

Tvheadend - Bug #5188

Fix inotify case where IN_MOVED_TO comes in subsequent read after read containing IN_MOVED_FROM

2018-09-02 22:50 - Joe User

Status:	Fixed	Start date:	2018-09-02
Priority:	Normal	Due date:	
Assignee:	Adam Sutton	% Done:	0%
Category:	PVR / DVR	Estimated time:	0.00 hour
Target version:		Affected Versions:	
Found in version:	4.3		

Description

While trying to move lots of recordings from one directory to another, I found that tvheadend only noticed (via inotify) about 60% of the changes, thus the dvr/log files were not updated.

After some debugging, I tracked the problem down to this note from the man page:

```
Applications should also allow for the possibility that the IN_MOVED_FROM event was the last event that could fit in the buffer returned by the current call to read(2), and the accompanying
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IN_MOVED_TO event might be fetched only on the next read(2), which should be done with a (small) timeout to allow for the fact that insertion of the IN_MOVED_FROM-IN_MOVED_TO event pair is
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not atomic, and also the possibility that there may not be any IN_MOVED_TO event.
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Also, the mask for IN_CREATE was being set, but never checked for. This also aggravated the problem by producing lots of unnecessary IN_CREATE events in the reads.

I created a pull request, but I am sure you will want to remove the extra tvhdebug lines I included.

Here is the diff:

```
diff --git a/src/dvr/dvr_inotify.c b/src/dvr/dvr_inotify.c
index 71137df20..a8db57c09 100644
--- a/src/dvr/dvr_inotify.c
+++ b/src/dvr/dvr_inotify.c
@@ -33,7 +33,7 @@
 /* inotify limits */
 #define EVENT_SIZE ( sizeof (struct inotify_event) )
 #define EVENT_BUF_LEN ( 10 * ( EVENT_SIZE + 16 ) )
-#define EVENT_MASK IN_CREATE | IN_DELETE | IN_DELETE_SELF | \
+#define EVENT_MASK IN_DELETE | IN_DELETE_SELF | \
                IN_MOVE_SELF | IN_MOVED_FROM | IN_MOVED_TO

static int _inot_fd;
@@ -378,6 +378,11 @@ void* _dvr_inotify_thread ( void *p )
    const char *from;
    int fromfd;
    int cookie;
+   char from_prev[50];
+   int fromfd_prev =0;
+   int cookie_prev =0;
+
+   from_prev[0] = '\0';

    while (tvheadend_is_running()) {
@@ -397,6 +402,7 @@ void* _dvr_inotify_thread ( void *p )
    pthread_mutex_lock(&global_lock);
    while ( i < len ) {
```

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    struct inotify_event *ev = (struct inotify_event*)&buf[i];
+   tvhdebug(LS_DVR, "inotify: i= %d   len= %d   ", i, len);
    i += EVENT_SIZE + ev->len;
    if (i > len)
        break;
@@ -406,12 +412,21 @@ void* _dvr_inotify_thread ( void *p )
    from = ev->name;
    fromfd = ev->wd;
    cookie = ev->cookie;
+   tvhdebug(LS_DVR, "inotify: i= %d   len= %d   from = %s   cookie = %d ", i, len, from, cooki
e);
    continue;

-   } else if ((ev->mask & IN_MOVED_TO) && from && ev->cookie == cookie) {
-   _dvr_inotify_moved(fromfd, from, ev->name, ev->wd);
-   from = NULL;
-
+   } else if (ev->mask & IN_MOVED_TO) {
+   tvhdebug(LS_DVR, "inotify: i= %d   len= %d   to_cookie= %d   from_cookie = %d   cookie_prev
= %d", i, len, ev->cookie, cookie, cookie_prev);
+   if ( from && ev->cookie == cookie) {
+   _dvr_inotify_moved(fromfd, from, ev->name, ev->wd);
+   from = NULL;
+   cookie = 0;
+   } else if (from_prev[0] != '\0' && ev->cookie == cookie_prev) {
+   _dvr_inotify_moved(fromfd_prev, from_prev, ev->name, ev->wd);
+   from_prev[0] = '\0';
+   cookie_prev = 0;
+   }
+
    /* Removed */
    } else if (ev->mask & IN_DELETE) {
        _dvr_inotify_delete(ev->wd, ev->name);
@@ -424,15 +439,26 @@ void* _dvr_inotify_thread ( void *p )
    } else if (ev->mask & IN_DELETE_SELF) {
        _dvr_inotify_delete_all(ev->wd);
    }
-
+/*
    if (from) {
        _dvr_inotify_moved(fromfd, from, NULL, -1);
        from = NULL;
        cookie = 0;
    }
+*/
+   }
+   // if still old "from", assume matching "to" is not coming
+   if (from_prev[0] != '\0') {
+   _dvr_inotify_moved(fromfd_prev, from_prev, NULL, -1);
+   from_prev[0] = '\0';
+   cookie_prev = 0;
+   }
+   // if unmatched "from", save in case matching "to" is coming in next read
    if (from) {
-   _dvr_inotify_moved(fromfd, from, NULL, -1);
+   strcpy ( from_prev, from);
+   fromfd_prev = fromfd;
+   cookie_prev = cookie;
+   tvhdebug(LS_DVR, "inotify: i= %d   len= %d   cookie_prev = %d   from_prev = %s   fd = %d
END OF READ", i, len, cookie_prev, from_prev, fromfd_prev);
    }
    pthread_mutex_unlock(&global_lock);
}

```

History

#1 - 2018-09-04 13:07 - Jaroslav Kysela

Fixed in latest.

#2 - 2018-09-04 13:07 - Jaroslav Kysela

- *Status changed from New to Fixed*