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Subject: Re: [ckrm-tech] [RFC][PATCH][2/4] Add RSS accounting and control  
Posted by [Andrew Morton](#) on Mon, 19 Feb 2007 11:23:52 GMT  
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On Mon, 19 Feb 2007 16:39:33 +0530 Balbir Singh <balbir@in.ibm.com> wrote:

```
> Andrew Morton wrote:
> > On Mon, 19 Feb 2007 16:07:44 +0530 Balbir Singh <balbir@in.ibm.com> wrote:
> >
> >>>> +void memctlr_mm_free(struct mm_struct *mm)
> >>>> +{
> >>>> + kfree(mm->counter);
> >>>> +}
> >>>> +
> >>>> +static inline void memctlr_mm_assign_container_direct(struct mm_struct *mm,
> >>>> +      struct container *cont)
> >>>> +{
> >>>> + write_lock(&mm->container_lock);
> >>>> + mm->container = cont;
> >>>> + write_unlock(&mm->container_lock);
> >>>> +}
> >>> More weird locking here.
> >>>
> >> The container field of the mm_struct is protected by a read write spin lock.
> >
> > That doesn't mean anything to me.
> >
> > What would go wrong if the above locking was simply removed? And how does
> > the locking prevent that fault?
> >
> >
> > Some pages could be charged to the wrong container. Apart from that I do not
> > see anything going bad (I'll double check that).
```

Argh. Please, think about this.

That locking \*doesn't do anything\*. Except for that one situation I described: some other holder of the lock reads mm->container twice inside the lock and requires that the value be the same both times (and that sort of code should be converted to take a local copy, so this locking here can be removed).

```
> >>>> +
> >>>> + read_lock(&mm->container_lock);
> >>>> + cont = mm->container;
> >>>> + read_unlock(&mm->container_lock);
> >>>> +
> >>>> + if (!cont)
```

> >>>> + goto done;  
> >>> And here. I mean, if there was a reason for taking the lock around that  
> >>> read, then testing `cont` outside the lock just invalidated that reason.  
> >>>  
> >> We took a consistent snapshot of cont. It cannot change outside the lock,  
> >> we check the value outside. I am sure I missed something.  
> >  
> > If it cannot change outside the lock then we don't need to take the lock!  
> >  
>  
> We took a snapshot that we thought was consistent.

Consistent with what? That's a single-word read inside that lock.

> We check for the value  
> outside. I guess there is no harm, the worst thing that could happen  
> is wrong accounting during mm->container changes (when a task changes  
> container).

If container->lock is held when a task is removed from the  
container then yes, `cont` here can refer to a container to which the task  
no longer belongs.

More worrisome is the potential for use-after-free. What prevents the  
pointer at mm->container from referring to freed memory after we're dropped  
the lock?

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