGraf. If you use the older version of IsaGraf (with any ICL controller other than Pinnacles) then you should back up your "C:\ISAWIN" folder before uninstalling ScadaWorks.

Further instructions for uninstalling are on the next page.

Name	Publisher	Installed C
 ScadaWorks	Industrial Control Links, Inc.	4/1/2014
 ScadaWorks Installer	ICL	3/28/2014

If you also see the “ScadaWorks Installer” in the uninstaller list, then you can un-install it also.

The ScadaWorks Installer is the program that continues installing ScadaWorks after a reboot as part of the original installation, and is no longer necessary once ScadaWorks is installed and working.

Once ScadaBuilder is upgraded, follow these steps to get the changes on the controller:

1. Put the controller in loader mode (power cycle and hold the button that is close to the USB ports).
2. Use the “Target / Update Loader” to update the loader and restart the controller when asked. Note that the update will take a few seconds and then the restart dialog will appear.
3. Put the controller back into loader mode.
4. Do a “Target / Send complete controller setup” and restart the controller again.

If you have any trouble getting the procedure to work then contact support at 530-888-1800 ext. 113.

There three types of downloads in ScadaBuilder:

1. Target / Send complete controller setup – Note that “Target” here refers to the Target menu and not the red target icon. This will download everything that can be downloaded:
 - a. The core system files.
 - b. ScadaBuilder configuration files.
 - c. IsaGraf program files.
 - d. All web related folders and files.

This type of download can be done at anytime, but will take longer than the other two download types. It can be done if the controller is in loader mode or in normal run mode, but should be done with the controller in loader mode if you are downloading an application (ScadaBuilder project) for the first time to this specific controller.

2. Red Target Icon – This will download the following, but the changes will not take effect until the unit is restarted. The unit can be restarted after the download by clicking the green “Go” icon.
 - a. ScadaBuilder configuration files.
 - b. IsaGraf program files.
3. Yellow Lightning Bolt Icon – This will download the following, and will automatically restart the unit.
 - a. ScadaBuilder configuration files.
 - b. IsaGraf program files.

If you are having trouble downloading, then start by checking the Windows settings:

1. Windows firewall - The Windows firewall should be turned off. This can also be fixed by adding an exception in the firewall for builder.exe, but you should try turning it off first to verify whether that is the problem or not.
2. Network adapters - ScadaBuilder uses a broadcast message to verify the unit IP and serial number. If more than one adapter is enabled, then the broadcast can go out through the wrong adapter. Check your network adapters and disable them all except the one you're using to connect to the controller. Note that they should be disabled and not just disconnected. The two that are most commonly and issue are a WiFi adapter and a virtual machine Ethernet adapter such as VMWare or Virtual Box.
3. Anti-Virus – Some anti-virus programs such as some versions of Norton Anti-Virus have a network module that can keep the download from working. If possible, disable the anti-virus program or at least the network module.
4. Duplicate IP address on the network – This can only be an issue if the computer running ScadaBuilder and the controller are connected directly and are on a common network. The easiest way to check is to ping the controller with and without the Ethernet cable plugged in to the controllers Ethernet port.
5. Multiple DHCP servers. This can happen if the controller and your computer are both on a network that also has an ICL I/O module (such as a Sprite) connected, and the DHCP server in the I/O module is enabled.

Next, check the associated IP addresses:

1. The DHCP rules:
 - a. If the controller is in loader mode and the IP address is 192.168.237.199, then it **has not gotten** its IP from a DHCP server. This is the default IP and will always be there if the controller is not connected to a network with a DHCP server. This is the most common case since in the field you will probably be connecting directly to the controller.
 - b. If the controller is in loader mode, and the controller does not have an IP of 192.168.237.199 , then it **has gotten** its IP from a DHCP server. Note that because of the conditions stated below, the IP may have gotten changed by ScadaBuilder if a download has been attempted. To verify the starting IP, power cycle the controller and put it back into loader mode.

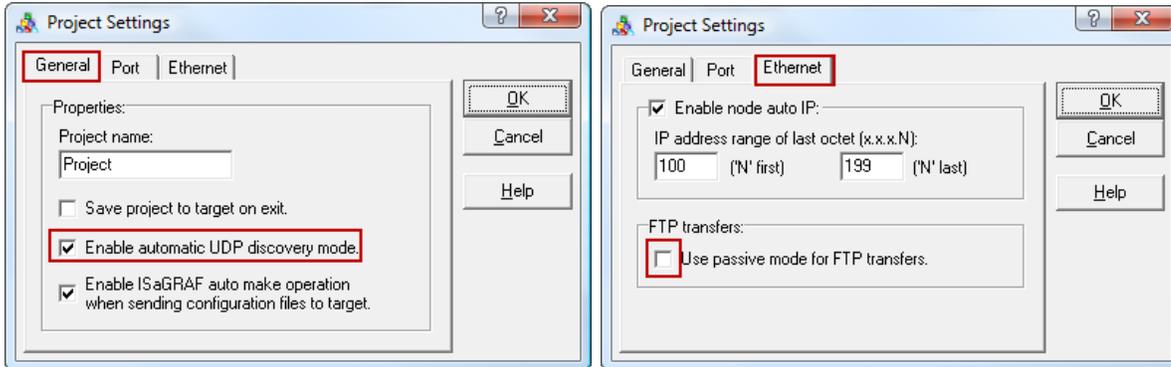
The affect of case A or B (above) on ScadaBuilder and the download:

When you do a discovery in ScadaBuilder to get the serial number, it then knows what IP the controller is at. Based on that information ScadaBuilder will do one two things:

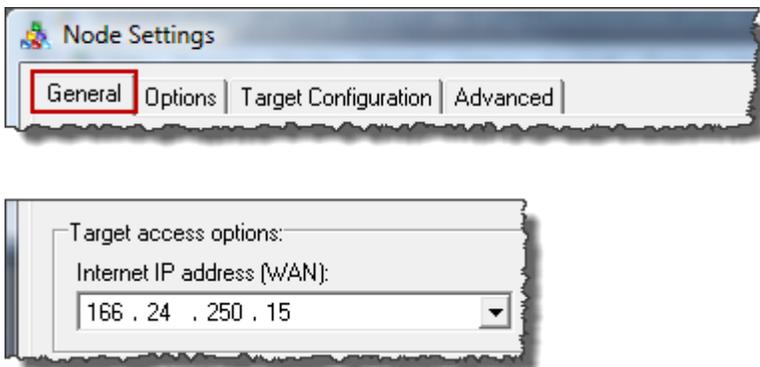
1. Has an IP of 192.168.237.199 – In this case ScadaBuilder will change the controller IP to what is in the node settings before downloading. Your PC IP address should be compatible with the IP address **in the node settings** (and not the IP address on the controller).
2. Does not have an IP of 192.168.237.199 – In this case ScadaBuilder will leave the controller IP as is and download. Your PC IP address should be compatible with the **controller IP** in loader (and not the IP address in the node settings). Note that if your PC and the controller are on the same network then the IP addresses should already be compatible. This is most common for an office environment.

ScadaBuilder Project Settings

When downloading to a controller that you are connected to directly, your project settings should be set as follows:



When downloading to a controller that you are connected to remotely, start with the same project settings as shown above but try changing them one at a time if it doesn't work. You must use the WAN IP setting also when connecting downloading remotely:



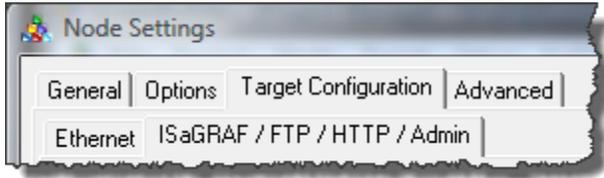
This type of connection uses the WAN IP of the router that is between you and the controller. The router then uses port forwarding to complete the connection. The gateway IP in the controller node settings has to be set to the router LAN IP also.

ScadaBuilder and Loader Version

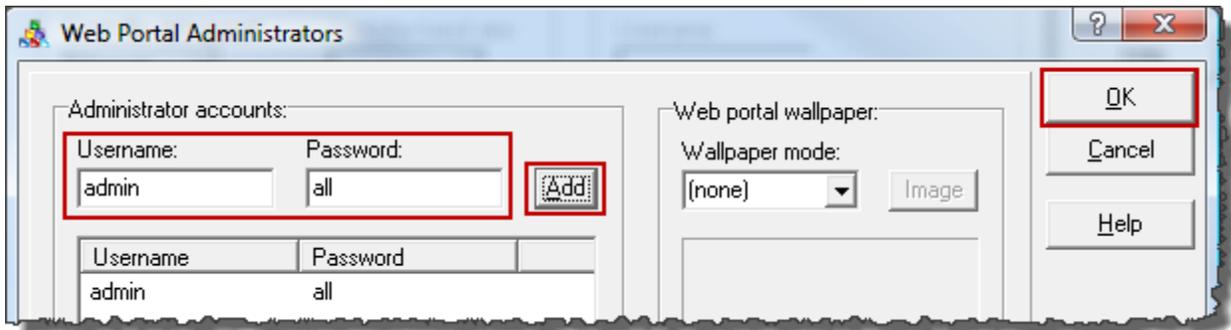
With the latest version of ScadaWorks (5.03b50) and the loader that comes with that version of ScadaWorks (1.16b50), the issues with downloading when using IP addresses that start with a number less than 128 (128.xxx.xxx.xxx) in the node settings has been resolved. Older versions of ScadaBuilder and loader will not work with IP addresses in the node settings that start with less than 128. If you run into this issue then use a different IP in the node settings (such as 192.168.xxx.xxx and subnet mask 255.255.255.0) and then change the units IP address through the web portal after it has been restarted.

To change the controller IP address through the web portal, follow these steps:

1. In the ScadaBuilder node settings, go to the “Target Configuration / IsaGRAF” tab:



Then go to the “Web Portal Administrators” button at the bottom, put in a username and password, and click the “Add” button:

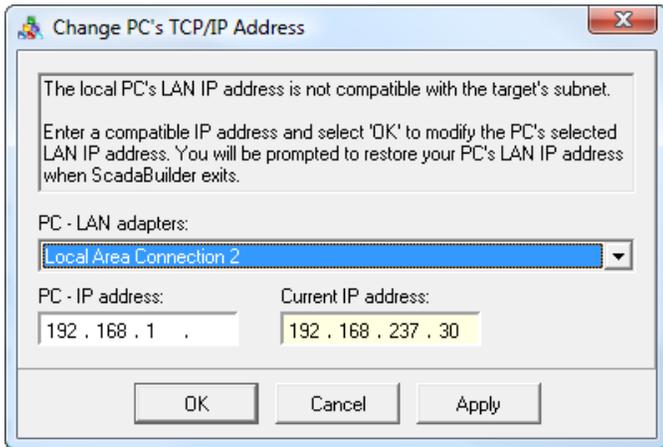


2. Do a “Target/Send complete controller setup” download and restart the controller. Alternatively, you can use the “Apply to Target” and “Restart Target” buttons, just make sure that you use both buttons since a restart is required for the changes to take effect.
3. Access the web portal by putting the controller IP address in a web browser.
4. At the login prompt use the username and password from the node settings.
5. Then go to “Administration”, and “IP Network Setup”. Change the IP here and click the “Write IP Setup” button.
6. Restart the controller by power cycling or by clicking the “Restart Target” button in the node settings.

Note that when the IP address is changed via the web portal, from then on the unit will always boot up with that IP address and not with what is in the node settings. If the IP has been set through the web portal and you need to have the controller boot up with the IP address in the node settings, then the Node Name.net file on the controller must be deleted, where “Node Name” is substituted with the node name in your ScadaBuilder project. There will only be one file on the controller with the *.net extension.

The ScadaBuilder “change IP” dialog

If attempting to download and the IP address on the controller is not compatible with the one on your PC, ScadaBuilder will bring up a dialog which you can use to change your PC IP address without having to go to the adapter settings on your PC. When you close ScadaBuilder you will be asked if you want to change your PC IP address back to what it was before ScadaBuilder changed it.



The address on the left is the one that ScadaBuilder wants to change your PC to so that you connect to the controller, and the one on the right is the one for your current PC IP address. In some cases you will already be compatible and ScadaBuilder just doesn't know it. In that case you can click the Cancel button and the download will proceed. If you click cancel and the download cannot proceed the you'll be given the choice of connecting with a serial cable.

The fact that this dialog came up may be an indicator that there is something about your PC IP address that is not right. If you choose not to use the automatic IP change feature then check your PC IP address by going to the adapter settings or running an “ipconfig” command in a command window.

This document can be used as a guide, but if you need further assistance then contact ICL support at 530-888-1800 ext. 113.