

1

Introduction

In this Chapter...

- [Reference Manuals](#), 1-2
- [Summary of System Administration Tasks](#), 1-4
- [Software Overview](#), 1-5
- [Hardware Overview](#), 1-9

Introduction

This manual contains an overview of information to administer 3070 board test systems running on the HP-UX version 10.20 operating system.

Agilent's 3070 System Administration Class

The Agilent 3070 system administration class explains system administration in depth. To best use this manual, enroll in a 3070 system administration class – see your Agilent representative for details.

For Help

HP-UX Reference

HP-UX reference information is available on the Internet at:

<http://docs.hp.com/index.html>

System Administrator Manager (SAM)

To start SAM, enter: `/usr/sbin/sam` at a shell window prompt.

For help inside of SAM:

- From the dialog, click **Help**.
- Press F1 for context-sensitive help on a specific field.

3070 Reference

3070 User and Service manuals are located on 3070 system controllers and on factory-supplied updates.

More Help

See [In Case of Difficulty](#) on page 10-1.

Reference Manuals

HP-UX Reference

HP-UX reference information is available on the Internet at:

<http://docs.hp.com/index.html>

Man Pages

Running `man` on just about any command will tell you a lot of important things. Be sure to look at the bottom of the `man page` for related commands – and run `man` on them, too.

The *manpages* (as they are popularly known) are intended for all HP-UX systems. You may view reference material on most any command, system call, subroutine, device file, or file format by using the `man` command. The manpages are intended as reference material and are most useful to experienced users. They are not designed to serve as learning tools for beginners.

NOTE

Some HP-UX commands created in the 3070 HP-UX software will not appear in the manpages.

The standard HP-UX manpages are divided into eight sections:

- Section 1: User Commands

- Section 1M: System Administration Commands
- Section 2: System Calls
- Section 3: Subroutines
- Section 4: File Formats
- Section 5: Miscellaneous Facilities
- Section 7: Device Files
- Section 9: Glossary. Agilent 3070 System Administration

Section **1M** contains information on those commands that are used primarily by a system administrator.

Section 4 **File Formats** is also invaluable to the system administrator as it contains information on most of the configuration files that you will be responsible for maintaining.

Script Files

Script files are ASCII, and human-readable. The comments often will tell you lots of useful information about what the script is and how it should be run. They also will often tell you what can be changed, and what shouldn't be changed. So check if a particular program is a script.

3070 Reference

User Manuals

Information related to 3070 programs is found in User manuals. User manuals are shipped on 3070 system hard drives, and on factory-supplied updates.

From a 3070 UNIX system, they are accessed by clicking the book icon on the common desktop environment (CDE) toolbar.

Service Manuals

CAUTION



Service manuals should be used only by qualified service personnel such as Agilent Customer Engineers (CEs).

Information related to 3070 service is found in Service manuals. Service manuals are shipped on 3070 system hard drives, and are also distributed in CD-ROM updates.

From a 3070 system, they are accessed by clicking the book icon on the common desktop environment (CDE) toolbar.

Summary of System Administration Tasks

How Many Administrators are Necessary?

Ideally, a system has one system administrator and a backup. It could be necessary to have a system administrator per shift.

Avoid maintenance conflicts by keeping as few system administrators as necessary.

Responsibilities

Day-to-day tasks are required to keep a system running efficiently. Depending on the number of 3070 systems and what level of support needed, system administration can be either a part- or full-time job.

Acquire some knowledge each of the 3070 system hardware, the HP-UX operating system including its directory structure and file system as well as the use of HP-UX commands, and the 3070 program software.

Most system users will have minimal involvement with the operating system, but there will be times when greater knowledge is required, especially if something unusual occurs. System users will see you to update system hardware and software, manage logins, and when a system performs oddly.

Be prepared to allow time for the training required to administer 3070 systems. Without adequate training, a system administrator has both the potential to solve problems and to make a system inoperable!

Maintenance

Most HP-UX system administration tasks are performed using the System Administration Manager (SAM).

SAM is a user interface that allows system administration tasks to be done without using the underlying HP-UX commands.

SAM can be used to:

- Perform incremental backups.
- Perform full system backups.
- Add / remove users (as necessary).
- Create system recovery tapes (after installing software packages or changing the system's configuration).
- Recover files from backups.

Software Overview

This section contains:

- [Introduction](#), 1-5
- [Features of the HP-UX Operating System](#), 1-5
- [HP-UX 10.20 Directory Hierarchy](#), 1-5
- [LAN Networking Software](#), 1-6
- [3070 Program Software](#), 1-6

Introduction

New testhead controllers and test development systems that use the UNIX operating system are shipped with:

- The HP-UX operating system.
- LAN networking software.
- 3070 programming software that includes languages for board test development and quality reporting.

Table 1-1 HP-UX 10.20 directory hierarchy

HP-UX 10.20 Directory	Description
/dev	Device files for local devices.
/etc	Machine-specific configuration and administration databases.

Optional software features are available. For more information, contact your Agilent sales representative.

Features of the HP-UX Operating System

- Simultaneous multi-user support – HP-UX efficiently shares resources such as controller memory and processing time while maintaining the security and protection needed to insulate users from the activities of each other.
- Multi-tasking – Several programs and several tasks (or processes) can be performed at the same time.
- System administration utilities – Use these to simplify system administration tasks.

HP-UX 10.20 Directory Hierarchy

The HP-UX 10.20 directory hierarchy is different from previous releases. [Table 1-1](#) describes some of the directories that are most important to the 3070 user.

Table 1-1 HP-UX 10.20 directory hierarchy (continued)

HP-UX 10.20 Directory	Description
/home	Default for user directories.
/mnt	Optional mounting point for local file systems
/net	Default NFS mounting point for remote file systems. Note that the Agilent PR-PLUS software assumes that the mount point is /sys, not /net. The 3070 system is customized to accommodate Agilent PR-PLUS.
/opt	Root for optional applications. The /usr/hp3070 hierarchy is now here, in /opt/hp3070.
/sbin	Essential system commands, required for booting and mounting.
/usr	Mount point for sharable user commands, libraries, and documentation.
/var	Holds files created at runtime, such as log files and temporary files. The LP spooler is in /var/spool. Also, the old /hp3070 directory hierarchy is now in /var/hp3070

LAN Networking Software

3070 LAN software includes LAN/9000, NFS, and Internet Services packages. Connecting 3070 systems together on a common LAN allows users to share peripherals and access remote files. Programmers can edit remote testplans from their local system without the need of physically transporting the data. Without networking, a remote testplan file might have to be transferred via tape, then loaded onto the local system for editing.

Centralized storage of applications, testplans, and board data can reduce software maintenance costs and can maximize the integrity of the 3070 software. It can also simplify the process of revision and backup control.

3070 Program Software

Files and Directories

3070 systems come with directories, files, and utilities that are not a part of the HP-UX operating system.

Table 1-2 on page 1-7 describes some 3070 files and directories.

Table 1-2 Agilent 3070 files and directories

File or Directory	Description
<code>/var/hp3070</code>	A directory beneath which the majority of the 3070 file system resides (except for most of the executable programs).
<code>/opt/hp3070/bin</code>	A directory in which most of the 3070 system's executable programs reside.
<code>/opt/hp3070/contrib</code>	A directory in which user-contributed software, available for other users, resides. Users should keep their personal files and executables in their home directory.
<code>/opt/hp3070/lib</code>	A directory in which the default environment and configuration files reside. The names of files in this directory begin with a prefix that indicates what they are associated with – for example, <code>pbq</code> for Agilent Pushbutton Q-STATS, <code>TCM</code> for Testcell Manager, and <code>dgn</code> for Diagnostics.
<code>/sys</code>	A directory that Agilent PR-PLUS uses to access remote systems. If Agilent PR-PLUS is accessing a file system on another computer, it assumes that file system is mounted in <code>/sys</code> . The 3070 system is customized to accommodate Agilent PR-PLUS.
<code>/var/hp3070/qm</code>	A directory that contains most of the file structure used by Agilent Pushbutton Q-STATS (except for the executable program itself).
<code>/opt/lib/X11/app-defaults</code>	A directory containing files that contain the default settings (colors, window sizes, and so forth) for some applications, such as Agilent Pushbutton Q-STATS and the hpglviewer program used to view files created by the Plot Generator program.
<code>/dev/bcr</code>	A device driver associated with the bar code reader.
<code>/dev/rpr1</code>	A device driver associated with the default report printer.

Languages

There are several languages that programmers can use to develop board tests including:

- Board Test BASIC (BT-BASIC) is a set of fundamental BASIC statements with many additional test-oriented statements. BT-BASIC testplans are used to control and manipulate the board test system and to run tests on the circuit boards.
- Analog Test Language (ATL) is a set of special statements used to make in-circuit measurements on analog devices.
- Vector Control Language (VCL) is a set of special statements used to write tests for individual digital devices (in-circuit testing) and groups of digital devices (digital functional testing).

Quality Reporting Software

The 3070 program software includes a datalogging feature and Pushbutton Q-STATS Quality Management Software for reporting board test results.

Datalogging automatically gathers test data on circuit boards, including board identification, failing component information, and measurement data on selected components. The logged information is stored in files used by Pushbutton Q-STATS, that generates informative reports which can be used to analyze board production processes.

The optional PR PLUS paperless repair software can access stored failure information and generate electronic repair tickets. A repair operator can retrieve test and repair history of a failed board then make new entries when the board is repaired. The process is done entirely on-line.

Hardware Overview

This section contains a brief overview of 3070 hardware.

NOTE

Access User manuals located on 3070 system controllers or on CD-ROM updates for additional and up-to-date information.

UNIX Test Systems

A test system consists basically of a testhead and a testhead controller.

The testhead contains hardware required to execute board tests.

The testhead controller is a computer that controls the testhead. It is located in a testhead pod.

UNIX Test Development Systems

A test development system is basically a testhead controller that does not have a testhead attached.

Test developers could use the test system for board test development, but usually they use test development systems to offload resources from the test system.

UNIX test development systems, as with UNIX test systems, allow multiple concurrent access.

Test Development Clients

A test development client can be any system with x-term access to the test development system (or test system). Often they are PCs running with MS Windows.