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Subject: [patch 1/4] Container Freezer: Add TIF\_FREEZE flag to all architectures  
Posted by [Matt Helsley](#) on Tue, 24 Jun 2008 13:58:24 GMT  
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From: Cedric Le Goater <clg@fr.ibm.com>  
Subject: [patch 1/4] Container Freezer: Add TIF\_FREEZE flag to all architectures

This patch is the first step in making the refrigerator() available to all architectures, even for those without power management.

The purpose of such a change is to be able to use the refrigerator() in a new control group subsystem which will implement a control group freezer.

Signed-off-by: Cedric Le Goater <clg@fr.ibm.com>  
Signed-off-by: Matt Helsley <matthltc@us.ibm.com>  
Tested-by: Matt Helsley <matthltc@us.ibm.com>

---

```
include/asm-alpha/thread_info.h | 2 ++
include/asm-avr32/thread_info.h | 2 ++
include/asm-cris/thread_info.h  | 2 ++
include/asm-h8300/thread_info.h | 2 ++
include/asm-m68k/thread_info.h  | 1 +
include/asm-m68knommu/thread_info.h | 2 ++
include/asm-parisc/thread_info.h | 2 ++
include/asm-s390/thread_info.h   | 2 ++
include/asm-sparc/thread_info.h  | 2 ++
include/asm-sparc64/thread_info.h | 2 ++
include/asm-um/thread_info.h     | 2 ++
include/asm-xtensa/thread_info.h | 2 ++
12 files changed, 23 insertions(+)
```

Index: linux-2.6.26-rc5-mm2/include/asm-alpha/thread\_info.h

=====

```
--- linux-2.6.26-rc5-mm2.orig/include/asm-alpha/thread_info.h
+++ linux-2.6.26-rc5-mm2/include/asm-alpha/thread_info.h
@@ -72,16 +72,18 @@ register struct thread_info *__current_t
#define TIF_UAC_NOPRINT 5 /* see sysinfo.h */
#define TIF_UAC_NOFIX 6
#define TIF_UAC_SIGBUS 7
#define TIF_MEMDIE 8
#define TIF_RESTORE_SIGMASK 9 /* restore signal mask in do_signal */
+#define TIF_FREEZE 19 /* is freezing for suspend */

#define _TIF_SYSCALL_TRACE (1<<TIF_SYSCALL_TRACE)
#define _TIF_SIGPENDING (1<<TIF_SIGPENDING)
#define _TIF_NEED_RESCHED (1<<TIF_NEED_RESCHED)
#define _TIF_POLLING_NRFLAG (1<<TIF_POLLING_NRFLAG)
```

```

#define _TIF_RESTORE_SIGMASK (1<<TIF_RESTORE_SIGMASK)
+#define _TIF_FREEZE (1<<TIF_FREEZE)

/* Work to do on interrupt/exception return. */
#define _TIF_WORK_MASK (_TIF_SIGPENDING | _TIF_NEED_RESCHED)

/* Work to do on any return to userspace. */
Index: linux-2.6.26-rc5-mm2/include/asm-avr32/thread_info.h
=====
--- linux-2.6.26-rc5-mm2.orig/include/asm-avr32/thread_info.h
+++ linux-2.6.26-rc5-mm2/include/asm-avr32/thread_info.h
@@ -82,10 +82,11 @@ static inline struct thread_info *current
#define TIF_BREAKPOINT 4 /* enter monitor mode on return */
#define TIF_SINGLE_STEP 5 /* single step in progress */
#define TIF_MEMDIE 6
#define TIF_RESTORE_SIGMASK 7 /* restore signal mask in do_signal */
#define TIF_CPU_GOING_TO_SLEEP 8 /* CPU is entering sleep 0 mode */
+#define TIF_FREEZE 19 /* is freezing for suspend */
#define TIF_DEBUG 30 /* debugging enabled */
#define TIF_USERSPACE 31 /* true if FS sets userspace */

#define _TIF_SYSCALL_TRACE (1 << TIF_SYSCALL_TRACE)
#define _TIF_SIGPENDING (1 << TIF_SIGPENDING)
@@ -93,10 +94,11 @@ static inline struct thread_info *current
#define _TIF_POLLING_NRFLAG (1 << TIF_POLLING_NRFLAG)
#define _TIF_SINGLE_STEP (1 << TIF_SINGLE_STEP)
#define _TIF_MEMDIE (1 << TIF_MEMDIE)
#define _TIF_RESTORE_SIGMASK (1 << TIF_RESTORE_SIGMASK)
#define _TIF_CPU_GOING_TO_SLEEP (1 << TIF_CPU_GOING_TO_SLEEP)
+#define _TIF_FREEZE (1 << TIF_FREEZE)

/* Note: The masks below must never span more than 16 bits! */

/* work to do on interrupt/exception return */
#define _TIF_WORK_MASK \
Index: linux-2.6.26-rc5-mm2/include/asm-cris/thread_info.h
=====
--- linux-2.6.26-rc5-mm2.orig/include/asm-cris/thread_info.h
+++ linux-2.6.26-rc5-mm2/include/asm-cris/thread_info.h
@@ -86,17 +86,19 @@ struct thread_info {
#define TIF_SIGPENDING 2 /* signal pending */
#define TIF_NEED_RESCHED 3 /* rescheduling necessary */
#define TIF_RESTORE_SIGMASK 9 /* restore signal mask in do_signal() */
#define TIF_POLLING_NRFLAG 16 /* true if poll_idle() is polling TIF_NEED_RESCHED */
#define TIF_MEMDIE 17
+#define TIF_FREEZE 19 /* is freezing for suspend */

#define _TIF_SYSCALL_TRACE (1<<TIF_SYSCALL_TRACE)

```

```

#define _TIF_NOTIFY_RESUME (1<<TIF_NOTIFY_RESUME)
#define _TIF_SIGPENDING (1<<TIF_SIGPENDING)
#define _TIF_NEED_RESCHED (1<<TIF_NEED_RESCHED)
#define _TIF_RESTORE_SIGMASK (1<<TIF_RESTORE_SIGMASK)
#define _TIF_POLLING_NRFLAG (1<<TIF_POLLING_NRFLAG)
+#define _TIF_FREEZE (1<<TIF_FREEZE)

#define _TIF_WORK_MASK 0x0000FFFE /* work to do on interrupt/exception return */
#define _TIF_ALLWORK_MASK 0x0000FFFF /* work to do on any return to u-space */

```

```

#endif /* __KERNEL__ */

```

Index: linux-2.6.26-rc5-mm2/include/asm-h8300/thread\_info.h

```

=====

```

```

--- linux-2.6.26-rc5-mm2.orig/include/asm-h8300/thread_info.h

```

```

+++ linux-2.6.26-rc5-mm2/include/asm-h8300/thread_info.h

```

```

@@ -87,17 +87,19 @@ static inline struct thread_info *current
#define TIF_NEED_RESCHED 2 /* rescheduling necessary */
#define TIF_POLLING_NRFLAG 3 /* true if poll_idle() is polling
    TIF_NEED_RESCHED */

```

```

#define TIF_MEMDIE 4
#define TIF_RESTORE_SIGMASK 5 /* restore signal mask in do_signal() */
+#define TIF_FREEZE 19 /* is freezing for suspend */

```

```

/* as above, but as bit values */

```

```

#define _TIF_SYSCALL_TRACE (1<<TIF_SYSCALL_TRACE)
#define _TIF_SIGPENDING (1<<TIF_SIGPENDING)
#define _TIF_NEED_RESCHED (1<<TIF_NEED_RESCHED)
#define _TIF_POLLING_NRFLAG (1<<TIF_POLLING_NRFLAG)
#define _TIF_RESTORE_SIGMASK (1<<TIF_RESTORE_SIGMASK)
+#define _TIF_FREEZE (1<<TIF_FREEZE)

```

```

#define _TIF_WORK_MASK 0x0000FFFE /* work to do on interrupt/exception return */

```

```

#endif /* __KERNEL__ */

```

Index: linux-2.6.26-rc5-mm2/include/asm-m68k/thread\_info.h

```

=====

```

```

--- linux-2.6.26-rc5-mm2.orig/include/asm-m68k/thread_info.h

```

```

+++ linux-2.6.26-rc5-mm2/include/asm-m68k/thread_info.h

```

```

@@ -50,7 +50,8 @@ struct thread_info {
#define TIF_SIGPENDING 6 /* signal pending */
#define TIF_NEED_RESCHED 7 /* rescheduling necessary */
#define TIF_DELAYED_TRACE 14 /* single step a syscall */
#define TIF_SYSCALL_TRACE 15 /* syscall trace active */
#define TIF_MEMDIE 16
+#define TIF_FREEZE 19 /* thread is freezing for suspend */

```

```

#endif /* _ASM_M68K_THREAD_INFO_H */

```

Index: linux-2.6.26-rc5-mm2/include/asm-m68knommu/thread\_info.h

```
=====
--- linux-2.6.26-rc5-mm2.orig/include/asm-m68knommu/thread_info.h
+++ linux-2.6.26-rc5-mm2/include/asm-m68knommu/thread_info.h
@@ -82,16 +82,18 @@ static inline struct thread_info *current
#define TIF_SIGPENDING 1 /* signal pending */
#define TIF_NEED_RESCHED 2 /* rescheduling necessary */
#define TIF_POLLING_NRFLAG 3 /* true if poll_idle() is polling
    TIF_NEED_RESCHED */
#define TIF_MEMDIE 4
+#define TIF_FREEZE 19 /* is freezing for suspend */

/* as above, but as bit values */
#define _TIF_SYSCALL_TRACE (1<<TIF_SYSCALL_TRACE)
#define _TIF_SIGPENDING (1<<TIF_SIGPENDING)
#define _TIF_NEED_RESCHED (1<<TIF_NEED_RESCHED)
#define _TIF_POLLING_NRFLAG (1<<TIF_POLLING_NRFLAG)
+#define _TIF_FREEZE (1<<TIF_FREEZE)

#define _TIF_WORK_MASK 0x0000FFFE /* work to do on interrupt/exception return */

#endif /* __KERNEL__ */
```

Index: linux-2.6.26-rc5-mm2/include/asm-parisc/thread\_info.h

```
=====
--- linux-2.6.26-rc5-mm2.orig/include/asm-parisc/thread_info.h
+++ linux-2.6.26-rc5-mm2/include/asm-parisc/thread_info.h
@@ -56,17 +56,19 @@ struct thread_info {
#define TIF_NEED_RESCHED 2 /* rescheduling necessary */
#define TIF_POLLING_NRFLAG 3 /* true if poll_idle() is polling TIF_NEED_RESCHED */
#define TIF_32BIT 4 /* 32 bit binary */
#define TIF_MEMDIE 5
#define TIF_RESTORE_SIGMASK 6 /* restore saved signal mask */
+#define TIF_FREEZE 19 /* is freezing for suspend */

#define _TIF_SYSCALL_TRACE (1 << TIF_SYSCALL_TRACE)
#define _TIF_SIGPENDING (1 << TIF_SIGPENDING)
#define _TIF_NEED_RESCHED (1 << TIF_NEED_RESCHED)
#define _TIF_POLLING_NRFLAG (1 << TIF_POLLING_NRFLAG)
#define _TIF_32BIT (1 << TIF_32BIT)
#define _TIF_RESTORE_SIGMASK (1 << TIF_RESTORE_SIGMASK)
+#define _TIF_FREEZE (1 << TIF_FREEZE)

#define _TIF_USER_WORK_MASK (_TIF_SIGPENDING | \
    _TIF_NEED_RESCHED | _TIF_RESTORE_SIGMASK)

#endif /* __KERNEL__ */
```

Index: linux-2.6.26-rc5-mm2/include/asm-s390/thread\_info.h

```

=====
--- linux-2.6.26-rc5-mm2.orig/include/asm-s390/thread_info.h
+++ linux-2.6.26-rc5-mm2/include/asm-s390/thread_info.h
@@ -96,10 +96,11 @@ static inline struct thread_info *current
#define TIF_POLLING_NRFLAG 17 /* true if poll_idle() is polling
    TIF_NEED_RESCHED */
#define TIF_31BIT 18 /* 32bit process */
#define TIF_MEMDIE 19
#define TIF_RESTORE_SIGMASK 20 /* restore signal mask in do_signal() */
+#define TIF_FREEZE 21 /* thread is freezing for suspend */

#define _TIF_SYSCALL_TRACE (1<<TIF_SYSCALL_TRACE)
#define _TIF_RESTORE_SIGMASK (1<<TIF_RESTORE_SIGMASK)
#define _TIF_SIGPENDING (1<<TIF_SIGPENDING)
#define _TIF_NEED_RESCHED (1<<TIF_NEED_RESCHED)
@@ -108,10 +109,11 @@ static inline struct thread_info *current
#define _TIF_SINGLE_STEP (1<<TIF_SINGLE_STEP)
#define _TIF_MCCK_PENDING (1<<TIF_MCCK_PENDING)
#define _TIF_USEDFFPU (1<<TIF_USEDFFPU)
#define _TIF_POLLING_NRFLAG (1<<TIF_POLLING_NRFLAG)
#define _TIF_31BIT (1<<TIF_31BIT)
+#define _TIF_FREEZE (1<<TIF_FREEZE)

#endif /* __KERNEL__ */

#define PREEMPT_ACTIVE 0x4000000

Index: linux-2.6.26-rc5-mm2/include/asm-sparc/thread_info.h
=====
--- linux-2.6.26-rc5-mm2.orig/include/asm-sparc/thread_info.h
+++ linux-2.6.26-rc5-mm2/include/asm-sparc/thread_info.h
@@ -137,17 +137,19 @@ BTFIXUPDEF_CALL(void, free_thread_info,
#define TIF_USEDFFPU 8 /* FPU was used by this task
    * this quantum (SMP) */
#define TIF_POLLING_NRFLAG 9 /* true if poll_idle() is polling
    * TIF_NEED_RESCHED */
#define TIF_MEMDIE 10
+#define TIF_FREEZE 19 /* is freezing for suspend */

/* as above, but as bit values */
#define _TIF_SYSCALL_TRACE (1<<TIF_SYSCALL_TRACE)
#define _TIF_SIGPENDING (1<<TIF_SIGPENDING)
#define _TIF_NEED_RESCHED (1<<TIF_NEED_RESCHED)
#define _TIF_RESTORE_SIGMASK (1<<TIF_RESTORE_SIGMASK)
#define _TIF_USEDFFPU (1<<TIF_USEDFFPU)
#define _TIF_POLLING_NRFLAG (1<<TIF_POLLING_NRFLAG)
+#define _TIF_FREEZE (1<<TIF_FREEZE)

```

```
#endif /* __KERNEL__ */
```

```
#endif /* _ASM_THREAD_INFO_H */
```

Index: linux-2.6.26-rc5-mm2/include/asm-sparc64/thread\_info.h

```
-----  
--- linux-2.6.26-rc5-mm2.orig/include/asm-sparc64/thread_info.h  
+++ linux-2.6.26-rc5-mm2/include/asm-sparc64/thread_info.h  
@@ -214,10 +214,11 @@ register struct thread_info *current_thr  
 *      an immediate value in instructions such as andcc.  
 */
```

```
#define TIF_ABI_PENDING 12
```

```
#define TIF_MEMDIE 13
```

```
#define TIF_POLLING_NRFLAG 14
```

```
+#define TIF_FREEZE 19 /* is freezing for suspend */
```

```
#define _TIF_SYSCALL_TRACE (1<<TIF_SYSCALL_TRACE)
```

```
#define _TIF_SIGPENDING (1<<TIF_SIGPENDING)
```

```
#define _TIF_NEED_RESCHED (1<<TIF_NEED_RESCHED)
```

```
#define _TIF_PERFCTR (1<<TIF_PERFCTR)
```

```
@@ -225,10 +226,11 @@ register struct thread_info *current_thr
```

```
#define _TIF_32BIT (1<<TIF_32BIT)
```

```
#define _TIF_SECCOMP (1<<TIF_SECCOMP)
```

```
#define _TIF_SYSCALL_AUDIT (1<<TIF_SYSCALL_AUDIT)
```

```
#define _TIF_ABI_PENDING (1<<TIF_ABI_PENDING)
```

```
#define _TIF_POLLING_NRFLAG (1<<TIF_POLLING_NRFLAG)
```

```
+#define _TIF_FREEZE (1<<TIF_FREEZE)
```

```
#define _TIF_USER_WORK_MASK ((0xff << TI_FLAG_WSAVED_SHIFT) | \  
 (_TIF_SIGPENDING | \  
  _TIF_NEED_RESCHED | _TIF_PERFCTR))
```

Index: linux-2.6.26-rc5-mm2/include/asm-um/thread\_info.h

```
-----  
--- linux-2.6.26-rc5-mm2.orig/include/asm-um/thread_info.h  
+++ linux-2.6.26-rc5-mm2/include/asm-um/thread_info.h  
@@ -67,15 +67,17 @@ static inline struct thread_info *curren  
 */
```

```
#define TIF_RESTART_BLOCK 4
```

```
#define TIF_MEMDIE 5
```

```
#define TIF_SYSCALL_AUDIT 6
```

```
#define TIF_RESTORE_SIGMASK 7
```

```
+#define TIF_FREEZE 19 /* is freezing for suspend */
```

```
#define _TIF_SYSCALL_TRACE (1 << TIF_SYSCALL_TRACE)
```

```
#define _TIF_SIGPENDING (1 << TIF_SIGPENDING)
```

```
#define _TIF_NEED_RESCHED (1 << TIF_NEED_RESCHED)
```

```
#define _TIF_POLLING_NRFLAG (1 << TIF_POLLING_NRFLAG)
```

```
#define _TIF_MEMDIE (1 << TIF_MEMDIE)
```

```

#define _TIF_SYSCALL_AUDIT (1 << TIF_SYSCALL_AUDIT)
#define _TIF_RESTORE_SIGMASK (1 << TIF_RESTORE_SIGMASK)
+#define _TIF_FREEZE (1 << TIF_FREEZE)

#endif
Index: linux-2.6.26-rc5-mm2/include/asm-xtensa/thread_info.h
=====
--- linux-2.6.26-rc5-mm2.orig/include/asm-xtensa/thread_info.h
+++ linux-2.6.26-rc5-mm2/include/asm-xtensa/thread_info.h
@@ -132,18 +132,20 @@ static inline struct thread_info *current
#define TIF_SINGLESTEP 3 /* restore singlestep on return to user mode */
#define TIF_IRET 4 /* return with iret */
#define TIF_MEMDIE 5
#define TIF_RESTORE_SIGMASK 6 /* restore signal mask in do_signal() */
#define TIF_POLLING_NRFLAG 16 /* true if poll_idle() is polling TIF_NEED_RESCHED */
+#define TIF_FREEZE 19 /* is freezing for suspend */

#define _TIF_SYSCALL_TRACE (1<<TIF_SYSCALL_TRACE)
#define _TIF_SIGPENDING (1<<TIF_SIGPENDING)
#define _TIF_NEED_RESCHED (1<<TIF_NEED_RESCHED)
#define _TIF_SINGLESTEP (1<<TIF_SINGLESTEP)
#define _TIF_IRET (1<<TIF_IRET)
#define _TIF_POLLING_NRFLAG (1<<TIF_POLLING_NRFLAG)
#define _TIF_RESTORE_SIGMASK (1<<TIF_RESTORE_SIGMASK)
+#define _TIF_FREEZE (1<<TIF_FREEZE)

#define _TIF_WORK_MASK 0x0000FFFE /* work to do on interrupt/exception return */
#define _TIF_ALLWORK_MASK 0x0000FFFF /* work to do on any return to u-space */

/*
--

```

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

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Subject: Re: [patch 1/4] Container Freezer: Add TIF\_FREEZE flag to all architectures

Posted by [Pavel Machek](#) on Tue, 24 Jun 2008 19:24:04 GMT

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On Tue 2008-06-24 06:58:24, Matt Helsley wrote:

> From: Cedric Le Goater <clg@fr.ibm.com>

> Subject: [patch 1/4] Container Freezer: Add TIF\_FREEZE flag to all architectures

>

> This patch is the first step in making the refrigerator() available

> to all architectures, even for those without power management.  
>  
> The purpose of such a change is to be able to use the refrigerator()  
> in a new control group subsystem which will implement a control group  
> freezer.  
>  
> Signed-off-by: Cedric Le Goater <clg@fr.ibm.com>  
> Signed-off-by: Matt Helsley <matthltc@us.ibm.com>  
> Tested-by: Matt Helsley <matthltc@us.ibm.com>

ACK.

--

(english) <http://www.livejournal.com/~pavelmachek>

(cesky, pictures) <http://atrey.karlin.mff.cuni.cz/~pavel/picture/horses/blog.html>

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Containers mailing list

[Containers@lists.linux-foundation.org](mailto:Containers@lists.linux-foundation.org)

<https://lists.linux-foundation.org/mailman/listinfo/containers>

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