

Cromemco Software Update Service Note CROMIX-1



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Product: CROMIX-L and CROMIX-S

Version.release: 10.09

Date production of this version began: November 14, 1980 on 8"
November 14, 1980 on 5"

First serial number with this version: CX1610435 on 8" disks
CX1710111 on 5" disks

Description of changes:

This report lists the differences in Cromix 10.09 and its utilities from previous versions:

To the operating system:

cromix.sys 10.09:

The new intrinsic function (or shell command) group has been added to the shell. This command may be used to enable a user to change groups. A group name is required which must be found in the file /etc/group. Note that neither of the files /etc/group nor /etc/passwd are changed; the users group is changed for only as long as that user is signed on. Users will not be able to change to a group unless they know the correct password. Keep in mind that a user in group 0 is defined not to be in any group; therefore, the group shell command does not make sense for such a user.

The .unmount system call now has the capability of ejecting the disk (8" drives only) being unmounted. This requires an additional parameter, passed in the C register. If the C register contains a 1, then an eject will be performed; if the C register contains a 0, then no eject will be attempted.

The hard disk drivers have been optimized so that interrupts are enabled for the longest possible time between disk accesses. It is now highly unlikely that the Cromix operating system will miss a character that has been typed on any console device during heavy use of the hard disk.

The maximum number of files which may be open at one time has been increased to 64. The maximum number which may be opened by any one process at one time is 32. Also, use of memory in the system bank (bank 0) has been improved so that there is a much decreased possibility of running out of process tables with six users.

Several new device drivers have been added to the operating system, with corresponding entries in the /dev directory. /dev/smem is a pseudo-device which allows access to the system memory for debugging purposes. /dev/ser1 is a driver for a serial printer.

Bug: Previously, the error handling mechanism for the hard disk drivers was incorrect. 1) Performing seeks subsequent to an error did not clear the previous error flag. 2) The error type was not being returned to the calling routine correctly. Both are now fixed.

On the disk:

The file /etc/group should be present on the Cromix system disk to allow users to change groups (described above). This file has a format similar to the /etc/passwd file, each line containing several fields separated by colons (:), and terminated by a RETURN character. The group file should have the following fields:

- 1) group name
- 2) encrypted group password (stored here by "passwd -g")
- 3) group identification number (in the range 0-65535)
- 4) user names of all users associated with the group, separated by commas.

A sample command process called ed.cmd has been added to the /cmd directory to illustrate the power of the if, goto, shift, and labeling intrinsic functions of the shell.

The format for executing the ed command process is
ed file1 [file2 file3 . . .]

This allows you to edit one or more files with the screen editor program by specifying all files on one command line.

The jsys- and mode-equates source files in the /equ directory have been updated slightly to bring them up to date with the operating system.

To the utilities:

backup.bin 00.03:

A list of one or more file names may now follow the source directory and destination device. Only files whose names match at least one of the names in the file list will be copied. Ambiguous file names may be included in the file list, but they should be enclosed in quotation marks so that they will be expanded by the backup utility and not by the shell. The format of the backup command is
backup [-tv] source-dir destination-dev [file-list]

The -t option has been added to allow only files which have been modified since the last time (and date) they were backed up to be copied. The backup utility will compare the time-last-modified with the time-last-dumped (or backed up) on a file by file basis and only copy those files which have changed. These two times are stored with every file under the Cromix operating system.

cdoscopy.bin 00.11:

The -d and -e options have been added to the cdoscopy utility to allow you to delete (erase) files from the CDOS disk. Thus, you can now delete files to make space for others you wish to cdoscopy to that same disk without having to boot up CDOS to do so. The -d and -e options are identical to each other in every respect, but -d is preferred since it is similar to Cromix convention.

chowner.bin 00.04:

Bug: Previously, chowner would not work correctly on a name which also happened to be a number (such as the user name "8080") -- now fixed.

compare.bin 00.04:

Bug: Under some conditions previously, two files of the same length would be declared by the program to be of different lengths if the two did not compare -- now fixed.

copy.bin 00.06:

The `-t` option has been added to allow only files which have been created or modified after a certain time (and date) to be copied. Thus, the copy utility will copy any file which 1) does not exist in the destination directory, and which 2) has been modified more recently than the destination file. This comparison is done on a file by file basis using the time-last-modified, which is stored with every file under the Cromix operating system.

The `-d` option has been added to allow directories and devices to be copied from. For example, a command such as "copy `-d /dev/tty2 data`" may be used to transfer all characters typed at terminal 2 into the file named data until receipt of a terminating character. (The terminating character for console devices is CNTRL-Z.)

cptree.bin 00.05:

A list of one or more file names may now follow the source and destination directories. Only files whose names match at least one of the names in the file list will be copied. Ambiguous file names may be included in the file list, but they should be enclosed in quotation marks so that they will be expanded by the cptree utility and not by the shell. The format of the cptree command is
cptree [-ftv] source-dir destination-dir [file-list]

The `-t` option has been added to allow only files which have been created or modified after a certain time (and date) to be copied. Thus, the cptree utility will copy any file which 1) does not exist in the destination directory, and which 2) has been modified more recently than the destination file. This comparison is done on a file by file basis using the time-last-modified, which is stored with every file under the Cromix operating system.

dcheck.bin 00.09:

The message "end of dcheck" has been added so that it's possible to tell when the program has finished executing.

The `-s` (salvage) option has been added to match this option in the icheck utility. The `-s` option is identical in function to the `-f` option. The `-f` option has not been removed; however, it will no longer be documented in future releases of the Cromix manual. From now on, `-f` will be reserved whenever possible to mean "force".

The program will now correct an incorrect inode number when:

- 1) the inode is allocated,
- 2) the inode link count is non-zero, and/or
- 3) the inode is being pointed to (i.e., is in use).

The program will not correct an incorrect inode number if the inode is unallocated.

dump.bin 00.06:

The `-k` option has been added to the `dump` utility to allow one to begin dumping with a particular block number. The next parameter on the command line following the `-k` option should be the number (in decimal or in hex when an `h` suffix is used) of the block at which to begin the dump.

icheck.bin 00.12:

The first five lines of the `icheck` printout are now separated by one blank line from the last seven lines. This provides a visual barrier between the "bad" or error conditions and the "good" or status conditions.

Bug: The program now prints a message if a duplicate block is present in both the free list and an inode. Previously, duplicate blocks in the free list only or duplicate blocks in an inode only were printed.

l.bin 00.07:

The meaning of the first column of numbers printed out by the `l(ist)` utility has been changed in some cases. If the file which is listed is a regular (data) file, the number associated with the file is still its size in number of bytes (or number of characters). If the file is a directory, the number is the number of files stored in that directory. If the file is a device, the number is the device number (the number of its driver).

The `-t` option has been added to the `l(ist)` utility which sorts the list of files in order of time-last-modified. (This time and date is stored with every file under the Cromix operating system.) This order is from oldest to newest unless the `-r` option is used. The `-t` option is not effective if any ambiguous files are specified. For example, the command `"l -t **"` is the same as the command `"l **"`. However, the command `"l -t"` is quite different.

The `-r` option has been added to the `l(ist)` utility which causes the specified sort to be performed in reverse order. Thus, an alphabetical listing will be given in reverse alphabetical order, and a time-date listing will be given in order of most recent file first.

mail.bin 00.03:

This utility has not been functionally changed. The version number has been increased to reflect the use of a subroutine module which was changed for use in another utility.

makfs.bin 00.09:

The `makfs` utility now stores the inode number in all inodes it creates. This is a minor change required by a change made earlier in the operation of the `icheck` utility.

match.bin 00.01:

This is a new Cromix utility used to find all occurrences of a particular string in a file or files. Each line containing the specified string will be printed out.

The format of the match command is

```
match [-bcelr] string file-list
```

Strings of more than one word and ambiguous strings may be specified on the command line surrounded by quotation marks. The same characters are used to represent ambiguous strings as are used by the Cromix shell (*, ?, []). In addition, the caret character (^) may be specified at the beginning or end of a string to force the match of that string at the beginning or end of a line of text, respectively. Also, the search for the string is case insensitive unless the -e option is used. The following options are available in the match utility:

- b Print out the block numbers of the lines which contain a match to the given string.
- c Print the count of the number of lines which contain a match to the given string. The lines themselves are not printed out.
- e Print only lines which match the given string exactly, i.e., do a case sensitive match.
- l Print the line numbers (numbering from line 1 at the beginning of the file) of the lines containing a match to the given string.
- r Reverse the sense of the match causing only lines which do not contain a match to the given string to be printed out.

mode.bin 00.12:

The operating system will now handle 3102 function keys to a limited degree. These keys will be disabled and will cause the terminal to "beep" when Cromix is initially booted up. They may be enabled with the mode utility by giving the command "mode fn". The command "mode -fn" will disable them again. Enabling the keys allows the actual two-byte sequence generated by the 3102 to be passed to a program. This sequence consists of a CNTRL-B (^B) followed by another character. For example, CNTRL-B and p are transmitted when function key 1 is pressed. These two-byte sequences must then be intercepted by an application program in order to cause them to perform some command. Due to limited system memory, the function key definitions of all users cannot be stored by the Cromix operating system at the present time.

mount.bin 00.08:

The mount utility will now look on the disk to be mounted for the file etc/passwd. Finding that file, it will look for the special user name "mount". If this name is present and has a password associated with it, then mount will prompt the user for that password before mounting the disk. Thus, it is now possible to protect disks from being mounted on other Cromix systems for the purpose of illegally gaining access to the information stored on them.

move.bin 00.05:

The `-t` option has been added to allow only files which have been created or modified after a certain time (and date) to be copied. Thus, the move utility will move any file which 1) does not exist in the destination directory, and which 2) has been modified more recently than the destination file. This comparison is done on a file by file basis using the time-last-modified, which is stored with every file under the Cromix operating system.

msg.bin 00.03:

Terminating a message with a CNTRL-Z now automatically causes the message "End of message" to be sent to the receiving user. Note that when sending a message with the `-2` option, this will cause the message itself on the destination 3102 status line to be overwritten with the string "End of message". Therefore, the `-2` option should not be used unless the other user is known to be present to receive it.

The `-a` option has been added to send a message to all presently logged on users. This can be used by the privileged user to warn other users of interruptions to system usage (such as rebooting). Note that this message is sent to all users regardless of whether they have message receiving enabled or not. The message will be preceded by the warning "Broadcast message". Only privileged users are permitted to use this option. Also, a message sent with the `-a` option will not be transmitted until the entire message is given (unlike a standard message which is transmitted line-by-line). Because of this, when the `-a` option is specified, it may optionally be followed on the command line by the name of a file which contains the broadcast message.

ncheck.bin 00.07:

The ncheck utility now gets the inode number for a file from the directory rather than from the inode itself. This prevents an error message if the inode itself is wrong.

Bug: The previous version of ncheck did not treat file names having 24 characters correctly -- now fixed.

passwd.bin 00.06:

The `-n` option has been extended to make it simpler for a privileged user to add new users to the `/etc/passwd` file. The option will prompt for all the required parameters for a new user but will now also create the sign-on directory if it does not exist and will make the new user its owner. If the sign-on directory already exists, the passwd utility will print out this information. This is not an error message.

Bug: The `-d` option did not work correctly previously -- now fixed.

priv.bin 00.03:

This utility has not been functionally changed. The version number has been increased to reflect the use of a subroutine module which was changed for use in another utility.

sim.bin 00.20:

The Record Count (15th byte of FCB) is now returned correctly to the CDOS program running under sim. Previously, a value of 80H was always returned resulting in the incorrect operation of COBOL under the Cromix operating system.

The CP/M Jump Table has been partially implemented to enable some CP/M programs to work under the Cromix operating system. Implemented are the entry points for I/O devices (console, printer, reader, and punch).

Bug: Previously when errors occurred, sim did not reset the mode functions which it had changed; thus, it could appear as though you had lost console control -- now fixed by always restoring the mode functions.

Bug: Previously if console input to/from a CDOS program was redirected from/to a file, it did not perform as expected with certain programs (in particular, sbasic.com and debug.com) -- now fixed.

spool.bin 00.06:

This utility has not been functionally changed. The version number has been increased to reflect the use of a subroutine module which was changed for use in another utility.

time.bin 00.06:

This is a new Cromix utility designed to replace the older CDOS utilities date.com and time.com. The following options are available in the time utility:

- s Set the time and/or date. If this is the only option, both the time and date will be set.
- d Set the date only. Used in conjunction with the -s option.
- e Display the date European-style with the date preceding the month. May be used to set the date European-style if used in conjunction with the -s option.
- t Set the time only. Used in conjunction with the -s option.
- 2 Retrieve and display the time stored in the 3102 terminal of the user making the request. May be used to set the time on the 3102 terminal of the user making the request if used in conjunction with the -s option. Note that this may be used to set the time of each user's terminal independently; however, the system time will still be maintained internally in the computer and will be used for all system functions (such as the times associated with file creates, modifications, and dumps).

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Parameters required by the time utility are passed to it on the command line in the format
time [-det2[s [date [time]]]

The date should precede the time if both are given. If they are not supplied and the -s option is given, the time utility will prompt the user for them.

unmount.bin 00.07:

The unmount utility now ejects the disk which it is unmounting (8" drives only).