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NCBridge 3.1 Release Notes

This document is a supplement to your *NCBridge Installation* manual. Please read this document and the *NCBridge Installation* manual before installing your NCBridge 3.1 software since this information could influence decisions you make both during and after the installation procedure.

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New features in NCBridge 3.1

A number of improvements and new features have been added to NCBridge since the 3.0 release. These include:

- Support for the NC400 series netstations.
- New *Boot Monitor* commands
- Windows NT install shield deployment.
- 16-bitplane color support for NC400 and NC200 netstations.
- Screen saver support.
- WinDD client ICA compression.
- Command line options to *xpsh aplay*.
- Local browser kiosk support.
- PPP support.
- A new local client, *TekLogin*, which simplifies session login for novice users.

Many of these items are additional configuration options in the *xp.cnf* file. For a complete listing of all *xp.cnf* parameters with notes, view the *MASTER_xp.cnf* file, found in the same directory as the *xp.cnf* file.

Multiple product support

NCBridge software includes support for several Tektronix hardware products, including the XP10, XP100, XP200, XP330, XP350, XP400, and NC200 families; the XP100D, XP300V, and XP400D special netstations; and the new **NC400** series.

New *Boot Monitor* commands

Boot ROM version 7.4 has a few new commands that will help simplify network booting. However, be aware that the 7.4 boot code will not work on NC400 netstations. You will need version 7.5 or higher for all NC400 netstations.

NOTE: *The 7.4 Boot Monitor code that ships with the media should **not** be downloaded to NC400 netstations. Instead, download the 7.5 boot code from the Tektronix FTP site. All new NC400 units will ship with the latest 7.5 (or higher) boot code already flashed into memory.*

Windows NT install shield

For users installing NCBridge on a Windows NT server, there is a new, simplified installation procedure that makes use of NT's install shield.

Local browser kiosk support

Netstations are an excellent choice for customers who wish to set up kiosks that allow end-users to search for and find their own information. Many customers are deploying kiosk systems that access secure intranet information via local browsers. One problem with this setup, however, is that a netstation with a local browser normally requires a login from the user, making a freely accessible kiosk system difficult to manage.

While it is not new for a Tektronix netstation to run a browser locally or function as a kiosk device, NCBridge 3.1 now has browser kiosk support that lets you set up a kiosk featuring a Tektronix netstation running a local Navigator browser without requiring login/password entries from the user. And with the new 12MB flash ROM option, customers can store browser files in flash memory for a fully independent system.

PPP support

Many customers need to connect remote or home-based netstations to their office networks via telephone lines. Since PPP (Point-to-Point Protocol) has become a worldwide favorite for serial communication between computers, we have added PPP support to NCBridge in this release. With NCBridge's PPP support, customers can use one of the serial ports on the back of a Tektronix netstation to connect to a variety of remote devices, including Remote Access Service (RAS) servers and terminal servers. This alleviates the need to use an Ethernet connection, so customers can use existing telephone lines and keep infrastructure costs down.

TekLogin client

The new *TekLogin* local client will help netstation users login, even from remote sites. *TekLogin* works closely with the *Setup* client to simplify netstation logins, particularly for novice users.

Before you install NCBridge 3.1

Before you copy the files from the NCBridge media, you might wish to calculate the disk space you will need for the software. Consult [Table 1, Approximate file sizes by host](#) on page 4 to determine which files you will need for the netstations in your environment. If you have Tektronix netstations from different families, you might have to add different OS files.

For example, NC200 and NC400 netstations both use *os.300* and *os.500* binaries; XP400s use the *os.300* and *os.350* binaries. If your environment includes models from all three netstation families, you would have to load the common *os.300* binaries as well as the product-specific *os.350* and *os.500* binaries.



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Table 1. Approximate file sizes by host

Package name		Approximate size (kilobytes)						
		Sun	IBM	HP	SGI	Alpha/ OSF	Generic Unix	Windows NT
tekxp/boot		4064	4064	4064	4064	4064	4064	4064
os.10	XP10 only ^a	14,724	14,724	14,724	14,724	14,724	14,724	14,724
os.300	All others ^b	23,428	23,428	23,428	23,428	23,428	23,428	23,428
os.330	XP330, 100D	+5100	+5100	+5100	+5100	+5100	+5100	+5100
os.350	XP100, XP200, XP350, XP400	+15,552	+15,552	+15,552	+15,552	+15,552	+15,552	+15,552
os.500	NC200, NC400	+6268	+6268	+6268	+6268	+6268	+6268	+6268
tekxp/man		696	696	696	696	696	696	580
tekxp/mgmt		284	284	284	284	284	284	284
tekxp/obsolete		872	872	872	872	872	872	872
tekxp/desktop		116	116	116	116	116	116	116
tekxp/examples		244	244	244	244	244	244	244
tekxp/Xext		48	48	48	48	48	48	48
tekxp/bin		10,442	3372	4776	3884	4880	3884	3020
tekxp/src		1584	1584	1584	1584	1584	1584	1584
tekxp/audioIntercept		756	n/a	n/a	n/a	n/a	n/a	n/a
tekxp/AcroRead_2.1		19,600	n/a	6124	n/a	n/a	n/a	n/a
tekxp/DpsNx_2.1		43,360	n/a	40,648	n/a	n/a	n/a	n/a
tekxp/boot/fonts (all)		12,884	12,884	12,884	12,884	12,884	12,884	12,884
misc		2496	2496	2496	2496	2496	2496	2496
100dpi		2396	2396	2396	2396	2396	2396	2396
75dpi		2092	2092	2092	2092	2092	2092	2092
japanese		2532	2532	2532	2532	2532	2532	2532
oldx11		1056	1056	1056	1056	1056	1056	1056
openlook		104	104	104	104	104	104	104
tek100dpi		564	564	564	564	564	564	564
Speedo		568	568	568	568	568	568	568
Type1		1072	1072	1072	1072	1072	1072	1072

^a. To operate XP10/XP10T netstations, you only need the *os.10* binaries.

- b. All netstations other than XP10/XP10Ts require the *os.300* binaries plus their product-specific binaries. For example, to operate an NC400, you need the *os.300* and *os.500* binaries. Note that the OS file sizes mentioned in the install message are the combined totals of the *os.300* and the product-specific binaries. If you need to load the binaries for NC400s ($23,428 + 6268 = 29,696$) and XP400s ($23,428 + 15,552 = 38,980$), you will not be loading the common *os.300* binaries ($23,428$) twice, so your total would be $45,248$ ($23,428 + 6268 + 15,552$) instead of $68,676$.
-

After you have determined which files you need to copy, approximate the amount of disk space you will need and make sure you have enough in the partition where you want to install the files. If not, select another partition that has enough space or increase the size of the logical volume.



Reflashing your netstations

To take advantage of many of the new features in this release, you will have to reflash the bootroms of your Tektronix netstations. To do this, uncomment the `do_flash` command in your `xp.cnf` file along with the relevant `flash_feature` command lines for the features you want reflashed. The next time the netstation boots, the new code for those features will be automatically reflashed into the netstation's bootrom.

Example 1 below has the two Navio browser flash_features at the very top, to ensure that these get flashed first. These will only work on NC200 or NC400 netstations with the optional 12MB flash memory board. Don't try to flash these features into other netstation models.

NOTE: Remember to use the 7.5 or higher boot code for your NC400 netstations.

Example 1. Excerpted `xp.cnf` with some flash features enabled

```
do_flash
#
## To flash any or all of the following features, remove the "#" from the
## beginning of each appropriate line.
##
## WARNING!! Each NC will flash as much as it can, given the size of the
##             EEPROM installed (2MB or 4MB). Prioritize the list of files
##             you want flashed by placing the most important feature first.
#
flash_feature NAVIO
flash_feature NAVIO_CONFIG_FILES
flash_feature SYSTEM
flash_feature TEKSETUP
# flash_feature TEKHOSTMENU
flash_feature REMOTE_CNF
# flash_feature TABLET_CONFIG_FILE
flash_feature LAUNCHER
flash_feature FONTS # as specified in fonts.tbl
flash_feature BOOT_MONITOR # XP350 and newer models
# flash_feature BOOT_MONITOR_ETHERNET # XP350 only
# flash_feature BOOT_MONITOR_TOKEN_RING # XP200 and XP400 only
flash_feature NIP
# flash_feature CLOCK
flash_feature SSADVT
```

New Boot Monitor commands

The NCBridge 3.1 software also ships with Boot ROM version 7.4, which has a few changes to the *Boot Monitor* code. There are new values for the **BAfrom** command, and two new commands: the **LANif** command for LAN transmission rates and a new **NAME** command to take advantage of DHCP booting.

Remember, do not flash the 7.4 *Boot Monitor* code into your NC400 netstations; instead download the 7.5 boot code located on the Tektronix FTP site.

NOTE: *Boot Monitor commands are not case-sensitive, although some of the values (your boot path and authorization key, for instance) will be. In the examples in this section, however, the capitalized (and/or underlined) letters in the commands indicate the minimum unique letters for each command that the Boot Monitor will recognize.*

BAfrom (get boot address from)

The **BAfrom** command tells the netstation whether to get its boot address and other boot information from NVRAM or from the network via a broadcast protocol such as BOOTP or RARP. In previous releases, choosing **Network** set the netstation broadcast for this critical booting information in a default sequence: First it tried DHCP, then BOOTP, then RARP. Whichever method yielded a server response first was the protocol that would be used to deliver the information. Some customers, however, may wish to restrict network address resolution to a specific protocol. Boot ROM version 7.4 allows you to restrict the broadcast protocol used for network boot address information to either DHCP, BOOTP, or RARP. *Table 2, BAfrom command descriptions* shows **BAfrom** command-values and what each will do.

Table 2. BAfrom command descriptions

Command syntax	Explanation
BA <u>NVRAM</u>	Get boot address from the netstation's NVRAM.
BA <u>DHCP</u>	Get boot address from the network using DHCP only.
BA <u>BOOTP</u>	Get boot address from the network using BOOTP only.
BA <u>RARP</u>	Get boot address from the network using RARP only.
BA <u>NETwork</u>	Get boot address from the network using all available methods in this order: <ul style="list-style-type: none"> • DHCP • BOOTP • RARP



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One advantage of specifying the broadcast protocol is for system administrators who prefer not to manually create and maintain tables with netstation names and Ethernet addresses on their DHCP servers. By specifying **DHCP** as the **BAfrom** method, you can let your netstations pass their names to the DHCP server--which issues them IP addresses--without worrying about matching device names with Ethernet addresses.

NOTE: *This feature will ONLY work if the **BAfrom** command is set to **DHCP**.*

These settings will persist through an **NVFactory** (default reset) after an **NVSave**.

LANif

The **LANif** command allows the user to specify the LAN transmission mode/rate. **AUTOnegotiation** is the default, but users can also select **DUplex m RATE n**, where

- **m** specifies mode of transmission (**HALF** or **FULL** duplex), and
- **n** specifies rate of transmission (**10Mbps** or **100Mbps**).

Example 2. LANif examples

```
BOOT> lan auto
BOOT> lan dup full 10
BOOT> lan dup half 100
```

NAME

The new **NAME** command in Boot ROM version 7.3 (or higher) allows users to identify each netstation with a unique name at the *Boot Monitor* level, before the netstation is booted. We now send the netstation's name to the DHCP server if the name has been set and **BAfrom** is set *specifically* to **DHCP**. If the netstation's **BAfrom** value is **Network**, and the first server that responds is a DHCP server, the name value will *not* be transmitted.

```
BOOT> name <client_name>
```

If you do not specify a value after the **NAME** command, it will respond with the netstation's current name.

A netstation's name can also be set in *Setup's Configuration Summaries | TCP/IP Configuration Menu* in the top field; this too will work with the **BAfrom DHCP** setting. But the new **NAME** command allows users to give their netstations names *before* booting.

Using the new *Boot Monitor* commands

To enter the *Boot Monitor*, power on the netstation and press any key before the progress bar reaches 100%. (You may need to reflash your netstations if you wish to use these new *Boot Monitor* commands. See [Refashing your netstations](#) on page 6.)

Figure 1. Boot Monitor screen

```

Tektronix
Boot Monitor V7.4
40960 Kbytes memory installed

Ethernet 08:00:11:05:6b:b7

IADDR= 0.0.0.0      DNODE= 0.0
IHOST= 0.0.0.0      BMETHOD= NOT SET
IMASK= 0.0.0.0      BDELAY= DISABLED
IGATE= 0.0.0.0      BAFROM= NVRAM
BPATH=

Boot process interrupted by key press...
Type HELP for a list of commands
BOOT>h
BOOT MONITOR COMMANDS (Use "Help <command name>" for more detailed messages)

Authorize [authorization-key] - Specifies key to enable optional software
BAfrom [NETWORK|NVRAM...] - NETWORK, NVRAM, DHCP, BOOTP, or RARP
BDelay [DISABLED|RANDOM|n] - DISABLED, RANDOM or n second boot delay
BMethod [ROM|MOP|TFTP|NFS [n]] - Specifies the boot method (n = NFS rsize)
Boot [ROM|MOP|TFTP|NFS] ... - Begin loading the boot file
BPath [path_and_filename] - Specifies the boot path and file to load
Dnode decnet_address - Specifies the terminal decnet node address
ERase - Clear scrolled area of display
ETherstat - Print Ethernet statistics
Help [command] - Help messages. Same as "?"
IAddr ip_address - Specifies the terminal IP address
IEee [YES | NO] - Specifies IEEE 802.2 LLC/SNAP headers
IGate ip_address - Specifies the gateway IP address
IHost ip_address - Specifies the boot host IP address
IMask ip_subnet_mask - Specifies the network subnet mask
Keyid - Selects the keyboard type
KFile [filename] - File name for custom keyboard information
LANif AUTO|DUP m RATE n - Specifies special LAN modes
NAME [client_name] - Specifies the client's name
NAtion [type] - Specifies the terminal nationality
NVFactory - Restores NVRAM to factory defaults
NVLoad - Loads settings from NVRAM
NVSave - Save current settings to NVRAM
Ping ip_address [timeout] - Check for remote IP host on the network
REport - Reports current terminal configuration
RESET - Hardware reset
SEIftest - Initiates Extended Self Test
? [command] - Help messages. Same as "Help"
BOOT> _

```

To enter a *Boot Monitor* command, type the command plus its associated parameter after the `BOOT>` prompt. To complete an entry, press Enter. To see a list of the *Boot Monitor* commands, type `help` or `?` and press Enter. (See [Figure 1, Boot Monitor screen](#) on page 9 for an example listing of commands.)



16-bitplane color support (NC400 and NC200)

All NC400 netstations and NC200s with option V2 can now take advantage of NCBridge's 16-bitplane color support.

When a netstation is configured to operate in 16-bitplane mode, its X server exports a 16-bitplane TrueColor or DirectColor visual, so you will see 65,536 colors instead of only 256 colors in 8-bitplane mode. That means you will see markedly better visual effects on applications that can take advantage of 16-bit color depth. Running your netstation in 16-bitplane mode will also eliminate irksome color flashes that occur when multiple color-intensive applications run simultaneously. For example, if you run Navigator and WinDD X Support at the same time, you will not experience any color flashing in 16-bitplane mode when you change focus from one client to the other.

Configuration

You can configure your NC200 or NC400 to operate in this mode either through the *Setup* client or through the remote configuration file *xp.cnf*.

In the *Setup* client, go to the **Configuration Summaries | X Environment** menu and select "16" for the **Root Depth** field. Then go back to the main menu and reset the X server by clicking on the "Reset Server" button. Once the server is reset, it will operate in 16-bitplane mode. If you decide to go back to the 8-bitplane mode, reset the **Root Depth** field to "8" and click the "Reset Server" button again for 8-bitplane PseudoColor. If you want the netstation to retain the new root depth settings the next time it is booted, click the "Save Settings to NVRAM" button in *Setup*'s main menu.

To configure the X server to operate either in 8-bitplane or 16-bitplane mode remotely, add the following line to your *xp.cnf* file:

```
root_depth 16 # [8 | 16]
```

Limitations

There are some limitations with 16-bitplane mode. For one, the WinDD ICA client requires 8-bit PseudoColor and cannot be used in 16-bitplane mode. If you try to launch a WinDD ICA client in 16-bitplane mode, the ICA client will write a message to the console stating that it "cannot find the PseudoColor visual" and will exit. (WinDD X Support works fine in 16-bitplane mode.)

Also the digital video player *vplay* cannot be used in 16-bit mode, due to the fact that current software reserves a color index from the PseudoColor table for the chromakey that makes *vplay* work.

Screen saver support

Another feature that will benefit kiosk administrators is our new screen saver support. The 3.1 release provides a new local client *ssadv*t which allows a customer to display a series of gif images as a screen saver on the netstation. Rather than having the netstation screen simply blank after a specified period of inactivity, system administrators can now display advertisements, corporate-endorsed images, and other images of general interest on inactive netstations. In non-kiosk systems, sys-admins can implement the screen saver over an entire network, such that all netstations will display the same images.

NOTE: *So-called “screen savers” do not prolong the life of a monitor. At best, a screen saver will turn off the video information, which will prevent images from being burned into the phosphor; it won’t turn off the filaments that heat the cathode, which is what generally wears out in a monitor first. A better way to “save” your screen is to select “PowerSave” in the Screen Saver field in Setup’s main menu. This will save the screen, the cathode, the CRT, and energy--automatically.*

The screen saver local client *ssadv*t can be started using *xp.cnf* or *xpsh*. Once it is started for a netstation, the process cannot be killed or overridden without rebooting the netstation.

Starting the screen saver with the *xp.cnf* file

To start the *ssadv*t client using *xp.cnf*, add a line similar to the following to your *xp.cnf* file:

```
start SSADV T YES -args " -t 600 -c 60 -f /home/ssadv.t.list" #<[ON | OFF]>
```

...where **-t** indicates the *timeout* in seconds, **-c** indicates the *cycle* time in seconds, and **-f** indicates the NFS-mounted *file* with the list of gif images to be displayed.

In this example, when the netstation has been inactive for a period equal to ten minutes (600 seconds), the screen saver will display the first image in the file */home/ssadv.t.list*. After a minute, the next image in the file will be displayed, and so on until the end of the file is reached, then it will loop to the beginning and start over. If a user “interrupts” the stream of screen saver images (presumably to do some work), the screen saver will resume with the next image in the list upon any subsequent ten-minute period of inactivity.



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Example 3. Screen saver list of gifs (ssadv.t.list)

```
!Do not delete this line.  
/local/GIFS/dilbert11.gif  
/local/GIFS/subliminal3.gif  
/local/GIFS/csun.gif  
/local/GIFS/xenal7.gif  
/local/GIFS/brainwash.gif  
/local/GIFS/pointy-hair.gif
```

The images in the *ssadv.t.list* file must be **gifs**; no other image format is supported. If you include a non-gif image in the file, that image will not display. The console should mention the status of opening the file *ssadv.t.list* and start displaying a different gif every minute.

Starting the screen saver with the *xpsh* command

To start the *ssadv.t* client using *xpsh*, enter this command:

```
xpsh -access <method> ssadv.t -t <timeout> -c <cycle> -f <filename>
```

The default *method* value is **nfs**, and since no other method is available at this time, the **-access** argument can be omitted entirely; the default *timeout* value is ten minutes (**-t 600**) with a minimum value of 20 seconds; the default *cycle* time is one minute (**-c 60**).

NOTE: *The local screen saver client will work in a CDE or multiple-workspace window environment such as TED; however, the images on the screen do not cycle at the specified interval. The images will only cycle at the default time interval of 10 minutes (600 seconds) and only if the CDE screen saver is on. Turning off the CDE screen saver also turns off ssadv.t.*

WinDD ICA client enhancements

The netstation ICA client that ships with NCBridge 3.1 has enhanced ICA compression, which will improve performance for connections over low bandwidth networks such as WANs or modems. (High-speed LANs may not need compression, as the extra compression overhead might actually degrade performance.)

ICA compression support is available for the following Tektronix netstations:

- XP100 (including XP100D), XP200, XP300V, XP330, XP350, NC200, and NC400.

It is not available for:

- XP10, XP10T.

By default, compression is disabled, but it can be enabled either on the *xpsh* command line or automatically through the *xp.cnf* file.

Another addition to the WinDD client is the ability to specify a published application name as one of the arguments. This will launch a WinDD session with the application already running.

Starting the WinDD ICA client with *xpsh*

To start a WinDD ICA client on your netstation with *xpsh*, enter the following:

```
xpsh -display netstation_name:0 windd <options>
```

In addition to existing WinDD options, the following new ICA compression options can be set on the *xpsh* command line:

- | | |
|--------------------------------|---|
| -compress | Enables compression of ICA network data to and from the WinDD client. |
| -no_compress | Disables compression of ICA network data to and from the WinDD client. |
| -max_compress_disable <i>n</i> | Disables compression for <i>n</i> number of outgoing ICA commands from the WinDD client. Defaults to 0, which enables all compression. Count setting of 0 might “compress” client data larger than its original size during start of login session. Settings larger than 0 restrict expansion of the client data. |

The published application name option works as follows:



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`-a published_app` Where *published_app* is the name of the published application. This will allow an ICA session to connect to any published application on a WinFrame-based server.

***xp.cnf* compression commands**

```
windd_compress                ""            #[ENABLED | DISABLED]
windd_max_compress_disable 0            #[<ICA command count>]
```

Command line options to *xpsh aplay*

The Audio Player client *aplay* can be started with the Client Launcher, with the remote configuration file, or with *xpsh*. The NCBridge 3.1 release adds one *xpsh* command line option (**-propcmd**) to the *aplay* local client.

Starting the Audio Player with *xpsh*

To start *aplay* with *xpsh*, enter the following:

```
xpsh -display netstation_name:0 aplay <options>
```

The following *aplay* options can be set on the *xpsh* command line:

-a <i>access method</i>	Specifies the access method used to access the audio file. Available access methods are tftp , nfs , and dap .
-f <i>filename and path</i>	Specifies the audio file name and its entire path. This file displays in <i>aplay</i> 's File Information area.
-h <i>host</i>	Specifies the host name or address on which the audio file resides. The host must be entered in the netstation's Internet Host Table in <i>Setup</i> . This host displays in <i>aplay</i> 's File Information area.
-p	When used with the -h , -f , -a , and -v options, plays the entire specified file without interruption and without opening the <i>aplay</i> client.
-propcmd	Enables the "property command" interface, which allows other clients to send command strings to control the <i>aplay</i> client remotely. (See examples below.)
-title " <i>string</i> "	Assigns a title for the <i>aplay</i> window.
-v <i>volume level</i>	Specifies the volume level (in percent) to use when playing an audio file. Enter a number between 0 and 100, with 0 indicating no volume and 100 indicating the loudest volume setting.

Example 4. Aplay examples

```
xpsh -display sierra:0 aplay
xpsh -display sierra:0 aplay -h eugene -f /usr/adam/story.au
xpsh -display sierra:0 aplay -h eugene -f /usr/adam/story.au -a tftp -p
```



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In the three **xpsh** examples above, the first starts the *aplay* client on a netstation named *sierra*; the second starts the Audio Player with the host *eugene* and the audio file */usr/adam/story.au* preloaded in the Audio Player's File Information Area; and the third example plays the audio file */usr/adam/story.au* (located on the host *eugene*) on the netstation without opening the Audio Player.

Property command interface

The property command interface lets other clients remotely control the command line version of the *aplay* client by allowing these other clients access to four "properties" created by the *aplay* client on the X server. (See [Table 3, Audio Player properties](#).) If the *aplay* client is executed with the **-propcmd** option, atoms (which uniquely identify each property) are created and become associated with these character strings. The client *aplay*'s shell window ID is then assigned to the `_TEK_APLAY_WID` property.

Table 3. Audio Player properties

Property name	Description
<code>_TEK_APLAY_WID</code>	gets the ID of the <i>aplay</i> shell window
<code>_TEK_APLAY_CMD</code>	passes commands to the <i>aplay</i> client
<code>_TEK_APLAY_REPLY</code>	sends replies to the client issuing the commands
<code>_TEK_APLAY_STATUS</code>	returns the status of the <i>aplay</i> client

To use these properties to control the *aplay* client, get the value of `_TEK_APLAY_WID`. You will need to know the client's window ID when setting the value of `_TEK_APLAY_CMD`, getting the value of `_TEK_APLAY_REPLY`, and finding the status of `_TEK_APLAY_STATUS`.

Commands that can be sent to the *aplay* client via the `_TEK_APLAY_CMD` are of two types: *value-free* and *valued*.

Value-free commands. A value-free command is simply a request for an action to be performed. Value-free commands include: PLAY, STOP, PAUSE, REWIND, and MUTE.

Valued commands. A valued command sends a command and a value to be used in the performance of that command. Valued commands include: FILE, VOLUME, ACCESS, and HOST. Valued commands can be used to set a value, or to query the client for a value.

The format for setting a value is:

```
<command>:<value>
```

There is no white space separating the command, colon, or value. The value is different depending on the command. The `FILE` command requires a full absolute path to a file.

```
FILE: /usr/audio/speech.au
```

Valued commands can also be used to query a particular value. This is done by sending the command and getting the string associated with the `_TEK_APLAY_REPLY` property. If the command string `FILE` is loaded into the `_TEK_APLAY_CMD` property, the current filename is stored in the `_TEK_APLAY_REPLY` property. If the command string `VOLUME` is loaded into the `_TEK_APLAY_CMD` property, the current volume level is stored into the reply property.

- user puts `FILE` in `_TEK_APLAY_CMD`
- `aplay` puts `/usr/audio/speech.au` into `_TEK_APLAY_REPLY`

Once the *aplay* client gets notification that the `_TEK_APLAY_CMD` property has changed, it gets the command string associated with it and deletes the property value. This is an acknowledgment that the *aplay* client has handled the property command.

To find the status of the *aplay* client, simply check the string associated with the `_TEK_APLAY_STATUS` property. The value of status is either `STARTED`, `PAUSED`, or `EOF`.



Local browser kiosk support

Navio NC Navigator is a Java-enabled web browser based on Netscape Navigator 3.0. We have made several enhancements that relate directly to our browser, including:

- local browser kiosk support;
- simpler methods of launching the browser;
- browser support in VAX VMS boot host environments; and
- support for a 12MB flash memory option (NC200 and NC400 only).

Local browser kiosk support applies to all Tektronix netstations that can run the browser, namely the following:

- XP100, XP200, XP300V, XP350, NC200, and NC400.

The browser is not available for:

- XP10, XP10T, XP20, XP100D, or XP330.

Although this section applies primarily to NC200 and NC400 netstations with 12MB flash, you can still take advantage of these new features with older netstation models.

New browser-related features

In previous releases, the only way to launch the browser was to use the *xpsh* command from a host login account, using *xpsh*'s file access mechanism to read and write browser preference settings and history data into the user's home directory. While this might remain the preferred method for many users, there are some circumstances--for example, using a netstation as an information kiosk--where it is either impossible or undesirable to log in to launch a browser. To support using the browser in such an environment, we have added two new methods of launching the browser.

Due to *xpsh* limitations in VAX VMS environments, the browser would not run when the netstation booted from a VMS host. Now it is possible to boot a netstation from a VMS host using the MOP boot protocol and start the browser with the *Launcher* or the *xp.cnf* file. When operating this way, the browser will use DAP file access to read the configuration files from the *navio* directory under the boot directory.

The 12MB flash memory option allows you to store all the browser files in flash memory so that the netstation can operate as a stand-alone kiosk. With the browser in flash, the netstation doesn't need a boot host, and users don't need login accounts. The netstation can be configured to start the browser upon power-up and immediately connect to a web server home page.

Starting Navio NC Navigator

Prior to the NCBridge 3.1 release, the only way to run the browser was with *xpsh*:

```
xpsh -access xpsh navio
```

With NCBridge 3.1, there are two new ways of starting the local browser, the simplest being through the *Launcher*. A default menu item for the Navio browser has been added at the top of *Launcher*'s **Host Connections** pull-down menu.

Figure 2. Starting the Navio browser with a *Launcher* pull-down menu



Another way to start the browser is to add the following line to your *xp.cnf* file.

```
start NAVIO YES
```

It is also possible to pass command line parameters and environment variable settings with this command. The following example starts the browser with a default geometry and overrides the proxy autoconfiguration URL with a different URL.

```
start NAVIO YES -args "-geometry 860x900+80+60" -envs  
"AUTOCONF_URL=http://proxy.mydomain.com"
```

Note that all the parameters must be specified on the same line in the *xp.cnf* file. (See [Configuring the browser for kiosks](#) on page 20 for information on configuring the browser's environment variables, command line parameters, files, etc..)



Configuring the browser for kiosks

An easy way to configure the browser for kiosk operation is to invoke it in non-kiosk mode (with the *xpsh* command) and then make changes with the **Preferences** menu. Once the browser is configured, copy the essential configuration files from the *.navio* directory created in your home directory to the *navio* directory under the boot directory. (Use the configuration files listed in *Table 4, Browser configuration files* below as a guide.) If you choose this method to configure the browser, be aware that you may have to modify some of the entries in the files, to remove references to *.signature*, *.mailcap*, or other personal files, for example. Sometimes you can make the necessary changes by editing the configuration files directly, although these database files are not generally editable.

Table 4. Browser configuration files

File	Description
config/plugins.tbl	list of plug-ins to support
navio/bookmarks.html	defaults for the “Bookmarks” menu
navio/cert5.db	default SSL certificates database
navio/cookies	default cookie database
navio/history.db	default history menu database
navio/key.db	default encryption key database
navio/mailcap	default helper applications
navio/mime.type	default mime file extension/application bindings
navio/preferences	default browser configuration preferences
navio/proxycon	default proxy autoconfiguration script
navio/signature	default signature for e-mail messages
usascii/app-defaults/Navio	X resource defaults for Navio

Because kiosk administrators don’t want their carefully configured browser environments altered by casual users, browser configuration files in kiosk mode, by default, are not writable. So users can change browser settings in the **Preferences** menu, but the changes will not be saved. The same restriction applies to bookmarks and history data. While this behavior may be desirable when operating a kiosk, it means you’ll have an extra step when setting up the browser for kiosk operation.

Environment variables used by the browser

The Navio browser uses certain environment variables for setting certain parameters (see [Table 5, Browser environment variables](#)). The `-envs` parameter of the `xp.cnf preload` and `start` commands can be used to alter the value of environment variables passed into the browser.

Table 5. Browser environment variables

Environment variable	Description
<code>AUTOCONF_URL</code>	Sets the URL for obtaining the proxy auto configuration file.
<code>HOME</code>	Locates the <code>.navio</code> config directory if NULL kiosk mode settings are used.
<code>NNTPSERVER</code>	Sets the default news server.
<code>WWW_HOME</code>	Sets the default web page.

Preferences file entries

It is generally best to create a `navio/preferences` file by running the browser in non-kiosk mode and using the **Preferences** menu to make changes. The resulting `.navio/preferences` in your home directory can then be copied to the `navio` directory in the boot directory. Sometimes it is only necessary to make a minor change, in which case you might want to edit the preferences file directly. [Table 6, Navigator preferences](#) explains a few commonly edited items in the preferences file.

Table 6. Navigator preferences

Preference name	Description
<code>HOME_DOCUMENT</code>	Sets the default document visited when the browser is started.
<code>PROXY_MODE</code>	Determines how proxy info is configured: <ul style="list-style-type: none"> • 0: Proxies are not used. • 1: Proxies are manually configured (<code>HTTP_PROXY</code>, <code>FTP_PROXY</code>, etc..) • 2: Proxy autoconfig script is loaded from an HTTP server.
<code>PROXY_URL</code>	URL used for <code>PROXY_MODE 2</code> .
<code>SHOW_MENUBAR</code>	Another item that can be used to limit what kiosk users can do. When set to <code>False</code> , kiosk users won't be able to exit the browser.
<code>SHOW_TOOLBAR</code>	When set to <code>False</code> , it turns off the icon buttons along the top of the browser. This is useful for restricting what users can do in a kiosk.



Proxy host configuration

By default, the Navio NC Navigator browser is configured to use the boot host as an HTTP server that provides the proxy autoconfiguration file. (This is the same file format used to configure standard Netscape browsers.) If you receive an error pop-up when the browser is started in kiosk mode, it will be necessary to change the proxy autoconfiguration setting.

When running in kiosk mode, the browser reads configuration files from the *navio* directory under the boot directory. By default the *navio* directory contains a preferences file with entries configured to get proxy configuration information automatically from the boot host using the following URL:

```
http://xp_boothost
```

With this configuration, the browser expects an HTTP server on the boot host to return a proxy autoconfiguration file with an “*application/x-ns-proxy-autoconfig*” MIME type, which is typically found on Netscape HTTP servers.

The proxy host configuration can be changed by setting the `AUTOCONF_URL` environment variable in the `preload` or `start` command “`-envs`” parameter, or by editing the preferences file. (See [Table 6, Navigator preferences](#) on page 21 for descriptions of the appropriate parameters.) Again, you may want to generate the preferences file first by using the browser in non-kiosk mode, then edit it directly with a text editor.

Forcing kiosk mode operation

When started, the Navio browser looks up the value of the *HOME* environment variable to determine the path to its *.navio* directory. If the *HOME* variable is not set, the browser assumes it has not been started with *xpsh* and immediately enters kiosk mode, using the kiosk mode configuration parameters to determine where to find a *navio* directory instead of a *.navio* directory.

It is sometimes desirable to operate the browser in kiosk mode even when it is started with *xpsh*. Add the following line to your *xp.cnf* file to force the browser to operate in kiosk mode.

```
parameter browser_kiosk_enable YES
```

Replacing “YES” with “NO” does *not* force non-kiosk mode operation; rather, it tells the browser to check the *HOME* environment variable to determine kiosk mode operation.

Flashing the Navio browser into ROM

To support the amount of memory required by the browser binaries, a 12MB flash ROM option is now available (for the NC200 and NC400 series only) that allows the Navio browser to be stored in a netstation's flash memory. We have also added two new *xp.cnf* commands to support flashing the browser. (See also [Reflashing your netstations](#) on page 6 for more information about flashing with the *xp.cnf* file.)

To flash the Navio executable files into a netstation's ROM, uncomment the `do_flash` command in your *xp.cnf* file along with the following command:

```
flash_feature NAVIO
```

This will flash the files in [Table 7, Browser executable flash files](#) into the netstation's 12MB flash memory. The total approximate size of these binaries is 10.9MB uncompressed; a little less than 5MB compressed.

Table 7. Browser executable flash files

File	Description
java_301	Java class libraries
locale/compose.dir	Internationalization config files
locale/iso8859-1/Compose	
locale/iso8859-1/XLC_LOCALE	
locale/ja/XLC_LOCALE	
locale/locale.alias	
locale/locale.dir	
navio.300	
plugins/advtguiplg.300	Spotlight video advertiser plug-in
plugins/bitmaps/begin.xbm	Bitmaps for video plug-ins
plugins/bitmaps/fast_left.xbm	
plugins/bitmaps/fast_right.xbm	
plugins/bitmaps/right.xbm	
plugins/bitmaps/sound.xbm	
plugins/bitmaps/stop.xbm	
plugins/videopl.300	Digital Video plug-in
plugins/winddplg.300	WinDD client plug-in
XKeysymDB	Key binding database file



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The other new *xp.cnf* command allows the user to flash kiosk mode configuration files (normally found in the *boot/navio* directory) into the flash ROM option:

```
flash_feature NAVIO_CONFIG_FILES
```

This will flash the files in *Table 4, Browser configuration files* on page 20 into the netstation's flash memory. Typically, you would only do this when there is no available host computer to boot from and you want the browser operate solely from flash memory. The total approximate size of these binaries is 400K; 160K compressed.

Make sure the configuration files contain the appropriate settings before flashing because, once flashed, the configuration cannot be changed. Furthermore, when the netstation is configured for a language other than *usascii*, the appropriate change to the *app-defaults* path is also made, so it is important to set the language too before flashing.

Setting Navio browser file access

In kiosk mode, the browser's default configuration location is a *navio* directory under the boot directory on the boot host using the boot file access method. If you want to set the location to something other than the boot directory or change the host or filepath, the default kiosk mode file access parameters can be overridden with three commands in the *xp.cnf* file:

```
parameter browser_default_file_access <access_method>
parameter browser_default_file_host   <hostname>
parameter browser_default_file_path   /<file_path>
```

The first of these commands sets the file access method to be used for reading browser configuration files when in kiosk mode. Valid values for *<access_method>* are *NFS*, *ROM*, *DAP*, *TFTP*, and *NONE*. When the access method is set to *NONE*, the browser will use the default boot access method.

The second command sets the name or IP address of the host that will be providing configuration files when the browser runs in kiosk mode. If a name is used, it should be one that can be resolved using DNS (Domain Name Service) or which appears in the netstation's Internet Host table. The generic name *xp_boothost* can be used in cases where the specific name of the boot host is not known. If *NFS* or *ROM* file access is used, the host name does not have to be set, but an *NFS* mount must be set up in the *NFS* table, and a *hostname* is required there.

The third command sets the path to a directory in which the browser expects to find a *navio* subdirectory. This directory is expected to contain the browser configuration files that are typically found in a user's home *.navio* directory or the *boot/navio* directory supplied on the install media.

Browser kiosk example

In this example, you will make some changes to your *xp.cnf* file and reboot the netstation to flash the new features into your 12MB flash memory board. Then you will make a few changes in the *Boot Monitor*. After that, you will reboot again to get the browser to launch automatically and run in stand-alone kiosk mode.

1. On the host where the *navio* directory is found (*teexp/boot* by default), edit the preferences file:
 - a. Set the value of `PROXY_URL` to the local proxy server. For example:
`http://proxy.tek.com`
 - b. Set other values to configure Navigator, such as the home page, links, etc..
2. Use the *xp.cnf* code in *Example 5*, on page 26 to configure your netstations for kiosk mode.
3. Reboot your netstation to initiate the flash process. (See [Reflashing your netstations](#) on page 6 for more information on the flash process.)
4. After flashing, edit your *xp.cnf* file and comment the `do_flash` command.
5. Reboot the netstation and press any key before the progress bar reaches 100% to interrupt the boot process and enter the *Boot Monitor*. In the *Boot Monitor*, do the following:
 - a. Reset the netstation with an **NVFactory**.
 - b. Set **IAddr** to the netstation's IP address.
 - c. Set **IHost** to Local Router, or something so it will not try BOOTP or DHCP.
 - d. Set **IMask**.
 - e. Set **IGate** to Local Router IP address.
 - f. Set **BMethod** to ROM.
 - g. **NVSave**.
 - h. **Boot**.
6. When you reboot the netstation--this time from ROM--the Navio NC Navigator browser will start in kiosk mode.



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Example 5. Excerpted `xp.cnf` file for browser kiosk operation

```
##***** Sample xp.cnf file *****##
enable_name_service      YES
preload LAUNCHER         PERM
preload NAVIO             PERM      -args "-geometry 860x900+80+60"
preload MWM               NO
preload OLWM              NO
preload CDE               NO
preload SETUP             NO
preload AUDIO_SERVER      PERM

console_pages            15

start NAVIO              YES
start NTP                 YES      # [YES | NO]

parameter time_gmt_offset -25200
parameter time_dst_mode   FOLLOW
parameter time_dst_offset 3600

do_flash
flash_feature NAVIO
flash_feature NAVIO_CONFIG_FILES
flash_feature SYSTEM
flash_feature XPWM
flash_feature TEKSETUP
flash_feature TELNET
flash_feature REMOTE_CNF
flash_feature LAUNCHER
flash_feature AUDIO_SERVER
flash_feature AUDIO_PLAYER
flash_feature AUDIO_BELL_SPEAKER # to use audio card for bell
flash_feature DIGITAL_VIDEO     # as specified in fonts.tbl
flash_feature FONTS
flash_feature NTP
```

PPP support

PPP is a reliable transparent Internet Protocol (IP) that allows Tektronix netstations to make network connections via serial lines to remote devices. NCBridge's PPP passes TCP/IP information over the phone line in such a way that it appears as though your netstation has an Ethernet connection.

PPP support is available for the following Tektronix netstations:

- XP100, XP200, XP300V, XP350, NC200, and NC400.

It is not available for:

- XP10, XP10T, XP20, XP100D, or XP330.

Before you begin

To run PPP successfully, you will need both the local PPP client process that runs on the netstation and the PPP server that runs on the remote host computer. NCBridge 3.1 software provides the PPP client; you will need to get the appropriate PPP server software from your host vendor.

There are several different ways you can connect your netstation via PPP to a remote host, but before you begin, you must first configure the following:

- the netstation's serial port;
- the netstation's PPP settings;
- the *xp.cnf* file (if you want PPP to start automatically after boot); and
- a few other settings.

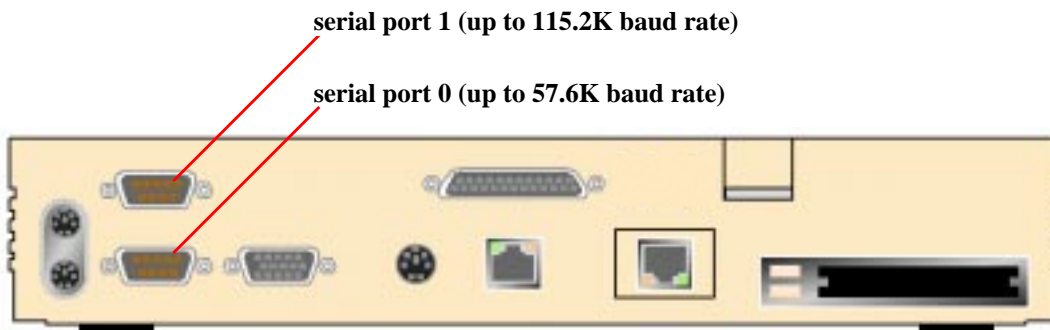


Configuring the netstation's serial port

Before you can connect via PPP, you must configure one of your netstation's serial ports for your modem.

First, select a port on the rear panel of your netstation. Since many users may already have tablets or other peripheral devices connected to port 0, and since port 1 allows higher transmission rates (115.2K), we recommend you use **port 1** for your modem connection, especially if you are using ISDN lines. On Tektronix netstations, port 1 is the upper port; port 0 is the lower. Connect your modem's 9-pin female cable to the desired port. (All examples in this section assume port 1 has been configured for PPP.)

Figure 3. RS-232 serial ports on an NC200

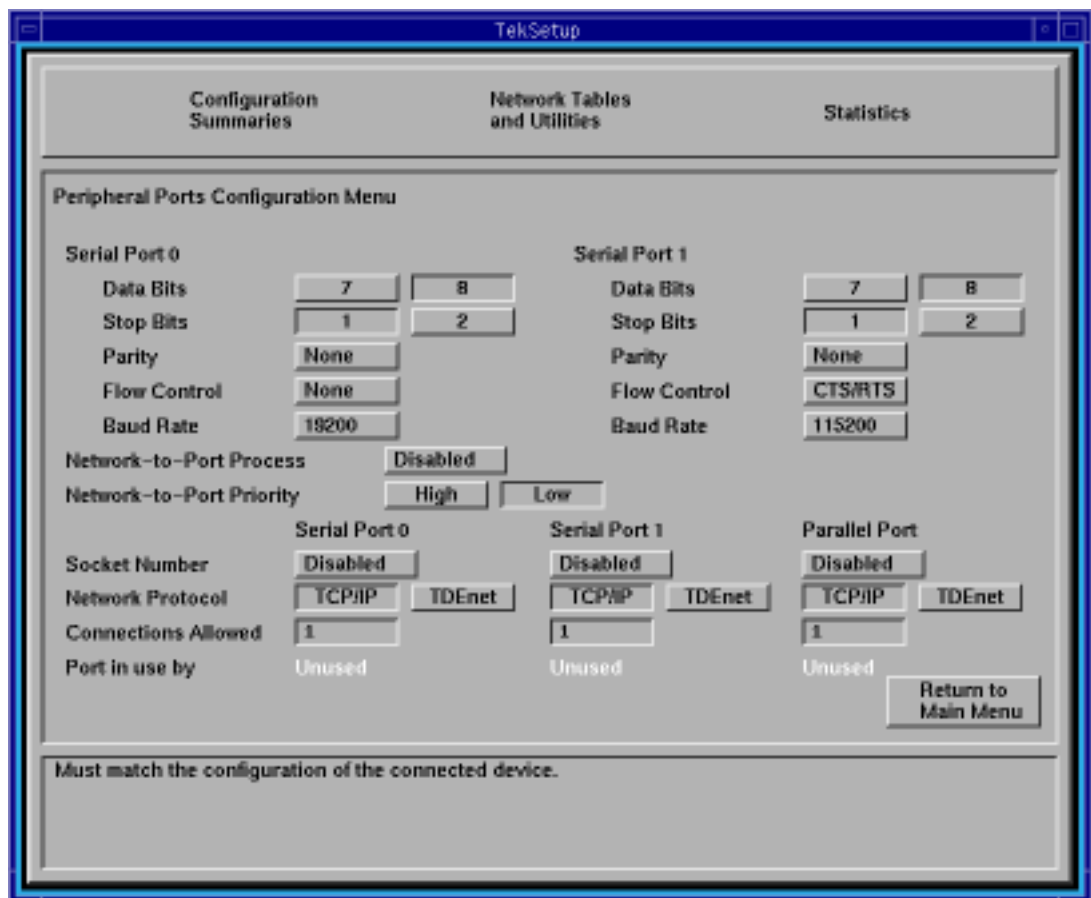


After you have connected the modem cable to your serial port, you must configure the serial port for modem transmission. In *Setup*, go to **Configuration Summaries | Peripheral Ports**. (See *Figure 4, Peripheral Ports Configuration Menu*.)

The fields in the lower half of this menu (from **Network-to-Port Process** down) do not affect your modem, so we will ignore them here. We are concerned with one of the two columns at the top, depending on the port you have chosen. For our example, this is Serial Port 1, on the right.

The “8”, “1”, and “None” default settings for the first three fields (**Data Bits**, **Stop Bits**, and **Parity**) will be correct for virtually all current production modems. (Check your modem user documentation to be sure.) The **Flow Control** and **Baud Rate** settings are really the only two you will need to configure.

Figure 4. Peripheral Ports Configuration Menu



Flow Control. This field determines what kind of PPP “handshake” passes between the netstation and the server: None, XON/XOFF, or CTS/RTS.

- “None” tells the netstation to pass data through the modem without acknowledging transmission or reception of the data packets;
- “XON/XOFF” is a software handshake; and
- “CTS/RTS” (recommended) is a hardware handshake. (Check your modem user documentation for the best handshake method.)



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Baud Rate. This refers to your modem's transmission speed. We recommend setting this field to at least 57,600 to avoid starving the modem of data. Port 0 supports a maximum of 57,600 baud rate; Port 1 supports up to 115,200.

NOTE: *Due to the complexity of the baud rate programming, port 0 is totally unusable if port 1 is in use at 115,200 baud. If port 1 is in use at lower baud rates, port 0 is available for use with any appropriate device.*

Configuring the netstation's session/PPP settings

Next, you will have to configure your netstation's session and/or PPP settings. In *Setup*, go to **Configuration Summaries | Session**. This menu allows you to configure the netstation for PPP sessions and for Ethernet sessions.

Figure 5. Session Manager Configuration Menu

The screenshot shows the 'Session Manager Configuration Menu' in the TekSetup application. The window has a title bar with 'TekSetup' and standard window controls. Below the title bar are three tabs: 'Configuration Summaries', 'Network Tables and Utilities', and 'Statistics'. The 'Configuration Summaries' tab is selected. The main area is divided into several sections:

- Session Manager Configuration Menu:** Includes a 'Session1' dropdown and a 'Session Name' field containing 'VND Dial Out 1'.
- Authentication Section:** Contains fields for 'User Name' (matthew), 'Password' (empty), 'Connection Method' (DialOut), 'Port' (Serial Port 1), and 'Phone Number' (empty). It also includes 'Connect String' (ATDT) and 'Disconnect String' (+++ATHD).
- Connection Section:** Contains 'Connection Type' (ICA Host), 'Host/Application' (128.181.187.252), and fields for 'User Name', 'Password', and 'Domain' (all empty).
- Status Section:** Features a 'Connect' button, a 'Status' field showing 'Connection down.', 'Local IP' (Not Connected), and 'Remote IP' (Not Connected). A 'Return to Main Menu' button is located on the right.
- Legend:** A text block at the bottom explains connection methods: DIAL-OUT (Dial and connect to a RAS capable PPP server), SCRIPT (Dial and connect using a predefined script), MANUAL (Dial and present the user with a manual connection window), and DIRECT (Connect to a port already running PPP).

As you can see in *Figure 5, Session Manager Configuration Menu*, the **Session Manager Configuration Menu** is divided into four areas, known as identification, authentication, connection, and status.



Session identification

In this area, identify each of up to eight session configurations.

Session. You can specify one of eight sessions in this field. For each session, you will configure the settings in the other fields listed below. When you select one of the eight sessions with this button, the settings you configure in the other fields described below will appear.

Session Name. Give each of your eight sessions a distinguishing name that will help users identify the correct session for their needs.

Session authentication

The session authentication area is for authentication purposes. Each session requires some form of authentication to make the session connection.

User Name. You must provide a valid user name.

Password. You must provide a valid password. Your password will appear as asterisks as you type it in; the field itself will appear blank after you press Enter. These two authentication parameters (User Name and Password) are saved in NVRAM when you click the “Save Settings to NVRAM” button.

Connection Method. There are four choices: *Dial Out*, *Direct*, *Manual*, *Script*.

Dial Out The dial out method--probably the most common--can only be used to connect to RAS servers (or servers emulating the RAS interface). *Dial Out* assumes PPP is already running on the host.

Direct This refers to a true direct serial cable connection from one device (your netstation) to another (an NT server, for example), in which the baud rate on the two devices' serial ports must be the same. We recommend you use this method only when you have a null-modem serial cable connecting your netstation *directly* to a server.

Manual This selection automatically brings up a TIP window and forces the user to enter his/her username and password. If the PPP daemon is not running on the host, the user will also have to start it manually.

Script This allows you to specify a script to automate the authentication process.

Port. Select *Serial Port 0 (PPP)*, *Serial Port 1 (PPP)*, or *Ethernet*.

<i>Serial Port 0 (PPP)</i>	Select this if you have configured Serial Port 0 for PPP (up to a maximum of 57,600 baud rate).
<i>Serial Port 1 (PPP)</i>	Select this if you have configured Serial Port 1 for PPP (up to a maximum of 115,200 baud rate).
<i>Ethernet</i>	This selection disables all the PPP settings you may have configured in the Session Configuration Menu and connects directly through the netstation's Ethernet cable.

Local IP. By default, this field is disabled. Any attempt by the user to add an IP address or other string will be ignored. In the rare case when you wish to use this field, you will have to uncomment the following line in your *xp.cnf* file and add an IP address value:

```
ppp_local_ip_addr      [IP_ADDRESS]
```

If you do this, be sure to enter a valid unassigned IP address on the same subnet as your server in the **Local IP** field; if you enter an invalid address, the host will not allow you to log in.

The remaining fields in the session authentication area may or may not appear, depending on the Connection Method you select. For example, if you choose *Direct*, you will not need to provide values for the next four fields.

- **Phone Number.** You must provide a valid phone number for the netstation to dial out to if you select *Dial Out*, *Script*, or *Manual*. This field will not appear if you select *Direct* as your connection method.
- **Script.** If you leave this field empty, it will remain blank but will default to one of the supplied scripts. You can also specify another script or one of your own. Enter the name of the script in this field. This field will not appear if you select *Direct*, *Dial Out*, or *Manual* as your connection method.
- **Connect String.** You must provide a connect string only if you select *Dial Out*. This field will not appear if you select *Direct*, *Script*, or *Manual* as your connection method. This string is modem vendor-dependent. The default value (shown in *Figure 5, Session Manager Configuration Menu*) will work with all Hayes-compatible modems. If you wish to alter the default string, or if it conflicts with your modem, consult your modem user manual for details.
- **Disconnect String.** (Same information as for the Connect String above.)



Session connection

The session connection area is for your login connection *after* you have successfully passed PPP authentication.

Connection Type. There are several connection types you can choose from.

<i>None</i>	(Default.) <i>None</i> means that after the netstation has made the connection and been authenticated, the user will have to start his own session, launch clients manually, etc..
<i>ICA Host</i>	This selection will connect you to a WinDD/Windows NT host over an ICA connection. If you select <i>ICA Host</i> , you must specify a WinDD/Windows NT host (name or IP address) in the Host/Application field. Unless you specify an alternate configuration in your <i>xp.cnf</i> file, the default WinDD window (640x480, 16 colors) will appear. (<i>Also, see note below.</i>)
<i>ICA Application</i>	This yields a result similar to the <i>ICA Host</i> connection type, except that the user, instead of getting an entire Windows NT session, will only get access to the specified application. If you select <i>ICA Application</i> , you must specify a (case-sensitive) application name in the Host/Application field. This application name is the name a master ICA browser broadcasts over the network to ICA clients. When you select <i>ICA Application</i> , the master ICA browser will connect you to the Windows NT host that can best serve you that application, based on the server's resources, number of users currently logged in, etc.. (<i>Also, see note below.</i>)
<i>TekHostMenu</i>	This will launch the TekHostMenu client, allowing the user to choose amongst the various protocol/host combinations to make a post-authentication connection.
<i>XDM Direct</i>	This sends an XDMCP login from a specific host to the user's display immediately after PPP authentication.
<i>Telnet</i>	This will launch a Telnet session to the selected host.
<i>Navio</i>	This selection is not supported at this time.

NOTE: *ICA connections will not work in 16-bit TrueColor environments. If you choose ICA Host or ICA Application as a connection type, be sure that your Default Visual and Root Depth settings are set to "PseudoColor" and "8" respectively. (See the section [Final netstation configuration considerations](#) on page 36 for more details.)*

Host/Application. This field is for one of two values: You can enter the IP address (or server name) of the ICA host to which the user will login; or the specific published application name. The published application name defaults to the local subnet, but you can optionally prepend the published name with a Windows NT server name or IP address, or with the subnet mask that points to a specific Application Master Browser location. For example, the following entry:

```
192.168.15.255 notepad
```

...points to an Application Master Browser on the subnet 192.168.15.255. In such a case, the Application Master Browser selects the Notepad application from among the hosts on the subnet based on server load.

User Name. Optional. This user name differs from the user name required in the session authentication area of this menu. This user name refers to the actual account the user must have on the server on which he wishes to login; the former user name is for authentication only. If this field is left empty, the user will have to manually login to the server after the session has been authenticated and established.

Password. Optional. This too differs from the password required in the session authentication area. If this field is left empty, the user will have to manually enter his/her password to login.

Domain. Optional. This is only for Windows NT environments. If you have entered a user name and password in the two previous fields, you might also want to specify a Windows NT domain on the login host. Otherwise, the user will have to manually select a domain at the Windows NT login prompt.

Session status

The session status area is where you make and break session connections. It also displays information about your connection.

Connect/Disconnect. Use this button to make and break your session connections. (See the section *PPP connections* on page 38.)

Status. This gives PPP connection status information (terminated, connecting, connected, etc.). If you have selected Ethernet as your Port, **Status** will display "Connection Down."

Local IP. Local IP refers to the IP address the PPP server allocates to your netstation after the PPP connection has been established. If you have selected Ethernet as your Port, **Local IP** will display "Not Connected."



Remote IP. Remote IP refers to the IP address of the PPP server you are connected to. If you have selected Ethernet as your Port, **Remote IP** will display “Not Connected.”

Configuring the *xp.cnf* file for PPP

Configuring the *xp.cnf* file will allow remote users to make PPP connections automatically, after they boot their netstations. You will need to complete the previous *Setup* configurations for each netstation you want to connect automatically. You will also need to uncomment and alter the following line in your *xp.cnf*:

```
START PPP NO #[YES | NO]
```

Change the value for this line to “YES”.

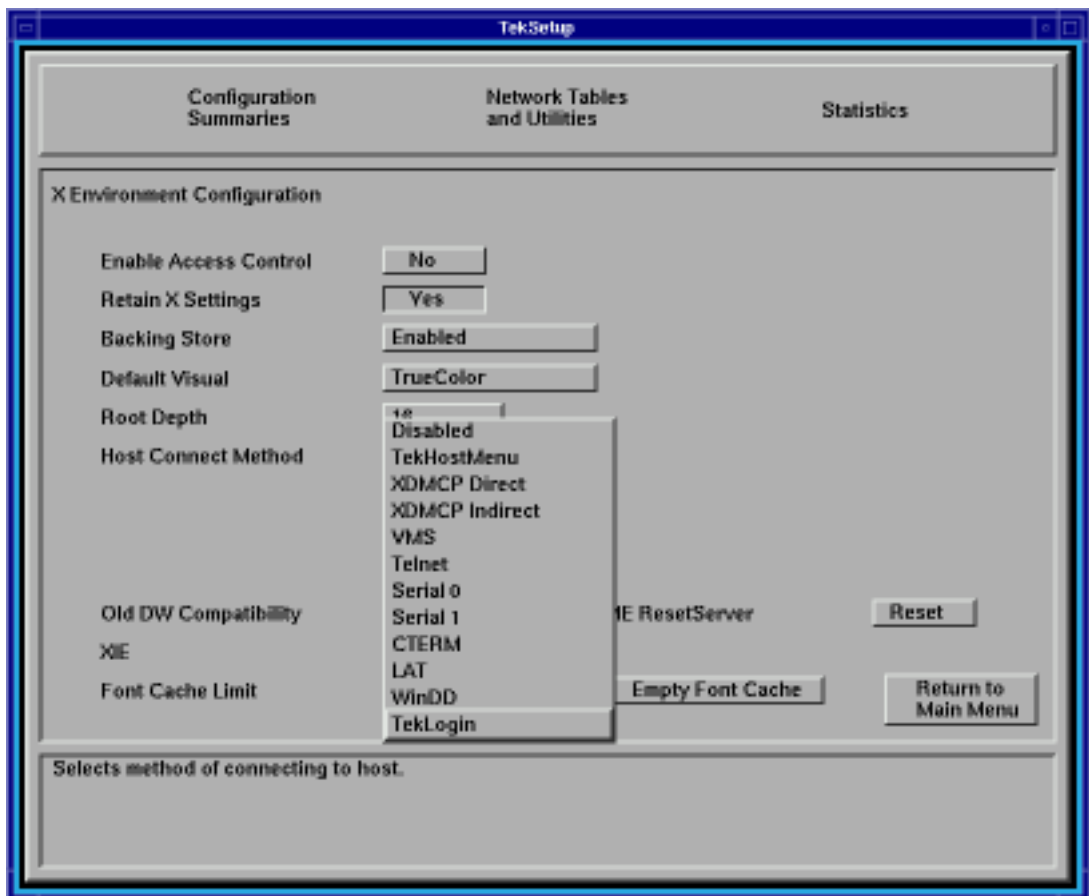
Final netstation configuration considerations

There are three other menu items in *Setup* that you should check before you are ready to make a PPP connection.

First, verify that your netstation has an Internet host name. In *Setup*, go to **Configuration Summaries | TCP/IP**. If the first field on this menu is blank, enter a netstation name. If your netstation does not have a name, PPP will generate a unique name for you--based on your netstation’s Ethernet address--so it is not critical that you enter one here; it is merely good practice.

Second, there are a few settings in **Configuration Summaries | X Environment** you should check. If you plan to use either the ICA Host or ICA Application connection type described in the previous section, make sure the **Default Visual** is set to “PseudoColor” and the **Root Depth** is set to “8”. Also, with NCBridge 3.1, you now have an additional choice of methods (under **Host Connect Method**) by which to connect to a host computer (see *Figure 6, X Environment Configuration* on page 37). *TekLogin*, a new local client which allows a simple connection automatically or with a single button-click, is explained in more detail in the section *The TekLogin local client* on page 42. You may want to change this setting for your netstation(s).

Figure 6. X Environment Configuration



Finally, you might want to save your settings so that you won't have to go through these procedures again the next time you reboot. To do this, click the "Return to Main Menu" button, then click the "Save Settings to NVRAM" button on the bottom left of the *Setup* main menu.



PPP connections

After you have configured your Tektronix netstation's serial port, PPP, and other settings, and you have attached a modem to one of your netstation's serial ports, you can connect to a remote host via PPP in any of the following methods:

- by using the TekLogin client;
- by using the “Connect/Disconnect” button in *Setup*'s **Session Manager Configuration Menu**;
- by using *xpsh* on a command line; or
- by booting the netstation and automatically connecting via PPP with the remote configuration file, *xp.cnf*.

Connecting via *TekLogin*

TekLogin is a new local client that simplifies the connection process, not just for PPP connections, but for other host connections as well. This method is recommended, especially in environments where the system administrator wishes to simplify the login procedure for inexperienced users. See [The *TekLogin* local client](#) on page 42 for more information.

Connecting via *Setup*

Another way to start PPP is from *Setup* where the user can see the PPP status and, in case PPP exits, the reason for the connection failure. When PPP comes up, the user will see the IP address for the connection on the netstation (if the remote is assigning IP addresses) and the remote IP address.

For each of the following methods, in *Setup*, go to **Configuration Summaries | PPP** and click the “Connect/Disconnect” button to make your PPP authentication connection, then follow the rest of these procedures below.

Dial out and Direct

For a properly configured *Dial Out* or *Direct* session, no other steps are necessary to connect.

Manual

When you click the “Connect” button for a *Manual* session, one of the provided scripts (*start_man*) will start, launching a TIP window and dialing the number specified in the **Session Manager Configuration Menu**. The *start_man* script prompts you for your username and password. If the PPP daemon is not running on the host, you will have to start it manually. The TIP window will close automatically as soon as the script detects that PPP is running on the host. The TIP window will remain open for thirty minutes otherwise before closing.

Figure 7. Connecting manually via a TIP window

```

telnet20 Serial Port
File Settings
Connected
atdt95039000
CONNECT 28800/ARQ/V34/LAPM/V42BIS

t1999ba line 26

User Access Verification

Username: matthewn
Password:

IP Modem Pool>251.8.17.60
Trying 251.8.17.60 ... Open

SunOS 5.6

login: matthewn
Password:
Last login: Tue Jul 14 14:08:17 from t1999ba.ens.tek.
Sun Microsystems Inc. SunOS 5.6 Generic August 1997
You have mail.
matthewn>

```

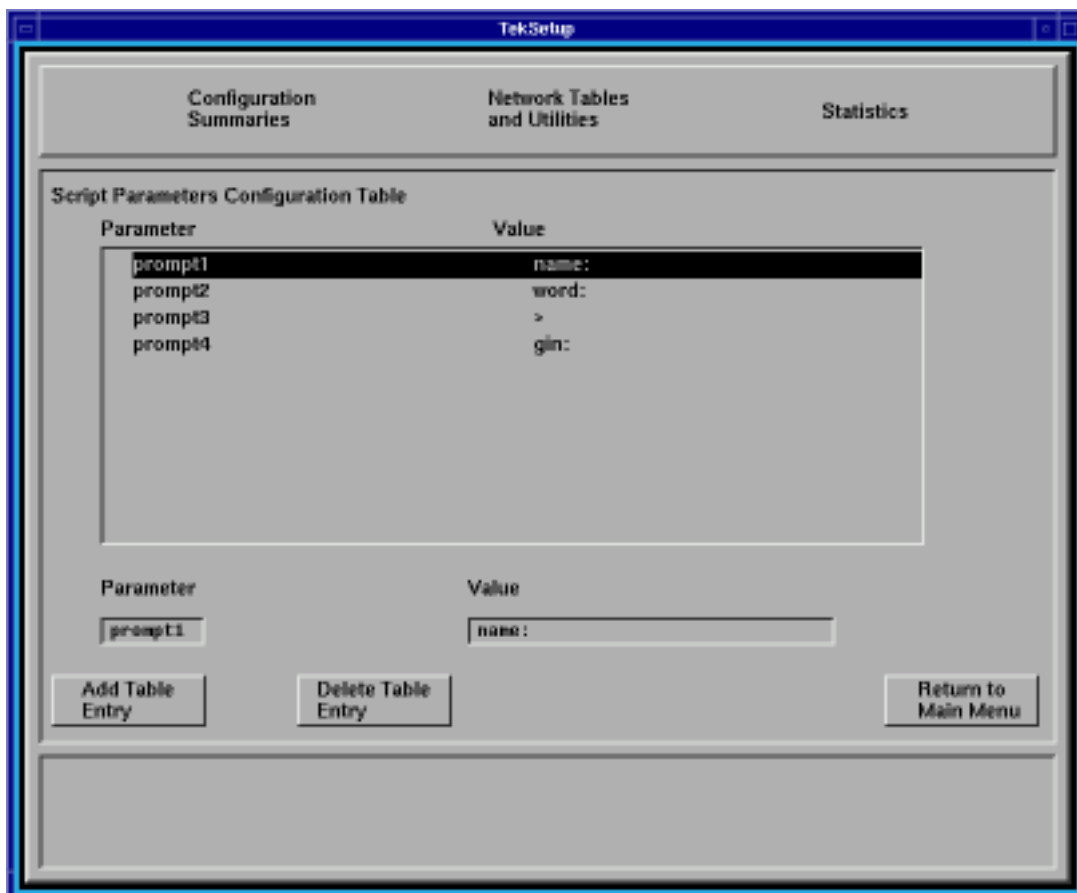
When your connection has been fully established, the remote device will assign you a remote IP address and display it in the **Remote IP** field in *Setup*'s **Session Manager Configuration Menu**.



Script

When you choose to connect via a script, the value you enter in the **Script** field names the parameter listed in *Setup*'s **Network Tables and Utilities | Script Parameters**. (See Figure 8, *Script Parameters Configuration Table* on page 40.) NCBridge 3.1 ships with three sample scripts (*start_ppp*, *start_man*, and *start_isp*) found in the */tekxp/boot/config/script* directory. The first of these is the default script when you select **Script** as your connection method in the **Session Manager Configuration Menu**; the second starts when you select **Manual**; the third is included only as an example. You may use these scripts or create your own.

Figure 8. Script Parameters Configuration Table



Connecting via *xpsh*

While it might not make sense to connect via PPP through the *xpsh* command (which requires you to be connected to another server in the first place), it is still possible to do so with the following command:

```
xpsh -display <display_name>:0 pppd <parameters>
```

Connecting via the *xp.cnf* file

If the sys-admin has set up the PPP parameters in the *xp.cnf* file for remote netstation users, the PPP session will start automatically after netstation boot.

Terminating PPP

With *TekLogin*, click the “Disconnect” button on the main menu. In *Setup*, go to **Configuration Summaries | PPP** and click the “Disconnect” button.

NOTE: *When clicking the “Disconnect” button, PPP does not send the disconnect string to the serial port to reset the modem. If this occurs, turn off/on your modem to reset the modem.*



The *TekLogin* local client

Many customers want to present their end-users a simplified environment with simple login methods and easy access to applications. The new *TekLogin* local client adds one more piece to that end, streamlining the login process and allowing system administrators to decide how much or how little control over to offer their end-users.

Starting TekLogin

There are several ways to launch the *TekLogin* client:

- with the *Setup* client;
- with the *Launcher*;
- with the *xpsh* command; and
- with the *xp.cnf* file.

As noted in the previous section, you can choose *TekLogin* as your **Host Connect Method** in *Setup*'s **Configuration Summaries | X Environment** menu. After a successful boot, the netstation will display the *TekLogin* client, as seen in *Figure 9, TekLogin client*.

Another method is to set *Launcher* to display and launch the *TekLogin* client. You can manually edit your *system.launcher* file to do this or set the following line in your *xp.cnf* file to "YES":

```
teklogin_show_sessions_in_launcher    [YES|NO]
```

This will automatically display all eight of your preconfigured sessions in a pull-down menu in the *Launcher*.

A third way to start TekLogin is with the *xpsh* command:

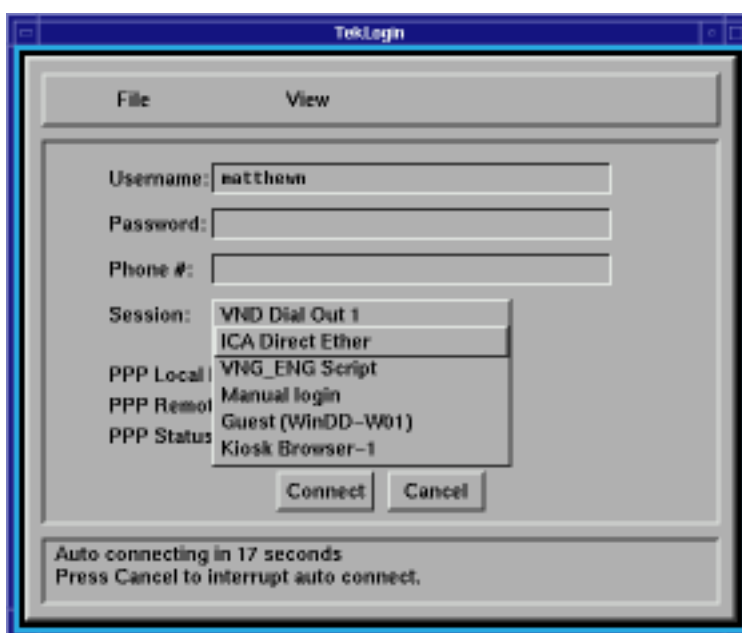
```
xpsh -display <displayname>:0 teklogin &
```

Finally, you can have TekLogin start automatically with the *xp.cnf* file by uncommenting and altering the following line in your *xp.cnf*:

```
START TEKLOGIN    NO                #[YES|NO]
```

Change the value for this line to "YES".

Figure 9. TekLogin client



***xp.cnf* commands for TekLogin**

The following commands may be added to your *xp.cnf* file to affect the *TekLogin* client. (They are not listed in the *MASTER_xp.cnf* file, but they will work if you enter them.)

```

teklogin_show_sessions_in_launcher      [YES|NO]
teklogin_force_fullscreen_windd        [YES|NO]
teklogin_timeout                        [SECONDS]
teklogin_require_login                  [YES|NO]
teklogin_save_passwords                 [YES|NO]
teklogin_default_session                [1-8]
teklogin_close_on_connect               [YES|NO]

```

The first two listed are notable in that they are not configurable with the *TekLogin* client itself, as most of the others are. The `teklogin_show_sessions_in_launcher` command will display the configured sessions in the *Launcher* client as pull-down selections. The `teklogin_force_fullscreen_windd` command forces the WinDD client launched by *TekLogin* to take up the whole screen (rather than a 640x480 window, the default).



Configuring *TekLogin* settings

In the **File** pull-down menu, you can select *Save Settings*, *Restore Settings*, or *Exit*.

<i>Save Settings</i>	This saves the current user name, password, phone number, and session settings such that the next time the <i>TekLogin</i> client is launched, these settings will display.
<i>Restore Settings</i>	Restores the last saved settings.

In the **View** pull-down menu, you can select *Setup* or *Options*. Both of these selections will require a password if you set password restriction in the *Setup* main menu.

<i>Setup</i>	This launches the <i>Setup</i> client. Sys-admins can disable this feature, however, if they do not wish end-users to have access to the <i>Setup</i> client. (See Security between TekLogin and Setup on page 45 for details.)
<i>Options</i>	Autologin Timeout. The default timeout is 30 seconds, after which, if the user does not click the Cancel button, <i>TekLogin</i> will attempt to make the connection described by the session name. If the user cancels the autologin, he can then choose one of the other configured sessions in <i>TekLogin</i> by its session name. The autologin defaults to the last session connected to via <i>TekLogin</i> . Interactive Login Required. This requires the user to enter his username and password after the PPP authentication has occurred. Close on Connect. If <i>TekLogin</i> is not configured to close on connect (default), it will remain on the user's screen, allowing the user a simple method of disconnecting from one session and reconnecting to another. Some system administrators, however, may wish to disable this functionality, forcing the netstation to connect using only session configuration.

Figure 10. TekLogin options



Security between *TekLogin* and *Setup*

System administrators can set the security mechanism for a netstation in *Setup*'s main menu so that no user can tamper with the netstation's configuration without the password. The security is activated whenever a user enters something in *Setup* or presses some button. Some of the fields, however--such as username and password for both authentication and account login purposes--need to be alterable to end-users. With security activated on the *Setup* client, users will be able to enter their own user names and passwords, but will not be able to change the session names or other configuration parameters.

If security is enabled, the *TekLogin* client will not launch the *Setup* client, so system administrators can effectively "hide" *Setup* from novice users.



NCBridge 3.1 Release Notes