

---

# ConvexOS and Utilities V10.1 Release Notice



---

Document No. 710-003430-042

July 1992

---

## **ConvexOS and Utilities V10.1 Release Notice**

Document No. 710-003430-042

©1992 CONVEX Computer Corporation  
All rights reserved.

This document is copyrighted. This document may not, in whole or part, be copied, duplicated, reproduced, translated, electronically stored, or reduced to machine readable form without prior written consent from CONVEX Computer Corporation.

Although the material contained herein has been carefully reviewed, CONVEX Computer Corporation does not warrant it to be free of errors or omissions. CONVEX reserves the right to make corrections, updates, revisions or changes to the information contained herein. CONVEX does not warrant the material described herein to be free of patent infringement.

UNLESS PROVIDED OTHERWISE IN WRITING WITH CONVEX COMPUTER CORPORATION (CONVEX), THE PROGRAM DESCRIBED HEREIN IS PROVIDED AS IS WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. SOME STATES DO NOT ALLOW THE EXCLUSION OF IMPLIED WARRANTIES. THE ABOVE EXCLUSION MAY NOT BE APPLICABLE TO ALL PURCHASERS BECAUSE WARRANTY RIGHTS CAN VARY FROM STATE TO STATE. IN NO EVENT WILL CONVEX BE LIABLE TO ANYONE FOR SPECIAL, COLLATERAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING ANY LOST PROFITS OR LOST SAVINGS, ARISING OUT OF THE USE OR INABILITY TO USE THIS PROGRAM. CONVEX WILL NOT BE LIABLE EVEN IF IT HAS BEEN NOTIFIED OF THE POSSIBILITY OF SUCH DAMAGE BY THE PURCHASER OR ANY THIRD PARTY.

CONVEX and the CONVEX logo ("C") are registered trademarks of CONVEX Computer Corporation.

COVUE is a trademark of CONVEX Computer Corporation. COVUE products consist of COVUEbatch, COVUEbinary, COVUEedt, COVUElib, COVUEnet, and COVUEshell.

UNIX is a trademark of UNIX Systems Laboratories.

Printed in the United States of America

---

# Contents

---

<b>1 Overview</b> .....	<b>1</b>
Prerequisites (V10.1 and V10.0) .....	1
Remote installations (V10.1) .....	2
Required UIDs and GIDs (V10.0) .....	2
/etc/services (V10.0) .....	6
Optional products (V10.1) .....	6
Minimum compatible versions of optional products .....	6
Optional products requiring reinstallation .....	7
CONVEX Consultant, CXdb, and CXpa .....	7
Associated documentation (V10.1) .....	8
Associated documentation (V10.0) .....	8

---

<b>2 New features</b> .....	<b>11</b>
Virtual Volume Manager (V10.0) .....	11
/etc/stripecap .....	11
vmdaemon .....	11
New utilities .....	12
mvst .....	12
rmst .....	12
qst .....	12
Enhancements to existing stripe utilities .....	12
newst .....	12
getst .....	12
putst .....	13
Large files support (V10.0) .....	13
System administration .....	13
Utility support .....	13
Programming interface .....	13
Restrictions .....	14

---

<b>3 Changes to utilities and procedures</b> .....	<b>15</b>
Utilities (V10.0) .....	15
GNU Emacs .....	15
Perl .....	15
acctconv .....	15
csh .....	15
chkpnt .....	16
cp and mv .....	16
chown and chgrp .....	17
cron .....	17
make .....	18
man .....	18

---

mkdir .....	18
msgs (V10.1) .....	18
sh .....	18
fsck .....	19
mount .....	19
lpr and lpd .....	19
sendmail .....	19
opreq .....	20
crashdump (V10.0) .....	21
crashdump (V10.1) .....	21
crypt library routine (V10.0) .....	21
mmap system call (V10.1) .....	21
CONVEX HYPERchannel (V10.0) .....	21
CONVEX Share Scheduler (V10.0) .....	22
CONVEX NFS (V10.0) .....	22
lockd .....	22
NFS installation .....	22
ConvexOS Tape System (V10.0) .....	22
ConvexOS Tape System (V10.1) .....	22
Adding or deleting drives .....	22
Security considerations .....	23
Using data compression on 3480 cartridge and DAT drives .....	23
Selecting a compression drive in your mount request .....	23
Setting labeled tape attributes for data compression .....	24
Using an IBM-standard tape .....	24
Using an ANSI-standard tape .....	24
DAT Stacker (V10.1) .....	24
Kernel source tree modifications (V10.0) .....	24
Compatibility .....	25
Kernel source compatibility .....	25
Return value from device drive close routine .....	25
Kernel binary object compatibility .....	26
sysgen .....	26
/sys files .....	26
/usr/include files .....	26
/usr/68k/include files .....	27
Kernel source tree modifications (V10.1) .....	28

---

<b>4 Bug information .....</b>	<b>29</b>
Fixed kernel bugs (V10.0) .....	29
crash .....	29
init .....	29
kern .....	29
kio .....	30
krpc .....	30
sgen .....	30
sysc .....	30
sysgen .....	30
tty .....	31
ufs .....	31
vfs .....	31
vm .....	31
Fixed kernel bugs (V10.1) .....	31
adjtime.o .....	31

arch .....	31
iosw .....	32
kern .....	32
kio .....	32
krpc .....	32
os_cfg_smg .....	32
os_pr .....	32
pm .....	34
scfs .....	34
sysc .....	34
tty .....	34
ufs .....	34
vfs .....	35
vm .....	35
Fixed utilities bugs (V10.0) .....	36
/usr/src/convex/nu.c .....	36
MAKEDEV .....	36
a2p .....	36
access.2 .....	36
accounting .....	36
adb .....	36
adb.1 .....	36
aliases .....	36
ar .....	36
avail .....	37
awk .....	37
binmail.1 .....	37
boot .....	37
catman .....	37
chfn .....	37
chkpnt .....	37
chkpnt_gd .....	37
cnxos_smg .....	38
compact .....	38
contact .....	38
contactcap .....	38
cp/mv .....	39
cpio .....	39
cpio.1 .....	39
cron .....	39
cron.1 .....	39
crontab.5 .....	39
csh .....	39
csh.1 .....	40
ctar.8 .....	40
cvxstat.2 .....	40
date.1 .....	40
df .....	40
diff .....	41
dir.5 .....	41
du .....	41
dump .....	41
dump.5 .....	41
emacs .....	41
execve.2 .....	41

---

file .....	41
find .....	42
finger .....	42
fsck .....	42
fstab.5 .....	42
fstat .....	42
getpatrr.2 .....	43
grep .....	43
hypot.3m .....	43
in.comsat .....	43
inline.8 .....	43
install .....	43
installsw .....	44
intro.2 .....	44
less .....	44
login .....	45
lpc .....	45
lpd .....	45
mail.1 .....	45
make .....	45
makewhatis .....	45
makewhatis.8 .....	45
man .....	45
man pages .....	46
mkdir .....	46
mkpasswd .....	46
mount .....	46
mount.8 .....	47
msgs .....	47
mt.1 .....	47
new_util .....	47
newfs.8 .....	47
newfs/newst .....	47
newst .....	47
newst.8 .....	48
notes .....	48
nu .....	48
nu.c .....	48
op .....	48
os_cfg_smg .....	48
os_conf_smg .....	49
os_oper_smg .....	49
os_pr .....	50
os_smg .....	50
os_tutor .....	50
pac.8 .....	50
perl .....	50
preen .....	51
ps .....	51
pstat .....	51
pwrestrict .....	51
ranlib .....	51
sa .....	51
sed .....	52
seestat.8 .....	52

sendmail.8 .....	52
setpggrp.2 .....	52
sh .....	52
sh.1 .....	53
siloquery .....	53
sort.1 .....	53
stat .....	53
stat.5 .....	53
statfs.2 .....	53
stty .....	53
syslogd .....	53
tar .....	53
tpconfig .....	54
tpconfig.8 .....	54
tpdaemon .....	54
tutorial papers .....	54
unexpand .....	54
uptime.1 .....	54
uuq .....	54
uucsend.1c .....	54
vdump .....	54
verify .....	54
verify.5 .....	55
verify.8 .....	55
vi .....	55
vipw .....	55
vmstat .....	55
wall .....	55
yacc .....	56
Fixed utilities bugs (V10.1) .....	56
/etc/rc .....	56
/etc/services .....	56
/usr/etc/upgrade .....	56
L.sys .....	56
MAKEDEV.8 .....	56
Mail .....	56
POSIX .....	57
a2p .....	57
activities.5 .....	57
adb .....	57
adjtime.2 .....	57
ansidaemon .....	57
ansitar.1 .....	57
apropos .....	58
ar .....	58
ar.1 .....	58
at .....	58
awk .....	58
awk.1 .....	58
bc .....	58
bstring.3 .....	59
cat .....	59
catman .....	59
chall .....	59
checkeq .....	59

checknr .....	59
chkpnt .....	59
chmagic .....	59
chown .....	59
ci .....	60
cmp .....	60
colcrt .....	60
comm .....	60
compact .....	60
config guide .....	60
contact .....	60
cp.1 .....	60
cp/mv .....	60
cpio .....	60
csch .....	61
csch.1 .....	61
ctags .....	62
ctar .....	62
date .....	62
date.1 .....	62
dc .....	62
dcheck .....	62
dd.1 .....	62
deroff .....	63
deroff.1 .....	63
df .....	63
diff .....	63
dump .....	63
dump.8 .....	63
egrep .....	64
eqn .....	64
error .....	64
ex.1 .....	64
expand .....	64
expr .....	64
expr.1 .....	64
false .....	64
fgrep .....	64
file .....	64
find .....	64
find.1 .....	65
flock.2 .....	65
fmt .....	65
fold .....	65
fsck .....	65
fstat .....	65
genrest .....	65
getitimer.2 .....	65
getpwent.3 .....	65
getst .....	65
grep .....	65
head .....	66
ibmdaemon .....	66
icheck .....	66
ident .....	66

indent .....	66
inetd .....	66
init.8, getty.8 .....	66
install .....	66
installsw .....	69
lastcomm .....	69
leave.1 .....	69
less .....	69
lex .....	70
link.2 .....	70
logger .....	70
look .....	70
lpc .....	70
lpd .....	70
lpd.8 .....	70
lpmv .....	70
lpq .....	71
lpr .....	71
ls.1 .....	71
mail .....	71
make .....	71
makewhatis .....	71
man .....	71
man pages .....	71
man.1 .....	72
mkdir.1 .....	72
mkfs.8 .....	72
mkstr .....	72
mmap.2 .....	72
more .....	72
mount .....	72
mount.8 .....	73
mpa .....	73
msgs .....	73
netstat.1c .....	73
newaliases.1 .....	73
newst .....	73
nfacess .....	74
nload .....	74
nfmil .....	74
nfxmit .....	74
nlist.3 .....	74
nm .....	74
nohup .....	75
notes .....	75
nroff .....	75
nu.8 .....	75
od .....	75
oldsh.1 .....	75
on .....	75
opreq .....	75
os_cfg .....	76
os_cfg_smg .....	76
passwd .....	79
pax .....	79

perl.1 .....	79
pr .....	79
pr.1 .....	79
preen .....	79
ptx .....	79
qst.8 .....	79
quickref .....	80
quot .....	80
quot.8 .....	80
quotacheck .....	80
quotactl.2 .....	80
ranlib .....	80
rcsdiff .....	80
readlink.2 .....	80
restore .....	80
rev .....	81
rm .....	81
rmail .....	81
rup.1C .....	81
schhdr.5 .....	81
sed .....	81
seestat.8 .....	81
sendmail .....	81
sendmail.8 .....	82
sendmail.cf.5 .....	82
setitimer.2 .....	82
setlimits.3 .....	82
sh .....	82
size .....	82
smg .....	82
sod .....	83
sort .....	83
spell .....	83
split .....	83
spucmd.8 .....	83
stat.2 .....	83
strings .....	83
strip .....	83
stty.1 .....	83
su.1 .....	84
sum .....	84
syslog.conf .....	84
syslogd .....	84
syspic .....	84
tabs .....	84
tail .....	84
tail.1 .....	84
tape .....	84
tar .....	85
tar.1 .....	85
tbl .....	85
tcsh .....	85
tee .....	85
test .....	86
test.1 .....	86

time.3c .....	86
touch .....	86
touch.1 .....	86
tpdaemon .....	86
tpinit.1 .....	87
tplist .....	87
tpmount .....	87
tpmount.1 .....	87
tpswitchvol.1 .....	87
tpunlabel.1 .....	88
tsort .....	88
tsug .....	88
ttys.5 .....	88
umask.2 .....	88
umount .....	88
uncompact .....	88
unexpand .....	88
uniq .....	88
units .....	89
uucp.1c .....	89
uudecode .....	89
uudecode.1c .....	89
verify .....	89
vers .....	89
vi.1 .....	89
vmstat .....	89
vvmdaemon .....	89
wait.2 .....	90
wall .....	90
wc .....	90
what .....	90
write .....	90
xdump .....	90
yacc .....	90
yes.1 .....	90
Fixed library bugs (V10.0) .....	90
access.2 .....	90
cfree .....	90
directory.3 .....	90
erf.3m .....	90
execlp/execvp .....	91
fclose .....	91
fclose.3s .....	91
fopen.3s .....	91
free .....	91
getacwent.3 .....	91
getpeername.2 .....	91
getpriority .....	91
getpwrestent.3 .....	91
getwd .....	91
hypot.3m .....	92
killpg.2 .....	92
libc.a .....	92
libwinlib.a .....	92
lockf.3 .....	92

longjmp.3 .....	92
malloc.3 .....	92
math.h .....	93
nlist.3 .....	93
scandir .....	93
scanf .....	93
shypot .....	93
sigsuspend.3 .....	93
sleep .....	93
stdio.h .....	93
strdup .....	93
strtod.3 .....	93
system .....	94
system.3 .....	94
ttyslot.3 .....	94
vfprintf .....	94
Fixed library bugs (V10.1) .....	94
getopt .....	94
getpwnam .....	94
getpwuid.3 .....	94
ioctl.h .....	94
libc_old_p.a .....	95
ndbm .....	95
nlist .....	95
realpath .....	95
restart.3 .....	95
sigsuspend.3 .....	95
syslog .....	95
time.h .....	95
ttyslot.3 .....	95
waitpid.2 .....	95
Kernel restrictions (V10.1) .....	96
iosw .....	96
kio .....	96
sysc .....	96
Utilities restrictions (V10.0) .....	96
cpio .....	96
du .....	96
emacs .....	96
lpq .....	97
make .....	97
newst .....	97
os_cfg_smg .....	97
tar .....	97
txt_ed_ug .....	97
verify .....	97
adbccu.8 .....	97
Utilities restrictions (V10.1) .....	98
cpio .....	98
csh .....	98
ctar .....	98
diction .....	98
diskuse .....	98
intro.5 .....	98
ln.1 .....	98

login .....	98
login/sendmail .....	99
lorder .....	99
ls .....	99
mail .....	99
man .....	99
style .....	99
su .....	99
verify .....	99
warps .....	99
Library restrictions (V10.0) .....	100
libc.a .....	100
malloc.3 .....	100
mset.3 .....	100
Library restrictions (V10.1) .....	100
dir.5 .....	100
Known kernel bugs (V10.1) .....	100
SPU SMG .....	100
arch .....	100
asio .....	100
boot .....	100
cnvx .....	101
cnxos_smg .....	101
cons .....	101
crashdump .....	101
exect .....	101
iosw .....	101
kern .....	101
kio .....	101
krpc .....	101
mremap.2 .....	102
os_inst .....	102
pm .....	102
scfs .....	102
sched .....	102
semaphore .....	102
sgen .....	102
shar .....	102
sync .....	102
sysc .....	103
tty .....	103
ufs .....	103
vfs .....	103
vm .....	103
Known utilities bugs (V10.1) .....	103
/usr/etc/upgrade .....	103
accounting .....	104
acm .....	104
adb .....	104
ansidaemon .....	104
ansitar .....	104
arch .....	104
autoseq .....	104
avail .....	105
awk .....	105

---

bc .....	105
bill .....	105
bsearch.3 .....	105
calendar.1 .....	105
catman .....	105
catman.8 .....	105
chfn .....	105
chkpnt .....	105
ci .....	105
comsat .....	106
convst .....	106
cp .....	106
cpio .....	106
cpr .....	106
cpuconf .....	106
crashdump .....	106
crashread .....	106
cron .....	106
csd .....	107
ctags .....	108
df .....	108
dump .....	109
dv_driv_gd .....	109
e .....	109
egrep .....	109
emacs .....	109
error .....	110
ex3.7preserve .....	110
ex3.7preserve.8 .....	110
explain .....	110
exportfs .....	110
expr .....	110
f .....	110
faillog .....	110
faillogpr .....	110
flpf.8 .....	110
fsck .....	110
fstat .....	110
fstat.8 .....	110
genrest .....	111
getgroups.2 .....	111
getmntent.3 .....	111
getopt.3 .....	111
getpeername.2 .....	111
getty .....	111
grep .....	111
gut .....	111
help .....	111
hosts.5 .....	111
ibmdaemon, nldaemon .....	111
indent .....	111
info .....	112
init .....	112
install .....	112
installsw .....	113

installsw.8 .....	113
intro.2 .....	113
lastlog.5 .....	113
learn .....	113
leave .....	113
less .....	113
lex .....	114
libtape.a .....	114
logger .....	114
login .....	114
login.1 .....	114
lpc .....	114
lpd .....	114
lpd.8 .....	115
lpq .....	115
lpr .....	115
lprew-daemon .....	115
ls .....	115
m4 .....	115
mail .....	115
make .....	115
makewhatis .....	115
man .....	116
man.1 .....	116
mcs .....	116
mkfs .....	116
mknod.8 .....	116
mount .....	116
mpa .....	116
ms .....	117
msgs .....	117
mvst .....	117
netstat .....	117
newfs .....	117
newsyslog .....	117
nldaemon .....	117
notes .....	117
nqsdaemon.8 .....	117
nroff .....	117
nu .....	117
op .....	117
opreq .....	118
opreq_daemon .....	118
opreq_daemon.8 .....	118
os_archref .....	118
os_cfg_smg .....	118
os_ext_ug .....	118
os_pr .....	118
os_primr .....	118
passwd .....	118
passwd/vipw .....	119
pax .....	119
perl .....	119
pmd .....	119
ps .....	119

---

pty.4 .....	120
putst .....	120
quota .....	120
quotactl.2 .....	120
ranlib .....	120
ranlib.1 .....	120
rca .....	120
rcafile.5 .....	120
rcamerge .....	120
rdiff .....	120
rdump .....	120
rdump/rrestore .....	120
restart .....	120
restore .....	121
rlog.1 .....	121
rm .....	121
rrip .....	121
sa .....	121
sa.8 .....	121
sed .....	121
seestat .....	121
sendmail .....	121
setgroups.2 .....	122
sh .....	122
shutdown .....	122
sort .....	122
spell .....	122
spucmd .....	122
stacker .....	122
swapon .....	123
sysgen .....	123
syslog .....	123
syslogd .....	123
syspic .....	123
tail .....	123
talk .....	123
tape .....	123
tape.3 .....	124
tar .....	124
tbl .....	124
tcsh .....	124
test .....	124
tip .....	124
touch .....	124
tpconfig .....	124
tpconfig.8 .....	124
tpdaemon .....	125
tpmount .....	125
tpqueue.1 .....	125
troff/nitroff .....	126
tset .....	126
tty .....	126
ttys .....	126
uncompact .....	126
unexpand .....	126

utilities .....	126
utime.3c/utimes.2 .....	126
uucico .....	126
uuencode .....	126
uuq .....	126
uuxqt .....	127
vdump .....	127
vi .....	127
vipw .....	128
vmstat .....	128
w .....	128
w.1 .....	128
wall .....	128
window .....	128
words .....	128
xdump .....	128
yacc .....	128
yesterday .....	128
Known library bugs (V10.1) .....	128
cxa inst libs .....	128
getrusage .....	128
libvm.a .....	129
msync.2 .....	129
vadvise(2) .....	129

---

<b>A VIOP device driver memory usage .....</b>	<b>131</b>
Overview .....	131
VIOP memory system usage .....	131
Event Governed Operating System (EGOS) .....	131
Device driver text/data segments .....	131
Device driver allocation .....	132
Device driver memory usage .....	132
Ethernet driver tunable .....	132
VIOP memory configuration worksheet .....	133
Text/data size .....	133
Device driver size .....	133
Total memory usage .....	134
VIOP system configuration .....	135
Courses of action .....	135
Example worksheet .....	136
/ioconfig file .....	136
Worksheet entry .....	136



This release notice describes the V10.1 release of ConvexOS and the ConvexOS Utilities. It is designed to supplement the permanent documentation with information that was developed too late for inclusion. Always refer to this document before reporting problems; your questions may be answered here. This release notice also lists fixes and workarounds that may save you time if you encounter a known problem.

The release notice contains information that is specific to both the V10.0 and V10.1 releases of ConvexOS and Utilities. If you are upgrading from ConvexOS V9.1 or earlier, be certain to read the sections of this document that apply to V10.0 as well as V10.1.

## Prerequisites (V10.1 and V10.0)

The V10.1 release of ConvexOS has the following prerequisites:

- Your system must have the versions of SPU software listed in Table 1. C1 Series machines have both System Diagnostics and a Diagnostic Database. For other machines, the system diagnostics and database have been combined into a single product called Processor Diagnostics.

Table 1 SPU software dependencies

CONVEX system	SPU OS	System Diagnostics or Processor Diagnostics	Diagnostic Database
C120	V5.2	V6.6 or later	V2.7 or later
C200, C3200 Series	V6.1	V5.0 or later	N/A
C3400 Series	V6.1	V1.2 or later	N/A
C3800 Series	V2.0	V2.1 or later	N/A

- You should read the appropriate installation document before beginning the installation.
  - If you are upgrading from ConvexOS and Utilities V9.1 or V10.0 and your machine has a tape drive, read *ConvexOS and Utilities V10.1 Local Upgrade Installation Procedures*.

- If you are upgrading from an earlier version of ConvexOS and Utilities and your machine has a tape drive, read *ConvexOS and Utilities V10.1 Local Initial Installation Procedures*.
- If your system does not have a local tape drive and you are upgrading from ConvexOS V10.0 or V9.1, read *ConvexOS and Utilities V10.1 Remote Upgrade Installation Procedures*.
- If your system does not have a tape drive and you are upgrading from an earlier version of ConvexOS and Utilities, read *ConvexOS and Utilities V10.1 Remote Initial Installation Procedures*.
- The ConvexOS V10.1 installation procedure requires machine-specific activation keys. The activation keys are shipped in an envelope attached to the ConvexOS V10.1 installation tape. Be careful not to discard the activation keys before you have completed the installation process.

---

## Remote installations (V10.1)

ConvexOS and Utilities V10.1 is the last release for which remote upgrades and remote initial installations will be supported. If your system does not have a local tape drive, contact the Technical Assistance Center (TAC).

---

## Required UIDs and GIDs (V10.0)

UIDs and GIDs 0 through 99 are reserved for use by CONVEX. Future releases may use UIDs and GIDs in this range on an as-needed basis; do not assign them to users or groups at your site.

Table 2 and Table 3 list required users, UIDs, GIDs and groups for ConvexOS V10.0. Names marked with a dagger (†) were new requirements for V10.0; there are no new requirements for V10.1.

Figure 1 and Figure 2 contain example `/etc/passwd` and `/etc/group` entries.

**Table 2** Required users, UIDs, and GIDs

User name	UID	GID
root	0	0
daemon	1	1
convex	2	10
anon	4	13
nouser	8	8
notes	10	13
uucp	14	40
test	16	49
auth <sup>†</sup>	20	20
audit <sup>†</sup>	21	21
fs <sup>†</sup>	22	22
lpr <sup>†</sup>	23	23
cron <sup>†</sup>	26	26

<sup>†</sup> New requirement as of ConvexOS V10.0.

**Table 3** Required groups and GIDs

<b>Group name</b>	<b>GID</b>
daemon	1
kmem	2
sys	3
tty	4
nogroup	8
bin	10
notes	13
auth <sup>†</sup>	20
audit <sup>†</sup>	21
fs <sup>†</sup>	22
lpr <sup>†</sup>	23
batch <sup>†</sup>	24
backup <sup>†</sup>	25
cron <sup>†</sup>	26
tapeadm <sup>†</sup>	27
operator	28
tapeop <sup>†</sup>	29
preserve <sup>†</sup>	30
guest	31
uucp	40
staff	49

<sup>†</sup> New requirement as of ConvexOS V10.0.

**Figure 1** Example /etc/passwd entries

```
root::0:10:ConvexOS:/:/bin/csh
daemon*:1:1:The devil himself:/:/bin/false
convex*:2:10:Convex Computer Corp.,,2144974000:/:/bin/false
anon*:4:13:Anon notes:/:/bin/false
nouser*:8:8:Generic Non-User:/:/bin/false
notes*:10:13:Notesfile Owner:/usr/spool/notes/.utilities:/bin/csh
uucp*:14:40:UNIX-to-UNIX Copy:/usr/spool/uucppublic:/usr/lib/uucp/uucico
test*:16:49:System Exerciser:/tmp:/bin/csh
auth*:20:20:Auth Admin:/:/bin/false
audit*:21:21:Audit Admin:/:/bin/false
fs*:22:22:Files system Admin:/:/bin/false
lpr*:23:23:line printer spooling pseudo-user:/:/bin/false
cron*:26:26:cron subsystem pseudo-user:/:/bin/false
```

**Figure 2** Example entries in /etc/group

```
daemon*:1:daemon
kmem*:2:
sys*:3:
tty*:4:
nogroup*:8:nouser
bin*:10:root,convex
notes*:13:notes,anon
auth*:20:auth
audit*:21:audit
fs*:22:fs
lpr*:23:lpr
batch*:24:
backup*:25:
cron*:26:cron
tapeadm*:27:
operator*:28:root
tapeop*:29:
preserve*:30:
guest*:31:root
uucp*:40:uucp
staff*:49:test
```

---

**/etc/services  
(V10.0)**

Your /etc/services file must contain the following entry:

ntalk            518/udp

---

**Optional products  
(V10.1)**

This section describes requirements for optional products.

---

**Minimum compatible versions of optional products**

The following table lists the versions of optional products that are compatible with ConvexOS and Utilities V10.1.

**Table 4** Minimum required versions for optional products

<b>Product</b>	<b>V10.1-compatible version</b>
CONVEX FORTRAN	V7.0
CONVEX C	V4.3
CONVEX Ada	V2.0
CONVEX Internet Services	V10.0
CONVEX Domestic NFS	V10.0
CONVEX International NFS	V10.0
CONVEX CXbatch	V2.1
COVUEshell	V8.2
COVUEnet	V2.2
COVUEbatch	V2.1
COVUEedt	V1.2
COVUElib	V2.0
COVUEbinary	V1.0
CONVEX CXwindows	V2.1
CONVEX Consultant	V8.0, V8.1, V8.2, V9.0
Convex AVS	V3.0
CONVEX Share Scheduler	V10.0

**Table 4** (continued) Minimum required versions for optional products

<b>Product</b>	<b>V10.1-compatible version</b>
CONVEX Toolbox	V10.0
CONVEX CXmotif	V1.0
CONVEX Application Compiler	V1.0
CONVEX C++	V1.1
CONVEX CXdb	V1.1
CONVEX CXpa	V1.3
CONVEX VECLIB	V7.0
FDDI	V1.1
HIPPI	V1.0
UltraNet	V1.2

All CONVEX Consultant utilities in V8.0, V8.1, and V8.2 will work successfully with ConvexOS V10.1 except for `gprof`. If `gprof` is in use at your site, you must install V9.0 of CONVEX Consultant.

---

### **Optional products requiring reinstallation**

Due to changes to the ConvexOS kernel, the following optional products must be reinstalled after installing ConvexOS V10.1:

- Domestic NFS
- CONVEX FDDI
- COVUEnet
- CONVEX TLI
- CONVEX UltraNet
- CONVEX HIPPI/Ultra

---

### **CONVEX Consultant, CXdb, and CXpa**

The original CONVEX Consultant product consisting of CSD, PMD, and "profs" utilities is being phased out. At the production release of ConvexOS V10.1, CONVEX CXdb and CONVEX CXpa will be shipped free of charge to all customers who have service contracts covering CONVEX Consultant. The functionality of CSD is subsumed by CXdb; "profs" is included with CXpa; and PMD is being frozen. Because most of the functionality is being transferred to CXdb and CXpa, the major features you have required of Consultant should be addressed in these packages. Support for Consultant will be provided, however, for a limited period of time.

CXdb is an interactive, visual debugger that works in a multiwindow environment. It has interfaces suitable for use with both ASCII terminals and graphic displays. CXdb has an extensive set of capabilities, including a CSD-emulation mode designed to ease transition for CSD users.

CXpa is an interactive tool that analyzes profiling data gathered during the execution of a program. The profs utilities (*gprof*, *bprof*, *prof*) previously shipped with CONVEX Consultant will now be shipped with CXpa. CXpa relies on instructions that are not available on C1 Series machines; C1 users should continue to use the profs utilities for profiling tasks.

PMD, the Post Mortem Dump utility, will be supported for a limited period of time.

Convex will provide new support pricing to align our changes to this package. Your local Sales Representative will contact you prior to renewal time to further discuss these options.

---

## Associated documentation (V10.1)

The following documents are new with the release of ConvexOS V10.1:

- *ConvexOS Tape System Operator's Guide* (DSW-397)
- *ConvexOS Tape System Manager's Guide* (DSW-398)

---

## Associated documentation (V10.0)

The following documents were new with the release of ConvexOS V10.0:

- *CONVEX SPU System Manager's Guide*, First Edition (DSW-022)
- *CONVEX 3800 Series SPU System Manager's Guide*, First Edition (DSW-023)
- *The ConvexOS Primer*, First Edition. (DSW-133) This book replaces the *CONVEX UNIX Primer*.
- *The ConvexOS Extensions User's Guide*, First Edition. (DSW-053) This book replaces
  - *CONVEX Checkpoint Restart Guide*
  - *CONVEX Share Concepts*
  - *CONVEX POSIX Concepts*

The following documents were revised for the ConvexOS V10.1 release:

- *ConvexOS Man Pages for Users*, Second Edition (DSW-331)
- *ConvexOS Man Pages for Programmers*, Second Edition (DSW-332)
- *ConvexOS Man Pages for System Managers*, Second Edition (DSW-333)
- *Managing ConvexOS: Configuration Guide*, Second Edition (DSW-030)
- *Managing ConvexOS: Operations Guide*, Second Edition (DSW-031)
- *CONVEX Guide to Writing Device Drivers*
- *CONVEX POSIX Conformance*, Second Edition (DSW-311)
- *CONVEX Networking Concepts*, Second Edition (DSW-128)
- *ConvexOS Tutorial Papers*, Eighth Edition (DSW-002)
- *ConvexOS Tape System User's Guide*, First Edition (DSW-018)

The following documents have been previously published and are current for both V10.1 and V10.0:

- *CONVEX Portable C User's Guide*, Fourth Edition

- *The C Programming Language*, First Edition. By Brian Kernighan and Dennis Ritchie, published by Prentice-Hall
- *Programming perl*, First Edition. By Larry Wall and Randal L. Schwartz, published by O'Reilly and Associates, Inc.
- *GNU Emacs Manual*, Sixth Edition. By Richard Stallman, published by the Free Software Foundation
- *CONVEX Architecture Reference*, Fifth Edition (DHW-045)
- *CONVEX adb Debugger User's Guide*, Sixth Edition
- *CONVEX Share Scheduler System Manager's Guide*, First Edition (DSW268)
- *vi Quick Reference*, First Edition

Beginning with the release of ConvexOS V10.0, the *CONVEX Assembly Language User's Guide* and the *CONVEX Loader User's Guide* are no longer bundled with releases of ConvexOS. They are now part of a new product, CONVEX ALL (Assembler, Loader and Libraries), and are contained in the *CONVEX Compiler Utilities User's Guides* (DSW-096). If you have not received CONVEX ALL V1.0, please contact the Technical Assistance Center (TAC).



---

## Virtual Volume Manager (V10.0)

The CONVEX Virtual Volume Manager (VVM) improves the reliability of striped file systems through the use of data redundancy. There are two methods of redundancy: mirroring and parity.

Mirrored file systems maintain two copies of each stripe partition on different disks. If the primary disk fails, data can be retrieved from the second disk.

In parity file systems, parity information calculated from the other disks in the stripe is stored on each disk. If one of the disks fails, the data on that disk can be reconstructed using parity information.

VVM also supports “hot spares.” You may designate certain disks or disk partitions to be hot spares. If hot spare disk space is available when a disk fails, VVM will automatically reconstruct the data from the failed disk onto the hot spare, and the hot spare will replace the failed disk in the stripe. If you do not have a hot spare, console error messages direct you to reconstruct the data manually.

For additional information, see Chapter 4, “Setting up the disk system” in *Managing ConvexOS: Configuration Guide*.

---

### **/etc/stripecap**

The format of /etc/stripecap has changed with this release. Your existing /etc/stripecap file will be converted to the new format during the ConvexOS V10.1 installation process. (A copy will be kept in /etc/stripecap.old.)

For additional information about the new format, see the stripecap(5) man page.

---

### **vvmdaemon**

vvmdaemon is the daemon for the Virtual Volume Manager. It must be started from /etc/rc.std.

vvmdaemon is responsible for:

- Reconstructing data once a disk failure has occurred
- Restarting reconstruction operations that did not complete normally due to a system crash

For additional information, see the vvmdaemon(8) man page.

---

## New utilities

Three new utilities are provided to help manage redundant partitions.

### mvst

The `mvst` utility allows data from an existing stripe partition to be moved to a new partition. It may be used with redundant and nonredundant stripes.

You must be the superuser to use this utility.

For additional information, see the `mvst(8)` man page.

### rmst

`rmst` deletes a stripe entry from kernel memory. It is also used to remove partitions from the hot spare list.

You must be the superuser to use this utility.

For additional information, see the `rmst(8)` man page.

### qst

`qst` reports stripe information from `/etc/stripecap` for a specified disk device. For example:

```
# qst /dev/du2
/dev/du2h is used in /dev/st2 (redundant)
/dev/du2g is used in /dev/st4 (non-redundant)
```

You must be the superuser to use this utility. For additional information, see the `qst(8)` man page.

---

## Enhancements to existing stripe utilities

Three stripe utilities have been enhanced to create and manage redundant partitions.

### newst

The `-R` option to `newst` enables stripe redundancy. By default, a two-partition stripe will be mirrored; stripes with more than two partitions will use parity.

The `-H` option is used to add a specified partition to the hot spare list.

### getst

The output of `getst` includes additional information for redundant stripes, as shown in this example:

```
# getst st0
stripe st0: redundant, sector size 2048 bytes, mounted on /usr/local
  section a: size 49200 Kbytes/partition, blocking factor 8 Kbytes
    partition 0: du6f (64, 1542) offset 0 Kbytes
    partition 1: du0f (64, 6) offset 0 Kbytes
    partition 2: du4a (64, 1025) offset 0 Kbytes
  section b: size 48600 Kbytes/partition, blocking factor 8 Kbytes
    partition 0: du6f (64, 1542) offset 49200 Kbytes
    partition 1: du0f (64, 6) offset 49200 Kbytes
```

The `-H` option to `getst` displays information about disk partitions in the hot spare list.

`putst`

The `-p` option to `putst` may be used to manually check the parity information on a redundant stripe.

---

## Large files support (V10.0)

ConvexOS now supports files and file systems up to one terabyte in size. Files and file systems larger than 2 gigabytes are considered "large."

---

### System administration

Large file systems are created and mounted normally with the `newfs`, `newst`, and `mount` commands.

By default, file systems are mounted with large file capability. This means that files greater than 2 Gbytes may be created in them.

You can disable large file capability on a specific file system with the `nolf` option to `mount`. For example, the following line in `/etc/fstab` will cause `/usr` to be mounted without large file capability:

```
/dev/st2      /usr          4.2      rw,nolf
```

This option only prevents the creation of new large files. Large files that already exist in a file system may still be accessed in their entirety if the file system is later mounted with the `nolf` option.

Large file systems (file systems greater than 2 Gbytes) are not required to be large file aware. Likewise, large files (files greater than 2 Gbytes) that contain "holes" may reside in file systems that are not large. (For an explanation of holes, see the section titled "cp and mv" on page 16.)

---

### Utility support

Some utilities have been enhanced to support large files:

- `ls`, `cp`, `mv`, `tail`, `find`
- `ftp`, `rcp`
- `tar`, `cpio`, `pax` (for files up to 8 Gbytes only)
- `dd`, `compact`
- `dump`, `xdump`, `restore`
- `chkpnt`, `restart`
- `quota`, `quotacheck`

Manipulating large files with other utilities may have serious consequences. Please refer to the section titled "Restrictions" on page 14.

---

### Programming interface

Several system calls have been added or changed to handle large files. For additional information on the large files programming interface, refer to the *ConvexOS Extensions User's Guide*.

---

## Restrictions

Interactive editors such as `vi` and `emacs` will truncate large files to 2 Gbytes.

Shell redirection (`<`, `>`, `>>`) will not work properly on large files.

You may use other utilities with large files if you use pipes. For example, the command

```
cat largefile | grep foo
```

will work on a large file, while

```
grep foo largefile
```

will not.

The current NFS protocol does not support large files. As a result, only the first 2 Gbytes of a large file can be accessed over NFS.

You will be unable to copy or move entire large files to a file system that has been mounted with the `no1f` option. Both `cp` and `mv` will truncate the file to 2 Gbytes.

This chapter describes changes to existing procedures and utilities.

---

## Utilities (V10.0)

Changes have been made to several utilities.

---

### GNU Emacs

Version 18.57 of GNU Emacs is now supported. This version mainly provides bug fixes. There is one significant functional change. The line-move function is now called `move-line-internal`. Initialization files that call `line-move` by name must be changed to call `move-line-internal` instead.

---

### Perl

Version 4.03 of Perl is now supported. This is the version that is described in *Programming perl*, by Larry Wall and Randal L. Schwartz, which is distributed with ConvexOS. This version contains many bug fixes and some enhancements over the previous version.

---

### acctconv

The `acctconv` utility, which was designed to convert accounting files to a new format for ConvexOS V8.1, is no longer supported.

---

### csch

An enhanced version of `csch` is now supported. `tcsh`, which was originally developed at Ohio State University and is in the public domain, is installed as `/bin/csch`. The previous version of `csch` will be available as `/bin/oldcsch`.

This version contains all the functionality of previous versions of `csch`, and has many new features, including:

- File name completion
- `vi` and Emacs-like command line editing
- Terminal mode checking and resetting
- Spelling correction of command, file, and user names

The `csch` man page describes standard `csch` functionality as well as the `tcsh` enhancements. The `tcsh` man page, which describes only the `tcsh` enhancements, is available in Appendix A of the *ConvexOS V10.0 Advance Notice* and the *ConvexOS and Utilities V10.0 Release Notice*. Please note, however, that `tcsh` is installed as `/bin/csch`.

---

## chkpnt

The checkpoint file format has been changed to support large files. As a result, checkpoint files created under ConvexOS V9.0 or V9.1 cannot be restarted after upgrading to ConvexOS V10.0 or ConvexOS V10.1.

---

## cp and mv

The `-z` option has been added to both `cp` and `mv`. This option preserves *holes* in a file when it is copied or moved. A *hole* is a region of a file that has not been written to, but has been bypassed with the `seek` system call. The presence of a hole is recorded, but its content is not stored on disk and it does not occupy any disk space. A large file (a file greater than 2 gigabytes) containing a hole may fit on a particular file system, while a file of the same size without the hole may not.

Without the `-z` option, both `cp` and `mv` will fill holes with zeros, so a copy of a file may take up considerably more space than the original file. Likewise, a file may take up more space after it has been moved via `mv`.

For example, the file `myfile` has a size of 10 megabytes as reported by `ls`, but is only taking up 32 kilobytes of actual disk space, according to `du`:

```
% ls -l myfile
-rw----- 1 joe 10485760 Sep 10 15:26 myfile
% du -a myfile
32      myfile
```

This discrepancy occurs because `myfile` contains a hole. If `myfile` is copied or moved to another directory, the holes will be filled with zeros:

```
% cp myfile bigmyfile
% ls -l bigmyfile
-rw----- 1 joe 10485760 Sep 10 15:30 bigmyfile
% du -a bigmyfile
10304   bigmyfile
```

If `myfile` is copied with the `-z` option, the hole is preserved, and the copy takes up only 32 kilobytes of actual disk space:

```
% cp -z myfile bigmyfile
% ls -l bigmyfile
-rw----- 1 joe 10485760 Sep 10 15:34 bigmyfile
% du -a bigmyfile
32      bigmyfile
```

---

## chown and chgrp

chown now supports the `-R` flag, which causes it to recursively descend directory arguments, changing the owner as specified.

For example, the command

```
# /etc/chown -R joe .
```

will make user `joe` the owner of the current directory, and of all files and directories below the current directory.

chgrp also supports the `-R` option. The command

```
% chgrp -R staff .
```

will make `staff` the group for all files in the current directory, and for all files and directories below the current directory.

chown can also be used to change the owner and group of a file simultaneously. For example, the command

```
# chown joe.staff myfile
```

changes the owner of `myfile` to `joe` and the group to `staff`. The group and owner may also be a numerical GID or UID.

---

## cron

There have been several enhancements to `cron` :

- World or group-writable `.crontab` files are now ignored by `cron`. Users with world or group-readable `.crontab` files will receive mail instructing them to execute the following command:

```
% chmod 644 .crontab
```

- The line

```
CRONREPORT=1
```

in a `.cronrc` file will indicate that the user would like to receive notification of output and failed requests via electronic mail. If `cron` is started at boot time with the `-m` option, `CRONREPORT` will be set for all users.

- `cron` now supports machine-specific `.crontab` files. Files named `.crontab.hostname` (where *hostname* is the name of the machine where the contents of the file should be executed) will be executed if they exist. If there is no `crontab.hostname` file, `.crontab` will be executed as usual. This feature can prevent multiple executions of `.crontab` files that are mounted on more than one machine via NFS.

---

## **make**

The built-in make rules for generating executables from EFL (Extended FORTRAN Language) sources have been removed. make no longer has built-in rules for handling files ending in .e or .e,v.

Users who use make to perform operations on files with these suffixes may provide a rule for .e or .e,v files in their makefile.

---

## **man**

man now supports a -g option, which will grep through all the man pages for a specified Perl regular expression. For example, the command

```
% man -g "crontab"
```

will report all the occurrences of the word "crontab" in the man page database.

This option will work with compressed man pages as well.

---

## **mkdir**

The -p option has been added to mkdir to create a specified series of directories, rather than creating only one directory at a time. For example,

```
% mkdir -p dir1/dir2/dir3
```

creates directory dir1, directory dir1/dir2, and directory dir1/dir2/dir3, even though dir1 and dir2 did not exist when the command was invoked.

The -f option will prevent mkdir from reporting an error when one or more of the directories in the path already exist.

---

## **msgs (V10.1)**

Messages are now kept in the /usr/spool/msgs directory, rather than the /usr/msgs directory. The /usr/etc/upgrade script, which is run as part of the installation process, will create the /usr/spool/msgs directory and move the contents of /usr/msgs into it.

---

## **sh**

/bin/sh has been upgraded to the AT&T System V, Release 2 version. The new version includes shell functions, as well as many bug fixes. This change should not affect existing sh scripts.

For additional information, see the sh(1) man page.

---

## **fsck**

`fsck` has been upgraded to the 4.3BSD Tahoe release.

“Dirty bit” functionality has been added. When executed normally via `preen`, `fsck` only checks file systems that were in use (marked “dirty”) when the machine went down.

When executed from the command line, `fsck` checks a specified file system even if it is marked “clean”.

The new `-f` option to `fsck` can be passed through `preen` to force checking on file systems even if they are marked “clean”:

```
# preen -f
```

You should force checking on file systems if:

- A disk or disk controller error occurs
- A dirty file system is mounted with the `-F` option to `mount` (see below)

This version also contains performance enhancements.

For additional information, see *Managing ConvexOS: Operations Guide* or the `fsck(1)` man page.

---

## **mount**

The `-F` option has been added to `mount` to force mounting of a “dirty” file system. Normally, dirty bits will be cleared by `fsck`, so all the file systems encountered by `mount` will be clean.

Forcing the mount of a dirty file system with `mount -F` will also clear the dirty bit, but the file system will remain dirty. This action could eventually cause the system to panic, and is not recommended for use in normal circumstances.

---

## **lpr and lpd**

Beginning with this release, the `/usr/spool/lpd` directory and its contents must be owned by user `lpr` and group `lpr`.

The ConvexOS V10.1 installation script will create user `lpr` with UID 23 and group `lpr` with GID 23, if they do not already exist. Before you begin the ConvexOS V10.1 installation, you should make sure that UID 23 and GID 23 are not in use.

The installation script will automatically change the owner and group for the `/usr/spool/lpd` directory and for all the printer queues within that directory.

---

## **sendmail**

The default `sendmail` configuration file has been significantly enhanced. For more information, see the `/usr/lib/conf/sendmail/README` file.

---

## opreq

Several changes have been made to `opreq`:

- Users no longer need to be the superuser to perform operator activities. Users that belong to the operator group (as specified in `/etc/group`) can execute the `select-done` and `select-cancel` commands. If you choose to take advantage of this feature, you must create an operator group and add the appropriate users to it.
- The interface has been improved. In addition to arrow keys, vi movement keys (`h,j,k,l`) and Emacs movement keys (`CTRL-f, CTRL-b, CTRL-n, CTRL-p`) may be used to move around the `opreq` screen.
- Mount, replace, and unmount messages can be logged in `/usr/adm/opreq-acct`. This file records the information about a message when `select-done` or `select-cancel` is performed. If you choose to log this information, you must create the file `/usr/adm/opreq-acct`. Like all accounting files, this file can get very large and should be trimmed periodically.
- Operators are notified when a tape request is satisfied via automatic volume recognition (a feature of the CONVEX ACS system). These messages are of type "Info" and will only be displayed if the `.opreqrc` file includes this message type.
- The status of "Info" and "Unmount" messages is changed to "Done" after two minutes. These messages are informative and don't require operator action.
- Multiple-tape mount requests now display all the tapes associated with a request simultaneously, so operators can retrieve all the necessary tapes at once.
- The `configure-drives` command has been added. This command allows the operator to enable or disable tape drives from within `opreq`.

For additional information about the `opreq` utility, refer to Chapter 8, "Managing the Tape System," in *Managing ConvexOS: Operations Guide*.

---

## crashdump (V10.0)

In addition to 9-track tape drives, `crashdump` can now write directly to the following tape drives:

- Fujitsu M2481 tape drive for VMEbus (MTD-207)
- Archive DAT model 4521NT tape drive for VMEbus (MTD-208)

Previously, `crashdump` only worked with 9-track and SPU tape drives.

If there is only one valid tape drive, `crashdump` will automatically use that drive. If there is more than one valid tape drive and one of those tape drives is a 9-track, that will be the default drive. If there is more than one valid tape drive, and none of them are 9-track, the user will be asked to select between valid drives.

The `-S` option to `crashdump` will allow a user to specify a tape drive other than the default. When this option is specified, the user will be presented with a menu listing all available tape drives.

For additional information about `crashdump`, refer to Chapter 14 of *Managing ConvexOS: Operations Guide*.

---

## crashdump (V10.1)

A significant performance enhancement has been made to `crashdump`. By default, `crashdump` no longer dumps all of main memory. Instead, it dumps only the memory mapped in by the kernel. (In nearly all cases, only the memory mapped in by the kernel must be examined in order to determine the cause of a system crash.)

The `-f` option can be used to force `crashdump` to dump all of main memory.

---

## crypt library routine (V10.0)

Due to export restrictions on DES encryption, the `crypt` library routine included in international distributions will not function correctly. If called, `crypt` will return an error.

This restriction does not apply to sites located within the United States or Canada.

---

## mmap system call (V10.1)

When using the `MAP_PRIVATE` mapping option and a file as the paging object, memory access beyond the length of the mapped file is now checked more carefully. A process attempting to read or write beyond the length of a mapped file will receive a `SIGSEGV` signal.

---

## CONVEX HYPERchannel (V10.0)

The maximum transmission unit (MTU) of the HYPERchannel network interface driver has been increased from 32 kilobytes to approximately 64 kilobytes. The larger MTU results in higher speed bulk data transfers over the HYPERchannel network interface. The MTU is set on a per-route basis using the `hyroute` command.

---

## CONVEX Share Scheduler (V10.0)

The CONVEX Share Scheduler now supports a NOLOGIN option. When Share is invoked with this option, users who have zero assigned shares are not permitted to log in.

If you choose to use this option, and if your /etc/inetd.conf file specifies that certain services should run as users other than root, you must allocate at least one share to those users. Otherwise, programs using these services will hang.

For more information, see the *CONVEX Share System Manager's Guide*.

---

## CONVEX NFS (V10.0)

There are two major enhancements to CONVEX NFS.

---

### lockd

The lock manager system has been upgraded to the ONC 4.1 version. With the new lock manager, local file locking is done entirely within the kernel. The lock daemon (lockd) is no longer required to be running for local file locks to operate properly.

---

### NFS installation

The Domestic NFS installation will automatically sysgen modules necessary for secure NFS functionality into vmunix and install the Secure NFS utilities. Secure NFS is no longer a separate installation item.

Due to export restrictions on DES encryption, Secure NFS is not available in international distributions.

---

## ConvexOS Tape System (V10.0)

The ConvexOS Tape System now includes support for ANSI- or IBM-labeled tapes. For additional information, refer to the *ConvexOS Tape System User's Guide*.

Several enhancements have been made to tpconfig. Users can now be required to:

- Mount labeled tapes only
- Label tapes with restricted access only
- Set restricted access for each file on a tape

For more information, see *Managing ConvexOS: Configuration Guide*.

---

## ConvexOS Tape System (V10.1)

Several changes have been made to the ConvexOS Tape System for V10.1.

---

### Adding or deleting drives

When adding or deleting drives on the tpconfig command line, it is possible to receive errors of the form

```
tpdaemon:[ERR] opendir: no such drive tc:0
tpdaemon:[ERR] tpd-avr.c:561 assigndrive: Failed to ASSIGN tc:0
tpdaemon: Errno 9: Bad file number
```

or

```
tpdaemon:[ERR] tpd_avr.c:586 unassigndrive: Failed to UNASSIGN eb:0
tpdaemon: Error 6: No such device or address
```

---

The `tpconfig add drive` or `tpconfig delete drive` commands complete successfully, but the errors will appear if there are no nodes defined for that drive. This will occur with all drive types. You should verify the command completion with the following command:

```
% tpconfig show drive
```

---

## Security considerations

Security enhancements have been added to the RCP interface to the tape daemon. Programs using `tpdaemon` services (other than `tplist`) must now be run as root. If you have user-written tape system applications that use the `libtape.a` library, you must do one of the following:

- Modify applications so they invoke tape system commands via the `system(3)` library call, rather than via `libtape.a` library calls. For example, the following line may be used to mount a tape:  

```
system("tpmount -a /dev/rmt20");
```
- Invoke the `tpdaemon` in `/etc/rc.std` with the `-anyclient` flag. This flag is provided for backward compatibility with previous, less secure versions of the tape system.
- Re-link the application against the V10.1 version of the `libtape.a` library. If you are certain the application does not present security risks, run the application as root, make it `setuid` root using the `chown` and `chmod` commands, or use the `op` facility.

---

## Using data compression on 3480 cartridge and DAT drives

If you have a 3480 cartridge or DAT tape drive that offers data compression, you can select it for use in your mount request with the `tpmount` command. This section describes how to reserve a compression drive and allocate a compression node when using either unlabeled or labeled tapes.

### Selecting a compression drive in your mount request

In all modes (`block`, `char`, `label`, and `n1`) data compression can be selected by using any of the following `tpmount` options in your mount request:

`-a comp_node` Allocate specific node, reserving the drive to which it is associated. `comp_node` is a compression node associated with one specific compression drive.

Compression device names end with an "i".

`-d comp` Reserve the next available compression drive

In the following example the `tc:0` drive is reserved because its compression node is specifically requested with the `-a` option:

```
% tpmount -a rtc0ni
```

In the next example, the first available DAT drive with compression is reserved because compression density is specified with the `-d` option, and the "dat" drive type is specified with the `-t` option:

```
% tpmount -d comp -t dat
```

---

## Setting labeled tape attributes for data compression

Data compression is implemented differently for IBM-standard and ANSI-standard label utilities, and also depends on how you set your tape attributes.

### Using an IBM-standard tape

If you select a compression drive in your mount request and are using IBM-standard label utilities, you can use the following command to specify compression of tape files only:

```
% tpattr -c
```

Volume and file labels will not be compressed when written to IBM-standard labeled tape as long as this attribute is set.

If you do not set the compression attribute before writing a file to an IBM-standard labeled tape, the volume and file labels and the file data are written with data compression.

If you do not select a compression drive in your mount request for an IBM-standard labeled tape and attempt to use the `tpattr -c` command, you receive an error message.

### Using an ANSI-standard tape

If you select a compression drive in your mount request and are using ANSI-standard label utilities, both your header labels and the tape files are written to the tape with compression. There is currently no ANSI standard governing compression of volume and file labels or file data, so setting data compression with the `tpattr -c` command does not result in compression of file data only. Both tape file headers and tape file data are compressed regardless of how the compression attribute is set.

If you do not select a compression drive in your mount request for an ANSI-standard labeled tape and use the `tpattr -c` command, volume and file labels are written to tape without compression and without displaying an error message.

---

## DAT Stacker (V10.1)

Functionality to eject the DAT magazine is now available for the DAT Stacker. To take advantage of this feature, patch the VIOP image by issuing the following commands on the SPU:

```
(spu)> cd /mnt/os  
(spu)> adbccu -w viop  
(adbccu) tc_dat_eject?=w 1  
(adbccu) $q
```

---

## Kernel source tree modifications (V10.0)

ConvexOS V10.0 contains changes to the structure of the kernel source tree.

These modifications affect:

- /sys files
- /usr/include/sys files
- /usr/68k/include files
- sysgen

If you have user written device drivers that require these files, or if you have modified the kernel via sysgen, please read this section before installing ConvexOS V10.0. If you require assistance contact the Convex Technical Assistance Center (TAC).

Please note that although current functionality of ConvexOS does not change, sysgen'd layered and optional products must be reinstalled after installing ConvexOS V10.0.

Backward binary compatibility has been maintained for all programs.

---

## Compatibility

This section describes ramifications on new kernel source and new kernel binary objects.

### Kernel source compatibility

The CPU source portion of the ConvexOS V10.0 kernel is now compiled in the extended ANSI C mode (`-ext`) of the compiler. New CPU source that is added to the kernel must be ANSI C-compliant.

The structure and organization of the kernel include files have changed with the ConvexOS V10.0 release, but the content of files that are needed by new kernel source has been maintained.

The include files that were previously in the directories:

- `/sys/dev_ccu`
- `/sys/dev_hsp`
- `/sys/dev_iop`
- `/sys/dev_viop`
- `/sys/kern20`
- `/sys/kern68k`
- `/sys/kernhsp`
- `/sys/kerniop`
- `/sys/kernviop`
- `/sys/mbs`

have been moved to the directories:

- `/sys/io/interfaces/ccu_if` and its subdirectories
- `/sys/io/interfaces/msg_if/mbs` and its subdirectories
- `/sys/io/lib`

The contents of these files have been maintained as much as possible.

### Return value from device drive close routine

The V10.0 kernel now respects the return value from a device driver close routine and passes it back to the user as the value of `errno` after the `close()` system call. User-written device drivers must be sure to explicitly return a value (return zero if successful) and avoid "falling off the end" of the driver close function, which may be interpreted incorrectly as a nonzero return value.

## Kernel binary object compatibility

A binary object that was compiled for use with ConvexOS V9.1 or earlier may not work with ConvexOS V10.0. You should only put objects that have been compiled specifically for or have been thoroughly tested with ConvexOS V10.0 into the ConvexOS V10.0 kernel.

---

## sysgen

The order of make commands used to generate a custom ConvexOS has changed. Beginning with this release, make commands must be invoked in system-generated directories one at a time, and must be allowed to finish before additional make commands are started.

For additional information, see Chapter 16, "Generating system images" in *Managing ConvexOS: Configuration Guide*.

---

## /sys files

Due to the structure changes in the kernel source tree, the following directories in /sys have been obsoleted:

- /sys/cmi
- /sys/dev\_ccu
- /sys/dev\_hsp
- /sys/dev\_iop
- /sys/kern20
- /sys/kern68k
- /sys/kernhsp
- /sys/kerniop
- /sys/kernviop
- /sys/mbs

These directories are replaced by:

- /sys/io and its subdirectories
- /sys/base/kio
- /sys/base/netif

---

## /usr/include files

The structure and organization of the system include files have changed with the ConvexOS V10.0 release, but the user-visible content of files has been maintained as much as possible. Backward binary compatibility has been maintained for all programs.

Some programs which include system header files may require changes to the include file set in order to recompile successfully. In general, this will only affect programs that are highly dependent upon the operating system and its internals.

As a result of the structure changes of the kernel source tree, the following symbolic links have been obsoleted:

- /usr/include/cmi

- /usr/include/dev\_ccu
- /usr/include/dev\_hsp
- /usr/include/dev\_viop
- /usr/include/kern20
- /usr/include/kern68k
- /usr/include/kernhsp
- /usr/include/kerniop
- /usr/include/kernviop

Previously, /usr/include/dev\_iop and /usr/include/mbs were symbolic links. They have been replaced by directories of the same name.

Also, symbolic links from

- /usr/include/kio to /sys/kio
- /usr/include/interfaces to /sys/io/interfaces

have been added.

---

### **/usr/68k/include files**

The structure and organization of the 68000 Tools include files have changed with the ConvexOS V10.0 release, but the user-visible content of files has been maintained as much as possible. Backward binary compatibility has been maintained for all programs.

Some programs which include 68000 Tools header files may require changes to the include file set in order to recompile successfully. In general, this will only affect programs that are highly dependent on the operating system and its internals.

The following symbolic links have been obsoleted:

- /usr/68k/include/dev\_ccu
- /usr/68k/include/dev\_hsp
- /usr/68k/include/dev\_viop
- /usr/68k/include/kern20
- /usr/68k/include/kern68k
- /usr/68k/include/kernhsp
- /usr/68k/include/kerniop
- /usr/68k/include/kernviop

Also, the symbolic link /usr/68k/include/dev\_iop now refers to /usr/include/dev\_iop. Likewise, /usr/68k/include/mbs now refers to /usr/include/mbs.

## Kernel source tree modifications (V10.1)

As part of an ongoing effort, the kernel source was restructured for the V10.1 release. These changes, like the changes made for V10.0, should not affect normal user source code, but may affect user-written device drivers.

Table 5 summarizes the changes for V10.1.

**Table 5** Kernel Source modifications

Old directory location	New directory location
/sys/arch	/sys/base/arch
/sys/asio	/sys/base/asio
/sys/convex	/sys/base/convex
/sys/dist	/sys/base/dist
/sys/h	/sys/base/h
/sys/init	/sys/base/init
/sys/kernel	/sys/base/kernel
/sys/kio	/sys/base/kio
/sys/krpc	/sys/base/krpc
/sys/machine	/sys/base/machine
/sys/net	/sys/base/net
/sys/netif	/sys/base/netif
/sys/netinet	/sys/base/netinet
/sys/nfs	/sys/base/nfs
/sys/pm	/sys/base/pm
/sys/rpc	/sys/base/rpc
/sys/sched	/sys/base/sched
/sys/sec	/sys/base/sec
/sys/share	/sys/base/share
/sys/specfs	/sys/base/specfs
/sys/streams	/sys/base/streams
/sys/sync	/sys/base/sync
/sys/syscall	/sys/base/syscall
/sys/tty	/sys/base/tty
/sys/ufs	/sys/base/ufs
/sys/uipc	/sys/base/uipc
/sys/vfs	/sys/base/vfs
/sys/vm	/sys/base/vm

---

## Fixed kernel bugs (V10.0)

This section lists problems with the ConvexOS kernel that were fixed in the V10.0 release.

(PR-09006) - It would be nice to have filesystems larger than 2 GB.

Resolution: The file and file system size limit has been increased to 1 terabyte.

(PR-18283) - This is a request for providing error indication to the event daemon. A CONVEX errno (error number) should be assigned to the MSL (Mass Storage Library - an E-Systems application) event daemon software. This assignment will allow the event daemon to indicate a failure to the application software when processing a kernel event call-out. This is necessary to provide an MSL user with the ability to distinguish between a CONVEX operating system error and an application event daemon error.

Resolution: Added the requested errno. Name EMASS Value 116 Text Event daemon application software processing error

(PR-19265) - `jpstat.jp` is built as a `c2mp` file, even on a C1.

Resolution: This bug is fixed for V10.0. It has been made to compile for a C1 on a C1.

(PR-19659) - The ConvexOS Configuration guide, First Edition, should include an entry for VME HYPERChannel in Table 3-1. LAN-204 HYPERChannel VME controller Table 3-2 should include entries for UltraNet and HYPERChannel.

Resolution: The required information is added in the V10.0 version of Managing ConvexOS: Configuration.

### crash

(PR-19101) - System crash with the message, `free: freeing free frag`

Resolution: Fixed in patch 9.0.7 and V10.0

### init

(PR-16066, PR-16150) - The operating system should have the capability to override XOFF on the console. It would be nice if it were implemented as a tunable: `tune cpu console_auto_xon = 1`

Resolution: In V10.0 flow control on the console will time out after 120 seconds.

### kern

(PR-15829) - System crashed with a nonresident `opte` error when executing a ported version of the Austin Kyoto Lisp code that uses `mremap(2)` system call.

Resolution: Fixed.

(PR-19279) - System crashed with an error 9925 `ialloc`.

Resolution: Fixed in patch 9.0.7 and OS V10.0

(PR-18766) - There needs to be `krpc`-specific error return codes for processes using the `krpc` mechanism.

Resolution: This has been done. Here are the details: NameEMASS Value116 TextEvent daemon application software processing error

(PR-19802) - As of Convex-OS 9.0, Convex has decided to disable execution of `setuid`/`setgid` shell scripts invoked through the `#!` mechanism. While this certainly fixes the security problems inherent with `set[ug]id` scripts on a BSD-based system, the "solution" Convex has taken is too strict. The correct solution would be for the kernel to just ignore the `set[ug]id` bits on a script, but to invoke the script anyway. This way one could write secure `perl` scripts with the "`suidperl`" mechanism.

Resolution: Due to conflicting demands from different sites, a new tunable, `suid_shell_script`, has been added. The default value of 0 causes attempted execution of `setuid` or `setgid` shell scripts to fail with `errno EPERM` (this has been the default behavior since version 9.0). A value of 1 causes `setuid` or `setgid` shell scripts to run as before 9.0 (i.e. the `uid` and `gid` are changed as they would be for a true `a.out` format file). A value of 2 causes the script to run, but the `uid` and `gid` of the caller are not modified.

(PR-21962) - `mmap` man page description of `errno` return code `[EINVAL]` does not include possibility that the maximum number of segments per process has been exceeded.

Resolution: `mmap` now returns `ENOMEM`.

## **kio**

(PR-16477) - The performance of the stripe driver through the raw interface (`/dev/rst*`) is less than adequate.

Resolution: This problem is fixed in ConvexOS 10.0. The stripe driver has been completely overhauled.

## **krpc**

(PR-17362) - Disk space is not freed for an unlinked file when a particular sequence of events occurs while using event daemons/`krpc`. The lost blocks are reclaimed only by "`fsck`".

Resolution: Fixed.

## **sgen**

(PR-17440 PR-19313) - There is a documentation error (and it is repeated several times) on page 16-17 of the `Managing ConvexOS: Configuration Guide`. Each example of when the `make` utility gets invoked begins: `# ./make ...`. The `make` utility would have to be resident in the current directory for this to work and it is clearly not. Each example should be changed such that it begins: `# make ...`

Resolution: The appropriate changes are made in the V10.0 chapter on `sysgen`.

## **sysc**

(PR-16657) - `dmon_ioctl 26` demonstrates a problem whereby the process will hang.

Resolution: Fixed

(PR-16686) - `dmon_fcntl(...DMON_FDGETASSOC)` as `cshtst` without permissions on the file does not result in `EPERM`.

Resolution: Fixed.

(PR-16829 PR-16831) - The `pipe(2)` man page says `read(2)` on an empty pipe with only one end returns an end-of-file; it actually returns 0.

Resolution: Changed wording to be more clear about what end-of-file means, namely that 0 is returned when nothing is read.

(PR-18338 PR-20528) - When `gdb` makes a "large" (e.g. > 12k) read request on a process file descriptor returned from `pattach`, the machine will panic.

Resolution: `vs_kmap` would loop through the regions that occupied the pages between `vlow` & `vhigh` where these were defined as: `vlow = btop(vaddr)` `vhigh = btop(vaddr+bytes-1)` `vaddr+bytes > 2^32` and would then cause `vhigh < vlow`. This case was silently ignored which caused the kernel `pte`'s not to be properly set up.

(PR-18796) - System crash; `pte` violation. `pro_rw()` did not update `tt_rval1` which is used by `read()` to update the `f_offset` in the struct file for the process. The `seek()` system call should not allow invalid offset for a `process_file` descriptor.

Resolution: Fixed.

(PR-21871) - The `setgroups(2)` man page does not appear in the printed version of the man pages.

Resolution: Fixed In `ConvexOS Man Pages for Programmers, 2nd ed`, released with ConvexOS V10.0.

## **sysgen**

(PR-22434) - Performing a `make` after adding a `files` file which contains references to sources files fails when the `/sys/h/object.h` file is used in a compile. There is no "`vm/mi_vm_vnode.h`" to be included.

Resolution: Fixed.

## **tty**

(PR-15457) - With ConvexOS 8.0, flow control support at the console appears to be too slow. The problem was first observed by noticing that system consoles had data loss problems when the printer was enabled. This was confirmed with and without a printer on a C1. The problem is not present at 7.1, but is at 8.x and 9.0.

Resolution: Fixed.

## **ufs**

(PR-19312) - It would be better if the uap structures created by the truncate and cvxtruncate calls were the same.

Resolution: Fixed in Patch V9.0.7 and in V10.0

(PR-20008) - The fhpath() system call will hang the system if called incorrectly by specifying file handles for both arguments.

Resolution: Fixed.

(PR-20004) - When mounting a file system without specifying a HIBLK mark, NO/LOBLK callouts are continuously generated once file system free space drops below LOBLK.

Resolution: mount has been fixed to disallow this situation.

(PR-20032 PR-22948) - When using the rename() system call to rename a directory through an event daemon, if the rename function fails, no unlink() is performed. The correct error is passed back to the application. This leaves the file system in an inconsistent state.

Resolution: Fixed.

(PR-20553) - When a device is associated with a daemon by use of a filehandle, LOBLK and HIBLK callouts are not received.

Resolution: Fixed.

(PR-22600) - An inherited event daemon association of a file may be lost if the inode cache entry is flushed and "iget" is used to retrieve the inode from disk.

Resolution: Fixed.

## **vfs**

(PR-22596) - fdpath(2) and fhpath(2) do not correctly handle path components that start with '..'

Resolution: Fixed.

(PR-22690) - A kernel event daemon gets a write(2) error (ENODMON) when trying to write to a migrated, unlinked file. The association is being cleared after callouts are resumed (because the inode has no links), thus preventing the daemon from writing to the file.

Resolution: Fixed. The daemon association is now only cleared when the daemon itself removes the final link to the file.

## **vm**

(PR-19023 PR-19271) - System crashed with Fatal Convex Unix Error: VM, 6648 cvx\_free: multiple frees

Resolution: This bug is fixed in V10.0

---

## **Fixed kernel bugs (V10.1)**

This section lists problems with the ConvexOS kernel that have been fixed for the V10.1 release.

### **adjtime.o**

(PR-21216) - adjtime() ignores the (struct timeval \*)otp parameter when it shouldn't.

Resolution: The adjtime syscall will now return EINVAL if a non-null bad address is passed in for the old field.

### **arch**

(PR-18162, PR-18445) - Certain bootcmd.local files will not boot a C2 with a large number of ptys. Reducing the number of ptys to 128 will allow the boot to complete.

Resolution: We are now able to boot with the maximum number of ptys allowed.

## **iosw**

(PR-19318) - In both ConvexOS V9.0 and ConvexOS V9.1, the default statement for the switch(msg -> me\_adata[0]) in kernviop/viop\_dev.c on line 224 says: printf("iop\_dev: Unknown request %d from processor %d n", It should say: printf("viop\_dev: Unknown request %d from processor %d n", This can be very misleading when troubleshooting.

Resolution: Changed printf("iop\_dev...") to printf("viop\_dev...").

## **kern**

(PR-17460) - Signal handler will not continue after trap is received. When a trap (ie divide by zero) is received, the signal handler would like to note the error, skip over the offending instruction, and continue processing. There seems to be no way of achieving this goal. All attempts to skip the offending instruction fail.

Resolution: It is now possible to continue execution of a user program after catching certain floating point exceptions. The program must clear the exception indicator (for example, PSW\_SDZ) from the signal context block's (struct sigcontext) stored PSW, which is passed to the user's installed signal handler. The signal handler does not need, however, to increment the signal context block's stored PC, because that value has already been incremented to the instruction following the faulting instruction.

(PR-20189) - execlp() and execvp() set errno to EACCESS when passed an empty string to exec. According to POSIX the errno should be set to ENOENT.

Resolution: A check is now done to make sure that the file to execute is not a NULL string. If it is, errno is set to ENOENT, and a failure status is returned.

(PR-22229) - The utility /usr/etc/riwet is designed to work with less than 5000 symbols. When executing a sysgen of OSI WAN 1.1 into ConvexOS, the resulting kernel contains about 5400 symbols. riwet does not check when exceeding the range of internal arrays defined at 5000 entries. Things get overwritten with data and the program aborts.

Resolution: Added a check for the number of symbols in riwet. The executable file is not touched if there are too many symbols, and a reasonable error message is displayed. (Too many symbols instead of Write error: Bad address) The number of symbols was also up'd to 7000.

(PR-24495) - The permissions on /dev/drum are 644, meaning anyone can read what's going on in memory (paging activity). This is a security hole which should be closed.

Resolution: MAKEDEV will now create the device /dev/drum with permissions 0640 rather than 0644 for security reasons.

## **kio**

(PR-24456) - A process will hang uninterruptibly if it tries to read/write a large amount of data from/to a raw stripe device.

Resolution: Fixed. All raw stripe requests are now done in 16 Mbyte blocks.

## **krpc**

(PR-24638) - Sending a SIGCONT to a process sleeping in the receive portion of krpc(2) will cause the server side sequence numbers to get out of sync and possibly drop messages.

Resolution: Fixed.

## **os\_cfg\_smg**

(PR-26571) - The Boot-Time Parameters chapter describes a tunable "swap\_on", to be used with 'tune cpu'. There is no such tunable. There is a separate 'swap on' entry, that is used to add swap partitions. This was correctly described in the older 'ConvexOS System Manager's Guide'.

Resolution: This has been corrected in the configuration guide, which is releasing with ConvexOS 10.1.

(PR-26583) - The Boot-Time Parameters chapter describes the tunable "viop\_enet\_proc" incorrectly. The second paragraph refers to each digit of the tunable value as representing a different viop. Actually, it represents a different vme ethernet controller which may or may not be on the same viop.

Resolution: This has been corrected in the config guide that is releasing with ConvexOS 10.1.

## **os\_pr**

(PR-15319) - The mmap(2) man page does not describe the MAP\_NOCORE option.

Resolution: The MAP\_NOCORE option for mmap man page has been described in mmap.2.

(PR-15748) - The manual page for sigvec has an incorrect type for the sv\_handler field in the sigvec structure. sv\_handler is shown as a pointer to an int function but is actually of type \_SigFunc\_Ptr\_t, which turns out to be a pointer to a function returning type void. The man page should reflect this. Note that for -pcc compile mode, the man page is correct.

Resolution: The sigvec(2) man page now properly describes the sigvec structure for compilation in the extended (default) mode of cc, and contains a "Backward Compatibility" section explaining the difference in the signal handler return type for -pcc mode.

(PR-15800) - The fcntl(2) man page does not explain the FNDELAY flag under the Convex extensions. It only appears in the BUGS section.

Resolution: The FNDELAY option is now described in the man page. A few spelling errors were corrected, also.

(PR-17603) - The man page for cvxftruncate(2) states that EISDEV should be returned for the cvxftruncate family if the target file is a device special file.

Resolution: The system call cvxftruncate() will now return the proper errno if invoked on a directory, special block or character device file, or socket.

(PR-17844) - The brk(2) man page has the following for the synopsis of the brk() function: SYNOPSIS caddr\_t brk(addr) caddr\_t addr; When this function declaration is included in a program, the compiler chokes on the caddr\_t type, which is declared in the <sys/types.h> header file. Also, is the function declared in some other header file that should also be included?

Resolution: The brk man page has been updated.

(PR-17920) - The man page for setpid(2) does not document the fact that this system call is available only for programs compiled with ANSI C (and not K&R C). Either the function should be included in libc\_old.a also, or the man page should specify that it is not available with programs compiled with the -pcc option.

Resolution: Updated man page to state setpid not available in pcc mode.

(PR-19072) - The tty(4) man page makes no mention of the POSIX-required restriction that limits the tty TIOCGPRGP ioctl call to the calling process' controlling terminal (even for root). Furthermore, it should point out that tcgetpgrp() is the preferred mechanism for this functionality and the tcgetpgrp() man page should be consulted for more details.

Resolution: The restriction is now in the man page.

(PR-21215) - The man page for faillog(2) states the errno returned (in the errors section): [EISDIR] The named file is a directory. Yet, when passing a directory to faillog, it returns EACCES (Permission denied) instead.

Resolution: When passing a directory to faillog, it returns EISDIR in errno.

(PR-20135) - The man page for sigblock states: Signal i is blocked if the i-th bit in mask is a 1. The file /usr/include/signal.h defines a macro, sigmask # define sigmask(m) (1 << ((m)-1)) This seems to imply that bit i-1 corresponds to signal i.

Resolution: Clarified man pages sigblock.2 and sigsetmask.2 because it was unclear if signal i corresponds to bit i or i-1 in the mask.

(PR-22251) - The mmap man page makes reference to the number NBPG (number of bytes per page) but this is not defined in the include files that it references: sys/types.h and sys/mman.h. In reality, this is defined in pagsiz.h.

Resolution: The mmap(2) man page now states where the referenced constant NBPG is defined and points the reader to another CONVEX document for more information on the use of shared memory.

(PR-22278) - The "SEE ALSO" section of the mremap(2) man page needs to be made more explicit. > SEE ALSO > mmap(2), munmap(2), usleep(2), mwakeup(2), msync(2), tas(3) > Using Shared Memory ^^^^^^^^^^^^^^^^^^^^^^^^^^^^^ Should probably be CONVEX Interprocess Communication Programming Guide.

Resolution: The mremap(2) man page now states where the referenced constant NBPG is defined and points the reader to another CONVEX document for more information on the use of shared memory.

(PR-22580) - The O\_LARGEFILE option is not documented on the fhopen(2) man page.

Resolution: The fhopen.2 man page now describes the O\_LARGEFILE flag.

(PR-24720) - The SEE ALSO section of the mremap(2) man page refers to something called "Using Shared Memory." It ought to refer to the chapter entitled "Using Shared Memory for Local Applications" in the CONVEX Inter-Process Communication (IPC) Guide, which is included in the Internet Services documentation set.

Resolution: The Using Shared Memory Guide has been obsoleted, and the reference has been deleted.

(PR-24798) - The syscall.2 man page refers the user to "/usr/include". This should probably be /usr/include/sys/syscall.h

Resolution: Updated man page to refer to the header <sys/syscall.h>

## pm

(PR-17527, PR-18041) - The setrlimit system call documents that the RLIMIT\_RSS value encourages a maximum resident set size for processes. When this call is made, the operating system places the specified value in the vs\_maxrss field in the virtual space structure for the process and the process' children. However, the operating system doesn't reference this field. In other words, setting the maximum resident set size doesn't do anything. This includes CXbatch, since it uses setrlimit.

Resolution: The csh(1) and setrlimit(2) man pages now document that setting the resource limit RLIMIT\_RSS (or memoryuse in the case of csh) currently has no effect under ConvexOS because of the existence of a tunable virtual memory system and paging and swapping daemons that help manage memory use.

(PR-23852) - It would be quite beneficial if the tunable "max\_user\_processes" would be allowed to be increased to 2500.

Resolution: The maximum value for the tunable for the maximum number of processes per user is now 2500.

## scfs

(PR-15787) - The system crashed with: Fatal Convex Unix Error: dustrategy: odd block number (bad makefs parameters)

Resolution: Fixed. The IDC driver now returns an error instead of panic'ing.

(PR-24564, PR-24773) - An open/close race condition exists in specsfs.

Resolution: The locks have been changed to fix the race condition.

## sysc

(PR-15617) - The creat(2) system call does not allow a path name of length equal to PATH\_MAX; it only allows a path name length of PATH\_MAX - 1. The green POSIX book, on page 46, defines PATH\_MAX as "Maximum number of bytes in a pathname (not a string length; count excludes a terminating null)."

Resolution: The POSIX-defined constant PATH\_MAX has been modified to properly exclude the NULL string terminator, as required in the POSIX 1003.1 standard.

(PR-15956) - When using write() on a tty line and the V/async is interrupted, write() does NOT return the correct number of bytes written.

Resolution: The VASYNC no longer resets tty lines when the characteristics are not being changed even though a reset ioctl is issued.

(PR-17544) - The cvtruncate call does not return the EISDIR message. Additionally, information returned upon inspection of the test directory is not correct.

Resolution: The system call cvtruncate() will now return the proper errno if invoked on a directory, special block or character device file, or socket.

(PR-20856) - When uname(2) is called, systems from other vendors return such things as "SunOS" or "AIX", but ConvexOS returns "vmunix" for SYSNAME.

Resolution: uname now returns ConvexOS instead of vmunix.

(PR-23857) - The problem with vread and vwrite is the #args field in relation to the mapping function. Both vread and vwrite claim that there are 0 arguments, but map to functions that require 3 args. Because of this, the result from making either of these calls is based on the state left by previous syscalls.

Resolution: The number of expected args has been corrected.

## tty

(PR-23209) - <sys/ttychars.h> includes the following code: #if !\_\_stdc\_\_ || defined(\_CONVEX\_SOURCE) /\* { \*/ #define CTRL(c) ('c'&037) In any of the ANSI-ish modes, CTRL() will expand to: ('c'&037) because there is no parameter substitution on the character literal.

Resolution: The ANSI CTRL() Macro now will expand the args passed to it.

## ufs

(PR-22213) - If a retry of a specific filesystem operation on a specific file system object is attempted while an event daemon is processing the first request, the attempt succeeds without involving the daemon. Commands such as touch and mkdir have exhibited this behavior.

Resolution: Fixed.

(PR-22604) - A process that opens a file and then forks, yields unexpected results when both the parent and child process write to the same file descriptor.

Resolution: Fixed.

(PR-24451) - If a migration filesystem runs out of inodes while creating a new directory, the process creating the directory will pend for free inodes without issuing a callout. Even if enough inodes are freed up, the process will not be continued because no callout was made.

Resolution: Fixed.

(PR-24640) - A fault callout on a multi-component pathname can cause an unresolved kernel pte violation panic.

Resolution: Fixed.

(PR-24659) - If the blklo mount option is not set or is set to be 100%, processes will error when trying to allocate disk space, instead of pending until the disk space becomes available.

Resolution: Fixed.

(PR-24633) - A hiblk callout on a filesystem that has crossed the hiblk watermark is not issued if the loblk watermark is set at 100%.

Resolution: Fixed.

(PR-24977) - Truncate and close callouts may not be issued when callouts are suspended while a remove is in progress.

Resolution: Fixed.

## **vfs**

(PR-21958) - ps(1) should indicate if a process is pended on an event daemon function. Doing this requires a new process state to be defined and set in p->p\_stat, so ps(1) can report the condition. A process should be considered to be waiting on an event daemon when (1) it is waiting on a krpc reply to a file-system event, and (2) when it is waiting for sufficient free space in the filesystem.

Resolution: Granted.

(PR-23352) - dmon\_ioctl(DMON\_FHCLEARLOCALCHAN) can clear channel it didn't set.

Resolution: Fixed. The channel passed in is now verified.

(PR-24715) - If a file has both a master and a slave dmon associated with it, and the master dmon is killed before the slave dmon, the filesystem where the file resides will become impossible to unmount.

Resolution: Fixed.

(PR-24879) - A deadlock can occur on multi-headed systems when one head is in dmon\_suspend() and the other in dmon\_checksusp(). This is due to a semaphore ordering problem.

Resolution: Fixed.

## **vm**

(PR-07687) - Page table entries are not always cleared when a buffer is part of a kluster, or when physmap is used.

Resolution: The ptes are now cleared after the copy or clear is complete on the page.

(PR-22653) - Access (via mmap) of an 8k file on a file system with an 8k block size succeeds even though more than 8k is accessed. The process should also get a SIGSEGV since the MAP\_EXTEND option to mmap was not used.

Resolution: When file size was a multiple of block size, access to a mmap(MAP\_PRIVATE|MAP\_FILE) region would not get signaled when accessing the first page of memory beyond file size. This was due to bread returning bcount == 0 and vnode\_pagein thinking we were trying to promote a fragment to pagesize. Fixed.

(PR-23136) - The MAP\_DEBUG option to mmap causes mmap to print the message, "mmap: overlaps another region", even when regions don't overlap. In this case, mmap does not return -1.

Resolution: Fixed.

---

## Fixed utilities bugs (V10.0)

This section lists problems with the ConvexOS utilities that have been fixed in this release.

### **/usr/src/convex/nu.c**

(PR-21057) - The file /usr/src/convex/nu.c does not compile.

Resolution: Fixed.

### **MAKEDEV**

(PR-16640) - Permissions of /dev/MAKEDEV are 755. Although mknod's can be done only by root, these permissions should be more restrictive.

Resolution: Fixed for 10.0. MAKEDEV is distributed 744 now.

### **a2p**

(PR-18090) - /usr/bin/a2p core dumps when attempting to convert an awk script.

Resolution: This problem has been fixed.

### **access.2**

(PR-18880) - The declaration of access() is incorrect. It contains an extra parameter, "accessible", which is not documented correctly in the man page.

Resolution: Description of the arguments has been corrected.

### **accounting**

(PR-14268) - The accounting files are padded with empty entries if a very high userid(65534) is present in the /etc/passwd file. This causes the accounting files to grow large when only one record should be added instead of many. It wastes disk space at no benefit.

Resolution: sa(8) still leaves empty records for unused user-ids, but now it leaves them as holes in the file rather than zeroed out records. This reduces the sizes of the summary files considerably.

(PR-14994, PR-20263) - /usr/adm/accounting cannot be run unless '.' is in path. Accounting does not use fully qualified path names for the scripts it calls.

Resolution: accounting has been changed to execute things like "daily" with "./daily".

(PR-19683) - The accounting script, /usr/adm/daily, makes four copies of acct, therefore producing reports for four different data files versus one.

Resolution: daily now uses the new "-p" option in sa which allows sa to preserve the contents of the accounting file while summarizing it. The copies are no longer needed, and the "-p" option is not used on the last run of sa which will cause it to truncate the accounting file at that point.

### **adb**

(PR-19746) - The help file for adb (/usr/lib/adb/helpfile) contains the following two errors: (1) In the description for "[cnt]\$n" the second line says "it's" where it should say "its" and (2) In the description for ":e" the word "disposition" is misspelled as "dispostion" (second "i" missing).

Resolution: These problems in the helpfile have been fixed.

### **adb.1**

(PR-20819) - The adb.1 manual page has references to UNIX which need to be changed to ConvexOS.

Resolution: All references to UNIX have been replaced by ConvexOS.

### **aliases**

(PR-19338) - The 9.0 version of ftpd contains the remote help message: 214 Direct comments to ftp-bugs@hostname. but there is no default ftp-bugs alias distributed in the /usr/lib/aliases file. Probably should be: "ftp-bugs: root" as a default.

Resolution: An alias for "ftp-bugs" has been added to the default aliases file.

### **ar**

(PR-05888) - An archive can get munged when two operations are performed on it simultaneously.

Resolution: ar(1) now uses flock(3) file locking to coordinate accesses to library archives.

(PR-16457, PR-21533) - When using `ar` to replace an object in a library and the filename is truncated, the user gets what looks like an error message. The operation succeeds, but it is unclear what happened from the message printed.

Resolution: `ar` now tells the user that the truncated filename message is a warning, rather than an error.

### **avail**

(PR-17071, PR-17072) - `avail` prints the following message when `/usr/spool` is more than 98% full: `/usr/spool is at 98 capacity 1) 98 capacity should read 98% capacity 2) since /usr/spool is not usually a disk partition, it should report the actual partition that is full (ie /usr)`.

Resolution: `avail` now formats the partition full message properly.

### **awk**

(PR-18002) - None of `/bin/awk`'s size limitations are documented in its man page.

Resolution: Documented maximum line length, number of fields, and number of temp files in the INTERNAL LIMITS section.

### **binmail.1**

(PR-20932) - The `/bin/mail` man page lists `xsend(1)` in its SEE ALSO section. `xsend` is a mail command which Convex doesn't support or ship.

Resolution: All mention of `xsend(1)` has been removed.

### **boot**

(PR-18996) - Since it is necessary to change "console" to "console -m 2" in the `/mnt/os/boot` file, the change should become standard in the production release.

Resolution: The change is now included.

### **catman**

(PR-20226) - '`catman -p`' does not behave as prescribed in the `catman(8)` man page.

Resolution: `catman -p` now functions according to the man page description and only prints what it would do without doing it.

(PR-21631) - The perl script "catman" creates a variable "`$MAKEWHATIS`" and assigns to it the value "`/usr/local/lib/makewhatis`". This file does not exist. Just above that assignment is a commented out assignment to the same variable of the value "`/usr/lib/makewhatis`". This file does exist.

Resolution: `catman` now knows that `makewhatis` lives in `/usr/lib`, not `/usr/local/lib`.

### **chfn**

(PR-15297) - `chfn` only checks `uid` when making modifications; it should match both `username` and `userid` to avoid changing multiple entries.

Resolution: `Chfn(1)` is now more careful about checking and updating lines fetched from the password file so as to not confuse lines containing null entries (e.g. `+`) with `root`.

### **chkpnt**

(PR-15953) - `chkpnt` no longer seems to recognize one side of a piped process. When checkpointing a process hierarchy interactively which includes a pipe, `chkpnt` used to complain if you told it to `chkpnt` only one side of the pipe; it now no longer does this.

Resolution: Fixed in V10.0.

(PR-19731, PR-19741, PR-21014, PR-21460) - If a job is checkpointed and killed (`-k HUP`), then restarted and either allowed to run to completion or killed again, the accounting record for the time from the restart until the job stops will show a negative value for the memory field (`k*sec`).

Resolution: Fixed in V10.0.

### **chkpnt\_gd**

(PR-17654) - Request that man pages for checkpointing be included in the `checkpoint/restart` guide.

Resolution: The `checkpoint/restart` guide is now part of the ConvexOS Extensions User Guide. The man pages are in there too.

(PR-17328) - In the Checkpoint Restart Guide, 1st Edition, Chapter 3, Checkpoint Restart Programming Interface, page 3-2, the paragraph describing the "checkpoint file name" says The maximum length of "name" is 16 characters, in addition to the null terminator. There is no restriction on the length of the name parameter. The sentence should be removed.

Resolution: Fixed in checkpoint section of ConvexOS Extensions User's Guide, 1st edition, published with ConvexOS V10.0.

(PR-17563) - In the Checkpoint Restart Guide (1st Edition, Nov 1990), the description of Uncheckpointable Processes on page 1-3 is incorrect. It says: o Have more than 58 memory segments. This should be corrected to "50 memory segments," or better still, reference `CHKPNT_MAXREGIONS` from `<chkpnt.h>`. Then `CHKPNT_MAXOPENFDS` should be used instead of the "250 open file descriptors" 2 lines above this one.

Resolution: Fixed in checkpoint restart section of ConvexOS Extensions User's Guide, 1st edition, released with ConvexOS V10.0.

(PR-18334) - The Checkpoint Restart Guide needs to discuss the ramifications of checkpointing applications that use random access data files and tell when the `-C` option must be given to `chkpnt` and restart.

Resolution: Added a paragraph to the "Files Used by Checkpointed Processes" in the first chapter.

## **cnxos\_smg**

(PR-06730) - The appendix which describes the submission of a contact report should reference the `contactcap(5)` man page, or should perhaps describe how to set up contact from scratch.

Resolution: There is now a chapter in Managing ConvexOS:Configuration Guide that describes how to configure contact.

(PR-14345) - `contactcap` needs a clear explanation and example of how to set-up contact via Internet.

Resolution: There is now a chapter in Managing ConvexOS:Configuration Guide that describes how to configure contact.

(PR-15350) - When running `fsck` you may get a message: HOLD BAD BLOCK? This is not documented in the System Managers Guide appd. A of Appendix B. It should be documented well enough so that the user knows whether they should answer yes or no.

Resolution: Added an explanation of this message to the "Checking the File System" chapter of the Operations Guide.

(PR-13962) - In the entry for `/etc/syslog.conf` (Appendix A, page 53 of the System Manager's Guide, 10th edition, Dec 89, No 710-001430-206), the list of available facilities is incomplete.

Resolution: Facilities list has been expanded to include the available options.

## **compact**

(PR-12969) - In the V8.x - V9.0 releases with quotas turned on, if a user is over their BLOCK LIMIT and invokes 'compact' with a wildcard (\*), compact will delete the file(s) the user is attempting to compact and will leave a zero length frame.C for each frame associated with the wildcard.

Resolution: compact now prints an error message and preserves the original file when the compacted file cannot be written for any reason.

## **contact**

(PR-10180) - This is a request for contact to save its report if a SIGQUIT is received.

Resolution: contact now treats SIGQUIT the same as SIGINT - when received, it will ask the user if they really want to quit before exiting.

(PR-09636) - The contact utility generates mail messages which do not have a "To:" line in its mail headers. While this does not violate the letter of RFC 822, it does not seem reasonable stylistically.

Resolution: contact now places a "To:" line in the header of the message.

(PR-17006) - "`^D` to terminate" is somewhat misleading. `^D` actually takes the user to the next prompt.

Resolution: The message has been changed from "to terminate" to "when finished".

## **contactcap**

(PR-10343) - To get contact working with a dialup UUCP connection, it is necessary to have the field `:uu:` in the `contactcap` or else the useless message "Mail/UUCP not available to Convex" is displayed and contact exits.

Resolution: There is now a chapter in Managing ConvexOS:Configuration Guide that describes how to configure contact.

## cp/mv

(PR-09321) - It would be nice if Convex supported the `-z` option on the `/bin/cp` command. This option, taken from Research Version VIII, allows copying files with “holes” (long strings of null bytes) without losing those holes as normally occurs, because the program detects them and `lseek()`s appropriately.

Resolution: Both `cp`, and `mv` (which has its own internal `cp` function) both understand the `-z` flag, and when it is specified, holes in files are preserved.

## cpio

(PR-14950) - `cpio` is dumping core. It appears that it either got a pathname too long for it to handle or it got confused by a symlink that pointed nowhere.

Resolution: The max path size has been increased in the `pcc` mode. There was an array overflow condition when handling very large paths in `pcc` mode. The new `PATH_MAX` is 1024.

(PR-15871, PR-19824) - `cpio -oacB` doesn't correctly create an archive. When encountering a name on `stdin` that is a directory name, it includes all files within the directory into the archive before continuing with the files listed on `stdin`.

Resolution: `cpio` no longer recurses into directories just because they are in the input stream. If there is just a directory in the input stream, only a directory is added to the archive.

(PR-17774) - Null lines (ie, lines consisting of just `<cr>`) in the input stream causes `/bin/cpio` to jump to the default of loading everything in the directory tree. This is different from previous OS releases which allowed for null lines in the standard input.

Resolution: Fixed for 10.0.

## cpio.1

(PR-15745, PR-16049, PR-19824) - The man page for `cpio` says: The owner and group of the files will be that of the current user unless the user has appropriate privileges, which causes `cpio` to retain the owner and group of the files of the previous `cpio -o`. `cpio` does not retain the owner and group of the files. The extracted files will be owned by `root`, not the user who created the tape/file.

Resolution: `cpio` now sets the owners on files if the user is `uid 0` (aka, `root`).

(PR-21652) - `cpio(1)` man page recommends unsupported `-depth` option of `find(1)`.

Resolution: The `cpio.1` man page no longer references the (unknown to CONVEXen) `-depth` option to `find`.

## cron

(PR-09094, PR-14610, PR-20806) - `cron` should mail back `stdout` and `stderr` of the command to the user if they exist, as well as any non-zero exit status of the command.

Resolution: This is now a configurable option in `cron`. Setting “`CRONREPORT=1`” in a user's `.crontab` file will cause `cron` to do these things.

## cron.1

(PR-16462) - Some of the examples on the `cron` man page can be cleared of duplicate and superfluous entries.

Resolution: Updated the example.

## crontab.5

(PR-20456) - Manual page discrepancy between `crontab(5)` and `cron(1)` in how `stderr` and `stdout` is handled if not redirected by user.

Resolution: Clarified the description of the `CRONREPORT` option.

## csh

(PR-07706) - If the “`source`” command in `csh` is used to execute a shell file and then an attempt is made to stop the shell command file (or command) with `ctrl-Z` (suspend), the process being executed will be stopped, but the shell will not wake up. The process must be killed from another line, since that line is effectively hung.

Resolution: The 10.0 `csh` no longer exhibits this problem. The `source'd` file is aborted at the point where `suspend` is entered, and the process that was running is suspended. That process can be resumed, but will only run to completion, and the rest of the `sourced` file will be ignored.

(PR-09926) - Request that Convex support the 4.3 `csh`'s mechanism to set hard limits as well as soft ones via ‘`limit -h`’.

Resolution: This functionality is included as part of 10.0 csh, which is based upon tcsh 5.20.

(PR-09929) - Using colon modifiers on environment variables causes very strange output.

Resolution: The new 10.0 csh fixes this problem.

(PR-11029, PR-16922, PR-16976) - The csh does not do filename completion at all, although BSD 4.3's does. Request upgrading to 4.3 csh.

Resolution: File name completion (and command completion) is provided as part of the csh shipped with 10.0. This csh is based upon tcsh 5.20.

(PR-15594) - csh seems to have a problem with either the aliasing of tset or the output it produces. The "t" alias works fine under both tcsh and csh, but the "tset" alias bombs.

Resolution: csh no longer generates a core dump when expanding a recursive alias, such as the following: alias tset 'eval ""tset -s !\*""' instead it returns the following error message: Fork nesting > 16; maybe '...' loop.

(PR-16666) - When reporting a bad history invocation, the csh uses printf where it should be using puts. This generates a coredump: "!?%f" and anything with a % in it comes out pretty wierd.

Resolution: csh no longer attempts to do percent substitution on error texts.

(PR-17109) - When setting limits with the limit command, the csh "attempts" to round the limits to the next highest K. This results in 512 bytes being added to the requested limit for any of the file/memory limits.

Resolution: csh now does more proper rounding of values passed to limit.

(PR-17582) - Request for the limit command to accept the -h option to irreversibly lower hard limits.

Resolution: The V10.0 csh supports this functionality.

(PR-19266, PR-19811, PR-20077, PR-20435) - When history is piped into more under the csh, both processes suspend with a "Stopped (tty output)" message.

Resolution: This is no longer a problem in V10.0.

(PR-21045) - The command "la%888888f" will cause csh to die and dump a core file.

Resolution: The new csh included with 10.0 no longer demonstrates this problem.

## **csh.1**

(PR-22016) - Typo found on Page 6 of 'csh(1)' man page, second to last paragraph. Last line of paragraph. "...Within souble quota-" This word should be "double".

Resolution: Fixed the spelling error.

## **ctar.8**

(PR-16959) - The man page for ctar.8 is confusing. The descriptions for the c and r options are opposed, yet it is stated that use of the c option implies the r option. The named files are written on the end of the tape. The c function implies this. c Create a new tape; writing begins on the beginning of the tape instead of after the last file. This command implies r.

Resolution: Removed the confusing cross-references and improved the descriptions.

## **cvxstat.2**

(PR-19384) - The cvxstat(2) man page says: [EINVAL]len is than or equal to zero. It's missing the word "less."

Resolution: The typo has been fixed.

(PR-20965) - The cvxstat(2) man page claims that the st\_atime field of the cvxstat structure is modified by the truncate(2) system call. Actually, it is the st\_mtime field that is updated.

Resolution: Fixed.

## **date.1**

(PR-19111) - On the date.1 man page, 'affect' should be 'effect': Hence, specifying the time zone to be cdt in January will result in EST being displayed by date since daylight savings time is not in affect in January for the central time zone in the United States.

Resolution: Modified date.1 to use correct word "effect" rather than "affect".

## **df**

(PR-19584) - df will exit with status == 1 when NFS servers don't respond, even if the filesystem being checked is not an NFS filesystem.

Resolution: `df` no longer returns a non-zero value from a down NFS server when looking only at a local file system.

(PR-20665) - ConvexOS 9.1 `/bin/df` appears to have been compiled with debugging information.

Resolution: The V9.1 version of `df` does appear to have been built with debugging enabled. The V10.0 version of `df` is built properly.

## **diff**

(PR-17249, PR-20009) - When the `-D` option of the `diff` command is executed, code is generated that will choke an ansi C compiler. The preprocessor syntax should be changed from: `#endif string to #endif /* scalar */`

Resolution: `diff` now emits ANSI-compliant `cpp` directives when the `"-D"` option is used.

## **dir.5**

(PR-18275) - In the man page for `dir(5)`, the user is instructed to use `<sys/dir.h>`. However, the first comment in `<sys/dir.h>` is that the user shouldn't be using `<sys/dir.h>` but rather `<dir.h>`. The man page needs updating.

Resolution: Fixed for 10.0.

## **du**

(PR-17673) - `du` should use `strerror` to display error messages when `fork()` fails.

Resolution: Fixed for 10.0.

## **dump**

(PR-16907) - When dumping an active, mounted filesystem with the `-a` option, the operator sees messages like: `DUMP: Inode number 12345 is not dumped, it is has been changed since the dump began.` The word `'is'` is unnecessary.

Resolution: This has been corrected in the 10.0 version of `dump(8)`.

## **dump.5**

(PR-16996, PR-18869) - The `dump(5)` man page refers to an include file of `"<sys/inode.h>."` The include file should be `"<ufs/inode.h>"` instead.

Resolution: `dump(5)` has been changed to reference `<ufs/inode.h>` instead of `<sys/inode.h>`.

## **emacs**

(PR-11126) - Execution of `(x-set-mouse-color "")` or with a valid color string causes a core dump.

Resolution: Upgraded to `emacs V18.57`; problem no longer exists.

(PR-11494) - The `emacs` man page lists several default options that can be initialized via the `.Xdefaults` file. Some of these options, specifically, `emacs*iconGeometry`, have no effect.

Resolution: Corrected in the Updated Emacs V18.57. Much more X support.

(PR-16147) - Request that convex support version 18.55 of GNU Emacs.

Resolution: Upgraded to `emacs Release 18.57`.

(PR-16798) - If one uses `emacs` on large files (at about 90 MB), the user can not go to the bottom of the file.

Resolution: Upgraded to `emacs V18.57`, problem no longer exists.

## **execve.2**

(PR-20216) - In the `execve` man page, the word `"privilege"` is misspelled.

Resolution: The spelling error has been corrected.

## **file**

(PR-05988) - The `file` command takes up to 6-7 CPU seconds to check a single file. It probably could be sped up.

Resolution: The performance of `file(1)` has been significantly improved.

(PR-14905, PR-20330, PR-20544) - Files of the form: `#!/<path>/<executable>` Should report: `<filename>: <executable> commands text`

Resolution: `file(1)` is now smart enough to correctly identify scripts that begin with `"#!"`.

(PR-18990) - The file command has an undocumented, fixed-length internal table for its magic numbers. The table should be allocated dynamically.

Resolution: file now dynamically allocates entries for the magic numbers.

## find

(PR-18012) - There is no warning about using find on NFS. The dangers of using find over NFS should be placed in the man page.

Resolution: Warning added to the NOTE section.

(PR-18321) - /usr/bin/find will search an NFS partition even when it is told to prune the partition.

Resolution: The solution recommended in the problem report has been incorporated into the product.

(PR-19258) - When doing find . -inum on an inode which exists (and can be found), find exits with status == 101. Running the same find on a 9.0 system results in an exit code of 0. Find is also broken when -size is used, and quite possibly anything else which does not go through the file name globbing routine.

Resolution: find(1) will exit with a status of 0 if any match to its parameters is found.

(PR-19932, PR-20442) - Exit status for find is inconsistent with man page.

Resolution: Find(1) fixed to comply with exit status behavior documented in its man page.

(PR-21884) - find(1) strips off sign characters before doing name matches. As a result, files starting with a '+' will never be found (but a file with the same name without the leading + will be found).

Resolution: Name comparison, if specified, is now made before leading + signs are stripped.

## finger

(PR-19903) - Line 1260 of finger.c contains putchar(c ^ 100); Obviously 0t100 was not what was intended.

Resolution: Bug reported on net and fixed accordingly. Leading zero of octal number was left off.

(PR-21001, PR-21428, PR-22794) - Finger dumps core if /etc/utmp is empty.

Resolution: Fixed bad code - structure pointer was not checked for validity.

(PR-20847) - finger(1) is not returning "office" information for users on dial-in lines.

Resolution: finger adjusts the short form output if a user is logged in on a dialup line. This behavior has been documented in the man page.

## fsck

(PR-03882) - /etc/fsck should be modified to use a "dirty bit" in the filesystem. When a filesystem is properly unmounted the bit should be set to "clean." Thus, fsck/preen will only run on those filesystems which require it.

Resolution: The requested enhancement in functionality has been added.

(PR-12534, PR-15726) - Request that fsck handle pathnames longer than MAXPATHLEN.

Resolution: Function getpathname was modified to return a malloc()'ed string containing pathname which is free()'ed by calling functions. This replaces the character array parameter of previous versions. fsck will no longer abort when encountering a pathname of length greater than MAXPATHLEN.

(PR-18346) - fsck does not handle files 2^31-1 in size well. When rebooting fsck complained that it couldn't correct problems with a file which consisted of a 16k block at offset 0 and another 16k block at offset 2^31-16k. After running fsck manually, it removed the file and continued on correctly.

Resolution: Large file support and 10.0 rewrite of fsck eliminated this problem.

## fstab.5

(PR-19975) - The fstab.5 man page incorrectly states: The final field, mnt\_passno, is used by the consistency checking program fsck(8) or preen(8) to allow overlapped checking of filesystems during a reboot. All filesystems with mnt\_passno of 1 are checked first simultaneously ....

Resolution: The man page has been changed to say that preen ignores the mnt\_passno field.

## fstat

(PR-18001, PR-19549) - /usr/etc/fstat is printing a 'C' flag where it really needs to print an 'r'.

Resolution: This problem has been fixed. The flags field is displayed properly now.

(PR-18341) - fstat(8) was not updated to do something intelligent when it finds an fd of the new DTYPE\_KRPC.

Resolution: `fstat` now correctly identifies descriptors of type `DTYPE_KRPC`.  
(PR-18978) - `fstat` uses `nlist()` instead of `knlist()`, which makes it unnecessarily slower.  
Resolution: `fstat` now uses the faster `knlist()` routine.

## **getpattr.2**

(PR-20696) - The symbolic constant `ESRCH` is spelled `ERSCH` in the `ERRORS` section of the `getpattr` man page.  
Resolution: Fixed.

## **grep**

(PR-19896, PR-21098) - `grep(1)` will always exit 0 when the `-v` option is used.  
Resolution: `grep -v` was exiting with status 0 regardless of whether or not the pattern was in the file. `grep -v` now exits with 1 if the pattern was in every line of the file.

## **hypot.3m**

(PR-18687) - The `hypot(3m)` man page doesn't say what happens when an error occurs. Is `errno` set? Also, it doesn't say which functions are available in what compatibility modes of the C compiler.  
Resolution: The man page has been enhanced several times since this bug was reported.

## **in.comsat**

(PR-13837, PR-18222) - A hole in `comsat` can be used to write to or clobber an arbitrary file on the system. It can also be used to gain superuser access by creating a Trojan Horse.  
Resolution: `in.comsat` now checks that the owner of the tty device has not changed after operations which may block.

## **inline.8**

(PR-19973) - Since the kernel is built with the new compiler, the old `inline` program is not shipped. The man page for it `_is_ shipped, as man8/inline.8. It should be removed.  
Resolution: The man page for inline(8) has been removed for the V10.0 release.`

## **install**

(PR-10534) - The `installsw` script for the utilities prints "Installation begun" for each product, but then asks the installer for a password. It should ask for a password first and then say "Installation has begun."

Resolution: This problem is fixed with the new GIP format install tapes.

(PR-15124, PR-17472) - Tapeless installation of ConvexOS will fail if the remote system has a bad `/usr/lib/tape/config.db` database or has `/dev/l` devices.

Resolution: Remote installations are handled differently beginning with the V10.0 release. They are done using `rsh(1C)` and `rcp(1C)`, rather than the tape system.

(PR-17469) - When a remote installation is complete, the directory, `local:/tmp/rinstall`, is automatically removed. This is annoying if the remote installation fails and the tape must be used again immediately (to try again, for example).

Resolution: Fixed for 10.0 with transition to GIP.

(PR-18682) - It would be nice if more than one optional product could be selected at one time at the menu prompt instead of selecting one at a time before doing the install.

Resolution: The V10.0 release of the ConvexOS Utilities tape uses the generic installation procedure, or GIP, for installation. With GIP you can specify multiple products on the same line.

(PR-18659, PR-20350) - During a 9.0 upgrade, `/etc/lpc` is not moved to `/usr/etc/lpc` with the symbolic link put in its place.

Resolution: Set up correct procedure to remove executables and establish new links for all files which have moved from `/bin` and `/etc` since release V8.1. This occurs during the V10.0 User Upgrade.

(PR-18755) - Step 5 of "Updating a Local System" instructs the user to remove `tmp` files that were created during installation. However, all file systems were unmounted in the previous step (as shown in the pictured screen).

Resolution: The install procedures have been rewritten. The V10.0 install notes instruct the installer to mount the correct file systems before accessing any files contained therein.

(PR-18249) - If `/` is created from scratch, the `passwd` entry for `uucp` has a blank `passwd` field. UUCP logins should be disabled by default for security reasons.

Resolution: The uucp account in the default passwd file now has a password of `""`. This will prevent anyone from using it until the system manager has configured the system.

(PR-18846) - The Installation Procedures for ConvexOS 9.0 didn't work very well for several reasons: 1) The Installation procedure for tapeless machines uses the undocumented `tpconfig add peer` command. 2) The Installation Procedure deletes comments in `/etc/inetd.conf` 3) The Installation Procedure doesn't ignore `ignore-lines` in `/etc/fstab` when doing consistency checks. 4) It seems not to be necessary to have the system with the tape drive with the same software as the system without the tape drive.

Resolution: The installation procedures have been rewritten for the V10.0 release in GIP format. These kinds of problems have been taken into account in the new procedures.

(PR-19572) - The usage message of `install` is incomplete. The `'binary'` and `'destination'` arguments are not mentioned.

Resolution: Modified usage text to include `"binary"` and `"destination"` arguments.

(PR-19654) - `rpc.statd` and `rpc.lockd` are not part of the `/usr` upgrade. They are necessary for the tape system.

Resolution: `rpc.lockd` and `rpc.statd` are now treated as part of the base product, rather than the NFS product.

(PR-17129) - If a `./crontab` file exists ( a file, not a link ) when a system is upgraded to V9.0 or V9.1, the file is not restored.

Resolution: Added `./crontab` to the normal list of user files to save and restore during the V10.0 Root Upgrade.

(PR-19893) - If `/tmp` is a real file system and it is `*not*` mounted before running `installsw`, the utilities `install` script mounts the real `/tmp`, gets confused, and then manages to severely mangle `/` and `/usr` while moving files about. Currently the installation notes say to have `/tmp` mounted `*before*` running `installsw`. The `install` script checks for this error, but the check is somehow wrong and should be fixed.

Resolution: All utilities installations now use the GIP product for installs. GIP by default mounts all 4.2 file systems before actualizing the install.

(PR-19920) - The `makefile`, `usr.bin/yppasswd/Makefile`, when invoked with `'all'` will overwrite the non-secure `yppasswd` with the secure `yppasswd` binary. `usr.bin/Makefile` is incorrectly invoking `usr.bin/yppasswd/Makefile` with the `'install'` parameter when the target is `'secure_tape'`. The parameter should instead be `'secure_tape'`.

Resolution: This problem has been fixed.

(PR-20957, PR-21221) - After upgrading ConvexOS from V9.0 to V9.1, `autoseq` malfunctioned. Typing `'q'` to exit a notes file resulted in the message: `lock n (<notesfile>) permanently locked` The protection of `/usr/spool/notes/.locks` was wrong after the upgrade The mode had to be changed using `"chmod g+w /usr/spool/notes/.locks"` to get `autoseq` working again.

Resolution: The notes directories have the correct owner/group/mode in the V10.0 release.

## **installsw**

(PR-17956, PR-18415) - Running `/etc/installsw` with a tape device that cannot be opened by the user terminates without an error.

Resolution: Fixed for 10.0. `installsw` now does a `perror()` when it can't open a tape drive.

(PR-17958) - If you enter `"installsw"` with no arguments it won't take SIGINT for an answer.

Resolution: Fixed in 10.0. Now `^C` will abort `installsw` in interactive mode.

## **intro.2**

(PR-17336) - The error descriptions on the `intro.2` man page do not match those returned by `strerror(3)` with `EISZERO`, `EAGAIN`, `ENOMEM`, `ENOPROTOPT`, or `EHOSTUNREACH`.

Resolution: Fixed for 10.0.

## **less**

(PR-17773) - When `less` is invoked with the `-t` option, redirecting its output fails with the following errors: `"Can't take input from a terminal"` `"read error"`

Resolution: Fixed in 10.0

## login

(PR-19485) - The interpretation of "uucp" in the /etc/ttys file should be changed such that users with the same primary GID as user 'uucp' can log into the port. Allowing uucp accounts to have individual UIDs will be consistent with the ConvexOS Configuration Guide which has instructed the user to use unique uids.

Resolution: The interpretation of the 'uucp' entry in the ttys file by login, as well as the validation of connects to the uucp port by uucpd, now demands that the user being validated have the same primary group id as the user uucp. Additionally, the group ownership of the uucp spool directories and binaries is changed from daemon or bin to uucp.

## lpc

(PR-16696) - The help display in lpc lists a (null) entry.

Resolution: lpc no longer displays a "(null)" entry when the help command is used.

## lpd

(PR-18761) - When passing arguments to filters, lpd will ignore the default values (defined in /etc/printcap) for width and indent. lpd will always pass -w0 and -i0 unless overridden by lpr command line options.

Resolution: lpd has been changed to correctly utilize the page width specified in /etc/printcap. Page indent is not supported in /etc/printcap, so this part of the problem report is in error.

(PR-20809, PR-21933) - lpd incorrectly calculates free space when determining whether to accept remote print jobs from other machines. This may lead lpd to improperly reject a print job thinking that it does not have the disk space to receive it.

Resolution: Fixed for 10.0.

## mail.1

(PR-17323) - It is undocumented that lines of a .mailrc file starting with a "#" are taken as comments. Moreover, it should also be stated that a whitespace character must follow the '#' for mail to recognize the line as a comment.

Resolution: Fixed for 10.0.

## make

(PR-07557) - SUN's make (and possibly Silicon Graphics') supports many features that Convex's make does not.

Resolution: This was resolved in 9.0; the man page was not updated appropriately.

(PR-13621, PR-19438) - Request that make implement null suffix rules, enabling one to set up suffix rules for executables without extension.

Resolution: The make utility now supports single-suffix rules.

(PR-17168, PR-17448) - make dependency rules seem to be broken.

Resolution: make(1) has been changed to more carefully check target and dependency modification times, especially with respect to non-existent targets.

(PR-21389) - Both gnumake and SunOS make diagnose circular dependencies. Convex make just performs unpredictable actions with no diagnostic.

Resolution: The make utility now detects and diagnoses circular dependency graphs.

## makewhatis

(PR-17872) - If man pages are compressed when makewhatis is run, then man -k displays a 'Z' instead of the man page section number.

Resolution: This is fixed in the 10.0 version of makewhatis.

## makewhatis.8

(PR-17306) - The synopsis section for the makewhatis man page: /usr/lib/makewhatis [-v] [-n] [-y] [[-M] manpath] has a -M option, which is not described in the description section. It is also not used in the example section: % makewhatis -n \$MANPATH # tell if any dbase in \$MANPATH out of date

Resolution: Documented the -M flag for 10.0.

## man

(PR-17896) - Many spelling errors can be found in the ConvexOS Programmer's Reference V9.0.

Resolution: Fixed spelling errors in man pages.

(PR-22537) - The command "man -k" no longer sends output to PAGER. The man page says it should.

Resolution: man(1) now sends the appropriate output through \$PAGER.

## man pages

(PR-11219) - A whatis entry should be added for 'errno' that points to the intro(2) man page.

Resolution: A man page for errno.h was distributed with the V8.1 release. This was modified to reference intro(2), where each of the errno's are explained.

(PR-20248) - The following manual pages refer to your Company's name as "Convex" instead of the correct name "CONVEX": fstat(8), hsend(8), installsw(8), makewhatis(8), sethnb(8), sticky(8)

Resolution: Changed Convex to CONVEX in all cases.

(PR-20251) - The following manual pages refer to "CONVEX UNIX" when they should be referring to "ConvexOS" in some form: lpd(8), lpf(8), ncp(8), nfaccess(8), nfdump(8), pstat(8), reboot(8), sa(8), spu(8), spucmd(8), syspic(8)

Resolution: The man pages no longer make reference to UNIX unless accompanied by the trademark note.

(PR-20241) - The following manual pages refer to the CONVEX System Manager's Guide which no longer exists. They should refer to either "Managing ConvexOS: Configuration Guide" or "Managing ConvexOS: Operations Guide". accounting.8, acctconv.8, connecttime.8, edactwho.8, faillogon.8, lpd.8, op.8, pac.8, reboot.8, sumscripts.8.

Resolution: Changed reference to the System Managers Guide to the "Managing ConvexOS documentation set".

(PR-21943) - There are a number of man pages in the standard release that pertain to special systems implementation of HASP. There are no commands normally loaded so these man pages should be eliminated.

Resolution: These man pages have been removed. man.7

(PR-17354, PR-19666, PR-19678) - The man page for man.7 has some formatting problems having to do with indentation that make the page almost unreadable.

Resolution: Fixed for 10.0.

## mkdir

(PR-10931, PR-15647) - It would be nice if mkdir had a -p flag so that a user could say 'mkdir -p foo/bar/glarth' even when foo doesn't exist so that it would recursively make all needed directories.

Resolution: The "-p" path creation functionality has been added to mkdir.

## mkpasswd

(PR-13294, PR-15052) - mkpasswd fails to preserve ordinality. For example, if two users have the same uid, the insert routine doesn't check to see if the key already exists before overwriting it. This produces different results from non-hashed password files when searching for a uid. This causes programs like rexd to break if a uid is multiply defined.

Resolution: /etc/mkpasswd now prefers the first instance of a uid/login rather than the last instance.

## mount

(PR-03882) - mount and umount should be modified to use a "dirty bit" in the filesystem. When properly unmounted, a filesystem's bit should be set to "clean" as a signal to /etc/fscck that it needn't run on that filesystem. When mounted, mount should set the filesystem's bit to "dirty."

Resolution: The requested enhancement in functionality has been added.

(PR-10917, PR-21191) - umount has a -h option to unmount everything NFS mounted from a specific host. It would be symmetrical (and nice) to have a similar switch to mount.

Resolution: The -h <host> flag has been added to mount, for symmetry with umount. The usage is 'mount -ah <host>', and it will mount all of the nfs filesystems from <host>.

(PR-17871) - /etc/mount does not return valid status.

Resolution: Fixed for 10.0. The mount.8 man page now describes the exit status for mount. Also, mount no longer counts a mount attempt on a currently mounted filesystem as an error.

(PR-17943) - Issuing a "mount /" removes the entry for "/" in /etc/mtab.

Resolution: Fixed for 10.0. Mount will now verify that the root filesystem is mounted but if a stat() on / fails, it will print an error message saying the stat failed.

## **mount.8**

(PR-19089) - The mount program checks for files in the mount point directory and displays an appropriate message if files do exist. This is new in ConvexOS V9.1 but the V9.1 man page for mount does not mention the possible warning message.

Resolution: The mount.8 man page now mentions the warning message about non-empty mount points.

## **msgs**

(PR-20968) - When msgs gets mail without a subject, it prints an error and exits status==1. It should use sysexits.h so sendmail doesn't complain about unknown error message. EX\_UNAVAILABLE would probably be fine.

Resolution: msgs now prints useful error messages and exits with status codes from /usr/include/sysexits.h

## **mt.1**

(PR-18662) - The restrictions section of the mt man page should mention that the tape movement commands, (ie fsf, bsf etc) only work as expected with no-rewind tape devices.

Resolution: A paragraph has been added to the mt.1 man page describing the tape position once mt has run to completion, if a rewind-on-close tape device is used.

## **new\_util**

(PR-08060, PR-10533, PR-10610, PR-11492) - Request that tcsh become part of the supported utility set for CONVEX.

Resolution: Starting with ConvexOS & Utilities V10.0, csh will be tcsh 5.21. newfs

(PR-20536) - When specifying an illegal argument to newfs, a bus error occurs.

Resolution: Corrected command line parsing. There was a coding error.

## **newfs.8**

(PR-20956) - The man page for newfs(8) references "A Fast File System for UNIX" from UC Berkeley that we no longer provide in the CONVEX Tutorial Papers. This reference should be removed, and the man pages for the rest of the file system utilities should be checked for this too.

Resolution: The reference has been removed.

## **newfs/newst**

(PR-04164, PR-13257) - newfs and newst should always check the following before they allow a new filesystem to be built: None of the component or target partition(s) are already mounted (this is mostly done already) None of the component or target partition(s) are already a part of a mounted stripe partition None of the component or target partition(s) overlap with a partition that is already in use (g versus d/e/f, etc.) None of the component or target partition(s) are in use as swap space

Resolution: The new release of the stripe utilities, known as the VVM (Virtual Volume Manager) utilities, correct all of the reported error checking problems.

## **newst**

(PR-04943, PR-05030) - A mkfs command can be generated which causes the following error message: "cylinder groups must have a multiple of 8 cylinders."

Resolution: The algorithm which sets cpg (cylinders per group) has been dramatically enhanced. The operation is now equivalent to that used by 'newfs' and should result in more accurate arguments to 'mkfs'.

(PR-05943) - The -m and -M switches for newst should be consistent with the newfs switches.

Resolution: In order to remain consistent with the previous release of 'newst', the "-m" switch is retained and means "maxcontig" for the 'mkfs' command. In order to be more consistent with 'newfs', the "-M" flag has been added to 'newst' and has the identical function of "-m".

(PR-06248) - The default values for rotdelay in newfs and newst need to be adjusted based on new performance data recently gathered.

Resolution: Setting of rotdelay has been changed to be sensitive to block size. If block size is less than 16k, then rotdelay is 8. Otherwise it will be 1.

(PR-03670, PR-05606, PR-09385, PR-12590) - newst does not allow the user to change the percentage of minimum free space threshold (minfree), as does newfs. newst should allow the user to do this, as a great deal of space can be wasted with large stripes.

Resolution: Added the "-F" option to 'newst' to allow the user to specify the minfree argument to 'mkfs'. It would have been preferable to use "-m", but that option already is used for 'maxcontig' and backwards compatibility must be assured.

(PR-17860) - The -m flag of newfs allows the modification of reserved space on a file system. This flag would be quite useful in the newst command.

Resolution: Added the "-F" option to 'newst' to allow the user to specify the minfree argument to 'mkfs'. It would have been preferable to use "-m", but that option already is used for 'maxcontig' and backwards compatibility must be assured.

## **newst.8**

(PR-21030) - The newst man page (probably newfs also) should discuss how to increase (or decrease) the number of inodes. It should mention that inodes are basically controlled by the number of cylinder groups (with the -c option), and that the -I option is really only good for maximizing the # of inodes per cylinder group to 2048.

Resolution: The new man page for the VVM version of newst contains text to this affect.

## **notes**

(PR-07458) - The notes system allows one to enter non-printable characters into a note. It then displays these without translating them into a more printable form. This allows trojan horses because sometimes persons with su privilege read notes and one could sneak in characters to the terminal, creating a security hazard. It's also impossible to read things with ^L's in them.

Resolution: notes now checks for control characters, both in the title and text of a note. Most control characters get replaced by "?", and <control-L> is handled properly.

(PR-18144) - When writing a note in /tmp, the mode on the /tmp/nf\$\$ file is 0666, allowing anyone to read or even alter the posting, which may be going to a privileged notesfile. This should be mode 0600 instead.

Resolution: Temporary files used by the notes system now have their mode set to 600, rather than 666.

(PR-18477) - Notes has a limit of 35 entries in the access list. This is inadequate for certain projects notesfiles with restricted access, yet a large readership.

Resolution: The number of allowable entries is now 256.

## **nu**

(PR-12648) - The nu command will fail doing edquota if the new user's home directory is a symbolic link.

Resolution: nu used a string match against the mounted file system entries to find the home file system setting up quotas. This algorithm could not follow symbolic links properly. The algorithm was rewritten to match device numbers instead, as per "df".

(PR-18470) - Supplying an illegal uid of >65535 in nu leads to an abort with bus error and the error message "The uid must be >0 and <Bus error". The lock files, /etc/ptmp and /etc/rtmp, are not removed.

Resolution: nu now correctly handles uids which exceed the maximum.

(PR-18468) - nu only acknowledges an uppercase "Y" as signifying a positive response to the question, "New scheduling group?". It should also accept a lower case "y".

Resolution: nu now accepts lower case 'y' for the "new share group?" question.

## **nu.c**

(PR-21056) - When compiling nu.c, the compiler generates an error message on line 1238, "expression statement has no effect", for the following C code in convert\_param: if (pch) \*pch == '0'; return(1); This should be an assignment statement rather than a logical comparison.

Resolution: Fixed code typo. Replaced comparison with assignment.

## **op**

(PR-20959) - For security reasons, the file /etc/op.access should never be world writable. If it is world writable, op(8) should report an error and refuse to function.

Resolution: op(8) now aborts with an error message if the /etc/op.access file is world writeable.

## **os\_cfg\_smg**

(PR-16903) - In the Managing Convex OS Configuration Guide 1.0, the "swap on" entry has disappeared in the index, and the syntax is not documented in the chapter related to Boottime parameters (Chapter 15).

Resolution: Information on “swap on” now appears where it is used - in the Setting Up the Disk System chapter of Managing ConvexOS: Configuration.

(PR-17604) - On page 4-14 of Managing ConvexOS: Config Guide 1st ed, the line: Figure 4-11 illustrates the configuration shown in the above example. should be Figure 4-11 illustrates the disk, configuration shown in the above example.

Resolution: Fixed in Managing ConvexOS: Configuration Guide, 2nd edition, released with ConvexOS V10.0.

(PR-17634) - In the manual “Managing ConvexOS: Configuration Guide” on page 7-4, in the footnote it states: “ConvexOS allows host names up to 256 characters;”. In the system include file /usr/include/sys/param.h, the parameter MAXHOSTNAMELEN is defined as 64.

Resolution: The referenced paragraph does not exist in the V10.0 version of Chapter 7.

(PR-17653) - In the Configuration Guide (doc 710-001430-209), on pg 4-21, “nont-striped” should be “non-striped.”

Resolution: Fixed in Managing ConvexOS: Configuration Guide, 2nd edition, released with ConvexOS V10.0.

(PR-19314) - The Managing ConvexOS: Configuration Guide does not include information on how to configure a system with swap space not on the default partition. There is no mention of the “miniroot on” and “swap on” boot-time parameters.

Resolution: The swap space information is in the “Setting Up the Disk System” chapter of the Configuration Guide. “swap on” was explained in the “Customizing Kernel Boot-Time Parameters” chapter of the Configuration Guide. “miniroot on” has been added to that same chapter.

(PR-20275) - The Configuration Guide gives incomplete instructions on how to disable a user’s account.

Resolution: The purpose of the field in question was to explain adding new users, not removing old ones. Clarified the technical ramifications of placing an asterisk in the password field. Did not add further preventative steps, as they are explained in the Removing User Accounts section further on in the chapter.

(PR-20602) - The Managing ConvexOS: Configuration Guide, Table 5-1 does not include the ‘if’ option for printcap. Furthermore, this chapter does not clearly explain the differences between Input Filters and Output Filters and how they are used.

Resolution: Table 5-1 now includes the if option. The input/output amplification will be included at a later date.

(PR-20882) - Within the Configuration Guide Disk System section, additional information regarding increasing the number of inodes in filesystems should be added; specifically, use of the -i option. Also a table listing default values produced by newfs for default /etc/disktab entries would be welcome.

Resolution: The disk system chapter explains the -i option, and offers some guidelines for determining the number of inodes needed for a file system.

(PR-21214) - Chapter 3 of the Managing ConvexOS: Configuration Guide should include the Sabre disk drives in table 3-2.

Resolution: Added info on the Sabre drives to the table.

(PR-20985) - The “Managing ConvexOS Configuration Guide” erroneously advises not to change the MAXMEMSIZE parameter on page 16-8 in the System Generation chapter.

Resolution: Changing maxmemsize will have no effect for customers without a source license. Therefore, most customers should not change this parameter. A note was added to advise source customers that they can change maxmemsize.

## **os\_conf\_smg**

(PR-12851) - The ConvexOS Tape System Guide, doc. no. 710-003130-000, should be modified to include the unambiguous abbreviations for “SEt Alloc\_drive”, “SEt Bypass\_labels”, “SEt Default DRive”, and “SEt Default DEnsity.”

Resolution: Fixed in Managing ConvexOS: Configuration Guide, released with ConvexOS V10.0.

## **os\_oper\_smg**

(PR-16244) - Tape accounting is not mentioned at all in this guide. There should be a description of what tape accounting features are available.

Resolution: Fixed in Managing ConvexOS: Operations Guide, released with ConvexOS V10.0.

(PR-19954) - The operations guide regarding accounting reports on page 9-8 is incorrect.

Resolution: Removed reference to -f as a way to access alternate file. Changed example to reflect the command structure shown in sa(8).

(PR-20433, PR-20458) - Chapter 4, Performing Backups and Restoring Files, needs to address the use of labeled tapes.

Resolution: Dumping and restoring file systems will be addressed in ConvexOS 10.0 documentation as follows: Managing ConvexOS: Operations Guide, part no. 710-011830-002 Dumping and Restoring File Systems (quick reference), part no. 710-017030-000

(PR-20748) - The Managing ConvexOS: Operations Guide, Chapter 10, entitled "Checking the File System," on pages 10-20 through the end of the chapter (10-32), discusses the error messages in the Initialization phase and phases 1, 1b, and 2 of fsck. The error messages and discussion of their meaning for phases 3 through 6 would be appreciated.

Resolution: Error messages for phases 3 through 6 were omitted due to production error. Fixed in 2nd edition of book, released with ConvexOS V10.0.

(PR-20986) - Page 5-2, Figure 5-1 displays an incorrect load average.

Resolution: Changed the colon in the load average figure to a period.

(PR-20987) - Page 5-4 Figure 5-3 the TIME and COMMAND fields run together.

Resolution: Incorporated corrected figure from the ConvexOS V9.5 version of Managing ConvexOS: Operation.

(PR-20988) - Page 5-6, Figure 5-4 first line of headers not lined up correctly.

Resolution: Incorporated corrected figure from the V9.5 version of Managing ConvexOS: Operation Guide.

### **os\_pr**

(PR-21293) - The last line of the ld88(1) man page (page 2) says: ld88 is an unreleased product and is available for CONVEX internal use only. Looks like one of the internal-use-only man pages slipped through the crack. Associated man pages that also got published are: as88, cc88, cpp88, nm88, size88, strip88.

Resolution: Fixed in 2nd edition of ConvexOS Man Pages, released with ConvexOS V10.0

### **os\_smg**

(PR-20788) - Chapter 10, "Setting Quotas on Disk Space Use", needs to be updated with more information (warnings) when using quotas with NFS. In this configuration, no warning or error messages are printed when the user exceeds soft or hard limits. Furthermore, the paragraph should clarify that users run quota(1) on the remote system to determine quota allocation.

Resolution: Added paragraph to the Setting Quotas on Disk Space Use chapter of the Configuration Guide.

### **os\_tutor**

(PR-20043) - Missing flow lines in Figure 1 of "Typing Documents on the UNIX System: Using the -ms Macros with Troff and Nroff".

Resolution: Fixed in ConvexOS Tutorial Papers, 8th ed., released with ConvexOS V10.0. 1 - eqn tutorial paper now included 2 - flowchart for paper on -ms macros fixed 3 - document on -ms macros not included; no longer part of BSD because obsolete 4 - closed; will keep in alpha order 5 - curses paper has been included 6 - lint paper has been removed (obsolete); is discussed in C books

(PR-20073) - Table needs fixed in Tutorial Papers, page USD:7-14 in "Mail Reference Manual".

Resolution: Fixed in 8th edition, released with ConvexOS V10.0.

(PR-20074) - The table in the Tutorial Papers, "The Answer to All Man's Problems", contains a misaligned table. (Figure 3 on page 6).

Resolution: Fixed in ConvexOS Tutorial Papers, 8th edition, released with ConvexOS V10.0.

(PR-20840) - The tutorial paper on lex seems to have been incorrectly formatted. There are "BL directives in the final output. In specific, you will find many instances of "center; l." spread throughout the document.

Resolution: Fixed in ConvexOS Tutorial Papers, 7th ed, released with ConvexOS V10.0.

### **pac.8**

(PR-19450) - The pac man page refers to /etc/pac. There is no /etc/pac; it is /usr/etc/pac these days.

Resolution: All references to /etc/pac have been changed to /usr/etc/pac.

### **perl**

(PR-14945) - perl dumps core if the user accidentally uses @x[\$i] when \$x[\$i] is meant, and there is no i-th element of the @x array.

Resolution: The 4.010 perl release handles incorrect `@x[$i]` references without coredumps.  
(PR-15387) - perl doesn't appear to handle the regular expression `{n,m}` correctly in the case that `n` or `m` is two digits.

Resolution: The 4.010 release of perl now correctly handles a regex modifier of `{xx,yy}`.  
(PR-15825) - perl will dump core in `do_split()` when given a null element to split.

Resolution: perl no longer dumps core in this situation.

(PR-16682) - Using `perl -i` to edit a file in place fails when the directory is not writable. The file is zeroed, and no warning is given.

Resolution: Fixed in 4.010 release of perl. An error message: `Can't rename file to file.bak: Permission denied, skipping file.` is now provided.

(PR-18780) - Please add support for `alarm` to standard release.

Resolution: `alarm()` is now a supported function in the 4.010 release of perl.

(PR-20594) - In perl, `tr` is not converting characters that have bit 7 set.

Resolution: Perl release 4.010 now correctly handles high-bit characters when performing translations.

## preen

(PR-14511) - Request that `/etc/preen` be changed so that it can pass on arguments given to it to `/etc/fsck`.

Resolution: `preen` checks the flags passed to it. If the flag is not a valid `preen` flag, then `preen` checks to see if it is a valid `fsck` flag; if so, `preen` passes it to each `fsck` forked.

(PR-19974, PR-20600) - Request that there be an option to `preen` that will limit how many disks it will attempt to `fsck` at one time.

Resolution: `preen` supports a `"-L <num>"` option. This option limits `preen` to running, at most, `<num>` `fsck`'s concurrently. `<num>` may be any positive integer. Note: `preen` still limits the number of concurrently running `fsck`'s to be no more than the number of disk drives.

## ps

(PR-19843) - On a system with a large number of I/O devices, `ps` will fail: `ps: too many character devices in /dev`

Resolution: `ps(1)` no longer searches `/dev` for `tty`'s - it now searches `/etc/ttys`. The limit is now 1024 `tty`'s, rather than 1024 character devices.

## pstat

(PR-17898, PR-21449) - `pstat -i` shows many `TYPE` fields of `????`. This type is not documented.

Resolution: `"pstat -i"` now correctly identifies items in the `TYPE` field. `putst`

(PR-06004) - It would be useful if the `putst` utility had an option to zero out a kernel stripe table entry.

Resolution: The new utility, `rmst`, allows stripe tables to be deleted at will from the kernel tables or the `stripecap` file.

## pwrestrict

(PR-18070) - After doing an initial installation of X9.1.0.5, `nu` failed with the message: `mkpasswd: /etc/pwrestrict: no such file or directory nu failed ( or some such messages) There was no /etc/pwrestrict, but the new user was added to /etc/passwd.`

Resolution: `nu(8)` has been changed to check for the existence of `/etc/pwrestrict`, and invoke `mkpasswd` only on the `passwd` file if `pwrestrict` doesn't exist. This eliminates the warning messages.

## ranlib

(PR-15470) - An incorrect unresolved symbol error message is generated and no executable is created when loading a program with libraries.

Resolution: This problem is fixed by `ranlib` in ConvexOS 10.0.

## sa

(PR-14143) - The file `usracct`, (created by `sa`) contains 1 record for each possible `uid`, up to the current maximum `uid` in the password file. For unallocated `uid`'s, `/etc/sa WRITES` an empty record (containing 0's). This allows huge files to be created (up to 2 Meg) if there are holes in the `uid` sequence.

Resolution: sa now truncates the savacct file before writing it, then uses fseek to skip over unused records.

## sed

(PR-18000) - sed has limits both to its total number of commands as well as the total length of all the commands. This is not documented as a bug or restriction.

Resolution: Fixed for 10.0.

## seestat.8

(PR-17125) - seestat only works on Printronix style printers. This restriction should be documented in the man page.

Resolution: This is now documented in the man page.

## sendmail.8

(PR-11499) - The documentation for sendmail doesn't give the default values for the "x" or "X" options, nor many of the other options.

Resolution: All options that have default values are documented in Managing ConvexOS: Configuration Guide and Managing ConvexOS: Operations Guide, released with ConvexOS V10.0.

(PR-14140) - The description of the -dX switch in the sendmail man page does not give the values for X.

Resolution: The debugging flags are only useful if you have source. They are quite cryptic and are supposed to be used for debugging the sendmail program itself. There has never been a guarantee as to what they are supposed to print, if anything. However, they are now documented on the sendmailcf.5 man page.

## setpgrp.2

(PR-21109) - The setpgrp man page needs to have the RETURN VALUE section fixed.

Resolution: Fixed.

## sh

(PR-13269) - /bin/sh dies when attempting to execute a double-quoted single-quoted filename.

Resolution: This is fixed in V10.0.

(PR-16144, PR-18172, PR-18442) - Scripts written in the Bourne shell are designed to be maximally portable. However, the version from Convex is so very old that many scripts that work on other machines won't run here. For example, "unset" is not recognized, and arguments to the shift operator are not handled properly. Functions are also unsupported. Convex sh should be upgraded to a version that is more compatible with newer versions of sh.

Resolution: Starting with ConvexOS 10.0, /bin/sh is based upon System V, release 2 bourne shell.

(PR-20440) - The sh continue command does not work as documented. Continue followed by a number seems to work the same as continue not followed by a number.

Resolution: continue <n> works as documented, ie, continuing the <n>-th outer loop.

(PR-20811) - When submitting a batch job with qsub -l, the Bourne shell will only execute \$HOME/.profile if the job was submitted from the user's home directory. The shell attempts to execute ./profile instead of \$HOME/.profile.

Resolution: The 10.0 sh now looks for .profile in \$HOME.

(PR-21271) - The CONVEX version of /bin/sh does not support "unset".

Resolution: With V10.0, /bin/sh has been replaced by an sh based upon System V, release 2, which supports the unset functionality.

(PR-21272) - /bin/sh does not support parameter substitution of the form \${parameter:-value}. The colon is not supported in any form.

Resolution: The \${var:-value} parameter substitution is supported as part of the 10.0 sh.

(PR-21273) - CONVEX version of /bin/sh does not support -x option of "test" (testing for executable file).

Resolution: With the 10.0 sh, test and ] are builtins, and they do support the -x flag. /bin/test continues not to support this flag.

## **sh.1**

(PR-18010) - The man page for /bin/sh does not document the maximum file descriptor value that can be used by the user.

Resolution: The sh.1 man page documents that the valid file descriptors are single digit numbers, by using the word 'digit' throughout.

## **siloquery**

(PR-21399) - PR-22574) - When attempting a 'siloquery volume' command with more than 500 tapes in the SUN data base (silo) errors occur : segmentation fault; core dumped.

Resolution: siloquery volume no longer aborts when displaying more than 500 tapes.

## **sort.1**

(PR-17331) - The man page for sort requires a more thorough explanation of the -t option. This option can be used to sort only certain column ranges of a file; however, this is not documented.

Resolution: Fixed for 10.0. Added an example on how to sort by column contents.

## **stat**

(PR-17788) - The 9.0 version of stat produces "empty" reports for report numbers 3, 4, 18, 25, and 29.

Resolution: The man page was partially incorrect and has been fixed. Report number is now report 30. All other reports are now supported.

(PR-17858) - stat data collection reports zero for disk mbytes/sec.

Resolution: Fixed for 10.0.

## **stat.5**

(PR-16710) - Network collisions/sec is effectively 2 bytes long, so the next offset in the man page should be 17 rather than 16, and the rest of the list should be incremented. Total # processes is 1 byte long instead of 2.

Resolution: Fixed for 10.0. The offsets in stat.5 are now correct.

## **staffs.2**

(PR-18395) - The man page for staffs lists sys/{types,vfs,mount}.h as the necessary #include files. At compile-time, nfs/nfs.h and errno.h are also required. The man page should be updated to show this.

Resolution: The 10.0 man page is appropriate for compiling a program referencing staffs.

## **stty**

(PR-19359) - stty always exits with status of zero. It should exit non-zero when an error occurs.

Resolution: stty now exits with status of 1 if an unknown mode is given or if an ioctl fails. sysgen

(PR-19130) - For the next release of ConvexOS, the device MTD-011 needs to be included in /sys/sysgen/units, and an entry point included in the kernel so that the OS will support a Telex drive.

Resolution: The telex tape drive has been added to /sys/sysgen/units for V10.0.

(PR-19006) - The /sys/sysgen/[un]convert.awk scripts do not understand the IDC or TLI or other new CCU devices.

Resolution: Fixed. It should be noted that the convert scripts will become unsupported in a future release of ConvexOS.

## **syslogd**

(PR-20438) - If name server is not working, syslogd can dump core.

Resolution: syslogd now properly reports name service error conditions rather than dumping core.

## **tar**

(PR-17843) - If one tries to tar into a directory he/she can't write to, tar yields error messages, but exits with a status of zero.

Resolution: Fixed in 10.0.

(PR-17955, PR-18599) - /bin/tar exits with a value of 0 when given an invalid input file name.

Resolution: Fixed for 10.0. tar now exits with status 1 when it can't open an archive.

## **tpconfig**

(PR-17721) - Once in tpconfig, entering help lists the command (among others) for granting users and groups allocate permission for a tape drive. The command as shown by the output of the "help" command is: Add/Del/SEt Alloc\_drive User\_set <user\_list...> <type\_unit> This does not work. The man pages shows: Add Allocate\_drive User\_set user\_list type:unit This command does work. It appears that the help printed is incorrect.

Resolution: The Help output now shows the proper syntax for the "Add/Del/SEt Alloc" commands.

## **tpconfig.8**

(PR-14367) - There is no documented way out of "tpconfig". <CTRL>-D works, but none of (bye, close, dot (.), eof, \$EOF, exit, leave, quit, stop) work. Convex should document ^D as the way out.

Resolution: The tpconfig man page mentions that <CTRL-D> causes it to exit.

## **tpdaemon**

(PR-18865) - tpmount fails with the -q and a symbolic-link name and vsn. The documentation doesn't list this as a restriction. The mount is successful if no vsn is included in the command.

Resolution: This problem has been repaired.

## **tutorial papers**

(PR-21298) - Documentation for eqn was omitted from the Document Preparation chapter.

Resolution: Fixed in ConvexOS Tutorial Papers, 8th edition, released with ConvexOS V10.0. (This bug is also reported in X-19697.)

## **unexpand**

(PR-14887) - Unexpand fails to convert spaces to tabs where two or more tabs would occur at the beginning of a line. Unexpand -a fails to convert spaces to tabs under a number of circumstances.

Resolution: This has been fixed.

## **uptime.1**

(PR-17792) - The uptime command prints the number of users logged in in addition to other information. The uptime man page should say that the number of users logged in is printed.

Resolution: Fixed for 10.0

## **uuq**

(PR-17674) - If the user gives uuq command line options incorrectly, it will not complain. Also, one cannot combine options or use a space between the option and its argument, as with standard unix commands. Please use getopt to parse command line options.

Resolution: Fixed for V10.0

## **uusend.1c**

(PR-09189) - The usage statement for uusend has options which are not documented in the man page. In particular the -r option is not documented.

Resolution: A description of the -r option to uusend(1C) has been added.

## **vdump**

(PR-18313) - The /etc/vdump script does not use full pathnames for "dump" and "filter."

Resolution: vdump now uses fully-qualified pathnames.

## **verify**

(PR-10152) - All flags of verify should be fully documented.

Resolution: The verify(8) man page has been updated to reflect all options.

(PR-10153, PR-21632) - The verify databases should be distributed with all fields fully qualified, including size, version, checksum, and date.

Resolution: Fixed for 10.0.

(PR-16143) - When verify encounters an unexpected symbolic link, it no longer processes the file, losing the opportunity to spot mode and owner problems. It should issue a warning and continue.

Resolution: verify(8) supports a new option, "-k", that when specified will cause it to follow unexpected symbolic links and verify the file that it points to.

(PR-17895) - The V9.0 verify database says that the GID for the directory /usr/lib/uucppublic should be "bin". However, the First Edition of the ConvexOS Configuration Guide on page 7-7 shows that the GID for directory /usr/lib/uucppublic should be "daemon".

Resolution: Fixed for 10.0. The user upgrade will now chmod /usr/lib/uucppublic to group daemon if it exists.

(PR-20230) - The V9.1 verify database shows the mode for /tmp as 755. It should be 777.

Resolution: The mode of /tmp is specified correctly in the V10.0 verify database.

(PR-20231) - The V9.1 verify database shows the modes for /dev/kmem and /dev/mem as 644. They should be 640.

Resolution: The modes of /dev/mem and /dev/kmem are specified correctly in the V10.0 verify database.

(PR-21837) - It looks as if verify does not follow symbolic links to locate files. Verify encounters the symlink & then apparently gives up on processing the files.

Resolution: This has been fixed. The default operation of verify(8) is still the same, that is, it will complain about unexpected symbolic links. A new option, -k, is supported in V10.0 that tells verify to follow unexpected symbolic links and apply the database entry to the file it points to.

(PR-22510) - /usr/lib/verify/system\_V9.1 indicates the mode for directory /usr/spool/notes/.locks should be 755. It should indicate the directory should be 775.

Resolution: /usr/spool/notes/.locks now has the correct mode of 0775.

### **verify.5**

(PR-20326) - The verify(5) man page does not document the checksum field (s=#).

Resolution: The verify man page has been updated to reflect all fields.

### **verify.8**

(PR-18862) - The man page for verify does not document the -m option for creating a verify database.

Resolution: Instructions are now included in the verify(8) man page for creating verify databases.

### **vi**

(PR-16441) - vi may not create a unique temporary file name when it starts.

Resolution: vi now creates temporary files using filenames generated by mktemp(3).

### **vipw**

(PR-11220) - When using vipw to add a line like +john:::::/bin/sh to the password file to override the shell set with Yellow Pages, one gets the warning: Warning: extra fields removed: +john:::::/bin/sh  
Resolution: vipw(8) now handles YP entries in /etc/passwd correctly.

(PR-13824) - In the passwd file, entries such as: +sca::::/usr/sca:/usr/local/bin/csh +@scagp:nologin: are truncated by vipw to just: +sca: +scagp:

Resolution: Fixed handling of YP entries that begin with "+" and "-".

(PR-20615) - The /etc/vipw utility does not handle NIS(YP) entries in the /etc/passwd file properly. If a username is prefaced with a plus sign (+), it prints an error message, "Removing extraneous data +user::::", and deletes these entries from /etc/passwd. This forces the system administrator to edit /etc/passwd without proper locking, and to manually run mkpasswd.

Resolution: vipw(8) now properly handles YP entries, both those that begin with "+" and those that begin with "-", in the password file.

### **vmstat**

(PR-08282) - The CPU percentages shown by the vmstat command do not add up to 100% like they normally do. The problem appears after several days of up-time when the CPU percentages appear to wrap around to 0. The percentages did add up to 100% for the first week or so of uptime.

Resolution: vmstat has been changed to use the more accurate cpu averaging scheme used by syspic.

### **wall**

(PR-20613) - wall uses the constant "#define USERS 128" to read the first 128 entries in /etc/utmp. If a user is the 129th or past entry, the user won't get a message from wall.

Resolution: wall now dynamically determines the space required for the utmp table.

## yacc

(PR-19230, PR-19760) - The check for yacc parser stack overflow in /usr/lib/yaccpar is off by one. With declaration short yy[YYMAXDEPTH]; it checks for overflow by saying if( ++yy > &yy[YYMAXDEPTH] ) { yyerror( "yacc stack overflow" )..... \*yy = yystate; Clearly if yy == &yy[YYMAXDEPTH] it is outside the array so the check should use >=, not >

Resolution: yaccpar has been changed to make the correct array bounds check.

(PR-19214) - The file /usr/lib/yaccpar needs to do something like this #if !defined(lint) && !defined(\_\_lint) static char yaccpar\_sccsid[] = "@(#)yaccpar 4.1 (Berkeley) 2/11/83 "; static char convex\_yaccpar\_rcsid[] = "\$CHHeader: yaccpar 90/02/08 11:09:39 \$"; #endif /\*not lint\*/ to correctly hide these objects from lint.

Resolution: The suggested fix was applied to /usr/lib/yaccpar. This section lists problem reports against the ConvexOS Utilities that point out inherent restrictions in the software, or that were not reproducible.

---

## Fixed utilities bugs (V10.1)

This section lists utilities bugs that have been fixed for the V10.1 release.

### /etc/rc

(PR-25275) - Request that if /etc/.new\_vmunix exists, /etc/rc should copy vmunix from the SPU into /vmunix and then remove /etc/.new\_vmunix. This hook could be exploited by product installation scripts to facilitate installations requiring sysgens.

Resolution: The requested functionality has been added to rc.

### /etc/services

(PR-23369) - The default /etc/services file shipped with the system still contains an entry for remote crashdumps, although that capability is no longer supported.

Resolution: The entry in the /etc/services file that was used for remote crashdumps (which are no longer supported or needed) has been removed.

### /usr/etc/upgrade

(PR-24109) - After upgrading to V10.0.2 and running the /usr/etc/upgrade script, the subsequent 'verify' of the Domestic installation returns: /tmp : mode is 777 should be 755.

Resolution: Fixed for 10.1.

### L.sys

(PR-05163) - The distributed /usr/lib/uucp/L.sys could use a good prototype for hosts that are polled.

Resolution: There is now an example of a poll only site in the L.sys.examples file.

### MAKEDEV.8

(PR-20250, PR-21453) - The MAKEDEV(8) man page lists the valid arguments. The following are also valid arguments but are not listed in the man page: dat\*, hy\*, st\*, lt\*, nc\*, covue, uv\*, unet\*

Resolution: All the devices created by MAKEDEV are documented.

### Mail

(PR-09274) - It is easy to accidentally delete mail unintentionally. The user typed 'd i' instead of 'd 8' and all messages from anyone with an 'i' in their name were deleted. This should either be changed to 'd \*i\*' or else documented.

Resolution: Documented that /usr/ucb/mail can use a string as a message list specifier. Added a comment that a very short string may have surprising results, since only substring compares are done.

(PR-13517) - An alias with a long list of names causes mail to take a memory fault and core dump. The mail(1) man page does not specify any size limitations for an alias. If this is a software limitation, it should be documented.

Resolution: The undocumented internal limit of 1024 characters has been removed from the command processing loop of /usr/ucb/Mail. Input lines may now be of arbitrary length, although long lines in /usr/lib/Mail.rc or ~/.mailrc will cause some slowness upon startup.

(PR-17032) - Embedded blanks in .mailrc fields enclosed within double quotes are not parsed properly. Parsing stops at the blanks instead of the closing quotes. This makes it impossible to define, among other things, a value for the "cmd" variable, and it is therefore impossible to print messages from within mail. It also means options cannot be defined to the PAGER.

Resolution: Mail now treats quoted strings on sets (and everywhere else) just like csh does, recognizing the quote within a string, and looking until it finds another quote. So "set FOO='Hello World'" sets Foo to "Hello World", and not "'Hello".

(PR-18142) - /usr/ucb/mail displays a negative line count for messages greater than 32767 lines long.

Resolution: Mail now uses a larger variable to store the number of lines a message contains.

(PR-22145) - mail should check for read/write failures and call perror if there was an error.

Resolution: If Mail encounters an input error, it will produce an error message and continue.

(PR-22763) - When a piece of mail has a fully qualified From: line and an unqualified To: line, mail misparses the addresses in the 'r' command. The 'R' form of the reply command works properly.

Resolution: Mail is no longer hopelessly confused by mixed non- and FQDN addresses.

## POSIX

(PR-18824) - Page 2-3 of the CONVEX POSIX Conformance document shows some variable names and values which are defined in <limits.h> for ConvexOS V8.0. This table is incorrect for ConvexOS V9.0. In particular, MAX\_INPUT, MAX\_CANON and NAME\_MAX are undefined in <limits.h> and are available only at runtime using pathconf(). Also NGROUPS\_MAX is shown as 8, but it has a value of 16 in ConvexOS V9.0.

Resolution: limits.h as it exists in both ConvexOS 9.1 and ConvexOS 10.0 conforms to the definitions found in sections 2.9.3-2.9.5 of the POSIX 1003.1 Standard. This file is correct as is. Updated the POSIX document (will release with ConvexOS 10.1) to match the values in limits.h

## a2p

(PR-23641) - The file /usr/bin/a2p has the wrong version number as seen by "vers".

Resolution: Install "a2p" using "install" rather than "copy" so version information is correctly established.

## activities.5

(PR-21395) - The activities(5) man page should indicate that if /etc/activities exists, there must also exist the file /etc/actwho. Otherwise, utilities such as at(1) produce an error message while attempting to call bill(1).

Resolution: It is now documented that both /etc/activities and /etc/actwho must exist for the bill(1) command to execute successfully.

## adb

(PR-22185) - adb should check for read/write failures and call perror if there was an error.

Resolution: Adb now checks for read errors and prints diagnostics when appropriate.

## adjtime.2

(PR-22375) - The adjtime(2) man page incorrectly refers to tv\_sec as an unsigned long. u\_long tv\_sec; /\* seconds since Jan. 1, 1970 \*/ It should be a signed long; long tv\_sec; /\* seconds \*/ Also the correct comment should be seconds.

Resolution: Fixed in 10.1.

## ansidaemon

(PR-12255) - Would it be possible to look for the owner name in both upper and lower case and perhaps not caring about the case of the label?

Resolution: ansidaemon will now force the owner field to upper case, before the compare.

## ansitar.1

(PR-20662) - The ansitar man page should document that, when creating a new archive, if the -V option (specify VSN for tape) is not used, the default value of ANSTAR ("ansitar" without the "i," in all-caps) is used.

Resolution: Added description of default VSN when "-V" flag is not used.

## **apropos**

(PR-23262) - apropos has some problems. It does not give a diagnostic, it does not return a non-zero code and gives error messages of the form: /usr/local/man/x11r5/whatis: No such file or directory /usr/local/man/whatis: No such file or directory

Resolution: Fixed for 10.1. apropos will now exit with a non-zero status and the message "Nothing appropriate." if nothing is found.

## **ar**

(PR-22150) - ar should check for read/write failures and call perror if there was an error.

Resolution: Added calls to perror for failed i/o operations.

## **ar.1**

(PR-21500) - The example in the ar(1) WARNINGS section is supposed to show that when using file names greater than 15 chars, you might find duplicate entries in the archive. This example does not work.

Resolution: The operation of ar had been modified to not exhibit the behavior shown in the warnings section. The warnings section has been updated to reflect the new behavior.

## **at**

(PR-15946) - When scheduling a job with at using the day option and a time that has already passed, at will schedule it for next year without notification to the user.

Resolution: at(1) will now reject jobs that are scheduled in the same day but an earlier time. at(1) prints "at: too late" under this condition.

(PR-22133) - at should check for read/write failures and call perror if there was an error.

Resolution: The programs at, atrun, and atm will now check for errors in the standard I/O routines fgetc, fputc, fgets, and fputs and issue a perror() upon failure.

## **awk**

(PR-17132) - awk gives a bus error when the \* option of printf is used.

Resolution: Added concept of "\*" in printf formats.

(PR-18277, PR-20616) - The /bin/awk printf ignores field width.

Resolution: awk now handles field width specifications in printf's.

(PR-18428) - Referencing an array with a negative index causes awk to coredump.

Resolution: awk now verifies that field indexes are non-negative.

(PR-20619) - The builtin function substr(s, p, n) does not always return the correct expression when "s" is a string expression of two concatenated strings totaling more than 12 characters.

Resolution: substr(s,p,n) now correctly works when "s" is a concatenated string.

(PR-22151) - awk should check for read/write failures and call perror if there was an error.

Resolution: awk now checks for read errors on input files.

## **awk.1**

(PR-18269) - The var=value filename syntax for presetting variables is not documented in the man page.

Resolution: awk man page is modified.

(PR-24912) - Looking at the nawk(1) MAN page and the awk(1) MAN page, the section describing the built-in functions is much easier to read in the nawk(1) format. It would be nice if something like this could be done in our regular 'awk' MAN page.

Resolution: Cleaned up the formatting for the awk(1) man page.

## **bc**

(PR-07640) - "A ^ B" (A raised to the B power) sometimes gives the wrong answer.

Resolution: Exponentiation with relatively large, negative exponent cleaned up.

(PR-10022) - Division by 2 fails for non-integer dividend, scale > 30.

Resolution: The calculator utilities (dc and bc) now do a better job of preserving the precision of non-integer, non-base 10 numbers. Some precision is lost though in converting these numbers to dc's internal representation.

(PR-22134) - bc should check for read/write failures and call perror if there was an error.

Resolution: Bc now produces error messages in case of input errors.

### **bstring.3**

(PR-24078) - The man page for bstring() is incorrect where: bzero(b, length) ^ > Should be a "b1" char \*b; > ^ > Should be a "b1" Bzero places length 0 bytes in the string b1.

Resolution: Changed references to argument "b" to "b1".

### **cat**

(PR-21866) - cat is very quiet about things when a read fails - it doesn't even return nonzero. It should call perror and return -1 or something similar.

Resolution: cat(1) will now report read errors on stderr and return an exit status of 1 if a read error occurs.

### **catman**

(PR-24165) - Running catman results in the following errors. mailq was a .so alias for sendmail.8, but sendmail.8's NAME section doesn't know it! getname was a .so alias for makewhatis.8, but makewhatis.8's NAME section doesn't know it!

Resolution: The appropriate NAME sections have been cleaned up.

### **chall**

(PR-23723) - 'chall' will not change the owner or group of a symlink (or the file it points to) unless the -l flag is specified (in which case it modifies the symlink).

Resolution: Fixed for 10.1

### **checkeq**

(PR-22095) - checkeq should check for read/write failures and call perror if there was an error.

Resolution: The utility checkeq now will print an error message and exit with non-zero status if there is an error reading the file.

### **checknr**

(PR-22117) - checknr should check for read/write failures and call perror if there was an error.

Resolution: checknr now checks for read errors and prints appropriate errors.

### **chkpnt**

(PR-23160) - From the csh, if a user attempts to restart a checkpointed job such that it is not attached to the terminal (e.g. the job is backgrounded), the job apparently is unable to complete, and will remain idle until the job is killed or the system is restarted.

Resolution: Restart will pass signals onto the process group of the process that is being restarted.

(PR-24076, PR-24091) - The function wchkpnt() doesn't do a very good job of keeping track of the position/size of the sections in a chkpnt file.

Resolution: Chkpnt was being inconsistent with how it was rounding offsets up to page boundaries. This could cause chkpnt to create chkpnt files with incorrect offsets.

### **chmagic**

(PR-22084) - chmagic core dumps upon read error; should check for read/write failures and call perror if there was an error.

Resolution: After a failed read, chmagic would core dump closing files. The core dump has been fixed, and the appropriate error messages get printed for failed reads.

### **chown**

(PR-04516) - As a special case to make life easy for users of makefiles, the chown command ought to test if the file is being changed from the invoker's ownership to the invoker's ownership and treat this noop as a successful chown.

Resolution: chown exits with 0 if successful, which it is in the case given.

(PR-22426) - chown -R does not correctly process files when ../\* is given as the leading part of the path and there is a directory in the parent.

Resolution: Chown now traverses directories correctly.

## **ci**

(PR-19845) - The quiet flag ('q') on ci does not suppress the warning message. ci warning: checkin aborted since prog.c was not changed; prog.c deleted.

Resolution: ci -q will not output this warning message.

## **cmp**

(PR-22152) - cmp should check for read/write failures and call perror if there was an error.

Resolution: cmp(1) will detect read errors and diagnose them with perror(3).

## **colcrt**

(PR-22140) - colcrt should check for read/write failures and call perror if there was an error.

Resolution: Read errors now cause an error message and a non-zero exit status.

## **comm**

(PR-22135, PR-22136) - comm should check for read/write failures and call perror if there was an error.

Resolution: Comm now produces error messages in case of input error.

## **compact**

(PR-12969) - In the V8.x - V9.0 releases with quotas turned on, if a user is over their BLOCK LIMIT and invokes 'compact' with a wildcard (\*), compact will delete the file(s) the user is attempting to compact and will leave a zero length frame.C for each frame associated with the wildcard.

Resolution: compact now prints an error message and preserves the original file when the compacted file cannot be written for any reason.

(PR-22169) - compact should check for read/write failures and call perror if there was an error.

Resolution: compact/uncompact now check for i/o errors.

## **config guide**

(PR-25834) - Page 1-1 of "Managing ConvexOS: Operations Guide" states that the non-existent directory /tcb/bin should be part of the shell search path.

Resolution: This has been corrected in the release with ConvexOS 10.1.

## **contact**

(PR-23503, PR-23839) - Request that contact reports automatically include the contents of the software version database in the report.

Resolution: contact(1) will now automatically include the contents of the software version database if it is available.

## **cp.1**

(PR-23398) - The man page for 'cp' is incorrect where it states: If the -z option is specified, cp preserves the holes (zero blocks) in files. "cp preserves the holes" is not accurate. It will actually create sparse blocks wherever possible, regardless of whether the block was sparse in the original file or not.

Resolution: Fixed for 10.1.

## **cp/mv**

(PR-09321) - It would be nice if Convex supported the -z option on the /bin/cp command. This option, taken from Research Version VIII, allows copying files with "holes" (long strings of null bytes) without losing those holes as normally occurs, because the program detects them and lseek()s appropriately.

Resolution: Both cp and mv (which has its own internal cp function) both understand the -z flag, and when it is specified, holes in files are preserved. The problem associated with producing a zero-length file has been corrected.

## **cpio**

(PR-14112) - The cpio -it option prints a table of contents of the input. However, it writes this output to stderr not stdout. This action is undocumented and inconsistent with the commonly accepted usages of stdout and stderr.

Resolution: cpio will now send the output of the -t option to stdout.

(PR-22153) - cpio should check for read/write failures and call perror if there was an error.

Resolution: cpio will now use perror to report problems using read(2) write(2).

(PR-23155) - cpio does not restore the owner of a file when run as root.

Resolution: Fixed for 10.1

(PR-22500) - Using the pass-through mode of cpio(1) fails when run as root. The ownership is not preserved; rather, all the files are owned by uid 0.

Resolution: Fixed for 10.1

(PR-23387) - 'cpio' puts garbage in the TRAILER record of the archive it creates. In particular, the filesize field is expected to be 0, but in reality it has some huge number in it.

Resolution: cpio will no longer put trash in the size field of the trailer record.

## **csch**

(PR-04933) - Jobs stopped then backgrounded may not show with the 'jobs' command, and the 'fg' command may forget the job exists. This situation disappears once a non-built-in command is executed (such as /bin/ls).

Resolution: Code was changed in sh.proc.c pgetcurr() to return the job passwd in as the current job if no other job could be found.

(PR-22086) - csh should check for read/write failures and call perror if there was an error.

Resolution: Csh now checks for read()/getc() errors and acts appropriately.

(PR-23835) - When evaluating a numeric expression/operation, csh starts from right to left, even when operators of the same precedence (i.e. + -) are used. This fact is not mentioned/warned in the man pages of the csh for this version (on CONVEX) but it `_is_` mentioned/warned in the csh man pages for the SUN (Release 4.1) where right associativity is explicitly mentioned.

Resolution: This behaviour is documented in the 10.1 csh(1) man page.

(PR-24557) - csh does not appear to close all of its file descriptors upon exec.

Resolution: The file handle to the tty device is now set to close upon exec of a child process.

(PR-24919) - Using the savedirs option causes the directory stack to be saved on logout. If the directory names are incorrect or the actual directories have been modified, then subsequent attempts to login will fail after the intro messages have been printed. The login shell will error exit when accessing the invalid directory names from the .cshdirs file.

Resolution: csh no longer tries to push a non-existent directory onto the directory stack when sourcing .cshdirs.

(PR-25194) - A FORTRAN program, suid to root, calling system while the environment variable SHELL is set to /bin/csh, fails in system with the message: csh: Permission denied. Any other SHELL specification, or no SHELL variable succeeds.

Resolution: The code that did real uid versus effective uid checking was removed.

(PR-25344) - Under ConvexOS V10.0, the /bin/csh time command prints zeroes for the shared memory and the unshared data and stack segments.

Resolution: The usage of shared and unshared memory is now reported more correctly.

## **csh.1**

(PR-19205) - In the time section of the csh.1 man page, it should be documented that the 'time' subcommand is only meant to be used as a rough indication of how long a command executes. The time reported will be less than the actual time when the command being timed is prematurely terminated.

Resolution: The csh(1) man page now indicates that the "time" builtin command is meant to be only a rough indication of the amount of time a command may require (particularly if it is prematurely terminated).

(PR-19728) - The csh.1 man page should document that the valid values for the "status" variable is - 128 to 127.

Resolution: Status has been documented as a byte.

(PR-24068) - The 'csh' man page is incorrect when describing the use of the shell builtin command 'limit'. It states: "... There is no need for a scale factor for concurrency, since the values will be integers between one and the number of processors on the system, inclusively." In truth, one can set the concurrency value anywhere from 1 to MCONCUR (currently 8) and can create that many threads via the thread\_create system call.

Resolution: Documented the concurrency scale factor as nonexistent and said the valid range is [1..MCONCUR] inclusive.

## **ctags**

(PR-22083) - ctags should check for read/write failures and call perror if there was an error.

Resolution: Errors reading source files now produce error messages.

## **ctar**

(PR-22183) - ctar should check for read/write failures and call perror if there was an error.

Resolution: Ctar will now check the return code from each read and write, if a failure is found perror or strerror will be used to print a message to stderr.

(PR-23797) - The V10.0 ctar will not create directories during file extraction if the directories were written to tape with absolute path names. It works fine if relative path names are used.

Resolution: ctar will now extract files with absolute path names.

## **date**

(PR-20223) - Output from 'date -z <zone>' is erroneous.

Resolution: date now properly displays the timezone the system was just set to, when using the -z option to set the timezone.

(PR-20236) - When setting the timezone with the "date -z -hour[,rule]" syntax, the rule must be specified, or else date will save an uninitialized variable as the daylight savings rule. Furthermore, the supported rules need to be updated to reflect all those supported in /usr/include/sys/time.h (specifically, DST\_CAN is missing).

Resolution: The internal timezone rules are now properly initialized. Additional timezone rules have been added.

(PR-21038) - The "-z" argument to the date utility is not correctly setting the time offset from GMT.

Resolution: date(1) is displaying an incorrect interaction between timezone(3) and tzset(3). date(1) is not at fault. A contact report has been filed against tzset(3) and timezone(3) to correct the incorrect interaction.

(PR-22891) - The current version of date was apparently updated to reflect the POSIX 1003.2 Draft 10 standards. The new Draft 11 standard is out and has some changes. date should be updated to reflect the new functionality.

Resolution: The date command has been updated to the format specifiers called out by POSIX.2 draft 11.2.

## **date.1**

(PR-20358, PR-22418, PR-23508) - The formatting option, '+', which allows output format specification, is not documented. This option allows formatting the date output by calling strftime(3).

Resolution: The date.1 man page now describes the supported formatting strings. This list supported is from POSIX.2, draft 11.2.

(PR-26048) - The man page for /bin/date does not document the feature that allows for custom date output. e.g. date +%H will print out just the hour.

Resolution: Fixed

## **dc**

(PR-22137) - dc should check for read/write failures and call perror if there was an error.

Resolution: Now, dc checks returns from reads and will give an appropriate error message.

(PR-23582, PR-23711) - dc returns an incorrect answer when using '%'.  
Resolution: Fixed for 10.1.

## **dcheck**

(PR-24172) - There are two problems with dcheck. The first is related to ANSIfication and the second to LARGE files. The function "bread" is sometimes called with a "long long" third argument but only expects an "int". When the macro dbldsize() is called, dirp->ip->di\_size is reverse word ordered (as it appears on disk).

Resolution: dcheck was ANSI-fied and made lint free. The di\_size field is fixed up before use.

## **dd.1**

(PR-13743, PR-14394) - It should be noted on the man page for dd(1) that the option "conv=ebcdic" does blocking by default, and that "conv=block,ebcdic" is redundant. It should also state that with "conv=ebcdic,block", the block overrides the ebcdic and all you get is block conversion.

Resolution: The dd(1) man page now accurately describes the ebcdic and block conversions. Specifically, "ebcdic" implies "block", and therefore specifying both will result in ebcdic conversion.

## **deroff**

(PR-22096) - deroff should check for read/write failures and call perror if there was an error.

Resolution: Deroff now checks for input errors and produces appropriate messages.

## **deroff.1**

(PR-19334) - The deroff man page references "troff(1)" as an "(optional product)" in the SEE ALSO section. While troff is available from a third party software vendor, it is not a CONVEX optional product (like NFS, etc.).

Resolution: Indicated troff is a 3rd party product.

## **df**

(PR-15618) - df is looking at file systems which are not asked about when doing a df of a particular file system.

Resolution: df(1) no longer hangs on a down NFS server when looking only at a local file system.

(PR-21857) - A non-root user can use the df utility to test whether a file exists in a directory hierarchy which is unreadable by that user.

Resolution: A non-root user can no longer use the df utility to test whether a file exists in a directory hierarchy which is unreadable by that user.

(PR-24253) - df outputs its data in columns which run together when looking at large filesystems.

Resolution: Spaces have been added between the columns of df so output about file systems on the order of 10MB will not run together.

## **diff**

(PR-15045) - When running diff on two files which differ in length by one byte and in content by the lack of a single newline character on the final line of the shorter file, diff output will report a difference in the two files (as it should), but will tack a 0x255 (-1) character to the end of the shorter file's output.

Resolution: diff now correctly displays the last line of a file that didn't have a <newline>.

(PR-22087, PR-22088) - diff should check for read/write failures and call perror if there was an error.

Resolution: diff now checks i/o operation for success.

## **dump**

(PR-10136, PR-11938) - Convex's dump program does not return the same exit status as BSD's dump. The manual page for dump(8) notes that dump is unusual in this respect, but gives no justification.

Resolution: dump now returns zero on successful exit, just like BSD 4.3.

(PR-24124) - Dump with a 'bread' will eventually abort (after 32 failures) and print the following message: DUMP: More than 32 block read errors from -2147250168 DUMP: This is an unrecoverable error. DUMP: NEEDS ATTENTION: Do you want to attempt to continue?: ("yes" or "no")

Resolution: dump will no longer abort. dump now displays a message about each and every file that has at least one block migrated.

(PR-24626) - Providing dump with the DEFAULT block size recommended by the dump man page results in a "bus error".

Resolution: The problem has been fixed.

## **dump.8**

(PR-20431) - The following warning message needs to be explained with respect to doing dumps with labeled tapes : DUMP: Warning... Can't set async. i/o flags on tape.

Resolution: The dump.8 man page now explains that failure to set async I/O results in a warning message only, and the dump proceeds using synchronous I/O.

(PR-24258) - The man page for dump(8) -b option says: b Take the next argument to be the blocking factor for tape records. This number indicates how many K-bytes are in a tape record. The default is 5. It should say: b Take the next argument to be the blocking factor for tape records. This number indicates how many 2 K-bytes are in a tape record. The default is 5.

Resolution: The -b option is divided by 2 and refers to 2k blocks. The defaults are not divided by 2, and therefore should be 2X of what is actually in the include file. The man page has been modified accordingly.

## **egrep**

(PR-14959, PR-18130) - Neither grep nor egrep properly deals with files which contain a last line not terminated by a newline, but fgrep handles this case properly. Grep and egrep will not find the pattern space if it occurs on the last line of the file, while fgrep will.

Resolution: grep has been fixed in 9.1 of the ConvexOS Utilities. egrep has been fixed in 10.1 of the ConvexOS Utilities.

(PR-22099) - egrep should check for read/write failures and call perror if there was an error.

Resolution: egrep now checks for i/o errors.

## **eqn**

(PR-22100) - eqn should check for read/write failures and call perror if there was an error.

Resolution: Eqn now produces diagnostic messages and exits with a non-zero status in case of i/o errors.

## **error**

(PR-22170) - error should check for read/write failures and call perror if there was an error.

Resolution: Error now checks for input/output errors and produces appropriate diagnostic messages.

## **ex.1**

(PR-24189) - The man page for ex talks about the "Edit:A tutorial" and "An Introduction to Display Editing with Vi" these papers are not in the Tutorial Papers, Seventh edition. Also, it refers to "ex Reference Manual, Version 3.5;" however, the Tutorial Papers contain V3.7.

Resolution: Fixed for 10.1.

## **expand**

(PR-22118) - expand should check for read/write failures and call perror if there was an error.

Resolution: Expand now checks return codes on reads and prints appropriate error messages.

## **expr**

(PR-16759) - The expr command can give incorrect answers when the result is a large number. When this happens, expr still gives a return code of zero and does not produce any error message.

Resolution: This was an overflow case. expr will now use long long's for internal data representation and the man page now documents the limits.

## **expr.1**

(PR-19261) - The man page for expr does not document the keywords: "match", "substr", "length", and "index". These keyword operators are for string manipulation.

Resolution: Added descriptions of the match, substr, length, and index operations to the expr man page.

## **false**

(PR-13916) - /bin/false cannot be run using 'execve'. /bin/false should be written as #!/bin/csh -f exit 1

Resolution: /bin/false is now run as an sh script, so it can be started by execve. /bin/false now looks like: #!/bin/sh exit 1

## **fgrep**

(PR-22101) - fgrep should check for read/write failures and call perror if there was an error.

Resolution: Fgrep now checks read return codes and prints appropriate error messages.

## **file**

(PR-22102) - file should check for read/write failures and call perror if there was an error.

Resolution: The file utility now checks for errors when reading in an alternate magic file (if specified with the -m option) and will print an error message if there is a problem.

## **find**

(PR-21452) - Find doesn't validate the parameter to the -type option.

Resolution: find now validates file type specifications given to -type.

(PR-23676) - 'find' trips on automount-point, when -fstype flag is used.

Resolution: Modified the find command so that it behaves properly and does not exit when it encounters a direct-map automount mount-point.

## **find.1**

(PR-23137) - The find(1) man page does not describe the -a (and) operator.

Resolution: Fixed for 10.1

## **flock.2**

(PR-14292) - The flock(2) page says “..which is the inclusive or of either LOCK\_SH ...” -- it would probably help if the “or” above was capitalized so that it's clear that the boolean operation OR is being referred to, instead of the conjunction “or”.

Resolution: The OR has been capitalized.

## **fmt**

(PR-22119) - fmt should check for read/write failures and call perror if there was an error.

Resolution: Fmt now detects input errors and prints error messages.

## **fold**

(PR-22120) - fold should check for read/write failures and call perror if there was an error.

Resolution: Read errors now result in error messages and a non-zero exit status.

## **fsck**

(PR-25187) - When the first directory entry is incorrect (e.g. bad d\_reclen), then instead of resetting the size to DIRBLKSIZ and clearing out the d\_fileno, fsck will do this on the next directory block. Also, if a directory entry other than the 1st one in a block is bad, the d\_fileno isn't being zero'd out.

Resolution: fsck correctly cleans out a directory block when 1st entry is invalid.

## **fstat**

(PR-23574) - 'umount' says that a filesystem is BUSY, yet fstat can't find a process using it.

Resolution: Fixed for 10.1.

## **genrest**

(PR-26422) - The 'genrest' example on page 5-15 of the Configuration Guide, 2nd Edition is incorrect. It should be 'genrest -t -m15 -M30'

Resolution: This has been corrected in the release with ConvexOS 10.1.

## **getitimer.2**

(PR-23798) - The man page for getitimer inappropriately refers to a CONVEX-1.

Resolution: Changed “CONVEX-1” to “CONVEX C-Series architecture”.

## **getpwent.3**

(PR-24979) - The getpwent(3) man page is missing a description of the setpwfile call, which is included in libc.a in ConvexOS. This call will set the passwd file to an alternate name.

Resolution: The setpwfile() call is now documented in the getpwent(3) man page.

## **getst**

(PR-24067) - getst appears to always return a status of 1. It should return zero when it is successful.

Resolution: Fixed for 10.1

## **grep**

(PR-20556, PR-20570, PR-20622, PR-20816, PR-21231, PR-21498, PR-22338, PR-23234, PR-25587) - 'grep "" file' dumps core with segmentation fault.

Resolution: grep(1) will no longer dump core when given a regular expression of "".

(PR-22089) - grep should check for read/write failures and call perror if there was an error.

Resolution: Grep now checks read return codes and prints appropriate error messages.

(PR-11522, PR-23555, PR-24116) - grep does not recognize it's "-h" option.

Resolution: Fixed for 10.1.

## head

(PR-00383) - Head (also tail) does not check the type of the file before displaying information. This means that head or tail may display the contents of directory files.

Resolution: Head now checks the file type before printing any of the file's contents. If the file is a directory, a message is printed and the file is skipped.

(PR-18397) - Request that artificial line length limits be eliminated in head.

Resolution: The line buffer size has been increased to 4096 to make "head" compatible with "tail".

(PR-22121) - head should check for read/write failures and call perror if there was an error.

Resolution: head now checks return codes on the reads and will print the correct error message.

## ibmdaemon

(PR-25706) - IBM "SL" tapes with variable-blocked-spanned (VBS) records should have a capital "R" in column 39 of the HDR2 label. (This is per the IBM manuals, the actual behavior of MVS, and Convex's internal design document.) ConvexOS 10.0 places an "S" in this field. This makes the tapes unreadable on MVS.

Resolution: The bug has been fixed.

## icheck

(PR-24178) - 'icheck' does not properly interpret the ic\_size field in the inode structure. If icheck is invoked without the -s option, false errors are reported. If invoked with the -s option, all copies of the super-block are corrupted.

Resolution: icheck was ANSI-fied and made lint free. The di\_size field is fixed up before use.

## ident

(PR-22173) - ident should check for read/write failures and call perror if there was an error.

Resolution: Ident now detects read errors and produces diagnostic messages.

## indent

(PR-22122) - indent should check for read/write failures and call perror if there was an error.

Resolution: Indent now detects input/output errors and produces diagnostic messages.

## inetd

(PR-20249) - Erroneous example in man page for inetd.

Resolution: Removed extraneous and/or unsupported entries from EXAMPLE.

(PR-24417) - Processes started from inetd(8) do not run under the share user as specified by the "user" field in /etc/inetd.conf.

Resolution: Spawned (non-root) processes will run under the correct share user. root processes will continue to run under the same share as inetd (presumably "network" share). This does not preclude the root processes from changing share charges (ie as in rlogind, rshd, etc...).

## init.8, getty.8

(PR-20948) - The manual pages for getty.8 and init.8 need to be updated.

Resolution: Updated man pages with appropriate descriptions.

## install

(PR-10468) - The install script should run the makewhatis in the background, and only do a wait at its very end, because it takes a long time to complete.

Resolution: makewhatis is now run (optionally) from the /usr/etc/upgrade script.

(PR-21818) - Given a DAT tape with 35 GIP'd products on it, when the part numbers & descriptions are displayed, several are too long for the field & cause the release & files information to be misaligned. This makes the table look very sloppy. Either the name should be truncated, a max description length decreed & enforced, or the display modified to be able to handle multiple line descriptions.

Resolution: Names of products were made more succinct.

(PR-22822) - The tables of space requirements are nice; it would be useful to add to this information space requirements accumulated per filesystem, or at least what are commonly assumed to be filesystems, like / and /usr. This saves addition of many numbers.

Resolution: We will not reprint installation documents for 10.0 These numbers have been added to the 10.1 installation procedures.

(PR-22958) - The install script gives several options for timezones to be selected when performing the OS install; however, there is no option for indicating an offset or alternate timezone if the ones shown are not applicable. A system manager could specify an offset to GMT to indicate their timezone if none of those shown apply, but the script will not accept it.

Resolution: Option 11 (none of the above) on the timezone menu will allow an offset from GMT to be specified.

(PR-23583) - When installing the SPU portion of ConvexOS V10.0, one of the prompts is: --- You have your own boot commands file "bootcmd.local" --- Do you wish to use it for this release also? [yn] In standard UseNET syntax, this implies that YES is the default answer. Hitting <RETURN> alone made the answer default to NO instead.

Resolution: Yes is now the default on the bootcmd.local questions.

(PR-23584) - If ConvexOS V10.0 is installed from a cartridge (ct, mt, or dat format), it is necessary to extract the /sys directory. The instructions are noted on pages 42-43 of the `_Local_Upgrade_Installation_Procedures_` document. Figures 27 and 28, from page 32, which show the expected output from the /sys extraction, ought to be at least mentioned (if not reproduced) on pages 42-43.

(PR-23636) - The screen image (Figure 13) on page 22 of the Local Initial Installation Procedures refers to the "X10.0.0.3 release" instead of the V10.0 release.

Resolution: This will never be fixed for V10.0 -- we will not republish any of the installation procedures. All screen dumps have been regenerated for V10.1.

(PR-23639) - On page 32 of the Local Initial Installation Procedures, Figure 29 shows the command `"/etc/mount/dev/vvea /usr"`. A space is missing between `"/etc/mount"` and `"/dev/vvea"`. The `"/dev/vvea"` should be replaced with `"/dev/vv0e"` (this is the device used in the other figures.)

(PR-23640, PR-23777) - On page 28 of the Local Initial Installation Procedures below Figure 22, and on page 32 below Figure 29, the following line appears: Replace device-name with the name of the SPU tape device, usually `/dev/rmt0`. This line is incorrect. A possible replacement is: Replace device-name with the name of the local tape device, usually `/dev/rmt20`.

Resolution: We do not republish installation procedures, so this will never be fixed for V10.0. It is fixed in V10.1

(PR-23643) - On page 57 of the Local Initial Installation Procedures, in the section "Booting with Domestic NFS" .. Step 1 says to umount the file systems with `"umount -a"`. Step 2 says to run `"/usr/convex/spu -r /mnt/os/vmumix (etc.)"` Since the "spu" command is on /usr, the umount command must be performed \*after\* the "spu" command.

Resolution: We will not republish the V10.0 installation procedures. This is fixed in V10.1

(PR-23646, PR-24466, PR-25491) - A sampling of OS 10.0 systems reveals that the permissions of `/usr/ucb/gprof` have been changed to: `--ws---wt 1 root 110592 Dec 7 1990 /usr/ucb/gprof` The same permissions are seen on machines running Consultant 9.1 and ConvexOS 10.0. This was not the state of gprof after the Consultant installation. Is the OS install changing the permissions? This looks like a potential security hole.

Resolution: Added leading "0" to permission value for perl's internal "chmod" function.

(PR-23785) - The ConvexOS V10.0 Local Upgrade Installation Procedures pg 16 omit the required group of `tapedm`. this is listed amongst the required uid's and gid's in the Release Notice, ConvexOS and Utilities V10.0 pg 1-2.

Resolution: Since this information often changes close to release, required users and groups will only be listed in the Release Notice. The "Prerequisites" section of the installation procedures now tells users to consult the Release Notice for this information.

(PR-23881) - Installing ConvexOS 10.0 leaves `/vmunix` in mode 666.

Resolution: Changed the spu-up function to `chmod /vmunix to 0644`.

(PR-23776) - The MAKEDEV script invokes `'chgrp kmem foo'` when constructing IDC disk device special files, but there is no `/etc/group` file on the miniroot, let alone a `kmem` group within same.

Resolution: The default `/etc/group` is now distributed on the miniroot.

(PR-23778) - In step 8 on page 28, the user is told: When the system prompt returns, bring the system to SPU level by executing the commands shown in figure 23. Where Figure 23 contains: `/bin/sync /etc/halt` It would be prudent to unmount the newly constructed root first, making figure 23 read: `cd / /etc/umount /root /bin/sync /etc/halt`

Resolution: We will not republish the V10.0 installation procedures. This is fixed in V10.1

(PR-23807) - In the ConvexOS and Utilities V10.0 Local Upgrade Installation Procedures, document No. 710-003530-016, there seems to be an error on pages 28 and 29. If you are using a cartridge tape to upgrade the SPU, you will not see the displays Figure 19 and Figure 20. The next display after Figure 17, I believe, will be Figure 21. If you are upgrading with a 6250 mag tape, you will see all the displays, but not with the cartridge tape.

Resolution: The 10.0 installation procedures will not be re-released. This problem is fixed in V10.1.

(PR-23988) - If a system has a very large `/usr/adm/acct` file, the `Usr Upgrade` will fail poorly if `/tmp` doesn't have enough free space to hold it.

Resolution: Added comprehensive checking of the backup procedures.

(PR-24071, PR-24556, PR-24795) - Page 29 of the document tells us after rebooting from the newly created root, we need to `fsck` it. This is true. The document says, however, to do this: `fsck /dev/rdivv0a` when it should say to do this: `fsck /dev/dv0a` That is, the block device interface should be used, not the character interface, when `fsck`'ing a mounted file system.

Resolution: We will not republish installation procedures for V10.0. The offending character has been removed for V10.1

(PR-24075) - The `fsck` command shown in figure 41 on page 38 should italicize the 'pp' portion of `/dev/rvvp` in the `fsck` command. It's currently in Roman, which is the convention for characters to type literally.

Resolution: We will not republish installation procedures for V10.0 Offending characters have been italicized for V10.1.

(PR-24083, PR-24891, PR-25642) - After an initial scratch install, the man pages for the 68K tools were located in `/usr/man` rather than `/usr/man/man1`.

Resolution: Apparently, the latest change made since V10.0 has corrected the problem. The `man1` man pages install properly.

(PR-24155) - After an upgrade to V9.1, the machine had two 'op' binaries. One called `/usr/etc/convex/op v.8.0` and the other called `/usr/convex/op v.9.1.6`. Unfortunately, the older version was not removed at upgrade and according to `root`'s path, was the default version. Since the syntax of the new 'op' config file has been extended to cope with "euid," the older version is incapable of appreciating these changes and fails.

Resolution: This has been fixed in 10.1.

(PR-24291) - On page 3-1, in ConvexOS V10.0 Local Upgrade Installation the part numbers for the optional products that are bundled on the ConvexOS V10.0 tape are listed. The part numbers for NFS(Domestic) and NFS (International) are wrong, the other match part numbers given by the tape header. Domestic NFS is listed as 710-009615-002, should be 710-009615-003, International is listed as 710-009715-002, should be 710-009715-003.

Resolution: Won't be fixed for 10.0; is fixed for 10.1.

(PR-24554) - In the Install Notes for 10.0 on page 32 at the top of the page; Step 3 says: Mount the file system by entering the commands in Figure 22. Figure 22 is on Page 28 and only has one command in that Figure having anything to do with mounting a filesystem and for that matter, is talking about mounting the mini- root filesystem! The actual command needed to mount the filesystem that pertains to Step 3 is contained in the box under Figure 29!

Resolution: This is an incorrect cross reference generated by Frame. It will not be fixed for V10.0 because we won't republish the document. Fixed for V10.1.

(PR-24555, PR-24796) - On page 32 of the Local Initial Installation Procedures, in Figure 29; the second command in this figure is not syntactically correct.

Resolution: Syntax problem was the result of a missing space. Space has been added for V10.1; this will never be fixed for V10.0.

(PR-24800) - On pg. 34 of the local initial installation manual the user is instructed on how to extract `/sys` from a cartridge tape. The user is told to go to `/tmp` and then given the commands to perform the extraction of `/sys`. When the user types "`cd /tmp`", he/she is really still in the `/` filesystem.

Resolution: Installation procedures for V10.0 will never be republished. Initial installation procedures for V10.1 instruct you to create and mount a `/tmp` file system prior to this step.

(PR-24802) - On page 57 of the Local Initial Installation manual the user is asked to terminate the init process and unmount the filesystems. If the user is following the "Booting with Domestic NFS" instructions, the very next command is to execute: /usr/convex/spu -r /mnt/os/vmunix ... .. But there is no /usr/convex/spu without /usr mounted .

Resolution: Corrected for V10.1

(PR-26426) - Many times there is the caution: 'Do not perform the steps in this section if your tape containing ConvexOS10.0 is a 6250-bpi (round) magnetic tape.....' This caution is more clear if rephrased in: 'Perform next steps if your tape containing ConvexOS10.0 is a cartridge tape'

Resolution: We will not reprint installation documents for 10.0. Due to document redesign for 10.1, this verbiage is long gone.

(PR-26554) - On page 46, of the Local Upgrade Installation notes, in the example where it shows you how to add the vvm Daemon to rc.local, there is no space between vvm Daemon and the ]. There needs to be. if [ -f /etc/vvm Daemon]; then should be if [ -f /etc/vvm Daemon ]; then

Resolution: The 10.0 installation notes will not be reprinted. This bug is fixed for 10.1.

## installsw

(PR-10475) - installsw -i needs to do more, and ask less questions, thus reducing the chance for user error.

Resolution: With the advent of GIP, product installs are being standardized, and the process of "question asking" has been standardized, and reduced, due to GIP's builtin operations.

(PR-22873) - It seems that each Convex product installed puts a message in /etc/motd in its own unique format. After a while, this gets to be a bit messy (and irritating). It would be nice if Convex could come up with a standard format for the messages in /etc/motd.

Resolution: With the GIP install system, the routines which affect /etc/motd are builtin, thus a standard format is established.

(PR-25066) - The installsw usage statement does not mention the -F option.

Resolution: The -F option is now included in the usage message.

## lastcomm

(PR-13858) - lastcomm sometimes reports a user as "Unknown User" when previous reports have correctly identified the user. YP is running.

Resolution: The getname() function in lastcomm has been completely rewritten to be more efficient and to fix a number of bugs, including this one.

(PR-20545) - Most of the time, lastcomm(1) is used in search for suspicious situations. lastcomm should include at least the uid when it can't attach a username to a uid.

Resolution: lastcomm has been changed to display "Unknown (uid)" instead of "Unknown User".

(PR-23773, PR-23958) - The man page for lastcomm shows the time to be the exit time but it appears that it is the start time instead.

Resolution: The lastcomm(1) man page has been changed to reflect the information generated by lastcomm.

## leave.1

(PR-23771) - The man page for leave (1) does not explain that it's possible to specify the time in the format +m, which is interpreted as offset of m minutes to current time.

Resolution: Added description of the +mm option, which allows the time from the current time to be the leave point.

## less

(PR-13318) - In the less prompt string, ?n should be set to true if it is the first prompt in a new input file. It is never true.

Resolution: ?n prompt fixed.

(PR-17297) - less will sometimes exit without a 'q' being entered. When using less as the back end of a pipe, after the first page is displayed, less will quit and the prompt is displayed.

Resolution: If less is invoked with either "-e" or "-E" options, it will terminate without prompting. Test of normal piped operation in V10.0 shows no problems.

(PR-22174) - less should check for read/write failures and call perror if there was an error.

Resolution: less will now print system error messages when read/write calls fail.

## **lex**

(PR-22162) - lex should check for read/write failures and call perror if there was an error.

Resolution: lex (the program) now checks for i/o errors. Note: yyinput(), the default macro for lex analyzers that lex generates, has not been modified.

## **link.2**

(PR-24984) - The link man page DESCRIPTION implies that root is allowed to create hard links to directories. The BACKWARD COMPATIBILITY section correctly states that this is no longer supported.

Resolution: The DESCRIPTION section now explicitly states that "name1 cannot be a directory."

## **logger**

(PR-22123) - logger should check for read/write failures and call perror if there was an error.

Resolution: Input errors now cause an error message.

(PR-23331) - /usr/ucb/logger does not recognize the new (for 10.0) migration syslog facility.

Resolution: Fixed in 10.1.

## **look**

(PR-22104) - look should check for read/write failures and call perror if there was an error.

Resolution: look now checks the return codes for reads.

(PR-23882) - The sort order of /usr/dict/words does not match the default of the utility "look", so that in some cases the list retrieved is not complete.

Resolution: Fixed for 10.1

## **lpc**

(PR-22307) - "lpc enable" is also starting the print daemon. It should only enable the queue to accept requests (lpr).

Resolution: Fixed for 10.1. The enable command no longer attempts to start a daemon. To do so, use start, up, or restart.

(PR-22430) - The command, 'lpc enable someprinter', prints the following messages: someprinter: queuing enabled daemon started In reality, no daemon is started, even if there is stuff in the queue.

Resolution: Fixed for 10.1. The enable command will no longer attempt to start a daemon. To do so, use the start, up or restart commands.

## **lpd**

(PR-25015) - Since lpd now runs as user lpr instead of user root, it fails to print jobs that have been submitted with 'lpr -s' if the file is not readable by a process running user-lpr, group-lpr. If the destination printer is local, only the banner page is printed. If the destination printer is remote, nothing is sent to the remote machine. In both cases, no error message is generated.

Resolution: lpd now changes to the user who requested the print job before opening the data file.

## **lpd.8**

(PR-23446) - The man page for lpd lists the -f option as using a hosts.equivfile. It actually uses a file which is in the hosts.equiv(5) format. Reference Sun man page.

Resolution: Fixed for 10.1.

## **lpmv**

(PR-15599) - lpmv does not start the print daemon on the destination queue after a move. Therefore, a job moved into a new queue will not print until the daemon is manually started (lpc start) or another job is submitted to the queue.

Resolution: Fixed for 10.1.

(PR-24423) - If a users umask does not allow group read access, lpmv between local printers will create print jobs which can not be seen by lpq.

Resolution: lpmv is now more careful about creating files with the proper umask.

## lpq

(PR-24437) - With `/usr/ucb/lpq` being mode 2555 by default, using `'lpq'` to check the status of a LOCAL printer returns the error msg, "Warning: no daemon present." If the permissions of `lpq` are changed to 4555, the `lpq` program executes without error.

Resolution: The problem was caused by the lock file being created by a user with a restrictive `umask`. The lock file is now created with a proper `umask`.

## lpr

(PR-22171) - `lpr` should check for read/write failures and call `perror` if there was an error.

Resolution: `lpr` now detects and prints the proper message upon read errors.

(PR-23236) - `lpr` needs to provide more diagnostic info whenever a 'write' operation fails.

Resolution: Fixed for 10.1.

## ls.1

(PR-23525) - The man page for `'ls'` describes the use of the `-s` option and why a file would occupy more or less space than would be expected by inspection of the `filesize`. This is limited to holes and indirect blocks. There should also probably be a section added which mentions that the Convex Storage Management System causes parts of the file to be migrated. Also, the word "executables" appears instead of "executables".

Resolution: Migration has been mentioned as a cause of low allocation figures. Spelling problem fixed.

## mail

(PR-12978) - The `/bin/mail` (and `/bin/rmail`) programs use `flock(2)` for locking the user's mailbox. Since `flock(2)` and `fcntl(2)` styles of locking do not cooperate, this presents a couple of problems. Also, `/bin/mail` does not seem to lock the folder when in use. So two `/bin/mail` programs could corrupt the mail folder.

Resolution: `/bin/mail` (sendmail's delivery agent) now does both `lockf()` and `flock()` style locking, exclusive, to lock the mailboxes during delivery.

(PR-23249) - The message, "Thou hast new mail", is displayed when new mail arrives at the same time the user exits the mailer. It would be less confusing to the users if the message was the more normal "You have new mail".

Resolution: The message "You have new mail." is now printed rather than the old English phrase.

## make

(PR-22939) - `Make` gives a segmentation fault and dumps core on a large makefile that contains thousands of source files. The following message is given: "Segmentation fault (core dumped)". This behavior occurs with a small environment.

Resolution: In the `make` utility, detection of excessively long strings resulting from macro substitution has been enhanced. This fixes an error wherein `make` dumped core instead of producing a diagnostic.

## makewhatis

(PR-23255, PR-23321) - `makewhatis` does a less than robust job of processing `troff`. Notably, processing of the `.SH NAME` section pays attention to only a few select `troff` directives and ignores the rest.

Resolution: `makewhatis` has been modified to filter out font changes and other things but keep conditional statements. The new line is then piped through `nroff` and then processed.

## man

(PR-23946) - Viewing a man page that is in the user's home directory or `/tmp` with "`man -l`", returns two copies if a relative pathname is given for the man page in the user's home directory. A full pathname to the original file in `/usr/man` is the only such path that seems to work.

Resolution: Fixed for 10.1. `man` will not check for a `pr` directory if using `-l`.

(PR-24962) - `man -u` always exits with status 1.

Resolution: `man` will now exit status zero if usage is requested and exit status one if the usage message is the result of an error.

## man pages

(PR-20324) - There are spelling errors in different man page entries.

Resolution: Man pages fixed.

(PR-23547) - Several of the accounting related man pages reference CONVEX System Manager's Guide (no longer shipped) instead of Managing ConvexOS: Configuration Guide.

Resolution: Fixed for 10.1

## **man.1**

(PR-22793) - man(1) contains: If at least non-switch two arguments are supplied, should probably be: If at least two non-switch arguments are supplied,

Resolution: The typo has been fixed.

(PR-23832) - The meaning of -K option in usage statement is incorrect.

Resolution: Editorial changes were made by the doc group which fixed this bug.

(PR-24565) - The man page gives no clue as to how to print a MAN page to a printer. There are enough clues to know that you need 'man -t' or maybe 'man -t -Tpsroff', but there is no information on how to specify PRINTER.

Resolution: The man page now explains how man chooses a printer.

## **mkdir.1**

(PR-24268) - The mkdir man page contains: ... The maximum pathname length (after expanding symbolic lengths) is defined in ... The word "lengths" should probably be "links."

Resolution: The typo has been fixed.

## **mkfs.8**

(PR-23451) - In the 'BUGS' section, the man page for mkfs states that 2Gb file systems are not supported. In the 'NOTES' section it states that 2Gb file systems are supported.

Resolution: Fixed for 10.1

## **mkstr**

(PR-22180, PR-22181) - mkstr should check for read/write failures and call perror if there was an error.

Resolution: Errors reading the source files now cause error messages.

(PR-24541) - mkstr blindly looks for "error(" in its input. If run over itself, even the code fragment: if (match("error(") gets 'fixed' with the associated text in the error file being part of the original code (i.e., the new version is missing a chunk of code). mkstr also failed to notice that "error(" also showed up in a comment earlier in the code, and 'fixed' it as well.

Resolution: mkstr has been modified to skip over C-style comment lines and quoted strings. It also understands the C style character escapes via backslashes. If you run code that checks to see if a character is a ", you should escape that quote if you plan to run mkstr over that code.

(PR-24543) - mkstr doesn't handle source files in other directories well: when it forms the output name for the massaged code, it blindly prepends the prefix, even if the file is a pathname.

Resolution: Fixed for 10.1. mkstr will now correctly generate the pathname for the prefix'd file name.

## **mmap.2**

(PR-23011) - The 'prot' parameter to the mmap(2) call is described as the logical OR of PROT\_READ, PROT\_WRITE, and PROT\_EXEC. It is really the bitwise OR of these values.

Resolution: The man page has been changed in several instances where logical-OR occurred to say bitwise-OR.

## **more**

(PR-22125) - more should check for read/write failures and call perror if there was an error.

Resolution: More now detects read errors and prints error messages.

## **mount**

(PR-21121, PR-21128) - The function addtomtab() in mount does not lock the file /etc/mtablock prior to making changes to /etc/mtab. This can lead to inconsistency between /etc/mtab and the kernel's internal mount table when multiple instances of mount and umount are concurrent.

Resolution: Fixed in 10.1.

(PR-24380) - It appears that mount does not do any file locking for access to /etc/mtab when a file system is mounted. If multiple processes are mounting a file system at the same time, they can write to the same file offset and blow away each other's data. The result is a mounted file system that does not show up in mtab and can't be df'd. Files can still be accessed and the file system can be unmounted.

Resolution: Advisory locks around writes to /etc/mtab have been added for 10.1.

## mount.8

(PR-23396) - The mount(8) man page does not include a description of the blkpre option.

Resolution: Replaced lost blkpre section in mount(8) man page.

(PR-23654) - The mount man page needs to state that the following condition must be true for the blkhi and blklo options: blkhi < blklo

Resolution: The mount(8) man page now specifies that blkhi must be less than blklo.

## mpa

(PR-22228) - mpa does not send its output to stdout or stderr.

Resolution: Mpa now flushes the stdout stream before exec'ing the process to be run. This will allow mpr to create the files containing the re-directed output.

## msgs

(PR-03460) - The 's' command in msgs saves the message text to a file. This is a request to make that file readable by '/usr/ucb/mail -f'.

Resolution: /usr/ucb/msgs now saves files such that /usr/ucb/mail -f can read them.

(PR-13416) - If /usr/msgs is full when a host gets a new message, the write fails. The message is then lost.

Resolution: /usr/ucb/msgs is now more careful about the return values for writes. If a write fails, it returns a "unavailable resource" exit code to the invoker, which in the case of sendmail will cause it to retry later.

(PR-21152) - The man page for 'msgs' states that the '-p' option uses the 'more' pager, when in fact the PAGER environment variable is checked first.

Resolution: A description was added describing how the PAGER environment variable has precedence over the -p operator.

(PR-23590) - It seems like the Right Thing To Do to have /usr/ucb/msgs use /usr/spool/msgs instead of /usr/msgs. By confining dynamic things to /usr/spool, one can more safely fill up /usr. With ever-burgeoning products with statically linked binaries and the associated cramped configuration that is shipped, this is a legitimate concern.

Resolution: /usr/ucb/msgs will now use /usr/spool/msgs as the article database, instead of /usr/msgs, allowing /usr to become a more static partition/filesystem.

(PR-24402) - /usr/ucb/msgs uses the "From " line instead of the "From: " line when printing messages. It really should use "From: " if it exists, and then fall back to "From ".

Resolution: msgs now uses the RFC822 headers for date and from if they exist, falling back to the UUCP headers if they don't. Of course, it still doesn't generate them.

## netstat.1c

(PR-19706) - The man page for netstat references iostat(1) in the SEE ALSO section. Neither the iostat command nor the iostat man page seems to exist.

Resolution: iostat(1) was a supported product at one time. It has since been replaced by syspic(1). The reference has been removed.

## newaliases.1

(PR-20654) - newaliases(1) states: NOTE: It no longer needs be run each time /usr/lib/aliases is changed in order for the change to take effect. This is now handled automatically by sendmail. This is true ONLY if the "D" option has been set in "/usr/lib/sendmail.cf" (which isn't always the case).

Resolution: Corrected description of when newaliases needs to be run.

## newst

(PR-23291) - mkfs exits abnormally on two dkd-284 h partitions.

Resolution: Code for cylinder group configuration had a variable which was expressed in incorrect units. This caused cylinders/group to be continually pegged at the internal maximum of 32.

(PR-23836) - On /etc/newfs it is possible to vary the free space value (default 10%) with the -m parameter. There is no equivalent option on the /etc/newst command.

Resolution: This option was implemented in newst as the "-F" option, since the "-m" option was already in use. The newst "-F" option has the identical effect as the newfs "-m" option.

(PR-24426) - Using 'newst -P5' with 9 disks produces the wrong results and a seemingly sub-optimal stripe configuration in terms of performance and disk space on more than 5 disks. The performance on an 8-way redundant is less than on a 5-way redundant, and the parity overhead is higher.

Resolution: Fixed.

(PR-24427) - 'newst -R' on 2k sector disks generates 'Floating exception (core dumped)' with 4k/512, 4k/1k, 4k/2k, 4k/4k, 8k/1k, and possibly others. With '-PR5' only 4k/\* fails. 8k/1k works, with frag size overridden to 2k.

Resolution: Fixed.

## **nfaccess**

(PR-17529) - nfaccess doesn't recognize group 'Other'.

Resolution: nfaccess now accepts Usr:Other and Grp:Other as options.

## **nfload**

(PR-18493) - When nfload is used to create a notesfile, the new notesfile starts with sys:Other and grp:Other in the access list. If the list being loaded has 35 entries (max allowed), the access list will overflow, and nfload will drop all entries after the first 33.

Resolution: nfload no longer places Sys:Other and Grp:Other in the default access list for a notes file.

## **nfmail**

(PR-07824) - If nfmail is reading non-mail text, and is interrupted with ^C, nfmail stops (as it should) but the notesfile lock is not removed.

Resolution: Added a signal handler for SIGINT (^C). Now the SIGINT is ignored (used an existing notes system signal handler) and the process will complete, limiting the chances for notesfile corruption.

(PR-16295) - nfmail does not check the return value of fclose() on its temporary file. It needs to do this in case /tmp fills up, at the very least. Should this occur, it should exit with EX\_TEMPFAIL so the mailer does the right thing, i.e. queues it until later and reports are not lost.

Resolution: nfmail now checks the return status on its close of the internal temporary file. If an error occurs, it reports EX\_TEMPFAIL to the calling process.

## **nfxmit**

(PR-10487) - The -p option on nfxmit is supposed to propagate notes title changes and director message changes. The original version used -p to transmit ONLY title changes and director message changes. The problem occurs when the user specifies a -p and there is a new note in the file. In this case, the note is transmitted without text.

Resolution: nfxmit should now properly propagate the director and title changes, and also propagate any new notes, not just the titles.

(PR-13936) - nfxmit fails using the default control string. When there is no entry in the file "net.how" for a specific site, no transmission to that site is taking place and the following message is displayed: nfrcv: Event not found. notesfile-name : Fail send (15, 33) to site-name since 10:00 am May 21, 1990

Resolution: nfxmit now uses a default rule with the proper escapes, and also starts the remote command up with sh instead of the users default shell.

## **nlist.3**

(PR-21233) - The nlist.h header file says: /\* FILE\_MOD\_FAIL is returned by libc routine nlist() to signify that \*/ /\* the file being read has been changed in the time it took to do a \*/ /\* symbol name lookup. \*/ #define FILE\_MOD\_FAIL -2 But the nlist(3) man page does not say anything about this return value of the nlist() function.

Resolution: FILE\_MOD\_FAIL has now been documented as a return code in the nlist.3 man page.

## **nm**

(PR-22157) - nm should check for read/write failures and call perror if there was an error.

Resolution: Nm now detects input/output errors and produces diagnostic messages.

## **nohup**

(PR-13400) - When a program executed in sh forks a process and writes to a pipe which the parent reads, both processes terminate as expected. However, when the program is run "nohup" in the background, a process is left behind in an idle state.

Resolution: /usr/bin/nohup previously caught SIGTERM as well as SIGHUP. The trap of SIGTERM (15) was removed. This bug was only reproducible under sh.

## **notes**

(PR-14340) - notes regularly merges notes or responses, corrupting the notesfile.

Resolution: Narrowed a number of race conditions dealing with updating the articles in the database files. Notes no longer keeps the world locked while the author spends hours editing the note. Instead it lets the note be finished, then locks the world for the little while it actually needs to insert the note.

(PR-14221) - When using the 'W' key to write a response including the text from the current page, a user cannot cancel your response. If the user types 'w' to write a response then quit editing with an empty buffer, no response is added. With 'W', if the user quits with an empty buffer or quits without modifying the buffer, it adds a response (an empty response, or a response with the unmodified text you just copied -- neither is useful).

Resolution: As of notes 10.1, if a response is less than two characters long, it is assumed to be an empty message, and not posted.

## **nroff**

(PR-16621) - Some man pages, which format correctly under troff, do \_not\_ format correctly under nroff -- thus leading to incorrect and very misleading man pages.

Resolution: exp.3m and frexp.3 man pages have been fixed. References to circumflex and tilde did not need changing in ms.7 man page.

(PR-22106) - nroff should check for read/write failures and call perror if there was an error.

Resolution: Nroff now detects input/output error and produces appropriate diagnostic messages.

## **nu.8**

(PR-22662, PR-22783) - The man page for nu says the source (nu.c) lives in /usr/convex. This is not correct. The source lives in /usr/src/convex (provided the "Optional Sources" were installed.)

Resolution: The nu(8) man page has been corrected to reflect the proper location of the nu.c source file.

(PR-22693) - The nu man page warns about the reserved value for share but does not mention that CONVEX has "reserved" uids 0 through 99 for system use.

Resolution: The nu(8) man page lists the uid's that are reserved in addition to the ones used by the share scheduler.

## **od**

(PR-11269) - od displays different values depending if the -v switch is used or not. Without -v, the output may be incorrect.

Resolution: od, now correctly displays contents of last line of a file following a sequence of identical and longer lines.

(PR-22090) - od should check for read/write failures and call perror if there was an error.

Resolution: od now checks for read errors and returns a error message.

## **oldsh.1**

(PR-23320) - Doing a "man sh" gets you the oldsh man page.

Resolution: Fixed in 10.1

## **on**

(PR-07579) - The on(1) command should be smart enough not to allow pseudo ttys to be turned on. This will help novice system managers and operators from messing up. This is a perennial problem.

Resolution: on (and off) now check to see if the target port is a pseudo-tty, and if so, outputs an error message and stops.

## **opreq**

(PR-22333) - oreq should give an error message when it fails to reserve a drive.

Resolution: tpd daemon will send an INFO message to opreq when a problem assigning the drive occurs. The opreq window must be configured to accept INFO messages.

(PR-22335) - The "configure-drives" command in opreq always results in the error message "tpconfig failed!" even when the tpconfig command was successful.

Resolution: The code will now flush the pipe opened to tpconfig, before the close of the pipe is attempted. Also, a more informative message will be returned to opreq.

## os\_cfg

(PR-24561) - The following messages that can appear in the uucp LOGFILE should be documented in the appendix B entry for /usr/spool/uucp/LOGFILE: FORGED HOSTNAME (name) ORIGINATED AT (IP address) SHOULD BE (name) These messages are currently not documented.

Resolution: These will be added to Managing ConvexOS: Operations Guide, Third Edition, which will be released with ConvexOS 10.1.

## os\_cfg\_smg

(PR-16999) - There is no '/etc/termcap' page in the Appendix B of either the `_System_Manager's_Guide_` (OS 7.1-8.1) or the `_Managing_ConvexOS:_Configuration_Guide_` (OS 9.0). A page or two describing this file would be useful, especially since gettytab, stripecap, and printcap (and a couple other) pages refer to termcap- style file formats.

Resolution: A better description of termcap will be added to Managing ConvexOS: Configuration Guide, Third Edition, which will be released with ConvexOS 10.1.

(PR-22788) - Chapter 5 does not clearly explain differences between Input Filters and Output Filters and how they are used. An amplified description would be helpful.

Resolution: Input and output filters to and from lpd will be described in better detail in Chapter 5 of Managing ConvexOS: Configuration Guide, Third Edition, which will be released with ConvexOS 10.1.

(PR-22756) - The SMG should document that all vme and multibus devices should be placed first in the ioconfig file. (ie before IDC or TLI).

Resolution: A comment stating that vme and multibus devices should come first in the ioconfig file will be included in Managing ConvexOS: Configuration Guide, Third Edition, which will be released with ConvexOS 10.1.

(PR-24119) - Index for Managing ConvexOS: Configuration Guide says that the "stat" utility is described on page B-58. It's really on B-57. Also the description for stat on B-57 says that stat should be in /etc. It really lives in /usr/etc.

Resolution: The indexing for stat will be corrected in Managing ConvexOS: Configuration Guide, Third Edition, which will be released with ConvexOS 10.1.

(PR-25048) - Page 3-6, the description of level states: "The interrupt level can be any number between 0 and 7." This is not exactly accurate. It can be a number between 0 and 7, but the same number cannot be used for more than one I/O controller.

Resolution: This information will be added to Managing ConvexOS: Configuration Guide, Third Edition, which will release with ConvexOS 10.1.

(PR-25049) - Page 3-30, format of termcap file should be: name | alternate\_name[ | ...]:attribute:attribute

Resolution: The termap entries will be better described in Managing ConvexOS: Configuration Guide, Third Edition, which will release with ConvexOS 10.1.

(PR-25050) - Page 6-22, 6-24, 6-35. The caution should read: "If you are running in a trusted environment, do not modify the bypass permissions lists except to add tape operators who will be restoring files from labeled tapes they did not create. No one else should be permitted to bypass labels."

Resolution: This comment will be added to the operations guide chapter on bypassing tape system security; however, this is an issue more so with Secure/OS than ConvexOS.

(PR-25052) - Page 7-6, step 2. This step has the user log in as the superuser or as uucp. Yet, step 3 is adding the uucp account with an impossible password. If this account is added with an impossible password (and it should be), no one can log into the uucp account.

Resolution: This documentation on this procedure will be corrected in Managing ConvexOS: Configuration Guide, Third Edition, which will release with ConvexOS 10.1.

(PR-25053) - Page 11-14, last paragraph. The first sentence talks about rebuilding the configuration file when it really means the database file. This sentence should read, "When the n configuration option is set to TRUE when sendmail rebuilds the database file .....

Resolution: This will be fixed in Managing ConvexOS Configuration Guide, Third Edition, which will release with ConvexOS 10.1.

(PR-25054) - Page 5-2, format of printcap file, second line should be indented 5 spaces.

Resolution: This will be corrected in the Third Edition, which will release with ConvexOS 10.1.

(PR-25056) - Page 5-9, step 5, the mode should be 775 not 770.

Resolution: This will be corrected in the Third Edition, which will release with ConvexOS 10.1.

(PR-25057) - Page 5-13, second bullet. The sentence "This ensures that the control lines are not modified by a user..." should read "This ensures that the control files are not modified by a user ..."

Resolution: This will be changed in the Third Edition, which will release with ConvexOS 10.1.

(PR-25058) - Page 5-13, third bullet should read: "The programs lprm and lpq run as SGID to lpr. The programs lpc and lpmv run as SUID and SGID to lpr to access spool file."

Resolution: This has been changed in the books being released with ConvexOS 10.1.

(PR-25059) - Page 9-5, step 3. Include the following information when describing number in the /etc/activities file: "If you have CXbatch configured on your system, it is important that you do not assign consecutive numbers when you assign numbers to billing activities. Instead, assign them in increments of 10 or 100. The amount of incremental space between nums affects the activity IDs assigned to jobs by Cch. If you assign numbers without incremental space between them, it is difficult to trace origin of jobs"

Resolution: This will be added to the Third Edition, which will release with ConvexOS 10.1.

(PR-25060) - Page 13-2, last paragraph. This sentence should read "A failed attempt to generate a core file..."

Resolution: This will be changed in the Third Edition, which will release with ConvexOS 10.1.

(PR-25061) - Page 16-4, table 16-1, abspathlen. There are no default, min, max supplied with this information.

Resolution: This information will be added to the Third Edition, which will release with ConvexOS 10.1.

(PR-25181) - Page 4-33, example 2, first sentence. The last part of this sentence should read "....., so each increase in fragment size results in a large increase in file system waste." (not file system size!!)

Resolution: This has been changed in the books being released with ConvexOS 10.1.

(PR-25266) - In the Managing ConvexOS/Configuration Guide on page 4-25 after STEP 6; the paragraph should be modified to direct the USER to check for existing "hot spares" in addition to checking for "disk stripes" and the hot spares information should be added to the diagram.

Resolution: This information has been added to the books that are releasing with ConvexOS 10.1.

(PR-25267) - In the Managing ConvexOS/Configuration Guide on page 4-27, Step 8, there should be additional steps after Step 8 to: \* Make decisions on disk striping and include on diagram.

Considerations are: which partitions to stripe together, whether or not the stripe is redundant whether the redundant stripe is mirrored or parity, or if you will let the system determine that.

Resolution: This information has been added to the configuration guide that releases with ConvexOS 10.1.

(PR-25268) - The steps for "Configuring Disk Partitions" are out of order/incorrect. 1) It's not necessary to do a "shutdown" to make disk devices or to edit the /etc/fstab file. 2) It's unnecessary to unmount file systems to make disk devices. 3) It's not possible to set disk quotas on file systems until they are configured. 4) Should be in single-user mode to make new file systems and new stripes. 5) Should be in single-user mode to run preen. 6) It's not necessary to reboot unless you have configured swap partitions.

Resolution: Numbers 1, 2, 3, and 5 have been added to the config guide, which releases with ConvexOS 10.1. Numbers 4 and 6 are not correct.

(PR-25273) - In the Managing ConvexOS Configuration Guide on page 5-11, step 10 needs to be changed to reflect both the need for the FQDN in the /etc/hosts/equiv file.

Resolution: Information about Fully Qualified Domain Names is included with the books releasing with ConvexOS 10.1.

(PR-25279) - All references to /usr/lib/crontab should be changed to /.crontab. /.crontab will either exist as a file or as a link to /usr/lib/crontab. Some sites may not have a file named /usr/lib/crontab.

Resolution: This information has been changed in the books releasing with ConvexOS 10.1.

(PR-25288, PR-25353) - The chapter on setting up man pages states that you must create cat\* and idx\* subdirectories. In fact; these directories are shipped on the release distribution tape.

Resolution: This information was changed in the configuration guide that is releasing with ConvexOS 10.1.

(PR-25292) - In the Managing ConvexOS Configuration Guide on page 3-49, after step 10 the USER needs to be directed to change the mode of the file created in step 10 to OWNER:lpr, GROUP:lpr, and mode:660.

Resolution: This information has been added to the configuration guide that is releasing with ConvexOS 10.1.

(PR-25299) - In the Managing ConvexOS Configuration Guide on page 3-14, the figure 3-7 has the arrows labeled "major #", "minor #" are pointing to the wrong items in the figure. "Major #" should be point to 5 and "minor #" should point to 80.

Resolution: This formatting error has been corrected. The corrected version releases with ConvexOS 10.1.

(PR-25302) - In the Managing ConvexOS Configuration Guide on page 6-20, step 15 is incorrect where it refers to "group\_set" and "group\_list". It should say "user\_set" and "user\_list".

Resolution: This has been changed in the ConvexOS Tape System Manager's Guide, which releases with ConvexOS 10.1.

(PR-25306) - In the Managing ConvexOS Configuration Guide on pages 6-13 and 6-43 it is described how to reset a timeout but how to disable timeouts is not discussed.

Resolution: A time out limit must be set for each drive in the tape system. A line stating such has been added to the guide, ConvexOS Tape System Management, First Edition.

(PR-25324) - In addition to documenting the importance of assigning "activity id's" in increments of 100 in Section B(System Files); this information should also be present on page 9-5 under the 'where number' title. The description in section B is much more informative and the potential exists for the USER to ignore this information and not realize the difficulty in "tracking" job ownership that can arise if activity id's are not properly set-up.

Resolution: This information has been added to the configuration guide, which releases with ConvexOS 10.1.

(PR-25347) - In Managing ConvexOS Configuration Guide on page 14-4 there are several problems: 1) The first paragraph states that catman creates the cat directories. This is not true. These directories are shipped empty on the release tape. 2) The third bullet states that "Before a man page is formatted and displayed, catman determines if a formatted version exists ..." man does this, not catman. 3) This section seems to recommend using catman. This is not a good recommendation as it will use up lots of disk space.

Resolution: The requested changes have been made to the configuration guide and are releasing with ConvexOS 10.1.

(PR-25348) - Having a section on "OS tuning" in the Managing ConvexOS/Configuration Guide would be a great help for system tuning.

Resolution: In Managing ConvexOS:Configuration Guide there is a chapter "Customizing kernel boot-time parameters," which covers OS tunables.

(PR-25382) - In the Managing ConvexOS Configuration Guide on pages 17-11 and 17-12, Step 16 should include the line (spu)> mv idc idc.save and Step 18 should include the line /usr/convex/spu -w /mnt/os/idc < /sys/GENERIC/os/idc. Step 19 is not needed, the rc script does this.

Resolution: This information has been added to the configuration guide that is to release with ConvexOS 10.1.

(PR-25355) - On pages 9-2 and 9-3 of Managing ConvexOS Config Guide; the description implies that accounting needs to be turned on using the 'accton' command to collect data in the collection log files. This is not true in al cases. Accounting data is collected in log files located in the /usr/adm directory. In most cases, the file only need to exist in order to have the information collected.

Resolution: The procedures described in the "Setting up the accounting system" chapter in Managing ConvexOS: Configuration Guide are somewhat unclear. A better distinction has been made between per-process system accounting, which is started with accton, and log accounting, which is implemented by touching log files and initiating accounting processes in the appropriate configuration files.

(PR-25359) - On page 9-8 of Managing ConvexOS Config Guide; whether or not Steps 12, 13, and 14 are performed depends on the kind of collection log files created in the earlier steps of settig up accounting.

Resolution: The procedures for establishing accounting, which can be found in the chapter, "Setting up the accounting system," in Managing ConvexOS: Configuration Guide, have been reorganized slightly in order to help make distinctions among different types of accounting more clear. These changes appear in the doc set being released with ConvexOS 10.1.

(PR-25365) - All references to /usr/lib/crontab in chapters 7 and 12 should be changed to /.crontab. Typically sites will either have /.crontab as a real file or a link to /usr/lib/crontab. Some sites will not have /usr/lib/crontab. References to /.crontab satisfies all cases.

Resolution: The requested changes have made to Managing ConvexOS: Configuration Guide, third edition, which releases with ConvexOS 10.1.

(PR-26435) - On page 16-15 in the "Customizing Kernel Boot-Time Parameters" section, the description for the tunable 'swap\_partswpchg' states: > The value specified for this parameter is added to the ^^^ The second "to" is in error.

Resolution: This error has been fixed in the config guide releasing with ConvexOS 10.1.

## **passwd**

(PR-22091) - passwd should check for read/write failures and call perror if there was an error.

Resolution: The passwd utility now checks for input/output errors and exits with an appropriate diagnostic.

## **pax**

(PR-19296) - tar (pax) incorrectly reports "tar: Write error: EOT seen" when a non-recoverable tape error occurs while the tape is not at EOT.

Resolution: tar will now use perror to report the problem seen. This is not much better because end if tape is reported as EIO.

(PR-22158) - pax should check for read/write failures and call perror if there was an error.

Resolution: tar (pax) will now use perror to report the problem seen. This solution is not much better than what existed before; the errno from the device driver is very nondescript.

## **perl.1**

(PR-23040) - The perl man page has some comments slipping through.

Resolution: The comment leader for RCS have been changed to "''''".

## **pr**

(PR-22092) - pr should check for read/write failures and call perror if there was an error.

Resolution: Pr will give an error message when it encounters a read error instead of silently treating the error as an EOF. EOF's are handled as always.

(PR-24963) - If pr is receiving stdin from the terminal, one ^D produces output but another ^D is required to exit.

Resolution: The code was changed to print out the new columns after a single ^D when running interactively.

## **pr.1**

(PR-20410) - The man page for pr states that "a date" is printed as part of the page header. The date printed is the last modification time of the file.

Resolution: The time stamp is described now for pr <filename> and pr from stdin.

## **preen**

(PR-03882) - preen should be modified to run fsck on unmounted filesystems only.

Resolution: If fsck is given a block device for an unmounted filesystem, it will abort with a message to either unmount the filesystem or use the raw device. If fsck is given a raw device for a mounted filesystem, it will abort with a message to either mount the filesystem or use the block device.

## **ptx**

(PR-22108) - ptx should check for read/write failures and call perror if there was an error.

Resolution: Ptx now produces error messages in case of input errors.

## **qst.8**

(PR-24356) - The qst.8 man page contains a spelling error (Loosing). Also, the SYNOPSIS is not accurate. The ellipsis (...) should be outside the square brackets [].

Resolution: Corrected spelling and synopsis errors.

## quickref

(PR-24424) - The new "Quick-Reference" for dump/restore and the MAN page for the same give inconsistent descriptions of the 'U' option.

Resolution: This will be corrected in the second edition, rev. 1, of the CONVEX dump and restore Qref.

## quot

(PR-24982) - The command /usr/etc/quot -fv is giving a read error at block 4263552 on two partitions that are both over 2 gbytes. The command works fine on the partitions that are smaller than 2 gbytes. There are 3 partitions that are 4-way stripes across the 2.5 gbyte idc drives.

Resolution: quot has been changed to support large file systems.

## quot.8

(PR-20382) - In the quot man page, the line -a Generate are report ... should be -a Generate a report ...

Resolution: Changed "are report" to "a report".

(PR-26716) - In the man page for quot, under the OPTIONS section for the "-a" option, the use of the word "are" is not correct.

Resolution: Fixed.

## quotacheck

(PR-22832, PR-22864) - Request that the quota system be made large file aware.

Resolution: quotacheck is now large file aware.

(PR-23959) - quotacheck needs to be large file aware.

Resolution: quotacheck is now large file aware, and will work properly on large filesystems.

## quotactl.2

(PR-21095) - The quotactl man page lists the EFAULT error condition twice.

Resolution: Removed the 2nd occurrence of the redundant description.

## ranlib

(PR-22164) - ranlib should check for read/write failures and call perror if there was an error.

Resolution: Ranlib prints a diagnostic and aborts if it encounters read errors.

## rcsdiff

(PR-15194) - rcsdiff defines its own version of the fprintf function. It contains a circular recursive call to faterror, which calls fprintf, which calls faterror, etc.

Resolution: Fixed in 10.1

## readlink.2

(PR-22637) - The DESCRIPTION section for readlink(2) uses "name" to refer to an argument identified as "path" in the declaration of readlink(). "Path" should be used instead of "name". Also, the declaration of "cc" in the SYNOPSIS is unnecessary, and does not conform to the standard used in other man pages like unlink(2).

Resolution: The corrections have been made to readlink.2

## restore

(PR-20877) - Request for restore(8) to flush its input (type-ahead) before prompting to mount next volume. This will alleviate problems of mis-typed carriage-returns.

Resolution: restore now flushes characters that are typed before the prompt is written to the terminal.

(PR-22296) - Apparently, in ConvexOS V7.0, the /etc/restore command allowed the use of wildcards in interactive restores. Starting with ConvexOS V8.0, this feature seems to have disappeared. Would like to be able to use the \* and ? wildcards in interactive restores.

Resolution: The traditional shell wildcard characters can be used in restore's interactive mode to expand filenames.

(PR-23206) - When restoring a user's directories from standard dumps, all of the soft links that the user created and that were previously owned by the user have their owner set to root. This does not happen to regular files and directories; only links.

Resolution: restore now changes the ownership of the symbolic links it creates to the original owner.

(PR-23438, PR-24034, PR-24166) - 'restore' fails when attempting to restore dumped filesystems from a tape using the -a option.

Resolution: restore now reports that a file is missing from a dump archive and skips over that file instead of prompting for another volume.

restore.8

(PR-20343) - The error message "Tape read error while trying to set up tape" is not in the restore (8) man page.

Resolution: Added the error message and a short explanation to the diagnostics section of the man page.

(PR-20878) - The restore man page needs to have a better explanation of multi-volume dumps. In particular, a section detailing volume ordering (why to start at last volume for a few files) would be helpful.

Resolution: Added a paragraph containing the requested information.

## **rev**

(PR-22165) - rev should check for read/write failures and call perror if there was an error.

Resolution: Rev now checks return codes on reads and prints appropriate error messages.

## **rm**

(PR-24464) - Doing a recursive rm of a null string (i.e. rm -r "") removes all files in a directory.

Resolution: rm now checks that args passed is not a zero length string and hence won't try to remove current directory.

## **rmail**

(PR-17015) - Only outgoing uucp mail should be queued. All incoming mail from uucp should not be queued.

Resolution: rmail no longer asks sendmail to just queue the message for delivery. Thus, sendmail will attempt immediate delivery when uuxqt is run.

## **rup.1C**

(PR-23077) - The 'rup' command does return useful status, but this is not documented in the man page.

Resolution: A description of the exit status was added to the man page.

## **scnhdr.5**

(PR-21003) - The scnhdr.5 manual page refers to obsolete #defines.

Resolution: Updated s\_flags macro value assignments.

## **sed**

(PR-22132) - sed should check for read/write failures and call perror if there was an error.

Resolution: Sed now prints error messages in case of input/output errors.

(PR-24972) - When sed is given an invalid option, part of the error message goes to stdout instead of stderr.

Resolution: The "Unknown flag" error message will now go to stderr.

## **seestat.8**

(PR-24790) - seestat report numbers are off by one in the man page. Report number 3 should be "Disk average latency" and the rest moved down.

Resolution: The report numbers have been changed to reflect reality.

## **sendmail**

(PR-22890) - These commands serve almost little purpose these days, except to break into a system. Use of these sendmail commands should be logged as a possible security problem.

Resolution: "wiz" and "debug" now generate a message to LOG\_INFO (mail.info) when invoked, and return a "command not recognized" to the user.



## **sod**

(PR-22160) - sod should check for read/write failures and call perror if there was an error.

Resolution: Sod now checks for input errors and produces appropriate diagnostic messages.

## **sort**

(PR-16526) - If sort is run when /tmp is full, the exit status is zero and the results are incorrect.

Resolution: sort now checks for write errors, cleans up, returns error status.

(PR-22109, PR-22110) - sort should check for read/write failures and call perror if there was an error.

Resolution: sort now checks status from i/o calls.

(PR-22347) - Directory names supplied to sort through the -T option are limited to 18 characters. There should not be a limit.

Resolution: Sort now allows MAXPATHLEN on temporary file names.

(PR-22723) - The -b option of sort does not appear to ignore leading whitespace.

Resolution: Operation of "-b" option now correctly ignores leading whitespace.

(PR-23161) - sort fails when attempting to sort a very large file (greater than 1.5 gig). The failure is due to the fact that the temporary filenames generated by sort eventually begin using invalid (non-printable) ascii characters, which fopen cannot deal with. The setfil subroutine is the culprit that generates the filenames.

Resolution: Extended the tmp file naming scheme in sort to allow for creation of a greater number of intermediate files.

## **spell**

(PR-22111) - spell should check for read/write failures and call perror if there was an error.

Resolution: The utilities spell, spellin, and spellout will now check for errors on opening and reading files and print an error message and exit with non-zero status if an error is encountered.

## **split**

(PR-22112) - split should check for read/write failures and call perror if there was an error.

Resolution: Split now checks for error on reads, and prints an error message when one occurs.

## **spucmd.8**

(PR-10334) - If there is a spucmd running and someone tries to run another one, the second one will fail with "mount device busy" (which should be documented). Worse yet, the first process reports "spucmd read: Not owner", finishes the command it was running, and then exits -1.

Resolution: Documented in 10.1 release.

## **stat.2**

(PR-16200) - The struct stat definition in the man page for stat(2) is not the same as the actual structure defined in /usr/include/sys/stat.h, as it should be. This is particularly important for utilities that try to distinguish between old dev\_t and new dev\_t (after 8.0).

Resolution: The full stat structure (as of 10.0) is documented on the stat.2 man page.

## **strings**

(PR-22142) - strings should check for read/write failures and call perror if there was an error.

Resolution: Read errors now cause error messages.

## **strip**

(PR-22161) - strip should check for read/write failures and call perror if there was an error.

Resolution: Strip now detects input/output errors and produces appropriate diagnostic messages.

## **stty.1**

(PR-19277) - The stty man page does not document the -g option output. Colon delimited lists should have the ordering of the fields documented.

Resolution: stty -g is now documented as being a dump of the termios structure. It is further documented that this format is not guaranteed across OS releases, or to be portable to other vendors platforms.

## **su.1**

(PR-20311, PR-21882) - Man page for su shows incorrect usage of the "-f" flag.

Resolution: Corrected SYNOPSIS for "-f" and "username" arguments.

(PR-24240) - The synopsis on the su(1) man page is wrong: su [ - ] [ -f username ] [shell arguments or command] should be: su [ - ] [ -f ] [username] [shell arguments or command]

Resolution: Fixed for 10.1

## **sum**

(PR-22166) - sum should check for read/write failures and call perror if there was an error.

Resolution: When the read fails on sum, a better error message is now printed and the erroneous sum is not printed.

## **syslog.conf**

(PR-15485) - There should be a man page for /etc/syslog.conf. The info is currently in the syslogd man page. It would be nice to have a sub-section for FORMAT of the syslog.conf file.

Resolution: syslog.conf(5) now exists, with the information on the configuration file moved from syslogd(8). It also describes the facilities and levels with out refering the reader to <syslog.h>.

## **syslogd**

(PR-23042) - It would be useful if, in addition to absolute pathnames, usernames, and hostnames prefixed with @-signs, syslog.conf allowed pipes as part of the "people or places to notify" (right-hand side).

Resolution: syslogd now allows a '|' to be specified in the 'action' field of syslog.conf.

## **sypic**

(PR-23208) - Typing ESCAPE from the connections window(like the help message says) does not do anything.

Resolution: The escape now takes you back to the menu on the network picture.

## **tabs**

(PR-12185) - The tabs command cannot reset the tabstops for a vt100 terminal.

Resolution: This is fixed for 10.1. /usr/bin/tabs now understands /usr/lib/tabset and will look there for the tab initialization string if it is running for a terminal it doesn't already know about.

## **tail**

(PR-22127) - tail should check for read/write failures and call perror if there was an error.

Resolution: tail now checks for i/o errors.

(PR-24532) - tail -100 -f filename results in the last 10 lines printed despite the "100" specification.

Resolution: Tail now parses arguments correctly.

## **tail.1**

(PR-18322) - The man page for tail should state that the +N parameter is the N'th line number and not an offset from the start of the file.

Resolution: The man page has been made more explicit about where tail will begin when the +number option is given.

## **tape**

(PR-13481, PR-21478) - If a cartridge unit has a tape loaded (online) and opreq is being used to service mount requests, AVR fails to display a message that the unit has been allocated and is in use.

Resolution: Problem was not reproducible on a 9.1 system with Tape ACL Enhancements 1.1 installed. Much work went into fixing communication between tpd daemon and the opreq daemon in the ACL Enhancements, which may have alleviated this problem.

(PR-13482) - 'tpmount -s xxx xxx' causes a 3480 tape to be ejected. Problem occurs if opreq is used, mt is configured as the default drive, and the 3480 is on line with a labeled tape.

Resolution: tpd daemon will no longer attempt to match an AVR message of one drive type and the request for the same VSN on another drive type.

(PR-20567) - All utilities that are used for writing tape files (eg, tar/cpio/pax, dump, dd, cp, cat, etc.) must check the status of close(2). Several existing tape devices have buffers and some of the data doesn't get flushed to tape until the tape marks are written in close(2). If there is a media error, the error is reported during close.

Resolution: dump, cat, cp, tar, pax, cpio have been updated to check the status of the close on the output devices. If an error is returned the user is given an error message to stderr.

## **tar**

(PR-16475) - When tar is used in labeled mode for extracting or reading the contents, the error message: tar: tape forward error is displayed. This message is displayed after the files have been extracted or after tar is used to list the names of all of the files in the archive.

Resolution: tar would always perform a MTFSF at the end of an archive to advance over the tape mark. On labelled tapes, if no file followed the archive, ENOENT was returned. tar would treat this as a fatal error.

(PR-22178) - tar should check for read/write failures and call perror if there was an error.

Resolution: tar has been changed to use strerror(3) when a problem occurs on a read or write. It is not much better than before, because EOT is reported as "I/O error".

## **tar.1**

(PR-13336) - The X8.1 tar man page doesn't document a return value for tar. It appears to have a standard return value system (0 meaning OK), just as the V7.1 tar had.

Resolution: Fixed in 10.1.

(PR-16301) - The man page for tar states: "except that the set-user-id and get-group-id modes are not set unless the user has appropriate privileges." In reality, tar will only retain setuid and setgid bits if the extractor is root. The man page should reflect this restriction.

Resolution: The man page has been modified to read "root".

(PR-24259) - It would be a fine thing if the 'tar' man page included the traditional example of tarring through a pipe.

Resolution: The copying example has been added since many people use it. The dashes were not removed since our tar allows them and it is our man page.

## **tbl**

(PR-22114) - tbl should check for read/write failures and call perror if there was an error.

Resolution: Tbl now checks for input/output errors and produces appropriate diagnostic messages.

## **tcsh**

(PR-23238) - If a sub-proc is created within vi with the ":shell" directive, then exit this shell, the parent is left in the background.

Resolution: Fixed in production 10.0.

(PR-23965) - 'fg' with no jobs causes tcsh to receive a Bus Error.

Resolution: Fixed for 10.1.

## **tee**

(PR-20094) - tee does not check to see if it was successful in writing to its output files. Also, if an output file doesn't exist and tee cannot create it, the returned status is zero. It should be non-zero.

Resolution: The tee utility now checks the return codes from the creat() and write() system calls and will exit with a non-zero status if either of them fails.

(PR-22093) - tee should check for read/write failures and call perror if there was an error.

Resolution: The utility tee now checks the return code from the open(), read() and write() system calls, and will display an error message and exit with non-zero status if an I/O system call fails.

## **termcap.5**

(PR-24589) - The termcap entry "km" is defined as a boolean variable which specifies whether or not the terminal has a "meta" key. The Convex seems to recognize this entry. However, this feature is undocumented.

Resolution: Documented the km flag.

## test

(PR-16265) - Several other vendors use the `-h` switch to test if a file is a symbolic link. ConvexOS has `-l` for the same purpose. Request that the `-h` switch be added to perform the same function as `-l`.

Resolution: This is fixed in Convex OS 10.1.

(PR-16289) - Request that `test` provide an option to determine if a file is executable. System V currently provides an `x` option with that functionality.

Resolution: `test` now has a `'-x'` option that tests to see if a file exists & if so, tests to see if it is executable.

(PR-17232, PR-20126) - The `-w` option of `test` is not compatible with the de facto standard: `-w` on a CONVEX means, "file and not a directory and writable", and `-w` on a Sun, HP, ... means, "file and writable."

Resolution: `/bin/test` now matches the `sh` built in `test`, as well as the SunOS, and HP/UX versions of `test`.

## test.1

(PR-23563) - The man page for 'test' does not document the `"-c"` (test for character device file) and the `"-b"` (test for block device file).

Resolution: Fixed for 10.1

## time.3c

(PR-22789) - The `time(3c)` man page has the following: Previous versions of `times()` filled the struct `tms` members with units measured in 60ths of a second. `CLK_TCK` ths are not necessarily the same. It is unclear what this sentence means: "CLK\_TCK ths are not necessarily the same."

Resolution: Clarified explanation of `CLK_TCK` unit in BACKWARD COMPATIBILITY section.

## touch

(PR-09797) - It would be nice if `touch` had an option that behaved exactly contrary to its `-c` flag. `-c` says don't create it if it doesn't exist. A flag (`-C`) that said touch it (create it) only if it \*doesn't\* exist would be useful in atomic file locking from shell scripts.

Resolution: Fixed in 10.1.

(PR-24840) - When trying to touch a file prior to V10.0, instead of giving the time as "Feb 26 10:33", the time is reported as "Feb 27 1992". This happens with both modification time and access time, as the user and as root (when running `touch`). Longer time jumps, (EG 24 hours in the past, or better) give the time or year as appropriate, but the day is 1 greater then it should be.

Resolution: `touch` was modified to make day of the month internal representation 0 relative. It was using 1 relative numbering.

## touch.1

(PR-20834) - The `touch` man page needs to describe the restriction of only being able to use the current time when the `-s` option is used to update a symbolic link.

Resolution: Rewrote man page in a clearer fashion, with examples.

## tpdaemon

(PR-21029) - With queueing enabled, a user performs a multivolume operation on ANSI labeled tapes. If a timeout occurs while waiting for the operator to replace tapes (between volumes), the `Replace_Tape` message is not canceled in `opreq`.

Resolution: The `REPLACE` message will now be canceled and an unmount mount message sent to the operator.

(PR-21852, PR-26627) - `tpdaemon` dumps core.

Resolution: `tpdaemon` no longer passes `-1` to `savestr()`

(PR-22226) - At times, tape commands to the silo are not completed. It appears that status information from the SUN is not picked up by the tape daemon. If a `tpmount` is executed, the tape is mounted in the drive, but `tpqueue` doesn't show that a drive has been allocated. At times, everything completes correctly.

Resolution: The results of silo mounts are no longer dropped.

(PR-22532, PR-22586) - The logging feature of `tpdaemon` is very nice, but the error messages should also refer to the tape drive. For example, a message of: `hostname tpdaemon: Errno 5: I/O error hostname tpdaemon: [ERR] can't get tape status w/MTIOCGET: Would be more helpful if the drive name or number were mentioned as well. This would be good for any site with multiple tape drives.`

Resolution: All of the references to tape drives should now be suffixed with the type:unit (i.e. mt:0, tc:1)

(PR-22782) - tpd daemon dies with a Bus Error core dump in timeoutpoll(). It happens when an idle drive gets reclaimed by the tape system and there are other mount requests that can be started using the reclaimed drive.

Resolution: tpd daemon no longer aborts in the timeoutpoll routine.

(PR-23041, PR-24138, PR-24169, PR-25369) - The tape system does not delete AVR messages for tapes that have physically been removed from the tape drive.

Resolution: tpd daemon will now delete the associated AVR messages from the tape queue.

(PR-23035) - The tape daemon loses Message Id's when mounting tapes from a silo.

Resolution: tpd daemon no longer forgets that a silo mount is in progress.

## **tpinit.1**

(PR-21886) - The tpinit man page description, paragraph four (unlabeled tapes), is missing several words. It reads "A tape that is requested to be unlabeled will have three 80 byte records of". This is not an English sentence. -a option, second line, "ibm labelled" should be "IBM labeled" (two, not three, ELs in LABELED). (This comment applies to the -v option description as well.)

Resolution: The spelling has been corrected, and the missing info has been replaced.

## **tplist**

(PR-21883) - tplist will not list the labels on a labeled tape if the tape is mounted as a block-special device. tplist works as advertised if the tape is mounted as a character-special device.

Resolution: The tpmount(1) man page has been updated to exclude the use of the block tape device and labelled tapes.

## **tpmount**

(PR-12787) - Return codes of tpmount are not explained in man page.

Resolution: The tpmount(1) man page has been updated to explain the three return values from tpmount.

(PR-15290, PR-16091) - With queuing enabled, when any signal besides SIGINT is sent to a tpmount process, tpmount should cancel its request by issuing a tpmount command.

Resolution: tpmount will now cancel the request when a SIGHUP, SIGQUIT, SIGTERM, SIGUSR1, SIGUSR2 is received.

(PR-16369) - When opreq is running and a tpmount is executed with a VSN that doesn't match the VSN of the mounted tape, an incorrect error message is returned.

Resolution: The problem was created with the initial release of the tape stacker loader enhancements. It has been fixed in the 1.2 release of ConvexOS ACL enhancements.

(PR-16380) - If a block type device is specified in conjunction with requesting a labeled tape on an unlabeled tape, then if one executes tplabel on this tape, tplabel will tell the user that it failed, but it will actually place a label on the tape.

Resolution: The tpmount(1) man page has been updated to exclude the use of the block tape device and labelled tapes.

(PR-16381) - If conflicting arguments are given for the "-a" option and the "-m" option, in most cases the "-a" option is allowed to override the "-m". There is no warning that inconsistent arguments have been provided.

Resolution: tpd daemon will now detect this case and reject the mount.

## **tpmount.1**

(PR-22767) - The man pages state that "There is no default value for labeled tapes..." under the -l option. If a labeled tape is used and "-m label" is in the command line, the tape will default to the correct label type. If a non-labeled tape is used and "-m label" is in the command line, the label type will default to ansi. Also, the correct spelling is labeled not labelled.

Resolution: Corrected "-l" option description. Corrected spelling errors.

## **tpswitchvol.1**

(PR-24494) - Both the synopsis and the description for 'tpswitchvol' contain numerous errors.

Resolution: These problems have been fixed for 10.1.

## **tpunlabel.1**

(PR-24146) - The tpunlabel man page says that the only valid commands after tpunlabel are tplabel or tpmount, but it doesn't say that the link is removed until the tape is relabeled. tpqueue still shows the mount as being connected to the symbolic link, so it looks inconsistent to the unsuspecting user.

Resolution: The man page has been updated.

## **tsort**

(PR-22115) - tsort should check for read/write failures and call perror if there was an error.

Resolution: tsort now checks for i/o errors.

## **tsug**

(PR-25705) - Chapter 5 of the Tape System User's Guide (2d Ed) doesn't give V or VBS as valid options for record format. These options are documented in the tpattr(1) man page.

Resolution: This information has been added to the ConvexOS Tape System User's Guide, Fourth Edition, and the ConvexOS Tape System Quick Reference, Third Edition. These release with ConvexOS 10.1.

## **ttys.5**

(PR-15375) - The man page for the /etc/ttys file implies that the "on" flag is a prerequisite for "secure". This is not the case for pseudo-terminals (where "secure" works just fine even though they are (and should be) "off"). The documentation should be updated to reflect this.

Resolution: The man page has been rewritten for 10.1

## **umask.2**

(PR-16646) - The umask(2) man page claims: The value is initially (S\_IWGRP | S\_IWOTH), allowing write access for the file's owner only. The mask is inherited by child processes. This is not necessarily true. Unlike the old CMASK from <sys/param.h>, V9.0 has the "sys\_umask" kernel tunable for the default system-wide umask.

Resolution: Changed definition of initial value to "sys\_umask".

## **umount**

(PR-07259) - umount -a leaves a process behind if a file system is busy. Future attempts to umount the file system fail even if it is not busy anymore. The user must explicitly kill the running umount -a before issuing the command again in order for it to work.

Resolution: /etc/umount's clnt\_broadcast() was changed to clnt\_broadcast\_exp() with no timeout. The old umount would hang around retrying the broadcast until the retry count was exhausted and any umount attempts while the previous execution was retrying would fail. Since umount doesn't care about any response to the broadcast, the timeout was removed.

(PR-08220) - umount needs to be smarter about the order of unmounting filesystems. What it really needs is some dependency heuristics to unmount the top-most filesystems first.

Resolution: This was fixed in a previous release with the addition of mount order intelligence in both mount and umount.

(PR-24711) - If a trailing slash is given when unmounting a filesystem, the filesystem is unmounted, but the mtab entry remains.

Resolution: umount has been modified to check for trailing slashes on an argument and remove them unless the argument is root(/).

## **uncompact**

(PR-22182) - uncompact should check for read/write failures and call perror if there was an error.

Resolution: compact/uncompact now check for i/o errors.

## **unexpand**

(PR-22128) - unexpand should check for read/write failures and call perror if there was an error.

Resolution: Unexpand now checks for return codes on reads and prints appropriate error messages.

## **uniq**

(PR-22116) - uniq should check for read/write failures and call perror if there was an error.

Resolution: Uniq now produces error messages in case of input errors.

## units

(PR-22179) - units should check for read/write failures and call perror if there was an error.

Resolution: Units now produces error messages in case of input error.

(PR-24551) - units has an incorrect value in the entry for 'mil'.

Resolution: The description for mil is now 1/1000 inch instead of 1/100 inch.

## uucp.1c

(PR-15972) - The uucp(1c) man page indicates that a file must have "other" read access to be copied. Currently, uucp will copy a remote file if access is permitted by USERFILE(5) and the uucp login has read access (i.e. file owned by uucp or group daemon).

Resolution: Corrected paragraph in BUGS section regarding the necessary permissions on remote files.

## uudecode

(PR-22167) - uudecode should check for read/write failures and call perror if there was an error.

Resolution: Uudecode now checks for input errors and produces appropriate diagnostic messages.

## uudecode.1c

(PR-20766) - The uudecode manual page needs to be enhanced to include an explanation of the action of setuid/setgid when uudecode is run as root.

Resolution: Added NOTE section with description of setgid/setuid behavior.

## verify

(PR-10525) - Files in the directory /lib/kernsyms have world write permission. This is a security hole. Malicious or incompetent users could fill up the root partition.

Resolution: /lib/kernsyms/\* files are made non-world writeable.

(PR-11025, PR-12581, PR-12583, PR-12707) - verify does not allow pathnames that contain the character ":" to appear in the database.

Resolution: Verify can now process a file that contains a colon in its name.

(PR-24724) - verify complains that '-V' (verbose mode) is an illegal option.

Resolution: verify now allows the '-V' (verbose) option to be specified.

## vers

(PR-23228) - When the -v option is used with install(1), the -v calls vers which upon being fed a script, doesn't like #! and complains bitterly. It would be fine for vers to just print a warning and exit successfully on such occasions.

Resolution: Fixed for 10.1

## vi.1

(PR-24191) - The vi(1) man page refers users to the Tutorial Papers for use of vi. The Seventh Edition of the Tutorial Papers do not have any documentation on the "vi" editor. "ex" is discussed, but MANY users do not associate the two together and the visual commands are not in the "ex" paper.

Resolution: Cleaned up the references for 10.1

## vmstat

(PR-12868, PR-20310) - vmstat never shows vector context switches.

Resolution: Fixed.

(PR-24563) - vmstat fields 'pi' and 'po' are too small and overflow frequently. When this happens, no leading blanks are specified in the format so these fields merge and become indistinguishable. This prevents anyone from gleening useful information.

Resolution: The pi and po fields have been expanded by one digit, and a space has been put in front of them. The headers were adjusted as well.

## vmmdaemon

(PR-23042) - It would be helpful to the system manager if vmmdaemon notified superuser by electronic mail when a stripe fails, instead of relying solely on the error logging facility.

Resolution: The -m option has been added to vmmdaemon.

## **wait.2**

(PR-20490) - The man page for wait(2) describes macros WTERMSIG, WEXITSTATUS, and WSTOPSIG as if they exist in both POSIX and traditional CONVEX (BSD) modes. In fact, the include file does not define these macros in non-POSIX mode.

Resolution: Made notation that WTERMSIG, WEXITSTATUS, and WSTOPSIG macros are defined in backwards compatible mode only.

## **wall**

(PR-22094) - wall should check for read/write failures and call perror if there was an error.

Resolution: Wall now checks for error messages when reading a file with a message. If an error is detected, an appropriate message is printed, and no one on the system is notified.

## **wc**

(PR-22129) - wc should check for read/write failures and call perror if there was an error.

Resolution: Changed to report read errors.

## **what**

(PR-22130) - what should check for read/write failures and call perror if there was an error.

Resolution: Read errors now cause error messages and a non-zero exit status.

## **write**

(PR-19498) - write doesn't complain if too many arguments are passed to it.

Resolution: Write now prints a usage message if more than 2 arguments are supplied.

## **xdump**

(PR-22270) - It is really quite annoying that xdump, unlike the rest of Unix, has decided that an exit status of 1 indicates successful completion.

Resolution: xdump, and its friend dump, now return zero on successful completion.

## **yacc**

(PR-22168) - yacc should check for read/write failures and call perror if there was an error.

Resolution: yacc now checks for i/o errors.

## **yes.1**

(PR-24842) - yes returns a bad exit code which is not documented in its man page.

Resolution: The yes.1 man page now describes the exit status of yes.

---

## **Fixed library bugs (V10.0)**

This section lists bugs in the runtime libraries that were fixed in the V10.0 release.

### **access.2**

(PR-17432) - The man page of access (2) shows the following: int access(path, mode) int accessible; char \*path; int mode; the 'int accessible' parameter does not exist

Resolution: The fictional argument 'accessible' has been removed from the access.2 man page.

### **cfree**

(PR-17309) - Since the source for cfree only calls free to deallocate memory, it should be made available as a macro.

Resolution: cfree(3) will now expand to free(3) when you include <stdlib.h>.

### **directory.3**

(PR-18750) - The SYNOPSIS section for the directory(3) man page declares rewinddir as returning an int, but the SYNOPSIS for rewinddir shows it returning type void.

Resolution: directory.3 now specifies that rewinddir(3) is of type void.

### **erf.3m**

(PR-10743) - Man page ERF(3M) refers to man page math(3M) which does not exist.

Resolution: The reference to math(3) was replaced with intro(3m).

## **execlp/execvp**

(PR-20189) - `execlp()` and `execvp()` set `errno` to `EACCESS` when passed an empty string to `exec`. According to POSIX the `errno` should be set to `ENOENT`.

Resolution: `errno` is now set to `ENOENT` if the underlying `exec` ever generates an `ENOENT`. If both `ENOENT` and `EACCESS` are generated during the path search, `errno` is set to `EACCESS`.

## **fclose**

(PR-18105) - Performing an `fgets` after a file has been closed causes the process to wait for the string to be input via `stdin`.

Resolution: `fclose` has been fixed, so that if you try to do I/O on a closed `FILE` pointer, the I/O operation will fail with an I/O error.

## **fclose.3s**

(PR-20953) - The man page for `fclose()` indicates that the function returns `EOF` in case of error. It does not say that it returns `0` if the operation completes successfully.

Resolution: A "Return Values" section was added to the `fclose(3)` man page.

## **fopen.3s**

(PR-17037) - Right side quotation marks on the `fopen.3s` man page are messed up. ie: "r" open for reading "w" create (or truncate to zero length) for writing

Resolution: The `fopen.3s` man page now has correct right side quotation marks.

(PR-18335) - The `fopen.3s`, `setlocale.3` and `vhangup.2` man pages have bad "quoting" [sic].

Resolution: Bad quoting has been fixed in the `fopen.3s`, `vhangup.2`, and `setlocale.3` man pages.

## **free**

(PR-08245, PR-20174) - `free()` actually does not release the memory dynamically allocated by a process to make it available to other processes. At best this should be fixed. At worst it should be more clearly documented in the man page.

Resolution: This bug has been documented in the `malloc.3` man page.

## **getacwent.3**

(PR-05951) - The return codes for `setacwent` and `endacwent` are not explained in the man page. It is unclear which function the man page is describing return codes for.

Resolution: The `setacwent()` and `endacwent()` functions are now declared as type `void` and the man page (`getacwent.3`) has been updated to reflect this.

## **getpeername.2**

(PR-18742) - The man page for `getpeername.2` in the synopsis section should include the following: `#include <sys/types.h> #include <sys/socket.h>`

Resolution: `#include <sys/types.h>` and `#include <sys/socket.h>` have been added to the SYNOPSIS section of `getpeername.2`

## **getpriority**

(PR-07947) - If a process group is reniced to the lowest priority +64, then doing a `getpriority` call on that process group erroneously returns with a "no such process" error. This bug only occurs for nice value +64.

Resolution: `Getpriority(2)` now returns +64 for process groups with priority +64.

## **getpwrestent.3**

(PR-18725) - The man page for `getpwrestent` miss-spells "fgetpwrestent" as "fgetpwent" in the SYNOPSIS section.

Resolution: The `getpwrestent(3)` man page now correctly refers to the `fgetpwrestent()` function rather than the `fgetpwent()` function.

## **getwd**

(PR-07191) - The `getwd()` C Library function calls `closedir(D)`, which calls `free()` on both one of the fields of `*D` as well as on `D` itself. It then proceeds to dereference `D` to copy out the name. Under certain circumstances, `free()` may coalesce freed space into larger chunks, potentially altering `*D` and thus causing `getwd()` to fail.

Resolution: Revised the order in which the closedir and the access to the memory block were coded. Now the data is copied out of the data memory block, and then the closedir issued.

### **hypot.3m**

(PR-18716) - The man page for hypot.3m needs to discuss the hypotf entry and which functions are available in which modes of the libraries (ie only in -pcc and -ext).

Resolution: The hypot.3m man page has been updated to document the above.

### **killpg.2**

(PR-07314) - The killpg(2) man page ERRORS section needs updating so that [ESRCH] concerns pgrp, not pid.

Resolution: killpg.2 now correctly refers to pgrp rather than pid in the ESRCH error description.

### **libc.a**

(PR-06809) - An inconsistency exists in the descriptions of the sys\_nerr variable in the /lib/libc.a library.

Resolution: sys\_nerr and sys\_errlist are declared as external in perror.c and initialized in errlst.c libtape.a

(PR-17195) - tpunmount does not recognize UNIX pathnames with multiple "/"s placed consecutively in it.

Resolution: The problem has been corrected. The handling of symbolic links in the root directory will now work as expected.

### **libwinlib.a**

(PR-12679) - Request that libwinlib be made aware of XTERM. Both syspic and opreq use libwinlib for cursor addressing and other screen features. Both don't look as 'graphical' as they could on an Xterminal with TERM=xterm[s].

Resolution: syspic(8) and opreq(1) will now have contiguous rather than dashed lines around test windows when run in an xterm.

### **lockf.3**

(PR-11378) - The man page for lockf should be changed to state that EACCESS is returned if the command F\_TLOCK or F\_TEST is used and the section is already locked by another process.

Resolution: The lockf man page now states that the F\_TLOCK command can cause the return of EACCESS.

### **longjmp.3**

(PR-20373) - The longjmp(3) man page fails to mention that a zero value can't be used.

Resolution: Clarified the man page to indicate what happens when longjmp(x,0) is called.

### **malloc.3**

(PR-17307) - From the man page of malloc(3): void \*calloc(size\_t nelem, size\_t elsize); int cfree(int \*ptr, unsigned int nelem, unsigned int elsize); In calloc, the function parameters are of the type size\_t, but in cfree they are unsigned int. They should be the same. Also the pointer in cfree should be void \* instead of int \*.

Resolution: The malloc.3 man page now uses the (void \*) and size\_t types where appropriate.

(PR-17307) - The man page for malloc should document that cfree is only available in -pcc and -ext modes of the libraries. In -ext mode it should note that it is available as an extension.

Resolution: The malloc.3 man page now notes that cfree() is only available in the backward compatible and extended modes of the compiler.

(PR-17308) - The man page for malloc does not describe the 'int' return value from the cfree function call.

Resolution: The malloc.3 man page has been updated to reflect the fact that cfree() is of type void.

(PR-17308) - The man page for malloc should document that calloc uses free to deallocate the memory acquired by calloc calls and that cfree is available in -ext mode as an extension.

Resolution: The malloc.3 man page now documents that both free and cfree can release memory allocated by calloc. The man page has also been changed to document that cfree is only available in -pcc and -ext modes of the C compiler.

## **math.h**

(PR-17393) - Please add the declarations for erf and erfc to /usr/include/math.h as a CONVEX extension in both -pcc and \_CONVEX\_SOURCE parts of this include.

Resolution: The declarations for erf and erfc have been added to math.h for both backward-compatible and extended modes of the CONVEX C compiler.

(PR-20527) - The arguments for functions ircvtr and rcvtir in math.h are declared as double where they should be declared as float.

Resolution: The declarations for ircvtr and rcvtir have been corrected in math.h.

## **nlist.3**

(PR-05882) - The code for nlist returns a value. The nlist man page says that it does not and that all entries will be zero if nlist fails.

Resolution: The nlist.3 man page now notes that nlist(3) returns -1 on error.

## **scandir**

(PR-19708, PR-19891) - The man page for scandir() needs to be updated to reflect how to use it in the different C compiler modes since it is not the same for all. Also, the definition of "namelist" needs to be corrected.

Resolution: Implemented the following changes: 1. corrected the synopsis for the POSIX conforming modes of the C compiler. 2. Noted the header file and data structure used by the backward compatible mode of the C compiler.

## **scanf**

(PR-20930) - Scanf and sscanf used to return the number of items assigned when EOF was encountered early. It no longer does this in -pcc mode; instead, it returns EOF (-1).

Resolution: The above problem has been fixed in -pcc mode of libc.

## **shypot**

(PR-21391) - Under ConvexOS V9.1, function shypot() returns wrong answers in -ext and correct answers in -pcc modes using cc4.1.

Resolution: Fixed in ConvexOS V10.0

## **sigsuspend.3**

(PR-16753) - The man page for sigsuspend(3) should document in which modes one can use this function (e.g., it is only available in -ext or -std modes).

Resolution: sigsuspend.3 now contains a note that sigsuspend() is only available in the extended and strict POSIX modes of CONVEX C.

## **sleep**

(PR-18674, PR-19047, PR-19358, PR-19882) - Sleep(3) should unblock SIGALRM before it sets the alarm. This will prevent applications from hanging if they call sleep(3) with SIGALRM blocked.

Resolution: sleep(3) now temporarily unblocks SIGALRM to prevent it from never returning. Previously, programs built in anything other than -pcc mode would never return from a sleep(3) call if SIGALRM was blocked.

## **stdio.h**

(PR-15616) - In stdio.h, fileno is prototyped as follows: extern int fileno(const FILE \*); According to P1003.1a / D4 10/23/89 the prototype should be: extern int fileno(FILE \*);

Resolution: The above change has been made to stdio.h.

## **strdup**

(PR-14181, PR-19097) - The V9.1 libc.a includes strdup (which is a good thing), but strdup is not documented in the man pages.

Resolution: strdup(3) has been added to the stringcpy.3 man page and definitions for strdup(3) have been added to /usr/include/string.h

## **strtod.3**

(PR-19380) - The man page for strtod(3) has several typos in discussing the return values and ranges for strtol and stroul.

Resolution: Man page fixed.

### **system**

(PR-18270, PR-19924) - The system(3) library call can reap the wrong children because it uses a raw wait() instead of a waitpid().

Resolution: system(3) now uses waitpid(2) rather than wait(2) so that it won't reap the wrong children.

### **system.3**

(PR-14542) - The man page for system(3) should have more information on its return value. Currently it has nothing, which is unacceptable.

Resolution: The system(3) man page now contains a pointer to the wait(2) man page to describe its return value.

(PR-21988) - In extended/ANSI compliant mode, system(3) returns the exit value of the command run, not the status returned by wait(2) as the man page indicates. Also, the man page should include a warning that if a SIGCHLD signal handler is installed, system(3) will always return 255 (in ANSI mode).

Resolution: Man page fixed.

### **ttyslot.3**

(PR-15352, PR-16182, PR-17383, PR-20457) - ttyslot() appears in the NAME line of the man page, but there is no synopsis nor description.

Resolution: The ttyname(3) man page now contains a SYNOPSIS and DESCRIPTION for ttyslot. Previously, ttyslot(3) appeared only in the NAME section.

### **vfprintf**

(PR-15984) - When vfprintf() is writing to a fifo and the fifo is opened O\_NONBLOCK; the fifo buffer is full (ie the reader is not reading the fifo); and a SIGALRM is sent to the process performing the vfprintf(), the process remains hung in the vfprintf() instead of being interrupted.

Resolution: The above problem is fixed.

---

## **Fixed library bugs (V10.1)**

This section lists bugs in the runtime libraries that are fixed in the V10.1 release.

### **getopt**

(PR-22575) - If argv[0] is set to NULL and getopt is used to parse command lines, if an invalid option or other error is encountered, getopt attempts to print argv[0] as the name of the program and dumps core. This doesn't seem to happen with System V.

Resolution: The getopt call has been changed to print out argv[0] only if the pointer is not NULL.

### **getpwnam**

(PR-09389, PR-18855, PR-25901) - There is no way to put user "nobody", which is uid=-2, into the passwd file, because getpw\*(\*) on it always fails. Entering it as an unsigned long (as in <pwd.h>) or as an unsigned short (as in <sys/types.h>) doesn't work either. This makes files written across NFS by root always come out saying they're user -2, not nobody.

Resolution: Added a cast to force consistent typing of uid values in getpwent.c. getpwuid now correctly handles user -2 = nobody.

### **getpwuid.3**

(PR-22669) - According to the getpwuid() man page, it is suppose to take uid\_t as an argument, yet the actual library code takes an 'int' for an argument and converts it to a 'short'. This causes uids greater then 32767 to not be found in the passwd file. Note: uid\_t is defined as an 'unsigned short'.

Resolution: getpwent.c has been modified so that uids are typed consistently. getpwuid for user "nobody" now works. Also, getpwuid.3 has been modified to reflect both sets of type definitions found in pwd.h.

### **ioctl.h**

(PR-20417) - The #define for MS\_ENABLE\_LOG in <sys/ioctl.h> is incorrect. It is currently: #define MS\_ENABLE\_LOG IOD\_ENABLE\_LOG but should be #define MS\_ENABLE\_LOG IOD\_ENABLE\_LOG

Resolution: Edited the file to correct the typo.

### **libc\_old\_p.a**

(PR-19556) - The following object files in libc\_old\_p.a were compiled in native mode on the V9.1 beta OS, preventing loading of programs compiled with -pcc -fi -p: back\_close.o back\_creat.o back\_filbuf.o back\_flbuf.o back\_getpid.o back\_kill.o back\_lprofil.o back\_mmap.o back\_mremap.o back\_sbrk.o back\_setsid.o back\_write.o

Resolution: All modules in the backwards compatible portion of libc are compiled for dual mode.

### **ndbm**

(PR-24176) - The results returned from dbm\_nextkey are inaccurate. Records are skipped in the database.

Resolution: dbm(3X) and ndbm(3) have been changed to provide the old dbm\_nextkey functionality. This is only provided in dbm - the new functionality still exists in ndbm.

### **nlist**

(PR-16286) - nlist can't handle duplicate symbols in a list. It fills the second and/or greater occurrence of a symbol with the address of zero. This should either be fixed or documented.

Resolution: nlist now searches for multiple occurrences of list items.

### **realpath**

(PR-18632) - realpath(3) fails given a relative path with a link.

Resolution: realpath now allows the user to request an absolute path by sending an absolute path. errno is also set correctly now.

### **restart.3**

(PR-19564) - The synopsis section for restart has a typo. It is: pid\_t restart(path, flags, signo) char \*path; int options; int signo; Where 'options' should be 'flags' or visa-versa.

Resolution: The correct value for the argument in question is "options". All pertinent references in restart.3 have been changed to reflect this.

### **sigsuspend.3**

(PR-23978) - There are numerous grammatical/spelling errors in the sigsuspend.3 man page: Execution is then suspended until the deliver of a signal... (delivery?) If the action is to handle the function, sigsuspend() returns (signal?) ...sigsuspend() returns with the signal mask restore to the set... (restored?)

Resolution: Numerous spelling/grammatical errors in the sigsuspend.3 man page have been fixed.

### **syslog**

(PR-25139) - If syslogd is not running and a process that does not have write access to /dev/console calls syslog(3) with a level that would normally be logged and with the LOG\_CONS option set, the process will eventually coredump.

Resolution: syslog now does the right thing without needing to fork.

### **time.h**

(PR-05209) - The data structure for timeout (in /usr/include/sys/time.h) represents time to be in seconds and microseconds. In actuality, timeout is controlled by the software timer mechanism, which currently has a granularity of 10 milliseconds.

Resolution: adjtime(2) and gettimeofday(2) now document that timeval is only accurate to 10 ms. The /usr/include/sys/time.h include file also includes a comment to that extent.

### **ttyslot.3**

(PR-05797) - ttyslot(3) should indicate that it reads the /etc/ttys file trying to match entries with the file name for devices in /dev. If the user has accidentally misnamed the two, ttyslot will fail.

Resolution: This was fixed in a previous release. The ttyslot(3) routines no longer look at /etc/ttys. It keys off the major and minor device numbers on a tty line.

### **waitpid.2**

(PR-23333) - The man page for waitpid does not indicate that this function is not available in -pcc or -str modes.

Resolution: Added a note to wait.2 indicating that waitpid is not available via the strictly conforming and backward-compatible libraries.

---

## Kernel restrictions (V10.1)

This section lists problem reports against the ConvexOS kernel that were closed for the release of ConvexOS V10.1. These reports either point out restrictions in the software or were not reproducible.

### iosw

(PR-13906) - When the /tmp directory on the spu is missing, the 'spu' command gives an error that denies the file on the spu disk exists. 'spucmd' says that there is a file or directory missing, but doesn't say which one. If /tmp is missing on the spu, the software should either create it or give a better error message.

Resolution: The restriction that the /tmp directory must exist on the SPU in order for spu(8) and spucmd(8) to work is now documented in both man pages.

### kio

(PR-12575) - If write(2) is called with a valid fd, but the buffer supplied is an invalid address (0, for example), -1 is returned and errno is set to EFAULT - which is correct. However, data is written to the file regardless of the error.

Resolution: The validity of the buffer was being checked as data was copied into the file (after disk space had been allocated). Simple checks were added to the read/write system calls to make sure the address of the buffer is at least in user space, but more sophisticated checks before it is actually time to copy the data would severely impact performance.

### sysc

(PR-19075) - When calling sigaction() to set the signal handler for SIGSTOP to SIG\_DFL the routine returns with EINVAL, but should succeed.

Resolution: The current action is OK according to the new (purple) POSIX book. The PCTS tests also pass as well.

---

## Utilities restrictions (V10.0)

This section lists problem reports against the ConvexOS Utilities that were closed for the release of ConvexOS V10.0. These reports either point out restrictions in the software or were not reproducible.

### cpio

(PR-13065, PR-19573, PR-13065, PR-19573) - cpio in pass-through mode is truncating a file under certain conditions. Workaround: cpio will now create directories listed in pass thru mode if the -d option is given. This indirectly fixes the bug referenced by this report.

### du

(PR-10004) - du /filename doesn't work when filename is a link. du /filename/ does work.

Resolution: This behaviour is documented in the man page.

### emacs

(PR-02103) - When using "goto-tag" (or "visit-function") to find a function, emacs quits looking as soon as it finds a name that matches the minimum character match, regardless of whether the identifier found has a longer (and therefore different) name than what was specified.

Resolution: This is proper operation for 'find-tag' according to "Info" within emacs. The argument to 'find-tag' need not be the whole tag name; it can be a substring of a tag name. However, there can be many tag names containing the substring you specify. Since 'find-tag' works by searching the text of the tag table, it finds the first tag in the table that the specified substring appears in. The way to find other tags that match the substring is to give 'find-tag' a numeric argument.

(PR-14754) - /usr/convex/emacs seems not to like a private termcap file, set with 'setenv TERMCAP pathname'.

Resolution: The old version of emacs, V18.51, was not reading locally defined termcap files (defined by a TERMCAP environment variable). The new version, V18.57 correctly reads the locally defined termcap.

## lpa

(PR-17749) - The precedence of -f over +[n] needs to be documented.

Resolution: Clarified the precedence of -f and +[n] in the man page.

## make

(PR-11397) - When ALONE and/or SERIAL macros are defined and the objects that need to be built use interactive commands, the output from these commands are not flushed, causing the user to believe that his process is hung. This only happens when using make with the -j option where j >= 2 or when MAKELIM is >= 2.

Resolution: This restriction is documented in the 'BUGS' section of the make.1 man page. A workaround would be to have any targets which are really useful to run in parallel as separate submakes. Invoke the top-level makefile with '-j 1'; then the top-level makefile can invoke sub-makefiles with -j greater than 1 to achieve parallelism.

## newst

(PR-16653) - newst does not allow the user to vary from the default 2048 inodes per cylinder group.

Resolution: The 'newst' utility does not have direct control over the number of inodes created. In general, the number of inodes can be increased by increasing the number of cylinder groups. This can be controlled by decreasing the number of cylinders per group (-c option).

## os\_cfg\_smg

(PR-16676) - In the new ConvexOS 9.0 "Managing ConvexOS: Configuration Guide", the tab for the section on disk quotas is spelled "Quotes". It needs to be changed to "Quotas".

Resolution: With release of ConvexOS V10.0, these books will be published as paperbacks, and tabs will no longer be used. Bug will not be fixed.

## tar

(PR-18106) - tar off a file that already exists on the disk; the mode on the file is not reset to correspond to the mode of the file on the tape.

Resolution: This is not a bug. tar normally extracts files using the umask of the current user. To extract a file and preserve it's mode, use the p option as described in the tar.1 man page.

## txt\_ed\_ug

(PR-07358) - On page 4-5 of the CONVEX Text Editor User's Guide, near the bottom of the page, there is an example of a sed command: sed -e "s/Con.\*rp/Convex Computer Corporation/g" At the end of the line there should be a file name such as 01.s used in the previous examples.

Resolution: Book is obsolete with release of ConvexOS V10.0

## verify

(PR-17090) - The 'system' verify database that Convex ships contains the following entry for /usr/lib/crontab: system\_X9.0.0.4:crontab:644:root:bin: Having world read access to root's .crontab can be a security risk. The mode should be set to 600.

Resolution: The advantages of a publicly readable crontab outweigh the disadvantages, so the default mode will be left as it is. Individual system managers may decide to change this, however, and cron will run properly with a mode of 600.

## adbccu.8

(PR-08927) - The description of the "i" format specifier in the adbccu(8) man page is in Print as PDP11 instructions "PDP11" should be replaced by "680x0" and a modifier should be inserted indicating that "680x0" is actually '68000' for IOP and HSP type CCU's and '68020' for VIOP type CCU's."

Resolution: Fixed as part of clever project which included restructuring of the adbccu tool.

(PR-13959) - The -C switch is not documented. -C is used for controller core files. The register display for controller core files is incorrect if this switch is not used.

Resolution: Fixed in ConvexOS V10.0. Many more command line options are documented therein as well.

---

## Utilities restrictions (V10.1)

This section lists problem reports against the ConvexOS Utilities that were closed for the release of ConvexOS V10.1. These reports either point out restrictions in the software or were not reproducible.

### cpio

(PR-23343) - 'cpio' gets rid of the leading slash on absolute pathnames.

Resolution: cpio deliberately strips off the leading slash for absolute pathnames. This is done to prevent the destruction of any essential files such as /etc/rc or /etc/passwd. The man page states cpio will restore a file in the current directory or in a level below it. Therefore, to restore a cpio archive with the paths in it to be treated correctly, the user must cd to / and then restore the archive.

### csH

(PR-06527, PR-23652) - The csH program returns a bad exit status if the reading process on a pipe terminates before the writing process. It would be useful if the exit status of the last command were returned instead.

Workaround: Convert the problematic scripts to the Bourne shell.

### ctar

(PR-16801) - The r option of ctar does not work.

Resolution: The documentation and the usage statement now show that the "r" option is no longer supported for ctar.

### diction

(PR-22097) - diction should check for read/write failures and call perror if there was an error.

Resolution: Since deroff is used to filter the input to the actual diction code, no changes were necessary.

### diskuse

(PR-07534, PR-15491) - When diskuse -d / is executed on a machine with NFS, the following error occurs: diskuse: cannot opendir ". " If the same command is issued on a system that is not running NFS, diskuse -d / will run to completion.

Resolution: This occurs on NFS partitions exported without root or anon=root access where the directory is mode 770. Since filesystem export restrictions aren't exported chdir() will succeed if the caller is root. However, once this is done, any operations such as getwd(), chdir('.'), and statfs() fail. Since diskuse does not keep track of its current directory, it can't return to a sane location and continue. To work around this problem use diskuse -i or export the filesystems with root access to your machine.

(PR-24079) - Running the 'diskuse' utility as it's described in the Operations guide returns a clutch of 'statfs' error messages and leaves an empty output file.

Resolution: No changes were made for this bug. Diskuse's man page has been modified to better describe what diskuse considers fatal errors.

### intro.5

(PR-20682) - ConvexOS Man Pages for Programmers is missing the introduction page for section 5 ( intro(5) ), file formats.

Resolution: The intro.5 man page is not "missing." It does not exist in BSD man pages, and thus could not be ported to CONVEX. Actually this section contains such a wide variety of information that it is pretty well summarized by the section cover sheet: Section 5, File formats.

### ln.1

(PR-23612) - The usage message for ln(1) mentions a "-c" option, apparently having something to do with warps and/or conditional links. This option is not mentioned on the ln.1 man page, and it should be.

Resolution: ln only prints the usage message about the -c option if warps have been enabled on the system. Since warps are unsupported, man pages do not show this option.

### login

(PR-23996) - Fully qualified domain names are getting truncated to 16 chars.

Resolution: The utmp structure has hard-coded array sizes in it. Changing this include will have a large ripple effect. The 16 character limit on hostname logging is a restriction.

## **login/sendmail**

(PR-22853) - We (in japan -09:00) set "JST-09:00" in TZ environment variable to print correct date as follows. % date Wed Nov 13 21:15:52 JST 1991 Because standard UNIX timezone including ConvexOS does not support Japanese standard time (GMT+09:00). The only correct way for us to use is with TZ variable.(TZ=JST-09:00) Because tzset() reads TZ variable, however some utilities cannot use TZ variable. /bin/login and /usr/lib/sendmail for example. /usr/lib/sendmail unsets TZ variable and /bni/login cannot set TZ.

Resolution: This requires improvements to the time family of runtime library routines. A bug report has been filed.

## **lorder**

(PR-22163) - lorder should check for read/write failures and call perror if there was an error.

Resolution: Since lorder is implemented as a shell script depending upon other utilities, it cannot be fixed in this case.

## **ls**

(PR-13702) - ls -l does not properly display users with negative uids. If a user's uid is negative, the negative uid is displayed in the user field.

Resolution: Starting with V10.0, uids are unsigned shorts, so there can never be a negative uid.

## **mail**

(PR-11972) - /bin/mail cannot handle null characters.

Resolution: This is a restriction. C programs (which make up most of Unix) cannot handle null characters, since a null is the end of string marker for C string handling.

## **man**

(PR-22124) - man should check for read/write failures and call perror if there was an error.

Resolution: Man is simply a perl script; files are run through either zcat or cat before processing.

## **style**

(PR-22113) - style should check for read/write failures and call perror if there was an error.

Resolution: Because deroff is used to filter the input to the actual style code, no changes were necessary.

## **su**

(PR-22148) - su should check for read/write failures and call perror if there was an error.

Resolution: Su cannot be modified to fix this behavior: it simply execs the appropriate shell and depends upon that to run the desired command.

## **verify**

(PR-23282, PR-24821, PR-24822) - The verify databases are inaccurate and verify generates many errors when running it after an upgrade to 10.0.

Resolution: verify output must be interpreted since files may change their contents, owner, group, or mode on a "live" system. The verify databases from the distribution tapes accurately reflect the contents of the tape but, due to install script actions or just system use, the files on a system may be different than those on the tapes. For example, /etc/rc is backed up before an install by the script and then moved back to /etc/rc. In this case, /etc/rc may show up as an inconsistency after an upgrade.

## **warps**

(PR-23611) - The /etc/warps file is not documented in the ConvexOS Man Pages.

Resolution: Warps are unsupported and, therefore, undocumented.

---

## Library restrictions (V10.0)

This section lists problem reports against the runtime libraries that were closed for the release of ConvexOS V10.0. These reports either point out restrictions in the software or were not reproducible.

### libc.a

(PR-05178) - System V compatible routines are not documented anywhere easy to find.

Resolution: Since these routines are only available for internal use, CONVEX will not document them. The only exception is `tmpnam`, which is a part of ANSI C. `tmpnam` does have a man page.

### malloc.3

(PR-17310) - The `malloc(3)` man page does not describe very well what the `cfree()` function and its parameters do. It should describe what the difference between `free()` and `cfree()` is. It should also describe what the `nelem` and `elsize` parameters do.

Resolution: Since `cfree` is obsolete and is documented in the new man page as such, there is no need to document the arguments to it.

### mset.3

(PR-06970) - `MAP_HASSEMAPHORE` exists in `/usr/include/sys/mman.h`, not `/usr/include/sys/types.h` as implied in `mset(3)`.

Resolution: The `mset.3` man page points the user to both the `mmap(2)` function and the `mmap.2` man page. This should be sufficient to let the user know that the definitions mentioned are explained there.

---

## Library restrictions (V10.1)

This section lists problem reports against the runtime libraries that were closed for the release of ConvexOS V10.1. These reports either point out restrictions in the software or were not reproducible.

### dir.5

(PR-21922) - The `dir(5)` man page should shift the current description of `<sys/dir.h>` into a Backward Compatible section, and include the `<dirent.h>` description in the first part of the `dir(5)` man page.

Resolution: `dir.5` talks about format of directories. Though operations on directories are now defined in two different ways, the directory structure remains the same.

---

## Known kernel bugs (V10.1)

This section lists problems with the ConvexOS kernel that are known at this time.

### SPU SMG

(PR-24150) - Chapter 5 page 34 describes the reboot command as being able to reboot the system to multiuser. This is not true if the system was booted single user from the spu. The reboot command and shutdown -r both take the user back to the mode that was last booted from the spu prompt.

### arch

(PR-25377) - Files just seem to be randomly corrupted and then get better again after a while.

### asio

(PR-04079) - Async I/O behaves differently than buffered I/O. When using a SIGINT/SIGTERM handler that reopens `stdin` as `/dev/null` and then returns, an EOF is encountered on the next read of `stdin` and the program terminates gracefully when using buffered I/O. When using async I/O, the read returns a -1 indicating an I/O error.

(PR-26689) - Users can bypass disk quotas when asynchronous I/O is used.

### boot

(PR-17113) - During long output to the console, if "NO SCROLL" is used, the console becomes hung. When the number of characters sent to the console on a single write was set to 2, the problem disappeared. This fix should be implemented in the `/mnt/os/boot` script.

(PR-16870) - If the system has a `/etc/profile` with a script that under certain conditions will execute "kill -9 0" the system will never go into single user mode.

## **cnvx**

(PR-19342) - When `/etc/faillog` is logging to `/usr/adm/failure_log`, any perfectly valid `man` or `syspic` command puts an error into the file. This happens even when the file ownership, group, and permissions are correct.

(PR-20089) - Issue the command `spucmd tail -f /mnt/errlog` and wait for the terminal to time out. `spuio` will crash and leave the `tail -f` running on the `spu`. Everything can be fixed by going to the console, killing the `tail` and restarting `spuio`.

(PR-18597, PR-21270, PR-22405, PR-25042) - Something in the kernel interface for the debuggers periodically causes the debug process to hang. This has occurred over several releases of the OS and has been reportedly seen in `csd`, `CXdb`, and `a.db`.

## **cnxos\_smg**

(PR-26557) - In the CONVEX SPU System Manager Guide, 1st Edition, page 8, last paragraph: This paragraph has nothing to do with the `"/ioconfig file"`. Please completely remove this paragraph.

## **cons**

(PR-13672) - The system console designated to receive error messages is a single point of failure. If for some reason the console is disabled, (e.g. power failure, loose serial connection, CTRL-S issued by operator) the SPU's message buffer becomes full causing a system hang. Operations must be allowed to continue. No important messages can be lost and must be recorded.

## **crashdump**

(PR-16222) - `crashdump` does not detect tape errors on a 9-track tape drive.

## **exec**

(PR-13044) - When `exec` is called with a non-executable program as an argument, the program stops and prints the message "Trace/BPT trap". It should fail since the program is not executable and return -1 (according to the man page).

## **iosw**

(PR-18365) - If all references to a certain device are removed from the `sysgen` configuration file and a new kernel built, the kernel will still contain the device driver for the removed devices.

## **kern**

(PR-16678, PR-17621) - On systems that are NOT networked, system time gains approximately 2 minutes per day.

(PR-17358) - The Australian time zone daylight savings rule (AEST/AEDT) does not work. When ConvexOS is installed and this daylight savings algorithm is chosen, the SPU correctly switches over to AEDT but the JP remains an hour slow at AEST. The times are correct, but the time zone is not, which makes the JP seem slow.

(PR-19474) - `swapstress` causes a `vgetstack` kernel panic.

(PR-20530, PR-20533) - Crash due to an unresolved kernel PTE violation.

(PR-16268) - If `COVUEdt` is used on the console and the left/right arrow keys are held down to move the cursor backward/forward, incorrect characters are put in the file (something like: [D in various places for the left arrow key and [C for the right arrow key). Similar problems exist for `vi` and `[t]csh` on the console.

(PR-18977) - The kernel symbols presented by `knlist()` are not documented, and are pretty incomplete. Please add `ufs_vnodeops` and `nfs_vnodeops` to the `ksyms_ents.h` file and document the kernel symbols.

## **kio**

(PR-20971, PR-20971) - If a system with a stripe with one failed disk crashes, the data on that stripe can become corrupt.

Workaround: Systems should not use failed mode as normal mode of operation.

(PR-24444, PR-26635) - A system that is low on memory and tries to swap or page to a redundant stripe may end up in a hung state.

## **krpc**

(PR-16818) - Running the `acct` test in either the `os/eventd/order/nfs` suite or the `os/eventd/order/ufs` suite causes the machine to go into a state where no process may exit.

## **mremap.2**

(PR-26305) - The mremap.2 man page does not document EFAULT as a valid error return.

## **os\_inst**

(PR-2540) -

Installing ConvexOS V10.0.3 on a C3400 fails if media is DAT.

Workaround: Manually extract the files from the DAT tape and transfer them to a supported tape device, e.g. 1/2" round tape. Modification of the OS install script is an alternative if DAT is the only device available.

## **pm**

(PR-12370) - The CPU time hard limit is ignored by the kernel. A process can ignore the SIGXCPU signal and run forever, no matter what its hard limit is. Once a process exceeds its hard CPU limit it should be terminated. Also, if a program sets up a signal handler for SIGXCPU and then exceeds its hard limit it will receive SIGXCPU continuously. It should receive the SIGXCPU once, after it exceeds its soft limit.

(PR-20331) - ConvexOS: FATAL ERROR: (pm,8516) trap: unresolved kernel pte violation The apparent cause was a failure in the kernremap function. It somehow managed to return an invalid address.

(PR-20643) - System crashed with crash code (pm, 8516), "trap: unresolved kernel pte violation". The panic occurred in the NFS code due to a duplicate allocation of cvx\_malloc() memory.

(PR-25649, PR-25979) - The accounting file (/usr/adm/acct) gets corrupted. /usr is a 14 way non-redundant stripe. Accounting records are truncated on block boundaries. The filesystem is a 16k/2k block/frag.

## **scfs**

(PR-20977) - When directly accessing stripes via the block interface, performance doesn't scale up as the size of the I/O transfer increases. This requires the use of obscure async I/O techniques to get high performance. Performance should be more predictable when accessing stripes via the block interface, and should scale up with the width of the stripe and the size of each individual transfer.

## **schd**

(PR-22193) - Shell processes that start up other long running cpu intensive programs should go to an idle state after 20 seconds of doing nothing. Instead they are stuck in disk wait, causing share to malfunction.

## **semaphore**

(PR-24314, PR-24504, PR-24773) - A tape drive will become unusable with the error message "mount device busy".

Workaround: This is a known semaphore problem in 9.1 kernel. There is a fix program that will free up the semaphore available from SIS.

## **sgen**

(PR-07681) - sysgen does not flag an unsupported disk type as an error.

## **shar**

(PR-25124, PR-26839) - setlimits(3) recursively calls itself to setup kernel lnodes for the desired uid as well as all parent (and grandparent groups) back to the "root" group. Since limits(2) is called for each group in the hierarchy, the calling process is momentarily attached to the group lnode. At this point, the process will no longer receive the CPU time required to finish the recursive call to attach itself to the actual user's lnode.

## **sync**

(PR-21105) - Looks like head one and head two have deadlocked the system contending over a semaphore. The other possibility is that someone has previously set rws\_write in the semaphore structure, and these two guys are stuck in busy loops trying to get it. This would be unfortunate, since there is no way for the process holding the lock to reawaken and release it.

(PR-24611) - /usr/include/sync/sem.h includes sync/ui\_sema\_debug.h more than once.

## sysc

(PR-15666) - In the test `os/syscalls/comm/send/send11`, the test is able to send data when it should be denied. Also, when trying to get the msg size overflow error, it gets a no buffer space available error instead.

(PR-23971) - The `adjtime(2)` man page says that the call fails when either pointer argument is bad. The call actually silently ignores a bad pointer, i.e., it succeeds, returning zero - when the second (old `tp`) parameter is invalid.

(PR-25949) - The system call `rlimit()` does not appear to have the desired effect upon paging.

## tty

(PR-16963) - Under the POSIX tty driver using the termio routines, turning off `IEXTEN` causes the tty driver to no longer honor the output post processing request of mapping newline to carriage-return/newline. Instead, it just echos the newline.

(PR-17053) - When using the old tty line discipline, setting tty attributes using the `TIOCSETP ioctl` command with any arguments causes the `ECHOCTL` bit (in the `c_lflag`) to be set in the tty's termios structure.

## ufs

(PR-19291, PR-24741) - Sometimes when booting, the `nfsd` daemons do not start. The `if` statement in the `/etc/rc.local` does not evaluate correctly. This causes the `xtab` to be left in an old and outdated state which is confusing once the system is up, i.e. it appears NFS mounts are done but they are not.

(PR-21129) - A process pended in a system call because it is waiting in a `dmon` callout will see the system call fail with `errno` set to `EINTR` after being suspended with a `SIGTSTP` and resumed with a `SIGCONT`.

(PR-24593) - When using `open(2)` to create a file in a directory whose group is one that the user is not a member, the file is created with that group, not the user's.

(PR-25255) - System crashed with a pte violation. Problem appears to be a corrupted inode free list.

(PR-25335) - The system hangs with no error messages. Problem appears to be a corrupted inode free list.

(PR-23501) - When `realloccg` is called with parameter `osize==0`, the function will skip `bread()` calls that assign values to variables (`bp | obp`). The `realloccg` will then use these un-initialized pointers.

## vfs

(PR-19990) - System crashed with (ufs,9932) `free: freeing free frag`. Delayed write buffers get sync'ed asynchronously, and nothing checks for an error return status when the write completes. If a failure occurs, the delayed write flag should be turned back on so the system will retry.

(PR-21750) - Measurements of redundant disk performance on a C240 (2 IDC controllers, 40 IPI disks, 512M memory), indicate that redundant stripe performance can substantially degrade when writing out a stream of data larger than about 256M. This only occurs on systems with large amounts of memory that expect to do large sequential writes.

(PR-25099) - Using `fcntl()` to provide a read-only lock on an NFS mounted filesystem fails with `EACCESS`.

## vm

(PR-13358) - The swapper ignores IO errors.

(PR-22384, PR-23478, PR-23994, PR-24856, PR-24867, PR-26144) - The last modified time field on several executables is updated at seemingly random times.

---

## Known utilities bugs (V10.1)

This section lists problems with the ConvexOS Utilities that are known at this time.

### `/usr/etc/upgrade`

(PR-24552, PR-24553, PR-25028, PR-25151) - After an "Initial install" and booting Multi-user the installation notes instruct the user to run the "upgrade" script. Doing so causes the script to complain about the mode for `/tmp` which was `777` (there's a `chmod 777 /tmp` on page 32!) and gripe about `/etc/group` having an id of 0 when it should be 12? There is no group 12 in the group file!

## accounting

(PR-23240) - To see if the monthly accounting needs to occur, the current month(only) is compared against the value given in lastacct(with no respect for the year). The daily accounting comparison suffers from a similar problem.

(PR-23701) - The accounting system seems to have placed the wrong login ID number on at least three of the Christmas day accounting records and probably did so six times.

## acm

(PR-13642) - The initial "welcome" message for SOME modems ALWAYS has trash in it. The calling modem may disconnect before the user has a chance to log in. The message has the appearance: Convxxxxxx(simulated trash)xxxxxhelix.nih.gov) login: The start and end of the trash varies by a few characters.

## adb

(PR-09290) - adb displays incorrect instruction parameters with the ?i format.

(PR-15329) - When making changes to a core file (and probably an object file as well), adb displays the change confirmation in hex regardless of the current default radix. It should honor the default output radix setting.

(PR-23138) - The current version of adb does not understand the core image of an executable which has mapped more than 64 memory regions. It ignores all regions after the 64th, which unfortunately normally includes the stack.

(PR-24184) - adb does not single step through an 'rtn' instruction correctly on a C3800.

(PR-25724) - "adb" reports "invalid SDRs" when run on the kernel (using -k option) of a large memory (normally 4GB) system or a crashdump from a large memory system.

(PR-26542) - When using the '\$?', adb prints the version number using signed rather than unsigned numbers. Hence, components of the version number which are greater than 127 are printed as negative numbers.

(PR-26643) - 'adb' does not know the following C3 instructions. eri\_idleSk eri\_rtn movBE(Sj),Sk mov Sk,BE(Sj) pref pmod

## ansidaemon

(PR-12261) - ASIO doesn't work with ANSI labeled tapes. The problem is related to the use of RPC between the kernel and ansidaemon. The ncwrite\_1() calls are initially sent to ansidaemon in the correct order, but RPC retries can cause: 1. extra records on the tape (if the RPC reply is dropped) 2. records out of order (if the RPC call is dropped) Remote tape has the same problems if ASIO is used.

(PR-12690) - The pattach() sequences (used to extract the user's data to write to tape and to write tape data into the user's buffer) in ansidaemon are inadequate. pattach() will likely break if the buffer being read/written is in thread memory, because the thread ID to use (the one that made the I/O syscall) is not passed along to ansidaemon to use in the pattach. This bug fix will also require changes to the kernel's "nc" device code that sends out the I/O requests to the ansidaemon (to pass tid along).

(PR-24539, PR-24776) - It is not possible to append to end of existing files on labeled tapes. The MTBSR and MTBSF commands return EINVAL.

(PR-26399) - ansidaemon does not properly position the tape after a rewind when the ansi label does not have the HDR2/EOF2 fields.

## ansitar

(PR-14120) - Use of the D option and a line length greater than 255 (man page says length 255) causes ansitar to abort with a core dump. Also, Ansi\* files are not always cleaned up in /tmp. ansitar shouldn't core dump and should clean up on all aborts.

## arch

(PR-25797) - 'arch' lives in /usr/convex. This somewhat defeats the purpose of 'arch' and causes scripts to blow up. It's a bit unreasonable to expect users to always have /usr/convex in their paths; after all, 'arch' is used to find out what kind of machine the user is running on (especially scripts) so that the user and script can act accordingly.

## autoseq

(PR-11648) - autoseq has a static limit on the length of the sequence list.

## **avail**

(PR-18460, PR-18537) - /usr/spool/convex/avail occasionally will not record the average load and average users in the availlog file even though the system is up and running.

(PR-21951) - After the 10.0 upgrade, the following messages from avail appear: spu file /mnt/usr/scn/cop.mem: No such file or directory spu file /mnt/usr/lib/softlog: No such file or directory

(PR-24167) - avail, the system availability reporting system, has as its default mailing address set to convex!avail. This address should be fully qualified. Why not have the default avail@convex.com?

## **awk**

(PR-25820) - The functions sin(), and cos() from 'awk' return the wrong results. Either these functions should not be there and the USER is returned an error message about that, or the functions can be called and return the correct results. If these functions are not supposed to be there, they should be pulled out and the documentation should be changed.

## **bc**

(PR-10064) - bc will sometimes output a backslash, newline, newline, digits, which results in a blank line.

## **bill**

(PR-07755) - There are problems with the way su interacts with bill in setting up the current activity id.

## **bsearch.3**

(PR-25140) - The SYNOPSIS in the 'bsearch' MAN page incorrectly states that the 'bsearch' function returns void. The bsearch function in fact returns a pointer-to-void.

## **calendar.1**

(PR-26187) - The calendar man page states that 12/7 is an acceptable date for December 7th, but not 7/12. 7/12 is a perfectly acceptable date for July 12th. The wording is misleading, and should be changed.

## **catman**

(PR-21948) - catman -p prints to stderr instead of stdout.

## **catman.8**

(PR-25945) - Catman has undocumented options, -M for instance.

## **chfn**

(PR-20243) - chfn allows an entry in the password file that is too long, thus causing problems for mkpasswd and vipw.

## **chkpnt**

(PR-19686) - Performing a 'chkpnt -nFv' on a process that holds a non-checkpointable resource (e.g. a socket) will produce output to the effect that the process is checkpointable. This can be confusing, because the process is not checkpointable.

(PR-19912) - chkpnt(1) will occasionally hang while checkpointing a process.

(PR-17235) - The restart command hangs when attempting to restart checkpointed jobs.

(PR-23243, PR-23261) - When chkpnt'ing and restarting a process which is lseeked into a large file, the restarted process gets(or uses) a 32 bit version of the offset into the file. A 64 bit offset is necessary.

(PR-26050) - When chkpnt is invoked in interactive mode, and the 'P' or 'p' options are used to display information about the process, the file size and current file position (for regular files) is wrong.

(PR-25839) - chkpnt generates error when user attempts to checkpoint a process that writes to an NFS mounted file.

## **ci**

(PR-14391, PR-23237) - If a file is ci'ed which does not have a newline on the last line then co is unable to retrieve any earlier versions of the file. However, the current version is available.

## **comsat**

(PR-24260) - The in.comsat daemon displays mail with no filtering of possible terminal programming characters.

## **convst**

(PR-23046) - If one attempts to run convst on a stripecap file that is already in VVM format, the user receives an error and nothing is written to the file.

## **cp**

(PR-18350) - With a symbolic link in the current directory that points to the current directory (newname -> .) a cp -r fails. A cp -pr produced ./newname/newname/... in the new directory structure.

(PR-25070) - cp fails when copying files to a 512 byte block file system. The files are created on the destination file system but do not contain any data. An ls -l shows the file size to be 0.

(PR-25333) - In some cases, 'cp -z' will fail to copy all of the source files' data.

(PR-25426) - When using the /bin/cp utility with a UniTree file system, the length of the created files was zero. The first read operation is then done with a zero length buffer, and completes immediately with no data transferred.

(PR-26180) - 'cp' returns a bogus error message when copying files to fileb when filling up a partition.

(PR-26640) - When a file is copied to an NFS mounted disk handled by Unitree, '/bin/cp' truncates the file to zero length.

## **cpio**

(PR-23665, PR-24889) - Along with the -p option, the -l option of cpio is supposed to link the files, if possible, rather than copy them. It doesn't.

## **cpr**

(PR-13339) - 'cpr -f [function]' should not print out extra formfeeds for functions that it does not print.

(PR-13466) - cpr can get confused about what constitutes a function, causing it to print things that are not functions in the table of contents.

## **cpuconf**

(PR-14726) - On one occasion, 'cpuconf -d all' disabled both cpu's on a C220; cpuconf should never allow one to disable all cpu's.

## **crashdump**

(PR-23299) - If a hard tape error occurs during a crashdump, both the tape containing the error, and the next tape are unreadable by crashread.

(PR-25816) - When doing a crashdump with the '-S' switch to select a tape drive other than the default, a menu comes up for selecting the drive with no commonly recognizable information for selecting the proper drive. There is a listing of controller and position, however this information is obviously meant for someone with a "hardware" background and means nothing to the average operator and or sysadmin.

## **crashread**

(PR-08122) - crashread tries to open the file mm.core twice. This doesn't work so well when the user's umask is 222 or anything that doesn't give write permission on the file which is created the first time around. crashread should keep the file open and only close it when it is finished.

## **cron**

(PR-21550) - cron's default path is: PATH=:/usr/local/bin:/usr/ucb:/bin:/usr/bin:/usr/convex which means that the current directory is searched first (BOURNE-Shell !!). Setting a new path (not starting with a colon) in /.cronrc causes the script not to be executed. Setting a path in ~/.cronrc works fine for normal users.

(PR-25508) - The MAN page for 'cron' states that /.crontab is a link to /usr/lib/crontab. After the installation of ConvexOS 10.0, "cron" sent an e-mail message to "root" complaining that root's .crontab file was writeable by others and that it would be ignored until fixed. This behaviour is contradictory to the MAN page and to the 'verify' database entry for /.crontab.

(PR-25850) - There's a relatively new feature of 'cron' that reports when a user does not own his .crontab file. There appears to be potential for trouble with respect to daemon, anon, etc., whose shared \$HOME is /. All are sharing the /.crontab but only one of them can own it.

## csch

(PR-07353) - It is not possible to inhibit pattern matching in csh switch statements.

(PR-08727) - csh considers its \$status variable to be a signed integer, but exit statuses are really unsigned chars, as detailed in <sys/wait.h>.

(PR-09071) - When a command extends over more than one line and the <return> sequence is used to continue the command; filename completion no longer works. The problem occurs when the filename begins in the first column after the return.

(PR-09945) - Using "nice" within the csh gives unexpected results.

(PR-12550) - csh and sh do not disassociate themselves from the controlling tty or ignore interrupts when invoked with the "-c" option (e.g. csh -cf emacs). This causes a problem when the child process is interactive and is interrupted by the user. The shell also receives the signal and exits (after waiting appropriately for the child process) with a bogus status that has nothing to do with the exit status of the child process. ksh gets around this problem entirely by executing the specified command without forking.

(PR-14615) - Here are a bunch of csh bugs.

(PR-10235) - If a foreach loop is embedded in a case block inside a switch statement, the "breaksw" statement is treated like a "break" statement and only breaks the current loop of the foreach statement, not the case.

(PR-14620) - Variable names created with "set" are distinct only in the first 18 characters. Names longer than 18 characters are effectively truncated when referenced (or cause a "Variable syntax" error).

(PR-15202) - The csh variable "time" is not always respected. When executing a backquoted command the internal timing gets confused.

(PR-15390) - In a csh or sh script, an illegal option passed to a shell builtin causes the whole script to be aborted.

(PR-13321) - Builtin command "repeat" doesn't recognize aliases.

(PR-15673) - csh does not handle escaped quotes, causing a "variable syntax" error.

(PR-14209) - When stopping a job with a kill -STOP both 'ps' and 'jobs' report it as being stopped. A kill -CONT to the stopped process causes ps to report it as running, which is correct. 'jobs' will report the state of the process is still "stopped".

(PR-16517, PR-16517) - When using the "if-then-else-endif" construct, and nesting them, if the first conditional fails the else of the second conditional is evaluated.

Workaround: Make sure you delimit the keywords with spaces and the script will work. That is, use "if (" instead of "if(" and " then" instead of ")then".

(PR-20199) - Cannot use pipes with csh builtins.

(PR-20175) - Cannot use job control within a csh shell script to terminate a background job.

(PR-20272) - When executing a csh script, the meaning of the -v (verbose) and -x (echo) switches are reversed.

(PR-20703) - In resolving a ~user syntax in a .cshrc, the csh may leave an open file descriptor (socket). Specifically, if the current machine is a YP client, the socket is left open to the YP server. The shell and its children may then be uncheckpointable.

(PR-20910) - If you invoke a c-shell as a subshell, then the ps command will show that process command as -sh, rather than csh.

(PR-21547) - Using the csh from X10.0.0.1 causes problems with tip. A .tiprc file that contains the following lines will not work with this csh. record=~ /tip/install\$\$ beautify script=true verbose This file works just fine with V9.1 csh. The problem is with the record file. It seems that the "\$\$" are not being expanded to the PID.

(PR-21576) - When editing a line that contains a real tab character, insertions before the location of the tab character in the line will corrupt the display.

Workaround: Use the replot key (usually ^R in emacs mode) to redisplay the command line. It will be correct.

(PR-21863) - When you add a new file (with execute permission) to the search path (i.e., \$PATH), the builtin command "whence" will show the new file. Attempting to execute this new file will be unsuccessful. It will not execute until the builtin command "rehash" is executed. The "whence" command should show exactly what command would be executed. It should use the same hash table algorithm used to fork and exec commands.

(PR-21968) - csh, when running large, long running shell scripts, will occasionally fail with a core dump in the internal malloc.

(PR-22455) - If the environmental variable path is unset, a ^D for filename completion will cause a Bus error(coredump).

(PR-21862) - tcsh does not follow documentation concerning history references given without an event specification following a previous history reference on same line.

(PR-22601) - csh does not know about the erase2 stty control. It is possible to set erase2 while another process is running on the tty, but once control returns to csh (e.g. ^Z) erase2 is cleared. It seems that csh is clearing erase2 as part of restoring the tty mode after a command finishes.

(PR-22909) - Observations regarding tcsh vs. csh V9.1: 1. Many tcsh vi key bindings do not work, notably <Esc>, which evidently fails to invoke vi-cmd-mode at all. 2. Under emacs key bindings only, tcsh fumbles the werase character, ^W, generally erasing the full command line instead of the last word. Although the binding of ^W to kill-region is documented in tcsh(1) and is compatible with emacs in some sense, the effect is not

(PR-23075) - csh doesn't allow the user to set terminal modes. Apparently it has a saved set of modes which it restores frequently, perhaps before every prompt.

(PR-23279) - If a user attempts to change to a directory using a relative pathname, and the user does not have permission to read the directory, the wrong error message is displayed.

(PR-23273) - Attempting to continue a substituted command across lines is unreliable. It may work or may not, depending upon where in the command pipeline the line is split.

(PR-23212) - Using "/"(without quotes) in a numeric compare(==) is now a divide by 0.

(PR-23303, PR-23990) - If a user has the autologout enabled and the (pseudo)port gets the ALRM signal, the user who gets that port the next time will get the settings of the previous user (rows and columns).

(PR-23258) - The shell built-in command 'time' fails when you pipe to it.

(PR-23589) - If one uses a <backslash><exclamation mark> sequence in a command to the shell, it is stored in .history without the backslash, which is fine, but when retrieving the command via the history mechanism, the bang is no longer escaped.

(PR-24242, PR-24811, PR-25840) - If either /etc/logout or ~/.logout references an undefined variable then the logout fails and the user remains logged on. This means that /etc/logout has to check the existence of every variable it references.

(PR-24859) - Piping input to a 'csh builtin' produces peculiar diagnostics.

(PR-24901) - 'whence' returns incorrect pathnames when a full path is given to it.

(PR-25085) - Executing an object module returns the error: :Exec format error. Wrong Architecture This message is very misleading.

(PR-25126) - When using the !:gs/... form of command line edit, only the first occurrence of the string to be replaced is replaced.

(PR-25374) - Although the shell allows a user to setenv foo/bar, it won't let a user unsetenv the variable, i.e. environment variables with an embedded "/" cannot be unsetenv'd.

(PR-25431) - When csh performs << redirection, it writes a file to /tmp. When /tmp is full, it quietly passes the 0 length file to the command expecting << input. It should produce an error or warning message in the very least.

(PR-25561) - The csh leaves file descriptor 15 open when it starts up a new process. It should only leave file descriptors 0, 1, and 2 open.

(PR-26135) - When running utilities which do not possess read access, faillogon reports an access violation by csh.

(PR-26204) - 'csh' is prone to corrupting the 'ty's control characters (eg suspend, eof, etc) in certain situations.

(PR-26592) - The builtin function time returns the wrong value for maximum working set size. The value returned is actually one-eighth the actual value as reported by ps and "syspic -p proc."

(PR-26814) - If a USER has an error in his ~/.cshrc file, the /etc/login file is not processed and billing accounts are not captured.

## ctags

(PR-23399) - With some source code from a 3rd party vendor, ctags returns entries that do not permit location of tags in the source file. The problem is the handling of the white space in front of the function name.

## df

(PR-25621) - df will exit with status == 1 when NFS servers don't respond, even if the (NFS) filesystem being checked is not from a down NFS server.

(PR-25894) - The usage line for `df` (printed when an invalid parameter is supplied) does not mention the `"-a"` option.

## **dump**

(PR-14245) - The backup utilities (`tar`, `dump`) do not have the facilities to verify that data written to the tape was written correctly.

(PR-24834) - When performing dumps to labeled tapes, `dump` warns: Warning... Asynchronous i/o capability not available on this system.

(PR-25999, PR-26169, PR-26389) - During a dump of a striped filesystem, the `/mnt/errlog` fills with `"ststrategy: request past end of device..."` errors. It appears that `dump` is requesting bogus block numbers from the raw device.

(PR-26333) - Doing an `'rdump'` on labelled tapes returns: Invalid Argument message.

(PR-26590, PR-26590) - `dump` uses the `-E` option but `rdump` (a link to `dump`) ignores this option.

Workaround: If dumping to a remote DAT drive where the `-E` option is needed, you can give the command a very long size (`-s` option) and work around the problem.

(PR-26157) - `dump` attempts to open the tape device twice when aborting a dump. This causes the misleading message: `"No such device or address."`

(PR-26707) - The `'dump'` utility is returning an `"asiostat error"` during dump. This happens only twice out of all the dumps done in a month.

## **dv\_driv\_gd**

(PR-10159) - On page 1-4 of the GWDD doc (third revision, April '88), under the description of `xxopen()`, the `"flags"` arg is claimed to be the same as the flag argument passed to the `open()` syscall. This is not entirely true. The flags have been converted from the `O_RDONLY` type of value into the `FREAD` type of value...

## **e**

(PR-16451) - `/bin/e` is installed as a hardlink to `/bin/ed`. `/usr/ucb/e` is installed as a hardlink to `/usr/ucb/ex`. This is a problematic name clash. Both should be removed, and the man pages updated. `edquota.8`

(PR-10145) - The man page `edquota(8)` makes no mention of the fact that it does not work on an NFS mounted filesystem.

## **egrep**

(PR-23259) - `egrep` returns after a long wait with the error message `"expression too long"`.

(PR-23885) - `'egrep -f'` stops finding some patterns if more complex patterns added to the pattern file.

## **emacs**

(PR-12488) - When you use `emacs` to do a FORTRAN compilation, it will not position the cursor on the next-error in the `*compilation*` buffer.

(PR-13966) - When editing a file `emacs` creates temporary copies of the file called auto-save files. When creating these files `emacs` uses the users `umask` instead of the permissions of the file being edited.

(PR-24653) - Regular expression searching and matching is broken due to an invalid assumption in `src/regex.c` that all valid pointers are positive when cast to an int regular expression. Matching fails for all patterns containing `@digit`.

(PR-25494) - `'emacs'` mail does not work. The variable `'sendmail-program'` seems to have been incorrectly defined to be `'fakemail'` rather than `'/usr/lib/sendmail'`.

(PR-25950) - `'emacs'` is installed setgid to group `kmem`. This is a SECURITY HOLE! `'emacs'` allows USERS to run arbitrary sub-processes which provide these processes with an open file descriptor to `/dev/kmem`.

(PR-26023, PR-26023) - `emacs` mail will not deliver mail due to an incorrect value for `sendmail-program`.

Workaround: Set the variable `sendmail-program` to `/usr/lib/sendmail` in the `.emacs` file.

(PR-25938) - `Emacs` generates `"permission denied"` errors in the failed file access log on. The file that has permission denied error is `"/usr/lib/gemacs/lock"`.

(PR-26374) - As shipped by Convex, 'emacs' does not inhibit the local variables. Consequently, editing a file can have unfortunate consequences if that file contains malicious elisp functions. A malicious person could mail such a file to an unsuspecting emacs user. Such consequences include corrupting or deleting any file for which the user has write permission; reading and perhaps mailing out of any readable file, and running any executable for which the user has permissions.

## **error**

(PR-12446) - The error utility gets a segmentation fault when output from fc is large. If the output is reduced, the command works correctly.

## **ex3.7preserve**

(PR-16442) - /usr/lib/ex3.7preserve appears to be ignoring zero length temporary files.

## **ex3.7preserve.8**

(PR-16443) - There is no man page for /usr/lib/ex3.7preserve.

## **explain**

(PR-10915) - The diction program complains about many things that explain has nothing to say about.

## **exportfs**

(PR-25743) - 'exportfs' and its argv interpretation seems not to be using getopt().

## **expr**

(PR-23012) - If the user types a bad expr line, it responds with "syntax error" rather than "expr: syntax error". This makes it difficult to know what went wrong in a script.

## **f**

(PR-26150) - f can coredump if swap space is exhausted. This may affect other utilities as well since malloc may fail during a printf.

## **faillog**

(PR-15321, PR-17304) - It seems that to execute an executable, the file also needs read permission; otherwise, an EACCES R error will be logged by faillog.

## **faillogpr**

(PR-20245) - If faillogpr is executed on an empty file, it issues an error message: /usr/adm/faillogpr: filename: invalid input file and exits with a code of 1. An empty input file is not an invalid input file. faillogpr should handle an empty input file without giving an error message and it should terminate with an exit code of 0.

(PR-25071) - When faillogpr encounters a uid not in the password file, it erroneously prints a '0' instead of the correct uid.

## **flpf.8**

(PR-23170) - No man page for /usr/lib/flpf (FORTRAN Line Printer Filter).

## **fsck**

(PR-24018) - fsck'ing a block device with a dmon association when the dmon is not running may cause fsck to pend. Interrupting fsck at this point (e.g a ^C) will cause the fsck to dump core.

(PR-25823) - A system crash resulted in a corrupted root file system. A subsequent 'preen' would say that it fixed the problem, however a reboot/preen would show the exact same problem and a manual 'fsck' showed the same behaviour. The problem was: 1. /etc/passwd had two links, yet only one name. 2. /etc/pwrestrict.pag had byte count 0, and block count non-zero. Both files had to be removed to get fsck to fix the fs from that point in order to get root cleaned up.

## **fstat**

(PR-18332) - fstat can find files in an undefined state due to the dynamic nature of the open file table. This means that a user can occasionally get peculiar things like "unk" in the TYPE field.

## **fstat.8**

(PR-26057) - The "-m mem" and "-n nlist" options are mentioned in the fstat(8) usage message, but are not documented on the fstat.8 man page. The usage message ought to match the man page, with or without the new options.

## genrest

(PR-26423) - The `genrest` man page does not include the argument for redirecting output to an optional file. The synopsis should read: `genrest [ -t ] [ -mn ] [ -MN ] [file]`

## getgroups.2

(PR-25373) - The `getgroups(2)` man page mentions the Convex extension `cvx$int_getgroups(gsize, intgidset)`. It's not clear if a `libc.a` has ever contained that function name. It has been `__ap$int_getgroups` for several releases.

## getmntent.3

(PR-23950) - The man page for `getmntent(3)` suggests that information can be obtained on the `/etc/mntab` entries instead of the `/etc/fstab` entries. How to do this is not documented. Paragraph in question: These routines replace the `getfsent` routines for accessing the file system description file `/etc/fstab`. They are also used to access the mounted file system description file `/etc/mntab`.

## getopt.3

(PR-25244) - The code fragment in the MAN page for 'getopt' has several big syntax errors where all character constants are written using a "forward tick" (the C compiler flags them as illegal characters).

## getpeername.2

(PR-26383) - The SYNOPSIS section of the `getpeername` man page should have the references to the header files in boldface type.

## getty

(PR-20480) - The `/etc/gettytab` file specifies that backspace (^H) is to be used as the erase character in the default entry (which is supposed to propagate to the other entries that don't specify an erase character). However a backspace is just treated as a normal character when typed at the login or password prompts.

(PR-25008) - The login message as designated by the 'im' field in `gettytab` is often corrupted.

## grep

(PR-23260) - The CONVEX version of `grep`, `fgrep`, and `egrep` are much slower than existing versions on the \*free\* market today, like `bm` and GNU `grep`.

## gut

(PR-25525, PR-25547) - When an optional product is sysgen'ed into the kernel, and spu'd down and moved into place on the JP and the system is rebooted, all is well. If the JP's `vmunix` is gutted, however, it is possible to lose the information.

## help

(PR-08018) - There are many utilities that don't react well to EOF. All should be tested by running them with `/dev/null` as `stdin`. Two with problems are `help` and `ftp`.

## hosts.5

(PR-25734) - There's an `/etc/hosts` and a `/usr/man/man5/hosts.5` in the base ConvexOS product, yet the `hosts.5` man page claims that `hosts` is an optional product. See the NOTES section of `hosts.5`.

## ibmdaemon, nldaemon

(PR-22819) - There is a problem with using C programs to write a file to a multivolume tape set (either IBM-labeled or unlabeled, under `nldaemon`). If the device is closed and then opened again (read-only), then rewound, then closed again, an error will occur with the first read performed on the file (errno 76: can't understand label). A second read (eg, in a silo) will advance to the second tape and the read will succeed.

## indent

(PR-09190) - `indent -npsl` corrupts the indentation level of the next line.

(PR-10664) - 'indent' fails to properly format certain files.

(PR-16649) - PR-20747) - `indent` appears to have a maximum input line length of 600 characters, and without warning will truncate lines longer than that limit. It should issue a warning/error message that it is truncating the line.

## info

(PR-24320) - The infosys database documents pre-8.1 tape commands, but does not document post-8.1 tape commands.

(PR-24570) - When info (re)builds a formatted \*.f file, that file becomes mode 666. There appears to be no need for this.

(PR-25836) - Under certain reproducible circumstances, an 'info' menu listing displays one more entry than it should. This last entry is blank except for its number.

## init

(PR-26822) - The default permissions for files created by rc scripts, /etc/rc.local etc., are 666. In the case of /etc/use\_nameserver one could maliciously fill up the root filesystem.

Workaround: Insert umask 022 in /etc/rc.local prior to /usr/bin/touch /etc/use\_nameserver.

## install

(PR-17470) - If a sysgen file already exists and the install attempts to use it for output (upon installing the SECURE NFS product), the install script does not remove or rename the existing file, and if the sysgen file is already damaged or corrupt it will stay that way.

(PR-20340) - Appendix F of the "ConvexOS and Utilities V9.1" installation notes say that the jptest directory, if there, can cause a shortage of SPU disk space. The crashdump (hwdump) utility can malfunction if this directory is deleted. If only a few files are needed, a more specific Appendix F would be appropriate.

(PR-21810, PR-21822, PR-22848, PR-25328) - The 10.0 installation script has trouble with interrupts whilst installing an optional product.

Workaround: If the tape drive is in motion, take the tape drive off line to interrupt the installation script.

(PR-22847, PR-23311) - When running a remote install, the installation reports, "Bad free() ignored at /tmp/Ins\_S028527 line 338." The script is the GIP master install script running on the remote (ie, the target) host. It looks as if the specific statement causing the problem is "open(STDOUT, '>&SAVEOUT');" "

(PR-24074) - After creating the /mnt file system, we are instructed to mount it on /dev/rvvp. This should be /dev/vvpp, the block interface, rather than the /dev/rvvp, the character interface.

(PR-24389) - /usr/convex/opreq is not installed with the proper permissions.

(PR-24295) - The permissions on the directory /lib/kernsyms are set to 777. This is not new to version 10.0 of the OS. Would it be hard to find another way to accomplish this? The potential for disaster looms large with the current mode.

(PR-24793) - The set of OS 10.0.3 tapes have the OS Utilities split across 2 tapes. This is a bit of an inconvenience, and is not documented in the installation procedures.

(PR-24806) - During the installation process, the user receives the error: tar: /etc/ftpusers: No such file or directory There is no reason to assume that this file is there. Obviously it is not there upon a virgin OS install. Even during an upgrade, there is no reason to assume it is there.

(PR-24777) - Numerous problems reported with installation performed in the Netherlands.

(PR-24978) - The extraction of /sys will fail if there is not enough space in /tmp to archive the current /sys directory. The installation script should do a 'df' of /sys and check and see if there is enough space for it in /tmp and give a warning if there is not ample space. This would give the installer a chance not to save /sys, and thus avoiding a redo of the Kernel installation after freeing up space.

(PR-24938) - If the /sys extraction fails due to not enough space on /tmp, the error message does not give enough details. It should list the process to extract the /sys directory by hand, as it once did.

(PR-25154) - During the installation of ConvexOS kernel 10.0.3 the message appeared: "You have specified the following swap partition in /mnt/os/bootcmd.local" tune cpu swap\_nicechg= 10 ls this information correct? [yn] Yes, the information is correct, or no, it is not a swap partition?"

(PR-25152) - At some point in time during the installation procedure the following message is seen: "Do you want to specify an alternate directory for this product (y or n)?" On the reply 'n' it returned: Please select one of: Yes, No

(PR-25387) - The man pages for the 68000 cross-compiling tools are installed in the incorrect location. They should be in /usr/man/man?, but are instead dumped into the /usr/man directory. This makes them a little difficult to find, among other things.

(PR-25150) - Several problems found after the installation of 10.0.2: 1. /usr/spool/at has uid & gid =26; an undocumented uid/gid. 2. /usr/spool/mail had its mode reset to 755; elm needs group access for bin. 3. The lpr uid/gid change is incorrect. 4. For some reason, the frozen configuration file was removed during the installation.

(PR-25511) - During the installation of ConvexOS 10.0, the OWNER/GROUP for the printer queues was not changed. The mode of /usr/spool/lpd was changed correctly, but not the directories below it. These directories were owned by root and group daemon after the installation.

(PR-25720) - /usr/bin/install violates the prevailing standard behaviour of "copying" files rather than "moving"(mv) them.

(PR-26469) - ConvexOS Source products need regen scripts for the GIP database. These products include basesrc, kernelsrc, and domnfssrc.

## **installsw**

(PR-17382) - installsw will read past the end-of-file of the Header file on a tape if the Header file does not end with a newline. Installsw uses the fgets() libc function to read the Header file. fgets() reads past the EOF of a file on tape if the file's last character is NOT newline.

(PR-25188) - Using installsw with a rewind device returns the following message: syntax error at line 2: 'newline or ;' unexpected. It would seem that installsw should require a non-rewind device.

## **installsw.8**

(PR-21190) - The man page for installsw describes the usage of the cipher SPU tape drive only. It completely ignores the qic tape drive, and even suggests that the cipher tape drive is the only option available for SPU installsw usage.

## **intro.2**

(PR-22483, PR-24261) - There are only 78 errno values defined in the intro.2 man page, whereas there are 116 in /usr/include/errno.h. The ones that are missing are 78-113 and 115-116.

## **lastlog.5**

(PR-26596) - There should be a man page describing /usr/adm/lastlog

## **learn**

(PR-10631) - When using learn to learn vi, learn puts you into the editor and only uses 24 lines, even if more than 24 have been set with term type.

(PR-11277) - learn files 10.1a is not exiting properly when using the "ready" response at the "%" prompt. It gives a shell error: sh: syntax error at line 1: '(' unexpected.

(PR-10632, PR-11891) - learn editor will not let you exit after selecting 2.2a.

(PR-13682, PR-19298, PR-25704) - Upon entering "learn editor 7.1a" and after typing a "q" as input, one gets a message like: "Extra characters at end of command" Learn fails to recognize the edit commands and the user is unable to complete the exercise as directed.

(PR-23163) - learn editor gets confused.

## **leave**

(PR-08630) - leave does not know when you have logged off from an xterm session and will stay around forever unless killed with a 'kill -9'.

## **less**

(PR-12551) - The 8.0 version of less has the nice feature of not clearing your screen if it receives no input. It does, however, move to the top of the user's screen, then back to the bottom when it sees no input. This is not only a waste of time, but if there is an error message sent to stderr, it gets placed at the top of the user's screen, where they may not see it.

(PR-13658) - When the goto function ("}") command is used, less forgets marks ("m") that have been set.

(PR-18333) - If less is invoked with very long pathnames and it is at the bottom line waiting to go to the next file, the line wrap makes the screen jump and you never can see the top line of the page.

(PR-20565) - If less is called with no argument and standard output is redirected to a file, the terminal is left in a confused state.

(PR-21137) - less(1) can not always find tags (-t option) in the tag file.

(PR-26166) - The ++CMD option in 10.0 'less' no longer works. The double ++ is used to repeat the command at the start of each new file.

## **lex**

(PR-24683) - If code produced by lex is run through 'lint -ext ...', certain messages occur often, including 'putc returns a value which is always ignored' because of the '# define output(c) putc(c,yyout)'

## **libtape.a**

(PR-24255) - tpmount(3) doesn't process linked list of drives consistently. For all (char \*) members of the first tp\_mntopt structure in the list, the function tpmount() in tpulib.c sets those members which are null to point to an empty string. But subsequent list elements linked using the next field of the tp\_mntopt structure do not have such substitution performed, resulting in a coredump from within the xdr routines at a lower level of the tape library when they try to process members of subsequent list elements.

## **logger**

(PR-22852) - When given the -f option, logger should print its usage statement rather than take input from stdin if the file part of the argument is missing.

(PR-24606) - The /usr/ucb/logger utility does not require a priority after the -p option or a tag after the -t option. An error should be generated when either is missing. Also, when an error is detected, the return status is zero.

## **login**

(PR-14294) - The getty program allows redefinition of the erase and kill characters via /etc/gettytab er= and kl=, but the login program does not recognize the locally set keys. The login program needs to have the erase and kill characters set locally.

(PR-17923) - /bin/login should not allow logins through telnet and rlogin to accounts that do not have passwords.

(PR-24005) - login doesn't close all the un-needed descriptors before exec-ing the shell. This causes /bin/sh to get more file descriptors than stdin/stdout/stderr.

(PR-24243) - login can coredump if it's on a secure RPC/NFS system and a user does an rlogin from a remote host named in the user's .rhost file.

(PR-25740) - If a user's mailbox file, /usr/spool/mail/\$USER, does not exist and the user receives mail, login incorrectly notifies the user that he has old mail vs new.

## **login.1**

(PR-18107) - The man page for /bin/login needs to document all possible error messages that can be seen by the user or logged.

## **lpc**

(PR-20476) - Using the line printer control program, lpc, to redirect print jobs fails.

(PR-22367) - The 'lpc topq printername' command returns with an inaccurate usage message.

(PR-24414) - When checking the status of a printer that is currently up and running, the last line usually ends in the middle of a physical line when there are entries in the spool queue. Part of the last line may actually be missing.

## **lpd**

(PR-12008, PR-12029) - If one submits a print job to the line printer, the lpd queue child starts printing the header on the printer and then dies strangely. lpq -Pprintername will then show entry(ies) in the queue, but "no daemon present".

(PR-18761) - When passing arguments to filters, lpd will ignore the default values (defined in /etc/printcap) for width and indent. lpd will always pass -w0 and -i0 unless overridden by lpr command line options.

(PR-19136) - Starting in ConvexOS V9.0, standard error from an input filter is sent to a temporary error file which is later deleted. This error output is never written to the log file (as specified with lo in printcap).

(PR-23719) - After a scratch install of ConvexOS 10.0, a parallel attached PS printer which previously worked under OS 8.1 fails to print PS jobs submitted to it. The same printer will however print a plain text file submitted to it via the Transcript enscript program.

(PR-26075) - Logging of received messages needs to be updated to include new messages known to lpd. Some of the new messages are logged as "bad request" even though they are known.

(PR-26453, PR-26499) - Request to add a boolean to `/etc/printcap` to disable remote query for printer redirection. The printer redirection feature is seen as an invalid message to several other vendors running older `lpds`.

(PR-26259) - After booting a system with two line printers, `lpq` shows entries in the queue, but “no daemon present”. The solution seems to be to use `lpc`: disable each printer, stop each printer, exit `lpc` and kill each `lpd` daemon, then use `lpc` to start and enable each printer in turn.

### **lpd.8**

(PR-25892) - The file `/etc/hosts.lpd` is examined after `/etc/hosts.equiv`. This is not mentioned in the man page.

### **lpq**

(PR-21333) - Specifying the `-l` option (long display) on `lpq` more than once for remote printers results in misleading error messages.

### **lpr**

(PR-22688) - `lpr` does not parse command line arguments in accordance with the synopsis in the manual page.

(PR-23391) - When the network connection is hosed, `lpr` and `lpq` can blow up.

(PR-24752) - `lpr` fails in a directory that is not world readable. `lpr` runs set uid root and root is not privileged across NFS.

### **lprew-daemon**

(PR-15363) - Print jobs are queued but never make it to the printer. Printer works fine when `lprew-daemon` is not running.

### **ls**

(PR-20573) - `ls` doesn't format it's output sometimes (i.e. files don't appear in columns).

### **m4**

(PR-22105) - `m4` should check for read/write failures and call `perror` if there was an error.

(PR-25033) - `m4` seems too FRAGILE. `m4` dumps core on SunOS machines, can't handle >4k chunks under RISC/OS, and it reverses lines.

### **mail**

(PR-07909, PR-08033, PR-14550) - `/usr/ucb/mail` does not correctly parse RFC-822 addresses. In particular, it thinks space is a delimiter on incoming addresses, which is incorrect.

(PR-13750) - There needs to be a standard mailbox (`/usr/spool/mail/XXX`) locking scheme that works when that directory is NFS-mounted. The current scheme(s) do not.

(PR-25741) - `/usr/ucb/mail` should not attempt to remove an empty user mail directory, `/usr/spool/mail/$USER`. The program does not possess the access rights to do so causing `/etc/faillogon` to note the discrepancy.

(PR-25792) - When sending a piece of mail that is sent to one login and CC'd to another with the CC in the following form: “User Name” <user@convex.com> `/usr/ucb/mail` does a poor job of parsing the CC. In attempting to make a reply, `mail` does this: Cc: “User, <user@convex.com>, Name” and will sometimes coredump in a similar instance.

### **make**

(PR-15781) - `make` will regenerate a target even if the prereq has not been modified.

(PR-18314) - When a pound sign (#) is escaped in a macro definition, `make` treats it as the start of a comment.

(PR-23964) - `make -R`, or `make` with a `make` containing `.RCSHECK` doesn't appear to be using the date in the RCS header.

(PR-25941) - `'make'` generates “syntax error” on a NULL target.

(PR-25841) - A space after a backslash causes the shell to abort inappropriately.

(PR-25779) - `'make'` returns “Segmentation fault” on a recursive macro.

### **makewhatis**

(PR-17311) - If a man page has multiple names in the NAME section, only the first name gets indexed if compressed man pages are used.

(PR-19336) - makewhatis should not be case sensitive concerning the NAME field. It should accept ".SH Name" as well as ".SH NAME".

(PR-21315) - Makewhatis returns: "can't store intro.8 -- would break DBM"

## man

(PR-14517) - When man -k is used to search for a keyword, the user receives the message: /usr/local/man/whatis: No such file or directory but then man prints the list of appropriate commands as one would expect. The whatis files are in /usr/man, not /usr/local/man. This message should not appear. It will confuse people.

(PR-18844) - man cannot handle man pages that have '\$' in the name.

(PR-20271) - Subsection indexing is not implemented strongly enough.

(PR-20787) - After system installation, the man system has world writable directories /usr/man/cat\* . On the first use of 'man <subject>' the appropriate page gets formatted and placed in /usr/man/cat\* owned by the user doing the man command. This user can then edit that man page, or even worse create spurious man page entries in the cat sub-directories.

(PR-21923) - man -i ignores the .ig man page macro as evidenced by an erroneous number of lines being reported for tset.1 BUGS section for example.

(PR-22619) - Man doesn't find .so aliases when those aliases are cross sections.

(PR-24455) - If the same alias is going to different sections, a reference may be missed because the check to stop recursion only considers basename instead of basename+section.

(PR-24480) - Running 'man' on whatever topic generates a file permissions EACCESS error on each of the whatis.pag files.

## man.1

(PR-25644) - The subroutine "config\_path" in "man" is not documented in the manual page, nor is it mentioned in the ConvexOS 10.0 Release Notice. The man page should be updated to show that PATH is included in the search strategy.

## mcs

(PR-26696) - mcs status on a very large MCS tree dumps core.

## mkfs

(PR-25461) - Specifying either the "-i" or "-l" option to 'newfs' does not work if the file system resides on an IDC device (du).

(PR-26427) - After upgrading to V10.0.5, the ability to re-create a stripe across four b partitions on a DKD-501 was lost. The error returned was: sh memory fault. The block/frag size given to mkfs were: 64k/8k. An attempt to create a single 'b' file system with the same block/frag size failed with the same error. If block/frag sizes are not provided both the stripe and the single 'b' file system will be created without error. This type of file system configuration worked under V9.1.

## mknod.8

(PR-22528) - The assignments of major device numbers, as documented in the manual pages MKNOD(8), refer to ConvexOS V8.0.

## mount

(PR-19088) - When /tmp is already mounted and a mount -a performed, the error messages "No such device", "mount: giving up on:", "/tmp" appears. Mount did not complain about other file systems that were already mounted.

(PR-21867) - mount(8) is silent when it should be reporting errors if an invalid numeric value is given for blkpre, blkhi, or blklo.

(PR-24187) - Giving mount blkhi and blklo settings which cannot be used together (blkhi=blklo=100) results in a poor message.

(PR-25818) - The mount command can get a bus error and dump core when trying to mount an NFS file system on a symlink mount point.

## mpa

(PR-19685) - When mpa is used to execute a command and the command name is not fully-qualified, mpa truncates the PATH environment variable inherited by the child process.

## ms

(PR-23740) - The umlaut operator in troff, \*, places two commas over its operand instead of two periods. In nroff there is no output.

## msgs

(PR-25582) - The msgs utility should be setgid to some group which is made the owner of the /usr/msgs (a.k.a. /usr/spool/msgs) directory. This directory could then be mode 775 rather than 777, such that no user could corrupt the contents, replace messages etc..

## mvst

(PR-24264) - The mvst command is many times slower than dd with a reasonable block size. For example, mvst between b partitions on two IDC drives takes 55 minutes of wall time but a dd with bs=1956k (1/10th of the partition) takes only 3 minutes of wall time.

## netstat

(PR-25443) - The 'netstat' utility doesn't display all of the available statistics for the udp protocol when the "netstat -p udp" or "netstat -s" commands are used.

## newfs

(PR-22721) - newfs will allow you to specify the block disk device (without a complete path name) to create new file systems. However, the resulting file system will have a grossly inaccurate size. If the raw device is required, newfs should complain when you specify the block device.

(PR-22969) - When installing the root partition on a DKD-504 disk (Seagate ST83050K 3.05GB IPI-2 disk) you need to use the 'boot mini' method from SPU to install the operating system under /dev/du0b (swap space). At this step, the newfs command doesn't recognize disk type 'DKD-504' (because there's no entry in the /etc/disktab file).

(PR-24674) - newfs does not check to see if the partition given is part of an active stripe.

## newsyslog

(PR-18173) - /usr/adm/newsyslog does not parse /etc/syslog.conf to determine which syslog files to manage.

## nldaemon

(PR-22272) - Can't write to nl tape device when the device is opened in O\_RDWR mode.

## notes

(PR-25942) - Sometimes the 'notes' program appears to skip lines when writing to a terminal logged in via telnet or rlogin. A typical scenario is that the user is paging through a long response by hitting the spacebar, and the user finds that there are 2 lines on the screen showing: more x% and that the text between them is incomplete.

## nqsd daemon.8

(PR-26297) - The 'nqsd daemon.8' MAN page does not describe the options to 'nqsd daemon'.

## nroff

(PR-07649) - nroff -T37 flag (default) does not work properly.

## nu

(PR-14377) - When yp is being used and new users are added with nu, they are appended after the +::0:0:: in /etc/passwd instead of before.

(PR-22836) - Nu should add a user to the shares database and the passwd file at the same time. Currently, the shares files is updated, some more questions are asked and then the /etc/passwd file is updated. This can result in inconsistencies if nu is aborted after the /etc/shares file is updated.

(PR-22771) - nu(8) as distributed on tape, does not recognize the 'newsgroup' keyword. Re-compilation of /usr/src/convex/nu.c solves this.

## op

(PR-17758) - The op command gives an error message if there are any '.'s in an argument to the command to be executed, as described in the op.access file.

(PR-23344) - /etc/op "bus errors" when given a long path name in the arg list.

## **opreq**

(PR-25578, PR-26008) - opreq can cause a deadlock by holding the lock on the lockfile when it calls out to tpd daemon following a "select-done". In processing, tpd daemon calls opreq\_daemon which pends on the lockfile. Thus all three processes are hung. Pressing ^C in opreq clears the situation.

(PR-25639) - When an operator issues the "select-done" command on a drive that is not available (already assigned to another user), the drive selection window is never closed.

(PR-26178) - opreq allows the operator to "select-done" a request that is in the "WAITING" state.

(PR-26350) - opreq does not check the effective UID's group privileges when determining operator status.

## **opreq\_daemon**

(PR-24303) - Interface to opreq\_daemon has a security hole.

(PR-26064, PR-26128, PR-26884) - opreq\_daemon will dump core and leave share.mem corrupted.

## **opreq\_daemon.8**

(PR-25588) - The man page for opreq\_daemon(8) has "logging" misspelled in the OPTIONS section.

## **os\_archref**

(PR-16217) - Chaining is described as a vector processing mechanism that uses the output of one vector instruction as the input to another (page 8-28). It is not clear whether or not the "output" includes the VM register, and whether or not the VM register is built and used one bit at a time. Thus, questions like "Will an operation under mask chain onto a vector comparison?" are not resolved.

## **os\_cfg\_smg**

(PR-20607) - The documentation for disk quotas, man pages, and The Configuration Guide, fail to state the size of a block.

(PR-25178) - Page 4-13, illustration. Directories under the root directories are shown with / (ie: /smith and /jones). These directories should be shown without the slashes.

## **os\_ext\_ug**

(PR-25009) - On page 107 of the ConvexOS Extensions User's Guide ( First Edition ), there is a reference to Chapter 1 page 14 to find the "Checkpoint File Name". Chapter 1 is "Large Files", not Checkpoint/Restart. Furthermore, page 14 is blank.

## **os\_pr**

(PR-26397) - On page xiii of the ConvexOS Man Pages for Programmers, in the section entitled "Using hard copy man pages", there is a reference to Section 6 which is not contained in this book.

## **os\_primr**

(PR-24193) - On Page 2-13 when talking about disabling a variable in .login it implies that the source command will make modifications for items removed from the .login and .cshrc files. It should be made clear that the 'source' command only adds to or modifies current variables. Unwanted variables will not be taken away without logging out and logging back in or using the unset/unsetenv commands.

(PR-24194) - On page 3-12 the example at the bottom of the page used the following... sort < who > <filename> Following the syntax quides one would expect 'sort' and 'who' to be the actual commands and filename to be a variable I give. When the command is run the output is "who: No such file or directory". Extra care should be taken using common command names in examples that are really wanting local file names.

(PR-24197) - In Chapter 2 and Chapter 3 of the ConvexOS Primer it talks about C-shell features and mentions the ability to create shorthand notations for a command or series of commands. It however, does not tell how to use the feature or even the command in C-shell to lookup.

(PR-24218) - The ConvexOS Primer cover says it is the First Edition but the Spine says it is the Second Edition. This needs to be corrected for the next printing.

(PR-25480) - On page 3-15 Figure 3-11 the user names have more than 8 characters. These are invalid user names in ConvexOS.

## **passwd**

(PR-16440) - The following entry should be added to the /etc/passwd file to be able to serve SunOS 4.1. nobody:\*:65534:65534::/:

(PR-25441) - 'passwd' rejects passwords shorter than six characters and passwords without numeric or special characters as well as an alphanumeric without a special character or a numeric. This is exasperating when trying to come up with a meaningful password. Whatever the restrictions are, the USER should be told specifically what is required whenever a passwd does not meet the restrictions in effect via some kind of informative message.

## passwd/vipw

(PR-24794) - There is no interlock to prevent simultaneous passwd updates or passwd and vipw updates from overwriting the /etc/passwd and /etc/pwrestrict files with inconsistent information.

## pax

(PR-25497) - Using the "a" and the "u" option with 'pax' for a labeled tape does not work.

## perl

(PR-15624) - The -s flag when used in conjunction with the -w flag can cause unwarranted complaints regarding ENV being a possible typo.

(PR-17804) - perl contains CONVEX copyright notices even though it is a copylefted source. It needs to be undone for CONVEX to be in good legal standing.

(PR-21653, PR-21697) - The [qQ] parameters of pack/unpack no longer work in the latest version of perl.

(PR-22107) - perl should check for read/write failures and call perror if there was an error.

(PR-21730) - perl does not handle the %lld format in printf() properly.

(PR-21614) - When a program sets a signal mask (via syscall(&SYS\_sigblock, \$mask)) and then executes a goto, the signal mask is reset to the original state it was in when perl compiled the program. It would appear that perl is using setjmp at compile time and longjmp at runtime to do it's goto's. This "feature" should either be noted in the man page, or perl should use \_setjmp/\_longjmp (assuming that is what it is doing).

(PR-22522) - The #!<pathname> method of invoking an interpreter (shell or perl) on the first line of an executable file breaks if there is a comment on the same line. Instead of running it with the program declared, it runs the file with the user's shell.

(PR-24411) - Running perl -d on a particular program dumps core in the subroutine read\_line, just after it reads a line of text from the file. It does not seem to dump core (but the program doesn't work) when run without -d.

(PR-24830) - The /usr/lib/perl/{ufs,net\*} include file directories are not being built, making it hard to write certain kinds of programs.

(PR-25430) - perl -e writes a small script to /tmp, but if /tmp is full, it executes a null perl script and returns 0. Perl should print an error and abort if /tmp is full.

(PR-26116) - When using a format with continuation fields, any arrays that are associated with a continued field are set to empty (not null, but empty) values.

(PR-26445) - When debugging a Perl program, setting a break point in an empty subroutine which is defined after the first executable statement in the file results in a core dump.

(PR-25579) - The function printf() does not pad correctly. The statement: printf ("%2.2d", 5); should produce "05" (as mentioned in the Perl manual, pg 184) but instead produces " 5".

(PR-26615) - The new -m file test operator doesn't quite parse like the rest. The code fragment "if (! -m \$\_) " doesn't work like "if (! -r \$\_)".

## pmd

(PR-25763) - If 'pmd' is executed when the current directory is not in the path (i.e. \$PATH does not contain ".") then it fails with the message: cannot locate 'filename'

printcap.5

(PR-26194) - The 'hl' option is not documented in the man page. ADD: hl bool false print the burst header page last

## ps

(PR-09615) - 'ps aux' will generate a floating exception if the load average is zero.

(PR-15015, PR-15184, PR-15625) - 'ps ux' sometimes passes a negative length argument to mmap.

(PR-19784) - 'ps v' shows some processes with bogus, negative values in the RE column.

(PR-21929) - ps will occasionally output bogus values for CPU% and MEM%. CPU percentages have been seen at several hundred percent for non-parallel jobs.

(PR-25102) - It's been observed on a (3440) that 'ps' will suddenly show a DECREASE in CPU time after the CPU time was previously seen to be INCREASING as one might expect.

(PR-26124) - 'finger' and 'ps' (certain options only) can take nearly 2 minutes to complete and can take abnormal amounts of CPU.

(PR-26185) - 'ps' returns the message: too many character devices in /dev after increasing the number of "ptys" to 256.

## **pty.4**

(PR-20901) - The pty(4) man page references the vhangup(2), and suggests that attempts to write to a pty where the master has been closed results in an error (errno = EIO). A test program indicates that the write does not fail. The output, however, is not printed through the master either.

## **putst**

(PR-26197) - The putst -a command in /etc/rc\* fails if it runs into a stripe definition that includes a disk that didn't probe. A group of disks were recently removed after which 'putst' died instead of continuing beyond the definition that contained the now non-existent device.

## **quota**

(PR-25990) - quota will not list the user root's quota even though root may have one.

## **quotactl.2**

(PR-21093) - The quotactl.2 man page and the quotacheck.8 man page differ.

## **ranlib**

(PR-20614) - Trying to create an executable generates the following error message from the loader: ld: can't load file of type 'unknown' ld: ERROR - Invalid archive member: mylib.bug.a(tf) ld: No executable produced.

## **ranlib.1**

(PR-25794) - The ranlib.1 man page describes the problem under BUGS; if the mod date of a library is later than the date on the table of contents, ranlib must be rerun. The man page says that 'ld' will issue a warning if there is a phase error, (implying that it will go ahead with the link), when in fact it treats this more like an error.

## **rcc**

(PR-26604) - Attempting to do 'rcc -orev1-rev2' can cause the command to hang or run forever.

## **rccfile.5**

(PR-12936) - The man page for rccfile(5) cannot be printed with nroff. It complains of zero width fields.

## **rccsmmerge**

(PR-15754) - When an attempt is made to merge a sufficiently large source file with rccsmmerge, the user gets the message "File size limit exceeded" in the output file. This apparently is a result of passing final diff output through ed, which has a 128 kilobyte file size limitation.

## **rdiff**

(PR-26282, PR-26344) - rdiff always returns a status of 0 instead of the status of the diff, as documented.

## **rdump**

(PR-25505) - rdump sometimes defaults to the local default drive for dump!

(PR-25506, PR-26314) - Unless a fully qualified hostname is used on a system configured for BIND, rdump will try to use a tape drive whose name is the same as the BIND domain name.

## **rdump/rrestore**

(PR-23230) - If the name server is running, rdump and rrestore require a fully qualified hostname in the file argument. They should accept any alias.

## **restart**

(PR-20962) - When trying to restart a checkpoint file that was inadvertently truncated, restart complained about a "bad file number". The error message should point you in the right direction.

## **restore**

(PR-25296) - restore will not restore a symbolic link if a link by the same name already exists.

## **rlog.1**

(PR-19518) - The man page does not document the -R and -L options of rlog.

## **rm**

(PR-16878) - rm uses the access(2) system call to determine file permissions; thus, real-uid is used rather than effective-uid. It should use effective-uid.

(PR-25078) - /bin/rm does not inform the USER of the reason for the failure of an unlink operation and so cannot help the USER figure out what is going wrong.

## **rntp**

(PR-26555) - The format of the new group file entries (auth, audit, batch, fs, lpr, preserve, and tapeop) should be documented in the Release Notice. The documentation merely says to add the entries without specifying what the entries are supposed to look like.

## **sa**

(PR-12315) - The kernel writes accounting records containing an average concurrency field that is not equal to 1.0 on a C1.

(PR-13090, PR-17502) - Running sa on an NFS system can produce: preposterous user id, 65534: ignored This is because user "nobody" (root = -2 on NFS) doesn't have an entry in the passwd file, and for that matter, even if it did there would be problems fetching it properly due to disparities in uid types between the kernel and the libraries. /usr/etc/in.ftpd does a setuid(-2), which is how these records make it into the acct file.

(PR-17500) - With the '-m' option of /etc/sa the first column (username) and the second column (number of processes) will not always stay separated by at least one space. Especially when summarizing over longer periods, a username of 8 characters can be accompanied by a number of processes >= 10,000,000. The printf should include one extra (fixed) space!

(PR-18872) - sa -m outputs bogus information for the k\*sec field. The results seem to be off by an order of magnitude or worse.

(PR-18836) - The sa command can die with a floating point exception. This happens because sa's internal function 'bcmp' (not the libc version) does not check two arguments for zero before using them as divisors. These values should be checked for zero.

## **sa.8**

(PR-10937) - There's no description of the "total I/O" statistic generated by "sa". Description should include how it can be used to do I/O accounting charge-backs on a per-byte basis.

## **sed**

(PR-23182) - Using 'regexp' syntax with sed doesn't work on CONVEX machines.

## **seestat**

(PR-13900) - seestat does not check the validity of the -y argument. Anything >= than 400 will dump core or mess up the output.

## **sendmail**

(PR-13602, PR-19412) - Queued local mail no longer has the original recipient's uid associated with it. Control files only store a list of exploded recipients (i.e. users, files and programs) -- one per line - each prefaced with an 'R'. So, after an address resolves to the local machine and has undergone alias and ".forward" expansion, if the letter happens to get queued, on the succeeding queue run, sendmail doesn't know for whom to run the final delivery.

(PR-18326) - Some modification has been made to sendmail under 9.0 such that site configuration files that worked under 8.x no longer work with the 9.0 sendmail executable. The changes that must be made to the configuration file entail making recipient names fully qualified before exiting the configuration rulesets. In particular, the relay host must be changed to be a fully qualified domain name, and the ruleset 0 must be changed to add domain names to known local hosts.

(PR-19290) - mail does not immediately process mail with local recipients.

(PR-23211) - In order for sendmail to use the YP aliases map you must have the "Op" line in the sendmail.cf file, then do a "sendmail -bz" to inform sendmail of the new option. This procedure should be added to the sendmail man page somewhere.

((PR-23997) - PR-26052) - 'sendmail' is not updating the /usr/lib/aliases file until it is killed and restarted.

(PR-24432) - It should be allowable to turn off inclusion of the sender in alias expansion in the cf file with "Omf" but it doesn't seem to take effect.

(PR-25889) - In main.c a reference is made to the routine getuid() which is a secure OS routine. As this system is a normal ConvexOS system there is no /usr/lib/libprot.a file: the linking of sendmail fails.

(PR-26290) - The CONVEX sendmail.cf template requires that "A" macro (INTERNET\_RELAY) be defined, but the m4 file nsmacros.m4 does not enforce it. This allows a site to build a sendmail.cf file without the "A" macro defined.

(PR-26293) - /usr/lib/conf/sendmail/convex/cf/README describes the INTERNET\_ALIASES macro. Defining this macro does not place changes into the newly built sendmail configuration file.

## setgroups.2

(PR-25372) - In the extended (-ext) mode compilation environment, the input array for the setgroups() library call is of type (gid\_t \*), rather than (int \*). Code written according to the MAN page and compiled in extended mode will incorrectly initialize the supplementary groups array - can be quite a security hole! Also, like getgroups(2), the MAN page should mention the Convex extension \_\_ap\$int\_setgroups().

## sh

(PR-21807) - sh provides the wait command which optionally takes a pid, but when a pid is given, sh may reap some children it shouldn't. It should use waitpid in the case where a pid is specified.

((PR-23172) - The line: DIR\_SIZE='grep "\$PRODX" .key.load.\$TAPE\_COUNT | awk '{print \$2}' fails with test argument expected. Changing the line to DIR\_SIZ='grep \$PRODX /dbms/oracle/.key.load.\$TAPE\_COUNT' DIR\_SIZE='echo \$DIR\_SIZ | awk '{print \$2}' works. IT IS VERY BASIC to have this kind of construct in the 3rd party application areas since most of them use BOURNE shell scripts.) - PR-25548) - Intermittent "if [ -f ... ]; then" failures in /etc/rc.local execution. The 'if' block for starting the NFS daemons intermittently fails in the rc.local file.

(PR-26515) - 'sh' hangs when starting a second script via 'nohup'.

## shutdown

(PR-20428) - shutdown hangs when trying to send the shutdown message to remote machines.

(PR-22968) - When the CONVEX is an NIS client (for example), then if you issue the '/etc/shutdown -h' command, you'll see the broadcast messages that keep you informed about what's going on. The problem comes when the shutdown time has arrived, some processes (ypserv or ypbind) won't be killed automatically.

(PR-25708) - Sometimes when the system is shutdown to single-user mode - without any errors, and all filesystems unmounted; using CTRL D to revert back to multi-user mode provokes the following messages: > mount: /dev/st0 on /tmp > Resources temporarily unavailable. Filesystem marked dirty: > Use fsck(8) then retry mount. At this point the system was taken back to single-user mode and 'preen' was executed and subsequently found errors in that filesystem and also in others.

## sort

(PR-23314) - The sort utility fails to ignore leading blanks in a secondary numeric sort.

(PR-26134) - Sorting a large data file creates too many temporary files, filling up /tmp. Attempting to work around by using a distinct scratch directory shows that about 800 files (each about 10kb in size) are created, before sort(1) gives an error about inability to write a file.

## spell

(PR-07509, PR-11337) - spell/look doesn't work on large dictionaries.

(PR-25440) - The 'spell' program recognizes "colour" and "programme" in -b(British) mode; however, "color" and "program" do not work in American mode.

## spucmd

(PR-23057) - The spucmd command causes spuio to die.

## stacker

(PR-23893) - Using the tape stacker as root, it is possible to hang the stacker by using the "stacker" command.

(PR-23779) - If a user allocates the stacker drive (ie /dev/rtc1), an attempt to access the stacker with the /usr/lib/tape/stacker command will return bogus error messages.

## **swapon**

(PR-18763, PR-19985) - A site with limited memory and/or large amounts of disks (including stripes) may have difficulty running any of preen, fsck, or clrinodefld without turning swapping on first with /etc/swapon. The Install and/or Release Notes should mention this explicitly.

## **sysgen**

(PR-21747) - Currently, one can not enter a file.o in /sys/sysgen/files.SYSTEM or /sys/sysgen/files.ccu.SYSTEM. sysgen aborts and complains about a bad suffix. This was once allowed in the files file and files.ccu. Please reinstate previous functionality.

## **syslog**

(PR-12503) - The file /usr/adm/log/tapelog is referenced in /etc/syslog.conf, but ConvexOS 8.0 does not come with this file already created. There should be an empty file there, after a new OS install.

(PR-25713) - If the syslog.conf file has a line of the form "service [tabs] @loghost" for a service that is also logged to /dev/console and to a local log file, messages are not sent to the loghost if the "service [tabs] @loghost" line is last of the three.

Workaround: Move the "@loghost" entry to the middle.

## **syslogd**

(PR-10261) - If host A forwards a message to host B, which in turn forwards it to host C which logs it, then the log message claims to have originated at host B, not host A.

## **sypsic**

(PR-08094) - Under certain circumstances, the sypsic display becomes ambiguous, due to insufficient field width.

(PR-15236) - When running the network picture the user will occasionally see bogus values in the "if" field.

(PR-17061) - Looking at the tty totals as displayed in 'sypsic' and in 'sypsic -p tty' one sees that in 'sypsic -p tty' the number of sent and received characters is about ten times the number displayed in the 'normal' sypsic display.

(PR-18710, PR-20651, PR-21403) - sypsic does not include disk stripes in calculating total Mb/sec for all disks. This exclusion is acceptable only if it does add in all the component disks of the stripe. This doesn't happen in all cases.

(PR-21681) - Sypsic will report a user (null) when the user is after line 2163 in the /etc/passwd file.

(PR-24781, PR-26692) - If sypsic is invoked with a screen which is too small for the picture to be displayed, the screen is cleared after it has displayed its error message, thus inhibiting the error message from being read.

(PR-25549) - sypsic does not cope well with very long mount point names. It complains of logical unit name being too long, and dumps core. (bus error).

(PR-26315) - 'sypsic' with the -p option doesn't show a tty line although two multiplexers are in place. 'sypsic' thinks there are no multiplexers configured.

## **tail**

(PR-20211) - 'tail -f <file>' gets stuck on certain files.

## **talk**

(PR-20899) - If talk is executed from an xterm window started with the -ut option, the message written on the receiving party's screen from the talk daemon leaves off the user's name.

## **tape**

(PR-13661) - If several tapes are being labeled (going through opreq) and one of the tapes is bad (can't be written), the user gets an error message and is not allowed to continue the labeling process. The operator is not aware that the tape is bad and the labeling has failed. The user must send a tpmount request and send a new tpmount and start labeling at the point where the failure occurred.

(PR-24168) - When ACL (Automatic Cartridge Loader) was installed on a system running ConvexOS V9.1 where the Mbus Telex Tape Driver was already installed, it replaced iop\_ta.c in object form, making it impossible to merge the two drivers. Tape products that require sysgens should check to see if the files it is going to modify have already been touched, and if so, warn the installer that they may be overwriting a previously installed tape product.

### **tape.3**

(PR-26112) - The tape(3) man page describes only some of the options for tpmount. In particular, the following flags aren't covered: TF\_FORCEDEV TF\_FORCEDEV\_DEFAULT TF\_BUFFERED TF\_BUFFERED\_DEFAULT The omission of TF\_BUFFERED is particularly nasty because not specifying this flag significantly reduces tape performance.

### **tar**

(PR-19517, PR-20286) - tar will hang when attempting to access the second tape when attempting to read or do a table of contents of a multi-volume ANSI-labeled tape set.

(PR-20235, PR-21054, PR-23879) - /bin/tar does not follow some cases of relative symbolic links correctly.

(PR-25375) - tar is unable to properly extract a file with a long path name.

(PR-25863) - When tar extracts a symlink with the verbose flag set, the message 'x bar symbolic link to foo' is not printed.

### **tbl**

(PR-14537) - tbl occasionally hangs.

### **tcsh**

(PR-26602) - 'tcsh' core dumps when 'home' is changed to . and back to /mnt/username.

### **test**

(PR-22008) - The Bourne shell's test command does not seem to work properly on newly mounted file systems.

### **tip**

(PR-07404) - PR-08159) - If a device spec with a missing comma is given to tip, it will become very confused.

(PR-15199) - tip exits with a core dump. No connection is made.

(PR-15510) - The default and hard-coded auto dial type for tip is tone. Many other countries need the capability of tip using auto dial "pulse" rather than tone.

(PR-23769) - Prior to installing ConvexOS V10.0, a .tiprc file could contain an entry such as: record=~smith/tip/file\$\$ tip would create a file by the name file<pid> and place it in the tip directory located inside smiths home directory. Now this entry results in the following error message: "~smith/tip/install\$\$": No match Bus error This makes it difficult to maintain multiple tip log files since the tip program overwrites it's record file.

### **touch**

(PR-26245) - 'touch' adds a day to the day provided.

### **tpconfig**

(PR-24617) - tpconfig(1) is missing a "set default [buffered | unbuffered]" command.

(PR-25301) - The 'quit' option is not documented in the help screen, nor are its features defined, e.g. "does a quit save changes or not"? It would be helpful if 'tpconfig' supported the use of "?" for HELP like some other utilities do.

(PR-25558) - tpconfig(8) should only print its "read-only" message once.

(PR-25246) - In tpconfig, an invalid option with the "Add Node" command will produce a "Drive does not exist" error message. Should say "xxxxx" invalid option.

### **tpconfig.8**

(PR-25557) - The tpconfig(8) man page does not state that the special character \* needs to be escaped when used on the shell command line.

(PR-26769) - The tpconfig.8 man page does not specify units for the command "SEt Timeout N type:unit".

## **tpdaemon**

(PR-20414) - The memory allocated by tpdaemon steadily increases each time a tape mount is performed but is not decreased as unmounts are done.

(PR-23544) - tpmount waits even if a robotquery mount fails. tpmount should return with failure status.

(PR-16856) - tpdaemon should reject ambiguous mount requests. Specifically, if the default tape density is not specified with tpconfig, and the user does not specify tape density with the tpmount, tpdaemon does not know to which device node (eg rmt12 or rmt16) to link.

(PR-24236) - If density of a 3480 tape is set to 37871 in config.db and default density is 6250, writes to stacker/loader hang after first tape has been written and the loader has loaded the second tape.

(PR-24070, PR-24128) - tpdaemon dumps core.

(PR-24254) - Interface to tpdaemon contains a security hole.

(PR-24493) - tpdaemon dumps core. Backtrace indicates an attempted strcmp() with (char \*) 0x01.

(PR-24170) - When a tape not in the library is mounted in the silo, an opreq silo-enter request comes up. When this request is cancelled with an opreq-cancel, the original request is still visible in tpqueue. Also, the tapelog shows that tpdaemon continues to instruct the robot server (Sun) to mount the tape until the system is rebooted or tpdaemon is restarted.

(PR-24144) - If both buffered and unbuffered device nodes are configured with tpconfig, tpdaemon will always select the unbuffered node when mounting labeled tapes, even if the -u option is used with tpmount.

(PR-24147) - If a mount request for a silo-based tape is cancelled (via tpmount) while the silo is in the process of mounting the tape, tpdaemon will allow the tape to sit in the drive once it is mounted. A subsequent mount request for the tape may be satisfied by AVR, but the drive is otherwise unavailable.

(PR-25127) - tpdaemon issues unmount requests using the internal VSN rather than the external VSN.

(PR-25137) - If several mount requests are issued simultaneously for a silo drive, the silo will initially allocate the same free drive to all requests. Since all requests point to the same drive, only one request will succeed. However, the other requests are now locked into using this drive. Even if another silo drive is free, the requests will all wait for the original drive to be freed.

(PR-25210) - There is a bug in tpd\_match.c with mismatched braces. This causes tape mounts to fail with message "tape is mounted read only" when a tape is not even in the drive.

(PR-25211) - tpdaemon will log messages "daemon missed the ACK, proceed anyway" when the Silo acknowledgement was really received.

(PR-25125, PR-25366) - If a list of VSNs is not specified in the tpmount command, tpswitchvol(1) will cause tpdaemon to dump core.

(PR-25628) - A race condition exists in the tape system such that a tpmount, tplabel, and tplist issued in quick succession will cause the tpdaemon and label daemon to deadlock.

(PR-25780) - When a mount request for the silo has completed (and tapes are being used) and the Convex goes down unexpectedly, tapes are left mounted in the silo. These tapes (mounts) are not remembered by tpdaemon; thus, you have unavailability of drives without a silo dismount. Without a manual dismount CSM will fail; CSM tries a mount request and it fails because of remaining silo mounts. There is a need for better cleanup/communication of the tpdaemon.

(PR-26626) - tpdaemon will allow two requests to deadlock on a single Silo drive. When the "Replace Tape" occurs for a multi-volume request, tpdaemon can instead mount the tape for a different request. The first request is waiting for the drive. The second request has the drive, but cannot start since the first request still has an ansidaemon running.

(PR-25179) - If the operator cancels a REPLACE\_TAPE request for a multivolume labeled tape set, the label will continue to tpmount on tpdaemon, and the application will hang. Only current recourse is tpmount. A canceled REPLACE\_TAPE should cause an (I/O) error at the application level.

## **tpmount**

(PR-22327) - Assuming that there are two (or more) mt-format drives on a machine, try to mount two labeled tapes on two different drives in bypass mode. Note how the second will not work if the tape-drives are online and ready at mount-time.

## **tpqueue.1**

(PR-26065) - The documentation for tpqueue does not explain any of the information that tpqueue displays. Most of it is relatively self-explanatory but when it curtly says "-l causes a more detailed ...," it should at least point out the differences.

## **troff/nitroff**

(PR-23743) - The command ".ID" with arguments does not work. When using the command ".ID 0", the system ignores the 0; the the 0 used to tell it to go back to the left margin, cancelling any ".ID"s currently in effect.

## **tset**

(PR-11818) - tset ignores any command line terminal type settings, as well as \$TERM, if a mapping argument would apply to the default term type as specified in /etc/tty.s.

## **tty**

(PR-21140) - When a login session is ended, the tty line is reset to owner root, group zero, mode 666. It should be set to group bin. Everything else is okay.

## **ttys**

(PR-13519) - /etc/ttys comes with terminals set to type "vt100n". vt100n is non-standard so there are a lot of situations where termcap stuff doesn't work, because csh (for example) can't find vt100n.

## **uncompact**

(PR-21608) - Possible problem with uncompacting of files greater than 2 gigs. Execution of compact on a file of 2560352012 was successful; however, the uncompact created a file that was 2 gig-- 2147483647 instead of the actual size.

## **unexpand**

(PR-14887) - Unexpand fails to convert spaces to tabs where two or more tabs would occur at the beginning of a line. Unexpand -a fails to convert spaces to tabs under a number of circumstances.

## **utilities**

(PR-08212) - Many utilities say "Cannot open", when they should use perror() on the filename that caused the problem. This often obscures the real bug.

(PR-09876) - All daemons should chdir to the root directory upon startup. A problem occurs when running a daemon from an NFS mounted directory. The filesystem cannot be unmounted.

(PR-24704) - When a filesystem fills up, both cp and cat print a bogus error message.

## **utime.3c/utimes.2**

(PR-25371) - Both utimes(2) and utime(3c) contain a statement to the effect that "The caller must be the owner of the file or the super-user" in the DESCRIPTION section. This is not true; it's sufficient for the caller to have write access to the file.

## **uucico**

(PR-10500) - In ConvexOS V7.0, sometimes many uucico processes show up in ps output, even though no uucp conversations are currently taking place.

(PR-15797) - uucico ignores the alternate spool directory specified with the -d option.

(PR-15996) - uucico -ssystem should produce an error message when the system is not in L.sys(5). Currently, it fails silently and exits with a status of zero.

(PR-12708) - If uucico has had a successful session with a trailblazer modem, it tries to gather statistics from the modem. This is done in a rather clumsy way; every successful session is logged as LOST LINE (LOGIN), and it takes a long time.

(PR-20731) - Sometimes the whole window is repeated without a prior transmission error, and thus without getting a retransmission request from the remote side.

(PR-24950) - uucico fails when sending uucp via TCP and BIND is running.

(PR-25612) - Attempting to chmod a file on a remote host that has been copied to it via uucp fails.

## **uencode**

(PR-22141) - uencode should check for read/write failures and call perror if there was an error.

## **uuq**

(PR-15799) - uuq ignores the alternate spool directory specified by the -r option.

## uuxqt

(PR-09313, PR-09314) - uuxqt takes a pipe symbol and the following commands as an argument to the first command to execute, rather than piping the commands together. This makes it impossible to do uux commands like "uncompress | nfrcv file host".

## vdump

(PR-16310, PR-18316) - vdump does not enter the 'verify' step if the dump runs more than 1 tape.

(PR-20287, PR-20446) - The system utility vdump fails when working with a single volume dump.

(PR-23507, PR-23562) - vdump appears to successfully dump the specified partition but has problems during the verify. It repeatedly asks for a second volume. The only way to exit is with CTRL-C.

vdump.8

(PR-24408) - /etc/filter is installed for and used by vdump(8) but is not documented on the man page.

## vi

(PR-12218) - When 'vi' starts up in the background while another invocation of 'vi' is running in the foreground, the backgrounded process scrambles TTY modes and is unusable.

(PR-14413) - Setting or unsetting the noerrorbells option has no effect.

(PR-16748) - vi sometimes gets confused on how the screen should appear.

(PR-17076, PR-18363) - When a filter is invoked using the syntax !<motion><cmd>, the command works fine, but the command remains a zombie (i.e., defunct). The problem doesn't occur with the !<cmd> syntax.

(PR-17316) - While using X windows and running vi, after running a command with !, vi prints [Hit return to continue] on the bottom of the screen. If the user reshapes the window at this time, strange things happen. vi seems to be confused as to whether it is in raw or cooked mode, but more importantly, the string "[Hit return to continue]" actually replaces the current text line in the file being edited. That is, the file gets corrupted.

(PR-17924) - If modelines is set in vi, the first "/\* vi:set command:\*/" must be an invalid command or all but the last command is ignored.

(PR-18193) - While doing a long operation, e.g. search and replace or reading in a huge file, and the xterm window is resized, vi longjumps back to the top of its command loop after the resize instead of completing the current operations.

(PR-19379) - vi will dump core while manipulating a long line.

(PR-19842) - If vi is invoked from ex after yanking some lines and putting them at the end of the file, it will abort with a core dump if the user hits <CTRL>B.

(PR-20598) - When trying to jump to another tag with :ta or ^} within vi, the tag is not found if the function name is > 30 characters in length, since it is truncated.

(PR-20526) - A ^D (backtap, unindent) in insert mode is taken as a ^A.

(PR-20852) - When the ignorecase option is set, regular expressions of the form [<uppercase character(s)>] no longer work.

(PR-21897) - The "+command" option to vi seems to work only for the first file to be edited. Typing "vi + file1 file2" causes vi to position to the end of file1 as expected, but will position to the start of file2.

(PR-22814) - If a user tries to access a file and fails, the alternate file (#) is not set.

(PR-22764, PR-23613) - Attempting to edit a file larger than 8+ megabytes returns a Bus Error. There is no mention in the man page of the MAXIMUM file size vi can process.

(PR-22861) - If one filters a region through a pipe, zombies are accumulated until processes are exhausted or the user exits the editor.

(PR-24425) - A user who tries to invoke vi will sometimes get the message that he has no permissions on file /etc/Ex??????? (variable number). This behaviour can be explained if vi uses mktemp instead of mkstemp to create its temporary file. It is believed that vi uses an internal method to create its temporary file, but that method appears to be as unreliable as mktemp.

(PR-26525) - A file opened with view or vi -R can still be modified with the :w! command, even though readonly is set.

(PR-26260) - Attempting to write-out a file when the current filesystem is approaching 100% of capacity yields undesirable results. When the attempt to write the file failed, the user attempted to get out of the file without modifying the contents. This too yielded unfortunate results in that the resulting file had only 1/2 of the original contents.

## **vipw**

(PR-14133) - vipw does not protest when a syntax error is made in the fields for password aging, e.g., the comma-separator is replaced by a 'dot' . Additionally, login dumps core when the user with wrong separator in these fields tries to login.

(PR-23295) - 'vipw' sometimes reports that the password files are unchanged and refuses to make any updates.

## **vmstat**

(PR-09654) - 'vmstat -z' doesn't always behave as expected with respect to what it actually zeroes out.

(PR-24905) - The output from VMSTAT -S does not provide for "white space" between the pi and po fields. Thus on a heavily loaded system with lots of paging, one cannot distinguish between the number of page outs and page ins as the two fields blend and merge together into one big number.

## **w**

(PR-09062) - The "w" command lists only the login time and not the date. This may mislead the user into believing that a terminal has only been idle "today".

## **w.l**

(PR-25483) - The w command allows a -d option to print detailed information about user processes. This option is not documented in the manual page.

## **wall**

(PR-17279) - wall only writes to some ttys, not all of them.

## **window**

(PR-10312, PR-10737) - window does not write an entry to utmp for the ptys it uses. Therefore, getlogin() fails.

(PR-12594) - The window command changes several tty settings.

## **words**

(PR-17687) - /usr/dict/words thinks that "[un]formatted" is really spelled with one "t."

## **xdump**

(PR-16466) - At the end of tape xdump very often gets a write error, whereas dump succeeds.

(PR-23683) - xdump does not take drive offline when switching tapes.

(PR-24701) - When 'xdump' receives an error from ta0 saying there was a correctable "write error", 'xdump' aborts anyway.

## **yacc**

(PR-03581) - Error recovery can take place "too late" in some cases.

## **yesterday**

(PR-19293) - yesterday should check if it is backing over a daylight savings time change. yesterday subtracts 24 hours off the current time to find out yesterday's day. This breaks if the US just went on/off daylight savings time.

---

## **Known library bugs (V10.1)**

This section lists problems with the ConvexOS runtime libraries that are known at this time.

### **cxpa inst libs**

(PR-16587, PR-23281) - The CXpa instrumented ANSI libraries are not properly compiled or instrumented for CXpa.

### **getrusage**

(PR-26347) - The getrusage() system call to return resource utilization does not always seem to increment the ru\_inblock portion of the structure.

## **libvm.a**

(PR-06088, PR-08500) - Bad data in /lib/kernsyms/symdata\_0.0. causes utilities such as ps to produce garbage answers and/or core dump. It would be useful if these utilities would rebuild this file if it is corrupted.

(PR-07357, PR-10091) - libvm is useful enough that it deserves man pages.

## **msync.2**

(PR-26381) - Since the declaration of msync() uses caddr\_t as the type of its first argument, the user needs to include <sys/types.h>. This information should be part of the manpage.

## **vadvise(2)**

(PR-26529) - As of ConvexOS V9.0, the vadvise(2) syscall was removed. However, for 10.0 there exists the vadvise(2) man page, the sys/advise.h include file, and /usr/lib/libc-internat\_p.a contains vadvise.o. The man page and include file need to be removed as well as the vadvise.o object file from libc-internat\_p.a.



---

## Overview

This document provides information about memory usage in the VIOP by ConvexOS device drivers. For ConvexOS to configure and boot properly, several resources must be available. This resource list includes the amount of memory used on the VIOP by device drivers. This document describes the resources used by various ConvexOS device drivers and shows you how to determine if your particular configuration will have problems configuring or booting.

---

## Note

**Prior to installing ConvexOS V10.1, you should read this document and determine if your system has enough VIOP memory for your particular configuration. If you do not have enough memory when you upgrade to ConvexOS V10.1, your system may not boot.**

To help you determine whether a particular configuration will work, this appendix presents information in the following sections:

- VIOP memory system overview
- Device driver memory usage
- VIOP memory configuration worksheet
- VIOP system configuration
- Example worksheet

---

## VIOP memory system usage

The VIOP contains 512 kbytes of local memory. This memory is divided into 128 four-kbyte pages. This memory is a resource used by all ConvexOS device drivers. The following are several different reasons for ConvexOS device drivers to use this memory.

---

### Event Governed Operating System (EGOS)

EGOS is a simple operating system that runs on a VIOP and determines what device driver code to execute. The EGOS code is stored in VIOP memory.

---

### Device driver text/data segments

Each device driver present in your viop image has an associated text and data segment. These segments are stored in VIOP memory.

---

## Device driver allocation

Most device drivers require use of VIOP memory to properly handle I/O requests. This memory is needed for various reasons, and the amount needed is different for each device driver.

---

## Device driver memory usage

Each device driver uses some amount of memory for its exclusive use. This section describes the number of pages of VIOP memory each device driver uses. The table below contains a list of controllers and how much VIOP memory the device driver for each controller uses:

Controller	VIOP Memory Usage (Pages)
ACM-201	4
DKC-203 (1 disk drive)	3
DKC-203 (2 disk drives)	4
DKC-203 (3 disk drives)	5
DKC-203 (4 disk drives)	6
DKC-204 (1 disk drive)	3
DKC-204 (2 disk drives)	4
LAN-007 (tunable=4) (default)	11
LAN-007 (tunable=3)	9
LAN-007 (tunable=2)	7
LAN-007 (tunable=1)	5
LAN-202	5
LAN-204	1
MTC-201	14
MTC-202	152

---

## Ethernet driver tunable

The VIOP Ethernet driver (controller LAN-007) uses multiple processes to transmit and receive. Previously, this driver used one transmit process and one receive process, either of which could block waiting for message buffers from the JP or request completion from the Ethernet controller. Now, multiple requests may be outstanding simultaneously.

A tunable to set the number of send and receive processes for the Ethernet driver on the VIOP has been added:

```
tunable viop_enet_proc = 0xabcd
```

where *abcd* is the number of processes for each Ethernet controller, and *d* is the first Ethernet controller. For example:

```
tunable viop_enet_proc = 0x1124
```

causes the first Ethernet controller in the /ioconfig file to have 4 send and receive processes, the second to have 2 processes, and the next two to each have one process each. The maximum legal value for any digit is 4 and the minimum is 1. If an illegal value is entered, an error message is displayed, and a default of 4 is used.

Using a smaller number of processes in the Ethernet driver uses less VIOP memory. If you decrease the number of processes used in the Ethernet driver by 1, two fewer pages of VIOP memory are used. Thus, if you set your Ethernet driver to use only 3 processes, you save 2 pages of VIOP memory. Likewise, if you set it to use 2 processes, you save 4 pages of memory, and if you set it to 1, you save 6 pages of VIOP memory.

---

## VIOP memory configuration worksheet

Fill out the following worksheet to determine how much VIOP memory a particular configuration will use. If the total is greater than 128 pages of memory, your configuration will not work properly with ConvexOS V10.1.

---

### Text/data size

Fill in one line of this section. If you are running the standard ConvexOS viop image, the text/data size for the device drivers is 50 pages. If you have sysgen'd UltraNet into your system, then the text/data size for the device drivers is 55 pages. Fill in the proper values for your system.

---

### Device driver size

For each controller in your VIOP, your system will use some amount of VIOP memory. In the chart below, enter the number of controllers for each type in the column labeled "Number." For a LAN-007 controller, fill in the proper entry based on the value of the tunable viop\_enet\_proc.

Once this is done, multiply the figure just entered by the number of pages each particular controller uses. Enter this value in the rightmost column.

## Total memory usage

Once you have entered your configuration, you should total the column on the right-hand side. If this total is greater than 128, your system will not configure properly. You should review the previous section to determine ways of reconfiguring your system to allow it to properly boot.

Overhead	Pages used	Number	Total pages
EGOS	9	1	9
<b>Text/data (fill in one line)</b>	-	-	-
Standard viop	55	1	
viop with UltraNet	60	1	
<b>Device driver</b>	-	-	-
ACM-201	14		
DKC-203	-	-	-
1 disk drive	3		
2 disk drives	4		
3 disk drives	5		
4 disk drives	6		
DKC-204	-	-	-
1 disk drive	3		
2 disk drives	4		
LAN-007	-	-	-
Turnable = 4 (default)	11		
Turnable = 3	9		
Turnable = 2	7		
Turnable = 1	5		
LAN-202	5		
LAN-204	1		
LAN-208	7		
MTC-201	14		
MTC-202	15		
<b>Total</b>	-	-	
<b>Maximum available</b>	-	-	<b>128</b>

---

## VIOP system configuration

With ConvexOS V10.1, VIOP memory configurations that have worked properly in the past may no longer configure or boot correctly.

Performance enhancements have been made to the ConvexOS device drivers, especially the Ethernet driver. To improve performance, extra VIOP memory has been allocated by these device drivers.

---

### Courses of action

If you have a system that uses too much VIOP memory, there are several options you can follow:

- If you have an Ethernet driver, you can define the tunable previously described so that it allocates less VIOP memory.
- Distribute your VMEbus controllers across multiple VIOPs, taking into account how much memory the device driver for each controller uses. Use the worksheet in the previous section to compute if a particular configuration will configure properly.
- If you still have problems with using too much VIOP memory, contact the Technical Assistance Center (TAC).

## Example worksheet

This section provides a sample /ioconfig file and a completed worksheet as an example system configuration.

### /ioconfig file

The following is a sample /ioconfig file entry for a VIOP.

```
viop 0
  vme 0
    ctrlr MTC-201 csr 0x1000 int 7
      unit 0 type MTD-204
    ctrlr DKC-203 csr 0x200 int 2
      unit 0 type DKD-284
    ctrlr LAN-007 csr 0xfe00 int 5
      unit 0 type ex
  vme 1
    ctrlr MTC-202 csr 0xee00 int 4
      unit 0 subunit 0 type MTD-207
    ctrlr MTC-202 csr 0xff00 int 5
      unit 0 subunit 0 type MTD-208
```

### Worksheet entry

With the above /ioconfig file, the worksheet should be filled-in as follows:

Overhead	Pages used	Number	Total pages
<b>EGOS</b>	9	1	9
<b>Text/data (fill in one line)</b>	-	-	-
Standard viop	55	1	55
viop with UltraNet	60		
<b>Device driver</b>	-	-	-
ACM-201	14		
DKC-203	-	-	-
1 disk drive	3	1	3
2 disk drives	4		
3 disk drives	5		
4 disk drives	6		
DKC-204	-	-	-
1 disk drive	3		
2 disk drives	4		
LAN-007	-	-	-
Turnable = 4 (default)	11	1	11
Turnable = 3	9		
Turnable = 2	7		
Turnable = 1	5		
LAN-202	5		
LAN-204	1		
LAN-208	7		
MTC-201	14	1	14
MTC-202	15	2	30
<b>Total</b>	-	-	<b>122</b>
<b>Maximum Available</b>	-	-	<b>128</b>



Release Notice ConvexOS and Utilities V10.1

Document No. 710-003430-042