
Subject: [RFC][PATCH 1/5] Container Freezer: Add TIF_FREEZE flag to all architectures

Posted by [Matt Helsley](#) on Thu, 24 Apr 2008 06:47:57 GMT

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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.

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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-v850/thread_info.h  | 2 ++
include/asm-xtensa/thread_info.h | 2 ++
13 files changed, 25 insertions(+)
```

Index: linux-2.6.25-mm1/include/asm-alpha/thread_info.h

=====

--- linux-2.6.25-mm1.orig/include/asm-alpha/thread_info.h

+++ linux-2.6.25-mm1/include/asm-alpha/thread_info.h

@@ -74,16 +74,18 @@ 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-2.6.25-mm1/include/asm-avr32/thread_info.h
=====
--- linux-2.6.25-mm1.orig/include/asm-avr32/thread_info.h
+++ linux-2.6.25-mm1/include/asm-avr32/thread_info.h
@@ -86,10 +86,11 @@ 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)
@@ -97,10 +98,11 @@ 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-2.6.25-mm1/include/asm-cris/thread_info.h
=====
--- linux-2.6.25-mm1.orig/include/asm-cris/thread_info.h
+++ linux-2.6.25-mm1/include/asm-cris/thread_info.h
@@ -84,17 +84,19 @@ 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-2.6.25-mm1/include/asm-h8300/thread_info.h
=====
--- linux-2.6.25-mm1.orig/include/asm-h8300/thread_info.h
+++ linux-2.6.25-mm1/include/asm-h8300/thread_info.h
@@ -90,17 +90,19 @@ 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-2.6.25-mm1/include/asm-m68k/thread_info.h
=====
--- linux-2.6.25-mm1.orig/include/asm-m68k/thread_info.h
+++ linux-2.6.25-mm1/include/asm-m68k/thread_info.h
@@ -56,7 +56,8 @@ 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

#endif /* _ASM_M68K_THREAD_INFO_H */
Index: linux-2.6.25-mm1/include/asm-m68knommu/thread_info.h

```

```

=====
--- linux-2.6.25-mm1.orig/include/asm-m68knommu/thread_info.h
+++ linux-2.6.25-mm1/include/asm-m68knommu/thread_info.h
@@ -86,16 +86,18 @@ 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-2.6.25-mm1/include/asm-parisc/thread_info.h
=====
--- linux-2.6.25-mm1.orig/include/asm-parisc/thread_info.h
+++ linux-2.6.25-mm1/include/asm-parisc/thread_info.h
@@ -60,17 +60,19 @@ 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-2.6.25-mm1/include/asm-s390/thread_info.h
=====

```

```

--- linux-2.6.25-mm1.orig/include/asm-s390/thread_info.h
+++ linux-2.6.25-mm1/include/asm-s390/thread_info.h
@@ -99,10 +99,11 @@ 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)
@@ -111,10 +112,11 @@ static inline struct thread_info *current
#define _TIF_SINGLE_STEP (1<<TIF_SINGLE_STEP)
#define _TIF_MCKK_PENDING (1<<TIF_MCKK_PENDING)
#define _TIF_USEDFPU (1<<TIF_USEDFPU)
#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-2.6.25-mm1/include/asm-sparc/thread_info.h

```

=====
--- linux-2.6.25-mm1.orig/include/asm-sparc/thread_info.h
+++ linux-2.6.25-mm1/include/asm-sparc/thread_info.h
@@ -135,17 +135,19 @@ BTFIXUPDEF_CALL(void, free_thread_info,
#define TIF_USEDFPU 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_USEDFPU (1<<TIF_USEDFPU)
#define _TIF_POLLING_NRFLAG (1<<TIF_POLLING_NRFLAG)
+#define _TIF_FREEZE (1<<TIF_FREEZE)

#endif /* __KERNEL__ */

```

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

```
Index: linux-2.6.25-mm1/include/asm-sparc64/thread_info.h
```

```
=====
--- linux-2.6.25-mm1.orig/include/asm-sparc64/thread_info.h
+++ linux-2.6.25-mm1/include/asm-sparc64/thread_info.h
@@ -234,10 +234,11 @@ 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)
@@ -247,10 +248,11 @@ register struct thread_info *current_thr
#define _TIF_SECCOMP (1<<TIF_SECCOMP)
#define _TIF_SYSCALL_AUDIT (1<<TIF_SYSCALL_AUDIT)
#define _TIF_RESTORE_SIGMASK (1<<TIF_RESTORE_SIGMASK)
#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_RESTORE_SIGMASK | \
     _TIF_NEED_RESCHED | _TIF_PERFCTR))
```

```
Index: linux-2.6.25-mm1/include/asm-um/thread_info.h
```

```
=====
--- linux-2.6.25-mm1.orig/include/asm-um/thread_info.h
+++ linux-2.6.25-mm1/include/asm-um/thread_info.h
@@ -81,15 +81,17 @@ 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-2.6.25-mm1/include/asm-v850/thread_info.h

```
=====
--- linux-2.6.25-mm1.orig/include/asm-v850/thread_info.h
+++ linux-2.6.25-mm1/include/asm-v850/thread_info.h
@@ -80,16 +80,18 @@ struct thread_info {
#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)
```

```
/* Size of kernel stack for each process. */
#define THREAD_SIZE 0x2000
```

Index: linux-2.6.25-mm1/include/asm-xtensa/thread_info.h

```
=====
--- linux-2.6.25-mm1.orig/include/asm-xtensa/thread_info.h
+++ linux-2.6.25-mm1/include/asm-xtensa/thread_info.h
@@ -136,18 +136,20 @@ 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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