Extensible trace analysis using the Tracing and Monitoring Framework

Alexandre Montplaisir, Ericsson – Tracing Summit 2012
About me

› Research associate at École Polytechnique de Montréal
› Working in close collaboration with the tracing team at Ericsson
› Involved in the LTTng project

alexandre.montplaisir@polymtl.ca
Overview

› The Eclipse Linux Tools project
› The LTTng integration
   - Demo
› The TMF framework
   - Demo: viewing a custom UST trace
Linux Tools project at Eclipse

› Collection of wrappers around Linux tools:
  - GProf
  - GCov
  - LTTng
  - OProfile
  - SystemTap
  - Valgrind
  - ...

› Linux Tools 1.0 released last June

http://www.eclipse.org/linuxtools/
LTTng sub-project

› Started off as a visualization tool for LTTng 0.x
› The generic TMF framework emerged over time.
   - Tracer-agnostic analysis
   - LTTng 2.0 support was added last June.
   - Also used internally for Ericsson-specific trace formats.

› It's currently the only OSS graphical analysis tool for LTTng 2.0 kernel traces.
LTTng subproject

Composed of three separate features:

› CTF
  - A reader for the CTF format implemented in Java
  - No need for native C libraries

› LTTng2
  - The LTTng 2.0 integration (control + analysis)
  - LTTng 0.x support was recently dropped in git master

› TMF
  - The generic framework
Demo 1
Viewing LTTng 2.0 kernel traces
Tracing and Monitoring Framework

› Base framework to support multiple trace types
  - ITmfTrace, ITmfEvent, ITmfTimestamp, etc
  - Generic state system
  - Basic views that can be extended/adapted

› CTF format is supported out of the box.
› Other trace formats would require writing a parser.
Tracing and Monitoring Framework

› Sequence Diagram:

[Sequence Diagram Image]
Demo 2
Implementing a view for a new trace type
What's planned next

› Integrating the CTF writer/reader work
  - Java tracer?
› Improving the statistics and histogram
› Improving the API for extending views
  - Abstract Gantt chart view
  - Call stack view
  - etc.
› Anything else our users wish!
References

› http://lttng.org/eclipse

› Mailing list:
  - linuxtools-dev@eclipse.org

› IRC:
  - #eclipse-linux on Freenode
Questions ?