Honeywell

Universal Station X System Administration

UX11-402

Total Plant

Honeywell

Universal Station^{X}

Universal Station^{X} System Administration

UX11-402

Release 200
4/96

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Revision 10– April 5,1996

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About This Publication

This publication is provided to aid configuration/operation of Universal Station^{X} Release 200 hardware/software.

Use this publication to install, configure, and operate the Universal Station^{X}. If you are unfamiliar with general LAN (Local Area Network) configuration techniques or details of the specific LAN configuration to which the station is attached, your Local Area Network Administrator will be needed to assist in configuration/troubleshooting.

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Acronyms

CIM ..... Computer Integrated Manufacturing
IWSM ..... Industrial Work Space Manager
LAN ..... Local Area Network
LCN ..... Local Control Network
OSF ..... Open Systems Foundation
OSI ..... Open Systems Interconnection
TDC ..... Total Distributed Control
TPDG ..... Turbo Peripheral Display Generator
UCN ..... Universal Control Network
UNPX ..... Universal Personality^{X}
U^{X}S ..... Universal Station with Extensions
WSI ..... Workstation Interface

References

Honeywell Documentation

Publication Title	Publication Number	Binder Title	Binder Number
Universal Station^X System Administration Manual	UX11-402	Universal Station^X	TDC 2095
Universal Station^{X}Service	UX13-410	Universal Station^X	TDC 2095
Five/Ten-Slot Module Service	LC13-400	LCN Service - 1	TDC 2060-1
Hardware Verification Test System HVTS-Universal Station^X	SW13-211	LCN Service - 2	TDC 2060-2
U^{X}S Specification and Technical Data	UX03-402	Universal Station^X	TDC 2095
System Site Planning	SW02-450	System Site Planning	TDC 2020-1
LCN Guidelines	LC09-410	LCN Installation	TDC 2025
LCN System Installation	SW20-410	LCN Installation	TDC 2025
LCN System Checkout	SW20-410	LCN Installation	TDC 2025

References

Hewlett Packard Documentation

This documentation is provided on a single CD-ROM titled: HP LaserRom - HP-UX Release 9.0.

HP LaserRom - HP-UX Release 9.0

A Beginner's Guide to HP-UX

Administering ARPA Services

Finding HP-UX Information Series 300/400/700
How HP-UX Works: Concepts for System Administrators
HP-UX Reference (3 vols)

HP-UX System Admin Tasks S700

HP-UX System Security

Inst/Update HP-UX S700

Installing and Administering NFS

Installing and Administering NS

Installing Peripherals S700

Master Index Series 700

Motif 1.1 Information Manual

Networking Overview

Read Me Before Installing or Updating HP-UX
Readme HP-UX 9.03 Series 700

Remote Access: User's Guide

Shells: User's Guide

Solving HP-UX Problems

Support Tools Mgr User's Guide

Terminal Control: User's Guide

Text Formatting: User's Guide

The Ultimate Guide to the vi and ex Text Editors

References

Hewlett Packard Documentation, continued

Using ARPA Services

Using HP-UX

Using Network Services

Using NFS Services

Using Serial Line IP Protocols

Using the X Window System

HP LaserROM
HP-UX Release 9.0

Section 1 – Universal Station^{X} Release 200 Documentation

1.1 Overview

Available documentation

The documentation for the Universal Station^{X} Release 200 product is comprised of manuals published by Honeywell and Hewlett Packard. All Hewlett Packard UNIX manuals are at HP-UX Release 9.0 and are provided via a single compact disc(CD). The CD can be viewed using a CD-ROM reader installed in a U^{X}S, another Hewlett Packard workstation, or a PC with a CD-ROM drive. A software utility is provided on the compact discs that is installed and used to read the documentation. The documentation can be viewed or printed directly from the CD. Instructions for installation are provided with the Hewlett Packard CD.

UNIX manual list by function

The numerous UNIX manuals can be grouped into functional categories to guide readers. Your manual requirement may vary depending on your job function, current level of UNIX expertise and level of interest.

Publication Title	System Administrators	General Users
A Beginner's Guide to HP-UX		√
Administering ARPA Services	√	
Finding HP-UX Information Series 300/400/700		√
How HP-UX Works: Concepts for System Administrators	√	
HP-UX Reference (3 vols)	√	
HP-UX System Admin Tasks S700	√	
HP-UX System Security	√	
Inst/Update HP-UX S700	√	
Installing and Administering NFS	√	
Installing and Administering NS	√	
Installing Peripherals S700	√	
Master Index Series 700	√	√
Motif 1.1 Information Manual	√	
Networking Overview	√	√

UNIX manual list by function , continued

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Read Me Before Installing or Updating HP-UX	√	
Readme HP-UX 9.03 Series 700	√	
Remote Access: User's Guide	√	
Shells: User's Guide	√	
Solving HP-UX Problems	√	
Support Tools Mgr User's Guide	√	
Terminal Control: User's Guide	√	
Text Formatting: User's Guide	√	
The Ultimate Guide to the vi and ex Text Editors	√	√
Using ARPA Services	√	
Using HP-UX	√	√
Using Network Services	√	
Using NFS Services	√	
Using Serial Line IP Protocols	√	
Using the X Window System	√	√

Section 2 – Universal Station^{X} Concepts

2.1 What is Universal Station^{X}

Long term plan

In today's competitive environment, maintaining control of costs and quality is paramount. Many process industry companies are formulating long-range plans to meet these objectives. The broad direction is to achieve low cost operations through the integration of process control and information system technologies. Honeywell's TDC (Total Distributed Control) system will be the foundation of the future CIM (Computer Integrated Manufacturing) system. This Honeywell system is called **TotalPlant**.

To meet these challenges, it is important to provide an evolutionary path of products, that preserve customer investments in hardware and training. The Release 100 Universal Station^{X} platform was the first step in implementing this long term strategy.

To further this evolution, the Release 200 platform contains upgrades to the Release 100 platform as well as new features. These improvements were achieved without altering the basic elements of the Universal Station^{X} platform. This consistency of design preserves the investment in training, hardware, and software, proving "Consistent Evolution" to be a vital element in a cost-effective solution.

Definition of Universal Station^{X} Release 200

An embedded open system environment provides support for display/import of data generated on non-LCN platforms. This TDC 3000^{X}/X Windows integrated platform enables software connections between the PIN (Plant Information Network) and the LCN (Local Control Network). Universal Station^{X} is the linking of open systems, X-Windows, and Motif to produce a visually integrated display of **TotalPlant** information.

Universal Station^{X} Release 200

Release 100 of the Universal Station^{X} product provided visual integration of plant information. Release 200 enables U^{X}S functions to be added/altered independent of a major LCN software release.

Universal Station^{X} Release 200 provides the following features/benefits:

Features	Benefits
Native LCN Window	Addition of a menu bar for zoom and LCN window behavior options.
Key Repeat Timer	The keyboard now has a repeat timer that can be configured
XSAM	Internationalization of text to display in the local (native) language.

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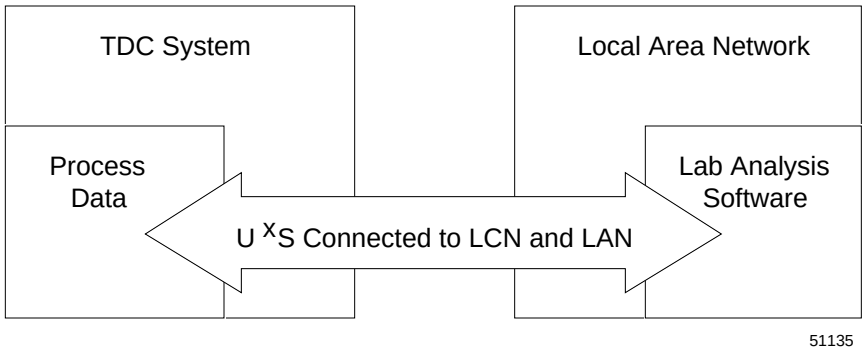
Universal Station^X Release 200, continued

Features	Benefits
Zooming Touch	Configuration for zooming touch in the LCN window has been added.
Operator and parallel operator keyboard	The X server can be configured to always send key codes to the native LCN window.
X Server supports X11R5	Display of fonts that can be scaled, consistent color independent monitor type and support for internationalizing text to display in the local (native) language.
X Server extensions	Enhancements to X server functionality without affecting standard client operation.
Touchscreen Drag and Drop.	Emulates three button mouse, enabling text editing by drag and drop method. Also simplifies point and click.
Multiple PIN windows	Simultaneous access to multiple non-TDC computer systems
Fail Safe Fall Back	Ensures the *"view to the valve."*
System Security	Limits access to authorized users. TDC system isolated from open system.

Universal Station^X example

The support for the open system allows connection to a wide variety of hardware platforms.



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Universal Station^X example , continued

Currently, information on the LAN (Local Area Network) can be displayed or updated at the Universal Station^X. This allows operators to view lab analysis data on the same screen as the process data. By integrating this data, the operator has less distractions and requires less training (only one computer system). A typical control room operator may have two or three computers to monitor (each holding some essential element of process data). When the operator's attention is diverted from the primary TDC display the potential for problems increases.

2.2 Universal Station^{X} Hardware

US - Universal Station^{X} migration

The Universal Station^{X} Release 200 is available in two basic forms: upgrade kits (for a Universal Station or R100 Universal Station^{X} in standard furniture), or as a complete station (in standard or ergonomic furniture). The upgrade kits are available in several versions to match your specific hardware configuration.

Components

The Universal Station^{X} consists of a tightly integrated TDC 3000^{X} Universal Station and an open system processor environment in a coprocessor architecture. The Universal Station^{X} contains the following components:

- Standard US furniture cabinet
- Standard 5-slot module
- New electronics package
- New high resolution monitor (touchscreen optional)
- Hard drive connected to coprocessor
- DAT (Digital Audio Tape) drive connected to coprocessor (one DAT required per system).

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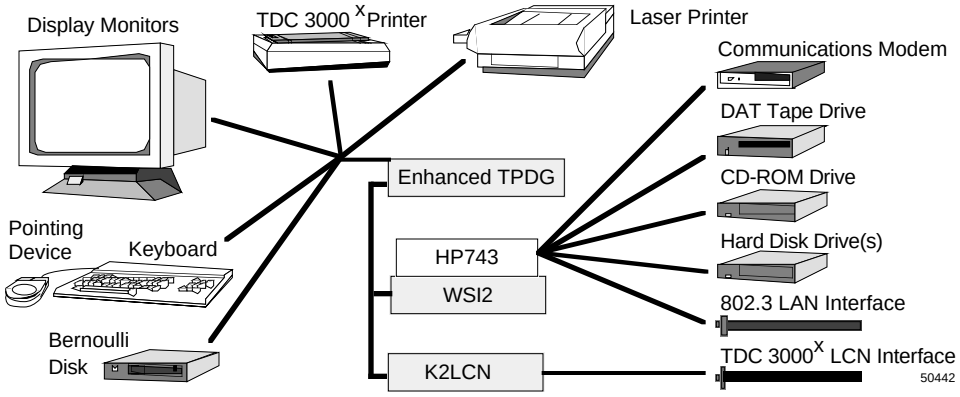
Component diagram



New electronics package

The R200 electronics package consists of:

- Standard K2LCN-8 board
- Workstation Interface board (WSI board)
- Turbo Peripheral Display Generator (TPDG board)
- I/O boards for each of the boards above
- 8 ampere power supply

New monitor

A new monitor is used to provide a higher resolution display. The resolution is increased to 1280 x 1024 pixels.

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Coprocessor media

A hard drive and a DAT (Digital Audio Tape) drive have been added to contain these Universal Station^X files:

- Open system filesystem
- X Window files
- TPDG download code
- Universal Station^X (UNPX) personality download code

This media is connected to the Open system coprocessor and is not accessible by the LCN filesystem.

Specific details

For more specific hardware information, refer to *Universal Station^X Service*.

Section 3 – Window Operations

3.1 Window Manager

X window system

The X Window system provides standards by which computers of dissimilar types can exchange window displays. This allows computer systems to execute an application and send the display of that application to other computer systems which support the X window graphical standard. This standard integrated the concept of a window manager. The window manager allows manipulation of the X window displays.

Consistent look

The Universal Station^{X} utilizes Motif Window Manager to provide a consistent look to all applications displayed on the Universal Station^{X}. This software provides functions for opening, closing, moving, resizing, and indicating the active window. If you have used Microsoft Windows you will immediately recognize the similarities.

The Window Manager attributes are preset, and cannot be altered by the user. System administrators may provide custom configuration of window attributes on a “system wide” or “user by user” basis.

Functions provided

The Motif Window Manager applies the window interface attributes independent of the application running within a window. The window interface affects only the manner in which that window is displayed. It will provide such elements as: title bars, scroll bars, resizing, control of overlapping windows, and the ability to iconify a window. These elements allow manipulation of multiple windows, independent of their application or the underlying computer platform/operating system executing the application. This allows one window interface to control the display of all windows appearing on the Universal Station^{X} screen.

3.2 Cursor Usage

Cursor types

The Window Manager uses various cursor types to depict the type of operation being performed. The types are:

- pointing  or  or 
- working 
- moving 
- resizing  or  or  or  or  or  or  or 

3.3 Altering Window Size

Changing window size

Where you grab the window's frame determines how the window will be resized. The dimensions (width x height) of the window being resized is displayed in the center of the screen. The measurement is in characters (across) and lines (down) for terminal windows; other types are measured in pixels (dots on the screen).

Note: When resizing the LCN Native Window, it is necessary to click the bottom right corner of the window border to cause the LCN display to resize. The LCN processing continues without problem, but the display may be only partially visible.

Use the following to change the window size:

If you want to resize the window . . .	Point to, depress, and hold the mouse button and drag. . .
vertically from the . . .	
top	top of the frame, above the title bar
bottom	bottom of the frame
horizontally from the . . .	
right	right side of the frame
left	left side of the frame
diagonally from the . . .	
bottom left corner	frame's lower left corner
top left	frame's upper left corner
top right	frame's upper right corner
bottom right	frame's lower right corner

Zoom enhancements

Release 200 provides several enhancements to the Native LCN Window. A menu bar with "`Size`" and "`Options`" menus was added to the Native LCN Window's window border.

It is important to remember the LCN generates a constant display size which is resized to fit the window border by the TPDG board. Resize is not an LCN function, but performing a resize could (depending on circumstances) trigger other changes to the Native LCN window appearance.

The "`Size`" menu is used to select the desired size of the Native LCN window and has the following choices:

- `Small` — standard one quarter screen size
- `Large` — full screen size

Native LCN window Option Menu

The “Options” menu controls the behavior of the Native LCN window and has the following items:

- `Allow Partial Window Overlay` — configures the ability to partially obscure the Native LCN window with other windows.
- `Allow Total Window Overlay` — configures the ability to totally obscure (overlay) the Native LCN window with other windows. You currently must select the window a second time for it to overlay the Native LCN window.
- `Zoom Touch active in Full Screen mode` — Enables Zoom Touch when Native LCN Window is displayed at full screen.
- `Automatic Resize` — maximizes Native LCN window and sets display to full screen.

3.4 Minimizing/Maximizing Windows

Minimize a window

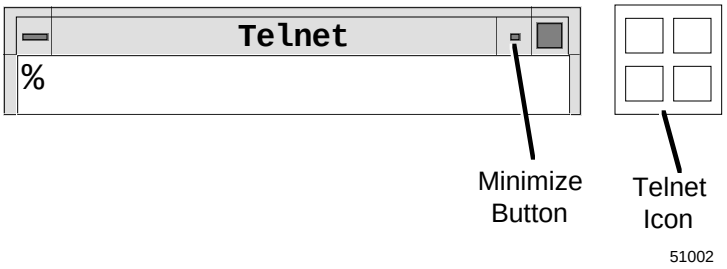
To reduce workspace clutter, you may change a window to an icon. An icon is a graphical representation of the application executing in that window. This reduction to an icon is called “minimizing” a window. Applications executing in a minimized window continue to execute until the task is completed or until they require user input.

There are several methods to minimize a window:

- Use the `Minimize` button on the windows Title Bar
- Use the `Minimize` selection from the Window Menu

A window which has been minimized (iconified) may be returned to the window form using several methods.

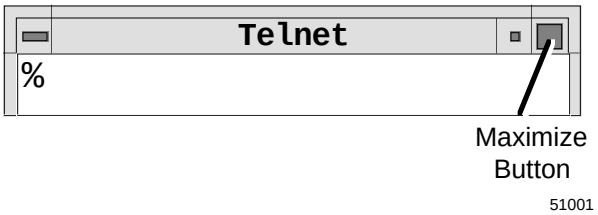
- Double-Click (click twice in rapid succession) the icon.
- Use the `Maximize` selection from the minimized window icon menu.



Maximize a window

Clicking on the Maximize button will enlarge the window to cover the entire monitor. Clicking on the button a second time will return the window size to the original dimensions.

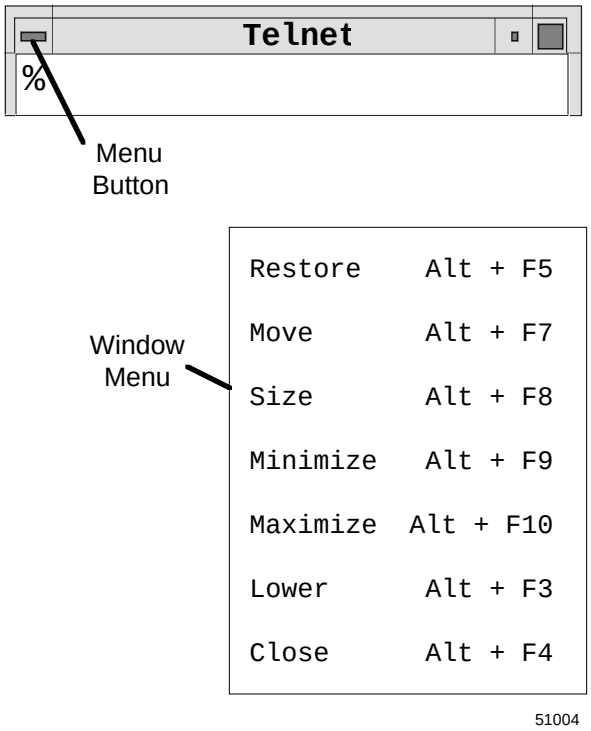
Note: When resizing the LCN Native Window, it is necessary to click on the bottom right corner of the window border to cause the LCN display to resize. The LCN processing continues without problem, but the display may be only partially visible.



3.5 Using the Window Menu

Window menu

Each window has a window menu containing functions for controlling the window. To access the window menu, point to the menu target and then press and hold the select button. The menu is displayed as long as the select button is held down. To select a menu item, drag the cursor down the list and release the select button when the appropriate item is highlighted.



To perform the following, select the appropriate menu item:

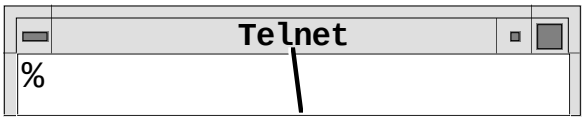
To do this . . .	Select . . .
Restore a window from an icon or after maximizing.	Restore
Change the location of a window.	Move
Change the size of a window.	Size
Shrink the window to its icon representation.	Minimize
Enlarge the window to cover the entire root window.	Maximize
Send a window to the back or bottom of the window stack.	Lower
Immediately close the window and make it disappear.	Close

3.6 Repositioning Windows

Moving windows

Windows can be positioned anywhere on the screen, with one exception. The Native LCN window is initially configured (for all users except engineer group members) to inhibit its ability to be partially obscured or overlapped by other windows. This attribute can be configured for users of all access levels and is covered in subsection 6.3, *Configure Native Window Behavior*.

To move a window, click and drag on the window's title bar. While moving, an outline of the window is shown for positioning purposes. The window will move to this new location if the select button is released at the current position.



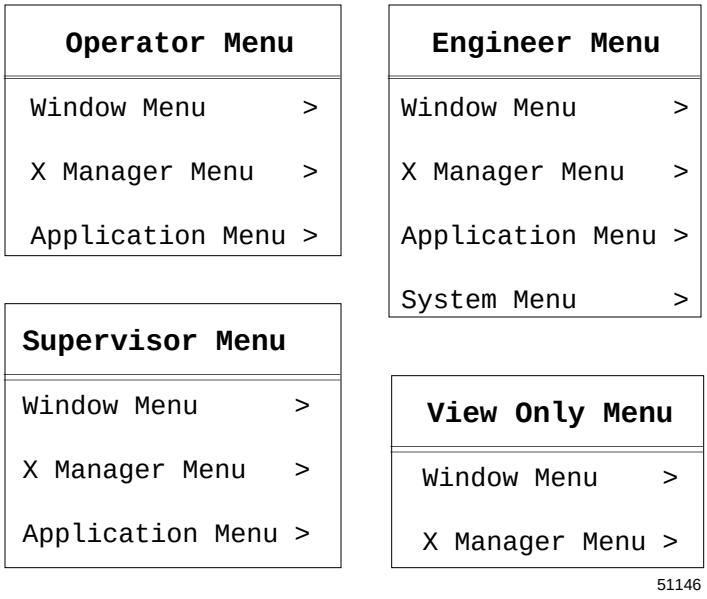
Title Bar

51003

3.7 Workspace Menu Access

Workspace menu

To reduce the user interaction with the open system environment, a workspace menu (sometimes called the root menu) is included. This menu is accessed by holding down the select button within the workspace (outside all windows). You can select a menu item by dragging the pointer down the menu list and releasing the select button when that item is highlighted.



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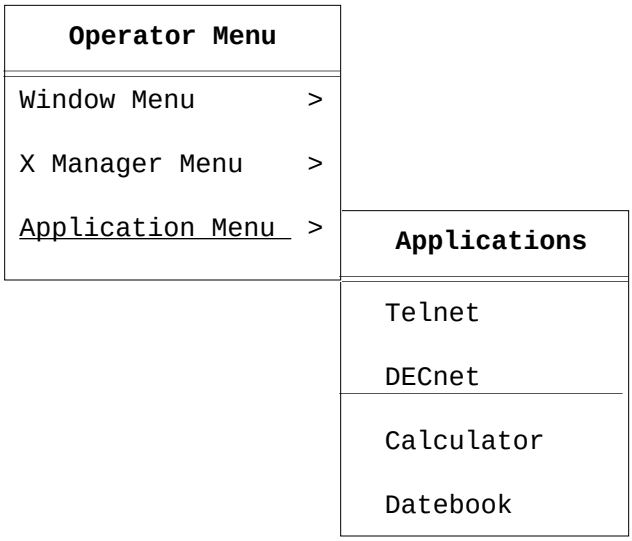
Hierarchical menus

The menu uses hierarchical (nested) menu items indicated by an arrow to the right of the item which has another level of menu. To access these nested menus, hold the select button and scroll to the appropriate menu; the nested menu item will appear. Moving the cursor onto this new menu will allow selections to be made from this newly visible list of items.



Access levels

The menu is preconfigured according to the access level, which is assigned by the system administrator. When a user is added to the coprocessor, their user-login name is associated to a group of users. This association provides security restrictions by displaying menus specific to that group's access authorization.

The access levels are

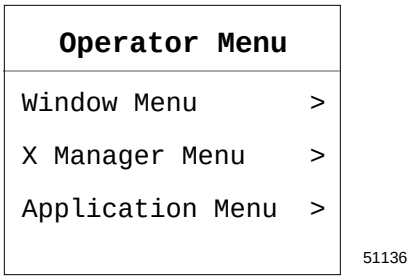
- operator
- supervisor
- engineer
- view Only

3.8 Operator Workspace Menu

Operator Menu items

The `Operator Menu` contains the following:

- `Window Menu` - a nested menu
- `X Manager Menu` - a nested menu
- `Application Menu` - a nested menu



Window Menu items

The operator's `Window Menu` contains the following:

- `Shuffle` - Shuffles the position (*`Up/Down`*) of the active window.
- `Other Screen` - This menu item toggles between dual screens allowing one pointing device and one set of keyboards to control both screens.
- `Keyboard Focus Policy` - Configures the X Windows attribute (*`Explicit/Pointer`*) to identify the active window. Either a mouse click (Explicit) or cursor within the window (Pointer) is required to identify the active window.
- `Window Print` - Prints the contents of the selected window.

X Manager items

The operator's `X Manager Menu` contains the following:

- `X Host Authorization` - Authorizes remote computing resources to display X applications on this station. Configured for each individual user.
- `Change User Password` - allows the user to change their login password
- `Refresh` - Performs a redraw of the X application windows.
- `Restart` - Restarts the Motif Window Manager; used to force a reset of Motif Window Manager.
- `Logout` - Sends a kill message to all X hosts to close open applications, logs the user out, and idles the coprocessor.

Continued on next page

Application Menu

The operator's `Application Menu` contains the following:

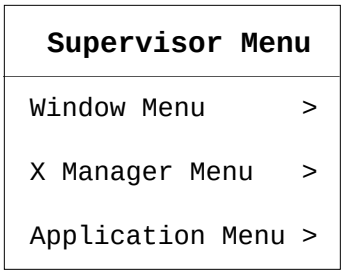
- `Telnet` - accesses the TELNET TCP/IP protocol
- `DECnet` - accesses the DECnet protocol
- `Calculator` - a full function calculator application
- `Datebook` - a calendar/datebook application

3.9 Supervisor Workspace Menu

Supervisor Menu items

The `Supervisor Menu` contains the following:

- `Window Menu` - a nested menu
- `X Manager Menu` - a nested menu
- `Application Menu` - a nested menu



Window Menu items

The supervisor's `Window Menu` contains the following:

- `Shuffle` - Shuffles the position (*`Up/Down`*) of the active window.
- `Other Screen` - This menu item toggles between dual screens allowing one pointing device and one set of keyboards to control both screens.
- `Keyboard Focus Policy` - Configures the X Windows attribute (*`Explicit/Pointer`*) to identify the active window. Either a mouse click (Explicit) or cursor within the window (Pointer) is required to identify the active window.
- `Window Print` - Prints the contents of the selected window.

X Manager items

The supervisor's `X Manager Menu` contains the following:

- `X Host Authorization` - Authorizes remote computing resources to display X applications on this station. Configured for each individual user.
- `Change User Password` - allows the user to change their login password
- `Refresh` - Performs a redraw of the X application windows.
- `Restart` - Restarts the Motif Window Manager; used to force a reset of Motif Window Manager.
- `Logout` - Sends a kill message to all X hosts to close open applications, logs the user out, and idles the coprocessor.

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Application Menu

The supervisor's `Application Menu` contains the following:

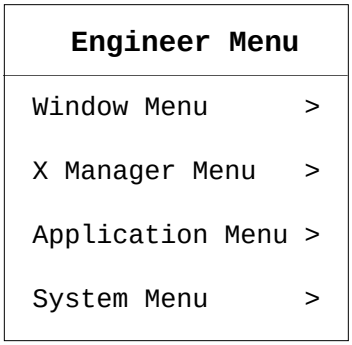
- `Telnet` - accesses the TELNET TCP/IP protocol
- `DECnet` - accesses the DECnet protocol
- `Calculator` - a full function calculator application
- `Datebook` - a calendar/datebook application

3.10 Engineer Workspace Menu

Engineer Menu items

The `Engineer Menu` contains the following:

- `Window Menu` - a nested menu
- `X Menu` - a nested menu
- `Application` - a nested menu
- `System Menu` - a nested menu



Window Menu items

The engineer's `Window Menu` contains the following:

- `Shuffle` - Shuffles the position (*`Up/Down`*) of the active window.
- `Other Screen` - This menu item toggles between dual screens allowing one pointing device and one set of keyboards to control both screens.
- `Keyboard Focus Policy` - Configures the X Windows attribute (*`Explicit/Pointer`*) to identify the active window. Either a mouse click (Explicit) or cursor within the window (Pointer) is required to identify the active window.
- `Window Print` - Prints the contents of the selected window.

X Manager Menu items

The engineer's `X Manager Menu` contains the following:

- `X Host Authorization` - Authorizes remote computing resources to display X applications on this station. Configured for each individual user.
- `Change User Password` - allows the engineer to change a user's login password
- `Refresh` - Performs a redraw of the X application windows.
- `Restart` - Restarts the Motif Window Manager; used to force a reset of Motif Window Manager.
- `Logout` - Sends a kill message to all X hosts to close open applications, logs the user out, and idles the coprocessor.

Continued on next page

Application Menu items

The engineer's `Application Menu` contains the following:

- `Telnet` - accesses the TELNET TCP/IP protocol
- `DECnet` - accesses the DECnet protocol
- `Calculator` - a full function calculator application
- `Datebook` - a calendar/datebook application
- `UNIX Load` - a bar chart display of UNIX processor loading

System Menu items

The engineer's `System Commands` menu contains the following:

- `Configuration` - a nested menu of configuration items
- `Update Software` - used to update coprocessor software
- `Add/Remove Users` - a coprocessor user registration application
- `Backup/Restore` - used to backup/restore the coprocessor software

Configuration Menu items

The engineer's `Configuration menu` contains the following:

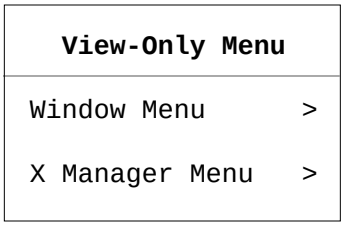
- `IWSM Configuration` - Shutdown WSI and Native Mode access
- `System Configuration` - used to configure the coprocessor LAN environment
- `System Terminal` - used to open a terminal session window.
- `Set Time/Timezone` - sets the coprocessor time, date, and timezone

3.11 View-Only Workspace Menu

X Menu items

The `View-Only X Menu` contains the following:

- Window Menu - a nested menu
- `X Manager Menu` - a nested menu



Window Menu items

The `Window Menu` contains the following:

- `Shuffle` - Shuffles the position (*`Up/Down`*) of the active window.
- `Other Screen` - This menu item toggles between dual screens allowing one pointing device and one set of keyboards to control both screens.
- `Keyboard Focus Policy` - Configures the X Windows attribute (*`Explicit/Pointer`*) to identify the active window. Either a mouse click (Explicit) or cursor within the window (Pointer) is required to identify the active window.
- `Window Print` - Prints the contents of the selected window.

X Manager Menu items

The X Manager Menu contains the following:

- `X Host Authorization` - Authorizes remote computing resources to display X applications on this station. Configured for each individual user.
- `Change User Password` - Allows the user to change their login password.
- `Refresh` - Performs a redraw of the X application windows.
- `Restart` - Restarts the Motif Window Manager; used to force a reset of Motif Window Manager.
- `Logout` - Sends a kill message to all X hosts to close open applications, logs the user out, and idles the coprocessor.

3.12 Using the Touchscreen

Display resolution

The high resolution display required a change to touchscreen operation. Software is provided to zoom the screen display at 2 times original size. This zoom touchscreen aids in the selection of small targets.

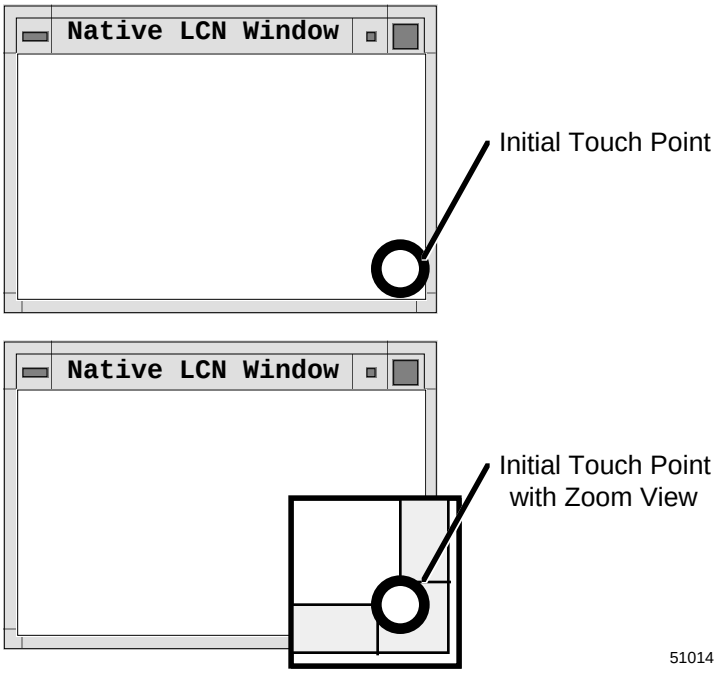
Zoom feature availability

The zoom feature is only available when a user is logged into the coprocessor environment. The software action is performed as part of the X window environment and does not effect operation of the application within the window.

Zooming touchscreen

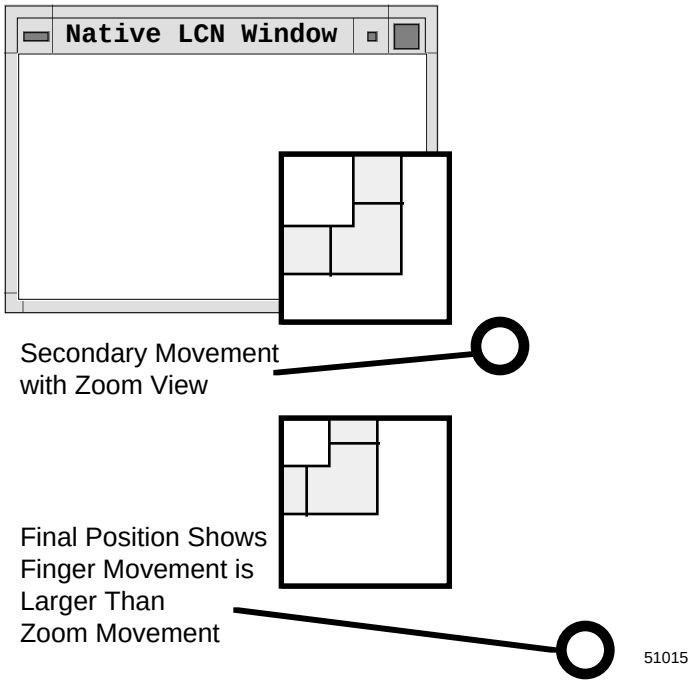
The touchscreen on the Universal Station^{X} is supplemented by software to aid in selecting small targets in a high resolution display.

When the screen is touched, a zoom window boundary is created approximately 3 inches around the initial touch point. A zoomed-in view (2x zoom) doubles the actual size of the display inside the zoom window boundary. Moving the finger 2 inches to the right moves the image inside the zoom window only 1 inch. This provides the necessary resolution for selecting targets in LCN displays set at 1/4 screen.



Continued on next page

Zooming touchscreen , continued



The proper method of using the zoom touchscreen is to place your finger on (or as close to) the desired target as possible. This is to reduce the amount of finger movement necessary allowing selection of targets close to the screen border. It is important to watch the zoomed view, as the 2:1 ratio of finger to image movement is initially confusing.

3.13 Configuring and Using Dual Screens

Overview

The Dual CRT function of the UXS release 200 software allows for two CRTs to be controlled by one set of UXS electronics. When the dual screen feature is selected for the UXS software, it can be configured to be in an over-under configuration or in a side-by-side configuration. When in the over-under configuration, screen 0 is located on the bottom with screen 1 being on top. When in the side-by-side configuration, screen 0 is located on the left and screen 1 is located on the right when facing the CRTs.

Input devices

When using the Dual CRT function of UXS release 200, a single mouse/trackball and set of keyboards are used for interaction with the system on either screen. A Motif Window Manager (mwm) menu selection can also be configured to "hop" the cursor between screens.

Touchscreen

The Dual CRT function of UXS release 200 allows for a touchscreen to be connected to screen 0. There is no hardware or software support to allow for connection of a touchscreen to screen 1.

Limitations

When using the Dual-CRT function of UXS release 200, the native LCN window can only be displayed on screen 0. All other applications may be displayed on either screen 0 or screen 1.

Configuration file setup

Three files are included in the /usr/lib/X11 directory for the configuration of Dual CRT functionality. They are:

- *usxserverrc.OnlyOneScreen* (for single crt stations)
- *usxserverrc.OverAndUnder* (for vertically oriented screens)
- *usxserverrc.SideBySide* (for horizontally oriented screens)

One of these files **must** be used and linked to the file name "*usxserverrc*" as part of the system startup configuration.

Example:

```
ln  -s  usxserverrc.OverAndUnder  usxserverrc
```

Required access level

The procedures must be performed while logged in as "engineer." The coprocessor (root) password is required.

WARNING

Take care when editing this file. If you make an error when editing file, it may stop the X-server from running (when you log out). In this case, the login banner will not be displayed. Without the login banner, you will not be able to login to the Universal StationX to correct your mistake. To correct your mistake, you will have to login from a remote device, or connect a console terminal to the WSI2 I/O board.

Continued on next page

Link usxserverrc to the appropriate screen configuration file

Perform the following steps to configure the system (X server) for the appropriate screen configuration:

Step	Action
1	Select `System Menu->Configuration->System Terminal` from the Workspace Menu.
2	Enter the coprocessor (root) password and press <RETURN>. Note: Only <RETURN> is necessary on a new station.
3	From the shell prompt, enter `cd /usr/lib/X11` and press <RETURN>.
4	Unlink usxserverrc from the file to which it is currently linked by entering `unlink usxserverrc` and pressing <RETURN>.

5	From the shell prompt, use the link command to link usxserverrc to the appropriate screen configuration file. Use one of the three commands that follow:
	
	`ln -s usxserverrc.OnlyOneScreen usxserverrc`
	
	`ln -s usxserverrc.OverAndUnder usxserverrc`
	
	`ln -s usxserverrc.SideBySide usxserverrc`

Setup Motif for multiple screens

Perform the following steps to configure the Motif window manager for multiple screens.

Step	Action
1	Edit `/usr/lib/X11/system.Xdefaults` to change (if necessary) the following resource to be setup as true: Mwm*multiScreen: true The following commands can be used to edit the file: Note: Unless specified, do NOT press <RETURN>. a. `vi system.Xdefaults` and press <RETURN>. b. `/multi` and press <RETURN>. c. `W` d. `cw` e. `true` f. <ESC> g. `:wq!` and press <RETURN>. Note: You must logout and login to make your screen configuration effective.
2	Enter `exit` and press <RETURN>.

Continued on next page

Command line use

To display a window on the second screen you must use the ”-display” option when invoking the application. For example:

```
xclock -display unix:0.1 <RETURN>
```

This will start the application “xclock” on the second screen (screen 1). If you use “-display unix:0.0”, the application will be displayed on the first screen (screen 0).

Refer the Hewlett-Packard manual “*Using the X Window System*” for more detailed information on X Window usage.

.mwmrc file use

You can add “-display unix:0.1” to the f.exec definition for the Motif menu items.

Default as screen 0:

```
"Calculator"f.exec "xcalc -geom 220x280-160+4 -fn
9x15 &"
```

With -display added to go to screen 1:

```
"Calculator"f.exec "xcalc -display unix:0.1 -geom
220x280-160+4 -fn 9x15 &"
```

Note

If an application is started from a Motif menu and there is no definition for the display to use, the application will start up on the screen from which it was invoked.

Section 4 – Universal Station^{X} Operations

4.1 Power-On (Procedure)

Apply power

Apply power using the following steps:

Step	Action
1	Place the station circuit breaker in the ON position.
2	Open the rear access door to gain access to the 5-slot module.
3	Apply power to the station using the power switch on the 5-slot module faceplate.
4	Observe the K2LCN board LEDs during the power on self-test. If no errors are detected, the appropriate LCN node address is displayed.
5	If the appropriate LCN node address is displayed Proceed with Step 6. If another number is displayed Record the error number for maintenance personnel to assist in correcting the fault. If the banner does appear within 5 minutes Proceed with Step 8 to shut down the coprocessor. If the Login banner has not appeared Proceed with Step 11.
6	The Login banner should appear within 5 minutes.
7	If the Login banner does appear Proceed to subsection 4.2, *Accessing Coprocessor Functions.* If the Login banner has not appeared Proceed with Step 11.
8	Position the cursor in the Login box and type *username* <RETURN> Note: The user must be authorized to shut down the WSI.
9	Position the cursor in the Password box and type *password* <RETURN> Note: Replace *password* with your password.

4.2 Accessing Universal Station^{X} Coprocessor Functions (Procedure)

Coprocessor access banner

After power ON (3 to 5 minutes) the Universal Station^{X} will display a banner on the lower portion of the screen.

This banner allows access to:

- X windows environment
- Shutdown of the coprocessor
- Universal Station^{X} Native Mode operation.

These items are user and password restricted to maintain security and restrict access to the coprocessor or LAN environment.

Using the access banner

Using the touchscreen:

Step	Action
1	Touch the `Login` field.
2	Type your *`username`* `<RETURN>`.
3	Type your *`password.`*
4	To Login: Press `<RETURN>` To Shutdown the Coprocessor Touch the `Shutdown WSI` target and select it with the space bar. To revert to Standard Universal Station Operation Touch the `Native Mode` target and select it with the space bar.

Using the mouse or trackball:

Step	Action
1	Select the Login field by placing the cursor over the field.
2	Type your *`username`* `<RETURN>`.
3	Type your *`password.`*
4	To Login Press `<RETURN>` To Shutdown the Coprocessor Select the `Shutdown WSI` target. To revert to Standard Universal Station Operation Select the `Native Mode` target.

4.3 Loading a Personality to the LCN Processor

Capabilities

The Universal Personality has been encapsulated in a "Windows environment" to form the UNPX Personality stored on the coprocessor hard drive. This integration enables the Universal Station^X to function as either a Universal Station^X or a standard TDC 3000^X Universal Station.

The X window capabilities are available only when functioning as a Universal Station^X. As a Universal Station^X, the presentation of all displays will be controlled by the X windows/Motif Window Manager to provide the addition of such items as title bar, zoom box, and scroll bars.

Hardware tests

A fully operational Universal Station^X system can use the UNPX personality. When power is applied, the system performs a series of internal self-tests. These tests check the presence and condition of both the TDC and coprocessor hardware. The results determine the loading action available when <Load> is pressed.

If test result is ...	then loading action available is ...
TDC and coprocessor hardware OK	UNPX personality from hard drive or UNP, ENG, or OPR from History Module
TDC hardware OK/coprocessor test failure	UNP, ENG, or OPR from History Module or Removable Media
TDC and coprocessor hardware failure	No loading performed

Loading the personality

The Universal Station^X may be loaded from several sources:

- History Module
- Removable Media (cartridge or floppy)
- Internal coprocessor hard drive

The Universal Station^X can be loaded from other stations (Universal Station^X or US) on the LCN. However, when loaded locally, the hardware tests will control the appropriate prompt. For example, failure of the coprocessor will inhibit the load prompt from displaying the appropriate choice (W).

There are four personalities available to be loaded into the Universal Station^X. They are: OPR, ENG, UNP, UNPX. The first three are available from the History Module or removable media, the last (UNPX) can be loaded only from the coprocessor. To get full Universal Station^X functionality, the LCN processor must be loaded with the UNPX personality. This allows data (point.parameter) to be transferred from the "LCN side" to the "UNIX side". Logging into a windowing environment is available regardless of what LCN personality is loaded.

Continued on next page

ATTENTION

Touch screen functionality is not available during the load of the LCN processor.

ATTENTION

If you are upgrading from a K2LCN to a K4LCN, you need to perform the following commands in order for the loading of the personality from "W" to complete successfully. These commands should be done prior to shutting down the system for the K2LCN to K4LCN board swap, or if this has already been down, prior to pressing the LOAD key. These commands can only be executed by "root".

Step	Action
1	Make sure you are in the appropriate directory. `cd /etc/opt/TDC_Open/common`
2	Remove the old personality file. `rm personality.config`
3	Establish a symbolic link from the new personality file(personality.config.usxk) to the active personality file(personality.config). The format for the command is: `ln -s` *`filename linkname`* Example: `ln -s /opt/TDC_Open/common/newconfig/personality.config.usxk personality.config`

Load the LCN processor

Use the following procedure to load the LCN processor. The touch screen is not active during this process and should not be used.

Step	Action
1	If the access banner is on the screen Press <Load> on the operator keyboard. If you are already logged in Select the Native LCN Window, press <Load> on the operator keyboard.
2	At the prompt `W, N, 1, 2, 3, 4, X` type **`W,Press <Enter>`**
3	The load modules will be displayed as the LCN processor is loaded.
4	At the prompt `NCF? N,1,2,3,4,X?` type **`N, Press <Enter>`**
5	The station will complete the load process in 1 to 2 minutes.

4.4 Printing from the Universal Station^{X}

Two printers

The Universal Station^{X} has two printer connections.

The standard LCN printer connection provided to print LCN displays and reports is configured as a standard Universal Station printer. This printer is functional whenever the station is in operation. The LCN printer can be connected directly to a Universal Station^{X} or assigned from another station in the console (US or Universal Station^{X}). Standard Universal Station^{X} operating procedures apply to the printing of reports, alarm summaries, configuration data, print displays, etc.

The coprocessor has a printer connection provided to print window dumps of X Window applications. This printer is available only when the user is logged into the coprocessor; however, printing will still continue after logging out. This printer will not print the various Universal Station Printer functions of alarm summaries, reports, etc. The coprocessor printer can be directly attached to this Universal Station^{X} or shared across the LAN from another Universal Station^{X}.

Printing the LCN window

The LCN processor must be active to print. The user can be logged into the coprocessor, but it is not required to print LCN data.

To print the LCN window on the LCN printer, use the following:

Step	Action
1	If logged into the coprocessor Select the LCN window.
2	Press the Print Display key.

Printing X Windows

When the user is logged into the coprocessor, the coprocessor printer can be used to print any window contents. To print to a shared printer, the coprocessor of the Universal Station^{X} sharing the printer must be active (login banner displayed or a user logged in).

To print any X Window on the coprocessor printer, use the following:

Step	Action
1	Select `Window Print` from the workspace menu. Note: The cursor will change to a cross-hair pointer.
2	Position the cursor in the appropriate window to print.
3	Click the select button.

4.5 Failsafe Operation

Failsafe fall back

The Universal Station^X is designed to be failsafe. Should an error occur in the coprocessor, the Universal Station^X reverts to a standard TDC Universal Station^X hardware/software configuration. If this should occur, the LCN display will revert to full screen and the message `Coprocessor has failed to start, Call maintenance` will be displayed in place of the Login banner.

When functioning as a standard Universal Station, you will be unable to access LAN (Local Area Network) resident applications.

Native mode

The Universal Station^X can be configured as a standard Universal Station by selecting Native Mode from the Login banner. To enter Native Mode, the user must be authorized using the procedures covered in *IWSM Configuration, Universal Station^X System Administration Manual.*

Manual shutdown

The coprocessor can be shut down after power-on using the `Shutdown WSI` target located on the login prompt. This action can also be performed by logging out of the open system session and waiting for the login prompt to appear.

To invoke the failsafe condition:

- At the login prompt, enter your login name/password and select the `Shutdown WSI` target.

Shutdown restriction

To shutdown the WSI, the user must be authorized using the procedures covered in "IWSM Configuration," *Universal Station^X System Administration Manual.*

Restarting after shutdown

After the coprocessor has been shutdown, a status message will appear in the Login banner area. The message is:
`The coprocessor is idle, select the box to reset.`

There is a red box to the right of the status message. Using the mouse, click on the box to reset the coprocessor.

4.6 Universal Station^{X} Display Changes

TDC display changes

Several changes are apparent when operating from the Universal Station^{X}. Some changes are due to TDC software Release 430, and are not Universal Station^{X} inherent.

- Console and Node Status Displays
  A field for the personality type has been added. The node status is not overwritten by personality type when status is `OK`.

- Console Status Display
  Ability to choose the personality which is loaded to a Universal Station^{X} has been added. The `autoload_net` target determines the default personality to load by testing the hardware.

- Real Time Journal Changes
  The System Maintenance Journal is updated with additional messages to support the new TPDG hardware. The System Status Change Journal will be updated with a new message—State Change Notification (SCN) to establish the personality subtype in a node.

4.7 X Window Operation

Background

The Universal Station^X is configured to launch the X window environment upon login. Once the system has initialized, the primary LCN display window appears. At this time you can start an X window session with LAN resident computing resources.

Prerequisites

The LAN computing resources must be configured to allow access from the Universal Station^X. In general terms, the following information is required by the LAN hardware and/or application software:

- Universal Station^X internet address
- System name
- User name/password for its login

Choosing emulators and protocols

To access LAN-resident applications you will use a communication protocol (either TCP/IP or DECnet), and a terminal emulator (either xterm or vt340). The DECnet protocol and the vt340 terminal emulator are optional packages on the Universal Station^X.

Terminal Emulator	Protocol	Menu Selection	Command(s)
vt102 (xterm)	Telnet TCP/IP	Telnet	open *hostname*
vt102 (xterm)	DECnet	Telnet	! sethost *hostname*
vt340	Telnet TCP/IP	DECnet	telnet *hostname*
vt340	DECnet	DECnet	sethost *hostname*

Procedure

LAN resident applications may not be Honeywell supplied; therefore, these access procedures are general in nature.

Step	Action
1	Login to the Universal Station^X.
2	Determine the appropriate terminal emulator and protocol.
3	Make the appropriate menu selection (to select the desired terminal emulator).
4	Enter the appropriate command(s) (to initiate a login sequence to the remote LAN device using the desired protocol).
5	Log in to the remote LAN device.
6	Enter the appropriate command(s) to launch the application in the remote LAN device.

4.8 System Security

TDC isolated

The TDC operating system is isolated and inaccessible to the coprocessor. This eliminates the possibility of misuse/tampering with the process control system by unauthorized personnel who may gain access to the Local Area Network.

The full implementation of HP-UX version 9.0 security features are provided. System security is controlled through the configuration and login utilities.

Configuration

Configuration parameters ensure only designated computer systems will be able to login to the Universal Station^{X}. This allows multiple computer systems to exchange data transparently while ensuring data integrity through limited authorized access.

The coprocessor password should be changed and recorded during initial configuration. This password is the highest level of system access and system security must be enforced by good password discipline.

Login

A password controlled login utility protects against unauthorized Universal Station^{X} coprocessor usage. This utility configures access dependent on the user-login identification. The system customizes the workspace menu as appropriate to the access level of the user. Access to additional items can be provided to individual users by modifying the `.mwmrc` file in the users home directory.

Access keylock versus coprocessor login

This login utility performs a function similar to the Access Level Keylock on the standard Universal Station; however, the coprocessor login is entirely independent from the keylock mechanism. System security may be compromised if the user leaves the immediate area without logging out of the coprocessor environment.

It is suggested to remove the access level key and logout of the coprocessor environment to ensure against unauthorized access to the LCN system.

Emphasize security

Users should be reminded of the potential security risks. A periodic review of the system security, security procedures, and system users will help to raise awareness. Remind users that the password is their computer signature. Emphasize the importance of periodically changing this password.

Continued on next page

Coprocessor access by group

The restrictions placed upon access levels are:

- Operator—able to configure their own environment, use telnet, and the optional VT340 DECnet communications
- Supervisor—able to configure their own environment, use telnet, and the optional VT340 DECnet communications
- Engineer—able to configure their own environment, use telnet, the optional VT340 S/W, coprocessor configuration (requires coprocessor password), and perform periodic backups of the coprocessor file system
- View Only—able to configure their own environment.

Note: User-configurable items are: X Hosts, allowPartiallyObscured Native Window, and Keyboard Focus Policy.

Remote user configuration

To configure the remote user coprocessor security features, review the procedures, gather the required information, and perform all tasks in Section 5, *"Configure Security for Remote Users"*.

4.9 Shut Down the Universal Station^{X}

Background

To prevent damage to the UNIX filesystem, the station must be shut down using a special sequence. The shutdown procedure must be followed before power is removed from the station. Only those users configured in IWSM configuration are allowed to shutdown the coprocessor.

Failure to perform the proper shutdown procedure could result in damage to the coprocessor filesystem. The next time the station is powered up, it may take up to 5 minutes to perform automatic repairs of the coprocessor filesystem. **Use caution in cycling power on and off.** If this is done while a repair is being made, the filesystem may be left in an unrepairable state. This would require reloading the filesystem backup from tape and possibly require reformatting or replacement of the hard drive.

Procedure

If you are currently logged into the Universal Station^{X}, use the following procedure:

Step	Action
1	Select `Logout` from the root menu.
2	At the prompt `Quit Mwm?`, select the `OK` target.
3	When login menu appears, enter your username and password. Note: Do not press `<RETURN>` after entering your password.
4	Select `SHUTDOWN WSI` target.
5	Press the `CONSOLE STATUS` key.
6	Select the node number of the appropriate Universal Station^{X}.
7	Select the `SHUTDOWN` target.
8	Press `ENTER` to confirm the shutdown request.

If no user is logged into the Universal Station^{X}, use the following procedure:

Step	Action
1	When login menu appears, enter your username and password. Note: Do not press `<RETURN>` after entering your password.
2	Select the `SHUTDOWN WSI` target from the login menu.
3	Press the `CONSOLE STATUS` key.
4	Select the node number of the appropriate Universal Station^{X}.
5	Select the `SHUTDOWN` target.
6	Press `ENTER` to confirm the shutdown request.

4.10 Universal Station^{X} Restrictions

Shutdown procedure

Because the coprocessor operating system is incorporated into the Universal Station^{X}, the station must be turned off using a special sequence. The shutdown procedure must be followed any time power is to be removed from the station.

Failure to perform the proper shutdown procedure could result in damage to the coprocessor filesystem. The next time the station is powered up it may take 5 minutes to perform automatic repairs to the coprocessor filesystem. **Use caution in cycling power on and off.** If this is done while a repair is being made, the filesystem may be left in a unrepairable state. This would require reloading the filesystem backup from tape, and possibly require reformatting or replacement of the hard drive.

Coprocessor red box target

Under most circumstances the coprocessor “red box” target should not be selected as the system is in the process of a self reset and the red box will go away on its own. Selecting the red box prematurely can cause UNIX related file problems. If you feel the red box target has been displayed for an unusually long time, wait a minimum of 10 total minutes before selecting it for a system reset.

4.11 Technical Assistance

If you need assistance	If you need technical assistance, contact your local Honeywell Service Organization, as explained in the following paragraphs.
International customers	Outside of the United States, contact your local Honeywell Service Organization. If you are not sure of the location or telephone number, call your Honeywell representative for information.
Customers inside the United States	Within the United States, call the Technical Assistance Center (TAC) at the toll free number 1-800-822-7673.
Arizona customers	Within Arizona, the local number for TAC is 602-863-5558.
Services provided	Calls to TAC are answered by a dispatcher from 7:00 A.M. to 5:00 P.M., Mountain Standard Time (6:00 A.M. to 4:00 P.M. when daylight saving time is in effect). Outside of these hours, emergency calls are those which affect your ability to control or view a process will be received by an answering service, and returned within one hour. TAC maintains its own TDC 3000^X system, and frequently can duplicate problems on this equipment.
Time saving tip	It is a good idea to make specific notes about the problem before making the call. This will help to reduce delays and expedite answers.

Section 5 – Coprocessor Configuration Tasks

5.1 Configuration Overview

LCN requirements

The Universal Station^X requires TDC 3000^X software Release 430. The Universal Station^X does not place any new requirements on LCN software or hardware. Approach the Universal Station^X planning and implementation tasks as a standard Universal Station. All the LCN conventions for Universal Station implementation apply to the Universal Station^X such as: node addressing, HM volume allotments, and NCF changes.

The Universal Station^X uses all LCN schematics/overlays without any data conversion. The Universal Station and Universal Station^X are equivalents as TDC 3000^X Process Control Computers. The Universal Station^X can load the standard personalities (UNP, ENG, and OPR) from the History Module or Removable Media, and also can load the UNPX personality from the coprocessor hard drive.

When loading the UNPX from the coprocessor hard drive, the button overlays, abstracts, schematics, and NCF are all read from the HM. The coprocessor hard drive stores only the QLTs and UNPX files for the K2LCN processor. The additional files cannot be stored on the coprocessor hard drive and must be loaded from the HM or Removable Media.

Currently, the UNPX personality is the functional equivalent of the UNP stored on the History Module; however, pending UNPX enhancements, it may provide functionality to the Universal Station^X that would not be available at the US.

NCF changes

Several fields were added to the NCF (Network Configuration File) to support Release 430. The NCF must be modified to reflect the Universal Station^X installation. This is done by following the standard NCF modification instructions available in the R430 Release Guide.

The NCF must reflect that a Universal Station^X is present at the LCN node address pinned on your Universal Station^X. LCN node configuration, and console assignment must be completed prior to applying power to the station.

The NCF has the following changes: new personality type—Universal Station^X, new board type—TPDG, new board type—WSI2.

The SMCC (System Maintenance Control Center) has the following change: new board type—TPDG.

Continued on next page

Coprocessor configuration

The major difference when compared to a Universal Station is the Universal Station^{X}'s ability to display non-TDC 3000^{X} applications, generated by LAN (Local Area Network - Ethernet) computing resources. The TPDG board works in tandem with the coprocessor, providing the TDC display as an X client, which then is displayed through the X window/Motif environment.

There are several attributes new to the TDC display, which are necessitated by viewing in the X window environment.

Installation complete?

This procedure assumes the Universal Station^{X} equipment to be properly installed and ready to apply power.

The following items must be completed, prior to the initial power on/login:

- Uncrating/positioning of the Universal Station^{X} equipment.
- Ground connections (power, cabinet, and Master Reference Ground)
- LCN node address pinning
- LCN cable connections
- LAN interface cable and transceiver attached to the Ethernet network
- Universal Station^{X} keyboard connection
- Universal Station^{X} mouse/trackball connection
- LCN printer connection (optional equipment)
- Laser printer connection (optional equipment)
- Visual inspection of all boards/cables to ensure proper seating
- Power Connection

Continued on next page

Make a copy

You will find it convenient to make a copy of the following lists for reference when performing the configuration procedures.

Required information

The information required to complete this process is listed below.

Desired hostname for the Universal Station^{X} _____
Desired IP address _____
Time/Date/Timezone _____
Multiple network routers (Yes/No)
(Single router only) IP address of router _____

Remote computer system information can be input in one of two ways:

1) Hostname and IP address for each when entered manually.

hostname	###.###.###.###

2) Source of existing `/etc/hosts` file when using ftp.
   IP address of source _____
   Login account at source _____
   Password for account _____

Coprocessor laser printer? (Local/Remote/Unused)
   If Remote - Network information needed
      Hostname of print server _____
      IP address of print server _____
      Printer name _____

Continued on next page

Required information, continued

Coprocessor user information

Username/Access Group	*johndoe/Engineer*
Shutdown WSI access	*username*
Native mode access	*username*
X hosts to be accessed	*hostnames*

Continued on next page

Required information, continued

Desired coprocessor password _____

Note: This password is extremely important. It is the key to your coprocessor security. Secure this document and control its access after completing the initial configuration.

Configuration checklist

Use this checklist to plan and record the various configuration tasks.

Step	Initials	Step performed	Subsection	Approx. time
1		Ensure installation complete? _____ Uncrating/positioning of the Universal Station^X equipment. _____ Ground connections (power, cabinet, and Master Reference Ground) _____ LCN node address pinning _____ LCN cable connections _____ LAN interface cable and transceiver attached to the Ethernet network _____ Universal Station^X keyboard connection _____ Universal Station^X mouse/trackball connection _____ LCN printer connection (optional equipment) _____ Laser printer connection (optional equipment) _____ Visual inspection of all boards/cables to ensure proper seating _____ Power connection _____ Information prepared	N/A	1 hour
2		Initial power on completed?	5.2	3-5 minutes
3		Initial login completed?	5.3	1 minute
4		Coprocessor password configured?	5.4	5 minutes
5		Time/date/timezone entered?	5.5	2 minutes

Continued on next page

Configuration checklist, continued

Step	Initials	Step performed	Subsection	Approx. time
6		Station coprocessor hostname and Internet Protocol address entered?	5.6	5 minutes
7		Remote hostnames and addresses entered?	5.7	4-10 minutes
8		Network routing configured?	5.8	4-10 minutes
9		Coprocessor printers configured?	5.10	15-20 minutes
10		Shutdown WSI access configured?	5.11	2-30 minutes
11		Native mode access configured?	5.11	2-30 minutes

5.2 Initial Power-On

Apply power

Apply power using the following steps:

Step	Action
1	Open front access door to gain access to the circuit breaker.
2	Place the circuit breaker in the ON position.
3	Open the rear access door to gain access to the 5-slot module.
4	Apply power to the station, using the power switch on the 5-slot module face plate.
5	Observe the K2LCN board LEDs during the power on self-test. If no errors are detected, the appropriate LCN node address is displayed.
6	If the appropriate LCN node address is displayed Proceed with Step 7. If another number is displayed Record the error number and contact maintenance personnel to correct the fault. Proceed with Step 9.
7	Wait 5 minutes for the Login banner to appear.
8	If the Login banner does appear Proceed with subsection 5.3*, Initial Login.* If the Login banner has not appeared Proceed with Step 9.
9	Using the power switch located on the 5-slot module faceplate, remove power from the 5-slot module.
10	Set the station circuit breaker to the OFF position. Contact maintenance to correct the fault.

5.3 Initial Login

Preconfigured users

The Universal Station^X coprocessor environment is preconfigured with one user in each of the four groups. The initial login passwords of the preconfigured users should be changed to ensure security.

The steps for changing the preconfigured user passwords are presented following the initial configuration procedures covered in this section.

Coprocessor (root) password

The coprocessor itself must be password protected; however, to ease installation it is shipped without a password. During initial installation procedures, the coprocessor has no password. When asked to type the password, press `<RETURN>`.

Only users with Engineer Access rights have configuration access to the coprocessor environment. Prior to obtaining access, however, the user must provide the coprocessor (root) password.

The steps for changing the coprocessor (root) password is presented following the initial configuration procedures.

Initial login passwords

The preconfigured user names and passwords are as shown:

User Name	Password	Coprocessor Access
`engineer`	`engineer`	Engineer Access
`operator`	`operator`	Operator Access
`supervisor`	`supervisor`	Supervisor Access
`viewOnly`	`viewOnly`	View-Only Access

Login

Login as the user “engineer,” using the steps below:

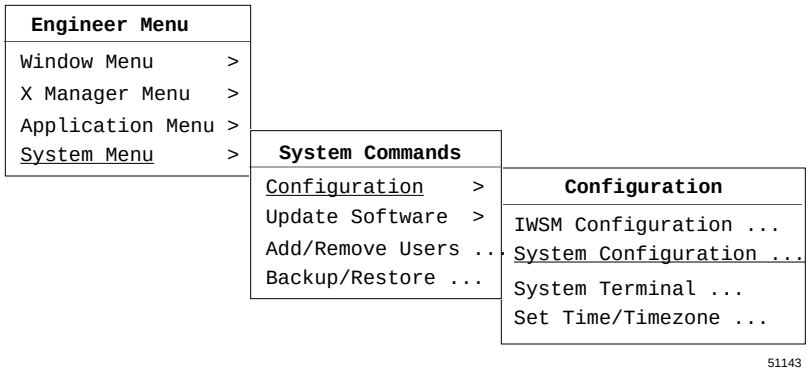
Step	Action
1	Position the cursor in the Login box and type `engineer <RETURN>` Note: The password box will be selected. Do not move the mouse/trackball. If the cursor is moved, it will be necessary to reposition the cursor over the password box.
2	Type the password `engineer <RETURN>`.

5.4 Change Coprocessor (root) Password

Required access level

The procedures must be performed while logged in as “engineer.” The coprocessor (root) password is required.

Menu appearance



Change the coprocessor (root) password

Changing the coprocessor (root) password to ensure security.

Step	Action
1	Select `System Configuration` from the workspace menu.
2	Type the coprocessor (root) password and <RETURN> at the prompt. Note: Only <RETURN> is necessary on a new station.
3	Using the arrow keys and <RETURN> to make selections, Select `Users and Groups`<RETURN>.
4	Select `Users`<RETURN>.
5	Select the line of the display containing the login name of “root” with the left mouse button.
6	Select `Actions` at the top of the window.
7	Select `Modify`. Note: You will be prompted to confirm this action. Select `Yes`.
8	Select the `Change Password` target located in the lower left corner of the window.
9	Enter the new password<RETURN>.
10	Re-enter the new password<RETURN>.
11	Select `Ok`.

Continued on next page

Change the coprocessor (root) password, continued

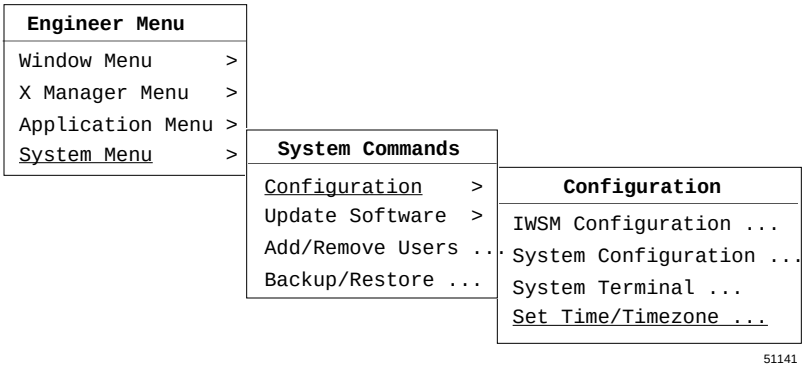
12	Select `Ok`.
13	Select `File` from the top of the Users and Groups window.
14	Select `Exit`.
15	Select `Exit Sam` target.

5.5 Configure Coprocessor Time and Timezone

Required access level

The procedures must be performed while logged in as “engineer.” The coprocessor (root) password is required.

Menu appearance



Set time/timezone

Set the time, date, and timezone using the following procedure.

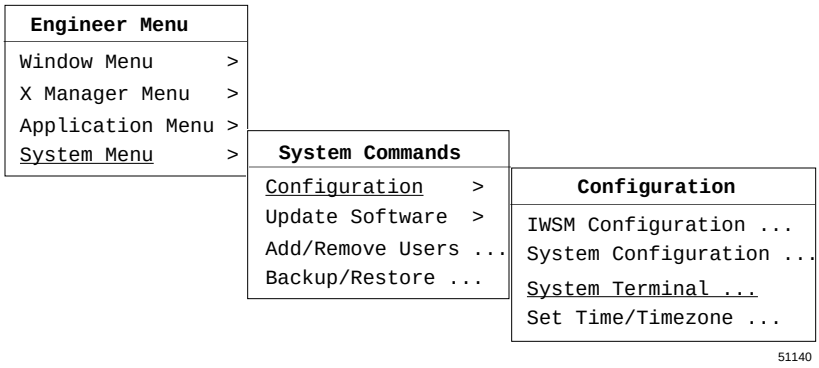
Step	Action
1	Select `Set Time/Timezone` from the System Configuration menu.
2	Type the coprocessor (root) password and `<RETURN>` at the prompt.
3	Respond to the prompts using the appropriate keyboard entry and `<RETURN>` to enter values.
4	It is a good idea to reboot the system after entering date and time. This will ensure that the system uses the correct time and date for time dependent functions such as cron, and file time stamps. Note: If you are setting the time as part of an initial coprocessor setup, you can defer the reboot process until after the coprocessor node name and IP address procedure.

5.6 Configure Coprocessor Node Name and IP Address

Required access level

The procedures must be performed while logged in as “engineer.” The coprocessor (root) password is required.

Menu appearance



Procedure Overview

A special utility called “set_parms” is used on a U^{X}S station to set up the coprocessor host name and the internet protocol (IP) address. Be prepared to supply these two entries. The coprocessor must be rebooted to enable the change.

Procedure instructions

Step	Action
1	Select `System Menu->Configuration->System Terminal` from the Workspace Menu.
2	Enter the coprocessor (root) password <RETURN>. Note: Only <RETURN> is necessary on a new station.
3	At the prompt enter `/etc/set_parms hostname`<RETURN>. Note: Enter the characters h o s t n a m e. Do not enter the hostname of your station here. The set_parms program will prompt you to enter the hostname of your station.
4	Respond to the prompts using appropriate keyboard entries for your configuration. Use <RETURN> to enter values. Note: When asked if you want to reboot now, enter n and press <RETURN>. You will reboot the station later in this procedure.
5	After returning the the system terminal window prompt, you must now configure the station coprocessor hostname for DAT tape backups. Enter `cd /usr/lib/X11`<RETURN>.

Continued on next page

5.6 Configure Coprocessor Node Name and IP Address,

Continued

Procedure instructions, continued

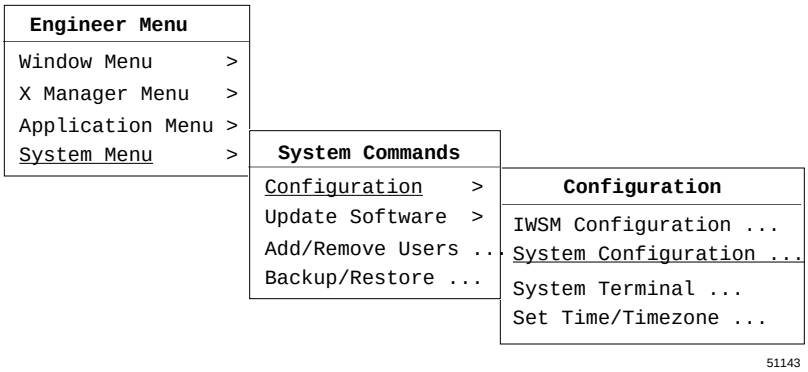
Step	Action
6	Edit the `system.Xdefaults` file. Enter `vi system.Xdefaults<RETURN>.`
7	Search the file for the first instance of <host. Enter `/<host <RETURN>.`
8	Change <host name> to the actual hostname of your station. Enter `:s/<host name>/{coprocessor name}<RETURN>.` Note: Substitute `{coprocessor name}` with the actual name of your station as entered earlier in this procedure. Do not include the curly brackets in your command. Example: `:s/<host name>/trn2 <RETURN>.`
9	Un-comment this line. Position the cursor on the `!` at the beginning of the line. Type `x` to remove it.
10	Save the file and quit the editor. Enter `:wq!<RETURN>.`
11	Enter `reboot -q<RETURN>` Note: This will cause the coprocessor to reboot . This enables the new hostname and IP address. Do not touch the red target that appears during reboot.

5.7 Configure Coprocessor LAN Information

Required access level

The procedures must be performed while logged in as “engineer.” The coprocessor (root) password is required.

Menu appearance



Enter LAN information

Setup remote hostnames, and their TCP/IP addresses using the following procedure.

Step	Action
1	Select `System Configuration` from the workspace menu.
2	Type the coprocessor (root) password and <RETURN> at the prompt. Note: Only <RETURN> is necessary on a new station.
3	Select `Networking/Communications` <RETURN>.
4	Use the arrow keys and <RETURN> to make selections. Select `System to System Connectivity` <RETURN>.
5	Select `Internet Connectivity` <RETURN>.
6	Using the mouse pointer select `Actions` from the top of the window.
7	Select `Add`.
8	Enter the IP address of the remote system and press <RETURN>.
9	Enter the remote system name<RETURN>. Note: Hostnames can consist of a maximum of 64 alphanumeric, underscore, and period characters.
10	Select `Ok`.
11	Repeat steps 7-10 as necessary.

Continued on next page

Enter LAN information, continued

Step	Action
12	Select `File` from the top of the window.
13	Select `Exit`.
14	Select `Exit SAM`.

5.8 Configure LAN Routing Information

Routing choices

The Universal Station^X coprocessor may be configured for either static or dynamic routing of LAN information. The Universal Station^X is configured by default for static routing. Typically the routing configuration will be supplied by a network support individual responsible for the Management of the LAN.

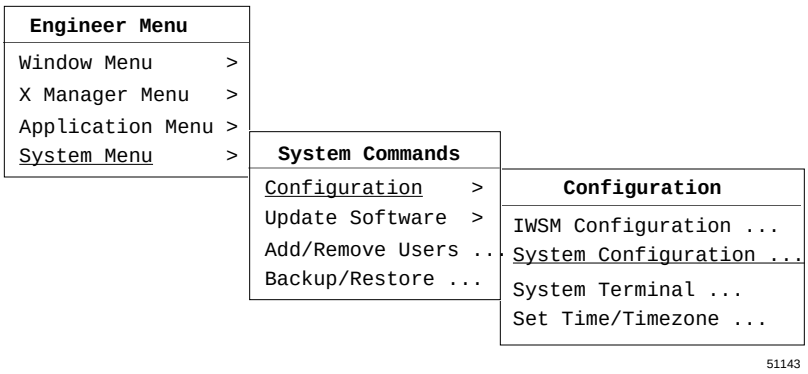
If the LAN has no routers or only one router, the gated daemon should not be used and the hostname and TCP/IP address for the default gateway should be configured.

If the LAN uses multiple routers and hosts which are configured with subnet masks, it will be necessary to configure and use the gated daemon. The coprocessor will interrogate the routers and use the routers dynamic routing table information. Configuring the gated daemon process is covered in the Hewlett Packard document *"Installing and Administering ARPA Services."*

Required access level

The procedures must be performed while logged in as "engineer." The coprocessor (root) password is required.

Menu appearance



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Setup of static LAN routing

The default gateway can be set using the following procedure:

Note: You must complete the "Configure Coprocessor Node Name and IP Address" procedure before you perform this procedure.	
Step	**Action**
1	Select `System Menu->Configuration->System Configuration` from the workspace menu.
2	Enter the coprocessor (root) password and press `<RETURN>`. Note: Only `<RETURN>` is necessary on a new station.
3	Note: Use the mouse/trackball (double click) or the arrow keys and `<RETURN>` to make selections. Select `Networking/Communications.`
4	Select `System to System Connectivity.`
5	Select `Internet Connectivity.`
6	Using the mouse/trackball pointer select `Actions->Add` from the top of the window.
7	Enter the IP address of the default gateway node.
8	Enter the hostname of the default gateway node.
9	Select the `Ok` target.
10	Using the mouse/trackball pointer select `Actions->Specify Default Gateway` from the top of the window.
11	Enter the default gateway internet address.
12	Select the `Ok` target.
13	Using the mouse/trackball pointer select `File->Exit` from the top of the window.
14	Select the `Exit SAM` target.

5.9 Configure Security for Remote Users

Overview

The default configuration of your Release 200 system does not allow any remote users to connect to the station. The file inetd.sec, which is located in the /usr/adm directory, is used for this purpose. Refer the Hewlett-Packard manual titled *"Using ARPA Services"* for a detailed discussion of this file.

WARNING

The inetd.sec file may be overwritten during a coprocessor software update to the UXS system. The system administrator should verify the accuracy of this file as part of the upgrade process.

Configuration

The default state of the inetd.sec file is set to "deny" for all entries. The file should be modified using the HP-UX SAM utility to allow remote access for various system services.

Step	Action
1	Select `System Configuration` from the workspace menu.
2	Type the coprocessor (root) password and `<RETURN>` at the prompt. Note: Only `<RETURN>` is necessary on a new station.
3	Note: Use the mouse/trackball (double click) or the arrow keys and `<RETURN>` to make selections. Select `Networking/Communications`.
4	Select `Security`.
5	Select `Internet Service`.
6	Using the mouse/trackball pointer select `Actions->Modify All Services` from the top of the window. **WARNING** This enables ALL services for ALL devices anywhere on the network. This can be a security risk. Instead, you may want to consider: a. Select the service you wish to modify (enable). b. Select `Actions->`**`Modify`**. c. Select `Selected-Allowed`. d. Enter systems to be allowed to use this service. e. Select the `Add` button. e. Skip the next step
7	Select the `Allowed` button.
8	Select the `OK` button.
9	Using the mouse/trackball pointer select `File->Exit` from the top of the window.
10	Select `Exit SAM`.

5.10 Configure Coprocessor Printer (Network)

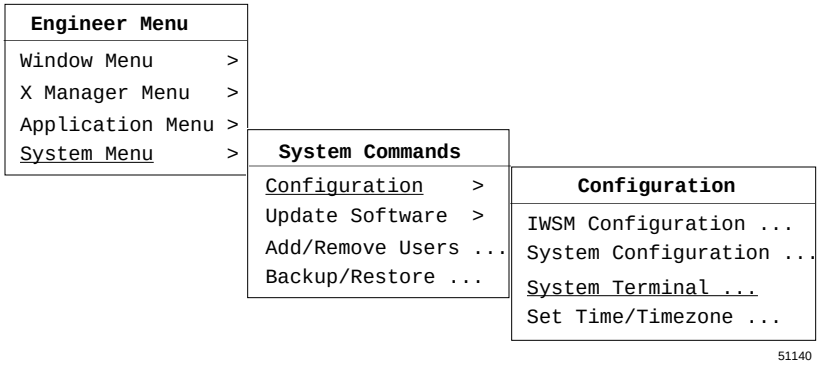
Local printer install

This procedure will configure a coprocessor network printer. The printer will be available to be configured on other Universal Station^{X} stations.

Required access level

The procedures must be performed while logged in as “engineer.” The coprocessor (root) password is required.

Menu appearance



Configure laser printer

Configure the coprocessor laser printer using the following procedure:

Step	Action
1	Select `System Menu ->Configuration ->System Terminal` from the workspace menu.
2	Enter the coprocessor (root) password and press `<RETURN>`.
3	Insert the Jet Admin Utility tape in the DAT drive.
4	Enter `cd /usr/lib` and press `<RETURN>`.

Continued on next page

Configure laser printer, continued

Step	Action
5	The procedure to load files from the tape depends on whether or not the UXS has a local DAT drive. If the UXS has a local DAT, follow procedure LOCAL, then continue with the next step. If the UXS does NOT have a local DAT, follow procedure REMOTE, then continue with the next step.
LOCAL	**If your tape is a tar format:** a. Enter `tar xv` and press <RETURN>. b. When the tape load is complete, enter `/usr/bin/hpnpinstall` and press <RETURN>. c. Enter `1` (Install JetAdmin) and press <RETURN>. d. Enter `Y` (to continue the Installation) and press <RETURN>. e. Press <RETURN> to accept the default directory for JetAdmin (/usr/lib). **If your tape is an update format:** a. Enter `/bin/ksh` and press <RETURN>. b. Enter `export UPDATETAPEMARKS=2` and press <RETURN>. c. Enter `/etc/update` and press <RETURN>. d. Use the arrow keys to select `Change Source or Destination` and press <RETURN>. e. Use the arrow keys to select `From Tape Device to Local System` and press <RETURN>. f. Check the following entries: major number: 54 select code: 0 bus address: 1 unit number: 0 volume number: 2 IF these are correct: Use the mouse/trackball to select `Done` at the bottom of the window. IF these are NOT correct: Position the cursor over the `n.` Enter `y.` Enter the numbers given earlier in this step. Use the mouse/trackball to select `Done` at the bottom of the window. Use the mouse/trackball to select `Done` at the bottom of the window (again). g. Use the arrow keys to select `Select All Filesets on the Source Media` and press <RETURN>. h Use the arrow keys to select `Start loading Now` and press <RETURN>. i. Enter `y.` j. When the tape load is complete, enter `exit` and press <RETURN>.

Continued on next page

Configure laser printer, continued

Step	Action
REMOTE	**If your tape is a tar format:** Note: Before performing this (remote/tar) procedure, you must have previously performed the local/tar procedure on another UXS. Through the remainder of this procedure, that other UXS will be referred to as "uxswithdat". When you perform this procedure, replace "uxswithdat" with the name of your UXS with the local DAT drive. a. Enter `ftp uxswithdat` and press <RETURN>. b. Enter the login name (use root) and password. c. Enter `cd /usr/lib` and press <RETURN>. d. Enter `get 700-90.tar` and press <RETURN>. e. Enter `cd /usr/bin` and press <RETURN>. f. Enter `lcd /usr/bin` and press <RETURN>. g. Enter `get hpnpinstall` and press <RETURN>. h. Enter `quit` and press <RETURN>. i. Enter `chmod 550 /usr/bin/hpnpinstall` and press <RETURN>. j. When the tape load is complete, enter `/usr/bin/hpnpinstall` and press <RETURN>. k. Enter `1` (Install JetAdmin) and press <RETURN>. l. Enter `Y` (to continue the Installation) and press <RETURN>. m. Press <RETURN> to accept the default directory for JetAdmin (/usr/lib). **If your tape is an update format:** Note: This procedure will refer to the UXS with the DAT drive as "uxswithdat". When you perform this procedure, replace "uxswithdat" with the name of your UXS with the local DAT drive. a. Set up uxswithdat to be a network distribution (netdist) server. To do this, follow the procedure "Preparing S/W Update Server (Server Only) in this manual. Use the Jet Admin Utility tape. b. Load the Jet Admin Utility software from the netdist server (uxswithdat) to the hard drive of this station. To do this, follow the procedure "Remote Coprocessor S/W Update" procedure in this manual.

Continued on next page

5.10 Configure Coprocessor Printer (Network), Continued

Configure laser printer, continued

Step	Action
6	Run the self test on the printer (Use the buttons on the printer's front panel) a. Press <ON LINE> (If required) to put the printer off-line. b. Press <MENU> repeatedly until "TEST MENU" appears on the printer panel. c. Press <ITEM> until "SELF TEST" appears on the printer panel. d. Press <ENTER>. e. Wait until the self test print is complete. f. Press <ON LINE> to put the printer on-line. Note: The LAN HW ADDRESS on this printout will be used later in this procedure.
7	Enter /usr/lib/hpnp/jetadmin and press <RETURN>.
8	Note: Steps 8-11 only need to be performed if you want this UXS to be a bootp server for the printer. You need to have at least one bootp server; you may have more than one. If you do not want this UXS to be a bootp server for the printer, skip to step 12. Add entry for bootp server: a. If the printer is powered on, turn it off. b. Enter 1 (configuration - Main Menu) and press <RETURN>. c. Enter 1 (create printer configuration in BOOTP/TFTP database - Configuration Menu) and press <RETURN>. d. Enter the printer's LAN hardware address: (ex: 0800094b53e5) and press <RETURN>. Note: Get this address from the printer self test you printed in a previous step. e. Enter the network printer name/IP name: (ex: lasernode) and press <RETURN>. f. If prompted, enter the IP address: (ex: 164.145.230.46) and press <RETURN>. If you get a message asking if you want to add your printer to /etc/hosts, enter y and press <RETURN>. g. Enter 0 (to configure the printer) and press <RETURN>.
9	Verify that the bootp server configures the printer: a. Turn the printer power on. b. Wait until the printer finishes the self test. c. At the UXS, press <RETURN> to continue.

Continued on next page

5.10 Configure Coprocessor Printer (Network), Continued

Configure laser printer, continued

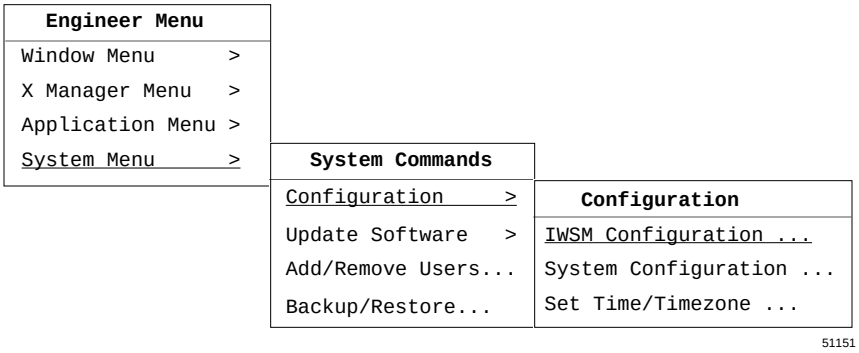
Step	Action
10	Test the printer by printing a file to it: a. Enter `Y` (to send test file(s) to this printer) and press `<RETURN>`. b. Enter `1` (text file) and press `<RETURN>`. c. Press `<RETURN>` to continue.
11	Get back to the Main Menu: a Enter `q` and press `<RETURN>`.
12	Add the printer (as the default printer) to the system: a. Enter `1` (configuration - Main Menu) and press `<RETURN>`. b. Enter `3` (add printer to local spooler - Configuration Menu) and press `<RETURN>`. c. Enter the printer host name: (ex: lasernode) and press `<RETURN>`. d. Enter `1` (LP destination (queue) name - Configurable Parameters List) and press `<RETURN>`. e. Enter the name of printer: (ex: lasernet) and press `<RETURN>`. Note: You may want to use the printer host name as the printer (peripheral) name. f. Enter `9` (default queue - Configurable Parameters List) and press `<RETURN>`. g. Enter `0` (to configure the printer) and press `<RETURN>`. h. Press `<RETURN>` to continue. i. Press `<RETURN>` to continue (again).
13	Exit jetadmin a. Enter `q` (Quit - Configuration Menu) and press `<RETURN>`. b. Enter `q` (Quit - Main Menu) and press `<RETURN>`.
14	Enter `/usr/lib/lpsched` and press `<RETURN>`.
15	Enter `exit` and press `<RETURN>`.
16	Remove the Jet Admin utility software tape from the DAT drive.

5.11 Industrial Workspace Manager (IWSM) Configuration

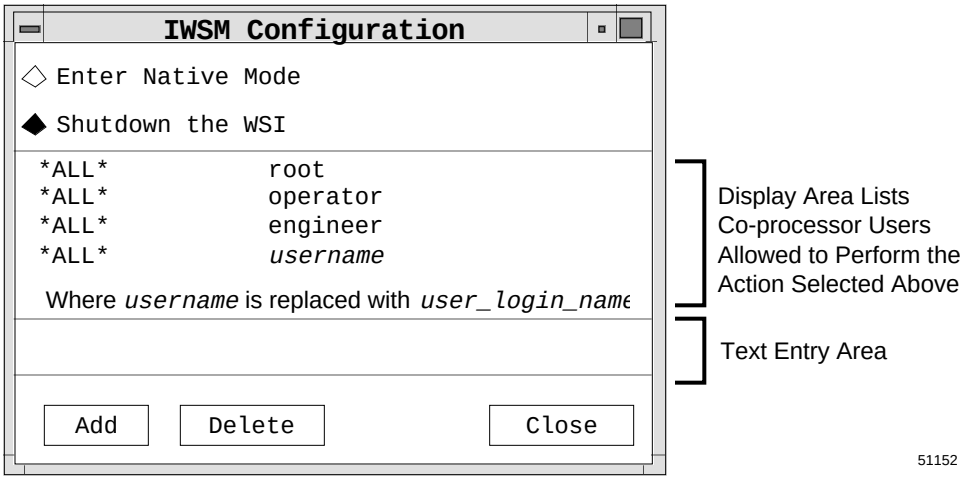
Required access level

The user must have engineer group access and perform these procedures while logged in as “engineer.” The coprocessor (root) password is required.

Menu appearance



IWSM configuration tool



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Shutdown WSI authorization

Use the following procedure to authorize specific users to shutdown the coprocessor:

Step	Action
1	Select `IWSM Configuration` from the workspace menu.
2	Type the coprocessor (root) password and <RETURN> at the prompt.
3	Select the `Shutdown the WSI` target.
4	Select the text entry area of the IWSM Configuration Tool. (Just above the Add, Delete, and Close targets).
5	Type information using this syntax: `*ALL*` *`username`* where *`username`* = user's login name Important: Use **spaces** to separate `*ALL*` from the user name.
6	Click on the `Add` target to authorize the user to shut down the WSI.
7	Repeat Steps 4 through 6 for each user requiring shutdown privileges.
8	Select the `Close` target.

Remove Shutdown WSI authorization

Use the following procedure to remove authorization to shut down the coprocessor from specific users:

Step	Action
1	Select `IWSM Configuration` from the workspace menu.
2	Type the coprocessor (root) password and <RETURN> at the prompt.
3	Select the `Shutdown the WSI` target.
4	Select the user name to be deleted.
5	Select the `Delete` target.
6	Repeat Steps 4 and 5 for all users to be deleted.
7	Select the `Close` target.

Section 6 – Coprocessor User Environment Configuration

6.1 User Configuration Overview

Coprocessor configuration

The major difference, when compared to a Universal Station, is the Universal Station^{X}'s ability to display non-TDC 3000^{X} applications, generated by LAN (Local Area Network - Ethernet) computing resources.

There are several attributes new to the Universal Station^{X} display, which are necessitated by viewing in the X Windows environment:

- X Host Authorization—Controls remote access to the Universal Station^{X} display
- Native Window Behavior—Controls dominance of the LCN display
- Keyboard Focus Policy—Controls keyboard/mouse pointer interaction

Custom configuration

The Universal Station^{X} coprocessor configuration can be customized to alter the standard user environment. This could include:

- Providing custom workspace menu choices
- Altering shell variables (path, terminal, prompt, etc.)
- Automatically mounting remote filesystems (HP LaserRom)
- Automatically running applications at login

Customizing the files which control the coprocessor environment should be done prior to registering users. When the customization is completed, the users can be registered and additional systems loaded with the custom configuration.

Required information

The following information is required for configuration:

- The hostnames of any remote computing resources which will open an X display on this station. This access is granted on a user-by-user basis using subsection 6.2,” X Host Authorization.”

6.2 X Host Authorization

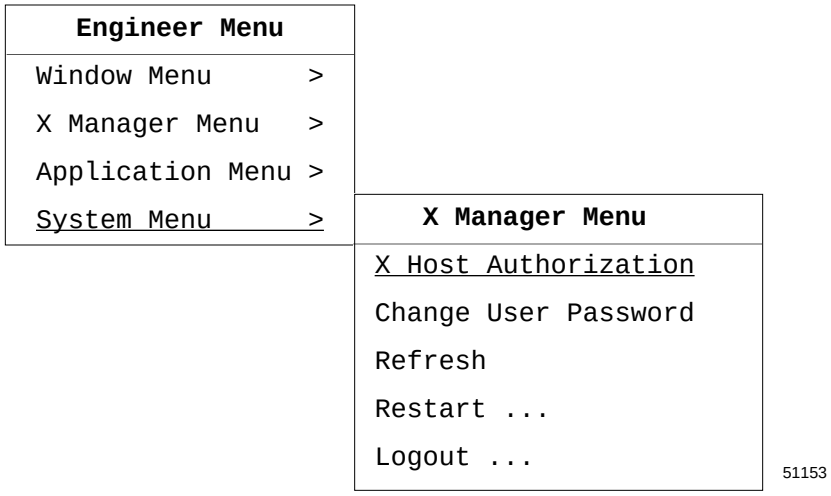
What is it?

The X host authorization application grants X display permission to remote systems on an individual-user basis. This allows other computer systems to open a window on the user's Universal Station^{X} display.

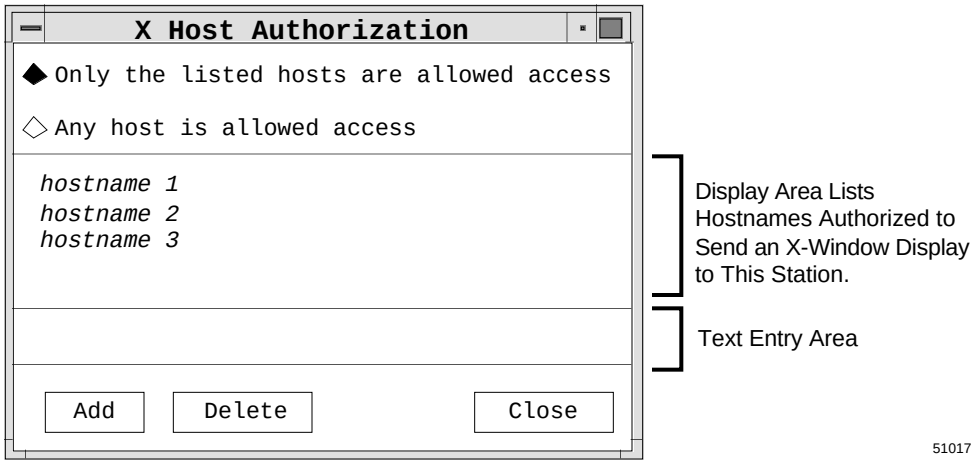
Required access level

The procedures can be performed by any authorized user. This authorization is granted/recorded on an individual-user basis.

Menu appearance



X Host tool



X host addresses

To authorize remote systems to display X Window applications on the Universal Station^{X}, the hostname and TCP/IP address must be entered prior to this step, using the LAN information entry procedure.

Continued on next page

X host authorization scope

The user can choose from two methods of granting access permission:

- Explicit host authorization—user must enter the hostnames of all systems requiring access
- Grant access to all hosts—user selects `Any host is allowed access`

Explicit host authorization

Use the following to authorize specific X hosts access:

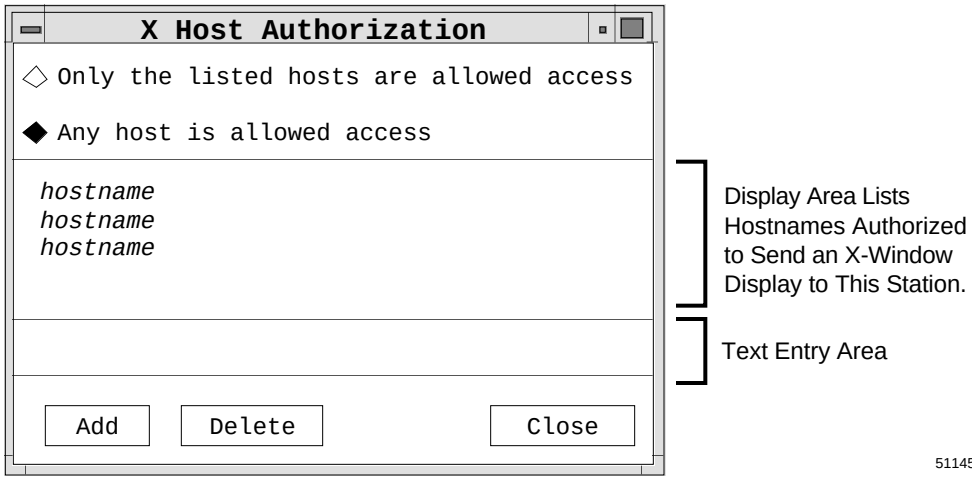
Step	Action
1	Select `X Host Authorization` from the workspace menu.
2	Type the coprocessor (root) password and <RETURN> at the prompt.
3	Select `Only the listed hosts are allowed access` target.
4	Click on the text entry area of the IWSM Configuration Tool.
5	Type information using this syntax: *hostname* *hostname* *hostname* *hostname* hostname = replace with a valid hostname Use of spaces is not allowed. The tool does nothing if there are invalid characters in the text entry field.
6	Click on the `Add` target to authorize the remote host to display locally.
7	Repeat Steps 4 through 6 for each host requiring X host access.
8	To delete a host's X display authorization privileges, click on the hostname to be deleted.
9	Click on the `Delete` target.
10	Repeat Steps 8 and 9 for each host to be deleted.
11	Select the `Close` target.

Continued on next page

Allowing all X-hosts access

All LAN computing resources listed in the hosts file can be authorized to display X-window applications on this station using the following procedure.

Step	Action
1	Select `X Host Authorization` from the workspace menu.
2	Type the coprocessor (root) password and <RETURN> at the prompt.
3	Select the `Any host is allowed access` target.
4	Select the `Close` target.



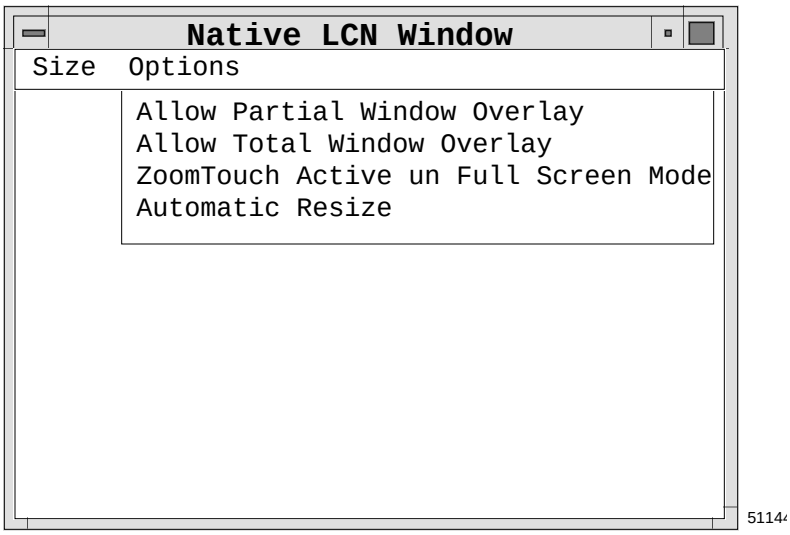
6.3 Configure Native Window Behavior

Window dominance

The dominance of the Native LCN Window is configurable on a user-by-user basis. The attribute allows the Native LCN Window to be partially obscured by another window.

The Native LCN Window behavior is initially configured to allow only engineering group members to obscure the LCN display. However, the individual users (all access levels) can set this attribute at their discretion.

Menu appearance



Allow/Disallow partial window overlay

The selection of this option toggles on/off. Therefore, perform the same steps to allow partial window overlay and to disallow partial window overlay.

Step	Action
1	Select `Options` from the Native LCN Window menu bar. Note: If a square appears to the left of the Allow Partial Window Overlay option, it indicates that the option is currently allowed. This will allow the Native LCN Window to be partially obscured by another window. If no square appears to the left of the Allow Partial Window Overlay option, it indicates that the option is currently disallowed. This will not allow the Native LCN Window to be partially obscured by another window.
2	Select `Allow Partial Window Overlay` to change the option. Note: The change will take effect immediately.

Continued on next page

Allow/Disallow total window overlay

The selection of this option toggles on/off. Therefore, perform the same steps to allow total window overlay and to disallow total window overlay.

Step	Action
1	Select `Options` from the Native LCN Window menu bar. Note: If a square appears to the left of the Allow Total Window Overlay option, it indicates that the option is currently allowed. This will allow the Native LCN Window to be totally obscured by another window. If no square appears to the left of the Allow Total Window Overlay option, it indicates that the option is currently disallowed. This will not allow the Native LCN Window to be totally obscured by another window.
2	Select `Allow Total Window Overlay` to change the option. Note: The change will take effect immediately.

Setting default native window behavior

Default behavior for the Native LCN Window during future login sessions can be configured for each user. This is accomplished by modifying the `.Xdefaults` file in the individual user's directory.

To set up the Native LCN window in the operator1 account to allow other windows to obscure it (partially or totally), change (or add) the following lines in the `.Xdefaults` file in operator1's directory (`/users/XUS/operator/operator1`).

```
NativeLCNWindow*allowTotalObscurity:     False
NativeLCNWindow*allowPartialObscurity:   True
```

To set up the Native LCN window in the operator1 account to automatically resize the LCN display to the current window size, change (or add) the following line in the `.Xdefaults` file in operator1's directory (`/users/XUS/operator/operator1`).

```
NativeLCNWindow*autoZoom:                True
```

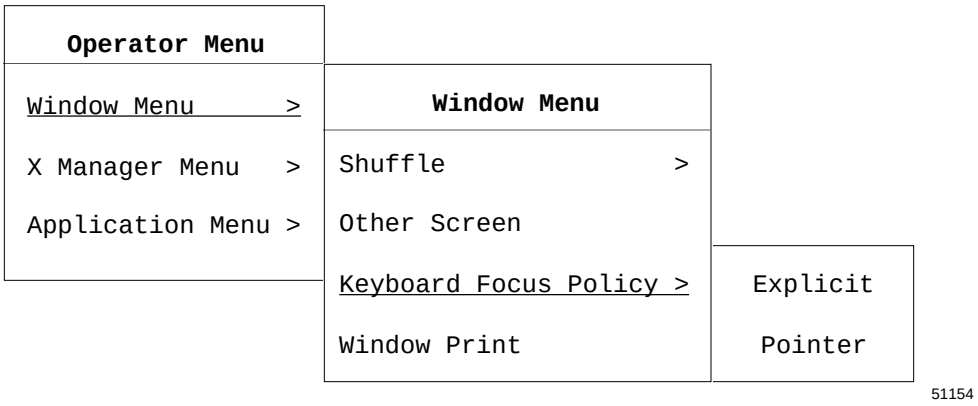
Global Native LCN window behavior for all users can be achieved by changing the lines above in the `NativeLCNWindow` file in the `/usr/lib/X11/app-defaults` directory.

6.4 Configure Keyboard Focus Policy

Required access level

The procedure can be performed while logged in as any user.

Menu appearance



Explicit vs. Pointer

The keyboard focus policy allows two choices:

- Explicit focus—user must click on a window to make it active
- Pointer focus—user must point at the window to make it active

Note: Even small mouse movements may inactivate the window when using pointer focus. This may cause keyboard entries to be lost or directed to the wrong window.

Explicit focus

Use the following to set the focus policy to explicit:

Step	Action
1	Select `Keyboard Focus Policy - Explicit` from the workspace menu. Note: The change in focus policy will not take effect until the next login.

Pointer focus

Use the following to set the focus policy to pointer:

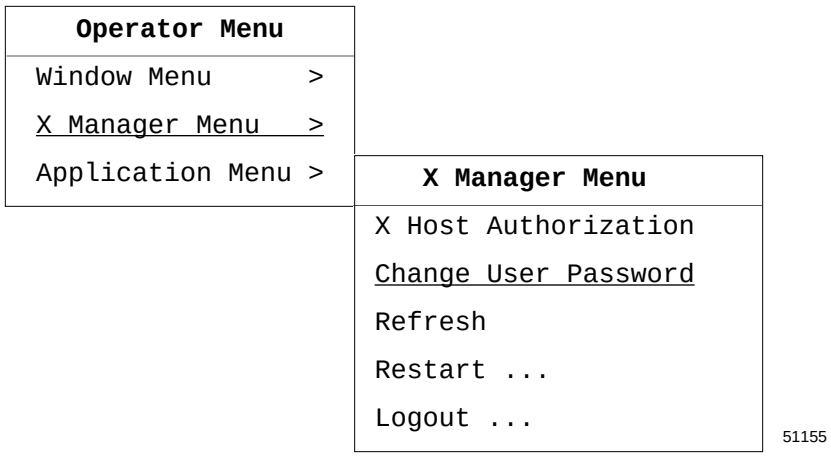
Step	Action
1	Select `Keyboard Focus Policy - Pointer` from the workspace menu. Note: The change in focus policy will not take effect until the next login.

6.5 Change User Password

Required access level

The procedure can be performed while logged in as any user. The current password is required.

Menu appearance



Change the user password

Change the user password frequently to ensure security.

Step	Action
1	Select `Change User Password` from the workspace menu.
2	Type the old password and <RETURN> at the prompt. Note: The new password must be at least 6 characters, containing at least 2 alpha characters and 1 numeric character.
3	Type a new password and <RETURN>.
4	Retype the new password and <RETURN> to confirm the entry.

6.6 Customizing the Workspace Menu

Why customize?

The workspace menu can contain items which connect to and run application software on remote systems and cause them to display locally. This reduces the steps and knowledge required to perform an operational task.

Modify all users

By modifying the file in the appropriate `.baseUser` directory, the customization can be for all subsequently registered users of a specific group. Remember to transfer this file to the `.baseUser` directory on all machines.

To use the new custom menu, prior users must have the new file transferred to their home directory.

Modify a single user

By modifying the `.mwmrc` file in the user's home directory, only that user will have the altered workspace menu. Remember to transfer this file to the user's home directory on all machines where he is registered.

Appropriate files

A customized command string can be appended to the workspace menu by placing the command string into the appropriate `.mwmrc` file.

- `/users/XUS/operator/.baseUser/.mwmrc`
- `/users/XUS/operator/`*`username`*`/.mwmrc`
- `/users/XUS/supervisor/.baseUser/.mwmrc`
- `/users/XUS/supervisor/`*`username`*`/.mwmrc`
- `/users/XUS/engineer/.baseUser/.mwmrc`
- `/users/XUS/engineer/`*`username`*`/.mwmrc`
- `/users/XUS/viewOnly/.baseUser/.mwmrc`
- `/users/XUS/viewOnly/`*`username`*`/.mwmrc`

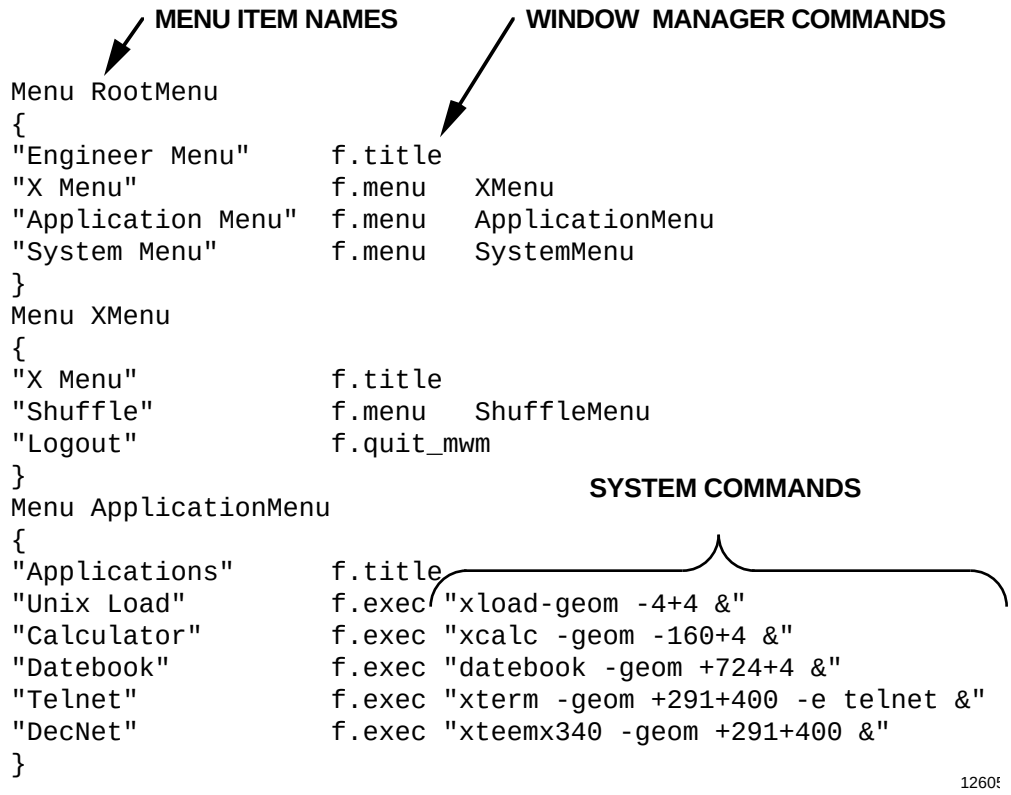
Parts of a command string

There are several components of a workspace menu command string to be placed into the `.mwmrc` file. The elements of the string are the same for all remote computing systems (even those of dissimilar operating systems). However, the commands and syntax of the remote system are used in one element of the command string. This requires knowledge of the remote operating systems commands and operation. This knowledge will not be covered in this manual and can be located in the documentation of the appropriate system.

Continued on next page

Parts of a command string, continued

The elements of the workspace menu command strings:



Creating a command

To create the command line, use the vi text editor to modify the appropriate `.mwmrc` file. Here are the steps to creating a command string to be included in the workspace menu.

Step	Action
1	Choose a menu label.
2	Choose the appropriate window manager command.
3	Determine if a remote shell is necessary. It is required to execute applications on remote computers.
4	Choose the system command including any additional parameters as appropriate to the software application.

Continued on next page

Choosing a label

Choose a label name that represents the action as close as possible. Time spent planning will provide a menu system that is intuitive and requires little (if any) additional documentation.

Choose a window manager command

Several window manager commands are used to customize the workspace menu and are listed here for your convenience. For additional information, see Hewlett Packard publication, *Using the X Window System*.

Category	Command	Description
Program Execution	`f.exec "cmd &"`	Executes *cmd* using /bin/sh
	`f.restart`	Restarts the Motif Window Manager
	`f.kill`	Kills the client that started the window
Menu Operations	`f.menu MenuName`	Associates a menu with a selection
	`f.post_wmenu`	Posts a window menu
	`f.separator`	Draws a line between selections
	`f.title`	Inserts a title into menu at specified position
	`f.nop`	Disable a menu entry with no operation

Local commands

To execute commands on the local system, only the window manager command and system command are necessary.

Required syntax for executing local applications

```
"MenuItemName"    f.exec "ApplicationName &"
"MenuItemName"    f.exec "ScriptFileName &"
```

An example of the command string to execute a local application.

```
"Datebook"    f.exec  "datebook &"
```

Continued on next page

Remote commands

To execute commands in a remote computer system, a remote shell session is needed. Add the following to the window manager command to build the command string.

Required syntax for executing remote applications

```
"MenuItemName"    f.exec "remsh hostname ApplicationName &"
"MenuItemName"    f.exec "remsh hostname ScriptFileName &"
```

An example of the command string to execute the application Framemaker on the host system named hp7ØØ_Ø1.

```
"Word Processor"    f.exec  "remsh hp700_01 maker &"
```

Sample customization

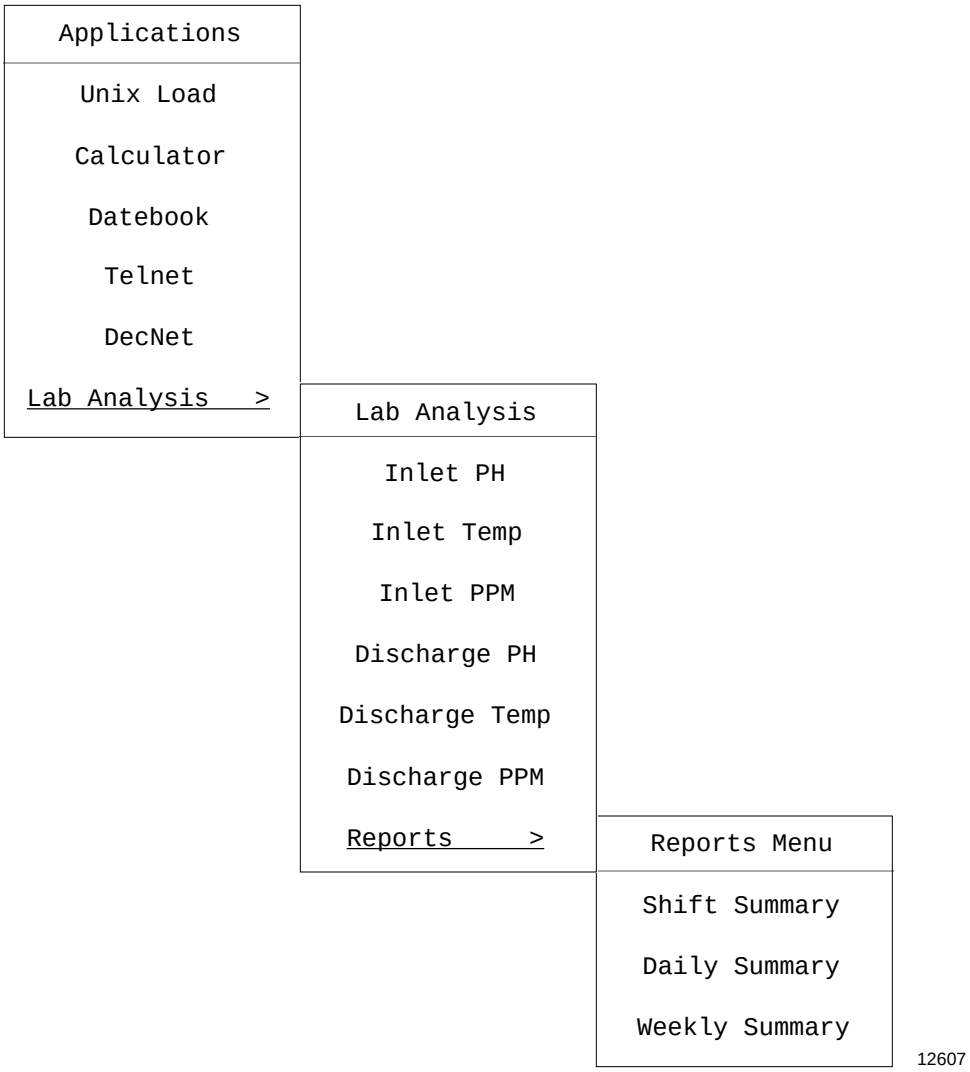
The following is an example of the existing Application Menu customized to provide an automatic connection to remote computers running various software. It is an excerpt of the standard `.mwmrc` file with additional lines (shown in larger print) to produce the workspace menu changes.

```
Menu ApplicationMenu
{
"Applications"    f.title
"Unix Load"       f.exec "xload -geom -4+4 &"
"Calculator"      f.exec "xcalc -geom -160+4 &"
"Datebook"        f.exec "datebook -geom +724+4 &"
"Telnet"          f.exec "xterm -geom +291+400 -e telnet &"
"DECnet"          f.exec "xteemx340 -geom +291+400 &"
"Lab Analysis"    f.menu LabMenu
}
Menu LabMenu
{
"Lab Analysis"    f.title
"Inlet PH"        f.exec "remsh hp700_01 -l Inlet_PH raw1 &"
"Inlet Temp"      f.exec "remsh hp700_02 -l Inlet_Temp raw2 &"
"Inlet PPM"       f.exec "remsh vax01 -l Inlet_Clarity raw3 &"
"Discharge PH"    f.exec "remsh hp700_2 -l Waste_PH out1 &
"Discharge Temp"  f.exec "remsh hp700_2 -l Waste_Temp out2 &
"Discharge PPM"   f.exec "remsh vax01 -l Waste_Clarity out3 &
"Reports"         f.menu ReportMenu
}
Menu ReportMenu
"Reports"           f.title
"Shift Summary"     f.exec "RunShiftSum &"
"Daily Summary"     f.exec "RunDailySum &"
"Weekly Summary"    f.exec "RunWeekSum &"
}
```

Continued on next page

Sample customization, continuation

Produces the following Applications Menu with two new sub menus:



6.7 Customizing the User's Shell Variables

What is the shell?

The shell is the mechanism used to issue commands to the UNIX processor. This shell acts as a command interpreter and controls the UNIX system resources to carry out the requested task. The shell provides a powerful and flexible programming language to allow creation of script files containing many commands.

Available shells

There are several shells used

- `/bin/ksh` — Korn shell used for members of the group Engineer
- `/bin/rksh` — restricted Korn shell used for members of the groups: Operator, Supervisor, and View Only
- `/bin/csh` — C shell used for the root user

Shell variables

The shell tracks items called variables that it uses to control system resources.

The most often used variables are

- SHELL - Pathname of your shell
- TERM - Defines your terminal type for screen oriented commands
- PATH - List of directories the shell searches for commands

Controlling files

The shell variables are set at login and each time a shell is created. The system executes various initialization files depending on the users shell type. These files are located in the users home directory.

Shell type	Controlling files
Korn shell — `/bin/ksh`	`.profile` — executed at login $ENV — when a subshell is spawned Note: $ENV is a variable that defines the name of the file. Commonly .kshrc
Restricted Korn shell — `/bin/rksh`	`.profile` — executed at login $ENV — when a subshell is spawned
C shell — `/bin/csh`	`.login` — executed at login `.cshrc` —when a subshell is spawned

For more information

For more information, see the following Hewlett Packard publications:

- A Beginners Guide To Using Shells
- HP-UX Concepts and Tutorials: Shells and Miscellaneous Tools
- HP-UX System Security

Section 7 – Coprocessor Administration Tasks

7.1 Create New Coprocessor Users

Required access level

The procedures must be performed while logged in as "engineer." The coprocessor (root) password is not required.

Guidelines

Use the following criteria when adding a user to the coprocessor environment:

- Assign a separate login name for each user
- Do not assign a login name beginning with a number
- Determine the user's group access level by providing the "least privileges" necessary to perform the required tasks
- Do keep a record of all users assigned access, it should contain:
  - User name, contact information (phone number, address, etc.)
  - User login name
  - User access level
  - List all systems the user has accounts on
  - List all software where the user has accounts (E-mail, Telex, etc.)

  Note: This listing should be maintained by the system administrator.

Trusted Systems

WARNING Honeywell strongly recommends that you do not make your Universal Station^{X}s trusted systems.

The coprocessor user environment is not intended to be used to configure a secure (trusted) system. If a trusted system configuration is required, use the HP-UX System Administration Manager (SAM) utility for this purpose. Refer to the manual *"HP-UX System Security"* for further information on setting up a trusted system.

.baseUser files

The .baseUser directory in each user category (engineer, operator, etc.) contains the default files that will be used to initially configure a new user's own directory. Be aware that Honeywell may update these files during a software release upgrade procedure. If you choose to modify any of these files, be sure to create a backup copy. Your custom changes should be merged back in with the new updated file after the software update is complete

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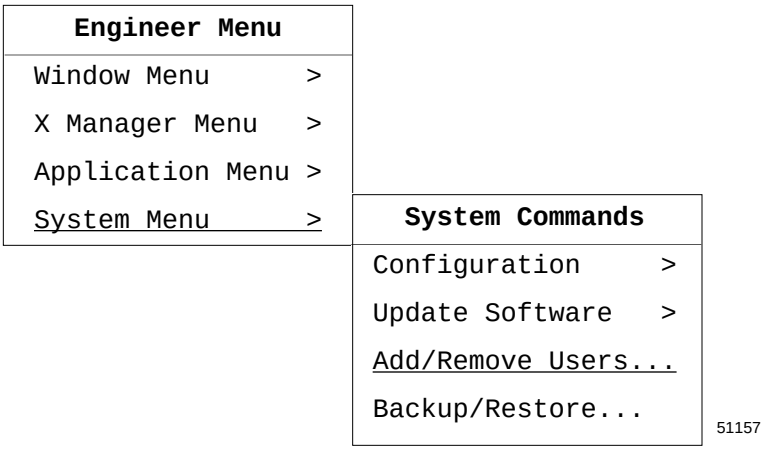
7.1 Create New Coprocessor Users, Continued

Initial use

When new users are created, the password is set equal to the login name. For example: the user account "guest" will use the password "guest."

To maintain system security, it is important that the password be changed as soon as practical. To do this, login as the new user and select change password from the workspace menu. Enter a password and record this information for the new user.

Menu appearance



Add users

Use the following procedure to configure user access to the coprocessor.

Note: If, at any point in the following instructions, you have made an error, selecting the `Close` target without selecting `Apply` will exit without saving changes.

Step	Action
1	Select `Add/Remove Users...` from the workspace menu, it is found nested as `System Menu > Add/Remove Users`.
2	Select the `User` target.
3	Select the `Add` target.
4	Type the user-login name in the `Login Name` field.
5	Type full user name, office location, work and home phone number into the field provided.
6	Select the appropriate group target from the menu.
7	Select the `Apply` target to save changes.
8	Repeat Steps 4 through 7 for each user.

Continued on next page

Add users, continued

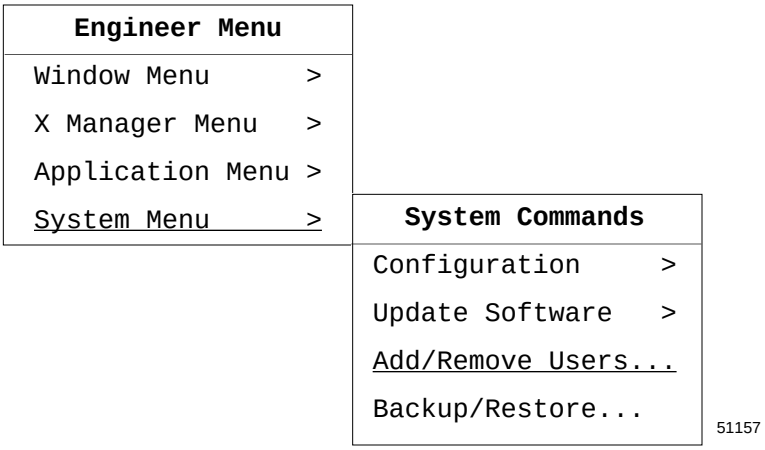
9	Select the CLOSE target and the window will close.
10	Select the Apply target to save changes.
11	Select the OK target.
12	Select the CLOSE target and the window will close.
13	Select the Exit Xsam target.
14	Select the OK target.

7.2 Delete Coprocessor Users

Required access level

The procedures must be performed while logged in as "engineer." The coprocessor (root) password is not required.

Menu appearance



Delete users

To deny authorized users access to the coprocessor, use the following:

Note: If at any point in the following instructions you have made an error, selecting the `Close` target without selecting `Apply` will exit without saving changes.

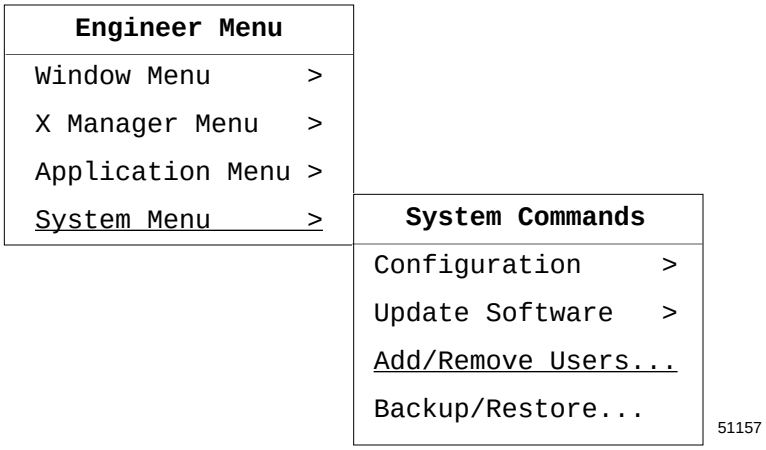
Step	Action
1	Select `Add/Remove Users...` from the workspace menu.
2	Select the `User` target.
3	Select each user to be removed by selecting the icon to left of the user-login name. Note: The icon is highlighted to show selection.
4	Select the `Remove` target.
5	Select the `OK` target. Note: This step is required only if multiple users have been selected to be removed.
6	Select the `Apply` target to save changes.
7	Select the `OK` target.
8	Select the `Close` target and the window will close.
9	Select the `Exit Xsam` target in the lower right corner.
10	Select the `OK` target.

7.3 Modify Coprocessor User Information

Required access level

The procedures must be performed while logged in as "engineer." The coprocessor (root) password is not required.

Menu appearance



Modify user information

To modify a user's coprocessor access information, use the following.

Note: If, at any point in the following instructions, you have made an error, selecting the `Close` target without selecting `Apply` will exit without saving changes.

Step	Action
1	Select `Add/Remove Users...` from the root menu.
2	Select the `User` target.
3	Select the user (to modify) by clicking on the icon to the left of the user-login name. Note: icon is highlighted to show selection.
4	If applicable, type changes into the `Login ID` field.
5	If applicable, type changes into the full name field.
6	To change the access level, select a group target.
7	Repeat Steps 4 through 7 for each user to be modified.
8	Select the `Apply` target to save changes.
9	Select the `Close` target and the window will close.
10	Select the `Exit Xsam` target and the window will close.
11	Select the `OK` target.

7.4 Backup the Local Coprocessor Hard Drive

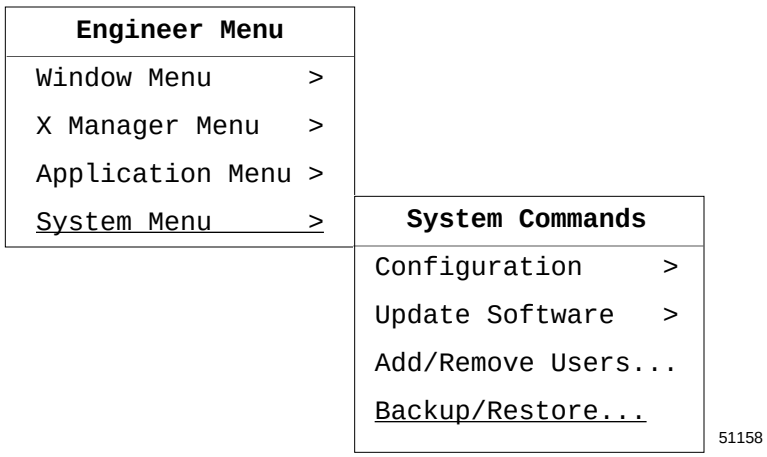
Two Options

There are several ways to backup and restore the data on the hard drive. Two options will be discussed here. One option is to use the Backup/Restore menu selection, the other is to enter a command from a terminal connected to the WSI2 I/O board. Both perform the same type of backup (fbackup); however, the "menu option" allows other functions to be performed on the Universal Station^X while the backup is running (e.g., someone can be using the Native LCN Window to control the process). The "terminal option" does not allow other functions to be performed on the Universal Station^X while the backup is running. The terminal option, on the other hand, runs in "single-user mode," which allows a more error free backup. The menu option usually has a few block checksum mismatch errors. A backup with these errors can still be used to restore the files on the hard drive, but there will be a few files that cannot be restored because of the errors. The terminal option is the preferred method if the station can be "down" during the backup. The backup procedure takes about 45-60 minutes. You must weigh the options and decide which is the better option in your situation.

Required access level

The menu option procedure must be performed while logged in as "engineer", and does not require the coprocessor (root) password. The terminal option does not require (or allow) login from the login banner, but does require the coprocessor (root) password.

Menu appearance



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7.4 Backup the Local Coprocessor Hard Drive, Continued

Menu Option

Use the following procedure to backup the local coprocessor hard drive using the menu option.

Note:	This procedure currently performs only full backups. The contents of the DAT tape will be overwritten.

Step	Action
1	Gently Insert the tape into the DAT drive. If you are unable to successfully insert the tape, gently remove the cartridge and reinsert it again. If you are still unsuccessful, contact your Honeywell service representative for assistance.
2	Select `System Menu->Backup/Restore` from the workspace menu.
3	Select the `Backup` target.
4	To perform a backup of the entire Universal Station^X filesystem Select the `System(all files)` target Note: Generally, this is a better choice than only backing up user files. To perform a backup of Universal Station^X user files only Select the `User files only` target.
5	To perform a FULL backup of all files within the scope Select the `FULL (all files)` target. Note: Performing an incremental backup is a feature that is not available at this time.
6	Select the appropriate `host` target. This indicates which device will have the tape drive.
7	Select the `Start Backup` target. Note: Depending on your selection (system or user backup), the backup operation will take 2 to 60 minutes to complete.

8	Upon completion, the following message is displayed:
	
	`fbackup: runtime: 2038 Seconds`
	`End of Execution`

9	Select the `Close` target.
10	Select the `Exit Xsam` target. Click on `OK` at the message `Do you really want to exit?`
11	Remove the backup tape from the DAT drive.

Continued on next page

7.4 Backup the Local Coprocessor Hard Drive, Continued

Terminal Option

Use the following procedure to backup the local coprocessor hard drive using the terminal option.

Note:	This procedure, as written, performs full backups. The contents of the DAT tape will be overwritten. If you wish to perform incremental backups, you will need to become more familiar with the fbackup command. Use the documentation distributed with the Universal Station^{X} (on CD/ROM) to learn more about fbackup.

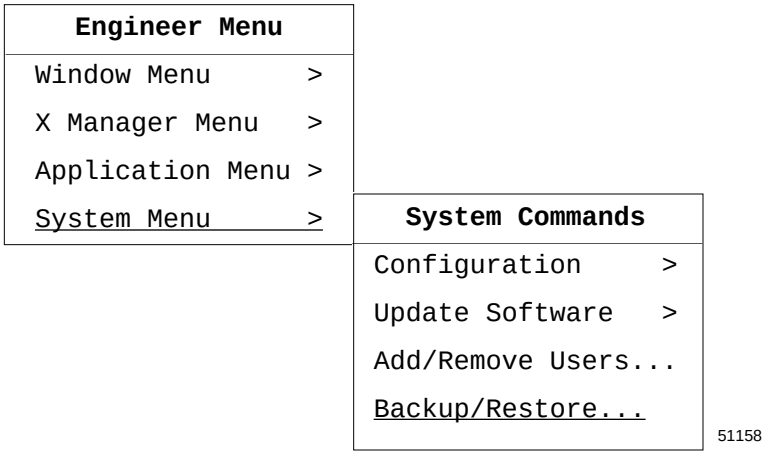
Step	Action
1	Gently Insert the tape into the DAT drive. If you are unable to successfully insert the tape, gently remove the cartridge and reinsert it again. If you are still unsuccessful, contact your Honeywell service representative for assistance.
2	Connect a vt100 terminal to the WSI2 I/O board of the U^{X}S.
3	Press <RETURN> (to get a login prompt), and login as root
4	Put the U^{X}S in single user mode by entering `shutdown -y 0` (zero) and pressing <RETURN>. Note: This will take about 30 seconds.
5	Enter `/etc/fbackup -i / -f /dev/rmt/0m` (zero-em) and press <RETURN>. Note: This command performs a backup of the entire U^{X}S filesystem; it is the recommended command. However, if you prefer to backup only a portion of the system, you can specify a directory to be backed up following the "-i" option. Example: `/etc/fbackup -i /users/XUS -f /dev/rmt/0m` This will backup only the files under the /users/XUS directory (and all of it's subdirectories). This is equivalent to selecting a User backup when using the Menu Option. Note: Depending on the directories you are backing up (/ or /users/XUS), the backup operation will take 2 to 60 minutes to complete.
6	After the backup completes, remove the backup tape from the DAT drive.
7	Enter `reboot -q` and press <RETURN>.
8	Disconnect the vt100 terminal from the WSI2 I/O board of the U^{X}S.

7.5 Restore Local Coprocessor Hard Drive Data

Required access level

The procedures must be performed while logged in as "engineer." The coprocessor (root) password is not required.

Menu appearance



Coprocessor restore menu

This menu provides the mechanism necessary to restore the coprocessor filesystem from a prior backup tape. It allows the user to specify the process by which files are restored.

Restore types

The restore procedure allows two types of file restoration:

- Overwrite — restores tape contents to the Universal Station^X regardless of time stamp.
- Update — writes files with dates later than those present in the Universal Station^X.

Perform a restore

To perform a restore, follow this procedure:

Note: If, at any point in the following instructions, you have made an error, select the EXIT RESTORE target to exit.

Step	Action
1	Remove the appropriate tape from its protective case and gently insert it into the tape drive. Press gently on the edge of the tape cartridge while inserting it into the unit until you feel the unit pull on the tape. The unit will then load and position the tape. While positioning is being performed, both indicator lamps on the front of the unit will flash. When the right lamp shows a solid green, positioning is complete and the tape unit is ready to use. If you are unable to successfully insert the tape, gently remove the cartridge and reinsert it again. If you are still unsuccessful, contact your Honeywell service representative for assistance.
2	Select `Backup/Restore...` from the workspace menu.

Continued on next page

Perform a restore, continued

Step	Action
3	Select the `Restore` target.
4	To perform an overwrite with all files on the tape Select the `Overwrite` target. **WARNING** - This procedure may cause error messages to be output during the restore due to conflict with running system processes. It is recommended that selective restores be performed instead of complete restores whenever feasible. To perform an update with files from the tape Select the `Update` target.
5	Select the `Start Restore` target.
6	Select the `Close` target.
7	Select the `Exit Xsam` target. Click on `OK` at the message `Do you really want to exit?`

7.6 Backup a Remote Coprocessor Hard Drive

Why this procedure?

This procedure will backup the hard drive that is on a remote coprocessor. That coprocessor can be another Universal Station^X, an Application Module^X, or a Hewlett Packard 712/60 workstation. The remote device can also be any other device that has the HP-UX 9.05 operating system.

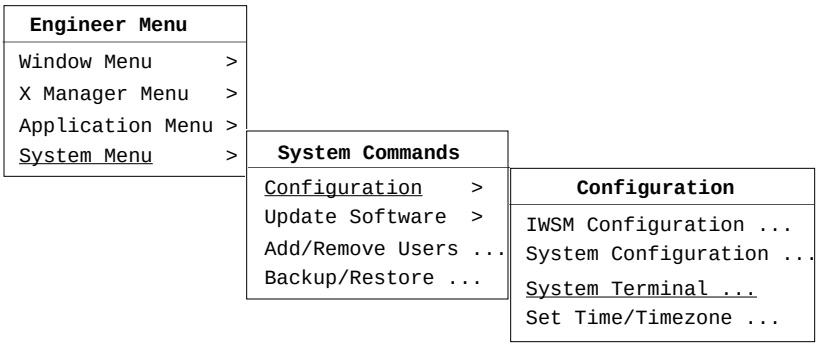
You would use this procedure if the remote device is an Application Module^X, or a Hewlett Packard 712/60 workstation that does not have a DAT drive. If the remote device is a Universal Station^X, either this procedure or the Backup the Local Coprocessor Hard Drive procedure could be used. In the case of the Universal Station^X, the only difference is whether you will be performing the procedure from the Universal Station^X with the hard drive (the other procedure), or from the Universal Station^X with the DAT drive (this procedure).

The backup procedure takes about 45-60 minutes.

Required access level

This procedure must be performed while logged in as “engineer”, and requires the coprocessor (root) password.

Menu appearance



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7.6 Backup a Remote Coprocessor Hard Drive, Continued

Backup Procedure

Use the following procedure to backup a remote coprocessor hard drive to the DAT drive on the local Universal Station^{X}.

Note:	This procedure, as written, performs full backups. The contents of the DAT tape will be overwritten. If you wish to perform incremental backups, you will need to become more familiar with the fbackup command. Use the documentation distributed with the Universal Station^{X} (on CD/ROM) to learn more about fbackup.

Step	Action
1	Login as engineer to the U^{X}S with the DAT drive.
2	Gently Insert the tape into the DAT drive. If you are unable to successfully insert the tape, gently remove the cartridge and reinsert it again. If you are still unsuccessful, contact your Honeywell service representative for assistance.
3	Select `System Menu->Configuration->System Terminal` from the workspace menu.
4	Enter the coprocessor (root) password for the local U^{X}S and press `<RETURN>.`
5	Verify that the name of the remote node is in the /.rhosts file of the local station . If it is, go to the next step, if not, follow these instructions to add it: a. Enter `vi /.rhosts` and press `<RETURN>`. b. Enter `<Shift>g<Shift>a` (GA) and press `<RETURN>`. c. Enter the full name of the remote node (alias names can not be used). d. Press `<ESC>`. e. Enter `:wq!` and press `<RETURN>`.
6	Enter `rlogin` *`remotehostname`* and press `<RETURN>.` Note: remotehostname is the name of the device with the hard drive.
7	If necessary, enter the root password for the remote device and press `<RETURN>.`
8	If prompted for TERM (terminal type), enter `hpterm` and press `<RETURN>.`

Continued on next page

7.6 Backup a Remote Coprocessor Hard Drive, Continued

Backup Procedure, continued

Step	Action
9	Enter `/etc/fbackup -i / -f` *`localhostname`*`:/dev/rmt/0m` (zero-em) and press <RETURN>. Note: *`localhostname`* must be a host that is known to the remote system. Note: This command performs a backup of the entire UXS filesystem; it is the recommended command. If you prefer to backup only a portion of the system, however, you can specify a directory to be backed up following the "-i" option. Example: `/etc/fbackup -i /users/XUS -f uxs1:/dev/rmt/0m` This will backup only the files under the /users/XUS directory (and all of it's subdirectories). Note: Depending on the directories you are backing up (/ or /users/XUS), and the size of your hard drive, the backup operation will take 2 to 60 minutes to complete.
10	After the backup completes, enter `exit` and press <RETURN>. This will log out of the remote node.
11	Remove the backup tape from the tape drive.
12	Log out of the UXS.

7.7 Restore a Remote Coprocessor Hard Drive

Why this procedure?

This procedure will Restore the hard drive that is on a remote coprocessor. That coprocessor can be another Universal Station^X, an Application Module^X, or a Hewlett Packard 712/60 workstation. The remote device can also be any other device that has the HP-UX 9.05 operating system.

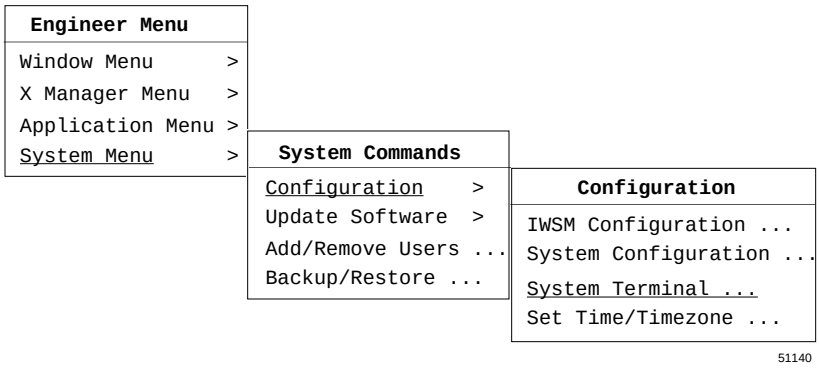
You would use this procedure if the remote device is an Application Module^X, or a Hewlett Packard 712/60 workstation that does not have a DAT drive. If the remote device is a Universal Station^X, either this procedure or the Restore the Local Coprocessor Hard Drive procedure could be used. In the case of the Universal Station^X, the only difference is whether you will be performing the procedure from the Universal Station^X with the hard drive (the other procedure), or from the Universal Station^X with the DAT drive (this procedure).

The Restore procedure takes about 45-60 minutes.

Required access level

This procedure must be performed while logged in as “engineer”, and requires the coprocessor (root) password.

Menu appearance



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7.7 Restore a Remote Coprocessor Hard Drive, Continued

Restore Procedure

Use the following procedure to Restore a remote coprocessor hard drive from the DAT drive on the local Universal Station^{X}.

Note:	This procedure, as written, restores all files on the DAT tape. The contents of the hard drive will be overwritten even if the files on the DAT are older than the files on the hard drive. If you wish to perform selective file restores, you will need to become more familiar with the frecover command. Use the documentation distributed with the Universal Station^{X} (on CD/ROM) to learn more about frecover.

Step	Action
1	Login as engineer to the U^{X}S with the DAT drive.
2	Gently Insert the tape into the DAT drive. If you are unable to successfully insert the tape, gently remove the cartridge and reinsert it again. If you are still unsuccessful, contact your Honeywell service representative for assistance.
3	Select `System Menu->Configuration->System Terminal` from the workspace menu.
4	Verify that the name of the remote node is in the /.rhosts file of the local station . If it is, go to the next step, if not, follow these instructions to add it: a. Enter `vi /.rhosts` and press `<RETURN>`. b. Enter `<Shift>g<Shift>a` (GA) and press `<RETURN>`. c. Enter the full name of the remote node (alias names can not be used). d. Press `<ESC>`. e. Enter `:wq!` and press `<RETURN>`.
5	Enter the coprocessor (root) password for the local U^{X}S and press `<RETURN>.`
6	Enter `rlogin` *`remotehostname`* and press `<RETURN>.` Note: remotehostname is the name of the device with the hard drive.
7	If necessary, enter the root password for the remote device and press `<RETURN>.`
8	If prompted for TERM (terminal type), enter `hpterm` and press `<RETURN>.`

Continued on next page

7.7 Restore a Remote Coprocessor Hard Drive, Continued

Restore Procedure, continued

Step	Action

9	Enter:
	`/etc/frecover -rov -f` *`localhostname`*`:/dev/rmt/0m`
	(zero-em) and press `<RETURN>`.
	
	Note: *`localhostname`* must be a host that is known to the remote system.
	
	Note: This command performs a restore of all the files that are on the DAT tape, and will overwrite newer files on the hard drive with older ones from the DAT tape. If you prefer to Restore only a portion of the files from the tape, you can specify a "graph file" (which indicates which files to be restored) following a "-g" option. Example:
	
	`frecover -x -g /tmp/graphfile -f uxs2:/dev/rmt/0m`
	
	Examples of entries in graphfile are as follows:
	
	i /users/XUS
	e /users/XUS/operator
	i /usr/lib/X11
	i /etc/passwd
	
	This will restore (include) all the files under the /users/XUS (except those in the /users/XUS/operator directory). It will also restore (include) all the files under the /usr/lib/X11 directory (and all it's subdirectories), and will restore the /etc/passwd file
	
	Note: Depending on the directories you are restoring, and the size of your hard drive, the Restore operation will take 2 to 60 minutes to complete.

10	After the Restore completes, enter `exit` and press `<RETURN>`. This will log out of the remote node.
11	Remove the backup tape from the tape drive.
12	Log out of the U^{X}S.

7.8 Upgrade Instructions- Release 200 to Release 200

Overview

Use the following procedure to upgrade an existing Release 200 station to a newer version of Release 200 software. The first tape to be loaded will be the UxS Windows SW (RELEASE 200) tape. Depending on the update, there may also be a UxS Personality for UxS R200 tape issued. This update procedure will load the two separate DAT tapes and is divided into two parts:

1. Loading of a single fileset on the UxS Windows SW (RELEASE 200) tape.
2. Loading the UxS Personality for UxS R200 tape.

ATTENTION

The .baseUser directory in each user group (engineer, operator, etc.) contains the default files that will be used to initially configure a new user's own directory. Be aware that Honeywell may update these files during a software release upgrade procedure. If you choose to modify any of these files, be sure to create a backup copy. Your custom changes should be merged back in with the new updated file after the software update is complete.

The files .Xdefaults, .mwmrc, and .xhosts will not be updated in the software update process. Newer versions of the files will be created as d.Xdefaults.200, d.mwmrc.200, and d.xhosts.200 respectively. These new versions should be merged in with their original version before any new users are added to the system.

Continued on next page

"UxS Windows SW" tape load procedure

Step	Action
1	Insert the UxS Windows SW (RELEASE 200) tape into the DAT tape drive. Wait for the lights to stop blinking.
2	Login as engineer
3	Select `Update Software - Local` from the workspace menu.
4	Type the coprocessor (root) password and <RETURN> at the prompt.
5	In the update window, use the arrow keys to highlight. `Change Source or Destination ->` then press the <RETURN> key on the keyboard. This will cause a new window to appear within the update window.
6	In the window that just popped up, use the arrow keys to highlight `From Tape Device to Local System ->` then press the <RETURN> key on the keyboard. This will cause a new window to appear within the update window.
7	In the window that just popped up you will be prompted to change the parameters in the file /dev/update.src. The current parameters are displayed at the right side of the window. They should appear as follows: `major number:` **`54`** `slot number:` **`0`** `bus address:` **`1`** `unit number:` **`0`** `volume number:` **`2`** If these settings are correct, use the mouse to position the cursor over the "`Done`" button at the bottom of the update window and press the left button on the mouse. Go on to the next step. If a change needs to be made, position the cursor over the "n" in the following question using the arrow keys on the keyboard and type "y". `Create or change the address of /dev/update.src ->` This will cause a new window to appear within the update window. Make the necessary changes and use the mouse to position the cursor over the "`Done`" button at the bottom of the update window and press the left button on the mouse. Select the "`Done`" button a second time.

Continued on next page

"UxS Windows SW" tape load procedure, continued

Step	Action
8	Select `Select/View Partitions and Filesets <RETURN>.`
9	Locate the line: `HONEYWELL-USX` Enter a Y to the left of that line and select the "`Start Loading`" target with the left mouse button.
10	Enter y to Start Loading Filesets Now? (y or n) Note: This fileset will take several minutes to be located on the tape. When the load is complete the system will reboot.
11	Remove the UxS Windows SW (RELEASE 200) tape. Note: The UXS will automatically reboot.

Loading the UxS Personality for UxS R200 tape

Step	Action
1	Insert the UxS Personality for UxS R200 tape into the DAT tape drive.
2	Login as engineer
3	Select `Update Software - Local` from the workspace menu.
4	Type the coprocessor (root) password and <RETURN> at the prompt.
5	In the update window, use the arrow keys to highlight. `Change Source or Destination ->` then press the <RETURN> key on the keyboard. This will cause a new window to appear within the update window.
6	In the window that just popped up, use the arrow keys to highlight `From Tape Device to Local System ->` then press the <RETURN> key on the keyboard. This will cause a new window to appear within the update window.

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Loading the UxS Personality for UxS R200 tape, continued

Step	Action

7	In the window that just popped up you will be prompted to change the parameters in the file /dev/update.src. The current parameters are displayed at the right side of the window. They should appear as follows:
	
	`major number: 54`
	`slot number: 0`
	`bus address: 1`
	`unit number: 0`
	`volume number: 2`
	
	If these settings are correct, use the mouse to position the cursor over the "Done" button at the bottom of the update window and press the left button on the mouse. Go on to the next step.
	
	If a change needs to be made, position the cursor over the "n" in the following question using the arrow keys on the keyboard and type "y".
	
	`Create or change the address of /dev/update.src ->`
	
	This will cause a new window to appear within the update window. Make the necessary changes and use the mouse to position the cursor over the "Done" button at the bottom of the update window and press the left button on the mouse. Select the "Done" button a second time.

8	Once the light on the tape drive has stopped blinking, use the arrow keys on the keyboard to highlight. `Select All Filesets on the Source Media->` then press the <RETURN> key on the keyboard. This will cause a new window to appear within the update window.

Continued on next page

Loading the UxS Personality for UxS R200 tape, continued

Step	Action
9	In the new window, use the arrow keys on the keyboard to highlight `Start loading now?` then press the <RETURN> key on the keyboard. Note: You may get one or more warning messages at this time. You may either select "y" to get more information or "n" to proceed with the installation.
10	After a few seconds a window will pop up and the final sentence in the window will ask. `Start loading filesets now?` When this window appears, press the "**y**" key on the keyboard. This will start the update. Note: You may get a "Summary of Warnings" message window. It will tell you that a kernel rebuild and system reboot is required and ask if you would like further information. An answer of n will continue with the software loading process. After all filesets have been loaded, the system will reboot. This process should take 2 to 3 minutes.
11	Remove the UxS Personality for UxS R200 tape from the tape unit by pressing the eject button. The green light will flash while the unit positions the tape to its beginning. When the tape is ejected from the unit, remove it and return it to its protective case.
12	Shutdown and re-load the "LCN side" of the Universal Station^{X}.

7.9 Preparing Software Update Server(Server Only)

Introduction

This procedure is used to prepare a Universal Station^X system to distribute software updates from a local DDS tape media to other Universal Station^X stations via Ethernet.

WARNING

Warning - This procedure must only be done on a Universal Station^X previously upgraded to Release 200 software.

Required configuration

This procedure requires a DAT tape unit connected to the Universal Station^X station. The station must be operational with full user-login capabilities and connected to an Ethernet network accessible to all Universal Station^{X}s to be updated.

CAUTION

Universal Station^X stations being used as full software update servers must have a 1 gigabyte hard disk drive. An additional method would be to move the netdist area to a second 525mb disk drive. Only software updates containing a small number of filesets should be loaded for network distribution on a single 525mb disk drive system.

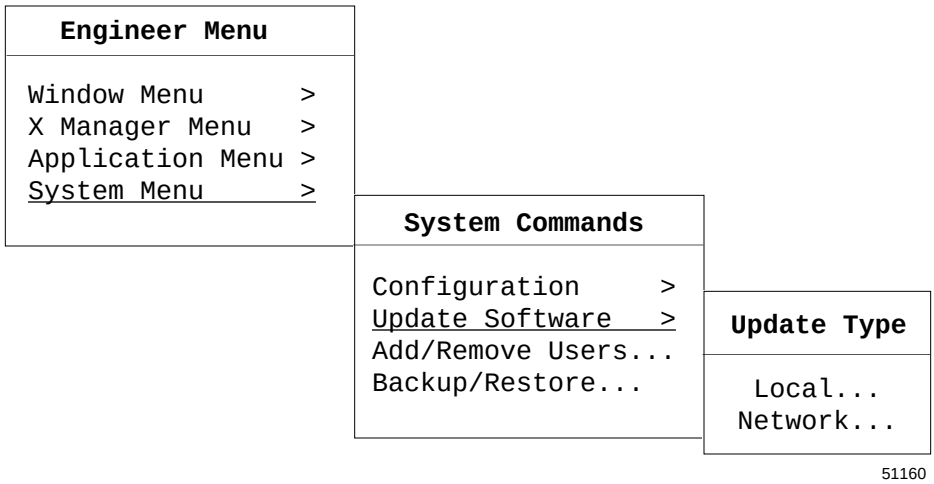
Restart after reboot

If the coprocessor is rebooted/shutdown before all machines are updated, the network distribution daemon will need to be restarted. This is done by typing `/etc/netdistd` at the UNIX shell prompt accessed from the system configuration menu.

Required access level

The procedures must be performed while logged in as “engineer.” The coprocessor (root) password is required.

Menu appearance



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Prior network distribution server

If a previous network distribution process is running, this procedure will cause a coprocessor reboot. Reinitiate this procedure after the system has rebooted.

Detailed installation instructions

To install the update, perform each of the following steps in sequence.
Warning: Do not continue if any step cannot be completed successfully.

Step	Action
1	Remove the update tape from its protective case and gently insert it into the tape drive. Press gently on the edge of the tape cartridge while inserting it into the unit until you feel the unit pull on the tape. The unit will then load and position the tape. While positioning is being performed, both indicator lamps on the front of the unit will flash. When the right lamp shows a solid green, positioning is complete and the tape unit is ready to use. If you are unable to successfully insert the tape, gently remove the cartridge and reinsert it again. If you are still unsuccessful, contact your Honeywell service representative for assistance.
2	At the station with the DAT drive, login as engineer.
3	Select `Update Software - Network` from the workspace menu.
4	Type the coprocessor (root) password and <RETURN> at the prompt.
5	If a software update has been previously performed on the station, you will see a message telling you that the network daemon is already running. The system will reboot automatically and you will begin this procedure again at Step 2.
6	A prompt will appear asking you “Remove existing network update files [Y/n]?”. Enter “y” to this question.
7	In the update window, use the arrow keys on the keyboard to highlight `Change Source or Destination ->` then press the <RETURN> key on the keyboard. This will cause a new window to appear within the update window.
8	In the window that just popped up, use the arrow keys to highlight `From Tape Device to Local System->` then press the <RETURN> key on the keyboard. This will cause a new window to appear within the update window.

Continued on next page

7.9 Preparing S/W Update Server (Server Only), Continued

Detailed installation instructions, continued

Step	Action

9	In the window that just popped up you will be prompted to change the parameters in the file /dev/update.src. The current parameters are displayed at the right side of the window. They should appear as follows
	
	`major number: 54`
	`select code: 0`
	`bus address: 1`
	`unit number: 0`
	`volume number: 2`
	
	If these settings are correct, use the mouse to position the cursor over the "Done" button at the bottom of the update window and press the left button on the mouse.
	
	If a change needs to be made, position the cursor over the "n" in the following question using the arrow keys on the keyboard and type "y".
	
	`Create or change the address of /dev/update.src ->`
	
	This will cause a new window to appear within the update window. Make the necessary changes and use the mouse to position the cursor over the "Done" button at the bottom of the update window and press the left button on the mouse.

10	Using the mouse, position the cursor over the "Done" button at the bottom of the update window and press the left button on the mouse. This will cause the top window to close and the light on the tape drive will begin blinking for a few seconds.
11	Once the light on the tape drive has stopped blinking, use the arrow keys on the keyboard to highlight. `Select All Filesets on the Source Media->` then press the <RETURN>key on the keyboard. This will cause a new window to appear within the update window.
12	You may get a message asking if you want to create a netdist directory. If so, enter y.
13	A prompt window may appear asking if you intend on loading to a series 700 or series 800. Enter 7.

Continued on next page

Detailed installation instructions, continued

Step	Action
14	In the new window, use the arrow keys on the keyboard to highlight `Start loading now?` then press the <RETURN> key on the keyboard.
15	Remove the tape from the tape unit by pressing the eject button. The green light will flash while the unit positions the tape to its beginning. When the tape is ejected from the unit, remove it and return it to its protective case.

Remote Update

Note: This procedure prepares the Universal Station^{X} with the DAT drive to be a netdist server. This allows Universal Station^{X}s without DAT drives to specify this station as the source for their updates. This procedure does not update the software in those stations. To update the software in those stations (without DAT drives), perform the "Remote Coprocessor S/W Update" procedure at each of those stations.

Update Errors

If any minor errors or warnings occurred, they will be displayed upon completion of the update process. Please record each message and press the `Search` target to display the next message. When all messages have been displayed, the system will beep. Select the `Exit` target.

If any major errors occurred during the update, this message is displayed:`Update Failed!!! Call the Technical Assistance Center for help.` The process will not continue. You must contact Honeywell's TAC to resolve the errors.

7.10 Remote Coprocessor Software Update

Introduction

This procedure installs the software update from another Universal Station^X station on the Ethernet network.

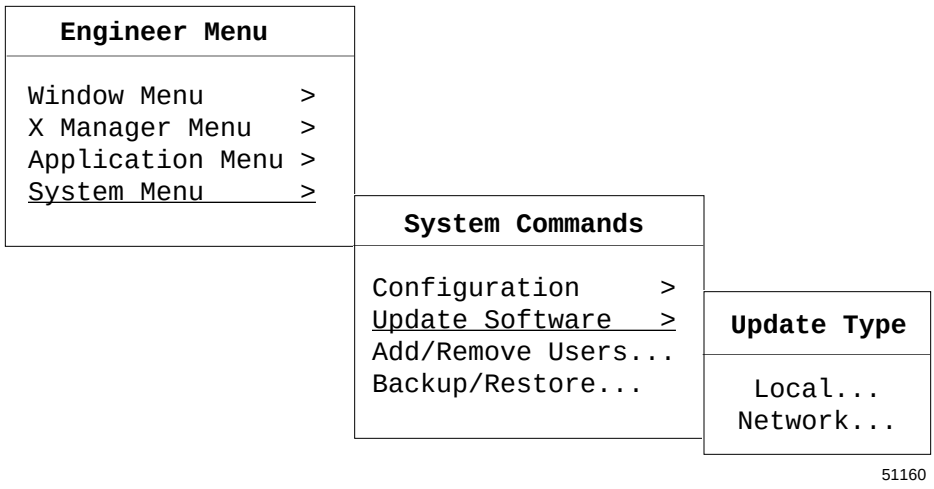
Required configuration

This procedure requires that an additional Universal Station^X station be connected to the LAN, which contains the update software for Universal Station^X and is running the "netdist" daemon. This master system must be prepared following subsection 7.9, "Preparing Software Update Server (Server Only)."

Required access level

The procedures must be performed while logged in as "engineer." The coprocessor (root) password is required.

Menu appearance



Detailed installation instructions

The following will complete the update installation from tape media. Execute each step in sequence. **Warning:** Do not continue if any step cannot be completed successfully.

Step	Action
1	Select `Update Software - Local` from the workspace menu.
2	Type the coprocessor (root) password and `<RETURN>` at the prompt.
3	In the update window, use the arrow keys to highlight `Change Source or Destination ->` then press the `<RETURN>` key on the keyboard. This will cause a new window to appear within the update window.

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7.10 Remote Coprocessor S/W Update , Continued

Detailed installation instructions, continued

Step	Action
4	In the window that just popped up, use the arrow keys to highlight `From Netdist Server to Local System->` then press the <RETURN> key on the keyboard. This will cause a new window to appear within the update window.
5	In the window that just popped up, this message is displayed: `Netdist Server (Source):` Enter the name of the node which contains the update files, then press the <RETURN> key on the keyboard.
6	Using the mouse, position the cursor over the "Done" button at the bottom of the update window and press the left button on the mouse. This will cause the top window to close.
7	In the window that just popped up, use the arrow keys to highlight `Select All Filesets on the Source Media->` then press the <RETURN> key on the keyboard. This will cause a new window to appear within the update window.
8	In the new window, use the arrow keys on the keyboard to highlight `Start loading now?` then press the <RETURN> key on the keyboard.
9	After a few seconds, a window will pop up and the final sentence in the window will ask. `Start loading filesets now?` When this window appears, press the "**y**" key on the keyboard. This will start the update.

Continued on next page

Detailed installation instructions, continued

Step	Action
10	The coprocessor may reboot automatically. This reboot will take approximately 14 minutes. During this time “DO NOT” cycle power or reset the UNIX coprocessor. Resetting the coprocessor in this 14 minute window will cause corruption of the system disk. If the system has not come back up within 30 minutes, then the coprocessor is in a halted state and you must cycle power to the node. It will take up to 20 minutes for the UNIX software to come up.
11	Reset the Universal Station^X node. If your Universal Station^X node is packaged in a standard Honeywell TDC 3000^X console cabinet, the reset button is located under the folding top edge of the operator's keyboard. If your Universal Station^X node is packaged in the new ergonomic design , Honeywell TDC 3000^X console cabinet, the reset button is a recessed button located at the top edge of the operator's keyboard. Use a ball point pen or similar device to activate this button. If your Universal Station^X node is packaged in a Honeywell Micro-TDC tower cabinet, the reset button can be accessed only by removing the front cabinet cover and pressing the button located on the front edge of the module power supply. Your Universal Station^X node software will automatically reload from the local disk storage media. This reload process should take approximately 5 minutes. After that time, you will observe the login bar appear at the bottom portion of the display screen indicating the Universal Station^X station is now ready to use.

Update errors

If any minor errors or warnings occurred, they will be displayed upon completion of the update process. Please record each message and press the `Search` target to display the next message. When all messages have been displayed, the system will beep. Select the `Exit` target.

If any major errors occurred during the update, this message is displayed:`Update Failed!!! Call the Technical Assistance Center for help.` The process will not continue. You must contact Honeywell’s TAC to resolve the errors.

7.11 Checking Tracking Files

Software tracking

There are several utilities within UNIX which provide troubleshooting information by constantly providing on-line recording of certain events/messages. This information can often help in locating the trouble source.

Interpreting the file contents is beyond the scope of this publication; however, the location and use of these files will be described here.

Login logs

The system logs all login attempts in the `/etc` directory. You may check the logs to determine if there have been any attempts to gain unauthorized access.

Login attempt	Recorded in log file
Successful Login	`/etc/wtmp`
Failed Login	`/etc/btmp`

The files are stored in binary format. Use the UNIX command `last` to read the wtmp file (successful logins and logouts) and the command `lastb` to read the btmp file (failed logins). For example,

```
last /etc/wtmp <RETURN>
lastb /etc/btmp <RETURN>
```

Shutdown log

The system logs all shutdowns in the file `/usr/adm/shutdownlog`. Check this file for any unattended shutdowns (power outage) or any abnormal conditions incurred during past shutdowns.

7.12 Software Restoration From Local DAT

Overview

This procedure will restore the software from DAT tapes to the U^{X}S's hard drive. It can be used when the software on the hard disk has been corrupted, or when the hard disk has been replaced with one that has no software. This procedure requires the U^{X}S to have a DAT drive. If it does not, use the "Software Restoration from a Server" procedure.

This procedure should take about 1.5 to 2.5 hours.

Required

In order to complete this procedure, you must have:

- vt100 terminal (or a terminal that emulates vt100)
- cable that connects the vt100 to the WSI2 I/O board
- DAT tapes:
  - HP-UX Install (UxS R200)
  - UxS Windows SW (RELEASE 200)
  - UxS Personality for UxS R200
  - HP-UX 9.05 Patches (UxS R200,...)
  - Optional HP-UX 9.05 Patches (UxS R200,...)
- hostname and IP address of the destination U^{X}S
- hostname and IP address of the server U^{X}S
- coprocessor (root) password of the server U^{X}S

Preferred (in addition to Required)

- DAT tapes:
  - system backup

Optional (in addition to Required)

In order to complete this procedure, you might want to have:

- subnet mask for your LAN
- hostname and IP address of the gateway
- hostname and IP address of the BIND server

Restore procedure

Step	Action
1	Connect a vt100 terminal to the WSI2 I/O board. Henceforth, this terminal will be called the system console.
2	After powering on the processor chassis, use the ESC key on your system console to halt the boot process. Note: Press the ESC key after after receiving the prompt to halt the boot process.
3	Insert the HP-UX Install (UxS R200) tape into the DAT tape drive.
4	Wait for the tape to load. When the lights on the drive stop blinking, enter 1 (Boot From a Device) and press <RETURN> .

Continued on next page

7.12 Software Restoration From Local DAT, Continued

Restore procedure, continued

Step	Action
5	Look for the line: `SCSI.1.0 HP` To the left of that line (under Key) will be a number (probably a 2). Enter that number and press <RETURN>. This will take 2 to 3 minutes.
6	You will get a message that the EISA configuration has completed. Press any key to continue.
7	Installation step information will be presented. Press any key to continue.
8	You will now be at the HP-UX INSTALLATION UTILITY. Look for the line with your type of disk listed. It will probably be one of the following: HP C2235 or Quantum LPS525S or Seagate ST3600N or Digital DSP 3107L or Quantum LPS1080S or Quantum VP31110 or Seagate ST31200 or Quantum VP32210 or Seagate ST32430N or HP C3325A Note: It will have Slot Number = 0, Bus Addr = 6, and Func Num = 1. To the left of that line will be a number (probably a 1). Enter that number.
9	You may get a warning message about an HP-UX system already being on this disk. Press any key to continue.
10	Do you want the root file system to allow long filenames? Enter `y`.
11	Enter `1` to Continue Installation Process.
12	Enter `80000` (or leave as default—whichever is larger) for the Root Disk Swap Space and press <RETURN>. Note: If you chose to use the default Root Disk Swap Space, skip the next two steps.
13	You may get a message indicating that swap space will be rounded to match system constraints. If so, press <RETURN>.

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7.12 Software Restoration From Local DAT, Continued

Restore procedure, continued

Step	Action
14	The Root Disk Swap Space will show a new number. Press <RETURN>
15	You will get a warning message that continuing the installation process will destroy the contents of your disk. Enter y to continue. You will see a message (making file system). The tape will begin loading files. When complete, the system will reboot. This will take 2-3 minutes.
16	After the system reboots, you will get a message "A PS/2 DIN interface has been detected ..." message will be displayed. Press <Enter> to continue. Note: You may get a "failed" message after pressing enter. This will be corrected later in the upgrade.
17	Remove the HP-UX Install (UxS R200) tape from the DAT tape drive.
18	Insert the UxS Windows SW (RELEASE 200) tape. Wait for the lights to stop blinking.
19	You will get a message asking you to confirm that the update media has replaced the install media. Press <RETURN>.
20	Select `Select All Filesets on Source Media` and press <RETURN>.
21	Select `Start Loading Now` and press <RETURN>. You will get a message: `Calculating Disk Space Requirements.`
22	Enter y to Start Loading Filesets Now? Note: This will take about 20 to 30 minutes.When the load is complete, the system will reboot automatically. The reboot process will ask for a number of items: Your intended Hostname Your Internet Protocol (IP) address for the station Subnetwork mask Gateway Information BIND server information Timezone information Password for the coprocessor (root) Follow the prompts through the configuration options.
23	When the system comes back up, login as root at the system console.

Continued on next page

7.12 Software Restoration From Local DAT, Continued

Restore procedure, continued

Step	Action
24	If you do NOT have a DAT tape with a **system** backup on it, continue with the next step. If you do, perform the following: 1. Insert the system backup tape in the DAT drive. 2. Enter `/etc/frecover -rov` and press <RETURN>. Note: this will take about 30-45 minutes. 3. Enter `reboot -q` and press <RETURN>. This completes the procedure—your station has been restored to the state it was in at the time of your last system backup.
25	At the prompt, enter `more /etc/kbdlang` and press <RETURN>. If you get : /etc/kbdlang: No such file or directory Enter `echo "PS2_DIN_US_English" > /etc/kbdlang` and press <RETURN>
26	Remove the UxS Windows SW (RELEASE 200) tape from the DAT tape drive.
27	Insert the UxS Personality for UxS R200 tape into the DAT tape drive. Wait for the lights to stop blinking.
28	Enter `/etc/update` and press <RETURN>
29	Select `Select All Filesets on the Source Media` and press <RETURN>
30	Select `Start Loading Now` and press <RETURN>
31	Enter y to Start Loading Filesets Now? (y or n) Note: Tape load will take about 1 to 3 minutes.
32	When the update is done, remove the UxS Personality for UxS R200 tape from the DAT tape drive.
33	Insert the HP-UX 9.05 PATCHES(UxS R200, AxM R110, AxM R200) tape into the DAT drive. Wait for the lights to stop blinking.
34	Enter `/etc/update` and press <RETURN>
35	Select `Select All Filesets on the Source Media` and press <RETURN>
36	Select `Start Loading Now` and press <RETURN>
37	You will get a warning message about a kernel rebuild. Enter n to continue.

Continued on next page

7.12 Software Restoration From Local DAT, Continued

Restore procedure, continued

Step	Action
38	Enter y to Start Loading Filesets Now? y or n The system will reboot automatically after the filesets are loaded. Note: This will take about 20-25 minutes.
39	After the system has come back up, remove the HP-UX Patches (UxS R200, AxM R110, AxM R200) tape from the DAT tape drive.
40	Insert the **Optional** HP-UX 9.05 PATCHES(UxS R200, AxM R110, AxM R200) tape into the DAT drive. Wait for the lights to stop blinking.
41	Login as root at the system console.
42	Enter `/etc/update` and press <RETURN>
43	If you wish to load all optional patches: 1. Select `Select All Filesets on the Source Media` and press <RETURN> 2. Select `Start Loading Now` and press <RETURN> If you wish to load only some of the optional patches (because of limited disk space): 1. Select `Select/View Partitions and Filesets` and press <RETURN> 2. Enter a `Y` to the left of the patches you want to load 3. Press the <control> and `f` keys together, release them and then press the numeric `4` key.
44	You may get a warning message about a kernel rebuild (depending on your selections in the previous step). If you get the warning, enter n to continue (no more information).
45	Enter y to Start Loading Filesets Now? y or n If you got the “kernel rebuild” warning, the system will reboot automatically after the filesets are loaded. Note: This will take about 5-10 minutes.
46	If the system did not automatically reboot, type `reboot -q` and press <RETURN>
47	After the system has come back up, remove the **Optional** HP-UX 9.05 PATCHES(UxS R200, AxM R110, AxM R200) tape.

Continued on next page

7.12 Software Restoration From Local DAT, Continued

Restore Completed

At this point, all the software is loaded on the UXSs hard drive. The UXS also has minimal configuration. Because you do not have a system backup on DAT, you must "manually" configure your system to recover your data base.

Manual Data Base Recovery Procedure

Step	Action
1	"Manually" configure your system. Note: You are here because you do not have a DAT tape containing a system backup; therefore, you must configure your system from scratch. Follow the appropriate sections in the UXS System Administration Manual to complete the configuration. Examples of procedures you must follow: Configure Coprocessor LAN Information Configure LAN Routing Configure Security for Remote Users Configure Coprocessor Printer Create New Coprocessor Users Industrial Workspace Manager CRT Configuration (for dual CRT UXSs)
2	If you have a DAT tape containing a user backup, restore it by using the Restore Local Coprocessor Hard Drive Data procedure in the UXS System Administration Manual. If not, "manually" configure user files. This can be done by using `ftp` to copy user files from other UXSs (if available) , or by following the procedures in the Coprocessor User Environment Configuration section of the UXS System Administration Manual.
3	Install any optional software by following the instructions that came with that software.
4	Perform a complete backup of your system by following the Backup the Local Coprocessor Hard Drive procedure in the UXS System Administration Manual.

7.13 Software Restoration from a Server

Overview

This procedure loads software (and database if available) from DAT tapes to a hard drive. It is intended to be used when the UXS with the corrupted file system does not have a DAT drive. Another UXS (which does have a DAT drive) will be required to perform this procedure. The UXS with the DAT drive will be referred to as the server UXS. The UXS with the corrupted file system will be referred to as the destination UXS.

During the restore procedure you will be asked to move between the server UXS and the destination UXS. The procedure should take about 2.5 to 3.5 hours.

CAUTION

This procedure requires the server UXS to have a 1 gigabyte (or larger) hard disk drive. Although it is possible to restore from a server UXS with a 525mb hard drive (small portions each time), this procedure will not discuss that method. Another method (also not discussed here) is to move the netdist area to a second 525mb disk drive. Only software updates containing a small number of filesets should be loaded for network distribution on a single 525mb disk drive system.

Required

In order to complete this procedure, you must have:

- vt100 terminal (or a terminal that emulates vt100)
- cable that connects the vt100 to the WSI2 I/O board
- UXS (server) with a 1.2G (or larger) hard drive and a DAT drive
- DAT tapes:
  - UxS Windows SW (RELEASE 200)
  - UxS Personality for UxS R200
  - HP-UX 9.05 Patches (UxS R200,...)
  - Optional HP-UX 9.05 Patches (UxS R200,...)
- hostname and IP address of the destination UXS
- hostname and IP address of the server UXS
- coprocessor (root) password of the server UXS

Preferred (in addition to Required)

In order to complete this procedure, is is preferable if you have:

- DAT tapes:
  - system backup

Optional (in addition to Required)

In order to complete this procedure, you might want to have:

- subnet mask for your LAN
- hostname and IP address of the gateway
- hostname and IP address of the BIND server

Continued on next page

7.13 Software Restoration from a Server, Continued

Destination U^{X}S - procedure 1

Step	Action
1	Connect a vt100 terminal to the WSI2 I/O board of the destination U^{X}S. Henceforth, this terminal will be referred to as the system console.
2	After powering on the destination U^{X}S processor chassis, use the ESC key on your system console to halt the boot process. Note: Press the ESC key after after receiving the prompt to halt the boot process.
3	Enter `6` and press <RETURN>. (Hardware Information)
4	Enter `1` and press <RETURN>. (I/O ASIC)
5	Look for the following information: `LAN 080009 - xxxxxx` Write down the last six digits. (Example - 0AFC5D)
6	Enter `0` and press <RETURN> (Previous Menu)
7	Enter `0` and press <RETURN> (Previous Menu)

Server U^{X}S - procedure 1

1	Now the station to be used as the sever must be set up. At the server U^{X}S, insert the UxS Windows SW (RELEASE 200) tape into the DAT tape drive.
2	Login as engineer.
3	Select `System Menu->Update Software->Network` from the menu.
4	Enter the coprocessor (root) password and press <RETURN>. Note: If this U^{X}S has been used as a netdist server before, you may get a message that the network daemon is already running, and the system will reboot. If it does, perform the following steps: Login as engineer. Select `System Menu->Update Software->Network` Enter the coprocessor (root) password and press <RETURN>. Enter y and press <RETURN>to remove existing files. Note: This may take 5-10 minutes.

Continued on next page

7.13 Software Restoration from a Server, Continued

Sever UXS - procedure 1, continued

Step	Action
5	Select `Select All Filesets on Source Media` and press <RETURN>. You may get a message asking if you want to create a netdist directory. If so, enter y.
6	A prompt window may appear asking if you intend on loading to a series 700 or series 800. Enter 7
7	Select `Start Loading Now` and press <RETURN>.
8	Enter y to Start Loading Filesets Now? (y or n). Note: Continue with the next step. When the tape load is complete, the Create_Network_Master window will close. This will take about 20-25 minutes.
9	While the previous step is executing we will proceed with another part of the setup process. At the server UXS, select `System Menu->Configuration->System Configuration` from the menu.
10	Enter the coprocessor (root) password and press <RETURN>.
11	Select `Networking/Communications` and press <RETURN>.
12	Select `Device Connectivity` and press <RETURN>.
13	Select `Boot Protocol` and press <RETURN>.
14	From the window title bar select `Actions`.
15	Select `Add`.
16	Into the form presented, enter the bootp device name (This is the internet node name of the destination UXS).
17	You may get a note window with a message about connectivity not being configured. If you do, select `ok`.
18	The internet protocol address may be filled in automatically. If not, fill it in.
19	Enter the Subnet Mask (example- 255.255.255.0)

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Sever UXS - procedure 1, continued

Step	Action
20	Enter the Station Address 080009xxxxxx. Where xxxxxx is the number copied from the destination UXS. This number was obtained earlier in this procedure.
21	Enter the bootfile name /usr/lib/uxinstlf.700 Note: You may get an error: Unable to stat file /usr/tftpdir//usr/lib/uxinstlf.700. No such file or directory. If you do, perform the following: 1. Select `System Menu->Configuration->System Terminal` 2. Enter the coprocessor (root) password and press <RETURN>. 3. Enter `cp /usr/lib/uxinstlf.700 /usr/tftpdir/` and press <RETURN>. 4. Select `No` in the Confirmation window. 5. Enter the bootfile name uxinstlf.700
22	Select `ok`. You will be returned to the Device Connectivity window.
23	Select `File` and then `Exit` from the window title bar to close the window. Note: You may get a message about enabling the Bootp server. If so, select `yes`.
24	Select `Exit SAM`.
25	Wait for the tape load begun earlier to complete. Note: When complete, the Create_Network_Master window will close.
26	Remove the UxS Windows SW (RELEASE 200) tape from the DAT tape drive and go to the destination UXS.

Destination UXS - procedure 2

Step	Action
1	On the system console connected to the destination UXS, enter 1 (Boot From Device), and press <RETURN>.
2	Look for the IP address of the server UXS. To the left (under Key) will be a number (probably a 1). Enter that number and press <RETURN>.

Continued on next page

Destination UXS - procedure 2, continued

Step	Action
3	You will get a message that the EISA configuration has completed. Press any key to continue.
4	Installation step information will be presented. Press any key to continue.
5	A list of required information (for a network install) will be presented. Press any key to continue.
6	Enter the IP address of this host and press <RETURN>.
7	Enter the IP address of the server UXS and press <RETURN>.
8	Enter port number 2106 and press <RETURN>.
9	Enter a Gateway address or the word "none" and press <RETURN>.
10	Enter a Subnet mask or the word "none" and press <RETURN>.
11	Press <control> X
12	You will now be at the HP-UX INSTALLATION UTILITY. Look for the line with your type of disk listed. It will probably be one of the following: HP C2235 or Quantum LPS525S or Seagate ST3600N or Digital DSP 3107L or Quantum LPS1080S or Quantum VP31110 or Seagate ST31200 or Quantum VP32210 or Seagate ST32430N or HP C3325A Note: It will have Slot Number = 0, Bus Addr = 6, and Func Num = 1. To the left of that line will be a number (probably a 1). Enter that number.
13	You may get a warning message about an HP-UX system already being on this disk. Press any key to continue.
14	Do you want the root file system to allow long filenames? Enter y.
15	Enter 1 to Continue Installation Process.

Continued on next page

Destination U^XS - procedure 2, continued

Step	Action
16	Enter `80000` (or leave as default—whichever is larger) for the Root Disk Swap Space and press `<RETURN>`. Note: If you chose to use the default Root Disk Swap Space, skip the next two steps.
17	You will get a message indicating that swap space will be rounded to match system constraints. Press `<RETURN>`.
18	The Root Disk Swap Space will show a new number. Press `<RETURN>`
19	You will get a warning message that continuing the installation process will destroy the contents of your disk. Enter `y` to continue. You will see a message (making file system). The system will begin loading files from the server U^XS. When complete, the system will reboot.
20	After the system reboots, you will get a message "A PS/2 DIN interface has been detected ..." message will be displayed. Press `<Enter>` to continue.
21	You will be taken to the update program. Select `Select All Filesets on Source Media` and press `<RETURN>.`
22	Select `Start Loading Now` and press `<RETURN>.` You will get a message: `Calculating Disk Space Requirements.`
23	Enter y to Start Loading Filesets Now? (y or n). Note: Wait for the load to complete. This will take about 30-45 minutes. The system will reboot automatically. The reboot process will ask for a number of items: Your intended Hostname Your Internet Protocol (IP) address for the station Subnetwork mask Gateway Information BIND server information Timezone information Password for the coprocessor (root) Follow the prompts through the configuration options.
24	Wait until the system finishes coming up.

Continued on next page

7.13 Software Restoration from a Server, Continued

Restore system backup

Step	Action
1	If you do NOT have a DAT tape with a **system** backup on it, continue with the next procedure (Server U^{X}S—procedure 2). If you do, then login as root at the system console.
2	Insert the backup tape in the server U^{X}S's DAT drive.
3	At the system console connected to the destination station, type `vi /etc/hosts` and press <RETURN>.
4	Enter <Shift>ga (GA) and press <RETURN>.
5	Enter the IP address and host name of the server U^{X}S. Ex: 164.145.114.52 trn2 Note: Limit the host name to 8 characters.
6	Press <Esc>
7	Enter `:wq!` and press <RETURN>.
8	Verify that the name of the destination station node is in the /.rhosts file of the server U^{X}S'. If it is, go to the next step, if not, follow these instructions to add it: a. At the server U^{X}S, select: `System Menu->Configuration->System Terminal` from the workspace menu. b. Enter the coprocessor (root) password and press <RETURN>. c. Enter `vi /.rhosts` and press <RETURN>. d. Enter <Shift>ga (GA) and press <RETURN>. e. Enter the full name of the destination node (alias names cannot be used). f. Press <ESC>. g. Enter `:wq!` and press <RETURN>. h. Enter `exit` and press <RETURN> to close the system terminal window on the server U^{X}S.
9	Type `/etc/frecover -rov -f` *`svrhstnm`*`:/dev/rmt/0m` and press <RETURN>. (where *`svrhstnm`* is the host name of the server U^{X}S). Ex: `frecover -rov -f trn2:/dev/rmt/0m` Note1: 0m is zero m, not oh m Note2: This will take about 60-75 minutes.
10	After the frecover has completed, type `reboot -q` and press <RETURN>. This completes the procedure—your station has been restored to the state it was in at the time of your last system backup.

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7.13 Software Restoration from a Server, Continued

Server UXS - procedure 2

Step	Action
1	At the server UXS, insert the UxS Personality for UxS R200 tape.
2	Select `System Menu->Update Software->Network` from the menu.
3	Enter the coprocessor (root) password and press <RETURN>. Note: Because a network daemon is already running, the system will automatically reboot.
4	Login as engineer.
5	Select `System Menu->Update Software->Network` from the menu.
6	Enter the coprocessor (root) password and press <RETURN>.
7	You will get a message asking if you want to remove existing update files [Y/n]. Enter y and press <RETURN>. Note: This will take about 5-7 minutes.
8	Select `Select All Filesets on the Source Media` and press <RETURN>.
9	Select `Start Loading Now` and press <RETURN>.
10	Enter y to Start Loading Filesets Now? (y or n). Note: Wait for the load to complete. When complete, the Create_Network_Master window will close. This will take about 1-2 minutes.
11	Remove the UxS Personality for UxS R200 tape and go to the destination UXS.

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7.13 Software Restoration from a Server, Continued

Destination UXS - procedure 3

Step	Action
1	On the system console connected to the destination UXS, login as root.
2	At the prompt, enter `more /etc/kbdlang` and press <RETURN> If you get: /etc/kbdlang: No such file of directory Enter: `echo "PS2_DIN_US_English" > /etc/kbdlang` and press <RETURN>
3	Enter `/etc/update` and press <RETURN>.
4	Select `Change Source or Destination` and press <RETURN>.
5	Select `From Netdist Server to Local System` and press <RETURN>
6	Enter the IP address of the server. Press the <control> and `f` keys together, release them and then press the numeric 4 key.
7	Select `Select all Filesets on the Source Media` and press <RETURN>.
8	Select `Start Loading Now` and press <RETURN>.
9	Enter y to Start Loading Filesets Now? (y or n). Note: Wait for the load to complete. When complete, you will be returned to a shell prompt (#). This will take about 1 minute.

Server UXS - procedure 3

Step	Action
1	At the server UXS, insert the HP-UX 9.05 PATCHES (UxS R200, AxM R110, AxM R200) tape.
2	Select `System Menu->Update Software->Network` from the menu.
3	Enter the coprocessor (root) password and press <RETURN>. Note: Because a network daemon is already running, the system will automatically reboot.

Continued on next page

Server UXS - procedure 3, continued

Step	Action
4	Login as engineer.
5	Select `System Menu->Update Software->Network` from the menu.
6	Enter the coprocessor (root) password and press <RETURN>.
7	You will get a message asking if you want to remove existing update files [Y/n]. Enter y and press <RETURN>. Note: This will take about 1 minute.
8	Select `Select All Filesets on the Source Media` and press <RETURN>.
9	A prompt window may appear asking if you intend on loading to a series 700 or series 800. Enter 7
10	Select `Start Loading Now` and press <RETURN>.
11	Enter y to Start Loading Filesets Now? (y or n). Note: Wait for the load to complete. When complete, the Create_Network_Master window will close. This will take about 3-5 minutes.
12	Remove the HP-UX 9.05 PATCHES (UxS R200, AxM R110, AxM R200) tape and go to the destination UXS.

Destination UXS - procedure 4

Step	Action
1	On the system console connected to the destination UXS, enter `/etc/update` and press <RETURN>.
2	Select `Change Source or Destination` and press <RETURN>.
3	Select `From Netdist Server to Local System` and press <RETURN>.
4	Enter the `IP Address of the Server.` Press the <control> and `f` keys together, release them and then press the numeric 4 key.

Continued on next page

7.13 Software Restoration from a Server, Continued

Server UXS - procedure 3, continued

Step	Action
5	Select `Select all Filesets on the Source Media` and press <RETURN>.
6	Select `Start Loading Now` and press <RETURN>. Note: You may get a warning message informing you that a kernel rebuild and reboot is required. Enter n to this message.
7	Enter y to Start Loading Filesets Now? (y or n). Note: Wait for the load to complete. This will take about 20-25 minutes. Note: After loading is complete the station will reboot.

Server UXS - procedure 4

Step	Action
1	At the server UXS, insert the **Optional** HP-UX 9.05 PATCHES (UxS R200, AxM R110, AxM R200) tape.
2	Select `System Menu->Update Software->Network` from the menu.
3	Enter the coprocessor (root) password and press <RETURN>. Note: Because a network daemon is already running, the system will automatically reboot.
4	Login as engineer.
5	Select `System Menu->Update Software->Network` from the menu.
6	Enter the coprocessor (root) password and press <RETURN>.

Continued on next page

Server UXS - procedure 4, continued

Step	Action
7	You will get a message asking if you want to remove existing update files [Y/n]. Enter y and press <RETURN>. Note: This will take about 1 minute.
8	If you wish to load all optional patches: 1. Select `Select All Filesets on the Source Media` and press <RETURN> 2. Enter 7. 3. Select `Start Loading Now` and press <RETURN> If you wish to load only some of the optional patches (because of limited disk space): 1. Select `Select/View Partitions and Filesets` and press <RETURN> 2. Enter 7. 3. Enter a `Y` to the left of the patches you want to load 4. Select the `Start Loading` target.
9	Enter y to Start Loading Filesets Now? (y or n). Note: Wait for the load to complete. When complete, the Create_Network_Master window will close. This will take about 3-5 minutes.
10	Remove the **Optional** HP-UX 9.05 PATCHES (UxS R200, AxM R110, AxM R200) tape and go to the destination UXS.

Destination UXS - procedure 5

Step	Action
1	On the system console connected to the destination UXS, login as root.
2	Enter `/etc/update` and press <RETURN>.
3	Select `Change Source or Destination` and press <RETURN>.
4	Select `From Netdist Server to Local System` and press <RETURN>.
5	Enter the IP address of the server. Press the <control> and `f` keys together, release them and then press the numeric 4 key.

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Destination U^{X}S - procedure 5, continued

Step	Action
6	Select `Select all Filesets on the Source Media` and press <RETURN>.
7	Select `Start Loading Now` and press <RETURN>.
8	Depending on which of the optional patches you selected, you may get a warning message informing you that a kernel rebuild and reboot is required. If you get the message, enter n to this message.
9	Enter y to Start Loading Filesets Now? (y or n). Note: Wait for the load to complete. This will take about 5-10 minutes. If you got the “kernel rebuild” warning, the system will reboot automatically after the filesets are loaded.
10	If the system did not automatically reboot,you will be returned to a shell prompt (#). Type `reboot -q` and press <RETURN>

Restore Completed

At this point, all the software is loaded on the destination U^{X}Ss hard drive. The destination U^{X}S also has minimal configuration. Because you do not have a system backup on DAT, you must “manually” configure your system in order to recover your data base.

Continued on next page

Manual Data Base Recovery Procedure

Step	Action
1	"Manually" configure your system. Note: You are here because you do not have a DAT tape containing a system backup; therefore, you must configure your system from scratch. Follow the appropriate sections in the UXS System Administration Manual to complete the configuration. Examples of procedures you must follow: Configure Coprocessor LAN Information Configure LAN Routing Configure Security for Remote Users Configure Coprocessor Printer Create New Coprocessor Users Industrial Workspace Manager CRT Configuration (for dual CRT UXSs)
2	If you have a DAT tape containing a user backup, restore it using the Restore Local Coprocessor Hard Drive Data procedure in the UXS System Administration Manual. If not, "manually" configure user files. This can be done by using `ftp` to copy user files from other UXSs (if available) , or by following the procedures in the Coprocessor User Environment Configuration section of the UXS System Administration Manual.
3	Install any optional software by following the instructions that came with that software.
4	Perform a complete backup of your system by following the Backup the Local Coprocessor Hard Drive procedure in the UXS System Administration Manual.

7.14 System Console Connection

Requirements for coprocessor console

Some system administration procedures will require a system console to complete. Examples of procedures requiring a system console are: restoring the software on a disk whose file system is corrupt, putting the U^X^S in single user mode and performing a backup of the hard drive using the fbackup command, and troubleshooting more serious problems.

Recommended Terminal

Honeywell recommends the Digital Equipment Corporation (DEC) VT-100 terminal (or any simple terminal with equivalent functionality) for use as a system console connected to the coprocessor.

You may also use a PC running suitable terminal emulation software (such as Windows 3.1 Terminal) to provide DEC VT-100 compatible terminal functionality.

A U^X^S, or System Administration and Development workstation (HP 712/60), can also be used as a coprocessor console. The serial port of these devices must be connected to the serial port of your U^X^S using the terminal cable to support this functionality.

Required terminal options

The terminal must be set to provide the following functionality to successfully communicate with the coprocessor serial port 1:

- Asynchronous operation
- 9600 bits per second
- 8 bits/character
- No parity

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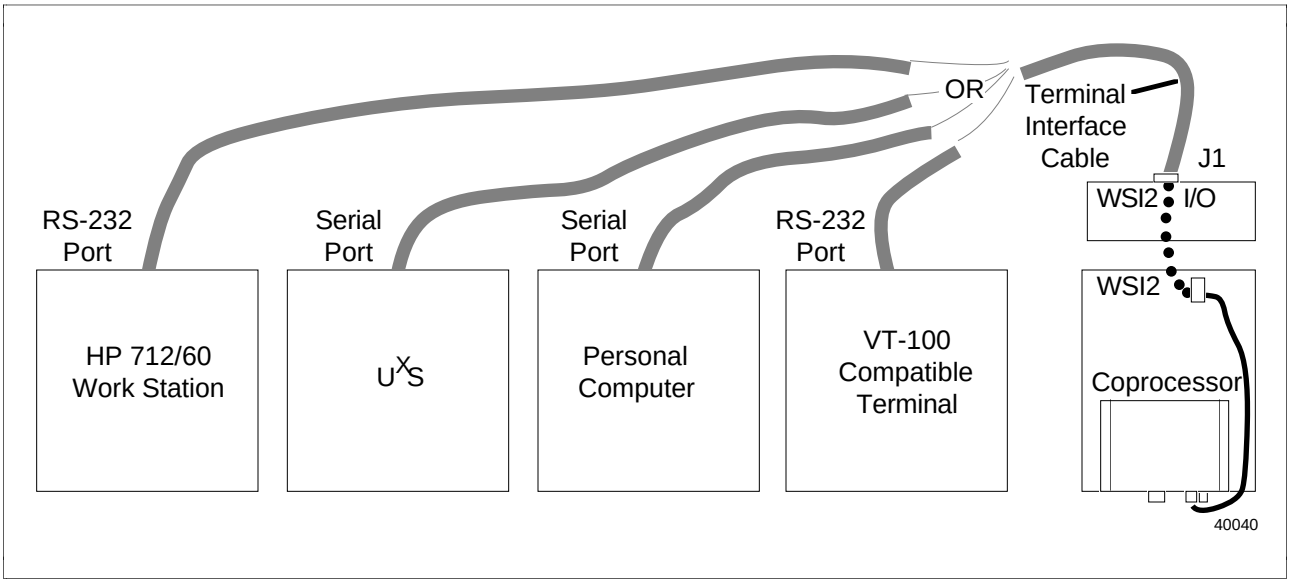
7.14 System Console Connection, Continued

Overview

A direct connect interface cable must be connected between the system console device and the WSI2 I/O board (Serial Port 1).

Figure 7-1 illustrates that several different devices can be used to provide this system console connection. It also illustrates how the system console is connected to the coprocessor.

Figure 7-1 Coprocessor Console Connection



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Coprocessor system console interface cable schematic

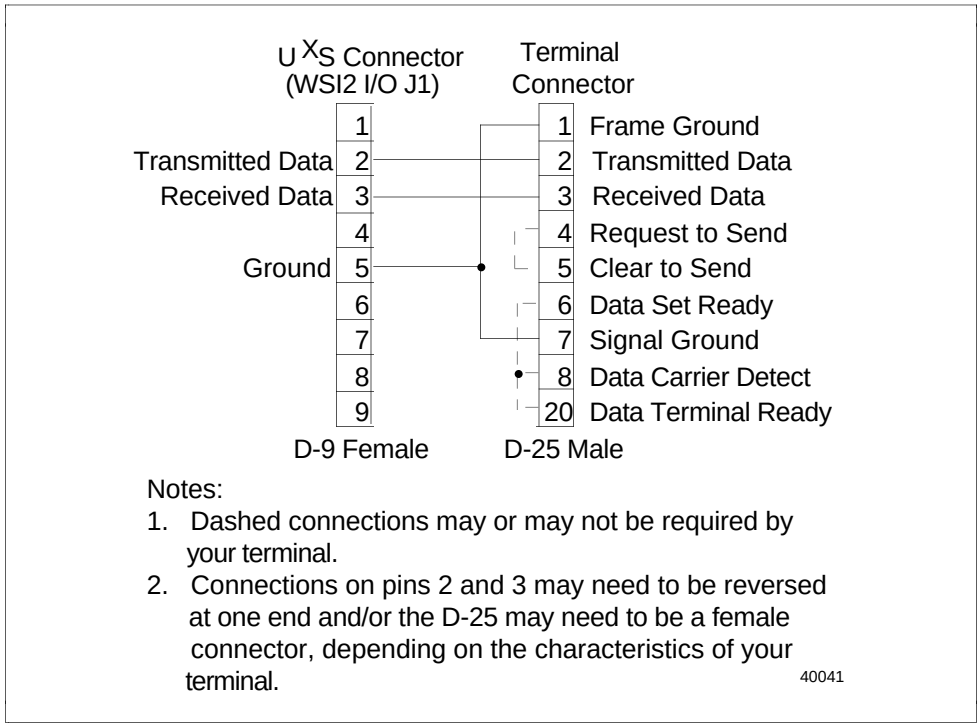
Examples of the direct connect terminal interface cable wiring details are shown in the following diagrams.

Notice that two cable types are described. One is a 9 to 25 pin direct connect cable and the other is a 9 to 9 pin direct connect cable.

The 9 to 25 pin cable (Figure 7-2) is available from Honeywell logistics using the part number 51196218-300. This is an optional cable. It is not generally supplied with the U^{X}S.

The 9 to 9 pin cable (Figure 7-3) is available from Honeywell logistics using the part number 51305069-100. This is also an optional cable. It is not generally supplied with the U^{X}S.

Figure 7-2 Coprocessor System Console Cable (9 to 25 pin)



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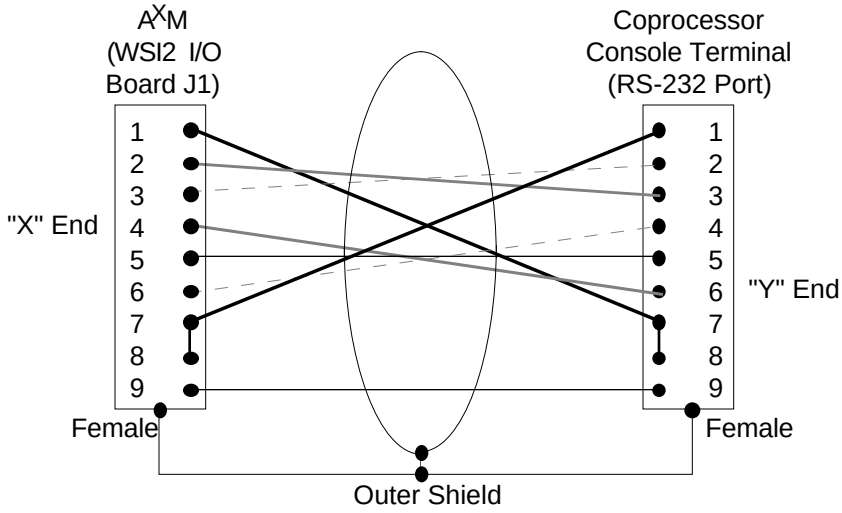
Coprocessor system console interface cable schematic, continued

Figure 7-3 Coprocessor System Console Cable (9 to 9 pin)



Pinning Table

"X" End	"Y" End
1	7 & 8
2	3
3	2
4	6
5	5
6	4
7	1
8	1
9	9
Shield	Shield

40070

Note: The dashed lines shown in the 9 to 9 cable diagram above are required connections. The dashed notation for some of the connections is used to make the specific wiring easier to read on screen.

Coprocessor system console connection procedure

The following table defines the different cable types available for connecting coprocessor consoles. Note that these cables are not generally supplied with the UXS. They are available by separate order.

Terminal Device	Terminal Connector	Cable Part Number
HP 712/60 Workstation	RS-232	51305069-100 9 pin(F) to 9 pin(F)
UXS	WSI I/O board (J1)	51305069-100 9 pin(F) to 9 pin(F)
VT-100 compatible devices with 9 pin RS-232 connector	Serial port	51305069-100 9 pin(F) to 9 pin(F)
VT-100 compatible devices with 25 pin RS-232 connector	Serial port	51196218-300 9 pin(F) to 25 pin(M)

Continued on next page

Procedure Overview

As mentioned earlier, you may use any of the following devices for a system console:

- DEC VT-100 terminal (or any "dumb" terminal with equivalent functionality)
- PC running suitable terminal emulation software (such as Windows 3.1 Terminal) to provide DEC VT-100 compatible terminal functionality
- R200 U^{X}S
- HP 712/60 workstation.

There are four procedures that follow this overview—one for each type of device. Make sure you use the correct procedure for the device you are using as a system console.

Dumb terminal procedure

Use the following procedure if you are using a "dumb terminal" as the system console.

Setting up VT-100 Emulation on a Dumb Terminal

Note: The coprocessor software defaults to the proper configuration of Serial Port 1 and no coprocessor configuration actions are required.

Step	Action
1	Connect the cable to the 25 pin RS-232 port on the terminal.
2	Connect the cable to the WSI2 I/O board connector for Serial Port 1 (connector J1).
3	Make sure the terminal is powered on.
4	Refer to the terminal documentation and set up the terminal for VT-100 emulation.
5	Set up the following communication parameters: 9600 baud, 8 data bits, 1 stop bit, no parity
6	If the U^{X}S is not powered on, turn power on now (you can watch the bootup process) Note: Be sure that the toggle switch on the left side of the WSI2 board is in the right (RUN) position.
7	At your system console, press <RETURN>. You should receive the login prompt from the U^{X}S
8	Log in as root.
9	Enter `setenv TERM vt100` and press <RETURN>.
10	Perform the desired procedure (restore software, backup, etc.). After the procedure is complete, return to the next step in this procedure.
11	Enter `exit` and press <RETURN>.

Continued on next page

PC procedure

Use the following procedure if you are using a PC with Windows 3.1 for the system console.

Starting VT-100 Emulation on a PC

Note: The coprocessor software defaults to the proper configuration of Serial Port 1 and no coprocessor configuration actions are required.

Step	Action
1	Connect the cable to the RS-232 port on the back of the PC. Use the end marked “HOST RS-232 PORT”. Note: Henceforth, the term system console means the PC.
2	Connect the cable to the WSI2 I/O board connector for Serial Port 1 (connector J1). Use the end marked “WSI2 I/O J1”.
3	Start Windows 3.1 and (if necessary) login to the PC.
4	At the Program Manager, double-click on the Accessories icon.
5	Double-click on the Terminal icon Note: If you get the Terminal Error “The selected COM port is either not supported or is being used by another device. Select another port.”, Click OK. When the Communications window is displayed, Click Cancel.
6	Pull down the Settings menu and select Terminal Emulation • Select DEC VT-100 (ANSI) Click OK
7	Pull down the Settings menu and select Terminal Preferences • Under CR->CR/LF, ensure **neither** box is selected • Under Columns, ensure 80 is selected • At the bottom, ensure Show Scroll Bars is **not** selected and ensure Use Function, Arrow, and Ctrl Keys for Windows is **not** selected (very important) Click OK
8	Pull down the Settings menu and select Communications • Select COM1 • Select 9600 • Select 8 data bits • Select 1 stop bit • Select Parity None • Select Flow Control None • Parity Check and Carrier Detect should **not** be selected Click OK
9	Maximize the window.

Continued on next page

7.14 System Console Connection, Continued

PC procedure, continued

Step	Action
10	If you wish to save your configuration settings, pull down the File menu, select Save As, enter a filename, and click OK. The next time you enter the terminal emulation program, pull down the File menu and select Open. This will automatically restore your settings.
11	If the U^{X}S is not powered on, turn power on now (you can watch the bootup process). Note: Be sure that the toggle switch on the left side of the WSI2 board is in the right (RUN) position.
12	At your system console, press <RETURN>. You should receive the login prompt from the U^{X}S.
13	Log in as root.
14	Enter `setenv TERM vt100` and press <RETURN>.
15	Perform the desired procedure (restore software, backup, etc.). After the procedure is complete, return to the next step in this procedure.
16	Enter `exit` and press <RETURN>.
17	Close the system terminal window.

U^{X}S procedure (R200)

Use the following procedure if you are using an R200 U^{X}S to serve as the system console. The console serial port (J1) is used on both the "terminal" U^{X}S, and the U^{X}S to which a terminal is being connected.

Starting VT-100 Emulation on an R200 U^{X}S

Step	Action
1	Connect the cable to the WSI2 I/O board connector for Serial Port 1 (connector J1) on the "terminal" U^{X}S. Use the end marked "HOST RS-232 PORT". Note: Henceforth, the term system console means the "terminal" U^{X}S.
2	Connect the cable to the WSI2 I/O board connector for Serial Port 1 (connector J1). Use the end marked "WSI2 I/O J1".
3	At the "terminal" U^{X}S, login as engineer.
4	Select `Application Menu->Telnet` from the workspace menu.
5	Enter `!` and press <RETURN>.

Continued on next page

UXS procedure (R200), continued

Step	Action
6	Set up the backspace key. Enter `stty erase <SPACE> <BACKSPACE>` and press `<RETURN>`.
7	Become the root user. Enter `su -root` and press `<RETURN>`.
8	Enter the coprocessor (root) password and press `<RETURN>`.
9	Find the Process Identification Number (PID) of the console process. Enter `ps -ef | grep console` and press `<RETURN>`.
10	You should see a line of the form: `root` *nnn*`...../etc/getty -h console console` *nnn* is the PID—record it here _____
11	Enter `kill -STOP` *nnn* and press `<RETURN>`. using the PID for *nnn*.
12	Invoke Kermit. Enter `kermit -l /dev/console -b 9600 -c` and press `<RETURN>`. Note: `l` is the letter ell
13	If the UXS is not powered on, turn power on now (you can watch the bootup process) Note: Be sure that the toggle switch on the left side of the WSI2 board is in the right (RUN) position.
14	At your system console, press `<RETURN>`. You should receive the login prompt from the UXS
15	Log in as root.
16	Enter `setenv TERM xterm` and press `<RETURN>`.
17	Perform the desired procedure (restore software, backup, etc.). After the procedure is complete, return to the next step in this procedure.
18	Enter `exit` and press `<RETURN>`.
19	Close the system console window. Note: It is important to close this window even though you are going to open another xterm window.

Continued on next page

U^{X}S procedure (R200), continued

Step	Action
20	Open an xterm window and become the root user by repeating steps 4-8 of this procedure.
21	Remove the "exclusive use of the system console port (J1) lock". Enter `rm /usr/spool/uucp/LCK..console` and press <RETURN>.
22	Enter `kill -CONT` *nnn* and press <RETURN>. using the PID recorded earlier for *nnn*.
23	Close the xterm window.
24	`Logout`.

HP 712/60 workstation procedure

Use the following procedure if you are using the serial port on the Honeywell MP-AMXST1 (HP 712/60 workstation) for the system console.

Starting VT-100 Emulation on a HP 712/60

Note: The coprocessor software defaults to the proper configuration of Serial Port 1 and no coprocessor configuration actions are required.

Step	Action
1	Connect the cable to the RS-232 port on the back of the HP 712/60. Use the end marked "HOST RS-232 PORT". Note: Henceforth, the term system console means the HP 712/60
2	Connect the cable to the WSI2 I/O board connector for Serial Port 1 (connector J1). Use the end marked "WSI2 I/O J1".
3	Login to the HP 712/60.
4	Open an hp terminal window by clicking on the terminal icon.
5	At the "TERM = (hp)" prompt, press <RETURN>.
6	Enter `kermit` and press <RETURN>.
7	Enter `set line /dev/tty00` and press <RETURN>.
8	Enter `set baud 9600` and press <RETURN>.

Continued on next page

7.14 System Console Connection, Continued

Step	Action
9	Enter `log session` *`pathname`* and press <RETURN>. where *`pathname`* is a file path of your choice for a session log file (for example, `/tmp/session.log`) Note: Do not skip this step, even if you don't need a log. On the 712/60, Kermit has a tendency to hang if the session is not logged.
10	Enter `connect` and press <RETURN>.
11	If the U^{X}S is not powered on, turn power on now (you can watch the bootup process). Note: Be sure that the toggle switch on the left side of the WSI2 board is in the right (RUN) position.
12	At the system console, press <RETURN>. You should receive the login prompt from the U^{X}S
13	Log in as root.
14	Perform the desired procedure (restore software, backup, etc.). After the procedure is complete, return to the next step in this procedure.
15	Enter `exit` and press <RETURN>.
16	Close the system console window.
17	Logout.

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Title of Publication: **R200 Universal Station** Issue Date: **2/96**

Publication Number: **UX11-402**

Writer: **C. Rosson**

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