Status of Preempt-RT and why there is no roadmap

Thomas Gleixner

ELC 2011 - SFO
Latest stable

2.6.33

- Difficult stabilization phase
- Recent update to longterm
Linux Real-Time status

What is mainline already?

- High resolution timers
- Mutex infrastructure
- Generic interrupt handling infrastructure
- Priority inheritance for user space mutexes
- Preemptible and hierarchical RCU
- ...

Thomas Gleixner
Linux Real-Time status

What is mainline already?

- Threaded interrupt handlers
- Forced threaded irq/softirq
- Tracing infrastructure
- Lock dependency validator
- Locking namespace and infrastructure
- Lot’s of tiny infrastructure bits and pieces
Linux Real-Time status

What’s left?

- Preemptible mmu gather (scheduled for .40)
- PerCPU modifications
- Preemtible memory and page allocator
- Soft-interrupt modifications
- Sleeping spinlocks
Linux Real-Time status

When is the merge to mainline done?

The realtime patch set will be mostly merged by the end of the year.


Thomas Gleixner
Linux Real-Time status

When is the merge to mainline done?

_The realtime patch set will be mostly merged by the end of the year._

Linux Real-Time status

When is the merge to mainline done?

- Piece wise merging is an ongoing effort
- Coming up with new fancy things in the same rate
- As always it will be done by end of next year
When is the merge to mainline done?

*The RT people have actually been pretty good at slipping their stuff in, in small increments, and always with good reasons for why they aren’t crazy.*

Linus 2010
Linux Real-Time development

Why is there no RT for kernel version X?

- Lack of man power
- Long stabilization phases
- Upstream work and merging has priority
Linux Real-Time development

Who is involved?

- About 20 active contributors
- Large testing efforts at RedHat, IBM, OSADL and Linutronix
Linux Real-Time development

Future features
- Non priority based scheduling algorithms
- Full CPU isolation
- Your fancy new idea
Linux Real-Time development

**Why there is no roadmap?**
- We do not use PowerPoint
Linux Real-Time development

Why there is no roadmap?

- We do not use PowerPoint
- We are kernel developers
Linux Real-Time development

Why there is no roadmap?

- We do not use PowerPoint
- We are kernel developers
- We are looking for the road to mainline ourself
Linux Real-Time development

Why there is no roadmap?
- We do not use PowerPoint
- We are kernel developers
- We are looking for the road to mainline ourself
- But ...
Linux Real-Time development

Here is a roadmap
Linux Real-Time development

Here is a roadmap

San Francisco
Alcatraz Island
Linux Real-Time

Famous last words

And yeah, I still think the hard-RT people are mostly crazy.

Linus - 2010