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Subject: Re: [PATCH] Remove rcu\_assign\_pointer() penalty for NULL pointers  
Posted by [Herbert Xu](#) on Sat, 01 Dec 2007 01:07:52 GMT

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On Fri, Nov 30, 2007 at 04:37:21PM -0800, Paul E. McKenney wrote:

>  
> The rcu\_assign\_pointer() primitive currently unconditionally executes  
> a memory barrier, even when a NULL pointer is being assigned. This  
> has lead some to avoid using rcu\_assign\_pointer() for NULL pointers,  
> which loses the self-documenting advantages of rcu\_assign\_pointer()  
> This patch uses \_\_builtin\_const\_p() to omit needless memory barriers  
> for NULL-pointer assignments at compile time with no runtime penalty,  
> as discussed in the following thread:  
>  
> <http://www.mail-archive.com/netdev@vger.kernel.org/msg54852.html>  
>  
> Tested on x86\_64 and ppc64, also compiled the four cases (NULL/non-NULL  
> and const/non-const) with gcc version 4.1.2, and hand-checked the  
> assembly output.  
>  
> Signed-off-by: Paul E. McKenney <paulmck@linux.vnet.ibm.com>

Acked-by: Herbert Xu <herbert@gondor.apana.org.au>

Thanks a lot for following through with this Paul!

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PGP Key: <http://gondor.apana.org.au/~herbert/pubkey.txt>

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Subject: Re: [PATCH] Remove rcu\_assign\_pointer() penalty for NULL pointers  
Posted by [paulmck](#) on Sat, 01 Dec 2007 06:00:58 GMT

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On Sat, Dec 01, 2007 at 12:07:52PM +1100, Herbert Xu wrote:

> On Fri, Nov 30, 2007 at 04:37:21PM -0800, Paul E. McKenney wrote:  
> >  
> > The rcu\_assign\_pointer() primitive currently unconditionally executes  
> > a memory barrier, even when a NULL pointer is being assigned. This  
> > has lead some to avoid using rcu\_assign\_pointer() for NULL pointers,  
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> > and const/non-const) with gcc version 4.1.2, and hand-checked the  
> > assembly output.  
> >  
> > Signed-off-by: Paul E. McKenney <paulmck@linux.vnet.ibm.com>  
>  
> Acked-by: Herbert Xu <herbert@gondor.apana.org.au>  
>  
> Thanks a lot for following through with this Paul!

No problem -- after all, it is not every day that one gets the opportunity  
to make a simple change that speeds things up and makes kernel hackers  
lives a bit simpler. ;-)

Thanx, Paul

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