Subject: Re: [RFC][PATCH 0/1]a new optional function for task assignment to cgroup
Posted by Paul Menage on Wed, 05 Mar 2008 05:56:13 GMT
View Forum Message <> Reply to Message

Hi Kazunaga,

On Tue, Mar 4, 2008 at 9:39 PM, Kazunaga Ikeno <k-ikeno@ak.jp.nec.com> wrote:
> Hi -
>
> This is a patch of a new optional function for task assignment to cgroup, RFC.
>
>
> == Purpose ==========
>
> To provide the function that leads a task, corresponding to the conditions specified
> beforehand, to a specific cgroup directory.
>

This is something that's been discussed before, originally as part of
CKRM with a complex rule engine in the kernel space.

Basically, the general agreement was that it's a case where a simple
API is going to be too simple for the majority of users, and a complex
API that satisfies everyone is going to be too messy/heavyweight.

This is something that can be done in a userspace daemon via the
process events connector - when you get a PROC_EVENT_UID event, you
can move the process into the appropriate cgroup (you may also need to
check any recently-forked children). This also gives you more
flexibility than you can have in the kernel - you can base your
decision on more complex factors than simply the uid of the process.

Dhaval Giani had a prototype implementation of such a daemon.

Paul

>
> == Description ==========
>
> This patch provides the function that leads a task, corresponding to the conditions
> specified beforehand, to a specific cgroup directory.
>
> Currently, this patch uses user-id as a condition to lead a task. On its I/F,
> specifies user-id of a task and a cgroup directory.
>
> The task set to specified user-id will automatically lead to the cgroup directory.
> (it is attached to specific cgroup)

>
> This function makes possible to attach a task to cgroup automatically when
> specific user logs in, also to attach a task of a service which is set to
> specific effective user-id to specific cgroup mechanically.
>
> This function is just option, all the functions of cgroup are the same.
> Also the migration of a task between cgroup directories can do by rewriting pid
> of a control tasks file, including a task leading by this option.
>
> It is able to enter two or more set of user-id and cgroup directory.
> Specified cgroup directory may be the same or that may not be.
> But it's not able to enter same user-id to plural cgroup directories to lead.
>
>
> == Interface ===
>
> /lead_option - control file of this option
>
> [example for reading a configuration]
>
>   # cat /cgroup/lead_option
>
>   uid:202   leadto:/cpuset/bar_cg
>   uid:201   leadto:/cpuset/foo_cg
>
>   * nothing appears before assignment.
>
> [example for adding an entry]
> - To lead a task(uid 201) to /cgroup/foo_cg
>
>   # echo uid:201 leadto:/cpuset/foo_cg > /cpuset/lead_option
>
>   * set a uid of task and cgroup dirctory to lead.
>   * Remake an entry uid to cgroup directory if set uid already exists.
>
> [example for delete an entry]
> - To delete an entry of uid
>
>   # echo uid:201 > /cpuset/lead_option
>
>   * To delete a registration, omit "leadto:" token.
>
>
> == Operation example (chronological order) ==================
>
> The follows is an example of the operation.
>
> # ##############################

```
> # # Various confirmation before testing
> # ##############################
> # id
> uid=0(root) gid=0(root) groups=0(root)
> # df /cpuset
> Filesystem           1K-blocks      Used Available Use% Mounted on
> none                         0         0         0   -  /cpuset
> # more /proc/self/cgroup
> cpuset:/
> # id foo
> uid=201(foo) gid=100(users) groups=100(users)
> # id bar
> uid=202(foo) gid=100(users) groups=100(users)
> # ##############################
> # # Add an entry of user foo,bar
> # ##############################
> # echo uid:201 leadto:/cpuset/foo_cg > /cpuset/lead_option
> # echo uid:202 leadto:/cpuset/bar_cg > /cpuset/lead_option
> # more /cpuset/lead_option
> uid:202        leadto:/cpuset/bar_cg
> uid:201        leadto:/cpuset/foo_cg
> # ##############################
> # # Confirmation of the assignment of user foo,bar - (1)
> # ##############################
> # su - foo
> $ more /proc/$$/cgroup
> cpuset:/foo_cg
> $ more /proc/self/cgroup
> cpuset:/foo_cg
> $ su bar --command "more /proc/self/cgroup"
> cpuset:/bar_cg
> $ exit
> # ##############################
> # # Delete an entry of user foo,bar
> # ##############################
> # echo uid:201 > /cpuset/lead_option
> # echo uid:202 > /cpuset/lead_option
> # more /cpuset/lead_option
> # ##############################
> # # Confirmation of the assignment of user foo,bar - (2)
> # ##############################
> # su - foo
> $ more /proc/$$/cgroup
> cpuset:/
> $ su bar --command "more /proc/self/cgroup"
> cpuset:/
> $
>
```

>
> Thanks,
> - Kazunaga Ikeno.
>
>
>
> --
> To unsubscribe from this list: send the line "unsubscribe linux-kernel" in
> the body of a message to majordomo@vger.kernel.org
> More majordomo info at http://vger.kernel.org/majordomo-info.html
> Please read the FAQ at http://www.tux.org/lkml/
>

_____
Containers mailing list
Containers@lists.linux-foundation.org
https://lists.linux-foundation.org/mailman/listinfo/containers

---

Subject: RE: [RFC][PATCH 0/1]a new optional function for task assignment to cgroup
Posted by Kazunaga Ikeno on Wed, 05 Mar 2008 07:02:17 GMT
View Forum Message <> Reply to Message

Paul Menage wrote:
> This is something that's been discussed before, originally as part of
> CKRM with a complex rule engine in the kernel space.
>
> Basically, the general agreement was that it's a case where a simple
> API is going to be too simple for the majority of users, and a complex
> API that satisfies everyone is going to be too messy/heavyweight.
>
> This is something that can be done in a userspace daemon via the
> process events connector - when you get a PROC_EVENT_UID event, you
> can move the process into the appropriate cgroup (you may also need to
> check any recently-forked children). This also gives you more
> flexibility than you can have in the kernel - you can base your
> decision on more complex factors than simply the uid of the process.
>
> Dhaval Giani had a prototype implementation of such a daemon.

Paul -

Thank you for your comment.
Because it was the almost same timing, I did not notice about Dhaval Giani's plan.
I will investigate it.

- Kazunaga Ikeno.

>
> Paul
>
> >
> > == Description ===
> >
> > This patch provides the function that leads a task, corresponding to the conditions
> > specified beforehand, to a specific cgroup directory.
> >
> > Currently, this patch uses user-id as a condition to lead a task. On its I/F,
> > specifies user-id of a task and a cgroup directory.
> >
> > The task set to specified user-id will automatically lead to the cgroup directory.
> > (it is attached to specific cgroup)
> >
> > This function makes possible to attach a task to cgroup automatically when
> > specific user logs in, also to attach a task of a service which is set to
> > specific effective user-id to specific cgroup mechanically.
> >
> > This function is just option, all the functions of cgroup are the same.
> > Also the migration of a task between cgroup directories can do by rewriting pid
> > of a control tasks file, including a task leading by this option.
> >
> > It is able to enter two or more set of user-id and cgroup directory.
> > Specified cgroup directory may be the same or that may not be.
> > But it's not able to enter same user-id to plural cgroup directories to lead.
> >
> >
> > == Interface ===
> >
> > /lead_option - control file of this option
> >
> > [example for reading a configuration]
> >
> >   # cat /cgroup/lead_option
> >
> >   uid:202   leadto:/cpuset/bar_cg
> >   uid:201   leadto:/cpuset/foo_cg
> >
> >   * nothing appears before assignment.
> >
> > [example for adding an entry]
> > - To lead a task(uid 201) to /cgroup/foo_cg
> >
> >   # echo uid:201 leadto:/cpuset/foo_cg > /cpuset/lead_option
> >
> >   * set a uid of task and cgroup dirctory to lead.
> >   * Remake an entry uid to cgroup directory if set uid already exists.

> >
> > [example for delete an entry]
> > - To delete an entry of uid
> >
> > # echo uid:201 > /cpuset/lead_option
> >
> > * To delete a registration, omit "leadto:" token.
> >
> >
> > == Operation example (chronological order) ==========
> >
> > The follows is an example of the operation.
> >
> > # ##############################
> > # # Various confirmation before testing
> > # ##############################
> > # id
> > uid=0(root) gid=0(root) groups=0(root)
> > # df /cpuset
> > Filesystem 1K-blocks Used Available Use% Mounted on
> > none 0 0 0 - /cpuset
> > # more /proc/self/cgroup
> > cpuset:/
> > # id foo
> > uid=201(foo) gid=100(users) groups=100(users)
> > # id bar
> > uid=202(foo) gid=100(users) groups=100(users)
> > # ##############################
> > # # Add an entry of user foo,bar
> > # ##############################
> > # echo uid:201 leadto:/cpuset/foo_cg > /cpuset/lead_option
> > # echo uid:202 leadto:/cpuset/bar_cg > /cpuset/lead_option
> > # more /cpuset/lead_option
> > uid:202 leadto:/cpuset/bar_cg
> > uid:201 leadto:/cpuset/foo_cg
> > # ##############################
> > # # Confirmation of the assignment of user foo,bar - (1)
> > # ##############################
> > # su - foo
> > $ more /proc/$$/cgroup
> > cpuset:/foo_cg
> > $ more /proc/self/cgroup
> > cpuset:/foo_cg
> > $ su bar --command "more /proc/self/cgroup"
> > cpuset:/bar_cg
> > $ exit
> > # ##############################
> > # # Delete an entry of user foo,bar

> > # ##############################
> > # echo uid:201 > /cpuset/lead_option
> > # echo uid:202 > /cpuset/lead_option
> > # more /cpuset/lead_option
> > # ##############################
> > # # Confirmation of the assignment of user foo,bar - (2)
> > # ##############################
> > # su - foo
> > $ more /proc/$$/cgroup
> > cpuset:/
> > $ su bar --command "more /proc/self/cgroup"
> > cpuset:/
> > $
> >
> >
> > Thanks,
> > - Kazunaga Ikeno.
> >
> >
> >
> > --
> > To unsubscribe from this list: send the line "unsubscribe linux-kernel" in
> > the body of a message to majordomo@vger.kernel.org
> > More majordomo info at http://vger.kernel.org/majordomo-info.html
> > Please read the FAQ at http://www.tux.org/lkml/
> >

_____
Containers mailing list
Containers@lists.linux-foundation.org
https://lists.linux-foundation.org/mailman/listinfo/containers

---

Subject: Re: [RFC][PATCH 0/1]a new optional function for task assignment to cgroup
Posted by Dhaval Giani on Wed, 05 Mar 2008 07:13:38 GMT
View Forum Message <> Reply to Message

On Tue, Mar 04, 2008 at 09:56:13PM -0800, Paul Menage wrote:
> Hi Kazunaga,
>
> On Tue, Mar 4, 2008 at 9:39 PM, Kazunaga Ikeno <k-ikeno@ak.jp.nec.com> wrote:
> > Hi -
> >
> > This is a patch of a new optional function for task assignment to cgroup, RFC.
> >
> >
> > == Purpose ==========

> >
> > To provide the function that leads a task, corresponding to the conditions specified
> > beforehand, to a specific cgroup directory.
> >
>
> This is something that's been discussed before, originally as part of
> CKRM with a complex rule engine in the kernel space.
>
> Basically, the general agreement was that it's a case where a simple
> API is going to be too simple for the majority of users, and a complex
> API that satisfies everyone is going to be too messy/heavyweight.
>
> This is something that can be done in a userspace daemon via the
> process events connector - when you get a PROC_EVENT_UID event, you
> can move the process into the appropriate cgroup (you may also need to
> check any recently-forked children). This also gives you more
> flexibility than you can have in the kernel - you can base your
> decision on more complex factors than simply the uid of the process.
>
> Dhaval Giani had a prototype implementation of such a daemon.
>

The daemon was posted at
http://article.gmane.org/gmane.linux.kernel/553267 . At that point
control groups were called containers. These corrections will have to
made for it to run.

If I can get the time, I will clean it up and try to put it up
somewhere.

Thanks,

--
regards,
Dhaval

_____
Containers mailing list
Containers@lists.linux-foundation.org
https://lists.linux-foundation.org/mailman/listinfo/containers