Summary of Changes in VENIX/11 Version 2
VenturCom, Inc.
October 1984

The following is a list of modifications that distinguish VENIX/11 version 2 from the previous VENIX/11 release. A number of new utilities and facilities are provided in this version. Items deemed most significant are starred (*).

VENIX/11 version 2 is distributed in a bootable form on RX50 or RX02 diskette, TM11 tape, or RL02 hard disk.

1. Utilities

1.1. New Utilities

A number of new utilities are included, from U.C. Berkeley and other sources. These are:

* basic (ANSII-standard BASIC interpreter)

* csh ("C" shell)

* dtree (displays directory trees)

* more (command for file perusal)

* vi (screen editor)

1.2. Utility Fixes and Improvements

The following programs have been improved:

at: now correctly exports shell variables whose names contain metacharacters

* awk: now code-mapped to handle larger programs

cb: bug fixed which caused cb to swallow portions of comments

cc: larger number of preprocessor symbols allowed. See also ld.

cp: recursion bug fixed; also uses bigger buffering for faster operation.

cu: fixed bug causing exclusive-used mode to sometimes be left on line when cu exits. 4800 baud speed is now provided.

f77: compiles larger programs (Note: some customers already have this version and thus will not notice an improvement. Customers who are not sure may check for the existence of the file f77_strings in /lib or /usr/lib, which, if present, indicates this version is already installed). A separate bug has been fixed in f77 run-time libraries which prevented code-mapping from working in user programs.

ds: bug fixed causing core-dumps when zombie processes existed. Now allows listings specific to particular users. Now allows specification of kernel other than /venix.

init: "kill -2 1" now works to reset active terminal lines

* ld: now allows code-mapped program to have larger than 64kb code space. Larger number of symbols allowed.

lint: a bug has been fixed which caused incorrect handling of some flags.

lp: now has options to avoid cr/lf translation on output, and to report job completion to user.

mail: when sending to remote systems, now finds the "return address" from the file /usr/include/ident.h allowing users to customize their system name.

mkfs: now reads prototype file correctly as documented. With -b option, now uses last inode on disk for bad blocks, so fsck will not complain.

mv: now moves directory hierarchies (on the same file system)

nm: now handles programs with code space > 64kb

* plot: see graphics section below

rm: recursion bug fixed

* rtpip: many bugs fixed, which caused rtpip to lose pieces of files. Largely rewritten; new command interface and options. See new write-up.

rxfmt: command line flag handling now agrees with documentation

size: now handles programs with code space > 64kb

strip: now handles programs with code space > 64kb

* tar: numerous bugs fixed and features added. New features are: will spread output across multiple volumes; can specify only files modified within a given number of days; can backup directories without losing mode and owner information; can backup device nodes; will retry reads in order to recover from some bad blocks. Bugs fixed: no longer hangs when CTRL-C'ed at key points; no longer ignores file arguments when using 't' option; no longer crashes on directories with "read" but not execute permission; resets modification time on linked files.

who: now has faster output when listing wtmp files

1.3. Renamed Utilities

The following utilities have been renamed for compatibility with standard UNIX names: fcheck is now fsck; ds is now ps; lp is now lpr. For compatibility with previous releases, these commands can still be invoked by their old names.

1.4. Commands Removed

All decryption devices from the system have been removed, to allow export of the product. The crypt command is deleted, and the encryption/decryption capabilities in ed have been taken out.

The ned editor is no longer distributed; it has been replaced by vi. However, existing copies of ned will work on version 2 VENIX.

2. Libraries

2.1. New Libraries

The following libraries have been added from U.C. Berkeley:

termlib: terminal-independent screen I/O

curses: screen window manipulation with optimal cursor motion

2.2. Library Fixes and Improvements

Floating-point and profiling start-off routines fixed for use with code-mapping

nlist(libc.a) routine fixed for operation with programs with code size > 64kb

graphics plot library improved (see below)

2.3. Routines Altered

The crypt(3) routine has been altered to remove decryption capabilities. (See "Commands Removed").

3. Graphics

3.1. New Features

Enhanced graphics routines are now supplied, to support features such as area fill and shading.

3.2. New Output Devices

Several new output devices are supported: the Hewlett Packard 7470A 2-pen plotters; the DEC LA50 and LA100 printer; the Epson FX-80 printer.

3.3. Devices Removed

The following output devices are no longer supported, as they are judged to be in minimal use now: Versatec and Benson/Varian plotters; Tektronix 4010 scopes (the continuing Tek 4014 support may be sufficient); Dasi printers; Selenar graphics board in native-mode.

4. Kernel

4.1. Terminal Interface

The terminal driver's efficiency has been greatly improved. The "clist" size has been raised from 8 to 64, resulting in better throughput, especially with DH-type interfaces which perform DMA output.

CBREAK mode is handled in a manner more compatible with v.7 UNIX; erase and kill characters are passed rather than swallowed (this is important to vi and more).

Control keys which are echoed as two characters (e.g. ^B') are now erased correctly on CRT screens; same is true for TABS.

Line speeds are remembered now, even if a port is completely closed and reopened.

An 8-bit data path is now maintained through the termainal interface.

4.2. File System

The "mount" call now identifies and rejects uninitialized diskettes more accurately.

A bug has been fixed which caused the system to hang when inodes were used up on a disk. The correct error message is now given.

The pipe mechanism has been made more efficient. A bug has been fixed which caused pipes to fail when the temporary partition was not mounted.

4.3. General

* LSI-11/73 processors are now supported.

The default program stack has been made larger; this greatly lessens the chance of unrecoverable stack-faults on LSI-11/23 processors, which would otherwise crash some programs.

The maximum number of files per process is now 20 instead of 15.

A bug preventing use of phys(2) calls on split I/D processors has been fixed.

4.4. Drivers

BV driver: new driver for Benson/Varian printer/plotter (plotting facilities not supported).

DL driver: bug fixed which caused unnecessary sleep/wakeup activity.

* DH driver: now has special I/O control call for faster response (intended for packet protocols). Greatly improved performance on DMA output. Contains fix for Able DH hardware bug causing receive interrupts to be lost sometimes, resulting in process hanging. Polling mode now optional.

* DZ driver: now handles multiple boards; modem control now selectable through minor device numbers; polling mode now optional. Bug fixed which caused unnecessary sleep/wakeup activity

IBV11 driver rewritten. Interface changed somewhat: see new documentation.

RK06 driver: now supports 22-bit addressing on EMULEX controllers; error recovery better; handles DEC controllers more reliably. Fix in SOFTECC code (also in RM02, RM05, RP06).

RM02 driver: error recovery more reliable.

* RQ driver: new driver for Micro/PDP-11 winchester/floppy controll.er

4.5. Boot Blocks

All VENIX/11 boot blocks have been patched in order to be compatible with newer DEC boot ROMs. These new boot blocks maintain compatibility with older DEC ROMs.

4.6. Kernel Configuration

* Configuration files for all supported processors are supplied, allowing users to reconfigure software when changing processors (e.g. from LSI-11/23 to 11/73).

Bootable RX01 distributions and RK05-based systems, are no longer supported. However, RX01 and RK05 devices are still supported for secondary storage purposes.

A number of inconsistancies have been resolved concerning routine names used in the config, c.c, and l.s files.

A bug with "sysfix" has been fixed, that prevented the generation of split I/D venix kernels with >32kb code size.