EfficiOS - May 2016
LTTng & Trace Compass
Progress Report

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LTTng 2.8 (release 05/2016)

- Shared object base address dump for mapping event to source code,
- Java Application Contexts,
  - Dynamic typing,
  - Enumeration type in LTTng-UST declarative Tracepoint probes,
- Discarded Events and Lost Packets Statistics,
- Metadata regeneration (for NTP major adjustments),
- Solaris 10 and 11 ports,
**LTTng 2.8 (release 05/2016)**

- New contexts for real-time tracing,
- Overhauled Man pages.
Upcoming in LTTng 2.9

- Gather detailed arguments for poll, epoll, select system calls in lttng-modules,
  - Custom declarative tracepoint probe code,
  - Variant, structure, enumeration support,
- LTTng session templates,
- Snapshot ring-buffer in discard mode
  - Effectively a “single-shot” mode,
- New state dump lttng command,
Upcoming in LTTng 2.9

- LTTng modules/Linux: instrument sched_set_prio,
- Performance Monitoring Unit counters on 32-bit ARM, for both lttng-modules and lttng-ust,
- Custom counters support (raw value) on 32-bit ARM,
- Improve speed of LTTng-UST on 32-bit ARM:
  - Improve getcpu speed (cpu_id cache),
  - Restartable critical sections,
Trace Compass

• In Neon:
  – Integration between Trace Compass and LTTng Analyses,
  – Mapping LTTng-UST events to source code,
  – Address PID 0 modeling problem,
• After Neon:
  – Stream intersection mode,
  – Show only active threads in Control Flow View,
  – Trace Trimming using Babeltrace,
  – Allow multiple concurrent instances of Control Flow and Resource Views, pin/unpin,
  – Filter to show only threads on a give CPU in Control Flow View,
  – ...

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Trace Compass

• After Neon:
  – Control Flow View refactoring,
  – Line thickness configurable in Control Flow View,
  – Goto next event cursor per-thread (in control flow view).
LTTng Analyses in Trace Compass

- Machine Interface to call external analysis scripts from Trace Compass GUI,
- JSON formatted layout to export analysis results into Trace Compass,
  - Tables,
  - Bar charts,
  - Scatter charts,
  - User configurable,
  - Etc...
BareCTF

- Port to 64-core Parallella (if we receive the board),
- Include support,
- Tracepoint instrumentation API.
Babeltrace Progress/Roadmap

- Babeltrace 1.4 (05/2016)
  - Stream intersection,
  - Mapping events to source code,
  - Warn on lost packets,
Babeltrace Progress/Roadmap

• Babeltrace 2.0
  – Plugin system overhaul,
  – Intermediate Representation,

• Babeltrace 2.1
  – Event filtering,
  – Add support for CTF 2.0,
  – Keep backward compability with CTF 1.8.
CTF 2.0

- Goal: transition from own metadata grammar (TSDL) to JSON,
- Will be easier to extend, and easier to parse by alternative CTF reader implementations,
- Add type attributes for formatting,
- Binary trace data stream will be unchanged,
- Will be introduced with Babeltrace 2.1.
Tracing External Projects

- CTF integration for Titan logger,
- Tracing RTEMS using BareCTF (GSoC project).
Workgroups and Events

- Diagnostic and Monitoring Workgroup
  - http://diamon.org
- Tracing Summit 2016
  - http://tracingsummit.org