Summary

- Speaker presentation
- Why Google needs tracing
- Tracing requirements
- Ktrace vs LTTng
- Development plans
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- LTTng maintainer since 2005
- IBM Research intern summer 2006
- Google intern winter 2007
Why Google needs tracing?

- Real-life examples OLS2007
  - Occasional poor latencies for I/O write requests
  - Race condition in OOM killer
Tracing requirements

- Tracing on production systems
- Very low impact when disabled
  - Low impact when enabled
- Disk dump and flight recorder modes
- Triggers to gather the data
- Use memory as efficiently as possible
Ktrace vs LTTng

- Ktrace is a home-made tracer made to fit Google's needs
  - Compact buffers
  - Low impact syscall tracing
- LTTng is a more generic and efficient alternative
  - Suitable for mainlining
  - Port Ktrace features to LTTng
Development plans

- Integrate LTTng to the Google platform
- Aim at LTTng mainlining
  - Markers (already in 2.6.24)
  - Tracer
LTTng mainlining plans

- Local cmpxchg
  - in mainline / -mm
- Markers support for multiple probes
  - in -mm
  - Steven Rostedt latency tracer (-rt tree)
- Text Edit Lock
- Immediate values
LTTng mainlining plans

- Instrumentation
- Kernel Trace thread flag
- Timestamping
- LTTng buffering
- LTTng format string parser
- Statedump
- Linux Kernel Markers /proc interface
Questions ?