



A TEXAS INSTRUMENTS COMPANY 

INNOVATIVE PC Data Acquisition and Collection Solutions

LANpoint XL Terminal Emulation Software QuickStart Guide

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INSTRUCTIONS

Getting your terminal emulation software configured and running is as easy as 1-2-3. Just follow these three setup steps for configuring the terminal and setting your IP addresses.

Before you start, you may want to note the terminal's hardware address (MAC) address and contact apps_eng@lanpoint.com, or call Intelligent Instrumentation Application Engineering for an authorization code. See FAQ#1 below for more information. You can use the terminal emulation without an authorization code, in evaluation mode any time. It will have an extra "nuisance" message and will time-out every 30 minutes, but it is a full-featured install in every other respect. See FAQ#5 for instructions to un-install the terminal emulation software.

Step 1 – Setup the hardware

- A) basic instructions are in the terminal installation manual. You'll need at least:
 - 1) a LANpoint XL (Windows CE.NET OS only) data collection terminal with power supply and almost any keyboard with PS/2 or USB connector (**for initial configuration only; the keyboard may or may not be used in production**)
 - 2) your network with 10/100Base-T connections or supported RF Ethernet Access Points, and a host computer.

Step 2 –Set terminal's IP address and install the Terminal Emulation Software

- A) set the terminal's IP address according to instructions found in section 7.2 of the *LANpoint XL Technical Manual* (part number 855M538; this manual can be purchased or can be downloaded at www.lanpoint.com)
- B) run the program `\CFCard\lanpoint\twinclient\install.exe`. An install window with several buttons will be displayed. Click on the button to install the terminal emulation type of your choice, or press the corresponding Function key (F1 = VT/HP; F2 = 3270; F3 = 5250, F4 = remove emulation software, etc). After you verify that you wish to install the software, the appropriate files will be copied as necessary. When done, a success message will be displayed (i.e. "5250 Emulation software installed").
- C) reboot the terminal by re-powering or pressing the F6 (or clicking the Reboot button on the install screen) - you will see a screen that shows "TwinClient TN xx". This is the initial terminal emulation screen. Note that you no longer have the toolbar and the desktop environment on the screen; see FAQ#4 for exiting back to this environment.

Step 3 – Terminal Emulation Configuration – assign Host IP address(es)

- A) at the "TwinClient TN xx" screen, press shift-C on a [temporarily] connected keyboard – PS/2 or USB. This takes you into the emulator's configuration menu.
- B) highlight "Edit Server/Host IPs" and hit enter. You will see a host name and the cursor will be positioned for you to enter the host computer's IP address. Enter this value and hit enter. At the prompt for Port (number), enter the port number (usually 23 for telnet sessions) and press F3 to save the changes. Note that you can enter another host address (up to 4) by hitting the Enter key after entering the port number, if you wish. This is for automatic failover protection, in case you have a secondary host to connect to.
- C) arrow down to "Edit License Key" and hit enter. You will see a 12-hex character MAC address like 00C052xxxxxx or 000FF8xxxxxx or similar. You must know this MAC address when you contact Intelligent Instrumentation for the authorization code as mentioned above. Enter the code assigned, and press F3 to save. The code has to be entered exactly as given, with capitalization and dashes.
- D) arrow down to the "Run Emulator" selection and hit enter to save the configuration.
- E) reboot the terminal for the IP addresses and other menu configuration items to take effect.
- F) When the "TwinClient TNxx" screen is shown, press the Enter key to attach to your host.

FREQUENTLY ASKED QUESTIONS

NOTE: Some of the FAQ's mention running a program or utility like the *WordPad* text editor. To get to other programs, utilities and any of the basic functionality of the terminal, you will need to exit the terminal emulation software as described in FAQ#4 below. Then you will see the Windows CE desktop and toolbar that is very familiar to desktop PC users.

Frequently Asked Questions – Startup and Shutdown

Q1: My terminal shows a “Recoverable error” message upon startup of the terminal emulation software, and also exits the emulation functions every 30 minutes. What’s going on?

A1: For demonstration and evaluation purposes, the terminal emulation software has the capability to run in evaluation (unlicensed) mode. The symptoms described are what is seen when there is no valid “authorization code” known to the emulation software. Contact Intelligent Instrumentation (see the second paragraph of this document) for the assignment of an authorization code. You will need the serial number affixed to the cover of this document when calling for the authorization code. Then follow the instructions given in installation instructions, step 3C above.

Q2: You have mentioned manuals several times, but I don’t find some of the manuals in the product package I received, and I don’t see them on the price list. Where can I get these manuals?

A2: The documentation for the Twin Client software is downloadable at <http://www.connectrf.com/Documents/r6tn.pdf>.

Q3: You have mentioned the internet for downloads several times. What if I can’t download for some reason?

A3: Just contact our technical support people by phone, email, or FAX and we will be glad to get you whatever you need in a format that you can easily use.

Q4: Several answers and the appendix have said that I should edit files on the terminal. It’s always running the terminal emulator, so how do I do that?

A4: There are many ways, but the quickest way is to use *WordPad.exe* on the terminal. To do this, exit the terminal emulation software. Go into the configuration menu (see step 3B in the installation instructions above), and scroll down to the “exit” selection. This will exit you to the Windows CE.NET operating system’s desktop. Then you can run the *WordPad* editor from the *Run* or *Programs* selection under the *Start* menu, or find it via *Windows Explorer*.

Q5: I’ve installed the terminal emulation software to evaluate it. Now, how do I un-install it?

A5: Exit the terminal emulation software to the desktop environment (see FAQ #4), then run the install program again, choosing the “Remove Terminal Emulation” (F4 key) selection. Then reboot the terminal.

Frequently Asked Questions – Configuration

Q10: I don’t want to stop work if my host is down. Is there a way to attach to a secondary host if the primary one is down?

A10: Yes, you can define up to 4 different hosts. In the configuration menu (see step 3A above), you can define multiple hosts. When the emulation software begins to run and there are multiple hosts defined, the user will be asked which host to connect to.

Q11: I am planning on using the integral Ethernet connector on my LANpoint XL instead of the RF Ethernet and access points for wireless connectivity to my network. Can this be done with the terminal emulation software?

A11: Absolutely! Once the RF card is installed in the terminal and the IP address is configured properly, the fact that the terminal is wired or wireless is immaterial. However, you will need to change your authorization code in order to do this, since the MAC address will change. Call Intelligent Instrumentation or go to www.connectrf.com to exchange your authorization code, at no charge to you.

Q12: I purchased VT220 emulation, but what would really work better is HP700 emulation (or VT100 emulation). Do I have to purchase something different?

A12: No, you do not have to purchase something different. Use *WordPad* to edit the file called *CFCard\lanpoint\twinclient\tnvt.cf*. Find a line that says “emul=vt220;” and change it to “emul=hp700;” (or “emul=vt100;”) and re-boot. That’s all there is to it.

Q13: Can I use DNS rather than having to hard-code IP addresses?

A13: Yes. Simply use IP address 0.0.0.0 when configuring the host IP address. Be sure to specify the host name! You may have to do this by *WordPad* to edit the file *CFCard\lanpoint\twinclient\power.net*, changing the host name from “Primary Host” to your host’s name.

Q14: The telnet information on my host lists the device name for the attached terminal as “EmulDev”. How can I make this more meaningful for our network management personnel?

A14: The quickest way is to use *WordPad.exe* on the terminal to edit the file *CFCard\lanpoint\twinclient\tnvt.cf*. Change the line “DEVNAME=EmulDev;” to “DEVNAME=xxx;” where xxx is your desired device name.

Q15: Some of the warning or error messages should be accompanied by an audible warning and remain displayed for a longer period of time. What can I do about this?

A15: You can use an editor to modify the file on your terminal called *u_msgs.txt*. This file contains lines of parameters that describe error and warning messages that will be displayed on the terminal’s display. The format of this file is:

```
a=b,c,d,e,f;
where...
a - message id (code)
b - row on terminal's display where the message will be shown
c - column on terminal's display where the message will begin to be shown
d - (0) - display message, no waiting for key press
    (-1) - display message, then wait for key press
    (-2) - display message and display "press any key...", then wait for key press
    (>0) - display message, value is number of milliseconds to wait for key press
e - number of beeps
    (>0) - one tone beep
    (<0) - two tone beep
f - message text
```

Q16: When the terminal first starts, I see an “AirLoad” dialog open, then a dialog that is titled “Enter Server IP Address”. I enter my host server’s IP address here but it doesn’t seem to have anything to do with that server. What’s going on?

A16: This is not for your host application server. This dialog is to identify the “Airload server” PC that is part of the advanced “Airloader” feature. Use the *WordPad* editor to edit the file *CFCard\lanpoint\twinclient\tnconfig.txt* and change the line that says “RunAirloader=1;” to

“RunAirloader=0;”. Airloader is an advanced feature for automatically updating terminals with configuration and program file updates. If you want to activate Airloader, you may purchase a license for it. See FAQ#22.

Q17: I see the task bar at the bottom of the screen and would rather see more lines from the application screen. Can I use the whole screen for the application screen by not showing the task bar?

A17: Yes. Use the WordPad editor to edit the *CFCard\lanpoint\twinclient\tnconfig.txt* and change the line that says “HideTaskBar=0;” to “HideTaskBar=1;” and then reboot.

Q18: I want to have several processes start-up when the terminal is rebooted; how do I do this?

A18: The easiest way is to use WordPad.exe to edit the files *CFCard\AutoStart\Start.bat* and *CFCard\AutoStart\Start-default.bat* to add command lines to start-up whatever processes you want to start upon reboot. **Be sure to make the same changes to both files** so that if you reload terminal emulation software some time in the future, you do not lose your autostart settings (when you run *install.exe*). For example, the following commands will the data wedge utility *WedgeCE.exe* against both the COM1 port (default) and the COM2 port, as well as the terminal emulation software.

```
Start \cfcard\lanpoint\wedgece.com
Start \cfcard\lanpoint\wedgece.com COM2
Start \cfcard\lanpoint\twinclient\CEStartup.exe
```

Frequently Asked Questions – Keyboard & Display Re-Mapping, Advanced Features

Q20: I’ve got an application for which I want the tab character to be mapped to the F4 key. Can this be done easily?

A20: Yes, keyboard re-mapping is supported by the emulation software. It is beyond the scope of this QuickStart Guide. Contact Applications Engineering at Intelligent Instrumentation, Inc, or see the documentation for the Twin Client software, downloadable at <http://www.connectrf.com/Documents/lanpointXL.pdf>. This functionality (as well as display re-mapping – a.k.a. “screen scraping” and many of the other advanced features) requires the Windows-based configurator software utilities downloadable at <http://www.lanpoint.com/te-dev-site.html>.

Q21: I’d like larger text on the LCD screen. Is it adjustable?

A21: Yes. You can adjust the size of characters displayed. Use the *WordPad* text editor to change the file *CFCard\lanpoint\twinclient\tnvt.cf*. Find the line in the file that reads “font_size=12;” (the default font size) and change it to be “font_size=xx;” where xx is the font size, then reboot the unit. Font size 8 and below is not recommended, as it is difficult to read. Font size modifications change the number of lines and characters per line that can be displayed, as you would expect to be the case.

Q22: I want to use some of the advanced features of the terminal emulation software. I’ve downloaded the configurator utilities from Intelligent Instrumentation’s website - <http://www.lanpoint.com/te-dev-site.html> - and configured all the files as I want them. Now, what’s the easiest way to get them to the terminal?

A22: Airloader is a very good way to do this. The terminal emulation software can be optionally licensed with an automatic configuration process called Airloader. Airloader can automatically attach to the Windows PC that you used to configure your files and copy all the appropriate ones to the terminal next time it reboots. It is beyond the scope of this

document to describe the steps necessary to do this, but it is simple and quick. Give Applications Engineering a call and we'll be glad to explain how to activate this feature.

Frequently Asked Questions – Troubleshooting

Q30: When I'm using my emulator, I don't see my regular logon prompt – the screen is blank or only shows portions of some logon messages. How do I log onto my host?

A30: If you see a familiar part of your logon screen, you may be able to solve this as described in FAQ#31 below. If you are not seeing a connection to your host, check to see if you can see a session starting on port 23 (or whatever telnet port you specify in the *power.net* file or the configuration menu – step 3B above); AS400 hosts must have a “5291” device defined (usual AS400 default has this – yours may be disabled). This and other tech notes can be found on the product diskette, our web site www.lanpoint.com, or by contacting Tech Support.

Q31: I see only part of a user prompt on my terminal's LCD screen. It looks like the screen has shifted to the right, showing only the last part of the prompt. What's going on?

A31: This is due to special functionality built into the software. Basically, the emulator can be set so that the terminal's LCD “window” is at a fixed position on the full terminal screen, or allowed to move. As such, it may shift the LCD display somewhere you do not wish it to be. Use *WordPad* to edit the file called *tnvt.cf* in the folder *CFCard\lanpoint\tnwinclient* to be sure it has the line “quad=off;” within it. Other values you can try include “quad=on;”, “quad=lock;”, “quad=hard;”, and “quad=soft;”.

Q32: I changed the terminal's IP address, subnet mask and gateway address in the setup menu, but it doesn't seem to work. What's going on?

A32: Make sure you run the program *regflush.exe* to update the Windows CE registry. Then reboot the unit. This has to be done for the changes to take effect.

Q33: I'm getting an “NCU packet error” message, and the terminal does not seem to connect to my host. Why doesn't it work?

A33: In the emulator's “Edit Functions” configuration menu (see step 3A above), arrow down to the “Switch Modes” menu selection item and hit enter. This will change the mode message to “Switched to TNClient Mode” instead of “Switched to Server Based Mode”. The TNClient mode connects directly to your host rather than through a pre-processor.

Q34: I see a DNS error message and I don't want to use DNS. How can I fix this?

A34: See also FAQ#13. You have a host IP address set to 0.0.0.0. Change this to the correct IP address for your host. The value in the host name field is not important with a hard-coded host IP address.

Q35: I have a slot reader that is returning different characters than what is coded on the card being read. What's going on?

A35: Some slot readers are connected to the terminal as a “wedge”. These slot readers have a PS/2 mini-DIN6 connector on them and are plugged into the port labeled “KB/MS” (KeyBoard/MouSe). If that is the case, and you have some keys re-mapped to other than the standard characters, this slot reader input is also re-mapped. For instance, if you re-map the 8 key to be a D, all 8's in the scanned data will be changed to a D. The solution is to re-map the keyboard using different keys/characters, or use a slot reader that connects through a different port on the terminal.

Q36: I have one host that I connect to, but made a mistake and did not press F3 when configuring my host IP address and port number. The menu asked for the next host, at which time I pressed F3 and saved the settings. Now I have a backup host with IP address 0.0.0.0 that I can't seem to get rid of. The emulator asks which host to connect to every time it begins execution. What do I do now?

A36: You can edit the file called *CFCard\lanpoint\twinclient\power.net*. See Appendix A below. Use a standard file editor (*WordPad.exe*) and remove the second host line. Another way to do this is to press F9 while in the configuration menu, which clears out the entire *power.net* file and allows you to start over again.

Q38: I have a user who says the arrow and delete keys don't work on data in a field shown on the screen – the cursor won't move past the first character in the field with the arrow key, and the delete key does nothing. He has to type over the entire string of data to replace one character that is in error. Does it have to act this way?

A38: This happens after you leave the field (say, tabbing to the next field), and then noticing the erroneous data, or when some data is re-displayed by the host. You can change this by editing the *tnvt.cf* file and changing the line that says 'dflt_d=off;' to 'dflt_d=on;'.

Q39: I've attached a serial scanner to COM1 on the terminal, and it appears to be working because it beeps as if the data is decoded, and when I run *WedgeCE.exe* on the terminal, I see data show-up in the *WordPad* window. But when I run the terminal emulation software, I don't see any data. What's going on?

A39: The easiest way to solve this is to startup *WedgeCE* on the terminal after every reboot (see FAQ #18. If for some reason you cannot do that, be aware that the terminal emulation software depends on a carriage-return/line-feed to determine that the whole character string has been received from serial devices before it acts on that data. Connect's Technical Note Number T1215 (www.connectrf.com in the technical support area) explains how to configure a Symbol scanner to do that. All serial scanners will have similar configuration abilities. For the Symbol scanner mentioned in that Technical note (a Symbol model number 8946), the particular instructions with the scanner's configuration manual page numbers are:

- 1 - (SET RS-232C DEFAULTS) pg3-3 (set RS232 parameters to factory defaults)
- 2 - (SET ALL DEFAULTS) pg3-3 (set all other parameters to factory defaults)
- 3 - RS-232 HOST BAUD RATE (9600) pg3-28
- 4 - RS-232 HOST PARITY (NONE) pg3-29
- 5 - RS-232 HOST DATA TRANSMISSION FORMATS (<DATA><SUFFIX>) pg3-21
- 6 - RS-232 HOST PREFIX/SUFFIX VALUES (SUFFIX) pg3-22
- 7 - RS-232 HOST PREFIX/SUFFIX VALUES (<1><0><1><3>) pg3-23 (set the suffix to carriage-return/line feed – ASCII character 10/ASCII character 13)

APPENDICES

Appendix A – Manually Editing Configuration Variables

The terminal emulation software supplied by Intelligent Instrumentation for the LANpoint XL data collection terminal communicates to the host system via TCP/IP. The host's IP address is stored and retrieved from an ASCII file named *power.net*.

For full operation, the software requires an Authorization Code that is assigned based on the terminal's MAC address. This eliminates an initial "nuisance" message and removes a 30-minute time-out limitation. This code is unique and is keyed to the MAC address of the unit's integral Ethernet MAC address. The authorization code is stored in an ASCII file, called *crfauth* (no extension).

Many configuration variables are also stored in a file called *tnvt.cf*. Do not change any of these variables with a text editor unless specifically instructed to do so.

These ASCII files all reside in the folder *CFCard\lanpoint\twinclient*. They are modified by the configuration menu within the terminal emulation software, or may be edited with any standard file editor such as *WordPad*.

If you intend to use the *WordPad* text editor, you may have to exit the terminal emulation software to access it. Those instructions are given in FAQ#4 above.

POWER.NET

The contents of the file *CFCard\lanpoint\twinclient\power.net* look something like the following.

```
198.182.118.169,23,Primary Host;
```

There are 3 fields, comma-delimited. There are no spaces except perhaps in computer name.

The first field is the IP address of the host where the client terminal will attach. The second field is a valid host port number - 23 is standard for a Telnet session. The third field is the host computer name that you make up to easily identify the host, or the host name if DNS is used. A semicolon terminates the line. For backup servers, additional lines, up to 5 total, can be added.

CRFAUTH

The terminal authorization code may be edited manually. Contact Intelligent Instrumentation apps_eng@instrument.com, or call 1-800-685-9911 for a valid code. You will need the serial number on the cover of this document in order to have an authorization code assigned.

The codes are related directly to the MAC address for proper activation, so e-mail is the preferred method to reduce errors. You will find the MAC address in the terminal emulation's "Edit License Key" menu (see setup step 3C on page 3 – it will be 12 hex characters). Also provide the terminal emulation software serial number(s) for each authorization code requested.

A unique authorization code will be assigned for each MAC address you provide. It must be edited into *CFCard\lanpoint\twinclient\crfauth* (no filename extension) exactly as specified – capitalization and dashes included.

LANpoint XL Vterm Default Keyboard Map

	Shift	Ctrl	Alt
Esc			
F1	F9	F17	
F2	F10	F18	
F3	F11	F19	
F4	F12	F20	
F5	F13	F21	
F6	F14	F22	
F7	F15	F23	
F8	F16	F24	
Tab			
`	~		
/	?		
'	“		
[{		
]	}		
-	=		
=	+		
\			
q	Q	Ctrl_q	
w	W	Ctrl_w	
e	E	Ctrl_e	
r	R	Ctrl_r	
t	T	Ctrl_t	
y	Y	Ctrl_y	BKTAB
u	U	Ctrl_u	
i	I	Ctrl_I	
o	O	Ctrl_o	
p	P	Ctrl_p	
a	A	Ctrl_a	
s	S	Ctrl_s	
d	D	Ctrl_d	
f	F	Ctrl_f	
g	G	Ctrl_g	
h	H	Ctrl_h	
j	J	Ctrl_j	
k	K	Ctrl_k	
l	L	Ctrl_l	
;	:		
z	Z	Ctrl_z	
x	X	Ctrl_x	
c	C	Ctrl_c	
v	V	Ctrl_v	
b	B	Ctrl_b	
n	N	Ctrl_n	
m	M	Ctrl_m	
,	<		
.	>		
Up	VWUP		
Shift			
ALT			
Ctrl			
Space			
Left	VWLEFT		
Down	VWDN		
Right	VWRITE		
Bksp			

7	&			
8	*			
9	(
4	\$			
5	%			
6	^			
1	!			
2	@			
3	#			
Del				
0)			
.				
Enter				

LANpoint XL 5250 Default Keyboard Map

	Shift	Ctrl	Alt	
Esc				
F1	F9	F17		
F2	F10	F18		
F3	F11	F19		
F4	F12	F20		
F5	F13	F21		
F6	F14	F22		
F7	F15	F23		
F8	F16	F24		
Tab				
`	~			
/	?			
'	“			
[{			
]	}			
-	_			
=	+			
\				
q	Q			
w	W		ERINP	
e	E		FEXIT	
r	R		RESET	
t	T			
y	Y		BKTAB	
u	U		DUP	
i	I			
o	O		EREOF	
p	P		FIELD+	
a	A		ATTN	
s	S		SYSREQ	
d	D		REDRAW	
f	F		FM	
g	G		HOME	
h	H		HELP	
j	J		INS	
k	K		END	
l	L		LEXIT	
;	:			
z	Z		PRINT	
x	X		NULLEND	
c	C		CLEAR	
v	V		REFRESH	
b	B			
n	N		NEWL	
m	M		FIELD-	
,	<			
.	>			
Up	VWUP		ROLLUP	
Shift				
ALT				
Ctrl				
Space				
Left	VWLEFT			
Down	VWDN		ROLLDN	
Right	VWRITE			

Bksp				
7	&			
8	*			
9	(
4	\$			
5	%			
6	^			
1	!			
2	@			
3	#			
Del				
0)			
.				
Enter				

LANpoint XL 3270 Default Keyboard Map

	Shift	Ctrl	Alt	
Esc				
F1	F9	F17		
F2	F10	F18		
F3	F11	F19		
F4	F12	F20		
F5	F13	F21		
F6	F14	F22		
F7	F15	F23		
F8	F16	F24		
Tab				
`	~			
/	?			
'	“			
[{			
]	}			
-	_			
=	+			
\				
q	Q		EOF	
w	W		ERINP	
e	E			
r	R		RESET	
t	T		BOT	
y	Y		BKTAB	
u	U		DUP	
i	I			
o	O		EREOF	
p	P			
a	A		ATTN	
s	S		SYSREQ	
d	D		REDRAW	
f	F		FM	
g	G		HOME	
h	H		HELP	
j	J		INS	
k	K		END	
l	L		LEXIT	
;	:			
z	Z		PRINT	
x	X		NULLEND	
c	C		CLEAR	
v	V		REFRESH	
b	B		TOP	
n	N		NEWL	
m	M			
,	<			
.	>			
Up	VWUP			
Shift				
ALT				
Ctrl				
Space				
Left	VWLEFT			
Down	VWDN			
Right	VWRITE			
Bksp				

7	&			
8	*			
9	(
4	\$			
5	%			
6	^			
1	!		PA1	
2	@		PA2	
3	#		PA3	
Del				
0)			
.				
Enter				