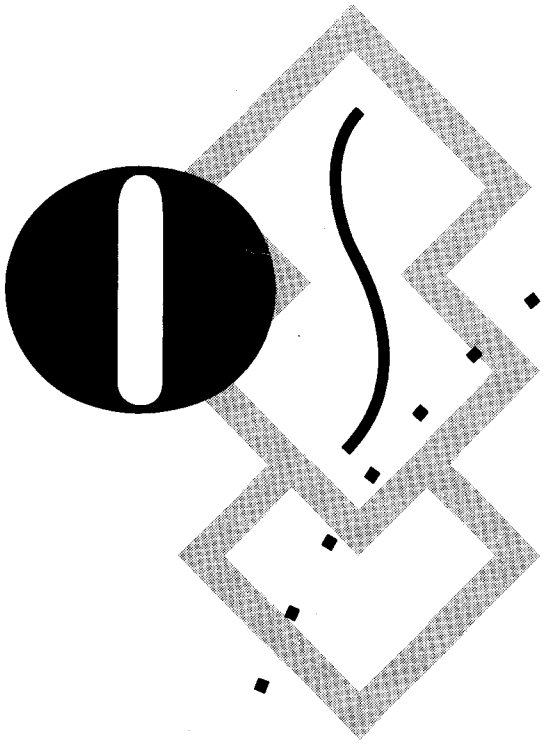

CONVEX

ConvexOS and Utilities V11.0 Release Notice

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Overview

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This release notice describes the V11.0 release of ConvexOS and the ConvexOS Utilities. It highlights new features and changes to existing features, and supplements the permanent documentation with information developed too late for inclusion. This release notice also lists fixes and workarounds that may save time if you encounter a known problem. Always refer to this document before reporting problems; your questions may be answered here.

Prerequisites

The V11.0 release of ConvexOS has the following prerequisites:

- The VME ethernet controller firmware must be at revision 6.4 or later. If it is not, reconfiguring the eth devices will not be supported and instability can result.
- 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	I/O Diagnostics
C120	V5.2	V6.6 or later	V2.7 or later	N/A
C200, C3200 Series	V6.1 or later	V5.2 or later	N/A	1.1
C3400 Series	V6.1	V2.1.1 or later	N/A	1.1
C3800 Series	V2.0	V4.0.1	N/A	N/A

- You should read *ConvexOS and Utilities V11.0 Installation Procedures* before beginning the installation (there is now one installation procedures document for both initial and upgrade installations).

Note

Remote installations, kernel upgrades from the SPU, and installation from ct-format cartridge tape are no longer supported in ConvexOS V11.0. If your system does not have a local tape drive, contact the Technical Assistance Center (TAC).

- The ConvexOS V11.0 installation procedure may require machine-specific activation keys. (The only optional product bundled with ConvexOS that requires an activation key is the CONVEX Share Scheduler.) Activation keys are shipped in an envelope attached to the ConvexOS V11.0 installation tape. Be careful not to discard the activation keys before you have completed the installation process.

Optional products

This section describes requirements for optional products.

Minimum compatible versions of optional products

Table 2 lists, in alphabetical order, the versions of optional products that are compatible with ConvexOS and Utilities V11.0.

Table 2 Minimum required versions for optional products

Product	V11.0-compatible version
CONVEX Ada	V2.1.2
CONVEX ALL	V3.0
CONVEX Application Compiler	V1.0
CONVEX AVS	V3.9
CONVEX C	V4.3.2
CONVEX C++	V1.1.1
CONVEX Profs	V1.3
COVUEnet	V3.0
COVUEbatch	V2.2
COVUEbinary	V1.0
COVUEedt	V1.2
COVUElib	V2.0
COVUEshell	V8.3
CONVEX CXbatch	V3.0
CONVEX CXdb	V2.0
CONVEX CXmetrics	V1.0
CONVEX CXpa	V2.0
CONVEX CXwindows	V3.0
CONVEX FDDI	V2.0
CONVEX FORTRAN	V8.0
CONVEX Internet Services	V11.0
CONVEX NFS	V11.0
CONVEX OSI WAN	V1.2
CONVEX PVM	V3.0
CONVEX Share Scheduler	V11.0
CONVEX TCP/HIPPI	V1.0
CONVEX Toolbox	V1.1

Table 2 Minimum required versions for optional products (continued)

Product	V11.0-compatible version
CONVEX UltraNet	V2.1
CONVEX VECLIB	V7.0

Optional products requiring reinstallation

Due to changes to the ConvexOS kernel, the following optional products must be reinstalled after installing ConvexOS and Utilities V11.0:

- CONVEX COVUEnet
- CONVEX FDDI Interface
- CONVEX TCP/HIPPI Interface
- CONVEX NFS
- CONVEX OSI WAN Transport
- CONVEX UltraNet Interface

Checkpoint/Restart

Processes that are checkpointed before the upgrade to ConvexOS V11.0 cannot be restarted under ConvexOS V11.0. All checkpointed jobs should be completed before the upgrade.

Binary compatibility with earlier versions of ConvexOS

Although every effort has been made to preserve binary compatibility between ConvexOS V11.0 and executables compiled and linked on previous releases, CONVEX recommends that any executables last built on ConvexOS V8.1 or earlier be recompiled and relinked. Networking applications built on earlier versions of ConvexOS are the most likely to have problems.

Associated documentation

The following documents are new for ConvexOS V11.0:

- *CONVEX PRTSMail User's Guide*, Fifth Edition (DSW-600)
- *CONVEX adb Command Summary Quick Reference*, First Edition (DSW-601)

The following documents are revised:

- *CONVEX adb Debugger User's Guide*, Seventh Edition (DSW-009)
- *ConvexOS Extensions User's Guide*, Second Edition. (DSW-053)
- *Managing ConvexOS: Configuration Guide*, Fourth Edition (DSW-030)
- *Managing ConvexOS: Operations Guide*, Fourth Edition (DSW-031)

The following documents have been previously published and are current for ConvexOS V11.0:

- *CONVEX 3800 Series SPU System Manager's Guide*, First Edition (DSW-023)
- *CONVEX Architecture Reference*, Sixth Edition (DHW-045)
- *CONVEX Assembly Language Reference*, First Edition (DHW-301)
- *CONVEX Compiler Utilities User's Guide*, First Edition (DSW-096)
- *CONVEX Networking Concepts*, Second Edition (DSW-128)
- *CONVEX POSIX Conformance*, Third Edition (DSW-311)
- *CONVEX SPU System Manager's Guide*, First Edition (DSW-022)
- *CONVEX vi Quick Reference*, First Edition, Rev. 1 (DSW-019)
- *ConvexOS Primer*, First Edition. (DSW-133)
- *ConvexOS Tutorial Papers*, Eighth Edition (DSW-002)
- *The C Programming Language*, First Edition (DSW-046)
  By Brian Kernighan and Dennis Ritchie, published by Prentice-Hall
- *GNU Emacs Manual*, Sixth Edition (DSW-050)
  By Richard Stallman, published by the Free Software Foundation
- *Programming perl*, First Edition (DSW-051)
  By Larry Wall and Randal L. Schwartz, published by O'Reilly and Associates, Inc.

Internet Services and Network File Systems (NFS)

CONVEX Internet Services and CONVEX NFS documentation has been combined for this release. The following list describes documents which are new or revised, as well as documents which have been superceded by the new edition.

- *CONVEX Network Programming Guide*, First Edition (DSW-106)
  This book replaces
  - *CONEX IPC Programming Guide*, Second Edition, Rev. 1 (DSW-143)
  - *CONVEX NFS Reference Set*, Third Edition (DSW-111)
  - *CONVEX Transport Layer Interface Library Guide*, First Edition (DSW-430)
- *Managing CONVEX Internet Services and NFS*, First Edition (DSW-108)
  This book replaces

  - *CONVEX Internet Services System Manager's Guide,* First Edition (DSW-142)
  - *CONVEX NFS System Manager's Guide,* Third Edition (DSW-113)
- *Using CONVEX Internet Services and NFS Quick Reference,* Second Edition (DSW-118). This book replaces
  - *CONVEX Internet Services Quick Reference,* First Edition (DSW-118)

The following documents are superceded by this release:

- *CONVEX NFS Concepts,* First Edition (DSW-109)
- *CONVEX NFS Programmer's Reference,* Second Edition (DSW-114)

Share Scheduler

The Share Scheduler product has not changed and the following document is current:

- *CONVEX Share Scheduler System Manager's Guide,* First Edition (DSW-268)

ConvexOS Tape System

The following documents are no longer bundled with releases of ConvexOS. They are now part of a new product, ConvexOS Tape System and are contained in the ConvexOS Tape System documentation kit.

- *ConvexOS Tape System Manager's Guide, Second Edition* (DSW-398)
- *ConvexOS Tape System Operator's Guide,* Second Edition (DSW-397)
- *ConvexOS Tape System Quick Reference, Fourth Edition* (DSW-391)
- *ConvexOS Tape System User's Guide, Fifth Edition* (DSW-018)

New features

2

This chapter describes the following new features in ConvexOS V11.0:

- STREAMS
- Shadow passwords
- `tcpd`
- `traceroute`
- SNMP
- JOBS
- `zic`

STREAMS

CONVEX TCP/IP protocols (TCP, UDP, and IP) have been converted to a STREAMS-based architecture for ConvexOS V11.0. STREAMS is a message-passing system that consists of system calls, kernel resources, and kernel routines. The STREAMS interface provides:

- Support for the industry standard TLI/XTI transport library
- Standard protocols at each layer (TPI, NPI, DLPI)
- Kernel information accessible only through ioctls
- Customizable and dynamically configured protocol stack

The TCP/IP STREAMS implementation provides binary compatibility with existing applications through the sockets-to-STREAMS interface, which maps socket requests to STREAMS structures and functions.

Note

The raw socket interface to the IP protocol is no longer supported. Refer to "Programming impacts" on page 31 and to the *CONVEX Network Programming Guide* for information about converting raw socket applications to STREAMS and NPI.

Three utilities (`knetdctl`, `io2knetcf`, and `strstat`) and several boot-time parameters have been added in this release for STREAMS configuration and management. The following sections describe additions and changes to ConvexOS for STREAMS support:

- `knetdctl`, `io2knetcf`, and the knetd.conf file
- `strstat`
- Changes to the rc.local file
- STREAMS programming interface

knetdctl

The `knetdctl` utility configures a STREAMS protocol stack from information provided in the /etc/knetd.conf configuration file. The knetd.conf file included in the standard distribution provides a default configuration for the TCP/IP stack and one Ethernet interface. If you use more than one network interface on your system, you need to modify this file to correctly build the network stack.

You can use the `io2knetcf` utility to generate the /etc/knetd.conf file from information in the /ioconfig file. To use `io2knetcf` to generate the knetd.conf file for your system's network interfaces, enter

```
io2knetcf > /etc/knetd.conf
```

This command uses **`spu -r /ioconfig`** as input and overwrites the existing knetd.conf file.

If you use SLIP, enter

```
io2knetcf -slip > /etc/knetd.conf
```

You can also modify the knetd.conf file manually; for example, if you have network interfaces that do not run TCP/IP.

The supplied knetd.conf file includes comments that explain what the statements in the file do, so you should read this file before making changes described on the following pages. For information on knetd.conf file syntax, refer to the knetd.conf(5) man page.

The following sections show changes needed in the supplied knetd.conf file for different types of interfaces.

Configuring additional Ethernet interfaces

If you have additional Ethernet interfaces, follow these steps:

Step 1 Duplicate the lines shown in Figure 1 for each new interface:

Figure 1 Duplicating lines in knetd.conf file for additional Ethernet interface

```
mac:0     -       PORT={0}              # open stream to mac device, use unit 0
ip        mac:0   PORT={2048, IP}       # link ip to mac stream, dlsap 2048

mac:1     -       PORT={0}              # open stream to mac device, use unit 0
ip        mac:1   PORT={2054, ARP}

mac:2     -       PORT={0}              # open stream to mac device, use unit 0
ip        mac:2   PORT={32821, REVARP}
```

Step 2 Modify the duplicated lines as follows:

1. Increment the `mac:` number for each pair.
2. Modify the `PORT={0}` number to reflect the controller number for each new interface.

Figure 2 shows an example of a second Ethernet controller definition:

Figure 2 Second Ethernet controller definition in knetd.conf file

```
mac:3     -       PORT={1}            # open stream to mac device, use unit 1
ip        mac:3   PORT={2048, IP}     # link ip to mac stream, dlsap 2048

mac:4     -       PORT={1}            # open stream to mac device, use unit 1
ip        mac:4   PORT={2054, ARP}

mac:5     -       PORT={1}            # open stream to mac device, use unit 1
ip        mac:5   PORT={32821, REVARP}
```

Configuring FDDI

To configure an FDDI interface in the knetd.conf file, follow these steps:

Step 1 Duplicate the lines shown in Figure 3 for each FDDI interface:

Figure 3 Duplicating lines in knetd.conf file for FDD I interface

```
mac:0     -       PORT={0}            # open stream to mac device, use unit 0
ip        mac:0   PORT={2048, IP}     # link ip to mac stream, dlsap 2048

mac:1     -       PORT={0}            # open stream to mac device, use unit 0
ip        mac:1   PORT={2054, ARP}

mac:2     -       PORT={0}            # open stream to mac device, use unit 0
ip        mac:2   PORT={32821, REVARP}
```

Step 2 Replace the `mac` keyword with `macf` if you also use Ethernet controllers in the system as shown in Figure 4.

Figure 4 FDDI interface definition in knetd.conf file

```
macf:0    -       PORT={0}            # open stream to macf device, use unit 0
ip        macf:0  PORT={2048, IP}     # link ip to macf stream, dlsap 2048

macf:1    -       PORT={0}            # open stream to macf device, use unit 0
ip        macf:1  PORT={2054, ARP}

macf:2    -       PORT={0}            # open stream to macf device, use unit 0
ip        macf:2  PORT={32821, REVARP}
```

Step 3 At the top of the knetd.conf file, in the Modules section, where `mac` is defined as `/dev/eth`, add the following line to define the FDDI controller:

```
macf dc /dev/fddi
```

Configuring HYPERchannel

If you use a HYPERchannel interface, STREAMS configuration is simpler because HYPERchannel does not support ARP or REVARP. To configure a HYPERchannel interface in the knetd.conf file, follow these steps:

Step 1 In the Modules section, remove the # (pound sign) from the following line:

```
mach      dc      /dev/hyper
```

Step 2 In the Streams section, add the following statements for each controller. Be sure to change the `mach:` number and `PORT={0}` appropriately for each controller:

```
mach:0    -        PORT={0}
ip        mach:0   PORT={5, IP}
```

Configuring SLIP

To configure SLIP in the knetd.conf file, follow these steps:

Step 1 In the Modules section, add the following line:

```
macs      dc       /dev/sl
```

Step 2 In the Streams section, add the following statements for each controller. Be sure to change the `macs:` number and `PORT={0}` appropriately for each controller:

```
macs:0    -        PORT={0}
ip        macs:0   PORT={5, IP}
```

Configuring HIPPI

To configure a HIPPI interface in the knetd.conf file, follow these steps:

Step 1 In the Modules section, add the following line to define the HIPPI controller:

```
maci dc /dev/hippi
```

Step 2 In the Streams section, add the following statements for each HIPPI controller. Be sure to change the `maci:` number and `PORT={0}` appropriately for each controller:

```
maci:0    -        PORT={0}
ip        maci:0   PORT={2048, IP}
```

Configuring UltraNet

UltraNet configuration does not support ARP or REVARP, and has only one link definition. To configure an UltraNet interface in the knetd.conf file, follow these steps:

Step 1 In the Modules section, remove the # (pound sign) from the following line:

```
un        dc       /dev/un
```

Step 2 In the Streams section, add the following statements for each controller. Be sure to change the `un:` number and `PORT={0}` appropriately for each controller:

```
un:0      -        PORT={0}
ip        un:0     PORT={2048, IP}
```

`strstat`

The new `strstat` utility displays statistics on the amount of system resources used by STREAMS. STREAMS resources are allocated at boot-time and can be controlled by modifying the boot-time parameters associated with that resource. The default values for all STREAMS boot-time parameters are optimal for a typical CONVEX TCP/IP network and should not need modification. However, if you experience failures in establishing TCP/IP or UNIX-domain connections, use the

`strstat` utility to determine whether the problem results from insufficient STREAMS resources, and increase the value of the boot-time parameter associated with that resource. For a list of STREAMS boot-time parameters, refer t o *Managing ConvexOS: Configuration Guide*, Fourth Edition. For more information about `strstat`, refer to the strstat(1) man page.

Changes to rc.local file for STREAMS

The following modifications must be made to the rc.local file for STREAMS networking:

Step 1 Insert the lines shown in Figure 5 before any `ifconfig` statement, or any statement for any other network operation. These lines initialize the STREAMS stack based on the configuration file /etc/knetd.conf:

Figure 5 rc.local file changes for STREAMS

```
# build the networking streams stack
if [" `/etc/knetdctl -q` " = "knetd not configured"]; then
                /etc/knetdctl -c /etc/knetd.conf
                /etc/knetdctl -r
fi
```

Note

The knetdctl -r (restart) and -s (shutdown) commands must be issued only when the system is in single user mode.

Step 2 Modify the `ifconfig` statements in rc.local to reflect the new device names. Table 3 lists the device names in V10.1 with the new name for V11.0.

Table 3 New device names

Device name in ConvexOS V10.1	Device name in ConvexOS V11.0
ex	eth
hy	hyper
fd	fddi
—	hippi
un	un

Step 3 Remove any references to /dev/lo, including the `ifconfig` for the loopback interface, lo0.

The loopback device has been incorporated into the IP driver and does not require separate initialization.

/dev/lo can still be accessed by opening a socket to localhost.

Changes to /etc/rc file for STREAMS

Before the line

```
rm -f /etc/nologin
```

add the line

```
rm -f /etc/use_nameserver
```

Programming interface

The programming interface to STREAMS is provided though new system calls and the CONVEX Transport Layer Interface (TLI) Library. For information on the STREAMS programming interface, refer to the following man pages:

- getmsg(2)
- poll(2)
- putmsg(2)
- streams(4)

For information on TLI, refer to the *CONVEX TLI Library Programmer's Guide* and the CONVEX TLI Library man pages.

Shadow passwords

Shadow passwords is a new optional feature in ConvexOS V11.0 that increases password security. A new file, /etc/shadow, contains the same information in the same format as the nonshadowed /etc/passwd file, with the addition of encrypted passwords. The encrypted password field of the /etc/passwd file now contains an asterisk (*) to indicate that the encrypted password is contained in /etc/shadow. For example:

```
fred:41hQCSOal.53g:8888:88:Fred Flintstone:/bedrock/fred:/bin/sh
```

becomes

```
fred:*:8888:88:Fred Flintstone:/bedrock/fred:/bin/sh
```

The /etc/shadow file is owned by root, group bin (default group root), mode 600. Nonprivileged users cannot read the encrypted password when the shadow passwords feature is enabled. /etc/passwd remains world-readable.

If shadow passwords is enabled, the `getpwent` library routines return the encrypted password if the process is owned by root. /etc/shadow has associated ndbm files, /etc/shadow.dir and /etc/shadow.pag, which are generated by `mkpasswd` for fast lookups by `getpwent` routines.

`cvtsdw` is a new utility that converts the /etc/passwd file to the new format and creates the /etc/shadow file. `cvtsdw` will also recreate /etc/passwd from /etc/shadow.

The /etc/rc file has been modified to recover the shadow password file if necessary.

For more information about shadow passwords, refer to the following man pages:

- cvtsdw(8)
- getpwent(3)
- passwd(5)

- pwrestrict(5)
- mkpasswd(8)
- vipw(8)
- yppasswdd(8c)

tcpd

tcpd, the remote network connection monitor and access control daemon, is new in ConvexOS V11.0. tcpd is a front end that monitors connections to network services started via inetd and reports them via the syslog mechanism. tcpd is typically used to log requests to services such as finger, ftp, telnet, rlogin, rsh, and tftp.

tcpd is used by modifying the inetd configuration file to execute tcpd instead of the daemon that would normally execute. For example,

```
finger stream tcp nowait nobody /usr/etc/in.fingerd fingerd
```

becomes

```
finger stream tcp nowait nobody /usr/etc/tcpd in.fingerd
```

The tcpd daemon then executes the daemon replaced by tcpd in the line above.

For more information on tcpd, refer to the tcpd(8) man page.

traceroute

traceroute is a diagnostic aid for network management. This program enables you to observe the route taken to reach a particular host. traceroute is useful for determining the actual routes taken in the network and can also be used to identify breaks in the normal route.

traceroute uses the raw IP interface to send requests and uses ICMP to receive information about nodes touched in the process.

traceroute was taken from the public domain and ported to ConvexOS using the STREAMS programming interface for IP.

For information about traceroute, refer to the traceroute(8) man page.

SNMP

`snmpd` is the SNMP (Simple Network Management Protocol) agent in ConvexOS V11.0. SNMP is a standard for management of TCP/IP-based internets and is defined in the following RFCs:

- RFC1155—Defines the Structure of Management Information (SMI), the mechanisms used for describing and naming objects for the purpose of management
- RFC1212—Defines a more concise description mechanism consistent with the SMI
- RFC1213—Defines the second version of the Management Information Base (MIB-II) for use with network management protocols in TCP/IP- based internets
- RFC1157—Defines SNMP, the protocol used for network access to managed objects

SNMP consists of a collection of network management stations (NMS) and network elements. CONVEX provides the management agent, `snmpd`, but not the NMS. The NMS, which has a user interface to SNMP, is available through third-party vendors and works with the agent that CONVEX supplies. Upon receipt of a request from the NMS, `snmpd` authenticates the request, attempts the operation, and returns a response.

For more information on SNMP, refer to the RFCs listed above and to the snmpd(8) man page.

Jobs

A job is a collection of related processes. For example, all processes that result from a single batch request are part of a single job. If the trigger file /etc/jobs is present, then all processes that have a common login shell as an ancestor are part of a single job. With jobs:

- Each job has an owner based on the UID of the user creating it.
- Each job is identified with a job ID.
- Each process in a single batch request or common login shell is associated with a job.

Jobs has been implemented in this release of ConvexOS to satisfy the needs of large central sites that run a lot of batch jobs. Jobs enables you to:

- Limit system resources on a per-job basis as well as on a per-process basis.
- Gather accounting information based on a job ID for billing and tracking purposes.

Limits

Limits can be placed on use of resources such as memory, CPU time, and maximum file size. Job limits can be placed on resources in two contexts: interactive login jobs and batch jobs.

To enable login jobs, the system manager creates the file /etc/jobs. If this file is present, `login()` creates a login job for the user by calling `setjob()` and executes the /etc/jobs file passing the following arguments: process ID of the login shell, job ID of the new job, and user ID of the user. The system manager can then create a script or program to set interactive job limits, which are site-configurable.

The batch manager sets the default absolute limits through batch queues. Users can specify limits for their own processes and jobs when submitting a job to CXbatch. If no limits are set when a job is submitted to CXbatch, the limits set for the queue are used. If there are no limits set for the queue, limits do not apply.

Per-job and per-process limits can be imposed on maximum usage on

- CPU time
- Memory space

Per-process limits can be imposed on maximum usage on

- Nice value
- Data segment size
- Stack segment size
- Working set
- Core file size
- Permanent file size

Three limits can be set for each resource:

- Soft limit—Lowest limit a user can set
- Hard limit—Highest limit a user can set
- Absolute limit—Maximum limit set by the system manager on the queue for a resource

Values can be set for these limits with the following restrictions:

- Soft limit can never exceed the hard limit. It must always be less than or equal to the hard limit.
- Hard limit can never exceed the absolute limit. It must always be less than or equal to the absolute limit.
- Any user can raise or lower the soft limit of their own processes and jobs, without exceeding the hard limit.
- Any user can raise or lower the hard limit of their own processes and jobs, without exceeding the absolute limit.
- Only root can modify the absolute limit on a process or job.
- No limit can exceed the absolute queue limit set by the system manager. If they do, the job is not accepted by the queue.

The action taken when a hard or soft limit is reached is configurable by the user owning the process or job. If a process exceeds the limit, the action is taken on the offending process; if a job exceeds the limit, the action taken is on all the processes associated with the job. This can be:

- Termination—If termination is selected, the process or job terminates.
- Stopping—If stopping is selected, the process or job stops until restarted by the user owning the process or job.
- Sending a warning signal—If a signal is sent, the process or job is dealt with according to the way the program receiving the signal deals with signals.

If the program does not specify an action for a limit, the default action is taken. This is:

- A warning is sent to the user when the soft limit is reached.

- The process or job terminates when the hard limit is reached.
- The process or job terminates when the absolute limit is reached.

If the absolute and hard limit for a resource have the same value, the action will be termination. If the hard and soft limit for a resource have the same value, the action defined for the hard limit will be taken.

Limit enforcement is controlled by the boot-time parameters shown in Table 4

Table 4 Boot-time parameters for limits

Boot-time parameter	Description
`limits_traditional`	Defines action to be taken when CPU time, memory size, or file size limit is reached. When set to 0, one of four actions occur when a limit is reached: • The violation is ignored • The process (for process limits) or all processes in a job (for job limits) are terminated, stopped or signalled. When set to 1 (the default), attempts to grow memory fail with ENOMEM, and attempts to grow files fail with EFBIG.
`limits_enh_mem`	When set to 1 (the default), total address space limits are checked for process and job totals when limits for memory use (data or stack segment size) are exceeded. When set to 0, total address space limits are not checked.
`limits_enh_cpu`	When set to 1 (the default), a process or job that exceeds the soft *or* hard CPU limit receives the specified action, and receives a SIGKILL if it exceeds the absolute limit. When set to 0, only process limits apply. When a process exceeds the soft CPU limit, it receives a SIGXCPU once every 5 seconds until the hard limit is reached, then the process is signaled every tick it runs.
`clk_sync_freq`	Defines the number of ticks (one tick is 10 milliseconds) between CPU limit checks, which synchronize process and job concept of time with hardware clocks. This parameters is ignored if `limits_enh_cpu` has a value of 0. Default = 100 (once every second), max = 32767.

Accounting

ConvexOS accounting generates three types of accounting records:

- Periodic record—A periodic record is generated every *n* seconds, where *n* is set by the system manager. This record carries a running total for resources

used by the process to date. There may be more than one periodic record for a process, but the most recent record obsoletes the others. This record type allows for partial accounting for processes which were in the system at the time of an abnormal shutdown, such as a crash, hang, power failure, etc.

- Process termination records—A process termination record is generated each time a process terminates. This record provides pertinent information on the process, such as process ID, parent, process ID, job ID, and so on. This record obsoletes any periodic records that exist for the process.
- Job termination records—A job termination record is generated when the last process associated with a job exits. This record provides summary of resources used by all processes associated with the job and acts as an end of marker in the accounting file.

Information from these records is retrieved through the daily, weekly, monthly accounting scripts and viewed using the `sa` command. See the *Managing ConvexOS: Operations Guide* for details on generating accounting reports.

Note

The summary accounting files usracct and savacct are not valid for ConvexOS V11.0 and can cause `sa` to core dump when using old style summary files.

The system manager can configure periodic accounting records to be produced approximately every *n* seconds using the `accton` utility. When a process has been marked to generate a record and at least *n* seconds has elapsed, it produces an accounting record the next time the process makes a system call or the next time the process is scheduled, whichever occurs first.

Commands

Jobs implementation has introduced some new commands and changed some existing commands.

- `acctconv`—New utility that converts old style accounting records to new style accounting records.
- `accton`—Modified utility that enables or disables standard accounting and periodic accounting.
- `js`—New user utility that displays information about jobs that are running. The output depends on the type of request:
  - If requesting information for all active jobs, displays a summary line for each job containing resource limits and utilization.
  - If requesting information for a single job, displays a line for each process of the job with run status and resource limits.
- `killjob`—New utility that signals all processes for a specified job.
- `limits`—New user utility that obsoletes `limit` in `csh` and `ulimit` in `ksh`. Permits users to:
  - Adjust absolute, hard, and soft limits of their own processes and jobs that are running. Only root can modify absolute limits or change limits for processes and jobs owned by any user.
  - Modify the action associated with exceeding a resource soft or hard limit for their own processes and jobs that are running. Root can modify the action for process and jobs owned by any user.
- `ps`—new option to the `ps` command that restricts output to processes which belong to a specified job.
- `qstat`—New utility that displays the job ID for each request. The long form

of `qstat` displays the new per-process and per-request resource limits.

- `qsub`—New utility that permits users to set a limit (hard limit) and a warning limit (soft limit) on resources.

zic

`zic` is the time zone information compiler, a compiler for time zone definitions. This feature, along with the revised `ctime()` and `*time()` functions provided as part of the C library, enables a CONVEX system to support any time zone.

This is an improvement from previous revisions of the ConvexOS and Utilities, that supported only 11 distinct time zones and 7 daylight savings time rules.

The CONVEX implementation supports 9 rule source files, which provide over 120 individual time zones. The zic(8) man page describes how to create additional time zone rule source files, so CONVEX customers can create their own.

The addition of `zic` and the zone information database means that the traditional method of setting the system time zone information with the `date` command no longer works. The `-z` to the `date` command switch now informs the user to use the `zic` compiler to set up local time zone information.

/etc/rc no longer uses the `date -z` command to set the system's idea of time zone information, because `zic` provides this via the file system (the file /etc/zoneinfo/localtime is a hard link to the local time rule for the system).

Initial installation of the zone information database and configuration of a newly installed system now occur during installation or upgrade of the ConvexOS Core Utilities instead of during kernel installation. The installation script suggests a time zone(s) for your region and gives you the opportunity to select an alternative.

Future ConvexOS upgrades will preserve the link to the /etc/zoneinfo/localtime file. This will preserve the local time zone information for a host.

For more information about `zic`, refer to the zic(8) man page.

Changes to utilities and procedures

3

This chapter describes changes to existing utilities and procedures. Changes discussed in this chapter pertain to the following areas:

- ConvexOS and Utilities packaging
- New installation procedure
- ConvexOS Tape System packaging
- Enhancements to ConvexOS utilities
- Enhancements to Internet Services
- NFS write-clustering
- IDC driver
- HYPERchannel management utilities and procedures
- Programming impacts

Repackaged ConvexOS Utilities

ConvexOS Utilities, previously distributed as root and usr Upgrades, have been split into 13 separate subproducts that may be released separately. Splitting the Utilities enables CONVEX to quickly develop and release patch or incremental releases. This means there is no longer a single ConvexOS version number associated with the kernel and utilities, but there is a ConvexOS configuration denoted by the subproduct versions saved in a system's Generic Installation Procedures (GIP) database.

Table 5 shows the new subproduct sets.

Table 5 Subproduct sets

Product name	Part number	Description
ConvexOS Accounting System	710-016215-002	Programs and files for accounting administration.
ConvexOS Core Utilities	710-000315-004	The basic set of utilities required to install the system. This subproduct contains at least all the utilities included in the mini-root.
ConvexOS Extended Utilities	710-016115-002	The remaining ConvexOS utilities not in the Core Utilities subproduct except for those associated with another specific subproduct.
ConvexOS Programming Tools	710-016315-002	Header files, libraries, and programs to support a development environment.
GNU Emacs	710-017215-002	The GNU version of EMACS.
ConvexOS Info System	710-016415-002	The `infosys`, `learn` and `csh-help` subsystems.
ConvexOS Line Printer System	710-016515-002	Programs and files to support the line printer subsystem.
ConvexOS Mail System	710-016615-003	Programs and files to support the mail subsystem.
ConvexOS Notes System	710-016715-002	Programs and files to support the notes subsystem.
ConvexOS Plotter Control System	710-016815-002	Programs and files explicitly for plotter control.

Table 5 Subproduct sets (continued)

Product name	Part number	Description
ConvexOS Terminal Control System	710-016915-002	Programs and files explicitly for terminal control.
ConvexOS Text Processing System	710-017015-002	`nroff` and related binaries and files.
ConvexOS UUCP System	710-017115-002	Programs and files to support the UUCP subsystem.

Of the subproducts listed in Table 5, you should at least install:

- ConvexOS Core Utilities, Extended Utilities, and Accounting system.
- ConvexOS Programming Tools, if you have any of the CONVEX compilers.
- ConvexOS Text Processing Tools, if you wish to view the man pages associated with any product you install.
- ConvexOS Domestic Tools, if your site is located within the United States and Canada (sites in other countries will not receive Domestic Tools).

The other subproducts are optional.

New installation procedures

The ConvexOS V11.0 installation scripts have been rewritten to make installation of ConvexOS simpler and easier. An initial installation involves installing miniroot, which boots ConvexOS on the miniroot file system. After miniroot is installed and the file systems are set up, the initial installation procedure is the same as an upgrade installation. Initial and upgrade installation procedures are combined in one document.

The following types of installation are no longer supported: remote installation, kernel upgrades from the SPU, and installation from ct-format cartridge tape.

Repackaged ConvexOS Tape System

The ConvexOS Tape System will not be shipped with ConvexOS V11.0. The ConvexOS Tape System is now a separate product and is installed and updated independently of ConvexOS. ConvexOS V11.0 will operate with whatever ConvexOS tape system is installed.

For more information about changes to the ConvexOS Tape System, refer to the *ConvexOS Tape System Release Notice.*

Enhancements to ConvexOS utilities

Changes have been made to several ConvexOS and Internet Services utilities:

- `contact`
- `crashdump`
- `cron`
- `m4`
- `mount`
- `rcs` and `diff`
- `sendmail`

`contact`

When you file a `contact` report, you now have the option of specifying a CPU number other than the one on which the report is filed. A new boolean field, `ac` (ask cpu), in the contactcap file controls whether the `contact` utility prompts you for a different CPU number. The `contact` utility prompts for a CPU number and host name if `ac` is true. If `ac` is false, you will not be prompted. The default is false.

A new field, `Submitter-CPU`, has been added to the `contact` report and is used in the `Subject:` header field in mail acknowledging receipt of the `contact` report. If ac is true, the `Submitter-CPU` field is automatically filled in with the CPU serial number you entered for the report. If a different CPU was not entered, the CPU serial number of the machine on which the report is filed is replicated in the `Submitter-CPU` field.

crashdump

The `crashdump` utility has two new options:

- The `-P` switch allows you to select a directory on the SPU disk drive in which to place the crash dump. This option is valid only on C3800 SPUs.
- The `-R` switch forces the dumping of memory ring 3, which contains the buffer cache. By default, only rings 0 through 2 are written.

cron

The `cron` system has been modified to incorporate some POSIX 1003.2 functionality. crontab files are now spooled to `/usr/spool/cron` as *<username>*.tab and any cronrc files are spooled as `/usr/spool/cron/`*<username>*.rc. To preserve backward compatibility, a new `autocron` daemon has been written that will update the spooled crontabs every hour.

If the `/etc/posixcron` file exists, and cron is not started with the `-a` flag, `cron` runs in POSIX mode and crontab files are spooled through the crontab interface.

If `cron` is started with the `-a` flag or the `/etc/posixcron` file does not exist, `cron` starts the `autocron` daemon and backwards compatibility is preserved. The crontab interface can still be used.

`tellcron` has also been modified to provide POSIX 1003.2 functionality. There are several options that can be used to perform operations on your crontab file.

For more information, refer to the tellcron(1), crontab(5), cron(8), and autocron(8) man pages.

fsck

During reboot, running the `fsck` utility on the root file system no longer requires a reboot to recover a corrupt file system. The root file system is automatically remounted and the following message is displayed:

```
/dev/<root>: root filesystem remounted
```

where `<root>` is the name of the root file system device.

In the event that the remount operation fails, `fsck` behaves as it did previously to ConvexOS 11.0 and reboots the system to recover the root file system.

m4

The ConvexOS Programming Tools V11.0 contains an improved version of the `m4` macro processing program. This version of `m4` is provided by the Free Software Foundation and includes all the System V `m4` flags as well as improved debugging flags, and the capability to define a search path for the `include()` and `sinclude()` directives.

Additional built-in macros include `pushdef()`, `popdef()`, `indir()`, `patsubst()`, `format()`, and `esyscmd()`. See the m4(1) man page for details.

mount

A new mount option, ra, has been added to provide greater control over read ahead. The ra mount option specifies on a file system basis how many blocks should be read in advance for files being accessed sequentially.

When the file system detects that a file is being read sequentially, it requests that blocks be read into the buffer cache ahead of time so that they will be available when a process needs them. The number of extra blocks read is normally a function of the file system block size and the number of disks that make up the file system, with a maximum value of 12.

On C3800 systems, 12 blocks are not enough to keep up with certain programs, so the maximum has been increased to 32 for all systems.

rcs and diff

The rcs shipped with ConvexOS V11.0 is a port of GNU RCS 5.6, distributed under license from the Free Software Foundation, Inc. If the Optional Sources product is installed on your system, the source for rcs is in /usr/src/gnu/rcs.

Note

The rcs source code supplied by CONVEX has some modifications to the GNU source code to provide backward compatibility.

rcs changes

Major changes to the new rcs are

- Bug fixes
- Binary file support
- Use of GMT time for checkins and checkouts

  GNU RCS uses GMT time by default; the CONVEX port of GNU RCS uses local time by default for backwards compatibility. Refer to the README file with the GNU RCS sources for directions on how to create RCS that works with GMT as the default.
- A 4-digit year used in preparation for the upcoming century change.

  This can cause rcsdiff to report differences when there are none. The only difference is the date expanded in $Header, which has a 4-digit year instead of a 2-digit year.
- Different format for header printed by rlog
- Arbitrary limits on internal table sizes removed.

There are many more changes to rcs; refer to the /usr/src/gnu/rcs/README file supplied with the Optional Sources product and to the following man pages:

- ci(1)
- co(1)
- ident(1)
- merge(1)
- rcs(1)
- rcsclean(1)
- rcsdiff(1)

- rcsfile(5)
- rcsfreeze(1)
- rcsintro(1)
- rcsmerge(1)
- rlog(1)
- sccstorcs(1)

Note

RCS wrapper programs may have problems with the new RCS. You can use the -v flag with RCS for backward compatibility; refer to the co(1) man page for details.

`diff` changes

GNU RCS requires a `diff` that supports binary files. To achieve this, GNU DIFF 2.0, distributed under license from the Free Software Foundation, Inc., has been ported to ConvexOS V11.0. This version includes new binaries for `diff`, `diff3`, and `cmp`. If the Optional Sources product is installed on your system, the source for `diff` is in /usr/src/gnu/diff.

Note

`diff` source code supplied by CONVEX includes some modifications to the GNU source code to provide backward compatibility.

Major changes to `diff` are

- `diff` supports binary files
- `diff3` is a stand-alone program (/usr/lib/diff3 is no longer supplied.)
- /usr/lib/diffh is no longer supplied (The `-h` option is ignored by `diff`.)
- `diff` is faster in some cases, slower in others
- `cmp` is significantly faster

Refer to the diff(1), diff3(1), and cmp(1) man pages for descriptions of new options.

sendmail

ConvexOS V11.0 includes a new version of `sendmail`. The latest version (8.6) contains numerous changes and enhancements to the earlier version (5.64). Some of the more visible changes are:

- New and enhanced command line flags
- Addition of new configuration line types and deletion of some old ones
- New options to support new features and to allow tuning that was previously available only by recompiling
- New mailer flags
- New predefined macros
- Bigger defaults for maximum number of rulesets, MX records, and queued messages

`sendmail` 8.6 performs more rigorous error checking on the rewriting rules than `sendmail` 5.64 did. Instead of quietly ignoring rules with errors, `sendmail` 8.6 emits an error message listing the line and the problem with the rule. Typically, this error is emitted when using an out of range replacement token.

With `sendmail` 8.6, the SMTP commands `expn` and `vrfy` no longer return identical information. `expn` continues to perform alias and .forward file expansion, while `vrfy` returns either an error or the address given (possibly with the local host name added, if it was unqualified), indicating the validity of the address on the local system.

`sendmail` will now use the original login name of a user to generate the `From:` line. To force a new UTMP entry so that any daemons started will show their mail as coming from root and not the user who started them, enter the following command as root:

```
# /bin/login
```

Current `sendmail` configuration files will continue to work with the new version of `sendmail` except for NIS aliases. For NIS, remove `Op` lines and replace with the line

```
OAnis:mail.aliases
```

For detailed information, refer to the sendmail(8) man page or to the file /usr/lib/conf/sendmail/CHANGES-R5-R8.

Enhancements to Internet Services

Several changes have been made to utilities and protocols in CONVEX Internet Services.

route

The `route` utility has two new commands and two new options. For complete information on `route`, refer to the route(8c) man page.

The `addhippi` command and the `addhyper` command add a HIPPI route or HYPERchannel route, respectively. For a description of new arguments for these two commands, refer to the route(8c) man page.

The `-a` option dumps the current routing table in use by the kernel.

The `-h` option dumps the route table to standard output with the hardware addresses and MTUs for each HYPERchannel route.

New networking tunables

Several tunables were added in ConvexOS V11.0 to accomodate networking enhancements. These tunables are listed in Table 6 (refer to *Managing ConvexOS: Configuration Guide*, Fourth Edition for a list of STREAMS tunables).

Table 6 New networking tunables

Tunable	Description
`adv_WS_option`	This tunable is used for window scaling, an option negotiated between the local and remote ends of a connection when the connection is established. Window scaling allows TCP to use a "sliding window" of greater than 64k. When the `adv_WS_option` tunable is set to 0, window scaling is not advertised. When set to 1 (the default), window scaling is advertised per RFC-1323. Window scaling is never used unless the TCP send buffer is set equal to or greater than 64k.
`disable_loopback_csums`	TCP checksums which are normally done on network data sent loopback on the system will not be done if this tunable is set to 1. If set to 0 (the default), checksums will be done on loopback data.
`fd_max_recv`	Specifies the number of buffers used to hold input packets received by the FDDI driver and ready to be handed to the IP layer. Default = 28, min = 2, max = 128
`fd_max_xmit`	Specifies the number of buffers used to hold output packets handed from the IP layer and ready to be shipped out by the FDDI driver. When these buffers are used up, the FDDI driver discards new output packets handed from the IP layer. Default = 28, min = 4, max = 64

Table 6 New networking tunables (continued)

Tunable	Description
hpi_recv_max	Specifies the number of read buffers posted to the HIPPI CCU. The driver will attempt to keep HPI_RECV_MAX buffers available to the CCU at all times. If more HPI_RECV_MAX packets come in before the CPU can replenish the buffers, further connections will be rejected. This applies only to TCP/IP over HIPPI, not to UltraNet over HIPPI. Default = 50, min = 32, max = 100
hpi_xmit_max	Specifies the number of packets that will be held for transmit in the transmit queue. Any additional transmit packets will be dropped until the queue size has dropped below this limit. This applies only to TCP/IP over HIPPI, not to UltraNet over HIPPI. Default = 50, min = 32, max = 100
networksarelocal	Consider networks as local. If set to 1, all TCP packets are fragmented to the maximum size for the outgoing network interface. If set to 0 (the default), packets destined for other networks, will be fragmented to 536 bytes.
num_tcplinks	Maximum number of TCP connections. Default = 3000, min = 300, max = 65535
num_udplinks	Maximum number of UDP connections. Default = 500, min = 300, max = 3000
str_n_sockets	Maximum number of networking sockets. Default = 850, min = 0, max = 1700
str_n_udsockets	Maximum number of UNIX domain sockets. Default = 500, min = 0, max = 1500
tcp_loopback_mtu	This is the maximum transmission unit TCP will use when transferring data loopback to the local host. Default = 4000, min = 1000, max = 64512
uv_num_windows	Specifies the number of windows the UltraNet driver will allocate on the VIOP. Default = 512, min = 128, max = 960
uv_num_small_windows	Defines the number of windows used to transmit small requests for UltraNet. Default = 128, min = 32, max = 256

BIND

The nameserver (BIND) has been upgraded to support HESIOD and TXT type records.

Name resolution service ordering

The order in which names are resolved can be altered. This is done by creating a file /etc/host.conf. The host.conf file consists of a line

`order` *service1 service2 service3*

where *service* can be `nis`, `hosts`, or `bind`.

The order that the services are listed is the order in which the name will be resolved. If the first service fails to resolve a name, then the second service will be consulted.

The default host.conf file place the host lookup directive first in the lookup order. If your site uses DNS or NIS, your should edit the host.conf file to reflect the preferred order of host lookup.

For more information on name resolution service ordering, refer to the gethostbyname(3) man page.

Rebuilding NIS maps

NIS maps that were built under ConvexOS 10.1 and contain blank lines must be rebuilt. If the source file for a NIS map (e.g. /etc/services for 'services.byname') has a blank line in it, it will cause problems with `ypserv` when performing look-ups on the NIS map. To avoid this problem, rebuild the NIS maps after installing 11.0 by entering the following commands:

```
su root
cd /usr/etc/yp
make clean
make
```

This will take about 2 minutes.

NFS write clustering

The NFS server in ConvexOS V11.0 contains an enhancement called *write clustering* that improves write throughput on the NFS server for synchronous exported file systems.

Write clustering improves write throughput on multi-CPU CONVEX systems but not on single-CPU systems. As a result, write clustering is by default enabled on multi-CPU systems and disabled on single CPU systems. These defaults can be overridden with two new tunables:

- `nfs_enable_wc`—When set to `1`, enables write-clustering regardless of the number of CPUs in the system.
- `nfs_disable_wc`—When set to `1`, disables write clustering regardless of the number of CPUs in the system.

These tunables are mutually exclusive; both should not be set to `1` at the same time. If they are both set to `1`, write-clustering is disabled.

For more information on NFS write clustering, refer to *Managing Internet Services and NFS*.

HYPERchannel interface

The `hyroute` command, including the `-c`, `-p`, and `-d` options, is no longer supported in ConvexOS V11.0. HYPERchannel routing has been merged into the IP routing.

The script `hyconvert` replaces the `hyroute -s` command (read input from a file) by converting input file entries to a series of `route` commands that can be used to create a file executed by the rc.local file. The input file directive `gateway` is no longer supported and must not be present in the input file.

If you have `hyroute` commands in your rc.local file, follow these steps:

Step 1 Run the `hyconvert` script to create a file containing the new `route` commands that are replacing `hyroute` in ConvexOS V11.0.

For example, if your rc.local file has an entry

```
hyroute hy0 -s /etc/hytab
```

the command to run the `hyconvert` script is

```
hyconvert <hytab >hyrtcmd
```

where `hytab` is the name of the old input file, and `hyrtcmd` is the new input file name.

Step 2 Execute the `route` commands in the new file. For example, if the new input file name is `hyrtcmd`, enter

```
sh hyrtcmd
```

Step 3 Delete the `hyroute` command in the rc.local file and insert an entry to execute the new input file. For example:

```
sh hyrtcmd
```

The output from `hyconvert` can also be inserted directly into the rc.local file.

IDC driver

The IDC driver has been modified to enable multiple drives to be attached in parallel. This greatly speeds up the booting process for systems with many IDC disks.

The number of disks that are attached simultaneously is limited by the `parallel_attach_limit` boot-time parameter. This parameter can be increased to as much as 16 drives, but caution must be used.

Attaching in parallel temporarily puts extra strain on the IDC CCU local memory. When the IDC CCU runs out of memory, it crashes. Therefore, the more disks connected to a single IDC CCU, the fewer can be attached in parallel.

The default value for the `parallel_attach_limit` parameter is 3. A value of 3 will not crash an IDC CCU with 32 drives connected and boots the system twice as fast as booting with drives attached one at a time.

Programming impacts

This section describes changes that may affect existing applications or new application development under ConvexOS V11.0.

libc restructuring

libc has been restructured to allow asynchronous releases of the different portions of libc, facilitate builds and replacement of portions, and improve handling of special library routines.

The loader treats libc as one library, even though it is composed of several libraries. Makefiles using `-lc` will continue to work as before.

Raw IP programming interface

In ConvexOS V11.0, the programming interface for raw IP users has changed. Raw IP is no longer accessible through the socket programming interface. Access has been limited to STREAMS, using the NPI primitives defined in the include file, npi.h. For information on converting raw socket applications to STREAMS and NPI, refer to the *CONVEX Network Programming Guide*.

The following utilities have been modified to use the STREAMS interface:

- `ping`
- `traceroute`
- `ifconfig`
- `arp`

At the present time, CONVEX is unaware of other tools using the raw IP interface and would be interested in any customer uses of this interface.

Existing applications attempting to run on an ConvexOS V11.0 kernel and using raw IP will receive the error `EPROTONOSUPPORT`.

/usr/include file modifications

In ConvexOS V11.0 standard include files work with the C++ compiler.

Structure and organization of the system include files have changed with the ConvexOS V11.0 release to support STREAMS. The user-visible content of files has been maintained as much as possible. Backward binary compatibility has been maintained for all programs.

Some programs that 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.

Table 7 summarizes the include file changes in ConvexOS V11.0.

Table 7 Summary of include file changes for STREAMS

Include file	Changes
/usr/include/interfaces/io_if/net	
if_exdef.h	Reorganized `ex_iocntl_msg` for better management of mblks. Increased number of VIOP messages per queue.
nx200.h	Improved transmit packet to handle simplified nonscatter-gather transmits.
/usr/include/net	
af.h	Moved to /usr/include/netinet/af.h. The struct, `af_addrlist`, has been removed, as well as its kernel definition. All locking macros have been removed. The structure, `ifaddr`, has been redefined for STREAMS.
if.h	Moved to /usr/include/netinet/if.h. Removed the ifnet structure; there is no replacement. Removed the `mbuf` queueing macros. Added subnet structure definition, IP streams registration structure definition, and interface list structure definition.
if_arp.h	Moved to /usr/include/netinet/arp.h.
if_slvar.h	Moved to /usr/include/netif/mi_slp_stream.h.
raw_cb.h	Removed. This form of raw IP is no longer supported.
route.h	Moved to /usr/include/netinet/route.h. Removed semaphore structures and macro definitions. Added definitions for HYPERchannel routing requests.
slcompress.h	Moved to /usr/inlcude/netif/slcompress.h.
/usr/include/netif	
hyioctl.h	Removed. HYPERchannel routing ioctls are now handled by the routing code in IP, ioctls are in ioctl.h.
if_hyreg.h	Removed. Structures moved into hyreg.h and hy_var.h
hyreg.h	Moved into ISA directory.
if_hyroute.h	Removed. HYPERchannel routing is now done in IP.
if_hyvar.h	Moved to ISA directory.
ex_softc.h	Reorganized ex_softc to contain a common portion and Ethernet-specific portion.
if_hydebug.h	Added structure, `hy_info`.
pkt.h	Modified `mbuf` constructs to `mblk`.
/usr/include/netinet	
if_ether.h	Renamed to inet_arp.h, because it has more to do with `arp` than Ethernet.

Table 7 Summary of include file changes for STREAMS (continued)

Include file	Changes
in_var.h	Renamed to inet.h. Should contain info only of interest to kernel.
ip_var.h	Removed file, contents moved as follows: Moved `ipovly` structure to tcpip.h. Moved `ipq` structure to ip.h. Moved `ipstat` structure to ip.h. Moved `ipoption` structure to ip.h. Moved flag definitions to ip.h. Moved `ipasfrag` structure to ip_input.h. Moved `ipmodule` structure to ip_stream.h.
udp_var.h	Removed file. Removed `udpiphdr` structure completely. Moved `udpstat` to udp.h.
icmp_var.h	Removed kernel declaration of `icmpstat`; structure definition remains.
in.h	Added `IP_TOS` and `IP_TTL`. Removed `in_prc_cmd` structure definition (not used by STREAMS).
in_pcb.h	Split structure `inpcb` into a user-visible portion and a kernel-specific portion. Added some flag definitions.
in_systm.h	Removed requirement for including types.h. Removed kernel definition of `iptime`.
ip.h	Uses ANSI-standard bit field definitions. Modified fragmentation structure definition for STREAMS. Added `ipstat` structure definition.
ip_icmp.h	Added `icmp_error_rec` structure definition, used by TCP and UDP to pass ICMP errors to IP.
panic_inet.h	Added or modified panic codes for STREAMS.
tcp.h	Uses ANSI-standard bit field definitions. Added TCP control flags.
tcp_debug.h	Redefined the `tcp_debug` structure and added support for STREAMS.
tcp_timer.h	Added linger timer for STREAMS. Increased TCP_TTL. Removed kernel timer definitions.
tcp_var.h	Redefined the `tcpcb` structure for STREAMS. Added definition of TCP connection statistic structure (`tcpconnstat`) for passing information to user programs.
tcpip.h	Added IP overlay structure definition (`struct ipovly`).
udp.h	Added UDP statistic structure definition.

Table 7 Summary of include file changes for STREAMS (continued)

Include file	Changes
/usr/include/nfs	
export.h	Moved to /usr/include/nfs/nfs_export.h.
nfs_clnt.h	Moved to /usr/include/nfs/nfs_vfsops.h.
rnode.h	Moved to /usr/include/nfs/nfs_rnode.h.
nfs.h	Modified to call appropriate include file based on compilation flag. User-level definitions are extracted from ui_nfs.h.
/usr/include/rpc	
des_crypt.h	Added extern definition for `_des_crypt()`.
svc.h	Modified definitions from socket-based to STREAMS- based.
/usr/include/rpcsvc	
nfs_prot.x	Added definition of HOSTNAMESZ.
/usr/include/streams	
str_alloc.h	Added some function definitions for tracking `mblk` leaks.
stream.h	Removed STREAMS semaphore definitions. Removed structure, stream, and associated flags; moved to str_util.h. Added STREAMS timing structure definitions. Added definitions for STREAMS `linkb` and `freeb` macros.
/usr/include/sys	
domain.h	Removed file. Structure domain does not exist in STREAMS.
mbuf.h	Removed file. STREAMS does not support use of `mbufs`.
soption.h	New file; contains linger and keepalive structure definitions for socket.h and tiuser.h.
conf.h	Added extern definition for `fmodsw` semaphore.
dlpi.h	Added interface flag definitions. Added structure definitions for `M_CTL` messages used in DLPI.
errno.h	Added error definitions for `EOUTSTATE` and `E2SMALL`.
ioctl.h	Added a variety of new ioctls for DLPI driver control, routing control, and for extracting statistics, state, and trace information from internet devices and drivers.
npi.h	Added definitions for unitdata transfer structures, `M_CTL` messages, and other primitives.
protosw.h	Removed definition of structure `protosw`. This is not used in STREAMS.

Table 7 Summary of include file changes for STREAMS (continued)

Include file	Changes
socket.h	Removed linger structure definition. Moved to soption.h, but is called by socket.h. Removed unsupported address family and protocol constant definitions.
socketvar.h	Removed definitions of socket and sockbuf structures. Replacement structures are included from STREAMS directory include files.
tiuser.h	Added option field constant definitions.+
tli.h	Added definition of the setpeer primitive. Modified `t_option` primitive to correspond to the new standard.
unpcb.h	Replaced `unpcb` structure with a `u_unpcb` structure, providing only safe information to the user level (no kernel address pointers).
/usr/include /uipc	Removed completely. mbuf and domain structures have no meaning in STREAMS.
/usr/include /knetd.h	Contains definitions needed by the `knetdctl` utility to communicate with `knetd` via `ioctl()` calls.

Bug information

4

Known bugs

This section lists problems with ConvexOS V11.0 that are known at this time. Some bugs do not have PR numbers; these are listed as "PR unknown."

Known bugs for next release

/mnt/os/prtlog and/o

PR unknown

This report applies to (at least) the 11.0.0.0.17 kernel build.The spu programs / mnt/os/prtlog and /diag/bin/logmsg do notseem to agree precisely about what the message format should be. Thus one can see output on the console like below. Note also the intermingled output..

...

[CCU33@11:50:56] FSC 0x102d idc 33 port 2 unit 0

[CCU33@11:50:56] cyl 0x7d trk 0x3 sec 0x1f p 2 cnt 1

/diag/bin/logmsg: Invalid argument count(8)

Usage: logmsg <tool> <event_code> <message_string_80_char_max>

[CCU3 NIS]

PR unknown

A Convex system is a NIS master server with multiple interfaces. If ypbind is using the default interface (e.g. ethernet) to communicate with the local ypserv and the route for the default interface is deleted, ypbind will be unable to communicate with ypserv until the route is re-added.

PR unknown

A Convex system is a master NIS server with multiple network interfaces. If ypbind is set up to access ypserv over a secondary interface (non-default like FDDI) and the route for that interface is deleted, ypbind will be unable to communicate with ypserv even if the route is re-added. ypbind must be killed and restarted.

adb

PR unknown

adb whines about 'stack botch' when debugging parallel process using tlibspawn() test tool. Try pipe/p_pipe02, set a breakpoint at test, then try a traceback with $c ...

```
% adb p_pipe02.e
Convex Debugger ($Date: 1993/02/19 16:19:31 $)
Use ')help' for help.
(adb) test:b
(adb) :r
job 0: running
job 0/0: breakpoint _test: sub.w #8,a0
(adb) $c
stack backtrace botch
```

crashdump to spu dis

PR unknown

(a) Crashdump should estimate size of crashdump and check for sufficient space on the destination file system. (b) If something goes wrong with the virtual mode dump (e.g. corrupted sdr) in memory, crashdump reverts to full memory mode, which is almost certain to fill the spu disk.

crashread

PR unknown

Running crashread without sufficient permissions on /dev/spu results in misleading error message sequence:

```
% crashread -S -f /diag/crash
spu shell start: Permission denied
tar: No input
taring spudisk: Errno is zero
./dmptmpmbs: No such file or directory
```

(a) 'taring' should be 'tarring'

(b) I doubt errno is zero

(c) why try for dmptmpmbs when tar failed?

csh

PR unknown

The following produces a core dump:

```
dhosone# alias tset 'eval "'tset -s !*'"'
dhosone# tset
```

This is a regression, test case csh/x15811.

csh,ksh

PR-38144

If csh or ksh is used to run a process which exceeds a memory limit, and the process takes the default action for SIGINFO (which is death) the shell prints "Cputime limit exceeded".

cxbatch install

PR unknown

CXbatch 3.0 does not use the system software installer supplied with GIP 1.4 and therefore does not support unattended installation or alternate root installation.

Workaround: When performing initial installs, do not install CXbatch until you have booted on your real root partition.

dumpccu

PR unknown

If you try to dump a hippi CCU you get an error message saying dumpccu:

```
Unable to dump memory.
```

fcntl

PR unknown

This is a POSIX conformance bug, the original test is from NIST-PCTS. From IEEE Std. 1003.1 (POSIX.1). P124 Ln 399-400: if cmd is F_GETLK, fcntl() should get the first lock that blocks the lock description pointed to by the third argument, which is a pointer to struct flock. The Information retrived overrites the information passed to fcntl() in the flock structure. The test case failed because that fcntl() failed to get the first lock, instead it returned some other lock information.

host.conf

PR unknown

The installation guide should recommend that this file be modified if the site is using DNS or NIS.

hyp_stream

PR unknown

The HYPERchannel driver is hardcoded to use the SAP 5. This means that all data is sent to IP and the MAC level interface cannot be used for data transfers.

jobs

PR-39819

PR-39966

Logins which are started by rsh and probably xdm (i.e. anything that doesn't go through /bin/login won't be run under a job.

There is also no method for restarting a daemon from a process which is part of a job and have that daemon removed from the job. (Although rsh can currently be used as a workaround for this problem.)

kernel

PR-31086

ConvexOS: FATAL ERROR: (schd,8813) THREAD_SETWQ: already enqueued

kernel crash

PR-35623

PR-38048

PR-39574

system crashed:

```
 [CPU00@07:47:58] ConvexOS: FATAL ERROR: (arch,7044)
C2_user_syscall: t_
tt
> flag not zero
> [CPU00@07:47:58] sp: 0bd70f6c a1: 0bd70f6c
> [CPU00@07:47:58] a2: 015005b8 a3: 00e056f0
> [CPU00@07:47:58] a4: 0bd70ea4 a5: 00086670
> [CPU00@07:47:59] ap: 0bd70f80 fp: 0bd70f6c
> [CPU00@07:47:59] s0: 00000000000000f2 s1: ffffffff00000000
> [CPU00@07:47:59] s2:
```

knetd

PR unknown

If /etc/knetd.conf wants to configure FDDI, but FDDI is currently not installed, the FDDI configure fails as it should. However, a subsequent I_STR ioctl(2) on "/dev/ip" with ic_cmd = SIOCGIFCONF will return FDDI as a configured interface.

man8/crashdump.8

PR unknown

Attached as a comment, you'll find some editorial changes to the man8/crashdump.8 man page. The report won't fit in space Cobra allows for descriptions.

named

PR unknown

PR unknown

named stopped responding to name service requests, and began consuming CPU time. I was unable to get a valid backtrace of the process, but I did get it to coredump. The coredump is on mikey in ~fox/named.core.2-23-94.

Workaround: We killed and restarted named and have not had trouble since.

net

PR unknown

It is possible to hang networking on the system by running a single client/server TCP connection application. The client side sends many small messages to the server. The server does not read the messages from its stream.

posix

PR unknown

This is a POSIX conformance bug, the original test is from NIST-PCTS. The high water mark of stream does not work correctly. When the test case uses fwrite to write to the stream associated with a pipe, the pipe always accept more data than it can hold.

posix (read)

PR unknown

According to FIPS 151-2 (NIST's extensions to POSIX) item m and the NIST test code, if an interrupted read() returns -1 and errno = EINTR (acceptable POSIX behavior) a subsequent read() must return all the bytes the system has read. (No data may be lost.)

Our read() returns -1 and errno = EINTR when interrupted but a subsequent read() does not return all the bytes the system has read, failing this assertion.

posix (tty)

PR unknown

This is a POSIX conformance bug, the original test is from NIST-PCTS. From IEEE Std. 1003.1 (POSIX.1). P136 Ln 334-335: "if neither IDNBRK nor BRKINT is set, a break condition is read as single '0', or if PARMRK is set, as '377','0','0'." But when c_iflag is set to PARMRK and IDNBRK,BRKINT are clear, the break condition is not read as '377','0','0' on our system.

PR unknown

This is a POSIX conformance bug, the original test is from NIST-PCTS. From IEEE Std. 1003.1 (POSIX.1). P138 Ln 417-420: "Under normal circumstances, a call to the open() function shall wait for the modem connection to complete. However, if the O_NONBLOCK flag is set of if CLOCAL has been set, the open() function shall return immediately without waiting for the connection." But when termios c_cflag is set to CLOCAL, the open() call hang, never return.

PR unknown

This is a POSIX conformance bug, the original test is from NIST-PCTS. Call to tcsetpgrp() when the controlling terminal is no longer associated with the session of the calling process. Expect a return value of -1 and errno set to [ENOTTY]. But tcsetpgrp() - set errno incorrectly Expected errno: [ENOTTY] - Inappropriate I/O control operation Actual errno: [EIO] - Input/output error.

PR unknown

This is a POSIX conformance bug, the original test is from NIST-PCTS. For tcsetattr(), when option is set to TCSANOW, the change suppose to occur immediately. The PCTS test only allows one clock_tick delay for the change to occur, but our system takes longer than that some time when the terminal are transmitting data.

PR unknown

This is a POSIX conformance bug, the original test is from NIST-PCTS. From IEEE Std. 1003.1 (POSIX.1). P136 Ln 334-335: "If termios c_iflag is not set and BRKINT is set, the break condition shall flush the input and output queues, and if the terminal is the controlling terminal of foreground process group, a single SIGINT shall be generated to that foreground process group."

Input and output queues are not flushed, no signal is generated.

PR unknown

This is a POSIX conformance bug, the original test is from NIST-PCTS. tcdrain() takes much less time than it suppose to take according to the baud rate of tty, this also causes the option TCSADRAIN of tcsetattr() the same probelm. This problem does not exist on 10.1 os.

restore

PR unknown

When the verbose option is set for a restore, a message is printed out that indicates the block size being used. The size that is printed seems to always be 1/2 of the block size that was used when the dump was taken.

PR unknown

In the man page for restore(8), under the "Bugs" section, it states: If a non-standard blocking factor is used to dump a file system, it must also be used during a restore. restore should determine the blocking factor by itself. It seems that restore does determine the blocksize used for a dump and uses it, even if the b option is used for the restore to specify a different blocksize or if none is specified at all. Observation based on the blocksize msg if v option used (see X-33036).

PR unknown

When the 'c' function modifier is used for a restore of a dump that does not need to be converted, restore dumps core.

sendmail releasenote

PR unknown

We should declare (or disclaim) the new sendmail behavior of trackingdown the original login name of a user when generating the from line and provide workarounds for sysadmins who want to make sure mail comesfrom root.

i.e. as root:

/bin/login

to force a new utmp entry so that any daemons started will show their mail as coming from root not the user who started them.

srpc

PR unknown

If 'root' runs passwd to change the root password, the passwd application wants to use the new password to encrypt the secret key for root in the yp map publickey.byname. Somehow, the secret key is not being encrypted properlywith the new password because a subsequent keylogin with the new password fails.

Workaround: When using secure NFS, NIS must be used and thus, yppasswd should be used instead of passwd. However, if passwd is used and the secret key is incorrectly encrypted, the chkey(1) utility can be used to generate a new key pair and properly encrypt the secret key.

tape

PR unknown

When a ninetrack writes a single file to EOT, rewinds, and tries to forward space one file (MTFSF 1), it gets a timeout error before it reaches EOT.

PR unknown

On a ninetrack tape, when UnitStatusFailOverlong is NOT set, reading an overlong record does not cause UnitStatusOverlongRead to be set. (So there's no way to know that the data is not valid).

/tstrel/syssw/tape/man4_dev/data_port/Files/dp_ioctl17.c tests this.

PR unknown

On a ninetrack, when UnitStatusFailOverlong IS set, reading an overlong record does not cause UnitErrorOverlongRecord to be set. (The read fails as it should, but no error bits are set.)

/tstrel/syssw/tape/man4_dev/data_port/Files/dp_ioctl18.c tests this.

timedc

PR unknown

The mtime command to timedc hangs on 11.0 systems.

uuxqt

PR unknown

Permitted commands are not being allowed to run (see comments).

vmstat

PR unknown

vmstat reported negative number for 'pages attached to buffer cache':

```
% vmstat -s
...
55422253 Deleted writes
0 Deferred writes
-255896 pages attached to buffer cache
0 partial swap outs
0 partial swap ins
...
```

Known bugs for ConvexOS utilities

/bin/sh

PR-36363

In /bin/sh and /bin/oldsh, when zero positional parameters are set in a shell, "$@" should expand to nothing. However, it expands to one emptyargument. /bin/ksh on the Convex handles this correctly as does /bin/sh and /bin/oldsh on the SUN.

/etc/group

PR-31620

The groups(1) command does not always reflect membership in a group.

/etc/termcap

PR-31239

Sun has changed the termcap entry for the Mu l sun console in Solaris 2.1 Convex needs to add it to /etc/termcap.

L.cmds

PR-40336

The L.cmds man page recommends including uncompress as one of theprograms executable by remote sites.

This is a very bad idea, since it could create a file anywhere on the system.

MAKEDEV

PR-30357

/dev/MAKEDEV makes standard entries for /dev/ramc[0-7] (raw/character device) and /dev/ramd[0-7] (block device).'Standard' is /dev/ramd0 and / dev/rramd0 (as suggested byfsck).

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-27066

PR-27098

The SET COVUE BILL=(ACTVTY="activity") when run in a batch job, results in all subsequent commands of the batch job being accounted under "activity"+0 rather than "activity"+activity-id of queue. When looking at /etc/sa -eg l grep 'uid' l grep 'gid' l more; one sees that all lines after the SET COVUE BILL command have the (sub)activity-id which comes from the CXbatch queue (e.g. 1 for short, 3 for verylong) being removed.

Looking at a qsa -x -u user -Q shows the correct activity id (aid).

PR-26915

There seems to be no way to bill USERS for remotely submitted processes (e.g. via rsh) or from USER jobs running from crontab.

PR-27442

When the system crashes, accounting data on all processes is lost. In the case of a heavily-used system, this can be the loss of records of hundreds of hours in CPU time. In an environment in which there is a charge for service, substantial revenue can be lost. And, of course, users can use this problem to their advantage, gaining substantial CPU time which can't be billed.

PR-28629

PR-29196

When running the sa -e utility on the /usr/adm/acct file, occasionally strange results are observed where the Total CPU time is significantly greater than the elapsed time.

adb

PR-22185

adb should check for read/write failures and call perror if there was an error.

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.

at

PR-30910

at fails to cleanup the spool file if interrupted by the user while reading from stdin.

PR-31016

The at utility doesn't respect the TZ environment variable. Setting TZ to a zone other than the system default and queueing a job runs the job at the requested time relative to the system default timezone, not the request timezone.

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

PR-28187

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?

PR-27967

Running /usr/spool/convex/avail -m avail from the crontab file causes the following output:

spu file /mnt/usr/lib/softlog: No such file or directory

In the file /usr/spool/convex/changes is the following command /usr/convex/spu -r /mnt/usr/lib/softlog > /usr/spool/convex/tmp.softlog, causing the above error. With the upgrade of software on the spu, this file has been moved to /mnt/softlog.

basename

PR-31631

PR-31747

The utility 'basename' does not behave logically.

bc

PR-10064

bc will sometimes output a backslash, newline, newline, digits, which results in a blank line.

PR-22134

bc should check for read/write failures and call perror if there was an error.

PR-33793

The sign of the output of a logarithm of a number less than 1 is wrong. The sign is alway positive.

PR-40750

PR-40750

The result of negative sign argument of sin() is always positive.

bc -l

s(-1.)

.84147098480789650665

bill

PR-07755

There are problems with the way su interracts with bill in setting up the current activity id.

bin/mail

PR-30636

The command line options "-i and -f" don't work in /bin/mail.

catinfo

PR-30310

The permissions in /usr/infosys/screens are set to 755. The permissions should be set to 644, since the files are notexecutable.

catman

PR-21948

catman -p prints to stderr instead of stdout.

chkpnt

PR-19912

chkpnt(1) will occassionally hang while checkpointing a process

contact.

PR unknown

PR unknown

The contact.1 man page needs to be rewritten from scratch to include the concepts of options (needs an OPTIONS section), a quick explanation of the PRTS database, a little more detail on the PRTSMail service, and soon. Perhaps prts.7 and prtsmail.7 need to be written as well.

Workaround: RTFM and badger the doc writer for weeks.

contactcap.5

PR-30957

The contactcap.5 man page does not explain in sufficient detail how to set up contact for an internet connection.

cpio

PR-22153

cpio should check for read/write failures and call perror if there was an error.

PR-23665

PR-24889

PR-32996

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.

PR unknown

The return code from cpio does not reflect read errors.

cpr

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.

cpu_monitor

PR-29528

The description of the FAILURE_COUNT parameter is incorrect. Experiments show that a better description would be "number of failures in the last tracking period needed to prevent a CPU being restarted".

PR-29528

CPU restart attempts appear to be logged as daemon.debug messages whereas the man page says they are daemon.notice. The latter would be more sensible because these are important operational messages.

PR-30395

The cpu_monitor command does not appear to log either CPU failure or restart. There is information about CPU failures and restarts in the spu /mnt/errlog file, but the messages have no time stamps.

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-27536

'crashdump -H' fails because /hw/cputest doesnt exist on the C3800 SPU disk.

cron

PR-27099

If the login shell is 'sh' or the USER is root, 'cron' mails the error message ": is not an identifier" to the USER without executing the command if .cronrc has an empty line in it.

csh

PR-07353

It is not possible to inhibit pattern matching in csh switch statements.

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 with the exit status of the child process. ksh gets around this problem entirely by exec'ing 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-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-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-21576

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-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-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 accross 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-23258

PR-24859

PR-30207

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

PR-26814

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-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 occurence 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-26204

'csh' is prone to corrupting the tty'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-26880

PR-27723

PR-29153

When submitting a job to CXbatch using '-l' option for login shell with a default shell of (csh), the job doesn't execute the commands in ~/.logout and /etc/logout on termination. When logging in interactively, the commands in these files are executed.

Workaround: workaround by adding the command logout to the end of the script instead of 'exit' or just falling off the end.

PR-27151

The form "if (-d DIR)" is supposed to check whether or not DIR is a valid directory. On the Convex it doesn't seem to work if DIR is /. It does work using tcsh 6.x on the Convex, or using csh on the Sun, even if DIR is /.

PR-28496

The =~ operator is broken with /bin/csh. It works fine with /bin/oldcsh.

PR-31366

If a partial command line contains an escaped semicolon, filename completion may not work as expected.

PR-31768

When trying to limit the number of processors a parallel application runs on, to a number between 2 and the maximum number of processors, it appears that "limit concurrency" is not handeled properly.

PR-31603

When executing a 'gmake', the C-shell bus errors and coredumps.

PR-33639

The time command built into C shell erroneously reports a negative number for virtual memory (unshared and total) due to overflow when actual virtual memory size exceeds 1 GB.

PR-35242

We have just discovered that if your .cshrc file contains a source command specifying a non-existent file, then the script /etc/login does not get run.

This is quite serious in that we perform various validations within /etc/loginas well as set up lots of things for our users environment. In fact, it is a problem for us and, no doubt, other sites, that /etc/login gets run after ~/.cshrc (the sh and ksh shells both run /etc/profile *before* ~/.profile).

csh/jobs

PR-26829

When a job is run in background and receives a signal 17, then receives a signal 19 (restart) the output of jobs is erroneous. [1] + Suspended (signal) foo.csh

cshrc

PR-28226

A connection from a dec ultrix workstation 3100 (ultrix version 4.2a) to the convex is sometimes dead. Other workstations have no problems. With ConvexOS V9.1 and before there were no problems such as this. After the login process, a /bin/csh excutes the .cshrc and .login scripts but no returnconnection is made, and nothing appears in the window.

ctags

PR-22083

ctags should check for read/write failures and call perror if there was an error.

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.

ctar

PR-22183

ctar should check for read/write failures and call perror if there was an error.

date

PR-22692

Setting the date several years in advance will appear to hang the system for an extended period of time. The fauther in advance the date is set the long the system appears to be hung.

diff

PR unknown

diff -B option (to ignore blank lines) doesn't work, it still flags blank lines as different,

diskuse

PR-33378

PR-40762

diskuse utility needs to be supported with "large files". If we support Accounting, then we should support the utilities to generate the necessarydata as documented in the ConvexOS Operations Guide. Please refer to posted Comments #1 for examples on how diskuse breaks with large files.

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-26333

Doing an 'rdump' on labelled tapes returns: Invalid Argument message.

PR-26590

PR-26590

PR-27137

PR-27137

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.

PR-26351

When a dump is completed, and the user has chosen to alert operators, dump can sometimes hang. It appears to happen if there are multiple "stuck" sessions. That is, in X Windows, it is not uncommon for xterm processes to hang around if ungracefully killed.

PR-31635

Please change the 'dump' program to act on the "-n" option for the first tape of a dump procedure. Currently, dump only acts on the "-n" option beginning with the second tape.

PR-30951

The "G" option of the /etc/dump command does'nt work correctly. When in single-user, using the "G" option will get you a 1600 bpi device(rmt8) when it should get a 6250 device(rmt16). This is a BIG impact for sites doing single-user dumps because of course, 1600 bpi uses considerably more tape.

PR-32040

While dumping a 10gbyte filesystem(redundant), sometimes the verify-restore (using 'vdump') fails at or close to the last tape.

PR-33990

using the -U switch, several dumps went into a CPU intensive loop over the weekend after being unable to switch tapes (also an open problem w/ Convex). Documentation for dump states > Any error will cause the dump to abort.

This did not function as advertised, and caused these dumps to dominate 4 cpus which could have been otherwise used for user jobs. the -U switch needs to function properly.

dump.8

PR-33442

PR-33669

PR-33812

"ConvexOS Tape System Operator's Guide" pp. 59-62. Customer dumped to labelled tapes. The operator was requested to mount the tapes. At each tape change, there is an ioctl(MTIOCTOP): Invalid argument and tpswitchvol aborts. Nevertheless, the dump proceeds.

When writing to a labelled tape set, the tape set is seen as one long tape. Because of this, the "-E" option must be used on dump. It would be useful to document clearly this effect in the dump(8) man page and in the Tape System Operator's Guide.

Workaround: use "dump -E" for labelled tape sets.

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.

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.

PR-27534

PR-29154

'egrep' produces wrong results when searching for compound regular expressions.

PR-40273

PR-40273

egrep -f FILENAME ... produces inaccurate results if FILENAME contains more than 197 characters one time then another time/day the limit might be 195. fgrep, however produces expected results each time.

Workaround: Use fgrep. Example: fgrep -f string_list_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 unknown

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-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.

PR-26715

If one compiles from within 'emacs', the current date and time are displayed when the compilation is complete. The time displayed is incorrect if the user is not in the time zone that Convex is in. For example, the time displayed is one hour earlier than the current time for the east coast.

PR-26710

The LISP code in /usr/lib/gemacs/lisp/compile.el needs to be refined. The error message of the form "error in source.f on line 34.12" line=34, column=12, is misleading. 'emacs' thinks the error is on line 12 since itdoes not expect the column number tacked onto the line number.

PR-28010

In the 'emacs' Mail Mode it's impossible to send mail. Although "Sending...done" is displayed in the minibuffer, the mail never reaches the addressee. In contrast, gnu emacs (version 18.57.1) works nicely.

eqn

PR-11535

Eqn italicizes equal signs, less-than signs, and greater-than signs.

etags

PR-27091

'etags' does not recognize the function if the function name and the parens are separated only by newlines.

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.

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.

faillogon

PR-32958

Failed file access messages are logged even though there appears to be nothing wrong.

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.

PR-27386

faillogon turns on logging of file accesses that get denied and writes the info to /usr/adm/failure_log. The data is there for large filesystems, but faillogpr just hangs after it tells you that it is "translating inodes into pathnames". All works fine on access failures on small filesystems.

file

PR-22102

file should check for read/write failures and call perror if there was an error.

PR unknown

If file encounters a read error in its alternate magic file it does not return a non-zero return code.

find

PR-26798

'find' gets hung when running the /.crontab entry: 40 04 * * * find / (-fstype nfs -prune) -o -fstype 4.2 -name '#*' -atime +3 -exec rm -f {}; find2perl

PR-30043

The script /usr/bin/perl/find2perl creates incorrect output when "-group" is used.

finger

PR-27105

If a user fingers the USER "@" or "finger @@hostname" the user will get information on all USERS of that system; not just the ones who are logged on.

PR unknown

If finger is given a query like "finger 6@mikey" (use any number), it returns every user defined (in long mode).

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-27034

'fsck' can be fooled into thinking that the stripe device is not mounted when given the raw stripe devices on the command line, since the block and raw stripe devices have different major numbers.

PR-29268

/etc/fsck needs to be ACL aware.

PR-30820

'fsck' attempts to check the "raw" device by default when invoking /etc/fsck after booting to single-user. Unless there is some compelling reason not to do so, 'fsck' should check the "block" device automatically.

fstat

PR-28978

/usr/etc/fstat(8) does not work on a large memory machine.

fstat.8

PR-26163

fstat man page incorrect in explanation of DEVICE when automounter is used.

ftp.1c

PR unknown

The man page for ftp should contain a FILES section. This files section should particularly document the /etc/ftpusers file.

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]

getpgrp

PR-35308

PR-35308

When two user signal handlers are defined, 'getpgrp' returns '-1' instead of correct process group on C3400 or C3800. Correct on C2 and C3200. If either one of the signal handlers is removed, 'getpgrp' returns correct value.

Workaround: Compile the signal handling 'C' code with 'cc -tm c2' option.

getsysinfo.1

PR-30794

/usr/convex/arch is a hard link to /usr/convex/getsysinfo. The getsysinfo.1 man page references arch in its SYNOPSIS field, but man arch doesn't pull up the getsysinfo.1 man page as it should.

getty

PR unknown

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.

PR-39595

Suggested fix in comment #1. grep with -i option picks up bogus strings when searching for strings that start with a space. It appears to only fail when the line happens to end at the same position that the spot where previous match was found (see example).

PR-39599

grep -i for a space or @ sign, picks up several characters

---------- bof ------

SPACE> <SPACE

garbage

'

moregarbage

@

moregarbage

moregarbage

moregarbage

@@

---------- eof ------

% grep -i " " TEST2

SPACE> <SPACE

garbage

'

moregarbage

@

moregarbage
moregarbage
moregarbage
@@
% grep -i @ TEST2
‘
@
@@
% grep -i ‘ TEST2
‘
@
@@

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.

ident

PR-22173
ident should check for read/write failures and call perror if there was an error.

indent

PR-09190
indent -npsl corrupts the indention level of the next line.

PR-10664
'indent' fails to properly format certain files.

PR-22122
indent should check for read/write failures and call perror if there was an error.

info

PR-24570
When info (re)builds a formatted *.f file, that file becomes mode 666. There appears to be no need for this.

info.1

PR unknown

The man page for info should say that it is dependent on the the contactcap file (/usr/lib/contactcap).

init

PR-26822

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-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 of 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

Is 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 acces 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.

PR-27031

When a USER attempts to ABORT an install using either ^C or ^Z, the resulting behavior is unpredictable.

PR-26778

Installation of 10.0.5 (upgrade from 10.0.3) fails unless the old version of /bin/sh is in place.

PR-27277

The installation of ConvexOS overwrites files in /usr/skel. The installation should be smarter about installing files in /usr/skel. Customers' changes to these files are lost during an upgrade.

PR-27683

When running installsw with just the root filesystem mounted, the scripts appear to be extracted and then overlaid by a mount of the real /tmp, causing a failure due to missing files. The master script should either mount all local filesystems or advise the user that /tmp must be mounted manually.

PR-27860

PR-28753

10.1 Installation Procedures lend confusion for DAT tape upgrades.

PR-28224

PR-28431

The Revision History for both ConvexOS Kernel V10.1 and ConvexOS Utilities V10.1 refers to a number of new and unknown products:

ConvexOS Kernel Release V10.1.2: This is the easy one; ConvexOS C100, release 10.1.2

ConvexOS Utilities Release V10.1: That is hard; is this Root Upgrade, Usr Upgrade, Optional Utilities Sources maybe, or Consultant? All of these are 10.1!

ConvexOS Utilities Update V10.1.2: Could this be ConvexOS Utilities Patch, release 10.1.2?

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.

PR-26404

Summary of problems with install of 10.0.5.

PR-32819

'installsw' on the JP will allow you to install SPU code.

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.

join

PR unknown

If join encounters a read error it does not indicate it. It should call perror and return non-zero status.

jpd.1

PR-21989

The jpd man page says that CTRL-C returns to jpd command level and that CTRL-B halts all cpus immediately. This is not true on 3800 SPUs with the default stty settings. In any case, the man page should not assume that the user is using the default interrupt and quit characters.

Also, the references to CONVEX UNIX should be updated to ConvexOS.

lastcomm

PR-27848

'lastcomm' is extremely slow when NIS is being used.

lastlog.5

PR-26596

There should be a man page describing /usr/adm/lastlog

PR-37897

The /usr/adm/lastlog file is not documented in a man page (lastlog.5). Sun's manpage covers utmp, wtmp, and lastlog, whereas ours covers only utmp and wtmp.

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-22174

less should check for read/write failures and call perror if there was an error.

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.

PR-26605

On a SPARC workstation using OpenWindows V3 and before telneting to a CONVEX, the user entered "stty size" to find the rows and columns of the window size.

Upon logging into the CONVEX, the user entered the same command but the rows and columns became 0. After trying to 'less' a file of several pages, the first 33 lines of text were listed on the bottom of the window, but the file-name and subsequent ":" were posted at 33 lines from the top of the window and subsequent text overlapped with previous page.

PR-29048

The current version of less is Rev 97. The latest version available is Rev 177.

We need to be running the latest version to fix numorous problems with less.

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)'

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.

login

PR unknown

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-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.

PR-28061

/bin/login does not deal with password restrictions correctly when they are done via NIS.

PR-28523

PR-29102

PR-29524

Login should, before exec'ing the user's shell, maximize the rlimit concurrency. The old method of having all processes inherit from init isn't sufficient now that heads may come online which were not online when init was started.

look

PR-22104

look should check for read/write failures and call perror if there was an error.

PR-29221

The look(1) program stopped working after upgrading to 10.1 because the file /usr/dict/words lost world readability.

lorder

PR-22163

lorder should check for read/write failures and call perror if there was an error.

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.

lpc.8

PR-34087

The current lpc.8 man page provides an incorrect description for the lpc clean command. It does not remove all [cdt]f* files from the specified queue on the local machine, but only those files which do not form a complete print job.

lpd

PR-28111

Placing a backslash on the end of a Comment line in /etc/printcap seems to cause the parser to evaluate the end-of-the-line before the first character on the line is evaluated, thereby causing the valid printer entry immediately following the backslash to be silently ignored.

lpq

PR-21333

Specifying the -l option (long display) on lpq more than once for remote printers results in misleading error messages.

PR-40310

lpq reports:

Warning: no daemon present whenever a job is in the queue. lpq is setgid lpr, but not setuid. It attempts to see if the daemon is still running by doing a kill(pid,0) which does error checking, but sends no signal.

The daemon is running setuid lpr, lpq is running as the user, so the kill returns with EPERM and lpq assumes the daemon is gone.

Note: this only happens on local printers which is why we don't see it here.

Workaround: Set the mode of /usr/ucb/lpq to 6755

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-26845

After installing ConvexOS V10.0 printing no longer worked. In addition to the change to the owner and group of /usr/spool/lpd as documented in the Release Notice for ConvexOS V10.0, it was necessary to give all directories rw permission for both owner _and_ group.

PR-27626

PR-28558

The '-i' of the lpr command has no affect on the format of the printed file. Everything remains left justified. The 'ic=1' flag has been set in the printcap file.

PR-36196

Problem with "-s" option.

lprew-daemon

PR-15363

Print jobs are queued but never make it to the printer. Printer works fine when lprew-daemon is not running.

PR-27217

Configuring a printer for use with the lprewind daemon ends up in a situation where everything looks fine, but nothing at all is printed.

m4

PR-22105

m4 should check for read/write failures and call perror if there was an error.

mail

PR-07909

PR-08033

PR-14550

PR-25792

/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-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-26954

/usr/ucb/mail will dump core if given a wildcarded, non-existent file with the -f option.

make

PR unknown

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 .RCSCHECK 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.

PR-26947

'make -j' doesn't print out the line it's run until after it's run it.

PR-29756

The existence of a dependency that is not up to date causes a remake even if updating the dependency does nothing.

PR-20851

The make parallel option, -j N, causes output to be queued until the commands have finished execution.

PR-30246

According to the man page, setting MAKESHELL to the desired shell will cause the make to spawn off the desired shell to execute all the commands. MAKESHELL does not appear to work.

PR-31520

Request that make be enhanced to support the $@ 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

PR-27619

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"

PR-26799

When makewhatis is run against the standard ConvexOS and Layered Products man trees, over 850 warnings are issued. Customers who like to create lint-free C programs find this irritatingly sloppy.

PR-29107

PR-29107

PR-29617

PR-29617

PR-36114

PR-36114

makewhatis does not store the name for sh.1 properly.

Workaround: Use 'man -h sh'.

PR-33414

makewhatis will not build the dbm databases for /usr/man/manl and /usr/man/manx.

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.

PR-29550

PR-29550

'man' does not handle compressed man pages correctly; The problem is 'nitroff' is missing an '-' argument telling it to take its input from STDIN.

Workaround: I tried to merge the Customer's work-around however it gets all messed up when submitting it as a work-around: Refer to the Contact Report. Customer patch: ********** *** 1112,1117 **** — 1112,1120 ---- $_[0] =~ s/^ s*cat s*<? s*([^ s|]+) s* | s*([^|]+)/$2 < $1/; $_[0] =~ s/^([^|<]+)<([^Z|<]+)$/ $1 $2/; ($roff eq 'troff') && $_[0] =~ s#(/usr/man/pr S+) s+(S+)#$2 $1#; + if ($_[0] =~ /^ s*zcat/) { + $_[0] .= " -"; + } }

PR-29837

PR-33049

man does not work correctly if a path, specified by MANPATH, is relative.

PR-35848

The man command produces strange behaviour when an environment variable exists, whose name starts with "MANPATH": man is unable to find any man page.

man/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.

mkdep

PR-22138

PR-23351

mkdep should check for read/write failures and call perror if there was an error.

mkfs

PR-25461

Specifying either the "-i" or "-I" 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.

mknf

PR-39609

The permissions and ownership of mknf imply that any user in the group 'notes' should be able to execute the command. However, mknf compares the user's real uid to the uid of 'notes' and fails if they are not the same.

mknod.8

PR-22528

The assignments of major device numbers, as documented in the manual pages MKNOD(8), refer to ConvexOS V8.0.

mman.h

PR-35858

The mmap function does not have a correct prototype in mman.h. Also, the functions munmap and msync have no prototypes at all. These are pretty common functions and it would be nice to have these added.

mount

PR-30137

Attempting to mount a filesystem while the current working directory does not exist fails.

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 thecontents, replace messages etc..

PR-32590

Perhaps since 10.0, msgs complains about a missing .msgsrc file rather than silently creating one. This changed behavior appears to be undocumented, and we recently had to create .msgsrc files for 306 users when the change was first noticed.

mvst

PR-27856

If a SIGKILL (9) is sent to a 'mvst' process running on a redundant stripe, the process will die upon completing a section of the stripe, but before updating the /etc/stripecap or /etc/streconfig files. There is then no way to get the files and the kernel consistant short of hand editing the files or rebooting the system.

PR-29684

Doing a mvst -H when no hot spare is available marks a device as failed in the /etc/stripecap file. However, a getst of a stripe failed in this manner doesn't show the stripe as failed (unless a machine crash causes the kernel to read the stripecap).

newst

PR-20882

PR-29186

PR-29233

PR-30052

PR-31458

The fixed maximum number of inodes per cyl group is too restrictive; especially on disks with small numbers of cylinders such as the DKD-281 which has 406 cylinders. On this device, the 2048 max inodes per cylinder group is too limiting particularly if the minimum number of cylinders per group is 2 or more and multiple partitions are striped together.

PR-31896

newst incorrectly sorts disk partitions larger than 2GB

PR-39765

Sending a STOP signal to newst while building a redundant stripe will cause the putst parity initializer/checker to abort. Putst(8) should ignore all signals except SIGTERM before doing the STPARITYCHK ioctl.

If newst is suspended ([ctrl]-z) then putst will abort. This is verified by running newst, suspending it and then using ps to observe putst.

Workaround: Steve believes all signals except SIGKILL should be blocked, the following code should do it. sigsetmask(~0); /* Block all signals except SIGKILL and SIGSTOP */ signal(SIGSTOP, stop_handler); /* execute stop_handler on recipt of SIGSTOP */ /* * stop_handler does nothing so SIGSTOP should be essentially ignored */ stop_handler(int sig, int code, struct sigcontext *scp) { }

newsyslog

PR-18173

/usr/adm/newsyslog does not parse /etc/syslog.conf to determine which syslog files to manage.

nfprint

PR-34824

The nfprint program doesn't use the NFPATH environment variable. I can't print notes from a notesfile in a location other than /usr/spool/notes.

notes

PR-30406

The 'c' and 'f' commands in 'notes' do not appear to work. These commands are supposed to allow you to copy notes to a different (or, presumably, the same) notesfile. I have been unable to get them to work, whatever options are supplied. The 'C' and 'F' commands (which allow editing of the note) DO seem to work.

PR-35871

'notes' will eat files when it runs into a lock left over by an errant notes process.

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.

PR-26967

'nu' creates a new $HOME directory with a numeric group.

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.

op.access

PR-29461

The /etc/op.access file can contain a command which 'op -h' indicates that a USER can execute and yet when the USER attempts to execute this command or get specific help on the command, 'op' says that the either the mnemonic was not found or the USER was is not allowed to execute it.

PR-31130

If there is a '.' in the pathname of the command which is to be executed in an op(1) command, it is treated as a syntax error:

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 ornot 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_primr

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.

passwd

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.

PR-30785

In maintaining a separate password file for Unitree ftp access, I want to use the passwd -f /usr/unitree/etc/passwd to change users' passwords. passwd aborts with the error message passwd: rename: Cross-device link supposedly because it tries to rename /etc/ptmp to /usr/unitree/etc/passwd. Proposed solution: always create ptmp in same directory as passwd

Rpt-by:

% cd <some dir not in root device>

% cp /etc/passwd .

% passwd -f ./passwd <some existing user>

Old Password: <valid password>

New password: <ne

pax

PR-22158

pax should check for read/write failures and call perror if there was an error.

PR-25497

Using the "a" and the "u" option with 'pax' for a labeled tape does not work.

perl

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-22107

perl should check for read/write failures and call perror if there was an error.

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

PR-26923

The /usr/lib/perl/{ufs,net*} include file directories are not being built, making it hard to write certain kinds of programs.

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-26549

When setting a < expression in the PERL debugger, which includes a call to a function, a step into that function produces a coredump. PERL appears to go into an infinite loop.

PR-28410

Perl periodically produces the following message, when used as part of the installation package (GIP):

Bad free() ignored at /tmp/Ins_S010576 line 584.

PR-30156

Perl does not print unsigned long longs correctly.

PR-30160

Printf of long longs has extra spaces.

PR-30800

CONVEX needs to ship the 1.6 version of 'c2ph' rather than the 1.2 version that is currently being shipped.

PR-34176

In the following example, the string inside the angle brackets is interpreted by perl as a filename pattern to be globbed.

```
while (<*.pl>) {
print "$_ n";
}
```

While converting the Unitree Source 1.7 to use Generic Installer, this code segment began failing silently when the working set size of the parent process crossed the 10MB boundary. The working set size of the script that is actually attempting to execute the code segment is a very reasonable 3MB. The process heirarchy looks something like

PR unknown

The following code works on v4.0 Patch level 34, but not on Patch level 10:

```
sub stress_op_Write {print("In stress_op_Write n");}
$func = "stress_op_Write";
if (defined &$func) {print("It's defined n");}
```

pm

PR-28412

When an entry in the /etc/group file exceeds 1024 characters, the user names after the 1024th character are silently ignored. Thus, those users are not reported to be in the specified group when using the "/usr/ucb/groups" command.

ps

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-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

PR-29093

'finger' and 'ps'(certain options only) can take nearly 2 minutes to complete and can take abnormal amounts of CPU.

pstat.8

PR-26876

The man page for pstat -p inaccurately describes possible flags. The structure returning the info (sys/pm/si_proc.h and sys/pm/ui_proc.h) include the following:

```
#define SPSIG 0x00000004 /* parallel signal mechanisms */
#define S_FREE_ 0x00000040 /* UNUSED */
```

The man page does not include 0x00000004 and claims that 0x00000040 is "process is locked in core".

quota

PR-25990

quota will not list the user root's quota even though root may have one.

rc.local

PR-26846

/etc/rc.local assumes that the only place /etc/use_nameserver needs to exist is when the system is running a local 'named' process. However, it also needs to be touched in the case when you are using an /etc/resolv.conf for name service.

rdcontrol

PR-33003

The -f option for rdcontrol creates an 8K/1K file system (or smaller). By creating a raw device with rdcontrol and manually creating the file system with mkfs, performance improvement of 10X (on C3800) can be achieved.

rdcontrol should be modified so that the -f option creates a 64K/8K file system by default.

rdcontrol(1)

PR-33002

The rdcontrol man page refers to the device /dev/rd1 whereas in reality the device is actually /dev/ramd0 (and/or /dev/ramc0).

rdcontrol.1

PR-30358

PR-31606

The rdcontrol.1 man page refers to incorrect devices /dev/rd1 and /dev/ram1, as opposed to the correct devices /dev/ramc1 and /dev/ramd1.

rdump

PR-27135

PR-27226

The utility rdump does not respect use of the write until finished or until end-of-tape reached flag, -E.

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-35675

After checkpointing two unrelated processes(no parent child relationship) using shared memory, and then killing and restarting the processes; the two processes will no longer share memory if the mmap() share option MAP_ANON is used. Substituting the option MAP_ANON to MAP_FILE works as expected.

Workaround: As a workaround you can either, make one process fork and exec the other, or use MAP_FILE instead of MAP_ANON.

PR-37695

After rebooting the machine, there were several jobs in cxbatch that were restarted. These jobs were checkpointed about 1.5 hours before the machine went down. At checkpoint time a process had 13,7xx minutes of cpu time. After the restart the process only had 13,4xx minutes of cpu time.

rmt

PR-34822

We use rdump to dump filesystems on other machines to disk files on baldur. This does not work when the filesystem being dumped exceeds 2G. Apparently, some of the utilities are not large-file aware. We need the capability to dump large filesystems to a disk file, since that is how we make complete system backups. The filesystem dump file is then migrated to tape via FileServ.

sa

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.

PR-30384

sed -e 's/FOO/BAR/g' test will fail to replace FOO with BAR if FOO occurs on the last line of an emacs-created file which is missing a final newline character. Other Unix systems have the same behavior, it's probably a misfeature.

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-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.

setgroups

PR-34800

%man setgroups

NAME

setgroups - set group access list

SYNOPSIS

#include <sys/param.h>

int setgroups(int ngroups, int *gidset)

...

%grep setgroup /usr/include/sys/param.h

%

> On teaparty (ConvexOS 10.1) the setgroups(2) system call is documented

> as taking an array of integers for group numbers, and I can't find a

> prototype for it anywhere. getgroups(2) has an array of gid_t for its

> parameters, so the two aren't directly compatible.

Does this mean we also need to fix getgroups?

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

PR-33324

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.

PR-32002

Under ConvexOS 10.2 on a 3800, the ability to execute a remote shutdown with a "reboot"(/etc/shutdown -r) is lost; the 3800 will just shutdown.

sigvec.2

PR-32540

The sigvec man page information is only valid for programs compiuled in -pcc mode. A section needs to be added (such as the one on sigaction.2) for -str/-std/-ext modes.

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-22111

spell should check for read/write failures and call perror if there was an error.

PR-28878

/usr/bin/spell accepts 'mdhfleas' as a word because /usr/lib/spell aborts and dumps core.

spucmd

PR-23057

The spucmd command causes spuio to die.

stty

PR-28888

It is seeminly impossible to use 8-bit characters in an Xterm window. If I say 'stty raw' it works, but that does not apply for the window as a terminal-session :-) , but 'stty raw' demonstrates that my Sun actually sends the 8-bit character.

PR-31767

stty option 'onlcr' or '-onlcr' does not alter the RETURN/NEWLINE handling.

PR-38502

The man page for 'stty' indicates that there is an option for to Select style of delay for horizontal TAB characters by specifying 'tab3'. If you actually execute the command 'stty tab3' the error "unknown mode: tab3" results. The man page should be modified to remove this as a possible option or the option should actually be implemented as documented.

stty(1)

PR-39484

The stty(1) man page entry for the "sane" option does not explain exactly what it does:

sane Reset all modes to some reasonable values.

style

PR-22113

style should check for read/write failures and call perror

if there was an error.

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.

syslog.conf

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.

syspic

PR-08094

Under certain circumstances, the syspic 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 'syspic' and in 'syspic -p tty' one sees that in 'syspic -p tty' the number of sent and received characters is about ten times the number displayed in the 'normal' syspic display.

PR-18710

PR-21403

syspic 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

Syspic will report a user (null) when the user is after line 2163 in the /etc/passwd file.

PR-24781

PR-26692

If syspic 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

syspic 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

'syspic' with the -p option doesn't show a tty line although two multiplexers are in place. 'syspic' thinks there are no multiplexers configured.

PR-27780

The calculation used to generate "Page Hits" in 'syspic' needs to be changed to more accurately reflect paging activity.

PR-27782

Kernel page faults (cnt.v_faults) and Page Ins (cnt.v_pgin) always have the same value. 'syspic' however, displays the values differently. Page Ins are computed per-second, and page faults are computed based on the last sample. 'syspics' display of these values causes each to appear to mean something unique. The fact that the paging variables are per-second is in the MAN pages but it's not obvious. 'syspic' output would be clearer if the VM summary and Paging output were calculated in the same way.

PR-28011

'syspic' uses too much CPU to run.

PR-30380

'syspic' complains about "ramd" device.

syspic: Unknown logical unit name: ramd

PR-30733

The fields in the disk picture are not always wide enough, causing the latency and transfer rate columns to overflow.

PR-30998

"syspic -p proc" reports that buffer cache is sometimes greater than 512MB, which isn't possible.

PR-31799

'syspic' incorrectly displays CPU activity on a 3-headed system. With 3 vector processes and a number of disk instensive process running on a 3830 and CPU's 1,2,3 installed; running 'syspic -p proc', the CPU usage for CPU 1 shows only a system percentage; it does not reflect that CPU 1 is running any user code.

PR-34061

If you choose a connection from the syspic -p network panel that is not on page 1 , you get the detailed information tcp from the same connection on page 1.

Under comments is a fix provided by Stefan Grefen.

syspic/ps

PR-28742

If you look at running jobs with syspic -p proc, and ps -ux, you see some significant differences in the RSS field. To see the differences, run syspic -p proc. While viewing the syspic -p proc, notice the RSS value for your syspic -p proc. Then execute ps -ux and notice the RSS value for the syspic -p proc. They will be different.

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.

tar

PR-20235

PR-21054

PR-23879

/bin/tar does not follow some cases of relative symbolic links correctly.

PR-25863

When tar extracts a symlink with the verbose flag set, the message 'x bar symbolic link to foo' is not printed.

PR-29681

PR-29938

PR-34178

tar should restore directory modification dates. It currently uses the date/time of the extract instead of the date/time in the archive.

PR unknown

If a tar archive contains an entry, say 'foo' which is a symlink to somewhere, the symlink is not extracted if 'foo' exists on the file system as a symlink to somewhere else. I.E. tar does not replace symlinks when extracting. If 'foo' is a file, tar correctly replaces it with a symlink.

PR unknown

Extracting tar files with certain namelengths will result in a file with the mode concatenated.

tbl

PR-14537

tbl occasionally hangs.

tcsh

PR-26602

'tcsh' core dumps when 'home' is changed to . and back to /mnt/username.

PR-27094

There seems to a problem within 'tcsh' whereby the execution of ~/.cshrc does not always have the desired effect.

PR-27727

'tcsh' hangs with the error "Too many words from ".".

PR-35206

'echo 'ls -tcr" can generate a different order from 'ls -tcr'.

PR-37110

When a filename has special characters embedded in it, like foo*bar, the tcsh will not expand the name correcly with ^D. Also the alias

alias cd 'cd !*; set prompt = "%S'whoami'%s@'hostname'-$cwd:gt{!} "'

will not work correctly when $cwd:gt{!} has embedded wildcard chars in it.

PR-35848

tcsh translates "setenv MANPATH=test" into MANPATH = "test=" in the environment without any errors. "oldcsh" would have reported "setenv: Too few arguments.".

termcap

PR-31872

The distributed termcap entry for xterm's and vt100 seems does not respond correctly to the following sequnce "<i> x <esc> <i> ^t".

test

PR-29235

The man page fails to note that numeric comparisons are limited to long integers.

tip

PR-07404

PR-08159

If a device spec with a missing comma is given to tip, it will become very confused.

PR unknown

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.

PR-27688

'tip' to a host or phone # will intermittently drop commands, or garbage characters will be echoed back (when modem is in echo); the call is never made and the tip session times out. Creating a zero length .tiprc file decreases the frequency of error. Setting options in .tiprc and aliasing 'tip' to do'tip -v' causes enough of a time delay to make it work. The modem involved is the Maxwell 1200VP and the emulation is Hayes.

PR-29914

tip seems to hang when attempting to take a file from a CONVEX host running 10.X.

PR-30181

PR-30181

If the permissions on the tty devices in /dev are 600 (root/bin), tip fails with "Permission denied." If the permissions are 666, it does not.

Workaround: chmod 666 /dev/tty0* /dev/cua*

PR-33074

When connecting to a system whose modem has a different baud rate than the call was initiated with, the modem reports the new baud rate, then expects me to switch my baud rate down to the new rate. Tip supports a "baudrate" variable, so I should be able to type ~s baudrate=1200 and switch to the new rate. However, tip tells me "access denied." Why does tip provide a baudrate variable that can't be changed?

tmac.s

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.

PR-23740

The umlaut operator in troff, *:, places two commas over its operand instead of two periods. In nroff there is no output.

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/ttys.

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.

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.

update

PR-30758

During a 10.1 upgrade, after the new MAN pages are restored, 'catman' doesn't update the /usr/man/cat files if they are newer than the installed MAN pages.

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!

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.

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 successfull 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.

uucp

PR-31813

When you try to do a uucp on the localhost, you will change the permissions of uucppublic from 777 to 666.

uuencode

PR-22141

uuencode should check for read/write failures and call perror if there was an error.

PR-27237

'uuencode' outputs error messages to stdout when it should be doing so to stderr instead.

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-31573

'vdump' does not recognize the U-flag, and consequently cannot be used to verify a multi-tape unattended dump.

vdump.8

PR-24408

/etc/filter is installed for and used by vdump(8) but is not documented on the man page.

verify

PR-27170

PR-28172

'verify' turns out various files with sizes being changed and wrong GIDs being set. It requests GID 12, which is an unknown group. If one changes the files to group 10 (bin), verify stops complaining.

PR-27294

After running the V10.0 UUCP_SETUP script and then running 'verify' on system_V10.0.2; there were errors about incorrect user/group ownership forfiles in /usr/lib/conf/uucp and incorrect group ownership for files in /usr/lib/uucp.

vers

PR-22175

vers should check for read/write failures and call perror if there was an error.

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-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 longjmps 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-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-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.

PR-29564

PR-30295

The return status of a read is not checked within vi.

PR unknown

/usr/ucb/vi on the CONVEX does not like characters from the ISO8859-1 extended range (i.e. with values above /177 octal). When a text file with these characters in it is edited, vi issues a message about non-ASCII characters, and re-maps those characters to standard ASCII. Vi should be enhanced to be able to handle those characters without problems.

PR-35761

When I try to edit the file included with this report, vi willcore dump with the following trace:

#0 0x80011892 in markpr (0)

#1 0x8001184e in markDOT ()

#2 0x8000d56c in global (1)

#3 0x80002d56 in commands (1, 1)

#4 0x8002c860 in source (0x8005c188, 1)

#5 0x80029af2 in main (1, 0xffffc854, 0xffffc85c)

vi, emacs

PR unknown

Running vi or emacs forces ixany bit on in current tty settings. To recreate the problem, try something like this:

stty -ixany ; vi; stty -a

orstty -ixany ; /usr/convex/emacs -nw; stty -a

1. It's sufficient to quit immediately from the editor in the above example.

2. Just an idea - could it be curses or termlib doing this?

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.

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.

PR-36472

PR-36472

vmstat shows pageout activity while system is not paging out. Syspic appears to work correctly and doesn not match output from vmstat with "-S" option with interfal specified.

This appears to happen only at random intervals. Sometimes vmstat appears to be working correctly, at other times it doesn not.

Workaround: Customer was instructed to use syspic to examine is "virtual-memory" statistics.

vvmdaemon

PR-27236

vvmdaemon -m option doesn't work. Mail never gets to receiver.

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".

wall

PR-17279

wall only writes to some ttys, not all of them.

whatis

PR unknown

For some reason the whatis database gets the following line for 'man': man, apropos, whatis (1) - display on-line reference manual informa- tion

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.

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.

PR-26993

xdump will print the message "XDUMP: dmon_fcntl(2) failed: No dmon present". This message may not be understood by (and is not relevant at) sites not running CSM.

PR-27022

The xdump utility fails on a large striped filesystem containing a great number of indirect blocks.

PR-28178

xdump prints the error message "XDUMP: dmon_fcntl(2) failed: No dmon present", upon every invocation. This message should not ever be printed if the system tunable "dmon_enable" is set to 0 (the default).

PR-30028

'xdump' issues the "TAPE REWINDING" message when closing a no-rewind device.

PR-31110

If no migration dmon is enabled xdump will always complain. This is harmless to the dump but annoying.

yacc

PR-03581

Error recovery can take place "too late" in some cases.

Known bugs for ConvexOS kernel

/etc/fsck

PR unknown

Doing fsck -c on a block device, such as fsck -c /dev/du15a, will cause a panic. Pass experience on ConvexOS shows that this is a bad thing to do. Btw, fsck /dev/du15a will return an errormsg.

/mnt/os/commreg

PR-30361

The commreg script either needs full pathnames when calling other utilities, or it should include its own path.

The commreg script could use full paths as in the following:

```
#!/diag/bin/dsh
/diag/bin/ddb < /mnt/os/dump_commregs
exit 0
```

/mnt/os/cpureg

PR-30362

The cpureg script either needs full pathnames when calling other utilities, or it should include its own path.

The cpureg script could use full paths as in the following:

```
#!/diag/bin/dsh
put hard_err_mask1 16#0
put hard_err_mask2 16#0
/diag/bin/ddb < /mnt/os/dump_cpuregs
exit 0
```

/mnt/os/jpstat

PR-30480

'jpstat' on the SPU is dumping core when run with the "-S" option.

arch

PR-25377
PR-27467
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
PR-27081
Users can bypass disk quotas when asynchronous I/O is used.

asmb_lg_ug

Assembly Language Refference Manual (1st Ed). pg 274. Operation should be

```
if (Ak < 0)
 VL = 0;
else if (Ak > 128)
 VL = 128;
else
 VL = Ak;
```

pg 296, Operation should be

```
if (Sk < 0)
 VL = 0;
else if (Sk > 128)
 VL = 128;
else
 VL = Sk;
```

pg 450, Operation should be

```
for (a = 0; a < VL; a++)
 Vk[a] = Vi[a] - Sj;
```

autoconf

PR-25824

After a large disk reconfiguration it was decided to start single user, to be able to 'fsck -n' the disks to ensure that they were where we expected them (fsck tells you the mount point last mounted on!) This failed because ioconfig refuses to configure write-protect disks. This seems an unnecesary protective behaviour.

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.

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-18597

PR-21270

PR-22405

PR-23560

PR-25042

PR-27613

PR-31287

PR-34487

Something in the kernel interface for the debuggers periodically causes the debug process to hang. This has occured over several releases of the OS and has been reportedly seen in csd, CXdb, and a.db.

PR-31435

The filesystem interface of a "ramdisk", implemented through rdcontrol(1), returns stale(?) data after awhile. An umount/mount sequence restores the filesystem again. This seems to signify that the raw ramdisk interface is working. It appears that the filesystem is also restored by waiting long enough, leaving the ramdisk quiescent.

PR-31546

The SPU /mnt/os/jpstat process dumps core on C3800's. It will dump core fairly frequently when invoked with the "-S" option.

PR-31575

In many include files distributed with the ConvexOS there is "#ifdef __convexc__" at places where is absolutely nothing compiler dependent but system dependent only, and thus the correct directive would be "#ifdef __convex__". This is very painful for people who regularly use other compilers than Convex C.

PR-32707

When executed on a system (or on a system image) with one CPU, jpstat (and jpstat.jp) will print information for CPU 0 even though the CPU is installed somewhere other than position 0.

convert.awk

PR-31633

The awk script /sys/sysgen/convert.awk does not support ITC or HIPPI CCUs.

crash

PR-33658

ConvexOS Fatal Error VM 6636 cm_getblk_assumption

crashdump

PR-16222

crashdump does not detect tape errors on a 9-track tape drive.

PR-28528

reaches end-of-tape instead of requesting another tape as it should. This behavior was observed on a 3800 series machine with an Opus spu and dat tape drive.

PR-28799

crashdump -s on a 3820 (opus spu) appeared to finish successfully. However, crashread finds an incomplete crash dump and fails differently on different platforms.

PR unknown

Crashdump is doing a very poor job of recovering from tape errors. In particular, it appears that a tape error in processing the first 4Mb of memory is not detected. The resulting dump is likely to be useless, as happened with the orion hang of 5/24/93.

csd

PR-27893

Convex is crashing from a variable print in csd from a normal USER. The program compiled nicely with -g option but crashes the Convex under 'csd'.

exect

PR-13044

When exect is called with a non-executable program as an argument, the program stops and prints the message "Trace/BPT trap". It shoud fail since the program is not executable and return -1 (according to the man page).

faillog(2)

PR-26135

When running utilities which do not possess read access, faillogon reports an access violation by csh.

getrusage

PR-26347

The getrusage() system call to return resource utilization does not always seem to increment the ru_inblock portion of the structure.

init

PR-30420

init does not disable faillog when going from multi-user to single-user mode. Something like the following needs to be added to the shutend() function:

(void)faillog((char *)0);

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.

ioctl

PR-30185

ioctl PIGETU is not working properly. It does not update the u_ssize field of the user_t struct for programs calling C from FORTRAN. However, if you have a C program calling C, ioctl with PIGETU will display the proper value of the stack every time.

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.

PR-32644

Crashdumps written to a 3800 SPU DAT tape (crashdump -s) cannot be read with crashread.

PR unknown

When supplying a disk partition partition to 'cpfs' the disk must reside on the first CCU defined in the /ioconfig file.

kern

PR-16678

PR-17621

On systems that are NOT networked, system time gains approximately 2 minutes per day.

PR-19474

swapstress causes a vgetstack kernel panic.

PR-16268

If COVUEedt 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.

PR-27216

Resource map fragmentation causes system hang.

PR-26162

According to man page, _setjmp() does NOT "manipulate only the C stack and registers." That is, it does the same thing as setjmp() in that the signal mask is saved (and restored with longjmp()). As a result, the _setjmp/_longjmp combination perform 33X slower than expected.

PR-28833

A floating exception trap mechanism is required in the Gasunie simulator. It appears that the error handling mechanism works as expected if the trap occurs in the main program. If, however, the trap occurs in a subroutine the sqrt(-1) causes the test program to loop. The methods described in the Fortran and C documentation do not work under all circumstances.

PR-30284

PR-30289

No core image is generated and the core dump bit is unset for SIGLOST.

PR-30373

/usr/include/sys/acct.h:

The include file uses the u_short type instead of the ushort_t type, which causes errors when compiled with -std flag.

PR-30744

/usr/include/sys/acct.h typedefs several objects in terms of u_short, which is defined (in /usr/include/sys/types.h) only under the equivalent of -ext. Thus -std and -str do not work. for -std and -str the type should be short_t.

PR-31754

The kernel is not setting the IEEE mode bit in the psw when it calls the signal handler for floating point exceptions, when the program is an IEEE program.

PR unknown

There's a series of bugs in the vcopy() function (which uses the vector registers to do a fast memory copy). vcopy does not context-switch and restore the vector registers correctly when the calling thread already is using them.

This situation seems to never arise in standard ConvexOS - it's been present in some form ever since revision 1.4 to sys/base/kernel/ISA.cseries/vcopy.c which was checked in in 01/91

AFS on V10.1 stretches it just the right way to break it, but it's still present in 11.0

kernel

PR unknown

If a program is run from an NFS partition, core dumps and gets a page fault in the text area, the system will hang. This is caused by a signal being processed twice (this isn't supposed to happen).

Workaround: On 11.0 production kernels that have the variable coredumpnfs, this problem can be worked around by setting this variable to 0. $adb -w vmunix - Convex Debugger ($Date: 88/09/21 15:51:31 $) Use ')help' for help. (adb) coredumpnfs?=w 0 _coredumpnfs: 1 = 0 (adb) ^D

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-30370

Problem with pcntl.h:

Including this file when compiling with the -std flag to insure ANSI compatibility causes an error due to the long long element in the pcntl structure. The pi_ottimer is surrounded by an #ifdef __convexc__, but that is always defined by Convex C according to the cc man page. The ifdef should probably check for __STDC__, which is defined only when the compiler is in strict conformance mode.

PR-31554

PR-31752

Running the Unitree "disksize" command on a block device (rather than raw device) causes ConvexOS: FATAL ERROR: (pm,8516) trap: unresolved kernel pte violation

Workaround: Use raw device (duhhh) disksize has been modified to check for raw/block device type.

PR unknown

When a window is closed with a process that reads/writes from/to that window, the process' read() is successful. The process receives a SIGHUP, but it appears that the window is still open(as per read()).

Workaround: The workaround they believe will work(and have to depend upon) is to use an ioctl() call instead. They check argp, and if it is null filled, they assume the window is closed. Better workarounds are WELCOME.

PR-31533

There are two processes - proc1 & proc2. File filea is associated with dmon 0 & dmon 1 however the dmons are registered for different callouts. Both processes are operating on filea. If proc1 suspends callouts on dmon 0, any operations on file1 by proc2 will hang until callouts resume regardless of the dmon that would recieve the callout.

PR-38317

Failures of disks that are part of redundant stripes while in single user mode are not reflected in /etc/stripecap (vvmdaemon is not running). This can lead to filesystem corruption.

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.

PR-27636

PR-27675

PR-28869

ncclose dereferenced a null client pointer. This caused a pte violation panic.

PR-30273

PR-30577

When using a Convex C3440 a system call to the DRPC services will sometimes return corrupted data.

Workaround: I places an "asm ("plch");" in front of the syscall in covuenetd and the data has been correct ever since. The workaround has been running on a customer site for 4 weeks from today. (4/9/93) tgm

mbs

PR-38021

A "dustrategy: pq_cmi_fm_alloc() returned error" panic may occur when performing large amounts of i/o on systems with more than 80 disks. Usage and allocation of MBS messages must be improved.

os_inst

PR-26966

Remote installation of ConvexOS 10.0.5 will fail.

PR-29424

Page 30, "Copying a new system image from the SPU": there should be a second command listed: "/bin/chmod 644 /vmunix".

PR-29424

Page 40, "MC6800 Tools": should read "MC68000".

os_mpgs

PR-29218

PR-29218

PR-38957

PR-38957

The getrusage(2) man page says:

ru_ixrssan "integral" value indicating the amount of

memory used which was also shared among other

processes. This value is expressed in units

of megabytes * clock-ticks-of-execution and

is calculated by summing the number of shared

memory pages in use each time the internal

clock ticks.

A specific value (100) must be defined for clock-ticks-of-execution. A definition for this constant should be defined in resource.h and getrusage(2) should refer to it.

Workaround: Use hardcoded value of 100 for clock ticks.

os_pr

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.

pm

PR unknown

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. Quotas were being run on the user "root".

PR-28055

Looking at a process listing, the CPU time for a process sometimes moves backward.

PR-32314

PR-32346

PR-32728

PR-32793

PR-33916

ConvexOS kernel can panic with "irrecoverable hard error: thread/proc mismatch" while a CPU is being taken offline with APR.

Workaround: TAC patch 10.2.170

pos_conf

PR unknown

POSIX.1 8.1.2 states:

"When locale is a null string, the setlocale() function takes the name of the new locale... from the environment as determined by the first condition met below:

(1) If LC_ALL is defined in the env. and is not null, the value of LC_ALL is used.

...

If the value does not name a supported locale... setlocale() returns a NULL pointer, and the locale of the process is not changed by this function call." Our setlocale() returns other than a NULL pointer under these circumstances.

posix (tty)

PR unknown

This is a POSIX conformance bug, the original test is from NIST-PCTS. If a modem disconnect is detected by the terminal interface for a controlling terminal, and if CLOCAL is not set in the c_cflag field for the terminal, the SIGHUP signal is sent to the controlling process associated with the terminal. But the child of the controlling process also received the signal unintentionally and is killed by it, which cause test failure.

PR unknown

This is a POSIX conformance bug, the original test is from NIST-PCTS. Call to tcsetattr() failed on non_controlling terminal.

pty.4

PR unknown

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.

quotactl.2

PR-32061

When using quotactl it is possible to get errno ESRCH 3 (No such process) if the user is new. This error is not documented in quotactl's Man Page.

The Man Page should include something along the following format:

[ESRCH] User ID is new and user' quotas has not been initialized.

Workaround: Use edquota...

quotas

PR-33390

There are problems with 'quotas' and X11.0. When user A starts a long-running process, puts it in the background and logs out; user B logs in and gets the same tty. When the long-running process exceeds user A's quota, user B gets the incorrect message:

WARNING: disk quota (/users4) exceeded despite the fact that he has no quota and no files on /users4. This problem occurs despite the fact the mode of the tty is 600.

sa

PR-12315

The kernel writes accounting records containing an average concurrency field that is not equal to 1.0 on a C1.

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.

PR unknown

PR unknown

schedstress run as root can deadlock the system.

Workaround: A workaround for this is: 1. Don't run schstress as root. No su users are limited in the number processes they can create, this will limit the number of forks & vect context regions they can obtain. (this doesn't prevent users from "teaming up" to reproduce the problem) 2. Since nproc is based on a multiple of the tuneable maxusers, (ie 8*maxusers + slop), limit maxusers to 32 or less.

PR-40352

There's a bug in the vector scheduling code for ConvexOS, and perhaps more notably, for OS/Secure, since it affects the initialization of the vector registers for a newly created thread. (The implication of newly created is that it's really significant only if the customer cared enough to enable the secure microcode.)

The problem only occurs if the cpus in the system are not numbered consecutively from 0, i.e. [0..n-1]. In this case, the array used to store the cir/cpu correlation is not cleared when

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.

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().

setrlimit()

PR-28088

PR-29740

It is essential to be able to control the number of threads for the CURRENT process dynamically, controlled by the processes itself thru calls to some service routine from the USER code. Currently it is not possible to change the concurrenvy limit dynamically. This capability is needed to spot a recurrence in a parallel application.

sgen

PR-07681

sysgen does not flag an unsupported disk type as an error.

PR-26763

ConvexOS 10.1 for the C3400 is compiled with -tm c38. This generates code for function calls that is very inefficient for the C3400, contributing to slow O/S performance.

spucmd

PR-28566

PR-29535

At various intervals the command 'spucmd' will hang and eventually time out. To correct the problem, one must go to the SPU and kill and restart the 'spuio' process.

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.

sysc

PR-25949

The system call rlimit() does not appear to have the desired effect upon paging.

PR-28165

The wait(2) man page lists EFAULT as a possible errno, but an illegal status argument causes a segmentation violation.

PR-28166

The execve(2) man page lists ETXTBSY as the error returned when a file to be executed is open for writing or reading by another process, but the execve is succeeding successfully.

PR-28168

The ioctl FIOGETOWN does not change the value of the return argument.

PR-30522

The brk(2) man page states that the addr parameter is rounded up to the next multiple of the system's page size. However, tests indicate that addr is not rounded up, even if addr=1.

PR-30793

The execution of "/usr/bin/uname -r" outputs C110 on a C120. This is caused by the uname(2) system call returning "C110" in the release field of the utsname structure. It should be returning a C120.

PR-32296

The memory integrals returned by the getrusage system call can overflow their fields for large long-running processes. The variables ru_ixrss, ru_idrss and ru_isrss are all declared as 'long', so the maximum value is 2**31 megabyte clockticks. This is about 10000 megabyte hours, so a 1 gigabyte job could run for about 10 hours before overflowing the field.

Customer typically runs long jobs and needs to report OS statistics on the job.

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.

PR-22769

PR-22769

Performing a sysgen following installation of Secure/Domestic NFS using the default configuration file REL_Cx.SECURE will fail. Dependencies will not be built correctly causing the sysgen to fail with unresolved symbols in conf.o.

Workaround: Rename REL_CX.SECURE to SECURE and rerun the sysgen.

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.

PR-26738

Setting the tunable, "number_ptys", to 144 results in a panic at boot time.

tunables

PR-35664

From: Jesper Halding, SE, +45 43 71 47 00, halding In the UniTree Installation Guide, Chapter 3, p.13-14, a manual method for adjusting the Mtu size is explained. This has to be done after each sysgen. A much better method would be to have this done simply by setting a tunable.

ufs

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-26405

PR-34194

PR-35420

PR-36000

System crashed with a pte violation. Problem appears to be a corrupted inode free list.

Workaround: There is now a patch to work around this problem. It's not a true fix, but rather a hack to iget() to reconstruct a corrupted in-core inode free list. I don't know when a true fix will be available, but at least you won't panic anymore.

PR-24410

PR-27167

PR-27588

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.

PR-31059

When a migration server attempts to write to a migrated file and the file is sufficiently large to require at least one indirect block (> 12 * blocksize) and the filesystem is completely full, the write system call will fail with errno set to EIO.

PR-36747

System crashed with ufs 9938 (dqrele) panic.

uname.o

PR-15207

The uname system call always reports that a system is running in default native mode. This has been tested on a C2 running 8.1 and a C1 running 9.0.

unconvert.awk

PR-31634

The awk script /sys/sysgen/unconvert.awk does not understand ITC or HIPPI CCUs.

vadvise(2)

PR-26529

As of ConvexOS V9.0, the vadvise(2) systemcall 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.

vfs

PR-19990

PR-40912

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-29404

PR-29606

PR-29607

"cvx_malloc: insane size" panic occurs when "lookupinum" accesses a directory (truncated) of 0 length.

vm

PR-27530

mremap() does not allow MAP_HASSEMAPHORE as a "share" option. Although this is not required for CSERIES, it should be allowed since the msleep() and mwakeup() man pages state that it is required.

PR-26882

The macro vallocprint expands incorrectly.

PR-28693

PR-29810

PR-30147

PR-35225

A system hang may occur when free memory is exhausted (freemem=0). "freemem + freeqmem" may be greater than "lotsfree" in which case the buffer cache memory (i.e. freeqmem) is never flushed and processes pend awaiting free memory.

Workaround: A workaround is to install TAC patch 10.1.186.

PR-30364

On some systems sbrk will allow you to extend the virtual address of a program over the limit of 2gb. The only place I can duplicate this is when you have more then 2gb of swap space.

PR-29787

mmap hangs the system when the following is executed.

1) Try and mmap a large section using a file.

2) This may sometimes fail due to not enough swap space. Mmap returns with invalid argument for the size.

3) Wait and then try it again. The system will hang.

PR-30587

System crashes with ConvexOS: FATAL ERROR: (vm,6646) cvx_malloc: wrong bucket

PR-31758

PR-32139

fc is aborting with a SIGILL. Mathematica with a SIGSEGV. With a given dataset the programs will produce the same failures *if* they fail. The programs often work correctly.

Workaround: This problem has been seen in the past, and was fixed by completely reloading / and /usr from the OS tape.

PR unknown

mremap of the text region from default to MAP_INHERIT | MAP_SHARE leaves pages encached on the vnode paging object which causes a panic when cmhashm is called on the swap object. See pte_remap() for the offensive code.

PR-38834

A program using increasing sizes passed to mmap with specific "prot" and "share" parameters will uninterruptably pend in its second run. This often leads to a system "hang".

Fixed bugs

This section lists fixed bugs and their resolutions.

Fixes forConvexOS utilities

/etc/ttys

PR-26408

/etc/ttys continues to be shipped with a bunch of terminals having the type "vt100n". vt100n is CONVEX specific and the rest of the world doesn't have this. The effects range from term[cap | info] programs not working, to tcsh exiting and logging one out.

Resolution: Fixed.

adb

PR unknown

adb displays incorrect instruction parameters with the ?i format.

Resolution: Fixed. adb correctly displays the format of the operand.

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.

Resolution: The default output radix is now used if one is not specified on the command line.

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.

Resolution: adb now supports up to 1024 memory segments.

PR-24184

adb does not single step through an 'rtn' instruction correctly on a C3800.

Resolution: adb correctly single-steps through a 'rtn' on a C3.

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.

Resolution: adb has been made large-file aware.

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.

Resolution: This has been fixed. adb now properly treats all components of a version number as unsigned chars.

PR-26643

'adb' does not know the following C3 instructions.

eni_idleSk

eni_rtn

movBE(Sj),Sk

movSk,BE(Sj)

pref

pmod

Resolution: adb now properly displays C3-unique instructions.

PR-27685

'adb' cannot disassemble sysc #0,#0.

Resolution: Fixed. adb correctly dissassembles sysc #0,#0.

PR-27889

'adb' disassembles the code 0x7dbd as "mov S5,VL", while the assembly reference manual only knows about "mov.w Sk,VL".

Resolution: mov sk,vl is a synonym for mov.w sk,vl. adb now disassembles the documented instruction.

ansidaemon

PR-27295

ansidaemon dumps core.

Resolution: ansidaemon no longer aborts when trying to contact tpdaemon if tpdaemon has been killed.

ar.1

PR-35872

The command 'ar r lib.a' (i.e. no object names given) will replace all same-name objects in lib.a that exist in the current directory. Please document this behavior. The man page implies that only the files explicitly named and newer will go into library.

Resolution: added test to explain what happens with '-r' when no objects are specified.

atrm

PR-27403

PR-27649

PR-27912

PR-33929

A normal user is able to remove any spooled 'at' job with 'atrm'. It isn't checking permissions and ownership.

Resolution: Fixed for 11.0.

autoseq

PR-11648

autoseq has a static limit on the length of the sequence list.

Resolution: the static sized group list has been replaced by an linked list implementation, which allows an unlimited group list size.

awk

PR-10700

User requests that awk support the trig functions.

Resolution: The following built in functions have been added to awk:

sin(), cos(), atan(), and system()

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.

Resolution: The following built in functions have been added to awk:

sin(), cos(), atan(), system() Calls to functions in awk programs that are not built in are now recognized as syntax errors instead of being silently ignored.

calendar

PR-27457

If the word "month" appears in the user's $home/calendar file on a monday, it matches for monday.

Resolution: Fixed the man page to explain that the pattern search used may find unintended matches. The patterns being searched for are now enumerated.

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.

Resolution: Hopefully cleared up the ambiguity.

cat

PR-29564

The return status of a read is not checked within cat.

Resolution: cat has been modified to check return codes on reads.

catman.8

PR-25945

Catman has undocumented options, -M for instance.

Resolution: Added descriptions for -M and -P flags. Debug switches and unimplemented features remain undocumented.

chall

PR-27639

'chall' aborts when it hits a symbolic link to nowhere. It should print an error message and continue changing the rest of the tree.

Resolution: chall now continues after encountering non-fatal errors.

PR-36273

Can the chall command be made available to unprivileged users? The program is world executable and in the default PATH, but if an ordinary user tries to use it it fails with the message

chall: You must be super-user

The program is not setuid; so removing the check does not give the user any extra privilege. It just makes it easier to do things he is allowed to do anyway. Forcing the user to use find(1) increases the likelihood of damaging mistakes.

Resolution: removed check for root UID.

chfn

PR-20243

chfn allows an entry in the password file that is too long, thus causing problems for mkpasswd and vipw.

Resolution: Fixed. Entries in /etc/passwd are now restricted to 512 bytes in length, which allows them to easily be placed in a dbm data block. The problem was large password file entries (close to the old limit of 1024 bytes) would get expanded by mkpasswd(1) beyond the 1024 byte limit in dbm, causing mkpasswd to fail.

chkpnt

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.

Resolution: Fixed.

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.

Resolution: Fixed.

chkpnt.1

PR-27469

The chkpnt.1 man page should document the restriction that processes in the 0xb0000000-0xbfffffff region cannot be checkpointed.

Resolution: The chkpnt(1) man page now explains that processes using virtual memory which overlaps the restart wart are not checkpointable.

ci

PR-11071

ci throws away the log message (and prompts for a new one) if the message length is greater than 4096 bytes. This is a request that it allow the user to edit the entry instead of losing it all.

Resolution: Upgraded to GNU RCS 5.6 which does not have this message size restriction.

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.

Resolution: Upgraded to GNU RCS 5.6 which does not display this problem.

cncpts

PR-24560

On page 64, the last sentence says "...provides the lower layers, shown as shaded boxes in Figure 21." However, none of the boxes in Figure 21 are shaded.

Resolution: Book source has been updated to show shaded boxes. The update will show up in the second edition of the book, probably late this year.

contact

PR-27520

The logic in the 'contact' program which prompts for cpu number and hostname when it is run on a cpu in Dallas needs to be extended to field offices as well as customers. Field offices often enter contact reports for customers, and the cpu number needs to match the customer machine. Customers with morethan one cpu should also have the ability to enter a contact report for anyCPU on any of their machines.

Resolution: New contactcap boolean ac (askcpu) prompts users for a different machine id to report the problem against. New Submitter-CPU field in the contact report always contains the machine id from which the report was sent.

contact.1

PR-28263

The contact.1 man page has a typo in the DESCRIPTION section, under Version. The second paragraph says "it's version" when it should say "its version".

Resolution: Spelling error has been corrected.

cp

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.

Resolution: cp now handles copies to filesystems with small blocksizes better.

PR-25426

PR-26640

PR-29926

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.

Resolution: cp now handles copies to filesystems with small blocksizes better.

PR-25333

PR-26505

PR-26886

PR-27356

PR-27428

Using 'cp' with the -z option causes unexpected results.

Resolution: fixed

PR-27429

In an attempt to free some badly needed disk blocks, 'cp' with the "-z" option was used to compact a file which had many null sequences. The files came out to be the same according to 'ls' and compared correctly using 'cmp'. 'cp' is making no attempt to compact the null blocks.

Resolution: A bug in the sparse block detection code has been fixed.

cp.1

PR-27465

The cp(1) man page states that "cp -z" will create sparse blocks whenever possible, without regard to sparse blocks in the source file. It then goes on to say that the resulting file will be an exact duplicate of the original with the same number of blocks used. Both of these statements clearly can't be true.

Resolution: The revised man page reads thus:

If the -z option is specified, cp copies sufficiently sized blocks of zeros as holes (sparse blocks). The resulting file will be the same size, but may not use the same number of blocks as the original.

PR-27465

The cp(1) man page states that "cp -z" will create sparse blocks "where ever" possible. "Wherever" should be one word.

Resolution: Rather than fixing just the word in question, the entire -z explanation was re-written.

cpio.1

PR-29232

The man page for cpio is incorrect, it says:

"It is important to use the -depth option of the find utility to generate pathnames for cpio . This eliminates problems cpio could have trying to create files under read-only directories."

The find command does not offer the -depth option.

Resolution: Changed -depth to -perm.

cpu_monitor.pid

PR-29214

The file /etc/cpu_monitor.pid is world-writeable. This allows a user to damage another process.

Resolution: cpu_monitor will no longer create world-writable files.

cron

PR-04498

PR-19180

New user-level cron generates too many directory searches. Request to limit by group or to root only.

Resolution: This is fixed in 11.0. The code which does the user-by-user search has been moved to a new daemon, /usr/convex/autocron. autocron is invoked when cron is run in the default backward compatible mode. To turn this off in 11.0, start up /etc/cron with the -p flag.

PR-06627

PR-08460

PR-15741

PR-19180

PR-20980

PR-21269

When a user's home directory is mounted via NFS on another machine, if there is a ~/.crontab file present, cron will sometimes spin forever, at other times dump core.

Resolution: This will be fixed in 11.0 with the merge of a new cron utility which is POSIX compliant and spools crontab entries in /usr/spool/cron. A new daemon (autocron) is forked off when cron is not in POSIX mode and will maintain backward compatibility while fixing this problem.

PR-16485

PR-19180

If two users (or more) share a common home directory, they cannot have independent crontabs, rather they must share a common one. System V and SunOS allow all users to have an individual crontab. POSIX.2 will require it.

Also, if two (or more) users share a home directory, and there is a .crontab file, the commands in the .crontab will be executed two (or more) times, usually not what is wanted.

Resolution: This is fixed in 11.0. Cron has been made optionally posix compliant while the use of the autocron daemon preserves backward compatibility. crontab entries will be spooled in /usr/spool/cron/<username>.tab.

PR-22622

Customer requests that cron check whether a home directory is NFS mounted before trying to execute the ~/.crontab and not execute the .crontab entries if it is NFS mounted.

Resolution: Fixed in 11.0. cron can be Posix compliant meaning that it will optionally execute the crontab files in /usr/spool/cron. When run in this Posix mode, crontab files may only be spooled by using /usr/convex/crontab or /usr/convex/tellcron. If cron is run in the default backwards compatibility mode, a companion daemon (autocron) monitors ~/.crontab files and spools them when appropriate. In this mode, cron will only go into a nfs-wait state if an nfs mount goes away while cron is updating a spooled crontab.

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 excuted. Setting a path in ~/.cronrc works fine for normal users.

Resolution: Cron's default PATH has been changed to:

PATH=/usr/ucb:/bin:/usr/bin:/usr/convex:/usr/local/bin

PR-23322

cron coredumps.

Resolution: This will be fixed with the replacement cron to be distributed with 11.0.

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.

Resolution: This problem is corrected in 11.0.

PR-26636

PR-31654

The mail sent by cron indicating that it cannot change to a home directory contains a mistake.

Resolution: Fixed.

PR-27738

The 'cron' MAN page says that if the day of the month as well as the day of the week are specified, the values are logically anded. This is not the case. In general, where a subset of the month and the week is specified, cron will logically OR the values.

Resolution: cron has been corrected to logically 'and' the 'day of month' and 'day of week' values.

PR-29995

PR-31400

PR-37898

'cron' gets confused on what day it is with ConvexOS 10.1.

Resolution: Cron has been corrected to properly compute the day of future events when the 'day/month' and 'day of week' are specified.

cron.1

PR-26844

PR-27027

The man page for cron incorrectly documents the default path. It should be

/usr/ucb:/bin:/usr/bin:/usr/convex:/usr/local/bin

Not

:/usr/local/bin:/usr/ucb:/bin:/usr/bin:/usr/convex

Resolution: Pathname has been corrected.

csh

PR-06150

Command substitution does not work if the substituted command contains an escaped newline.

Resolution: Fixed this by uncommenting a couple of lines. The offending /**/ were apparently inherited as they appear in the earliest revision.

PR-18088

in the convexos programmer's reference document number 710-004030-001 the man page for CSH(1) is unclear with respect to whitespace. page 1 paragraph two apparently shows the following entry in .cshrc "if (!$?prompt) exit" which is incorrect. it should have a space between "!" and "$" as the online documentation shows.

Resolution: The space is more visible in the printed version when the example is not in italics.

PR-21968

PR-27445

PR-27666

csh, when running large, long running shell scripts, will occasionally fail with a core dump in the internal malloc.

Resolution: Correct csh to free up allocated environment space when changing the value of an environment variable.

PR-27970

Within a 'foreach' a set of variables is handled differently from OS 9.1.6 to OS 10.0.

Resolution: Fixed. The shell no longer strips quoting bits off in addpath().

PR-28117

The test option -x under the csh works properly if the command is issued under an id other than root. If the root id issues this command, regardless of the execute permissions on the file, the output of the test indicates that the file is executable.

Resolution: It is documented on the man page that the -x option behaves just as the access(2) system call does. access(2) returns 0 for any file if ruid==0, even if no exec bits are set in the mode.

PR-29525

We found that a user's ~/.cshrc was being ignored. It turned out that he had a file ~/.tcshrc which was getting executed instead. This behaviour is not documented in the csh man page.

Convex's implementation of csh causes a lot of headaches because of the way it executes ~/.cshrc before /etc/login. It causes even more confusion when we discove there are extra undocumented complexities.

We would prefer it if this feature were disabled, but failing that it should be documented.

Rpt-by:

Create a file ~/.t

Resolution: The .tcshrc file is now documented on the csh man page.

PR-30376

PR-32886

PR-33103

PR-33105

A script doing a 'setenv' eats memory with the speed of slow light. The same script behaves appropriately on a 9.x system.

Resolution: Correct csh to free up allocated environment space when changing the value of an environment variable.

PR-31436

C-shell script fails following installation of ConvexOS 10.1.2.

Resolution: Correct csh to free up storage for array values after the new value has been computed.

csh.1

PR-28868

PR-29134

The -h option of the limit command is documented in the Release Notes, but not in the csh.1 man page.

Resolution: The -h option of limit is documented on the man page.

PR-29061

PR-29150

PR-29351

The csh.1 MAN page states nothing about the C-SHELL feature 'savedirs' or the ".cshdirs" file created in the $HOME directory when "savedirs" is set. This feature can be a real problem in and of itself and even more so since the behavior is not documented.

Resolution: The savedirs variable and the ~/.cshdirs file are documented on the man page

PR-29956

The man page for csh fails to note that $#name only works for shell variables and fails for environment variables.

Resolution: Added explanation that $#name syntax works on shell variables only.

date

PR-06820

PR-30014

Please amend the "date" system so that the timezones GMT and BST can be specified with the -z option.

Resolution: The time subsystem has been replaced by the zoneinfo implementation, as provided by Berkeley with the 4.3 reno releases. "date -z" is no longer used to set the timezone information. Instead, a zoneinfo rule file is written, if needed, compiled, and installed as the local timezone information. see zic(8) for more information on compiling the zoneinfo files, and tzfile(5) for more information on the format of zoneinfo rule file.

date.1

PR-28781

The date.1 man page (page 2) says "EST" where it should say "CST."

Resolution: Corrected time zone and clarified paragraph concerning daylight savings time rules.

df

PR-08859

df lists file systems in the order they were mounted, not the order they appear in fstab. This should be changed or documented.

Resolution: Added verbasge to the man page to describe the order of the 'df' listing.

PR-25621

PR-32498

PR-40116

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.

Resolution: 'df' has been modified to bahave much better with NFS file systems. It now makes ues of the 'fsid' option stored in /etc/mtab for NFS file systems allowing 'df' to not be dependent on all remote hosts to be up.

PR unknown

The usage line for df (printed when an invalid parameter is supplied) does not mention the "-a" option.

Resolution: The usage statement has been updated.

dirname

PR-33101

Some third party install scripts use dirname (see basename) and it doesn't exist on Convex. Interestingly enough it does exist (on same man page too) on SUN, HP, SGI, etc. Request to support 'dirname'.

Resolution: Dirname is now now included as a basic utility.

diskspace

PR-27830

The CONVEX supplied csh script /usr/lib/diskspace has no PATH variable defined and does not use fully qualified path names on the commands used.

Resolution: Added a full path to all the utilities used by 'diskspace'.

du.1

PR-29768

The BUGS section of the du.1 man page, second sentence, is unclear and should be rewritten.

Resolution: The badly constructed sentence has been corrected.

dump

PR-24834

When performing dumps to labeled tapes, dump warns:

Warning... Asynchronous i/o capability not available on this system.

Resolution: Changed message:

"Warning... Asynchronous i/o capability not available on this system." to

"Dumping to a labeled tape. Asynchronous I/O is not being used.".

PR-26591

The abort message from dump seems a bit strange and a bit abrasive. A more informative message seems in order.

Resolution: Changed the messages upon aborting from:

"The ENTIRE dump is aborted" to "The dump has been aborted" and the interrupt message from:

"Interrupt Received. Are >>>>>YOU<<<<< sure you know what you're doing?" to

"Interrupt Received".

PR-27179

The 'dump' message "DUMP: Dumps on mounted filesystems can be unreliable" is well and good; however it has no place when dumping a READ-ONLY filesystem.

This is an enhancement request to do away with this message during a READ-ONLY filesystem dump.

Resolution: Added a check for "ro" filesystem before printing the warning message. If the filesystem is "ro" then the message is not printed.

PR-26987

When a drive is mounted with 'tpmount', 'dump' will still use /dev/rmt8.

Resolution: The default drive for dump is the currently allocated drive, or /dev/rmt8 if no tape devices are allocated.

PR unknown

The dump and restore usage messages need updating to refect the man pages.

Resolution: I edited the dump_main.c and main.c for restore and updated their usage messages to reflect all the options as listed by the man page. I also noticed an inconsistency in the Synopsis section of the dump man page and went ahead and fixed that too.

edquota.8

PR unknown

The man page edquota(8) makes no mention of the fact that it does not work on an NFS mounted filesystem.

Resolution: Added paragraph stating that edquota does not work on NFS mounted file systems.

egrep

PR-30590

If 'egrep' gets an error when opening a file, the error message is repeated for every file it trys to open thereafter.

Resolution: egrep now correctly handles read errors on files.

emacs

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.

Resolution: The file descriptor to /dev/kmem has been made 'close-on-exec'.

Therefore child processes will no longer inherit the open file descriptor.

ex

PR-09601

If an entry for a terminal of type "dumb" does not exist in your termcap file, then ex scripts don't seem to do anything.

Resolution: If input was from a script or not a terminal, then ex set the terminal type to "dumb". It didn't need to set the terminal type at all.

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.

Resolution: expr now prints "expr: syntax error."

PR-29522

PR-38914

The expr utility incorrectly processess long long integers.

Resolution: expr now handles long longs

exten_gd.m

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: The access() check is now done first, so that no further information may be gained based on the euid of 0.

find

PR-23092

When the command "find / -name perl -print" is issued from the user's home directory, the command fails with a "bad status" error. If the user does a "cd /" then repeats the EXACT same command no errors are reported.

Resolution: fixed

PR-23834

'find' should remove trailing '/' from its first argument.

Resolution: Find now removes a trailing '/' in a path name.

PR-26412

A flag for 'find' to follow symbolic links would be nice when trying to walk down a section of a tree looking for a file, or any other purpose. The current behavior of 'find'; ending the walk of this tree when it encounters a symbolic link is excellent for the default case, but the user should be allowed to specify the reverse, perhaps by using a "-follow" flag.

Resolution: This wish has been granted.

PR-29723

Find is not working properly. find . -cpio find.cpio will not do symbolic links. Instead find makes the symbolic link the first line of the file. Also find /usr/include -cpio file.cpio does not set up the cpio file properly. It will add files to cpio as usr/include/file.h instead of /usr/include/file.h.

Resolution: The creation of symlinks in the cpio code has been fixed. The other problem mentioned is not a bug. Try:

$ echo /usr/include | cpio -oB | cpio -itv

40755 root 0 Aug 15 13:26:24 1992 usr/include

1 Blocks

this is simply the way cpio behaves and find is consistent with cpio behavior.

PR-29895

PR-30046

PR-35437

On certain, probably very specific cases, find coredumps with an inward ring address reference, caused by the first (ZERO) parameter of strcmp() in fstype(). Just before the error, find reports a 'permission denied'.

Resolution: Find now catches null pointer returned by getmntpt().

PR-30044

The group "trustedos" doesn't print correctly using the -ls switch with 'find'.

Resolution: find will no longer truncate group names to eight characters on the -ls command

PR-31610

find dumps core when it walks down a directory whose entire path is greater than MAXPATHLEN.

Resolution: Corrected find to print an error message when the pathname gets longer than MAXPATHLEN.

find.1

PR-25583

The 'find' MAN page needs a better example in its NOTES section, relative to using 'find' on an NFS mounted filesystem. Currently, the NOTES section contains the statement: "Use the -fstype 4.2 argument in prevent delving into nfs filesystems". This should be changed to include an EXAMPLE of how one might do this using the 'prune' option. The grammar is also wrong.

Resolution: Example has been added to the man page.

finger.1

PR-15421

If you type "finger @" without a specified username or hostname, the output you get is as if you had typed "finger -l" and everyone were logged on. The documentation ought to be updated to reflect this, if this is supposed to be a feature.

Resolution: Added text to finger.1 man page informing the user of the long listing when user specifies 'finger @'.

fopen.3s

PR-29472

The 10.1 man pages are omitted for the stdio functions: fopen, fclose, fread, fwrite, fdopen, etc.

Resolution: These man pages will appear in the 11.0 release. They can be provided via the TAC on an "as-needed" basis to customers running earlier releases.

fsck

PR-25823

PR-28685

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.

Resolution: Corrected fsck to NOT open the /etc/passwd file when checking the root file system. This shopuld allow /etc/passwd to be cleaned up properly if it is corrupted.

PR-27075

PR-31071

After a hard crash, it often takes several invocations of 'preen' (and thus several reboots) to properly clean the root filesystem. If 'fsck' is unable to correct the root filesystem in one pass, 'preen' should rerun 'fsck' on the root filesystem until it is clean before it reboots, if at all possible.

Resolution: Fsck if changed to remount the root file system after it makes corrections to it thereby eliminating the reboot.

PR-32344

During the boot process 'fsck' claims there are problems with /root and a auto-reboot is done. This may or may not loop in this mode until ^C. A boot off altroot and fsck of / shows file system modified, yet no errors, then on the next normal boot everthing is fine. This happens after a 'shutdown -h now' command is executed.

Resolution: The ufs section of the kernel has been modified to allow remounts of the root filesystem after it is modified during bring up. This problem has not been reproducible after these changes.

fstat

PR-25869

PR-26971

PR-27153

PR-27502

PR-28653

fstat does not work in 4GB environment

Resolution: Fixed. fstat(8) now works on large-memory machines.

fstat.8

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.

Resolution: Added text in the BUG section warning the user that "unk" may occasionally show up in the TYPE field of the output.

PR-20160

The manual page for "fstat" refers the user to /usr/include/sys/vnode.h for details on the output presented in the TYPE column. Documentation which refers to the source is bad enough, but the only possible reference is the line

enum vtype { VNON, VREG, VDIR, VBLK, VCHR, VLNK, VSOCK, VBAD, VFIFO };

(which is far from helpful).

Please change the manual page to describe each of the file types which "fstat" reports.

Resolution: Added descriptions of vnode types to man page.

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.

Resolution: Added descriptions for -m and -n command line options.

PR-35878

options v, m and n are undocumented

Resolution: Changes were already made in this man page.

getsysinfo.2

PR-30058

getsysinfo(2) man page should have a SEE ALSO that points to getsysinfo(1)

Resolution: Added getsysinfo(1) to SEE ALSO section.

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.

Resolution: Since /etc/hosts is part of the core product, the optional product disclaimer has been removed from the NOTES section of the hosts(5) man page.

in.comsat

PR-24260

The in.comsat daemon displays mail with no filtering of possible terminal programming characters.

Resolution: comsat now scans the message before displaying it, replacing control characters with '?'.

indent

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.

Resolution: Fixed. The 600 character limit has been removed. You are now limited only by how much memory you can malloc.

info

PR-05896

It would be useful, in the opening INFO menu, to allow either <n> OR <return> to advance to the next screen. The VAX HELP command and MAIL commands work with just <return> to advance screens. The <return> key is quicker and easier to find than <n>.

Resolution: Fixed. <newline> is now accepted in place of n in certain menus.

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.

Resolution: Fixed. The extra entry no longer appears.

PR-27603

The 'info' utility has errors in the 'info' pages.

Resolution: Fixed. The vc and vcpp info pages have been removed, and the example in the chfn page has been corrected.

init.8

PR-28118

init.8 makes erroneous reference to login.8.

Resolution: Man page is corrected.

install

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.

Resolution: /usr/adm/log/tapelog is created if it doesn't exist.

PR-28145

After installing 10.1.2, the VDB shows incorrect information. The VDB shows that ConvexOS is at 10.1.140. This is incorrect. It should show 10.1.2, as it shows in /mnt/os/vmunix.

Resolution: The install scripts ahave been corrected to update the VDB.

learn

PR-11277

PR-13682

PR-19298

PR-25704

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.

Resolution: Fixed. learn now handles this case properly.

PR-10632

PR-11891

PR-23163

learn editor will not let you exit after selecting 2.2a.

Resolution: The scripts have been updated to work properly.

less

PR-29337

Using 'less' on a file whose size is 75,608,736 doesn't work if the percent command is used. The command should put me 50 percent of the way into the file; instead it places you back at 0%.

Resolution: Fixed integer overflow problem in computing percent offset in very large files.

PR-36133

With the advent of Xterminals creating a screen size of over 100 lines is a trivial matter. I use it regularly to compare large amounts of output in 3rd party applications. Please change to 200 lines.

Resolution: increased max window size from 100 to 200

ln

PR-27959

Creating a symlink to a directory when a trailing slash is present on the "linked-to" directory pathname will fail if the name of the symlink is implied or is a directory.

Resolution: Before creating a soft link to a directory, ln will now strip trailing slashes from the source name.

lock

PR-28785

When /usr/ucb/lock is run on a machine where root has no password, then any string typed at the "Key:" prompt will unlock the terminal.

This occurs with or without the -p option.

Resolution: The code has been fixed to require a key even when root has no password.

logger

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.

Resolution: logger will now print a usage message and exit status 1 if -t or -p are specified with no arguments.

login

PR-27820

PR-29379

Customer cannot build login.c from the source distribution due to missing files prot.h and libprot.a.

Resolution: The 11.0 release will include the appropriate files necessary for building. The files audit.h, prot.h, and libprot.a will be made available as a TAC patch. The customer has already had the files ftp'ed to them.

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.

Resolution: User visible errors that are not self-explanatory are now documented on the man page. The reference to "programming counselor" (probably a Berkeleyism) has been removed.

lorder.1

PR-20374

Questionable writing style in man page for lorder.

Resolution: Changed questionable grammar.

lpd

PR unknown

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).

Resolution: lpd has been fixed to copy the contents of the temporary error file to the log file.

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.

Resolution: lpd has been fixed to log all valid operations.

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.

Resolution: The requested functionality has been added to the lpr utilities.

PR-23719

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 to: disable each printer, stop each printer, exit lpc and kill each lpd daemon, then use lpc to start and enable each printer in turn.

Resolution: lpd has been corrected to reap it's children properly, instead of falling into an infinite loop.

PR-28066

It looks like the 'lpd' can go into an infinite loop if the output filter is reaped before the 'lpd' can get to it. Whatever the actual cause, the following code from printjob.c in the lpd is obviously broken:

```
if ((child = dofork(DORETURN)) == 0) {
 ...
 }
 while ((pid = waitpid(child, &status, 0)) != child)
 ;
```

Since child is an actual pid, the while loop will run forever.

Resolution: This code has been corrected to check for a -1 return from waitpid().

lpd.8

PR-25892

The file /etc/hosts.lpd is examined after /etc/hosts.equiv. This is not mentioned in the man page.

Resolution: Added description of hosts.lpd file.

lpr

PR-27892

PR-30726

When using the "-s" and "-r" options to 'lpr', the file does not print and a mail message is received from the 'daemon' saying the job could not be printed. 'lpq' shows the job being sent to the printer as zero length file.

Resolution: 'lpd' will now change its 'euid' to that of the submitter before attempting to remove the file. This implies the 'uid' of the submitter must have write permission on the directory the printed file resided in so the unlink can work.

PR-28479

If one is not 'root' or not user 'lpr', the lpq command will show a status of 'Warning: no daemon present' for LOCAL printers when in fact the daemon is actively printing a job. It appears that this same problem could affect lpmv and lprm during certain windows.

Resolution: lpq, lprm and lpmv have been corrected to properly detect if there is an active daemon for the print queue reguardless of the user invoking the command.

lprew

PR-30276

Configuring a printer for usage with the lprewind daemon ends up in a situation where on the system everything looks fine, however, nothing at all is printed.

Resolution: Corrected lprew-daemon to properly check for pending I/O on the two sockets it uses to communicate with.

ls

PR-30618

A directory containing greater than 1000 subdirectories will cause the 'links' field to merge into the 'permissions' field in the 'ls -lg' output.

drwxr-xr-x1604 hhecker lp 32256 Feb 11 13:00 many

Resolution: If the link count is greater than 999, the link count field is expanded to hold 5 digits (i.e., up to 65535, currently the maximum link count). For the usual case, though, the old style is still used.

m4

PR-25033

m4 seems too FRAGILE. m4 dumps core on SunOS machines, can't handle >4k chunks under RISC/OS, and it reverses lines.

Resolution: Starting with ConvexOS 11.0, GNU m4 is provided as the standard m4. It appears much more robust than the standard m4, s well as being more feature-ful. It also acts more like the System V m4.

PR-31474

Please enhance 'm4' to support the "-D" and "-U" command line options, analogous to those for 'cpp'. It is currently impossible to use 'm4' to pre-configure scripts for various systems because it lacks support for these options.

Resolution: ConvexOS 11.0 contains a new 'm4' which supports these and many more options.

make

PR-22155

PR-22156

make should check for read/write failures and call perror if there was an error.

Resolution: Corrected make to call perror() when the opening of a 'makefile' fails for migratin reasons.

PR-29838

make is confused by filenames like: FIRSTPART.cSECONDPART.c where FIRSTPART.c is acutally part of the filename.

Resolution: Corrected suffix substitution to work properly when the suffix exists in the middle of the string.

make.1

PR-25923

Remove the word "is"...

man make:

...

Command lines are executed one at a time, each by its own
shell. If the environment variable MAKESHELL is set, it is
^^^^

names the command interpreter to be used; otherwise, /bin/sh

...

Resolution: Fixed

man

PR-28579

PR-28580

Man page for csh contains type-o's:

Line 3180: bye the octal code fInnn fP. ('bye' needs to be 'by')

Line 3211: Include string a a literal escape sequence. Note: The enclosed ('a a' needs to 'as a')

Resolution: The spelling has been corrected on the man page.

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.

Resolution: Rewrote sections of man page to show that the PATH environment variable is used to construct a default search path if MANPATH is not set.

mount

PR-21867

mount(8) is silent when it should be reporting errors if an invalid numeric value is given for blkpre, blkhi, or blklo.

Resolution: Error checking on parameters has been enhanced, and informative error messages have been added.

PR-23653

A more descriptive error message from mount is needed.

Resolution: Error checking on parameters has been enhanced, and informative error messages have been added.

PR-24187

Giving mount blkhi and blklo settings which cannot be used together (blkhi=blklo=100) results in a poor message.

Resolution: Error checking on parameters has been enhanced, and informative error messages have been added.

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.

Resolution: 'mpa' has been fixed to preserve the PATH environment variable.

mpa.1

PR-17410

If there is a high priority task using one of the heads, a task will never get to use (all) the heads as it was instructed by mpa due to the high priority task sitting there and grinding away.

It would be nice to either mention that in the man page or have mpa mention that "not possible to use all heads due to priority task."

Resolution: Added NOTES section to man page, warning user that mpa will not cause preemption of another high prority task.

PR-27314

The mpa.1 man page has a typo in the description of the "-f" option. The word "it's" should be "its" in the sentence:

A fixed schedule job is always scheduled with all CPUs available for it's use.

Resolution: Text has been corrected.

mtio.4

PR-38530

The ASSIGN/UNASSIGN ioctl()'s need to be documented in mtio.4 man page.

Resolution: Added the text to the man page describing the IOC_DEV_ASSIGN and IOC_DEV_UNASSIGN ioctls.

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.

Resolution: The internal buffer size has been increased to 64k. The maximum size of a physical read.

PR-26925

'mvst -H' will incorrectly select a hot spare partition that resides on the same disk device as another partition in the failed section.

Resolution: mvst is fixed to not select a spare that exists on the same drive as another component of the stripe.

PR-29340

PR-29888

When a disk drive fails, only the first entry in /etc/stripecap used by a redundant stripe is changed to reflect the hot spare that has been used. Other stripe section entries for the failed drive on this stripe are notchanged, even though the kernel stripe table is correct.

Resolution: mvst(8) has been corrected to ensure the integrity of the /etc/stripecap file.

PR-30619

If there is a failed disk in a redundannt stripe, and an attempt is made to move data from another disk in the stripe, the 'mvst' command will fail, but the "Fa" field in the stripecap will be modified to point to the second disk instead of the real failed disk. Upon rebooting the system, all the data in the stripe will be lost.

Resolution: Fixed.

new_util

PR-20236

PR-23660

Request for ConvexOS to use zic (time zone compiler). This utility creates and manages a time zone rules file used by ctime(3), and thus time zone rules not hardcoded. This utility is available on other BSD derived systems.

Resolution: zic and the enhanced timezone routines are provided as part of ConvexOS 11.0 and ALL 3.0.

PR-20857

The uname command is not provided by Convex. Other vendors, such as IBM (AIX), Sun (SunOS 4.1 on Sparcs), and Cray (Unicos), do provide this command.

Resolution: uname(1) is now part of the standard ConvexOS Utility set.

newfs

PR-24674

newfs does not check to see if the partition given is part of an active stripe.

Resolution: This was fixed in mkfs(8) as part of X-25351. newfs(8) does not check for overlaping used partitions but mkfs(8) does.

newst

PR-26901

PR-28718

newst allows one to create stripes which contain part of mounted filesystems, e.g., a stripe with du0c in it can be created even if du0a is a mounted filesystem.

Resolution: 'newst' and 'mkfs' (therefore newfs also) have been corrected to check for overlaping partition dependencies.

PR-31330

The 'newst -vn' command is used to check the effect of various disk configurations. With the -n option, the command should be executable by a normal user to lessen the chance of a serious data loss as a consequence of a typing mistake. It has not been a requirement to have super-user privileges in the past, to run this command.

Resolution: newst is corrected to run by any user when using the -n option

newst.8

PR-27709

The man page for newst(8) does not list -R as one of the options in the SYNOPSIS section.

Resolution: The synopsis section of ther man page has been updated.

nfaccess.8

PR-26222

In the SEE ALSO section of the nfaccess.8 manual page, there is a reference to "notesadm(8)". Notesadm does not exist any longer. Please update the nfaccess.8 manual page accordingly.

Resolution: Reference was removed from the man page.

nfmail

PR-27169

If 'nfmail' processes a message with a subject of the form "Re: title" then excess trailing spaces in the subject field will cause the message to be entered as a fresh note rather than as a response to an existing one. If there are fewer trailing spaces in the response subject than in the base note title then the response is entered successfully.

Resolution: All trailing blanks are now removed before attempting to do title compares for note insertion.

PR-27960

PR-29036

PR-29128

PR-30182

After upgrading to ConvexOS 10.1 we have had at least four occurences of a locked notesfile. Until the file in /usr/spool/notes/.locks is removed, attempts to exit from the notes program produces long delays followed by the message: qlock n (cait) permanently locked - consult a guru The datestamp of the lock file appears to coincide with runs of nfmail.

Resolution: Fixed. nfmail wasn't properly freeing the lock when adding a response to

a base note.

nfxmit

PR-29166

nfxmit appears to be leaving temporary files laying about in /tmp. They are named nfxmit.<pid>.

Resolution: nfxmit now removes its temporary files, once it is done with them.

notes

PR-09883

If there is no anonymous account, every time a user starts up notes, the user receives the message, "Can't find uid for anon, assuming 4", which is not a reasonable assumption. It should not allow anon postings if no such account exists.

Resolution: Notes no longer emits the message "can't find uid for anon, assuming 4" to the users terminal. Instead, it logs this via syslog at LOG_INFO.

The use of anonymous notes is also disabled if the "anon" account is not present.

PR-11983

'whatis notes' claims it is 'a news system.' This is deceptive for the majority of the world who knows what a news system really is. It should be changed to more accurately reflect what it is.

Resolution: The whatis database has been updated to describe notes as a "bulletin board system", which is somewhat more descriptive.

PR-28349

PR-30188

PR-34030

If one edits a response which one wrote but makes no change, either by quitting out of the editor (:q! in vi) or even writing out an unchanged version of the response and then exiting, that response is deleted.

Resolution: notes will now only delete the note if the text file is less than 2

characters long (ie, only includes vi's new line). This change make an edit, and delete of the note text, equivelent to a delete of the note. Notes will no longer create a new note, if it is unchanged during an initial edit, but also will not remove an existing note if it is edited, but no changes are made.

PR-25942

PR-29385

'notes' will sometimes display a multi-screen note improperly. The first page is almost always displayed properly, but subsequent pages are more likely to be corrupted by the dropping of some number of lines of text. Pressing ^L will redraw the full screen correctly. The problem seems worse when using a slower speed modem line, but it's been seen almost everywhere.

Resolution: notes no longer does 'erase-abort' checking, meaning that spurious characters will no longer cause notes to quit updating the screen, and present the -- more -- prompt.

nroff

PR-28951

The ConvexOS utility nroff fails with a segmentation fault if the macro file specified by the -m option does not exist.

Resolution: Fixed. nroff now displays the appropriate error message instead of aborting with a segmentation fault.

os_cfg_smg

PR-17765

The System Manager's Guide ought to document how to use dump(8) or xdump(8) on ANSI labeled tapes.

Resolution: xdump does not work with labeled tape. xdump requires asynchronous I/O, which is not available with a labeled tape device.

Using dump on labeled tape will be documented in detail in Managing ConvexOS: Operations Guide, Third Edition.

PR-24382

The index for the Managing ConvexOS Configuration Guide (second edition), is lax in the area of "avail". Avail needs to have an index for much like the index for "contact", where the keyword "avail" heads the index, with subsequent mentioning of logfile, setting up avail, etc. indexed appropriately.

Resolution: One of the requirements for the system management books for ConvexOS 11.0 is a more robust index. avail as well as other commands and tasks will be listed in more detail.

PR-25062

Chapter on setting up the disk system has some missing steps and some steps out of order. Have forwarded corrections to sysdoc.

Resolution: The content and organization of the disk chapter in Managing ConvexOS: Configuration Guide will be examined for the ConvexOS 11.0 release.

passwd

PR-14072

PR-22866

PR-25481

PR-25830

PR-26312

PR-26960

PR-28438

PR-29610

This is a request for shadow passwords to be implemented.

Resolution: This feature is supported in ConvexOS 11.0

PR-16440

The following entry should be added to the /etc/passwd file to be able to serve SunOS 4.1.

nobody:*:65534:65534::/:

Resolution: added user nobody with uid == -2

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.

Resolution: passwd has been fixed to close and reopen /etc/passwd, avoiding races.

perl

PR-21653

PR-21697

The [qQ] parameters of pack/unpack no longer work in the latest version of perl.

Resolution: This problem has been fixed.

PR-21730

perl does not handle the %lld format in printf() properly.

Resolution: This problem has been fixed.

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).

Resolution: This problem has been fixed.

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.

Resolution: Should perl -e be unable to write to /tmp, it will print an error and terminate with a non-zero status.

preen

PR-28520

One cannot coerce 'preen -f' to run if the /etc/fstab file contains a striped filesystem for which a corresponding /etc/stripecap entry does not exist. This should not be reason enough to abort the 'preen' operation.

Resolution: 'preen' has been fixed to not abort when it encounters a stripe in /etc/fstab that is not defined in /etc/stripecap.

This is still considered an error by 'preen' and will therefore abort an automatic boot to multiuser.

printcap.5

PR-26194

The 'hl' option is not documentated in the man page. ADD:

hl bool false print the burst header

page last

Resolution: The man page has been updated.

PR-29883

The printcap(5) man page does not specify that the printer name field can be used as a comment if it contains whitespace.

Resolution: Added paragraph describing the printer name field of the printcap file.

ps

PR-34994

PR-35072

There is a concern that the directory /lib/ps has permission set to 777 which in turn allows ALL user read write and execute to this directory. If a user it to write bogus information into the file ps.ttys (THAT RESIDES IN THIS DIRECOTRY) the command "PS" WILL CEASE TO EXECUTE.

Resolution: Changes permission on /lib/ps to 0775.

ps.1

PR-28448

The -C and -S options to ps should be documented in the ps(1) man page.

Resolution: Added descriptions for C and S command line options.

pstat

PR-29039

On an 8 headed machine, pstat can sometimes show 9 threads of a process.

Resolution: A problem has been fixed wherein the /etc/pstat command might incorrectly show a ninth thread for a multi-threaded process on an eight headed machine.

pwrestrict.5

PR-29559

The pwrestrict(5) man page should reference genrest(8) utility, and its man page should be listed in the "SEE ALSO" section.

Doc:

Software Configuration:

product version patches

------ ------ ------

68k 10.0

all 1.1

convex c 4.3.2.0

convex fortran 7.0.1.0

convexos 10.1.2 10.1.135 10.1.137 10.1.138 10.1.143

cxbatch 2.1 2.1.2 2.1.4

cxdb 1.

Resolution: The man page has been changed to explain the use of the genrest program.

quot

PR-26937

PR-27376

quot returns an error when used on file systems greater than 2 Gig. error: read error at block 4388096

Resolution: This problem is corrected in 10.1

quotactl.2

PR-21093

The quotactl.2 man page and the quotacheck.8 man page differ.

Resolution: Changed quotacheck(8) reference to edquota(8). New paragraph reads:

Q_QUOTAON

[...] addr is a pointer to a null terminated string containing the path name of file containing the quotas for the file system. The quota file must exist; it is normally created with the edquota(8) program.

ranlib.1

PR-25794

The ranlib.1 man page describes the problem under BUGS; if the mod date of a library is later that the date on the table of contents, rablib 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.

Resolution: The man page has been updated to to state that 'ld' prints an error message and exits.

rcs

PR-08144

The RCS system is old and needs to be updated with the latest source from OSU-CIS.

Resolution: Upgraded to GNU RCS 5.6.

PR-17369

Please include the patch for rcs.

Resolution: Upgraded to GNU RCS 5.6 which handles this functionality in a different manner:

rcs -nSYMBOL: tree

will tag the latest revision of all sources in 'tree'. See the man page for more details.

PR-26321

Enhancement request for 'rc' to support the filename mapping extensions to default comment strings for the following types:

typecomment

".s""; "assembler

".awk""# "awk/nawk

".pl""# "perl (conflict with prolog in released

".C"" * "C++, I believe

A 'ci' for a brand new file with any of the above extensions

guesses an empty comment string.

Resolution: The Convex version of GNU RCS 5.6 has this functionality added to it.

PR-26604

Attempting to do 'rcs -orev1-rev2' can cause the command to hang or run forever.

Resolution: Upgraded to GNU RCS 5.6 which does not have this problem.

rcsfile.5

PR-12936

The man page for rcsfile(5) cannot be printed with nroff. It complains of zero width fields.

Resolution: Upgraded to GNU RCS 5.6 which does not display this problem.

rcsmerge

PR-15754

When an attempt is made to merge a sufficiently large source file with rcsmerge, 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.

Resolution: Upgraded to GNU RCS 5.6 which does not use ed and theoretically should be able to handle files as large as addressable memory.

rdiff

PR-26282

PR-26344

rdiff always returns a status of 0 instead of the status of the diff, as documented.

Resolution: The exit status is now set correctly after executing the diff, and is consistant with the documented behavior.

rdump

PR-25505

rdump sometimes defaults to the local default drive for dump!

Resolution: Fixed. The "G" option was overwriting the values set by the "f" option. The processing of the "G" option is now smart enough to only set those values that have not been previously set.

PR-25506

PR-26314

PR-27134

PR-27962

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.

Resolution: Fixed. rdump handles hostnames with or without BIND correctly now.

readlink.2

PR-30693

readlink.2 says the 3rd argument should be an int; /usr/lib/lint/llib-lc says it's a size_t.

Resolution: changed type of bufsiz to size_t

repquota

PR-28225

The output fields of 'repquota' are not separated by a space anymore with blocksizes larger than 1000000 blocks.

Resolution: The printf() statment has been corrected to prevent large numbers from running together in the report.

restart

PR-20962

When trying to restart a checkpoint file that was inadvertantly truncated, restart complained about a "bad file number". The error message should point you in the right direction.

Resolution: Fixed - restart now displays a more informative error message.

PR-26027

PR-27111

User would like restart to be self-locating to permit jobs that use virtual addresses from 0xb0000000 to 0xbfffffff to be checkpointed. Many large jobs can't be checkpointed due to this restriction.

Resolution: The restart wart has been moved to a region above the thread private stack (0xe4001000-0xe8001000) to accomodate programs with large heap regions.

restore

PR-26988

If a drive is not specified on the command line for 'restore', the default drive will always be used.

Resolution: The default drive is the tape device allocated, or /dev/rmt8 if no tape devices are allocated.

PR-26576

The man page for restore(8) does not mention that only positive, even integers can be used as arguments for the blocking factor. This presents a problem for the man page also states that the default value is 5.

Resolution: The man page has been updated.

PR-29685

/etc/restore appears to collect all directory meta-data(owner/mode/...) in tmp-file for later use. A recent restore of a 1Gb file system failed to restore all dirmodes. Some were done, others were not.

Resolution: restore now handles write errors to the modefile correctly.

rlog.1

PR-19518

The man page does not document the -R and -L options of rlog.

Resolution: Upgraded to GNU RCS 5.6, the rlog man page documents all options.

rm

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.

Resolution: rm now prints cause of unlink failures.

scanf.3

PR-31470

The scanf(3s) man page was not contained on the 10.1 OS tape. Because these are not contained in the tape, the date of these man pages are "Dec 7 1991", which is the date of the 10.0 upgrade.

Resolution: Fixed in 11.0.

seestat.8

PR-30290

The seestat(8) man page should include a reference to stat(5) in the SEE ALSO section.

Resolution: Added stat(5) to SEE ALSO section of seestat(8) man page.

sh

PR-27065

PR-30569

PR-32133

PR-32995

PR-33000

PR-33112

When using functions within the Bourne shell, if a user calls more than one function from within a function, the function will execute; however, theprocess hangs immediately upon exiting the function.

Resolution: Corrected /bin/sh to properly handle nested function calls.

PR-27205

'sh' appears to pass a corrupt environment on occasion. Usually the corruption manifests itself as a slipped bit. It seems to have to do with processes which have a large environment.

Resolution: Code has been corrected to not free memory twice.

PR-27676

The bourne shell corrupts the environment after executing scripts in its current environment (with the .).

Resolution: Code has been corrected to not free memory twice. Patch 10.1.135 is available to fix this on 10.+ systems.

PR-27969

It appears there is a "memory mgmt" bug in the BOURNE shell. Since /bin/sh in normal operation runs free(p) without checking the validity of the pointer 'p' given as a parameter and since free(p) modifies the word before 'p'(it clears the lowest bit), the effect of a bad pointer 'p' is unpredictable.

Resolution: Memory allocation has been fixed to correct this problem.

PR-32632

'/bin/sh' will loop forever when a for loop is used in a subroutine.

Resolution: /bin/sh is corrected to properly handle 'for loops' within a function.

sod

PR-28570

When using "sod" to display the soff header, the version number printed is sign extended and should not be. For example, a machine with a version stamp of 10.1.145 prints as:

version = 10.1.-111.

Resolution: Sod now prints version number fields (>127) correctly

sort

PR-26223

When sorting a file on multiple conditions on different fields, the results on a CONVEX machine are different than the results from the same command on a SUN. The results on the SUN are what one might expect given the sort command used and the input provided.

Resolution: I made the default behavior to ignore trailing blanks in the key field and added an option (-k) to make them significant.

strings

PR-30856

"strings -o" in ConvexOS V10.1 is broke. The "-o" option returns a blank at the front of the line.

Resolution: Corrected a 'printf' statement so that offset numbers are printed.

strip

PR-29087

When executing with the -s option, 'strip' will malloc enough memory to hold the entire file. Unfortunately, the malloc'd memory is never freed, which means that stripping several large files in succession can exhaust the available swap space.

Resolution: strip no longer runs out of memory.

su

PR-31791

If the user to which you 'su' does not have access permission to your current directory 'su' gets into a loop that finally produces a memory fault. The same happens when you are root and 'su' to a regular user. It would be nice if su recognized this case by itself and produced a proper diagnostic.

Resolution: su is corrected to try the current directory, then the target users home directory and finally /.

syslogd.8

PR-29986

The syslogd.8 man page needs to explain the functionality of the -m option. What are the minimum and maximum values to use between mark messages? An explanation of the "mark message" would also be quite helpful.

Resolution: Added verbiage to further explain the use of the -m switch and the mark facility.

syspic

PR-33457

syspic needs to be able to monitor TLI-attached tape drives. syspic needs to have a "tape" picture that shows more than six tape drives.

Resolution: A new view, "tape.syspic", has been added to syspic. Tape.syspic will display 64 tape drives at the same time. The picture file has been placed in /usr/lib/syspic.

tail

PR-20211

'tail -f <file>' gets stuck on certain files.

Resolution: tail now flushes stdio's buffers after every read when doing -f.

tar

PR-25375

tar is unable to properly extract a file with a long path name.

Resolution: The problem is fixed.

PR unknown

When a migrated file is not available, 'tar' will write an empty file instead of skipping over the unavailable file.

Resolution: Added description of tar's behavior when read errors are received or the file size changes while creating a tar archive.

PR-30607

tar -r no longer gives the Write Error: EOT seen message when trying to append a file to a full tape. tar -t no longer gives the Read Error: EOT seen message when trying to list a second archive from a full tape.

Resolution: restored former "EOT seen" message

tcsh

PR-28921

PR-30807

Setting the parameter "savehist" to a non-zero value normally will save the command-history in the file ".history". When the log-out is caused by reaching the auto-logout time, an empty .history file is left behind.

Resolution: autologout no longer leaves an empty .history file

termcap

PR-30687

When logging in from a HP7xx series workstation, one finds very quickly that it is not a pleasant experience to dial into the Convex. Convex does not have an hpterm entry. This looks incredibly stupid to the customer since we are in a "joint venture" together. I understand that doing "xterm" will get the job done, but again, this looks really bad to the customer.

Resolution: Added many new HP termcap entries

termcap.5

PR-14555

Please make the Convex description of the ti/te and vs/ve entries in /etc/termcap consistent with other Unix termcaps.

Resolution: The descriptions for ti/te and vs/ve in the termcap.5 man page have been made consistent with that of SunOS 4.1.1.

PR-27410

The following sentence in the termcap(5) man page is unnecessarily convoluted:

If the terminal can backspace, then it should have the bs capability, unless a backspace is accomplished by a charac ter other than ^H (ugh) in which case you should give this character as the bc string capability.

Resolution: Paragraph in question has been cleaned up.

time.h

PR-28439

/usr/include/time.h contains a syntax error.

Resolution: The problem is fixed.

tip.1C

PR-27039

The man page for tip(1C) incorrectly identifies the location of the LCK* files.

/usr/spool/uucp/LCK..* lock file to avoid conflicts with
^^^^^^^^^^^^^^^^^^^^^^

should be

/usr/spool/uucp/LCK/LCK..*

Resolution: Pathname has been corrected.

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.

Resolution: An explanation for quoting "*" has been added.

PR-27423

Errors in tpconfig.8 man page.

Resolution: Corrected description of "add stacker" command.

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.

Resolution: The terminal setting in /etc/ttys now defaults to vt100.

uname

PR-27114

PR-33102

Enhancement request for CONVEX to support uname(1). Currently, CONVEX supports only the system call uname(2). Many vendors support this.

Resolution: A uname(1) utility will be provided in 11.0.

uucp

PR-02890

When a uucp connection fails, a diagnostic message is written to the uucp log file. Where are these log file messages documented?

Resolution: Log file messages are currently being collected for inclusion in Managing ConvexOS: Operations Guide, Fourth Edition, which will be released with ConvexOS 11.0.

uucp.1c

PR-05343

The documentation for uucp should describe how to remove a uucp job from the uucp spool queue.

Resolution: Added references to uuq.1C and uuclean.8C to SEE ALSO section of man page.

vdump

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.

Resolution: vdump was not positioning norewind devices at all. The code has been corrected to position norewind devices back to the beginning of the dump before calling restore.

PR unknown

The vdump script is installed mode 644.

Resolution: The install is corrected to install vdump with permissions of 0755.

vi

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.

Resolution: vi now reaps child processes created by !filter commands.

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.

Resolution: vi will now accept tags up to 256 characters.

PR-22814

If a user tries to access a file and fails, the alternate file (#) is not set.

Resolution: vi now sets the alternate file on failed access to a file with :n file.

PR-22764

PR-23613

PR-28091

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.

Resolution: vi no longer has a bus error when editing long files.

PR-22861

PR-34332

If one filters a region through a pipe, zombies are accumulated until processes are exhausted or the user exits the editor.

Resolution: vi now reaps child processes created by !filter commands.

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.

Resolution: vi is changed to use mkstemp in creating the temp file.

vipw

PR-23295

'vipw' sometimes reports that the password files are unchanged and refuses to make any updates.

Resolution: The passwd file locking code is rewritten in 11.0 so this problem should not occur any more.

PR-28582

'vipw' creates a 0 length file which can prevent 'genrest' from creating the /etc/pwrestrict file.

Resolution: vipw no longer leaves a zero length pwrestrict file if there was no pre-existing pwrestrict file.

PR-29231

'vipw' insists that roots' home directory is /. This should be configurable so that 'vipw' recognizes that the root home directory has been changed rather than generating an error saying the root entry is _missing_.

Resolution: It is now only a warning if root's home directory is not '/'

words

PR-17687

/usr/dict/words thinks that "[un]formatted" is really spelled with one "t."

Resolution: Fixed. spell now knows the difference between "formated" and "formatted".

xdump.8

PR-14368

The man page for xdump does not include an example where more than one parameter expects an argument, such as:

```
xdump 0sd 500 6250 /mnt
```

Resolution: Added example to NOTES section of man page.

yesterday

PR-19293

PR-31379

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.

Resolution: yesterday(1) has been updated to properly compute the previous day after changing to daylight saving time.

cpu_ta.c

PR-39000

Under certain conditions a TLI drive can rewind if an error occurs while writing. The driver needs to be modified so that when this happens it does not write tape marks when an OFFL ioctl() is done (or when the device is closed).

jpstat

PR unknown

The jpstat.jp command does not appear to be in the 11.0 kernel package. The jpstat man page says that jpstat.jp can be used on the JP. We really need to include jpstat.jp with 11.0 since it has many useful new features for debugging STREAMS and networking problems.

Resolution: jpstat.jp will be included in the sys tree for 11.0.

zic

PR-30191

A new utility called zic has been added for the 11.0 release and will require documentation.

Resolution: zic has been documented.

Fixes for ConvexOS kernel

accounting

PR-23701

PR-27668

PR-30867

PR-31580

The raw accounting files reflect inaccurate accounting data where CPU time is being charged against the wrong UID.

Resolution: The credentials within the thread structure are now explicitly copied from the proc within exit(), in case the exit() call is internal (as a result of a fault/trap/signal/exit sequence) as opposed to the exit() system call.

arch

PR-25819

The include file pagsiz.h is not protected with #ifdef and #endif. Also, the symbol NBPG is defined there and in ...

/usr/include/interfaces/kernel_if/arch/ISA/ui_arch.h

This makes it hard to update the C++ include files.

Resolution: Fixed as part of the C++-ification of the kernel header files.

PR-29848

The size of the kernel stack "death_stack" was reduced from 511 words to 1k bytes. It should be large enough to hold a C3800 context stack frame (3920 bytes) plus several standard stack frames, i.e. approximately 8k bytes.

Resolution: The size of the stack used to trap improperly nested interrupts is increased from 1K to 8K; the 1K value was too small for C3800.

cnvx

PR-27011

When debugging code that has a signal handler, once CXdb enters the handler, a bogus value shows up in the sigcntxt struct (signal.h). Disassembly of the code at sigcntxt->sc_pc generates what appears to be nonsense instructions.

Resolution:

(1) The workaround of using the user-mode arithmetic exception handler has been suggested to the user.

(2) A new version of the kernel source file sys/base/pm/sig.c has been checked into source control which would be suitable for a 10.1 patch if the customer's problem isn't solved by (1).

(3) The same sig.c source change will appear in the next OS release.

PR-26594

Files which include <sys/acct.h> and are compiled via "cc -std" do not compile due to syntax errors. It appears that the typedef for u_short is #ifdef'ed out when compiling with -std.

Resolution: <sys/acct.h> is not an include file specified by Posix 1003.1; it should therefore not be included in source to be compiled in -std mode.

crashdump.8

PR-35849

Man page indicates -SH is acceptable usage. crashdump complains about the H unless usage is crashdump -S -H. Customer indicated that -S with other additional options besides H behaves similarly (ie: not inconsistent with man page).

Resolution: modified man page to reflect the options must be separated.

getmsg.2

PR-27327

The second paragraph of the getmsg(2) man page mistakenly has the word "mush" instead of "much."

Resolution: Fixed spelling error.

getpeername.2

PR-26383

The SYNOPSIS section of the getpeername man page should have the references to the header files in boldface type.

Resolution: fixed

kern

PR-31669

Since 10.0, the kernel has contained invalid calls to the trace utility due to conflicting assumptions about tracepoints numbering between the base and io portions of the kernel. If tracing is enabled to the extent of allocating a trace buffer in the bootcmd.local file, this can lead to undesired tracepoints, which cannot be disabled, being entered into the the buffer.

Resolution: Although there's still no way to enable/disable the i/o "reserved" tracepoints with the trace utility, the kernel now comprehends the reserved range by allocating sufficient memory. This implies the reserved range of tracepoints stays reliably disabled now.

mremap.2

PR-26305

The mremap.2 man page does not document EFAULT as a valid error return.

Resolution: The EFAULT description was added to the man page.

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.

Resolution: the #include has been added.

open.2

PR-27313

PR-29694

In the man pages for open(2) and lseek(2), reference is made to the "ConvexOS Large Files User's Guide" which apparently does not exist.

Resolution: Changed the Large Files User's Guide reference to Large Files chapter in the Extensions User's Guide.

pm

PR-28052

There seems to be no easy way to set 'hard' resource limits (e.g. CPU time, memory usage limits, etc.) for interactive users in ConvexOS. Some shells contain some kind of 'limit' built-in which can be used to set resource limits. Because those limit commands are setting only the soft limit of the resource, they can be redefined very easily by the user using the 'limit' or 'unlimit' command. This kind of limit command is

almost useless.

Resolution: In 11.0 it will be possible to set login job limits by using the the new limits(1) utility. /bin/login will execute the file /etc/jobs if it exists passing the following arguments: job id of new job, process id of new shell, and uid of user. This allows the local sysadmin to write their own site configurable limits on a per user or system wide basis using the limits(1) utility. Limits(1) allows you to set the soft, hard, and absolute limits on system resources such as cpu time, memory use etc.

pos_conf

PR-29096

The 1990 POSIX.1 standard requires that <limits.h> definePOSIX_SSIZE_MAX, POSIX_STREAM_MAX, and POSIX_TZNAME_MAX.

PR-29420

The file <sys/unistd.h> should set _POSIX_VERSION to '199009'. It still references the 1988 standard.

Resolution: The version has been changed to match the purple book.

schd i

PR-27346

Occasionally file time stamps can be 72 minutes off (in the past).

Resolution: The C1 kernel would in rare circumstances apply a file timestamp approximately 72 minutes too old due to loss of carry in an extended precision math operation. The fix will appear in the next ConvexOS release.

sync

PR-24611

/usr/include/sync/sema.h includes sync/ui_sema_debug.h more than once.

Resolution: A duplicate #include was removed, was removed.

sysc

PR-29428

Sysconf() always returns _POSIX_CHILD_MAX when queried for _SC_CHILD_MAX. It should return -1 because the value is indeterminate.

Resolution: Changed SC_CHILD_MAX to -1 since the number of processes per real uid is unknown. NOTE: effective uid is max_user_processes, but real uid is unknown.

sysgen

PR unknown

sysgen does not return an error status when it finds a syntax error in the system configuration file. It politely returns success in these cases, making it hard to handle automated installs.

[Interestingly, the 10.1 sysgen marked above came from /sys/sysgen/sygen on orion, which is an 11.0 system]

Resolution: Fixed.

ufs

PR-24993

When the event daemon is associated to a directory and a hard link is created such that the associated directory is the target directory and the file being linked to is not associated with the event daemon, no call-outs are received.

Resolution: Fixed.

PR-33489

[CPU02@14:45:14] /scr: bad dir ino 2 at offset 192 : mangled entry

[CPU02@14:45:14] /scr: bad dir ino 2 at offset 512 : mangled entry

[CPU02@14:45:14] /scr: bad dir ino 2 at offset 0 : mangled entry

Resolution: Fixed

vm

PR unknown

mmap() can fails when I another process mmaps the same file and thenunmaps it.

Resolution:

vs_maphint was improperly checking the whether a new region would fit in a available hole.

vm n

PR-28460

PR-28959

PR-31774

Cooperating processes using mset/mclear on C34 or C38 series machines can hang. Mset/mclear use the kernel system calls msleep and mwakeup to provide shared memory synchronization. This has been observed in parallel fortran codes since the fortran run time code uses mset/mclear. The net affect is multiple processes pended in msleep().

Resolution: This is a bug in the code that has been there since day one. I re-wrote the code and checked it into the V11.0 version of ConvexOS.

Restrictions

This section lists restrictions for this release.

Restrictions for ConvexOS utilities

config_gd.m

PR-27672

Incorrect documentation for maximum value of max_user_processes boot time parameter.

Resolution: Corrected in Managing ConvexOS: Configuration Guide, Fourth Edition.

PR-27914

In the third sub-point after the first paragraph on page 83 the sentence that states

However, redundant stripes increase the risk of data loss...should state:

However, stripes increase the risk of data loss...

Resolution: Corrected in Managing ConvexOS: Configuration Guide, Fourth Edition.

PR-27938

On page 182 of the Managing ConvexOS Configuration Guide, Third Edition, there is a typo: In addition to getting the default billing account for /etc/passed, bill gets information from three user-generated

The "/etc/passed" should be "/etc/passwd".

Resolution: Corrected in Managing ConvexOS: Configuration Guide, Fourth Edition

PR-27942

There is a typo on page 301 of the Managing ConvexOS Configuration Guide, Third edition. In the Parameter column, the parameter "swap_nicehg" should actually be "swap_nicechg".

Resolution: Corrected in Managing ConvexOS: Configuration Guide, Fourth Edition.

PR-28695

The first sentence on page 184 of the Managing ConvexOS: Configuration Guide Third Edition contains a reference to /usr./adm, the "." is invalid. The correct directory is /usr/adm.

Resolution: Corrected in Managing ConvexOS: Configuration Guide, Fourth Edition.

PR-29893

In the Convex Document "Managing Convex OS: Configuration Guide", Third Edition (July '92), there is a typo. On Page 292, instead of 'fp_default_mode_ieee', they wrote 'fp_default_mode_issue'.

Resolution: Corrected in Managing ConvexOS: Configuration Guide, Fourth Edition.

PR-30091

On page 153 (UUCP), for the description of class, it should read:

classes the baud rate to use for terminals or modems. It is the port number for TCP/IP.

Resolution: Corrected in Managing ConvexOS: Configuration Guide, Fourth Edition.

crashread

PR-28344

PR-28344

Using the 'crashread' program with 3480 tapes produces the following messages for each tape:

Found end of crashdump mark.

Crashread completed successfully.

Exiting

This does not happen on any other media than 3480's.

Workaround: The workaround is to run crashread on each tape individually.

cron

PR unknown

cron/tellcron don't do any error checking on .cronrc files when they are submitted. A bad .cronrc is only discovered at the time when cron attempts to execute a command.

Resolution: Complete analysis of a crontab file is not possible. However, cron will check for blatantly incorrect information when it receives the crontab file and will notify the user. If syntax errors do occur, the command will be rejected.

ctags

PR-29237

There seem to be two distinct ctags programs supplied by 10.1, one in /usr/convex and another in /usr/ucb. It is not clear how they differ, but they are distinct files - not links - and of different sizes. The ctags(1) man page does not identify which should be used.

Resolution: The man page now clearly states that there are two versions, the one in

/usr/convex being associated with emacs.

dump

PR-27543

If the file /etc/dumpdates does not exist and a dump is attempted, the dump command will die with the message:

/etc/dumpdates: No such file or directory

DUMP: SIGBUS() try rewriting

DUMP: Rewriting attempted as response to unknown signal.

Performing a touch /etc/dumpdates will correct the problem.

Resolution: If test for /etc/dumpdates fails, an attempt is made to create the file. A message to that effect is printed. If the permissions are such that creating the file /etc/dumpdates is possible, then the dump continues with no problem. If the create fails, then a message is issued explaining the inability to create the file and then the dump aborts.

find

PR-11118

PR-11549

Find does not parse its arguments well.

Resolution: Each argument to find must be separated by white space. Parentheses are considered arguments.

ops_gd.m

PR-27952

On page 54 of the Managing ConvexOS: Operations Guide (Third Edition), the title is "Reclaiming hot spare status." The title should be "Reclaiming hot spare space."

Resolution: Corrected in Managing ConvexOS: Operations Guide, Fourth Edition.

restore

PR-25296

restore will not restore a symbolic link if a link by the same name already exists.

Resolution: This problem is fixed. restore now will unlink a preexisting symlink, socket or special file before restoring the one on the tape.

os_mpgs

PR-27311

The wait.2 man page states that the macros WEXITSTATUS, WTERMSIG, and WSTOPSIG are only defined in backward compatibility mode. This is not correct as these macros are defined in POSIX.1, and they are available with any POSIX compliant mode of the compiler.

Resolution: The man page has been changed.

ufs

PR-28329

When writing a migrated file back onto disk the write can take about five times longer if the migrated file is not first cvxtruncate'd to zero length.

Resolution: The problem is actually that cvxtruncate() failed for memory mapped files that have been migrated. Cvxtruncate() has been modified to allow migrated blocks of memory mapped files to be truncated.

VIOP device driver memory usage

A

This appendix 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 V11.0, 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 V11.0, 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 standard VIOP contains 512 kbytes of local memory. This memory is divided into 128 four-kbyte pages and is a resource used by all ConvexOS device drivers. The RTIOP/VIOP-2, containing 1 Mb of local memory divided into 256 pages, has twice as much memory as the standard VIOP.

ConvexOS device drivers use memory for

- **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. Table 8 contains a list of controllers and how much VIOP memory the device driver for each controller uses:

Table 8 VIOP memory use per controller

Controller	VIOP Memory Usage (Pages)
ACM-201	6
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	9
LAN-202	8
LAN-204	1
MTC-201	10
MTC-202	12

VIOP memory configuration worksheet

Fill out the following worksheet to determine how much VIOP memory a particular configuration will use. With standard VIOP, the maximum amount of memory can not exceed 128 pages. For the RTIOP or VIOP-2, the maximum amount of memory can not exceed 256 pages.

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 70 pages. If you have sysgen'd UltraNet into your system, then the text/data size for the device drivers increases by 6 pages. Sysgening in the FDDI driver increases the text/data size by 12 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."

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 for standard VIOP or 256 for RTIOP/VIOP-2, 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.

Table 9 Total memory usage

Overhead	Pages used	Number	Total pages
EGOS/Text/data	-	-	-
Standard viop	70	1	
with FDDI	+12		
with UltraNet	+6		
Device driver	-	-	-
ACM-201	6		
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	9		
LAN-202	8		
LAN-204	1		
LAN-208	11		
MTC-201	10		
MTC-202	12		
Total	-	-	
Maximum available for standard VIOP	-	-	**128**
Maximum available for RTIOP/VIOP-2			**256**

VIOP system configuration

With ConvexOS V11.0, 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 FDDI driver. To improve performance, extra VIOP memory has been allocated by these device drivers.

If you have a system that uses too much VIOP memory, you can 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.

The following is a sample /ioconfig file entry for a VIOP:

```
viop 0
   vme 0
       ctlr MTC-201 csr 0x1000 int 7
         unit 0 type MTD-204
       ctlr DKC-203 csr 0x200 int 2
         unit 0 type DKD-284
       ctlr LAN-007 csr 0xfe00 int 5
         unit 0 type ex
   vme 1
       ctlr MTC-202 csr 0xee00 int 4
         unit 0 subunit 0 type MTD-207
       ctlr MTC-202 csr 0xff00 int 5
         unit 0 subunit 0 type MTD-208
```

With the above /ioconfig file, the worksheet should be filled-in as follows:

Overhead	Pages used	Number	Total pages
EGOS/Text/data	-	-	-
Standard viop	70	1	70
with FDDI	+12		
with UltraNet	+6		
Device driver	-	-	-
ACM-201	6		
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	9	1	9
LAN-202	8		
LAN-204	1		
LAN-208	11		
MTC-201	10	1	10
MTC-202	12	2	12
Total	-	-	**104**
Maximum available for Standard VIOP	-	-	**128**
Maximum available for RTIOP/VIOP-2			**256**

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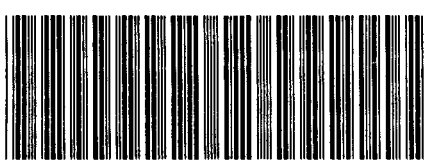

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