

Linux-Kernel: RE: how do you call userspace syscalls (e.g. sys_rename) from inside kernel

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From: Aboo Valappil (aboo_at_ABOOSPLANET.com)

Date: 10/11/04

Date: Mon, 11 Oct 2004 09:13:06 +1000

To: "Luke Kenneth Casson Leighton" <lkcl@lkcl.net>, "Fabiano Ramos" <ramos_fabiano@yahoo.com.br>

Hi,

In the past I looked in to open, read and write a file from a kernel module. But problem I faced using the kernel function was that it checks for the permissions of the file and path against the "current" process. For eg: open_namei() function ... My requirement was to open the file regardless of the permissions on the file and also not by modifying task_struct of the current process to change the permissions first ! I also wanted not associate the file with the current/any processes.

Any ideas on this ?

Then I thought of using a work around and avoid opening files in kernel mode.

Thanks

Aboo

-----Original Message-----

From: linux-kernel-owner@vger.kernel.org

[<mailto:linux-kernel-owner@vger.kernel.org>] On Behalf Of Luke Kenneth Casson Leighton

Sent: Saturday, October 09, 2004 1:35 AM

To: Fabiano Ramos

Cc: linux-kernel@vger.kernel.org

Subject: Re: how do you call userspace syscalls (e.g. sys_rename) from inside kernel

On Fri, Oct 08, 2004 at 10:07:04AM -0300, Fabiano Ramos wrote:

> *On Fri, 2004-10-08 at 14:04 +0100, Luke Kenneth Casson Leighton wrote:*

> > *could someone kindly advise me on the location of some example code in*

> > *the kernel which calls one of the userspace system calls from inside*

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the

> > *kernel?*

> >

> > *alternatively if this has never been considered before, please could*

> > *someone advise me as to how it might be achieved?*

> >

>

> *you cannot do that. For every sys_xx there is a do_xx, that can*

> *be called from inside the kernel.*

so, there's a do_rename (yes i found that and ISTRC that when i used it i can't exactly remember what the problem was: either i got an error code -14 or i got "warning symbol do_rename not found" when my module was linked together, even though it says EXPORT_SYMBOL(do_rename) in fs/namei.c, so i was forced to cut/paste sys_rename)

and there's a do_open no there isn't, there's filp_open.

and a do_pread64 no there isn't i had to cut/paste sys_pread64 which was okay because it's pretty basic, just call vfs_read.

and a do_mkdir no there isn't so i had to cut/paste that.

basically what i am doing is writing a file system "proxy" module which re-calls back into the filesystem with a prefix onto the front of the pathname.

> > *[p.s. i found asm/unistd.h, i found the macros syscall012345*

> > *etc., i believe i don't quite understand what these are for, and*

> > *may be on the wrong track.]*

>

> *These are available for you to make syscalls from user mode*

> *without library support (usually that brand new syscall you added).*

> *They are basically wrappers that expand into C code. _syscallx,*

> *where x is the number of arguments the syscall needs.*

so, it's for use the other way round. okay, thanks for keeping me off a broken line of enquiry.

[oh, and i'll be abandoning this line of enquiry _entirely_ if i find that supermount-ng can do the same job - namely manage to keep userspace programs happy when users rip out media]

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Truth, honesty and respect are rare commodities that all spring from the same well: Love. If you love yourself and everyone and everything around you, funnily and coincidentally enough, life gets a lot better.

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<a href="<http://lkcl.net>"> lkcl.net

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 lkcl@lkcl.net

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