
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,
> > 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!

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
