Quick Start Guide

SoftPLC Hardbook Processors

Thank you for purchasing a SoftPLC Hardbook! This guide is for those who don't like reading users manuals and just want to get started using the product quickly.

Smart System Defaults

IP Address for eth0 (marked SW1, SW2, SW3 on side panel)	192.168.1.100
Serial Console (COM1 - 9 pin port)	baud=115200 (ver 4.6 & later), 38400 (ver 4.2) No parity 8 bits 1 stop bit
System Console login	login = **root** password = **softplc**
FTP login	login = **anonymous** password = **softplc**

PC Software Requirements

The software programs listed below are needed on your programming computer. They can be found on the SoftPLC Product CD and from our website Knowledge Base, unless otherwise indicated. Items marked “R” are required. “O” items are optional and may be required for certain functions or low-level troubleshooting.

SoftPLC or Gateway Configuration/ Programming software	TOPDOC NexGen	Configuration, Programming & Troubleshooting Smart SoftPLC / Gateway	R
Java RTE (Run time environment)	Java 6 or above	Req'd for TOPDOC NexGen	R
SSH client program	PuTTY (Windows) ssh (Linux)	Ethernet Troubleshooting and advanced configuration	O
FTP client program	WSFTP or FileZilla (Windows) gFTP (Linux)	File transfer to/from Compact Flash	O
Terminal emulation program	* HyperTerminal (Windows) minicom (Linux)	Serial port based troubleshooting - in the event Ethernet comms are not working	O

* If you are using a Windows system that does not include HyperTerminal, there is a non-free version available at http://www.hilgraeve.com/hyperterminal/ .

PC Hardware Requirements

- Laptop or Desktop computer with serial port or USB to serial adapter
- Ethernet RJ45 cable (patch or cross-over)
- DB-9 female/female Laplink cable (Null Modem) and/or USB-serial converter

Connecting to a SoftPLC Hardbook for the first time

1. Install the recommended software. This includes: Java RTE, TOPDOC NexGen, PuTTY, and optionally HyperTerminal.

2. Set your PC's Ethernet portsTCP/IP properties to use a fixed IP address that is on the same subnet as the default IP address of the SoftPLC (192.168.1.100). For example, set your PC to 192.168.1.2.

3. Connect an Ethernet cable from your PC's Ethernet port to LAN1 on the SoftPLC.

4. Connect a non-powered power supply to the SoftPLC.

5. Turn on the power supply and allow the SoftPLC to boot up.

6. Start TOPDOC NexGen, click OK to login as “Default” and select the PLC option.

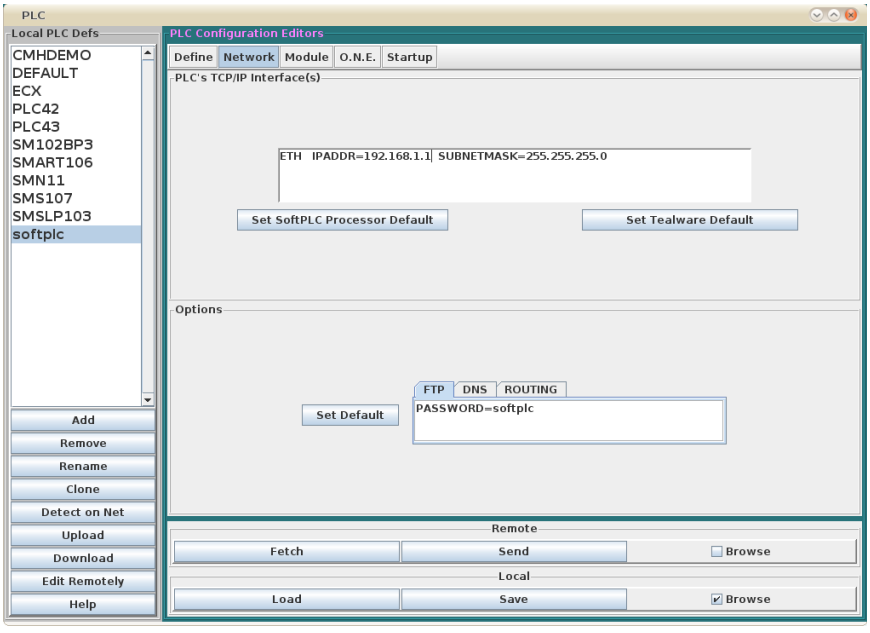
7. Select “Detect-On-Net” to discover the PLC. If successful, click on “Save Selected” to upload and save the configuration to your PC. A new PLC Def will be added to the list in the upper left, which is your new SoftPLC.

   NOTE: If you are using WinXP, you may need to turn off the Windows Firewall.

8. Press “Edit Remotely” to connect to the PLC and view the current running APP.

Changing the Ethernet TCP/IP Address

1. Click on your SoftPLC name. Then click on the Network tab to the right of the PLC name list.



2. Enter the desired IPADDR and SUBNETMASK in place of the displayed addresses.

3. Press “Send” *(bottom center of the screen)* to write the new address to the SoftPLC. *(It will not take effect until you restart the SoftPLC.)* Also press “Save” to copy the new setting to your PC drive.

4. Cycle power on the SoftPLC or use PuTTY/ssh to restart (*using instructions found later in this document).*

5. Set your PC's Ethernet port TCP/IP properties to use a fixed IP address that is on the same subnet as the new IP address of the SoftPLC.

6. Test communications using Detect-On-Net as before.

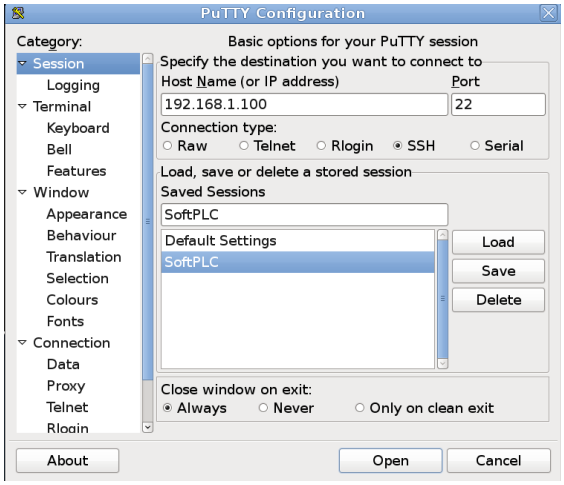
Connecting to the SoftPLC for diagnostic and problem resolution

Ethernet Connection from Windows

1. Connect your PC to the SoftPLC's Ethernet port LAN1, making sure your PC and the SoftPLC are on the same subnet.

2. Use PuTTY to connect to the SoftPLC's console.

   Start PuTTY.
   Enter the IP address of the SoftPLC.
   (default=192.168.1.100)
   Select SSH.
   Press Open.



3. When the console window appears,
   Login as username: root
   At prompt enter the password: softplc

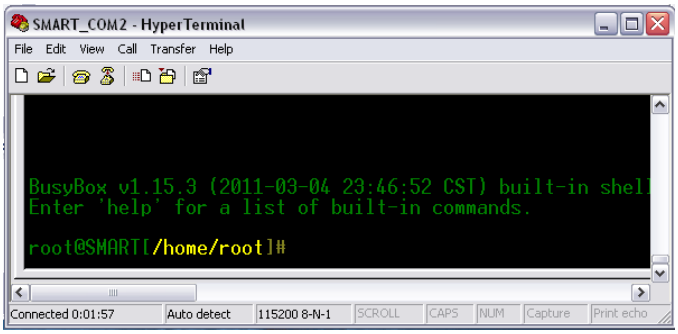
4. Now you can use Console commands to view log files, edit files, search, etc. *(see last page)*

Serial Connection

1. Connect your PC to the SoftPLC's 9-pin serial console port (COM1) using a Null Modem cable.

2. Start your terminal emulation program using a “Direct to COMx” connection, with the communication parameters set to:

   115200 baud *
   8 bits
   No Parity
   Stop bit



3. Login at the serial console.
   Login=root
   Password=softplc

* *38400 for versions 4.2 and earlier*

Basic Console Utilities and Commands

At the SoftPLC console, the following are only some of the commands that may be executed.

NOTE: *All utilities and commands should be typed in lower case characters and Linux uses the "/" rather than the "\" used in Windows.*

less "file"	Shows contents of "file". Use Up/Down to transverse file and 'q' to exit.
logread	Dump contents of syslog to console. View syslog using less: logread |less
setupgatecraft	Edit PLC configuration files
ifconfig	List network interfaces
date YYYYMMDDhhmm.ss	Set system date and time
hwclock -uw	Save current system date and time to hardware clock
nano "file"	Edit file name "file" Save: CTRL-o Exit: CTRL-x
tar [mode] [format] [file options] "file"	Lists, creates or extracts an archive file extract bzip2: tar -xjvf filename.tar.bz2 extract gzip: tar -xzvf filename.tar.gz
opkg [options] [subcommand] ["package"]	SoftPLC Package Manager. (Requires Gateway & DNS IP's defined.) Update package list: opkg update Ugrade packages: opkg upgrade Install package: opkg install "packagename"
/etc/init.d/network.sh {start|stop|restart}	Start, Stop or Restart networking. (use 1 of the 3 options) ex. /etc/init.d/network.sh restart
/etc/init.d/softplc.sh {start|stop|restart}	Start, Stop or Restart SoftPLC (use 1 of the 3 options) ex. /etc/init.d/softplc.sh stop ex. /etc/init.d/softplc.sh start
cd "path"	Change to directory (ie. cd /SoftPLC/run)
cat "file"	Print contents of "file" to screen
mv "file1" "file2"	Move (rename "file1" to "file2")
cp "file1" "file2"	Copy file1 to file2
ls [options]	List lies in current directory. Long format: ls -l Complete list of "ls" options: ls --help
rm "file"	Remove file with name "file"
mkdir "path"	Make new directory
which "file"	Locate executable files. Example: which ifconfig
find -name "file"	Search for a file in current directory and subdirectories. Example: find -name "NETWORK.LS
"command" -help	Get help on specific shell command
df	report file system disk space usage.
free	Display amount of free and used memory in the system.