

DragonFlyBSD - Bug #3251

file ctime not updated as documented on chmod(), link()

10/25/2020 06:08 PM - tonyc

Status:	Resolved	Start date:	10/26/2020
Priority:	Normal	Due date:	02/18/2021
Assignee:		% Done:	100%
Category:	VFS subsystem	Estimated time:	0:00 hour
Target version:			
Description			
The stat(2) man page claims:			
<pre>st_ctim Time when file status was last changed (inode data modification). Changed by the chmod(2), chown(2), link(2), mknod(2), rename(2), unlink(2), utimes(2) and write(2) system calls.</pre>			
but neither link() nor chmod() update ctime.tv_sec:			
<pre>\$ pwd /home/tony/dev/perl/git/dflybugs \$ cc -olink_ctime link_ctime.c \$./link_ctime FAIL: chmod didn't update ctime FAIL: link didn't update ctime \$ mount serno/VB6e53d937-50b8dc58.s1d on / (hammer2, local) devfs on /dev (devfs, nosymfollow, local) /dev/serno/VB6e53d937-50b8dc58.s1a on /boot (ufs, local) /build/usr.obj on /usr/obj (null) /build/var.crash on /var/crash (null) /build/var.cache on /var/cache (null) /build/var.spool on /var/spool (null) /build/var.log on /var/log (null) /build/var.tmp on /var/tmp (null) tmpfs on /tmp (tmpfs, local) procfs on /proc (procfs, local) tmpfs on /var/run/shm (tmpfs, local) \$ uname -a DragonFly 5.8-RELEASE DragonFly v5.8.3-RELEASE #10: Thu Sep 24 19:19:45 EDT 2020 root@www.shiningsilence.com:/usr/obj/home/justin/release/5_8/sys/X86_64_GENERIC x86_64</pre>			
link_ctime.c is attached.			

History

#1 - 12/21/2020 11:36 PM - deef

- Due date set to 12/22/2020

- Status changed from New to In Progress

- % Done changed from 0 to 50

link() issue fixed for both hammer (commit c5adbbb2+ on master, d74465f2+ on RELEASE_5_8) and hammer2 (b6c0d52e+ master, 2d476770+ RELEASE_5_8).

However, I've been unable to reproduce chmod() issue... It works as expected for me on master. And according to the code, it should also work the same on RELEASE_5_8. Could anybody confirm, please? :)

#2 - 12/26/2020 03:54 PM - tonyc

deef wrote:

However, I've been unable to reproduce chmod() issue... It works as expected for me on master. And according to the code, it should also work

the same on RELEASE_5_8. Could anybody confirm, please? :)

My test is a little broken in that it doesn't distinguish between a successful `chmod()` that does change the mode and a successful `chmod()` doesn't change the mode, but I'm not sure that makes a difference.

Looking at the code (HEAD:/sys/vfs/hammer2/hammer2_vnops.c#1543) it appears `ctime` is only updated when the mode is modified. The dragonfly man pages that I (briefly) looked at don't include enough information to decide whether that's documented behaviour, but POSIX says:

Upon successful completion, `chmod()` shall mark for update the last file status change timestamp of the file.

So it looks to me like POSIX says that `ctime` should be modified even if the mode doesn't actually change. This is the behaviour on Linux/ext4 and FreeBSD 11.4/ufs.

#3 - 02/18/2021 03:41 AM - deaf

- Due date changed from 12/22/2020 to 02/18/2021
- Status changed from In Progress to Resolved
- % Done changed from 50 to 100

Also `chmod()` should now behave POSIXly :), for both hammer (commit cf4606c+ on master, 11e11aa+ on RELEASE_5_8) and hammer2 (787d144+ on master, d96b57b+ on RELEASE_5_8).

Files

link_ctime.c	1.12 KB	10/26/2020	tonyc
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