LTTng
Brian Finelli
Purpose

- Linux Trace Toolkit - next generation
- Linux Kernel Tracer
  - Like logging low level events
- Allows for tracing system calls, interrupt requests, other kernel events
- Also has user space tracing
- LTTng has other useful modules as well
Setup

- `sudo apt-get install lttng-tools`
- Also has git repositories for tools, babeltrace, etc.
Setup

● list kernel events:
  ○ lttng list -k

● Create a session
  ○ lttng create sessionName

● specify events to trace:
  ○ lttng enable-event … -k
lttng@lttng-Desktop:~$ sudo usermod -aG tracing lttng
[sudo] password for lttng:
lttng@lttng-Desktop:~$ su lttng
Session mySession created.
Traces will be written in /home/lttng/lttng-traces/mySession-20120730-115454
lttng@lttng-Desktop:~$ lttng enable-event sched_switch -k

Usage: lttng [OPTIONS] <COMMAND>

Options:
  -h, --help                      Show this help
  --list-options                 Simple listing of lttng options
  --list-commands               Simple listing of lttng commands
  -v, --verbose                  Increase verbosity
  -q, --quiet                    Quiet mode
  -g, --group NAME               Unix tracing group name. (default: lttng)
  -t: tracing
  -n, --no-sessiond             Don't spawn a session daemon
  --sessiond-path PATH          Session daemon full path

Commands:
  add-context  Add context to event and/or channel
  calibrate    Quantify LTTng overhead
  destroy      Tear down tracing session
  create       Create tracing session
  list          List possible tracing options
  set-session  Set current session name
  start         Start tracing
  stop          Stop tracing
  version       Show version information
  view          Start trace viewer

Each command also has its own -h, --help option.

Please see the lttng(1) man page for full documentation.
See http://lttng.org for updates, bug reports and news.
- `lttng start mySession`
- `lttng stop mySession`
lttng@lttng-Desktop:~$ sudo usermod -aG tracing lttng
[sudo] password for lttng:
Password:
lttng@lttng-Desktop:~$ su lttng
Session mySession created.
Traces will be written in /home/lttng/lttng-traces/mySession-20120730-115454
lttng@lttng-Desktop:~$ lttng enable-event sched_switch -k
kernel event sched_switch created in channel channel0
lttng@lttng-Desktop:~$ lttng enable-event -a -k
All kernel events are enabled in channel channel0
lttng@lttng-Desktop:~$ lttng start

Usage: lttng [OPTIONS] <COMMAND>

Options:
- h, --help
  Show this help
- i, --list-options
  Simple listing of lttng options
- l, --list-commands
  Simple listing of lttng commands
- v, --verbose
  Increase verbosity
- q, --quiet
  Quiet mode
- g, --group NAME
  Unix tracing group name. (default)
t: tracing
- n, --no-session
  Don't spawn a session daemon
  --sessiond-path PATH
  Session daemon full path

Commands:
  add-context
  Add context to event and/or channel
  calibrate
  Quantify LTtng overhead
  create
  Create tracing session
  destroy
  Tear down tracing session
  enable-channel
  Enable tracing channel
  enable-event
  Enable tracing event
  disable-channel
  Disable tracing channel
  disable-event
  Disable tracing event
  list
  List possible tracing options
  set-session
  Set current session name
  start
  Start tracing
  stop
  Stop tracing
  version
  Show version information
  view
  Start trace viewer

Each command also has its own -h, --help option.

Please see the lttng(1) man page for full documentation.
See http://lttng.org for updates, bug reports and news.

lttng@lttng-Desktop:~$
lttng@lttng-Desktop:$ sudo usermod -aG tracing lttng
[sudo] password for lttng:
lttng@lttng-Desktop:$ su lttng
Password:
lttng@lttng-Desktop:$ lttng create mySession
Session mySession created.
Traces will be written in /home/lttng/lttng-traces/mySession-20120730-115454
lttng@lttng-Desktop:$ lttng enable-event sched_switch -k
kernel event sched_switch created in channel channel0
lttng@lttng-Desktop:$ lttng enable-event -a -k
All kernel events are enabled in channel channel0
lttng@lttng-Desktop:$ lttng start
Tracing started for session mySession
lttng@lttng-Desktop:$ lttng stop
Tracing stopped for session mySession
lttng@lttng-Desktop:$

Usage:
lttng [OPTIONS] <COMMAND>

Options:
-h, --help        Show this help
--list-options    Simple listing of lttng options
--list-commands  Simple listing of lttng commands
-v, --verbose     Increase verbosity
-q, --quiet       Quiet mode
-g, --group NAME  Unix tracing group name. (default: tracing)
-n, --no-sessiond Don't spawn a session daemon
-sessioend-path   Session daemon full path

Commands:
add-context       Add context to event and/or channel
calibrate         Quantify LTTng overhead
create            Create tracing session
destroy           Tear down tracing session
enable-channel    Enable tracing channel
enable-event      Enable tracing event
disable-channel  Disable tracing channel
disable-event    Disable tracing event
list              List possible tracing options
set-session       Set current session name
start             Start tracing
stop              Stop tracing
version           Show version information
view              Start trace viewer

Each command also has its own -h, --help option.

Please see the lttng(1) man page for full documentation. See http://lttng.org for updates, bug reports and news.
• Litng view mySession
• Litng destroy mySession
sched_stat_runtime: { cpu_id = 0 }, { lttng@lttn-g-Desktop:-$ lttng -h
Comm = "lttng-sesslo", tid = 7828, runtime = 31092, vruntime = 648619376LTng Trace Control 2.0.1 - Anned'dale
} [11:58:53.914599326] (+0.000002530) sched_stat_wait: { cpu_id = 0 }, { comusage: lttng [OPTIONS] <COMMAND>
m = "lttng", tid = 8213, delay = 31092 )
[11:58:53.914601262] (+0.000001936) sched_switch: { cpu_id = 0 }, { prev_options:
Comm = "lttng-sesslo", prev_tid = 7828, prev_prio = 30, prev_state = 1, next_comm = "lttng", next_tid = 8213, next_prio = 20
} [11:58:53.914614099] (+0.000001267) exit_syscall: { cpu_id = 0 }, { ret = 0 }
[11:58:53.914616157] (+0.000002058) sys_getuid: { cpu_id = 0 }, { }
[11:58:53.914616672] (+0.000000515) sys_geteuid: { cpu_id = 0 }, { ret = 0 }
[11:58:53.914618099] (+0.000000342) sys_sendmsg: { cpu_id = 0 }, { fd = 3, msg = 0x7F8100000000, flags = 0 }
[11:58:53.914670963] (+0.000005168) sched_stat_sleep: { cpu_id = 0 }, { comm = "lttng-sesslo", tid = 7828, delay = 71110 }
[11:58:53.914672191] (+0.000001228) sched_wakeup: { cpu_id = 0 }, { comm = "lttng-sesslo", tid = 7828, prio = 120, success = 1, target_cpu = 0 }
[11:58:53.914674237] (+0.000002046) sched_stat_runtime: { cpu_id = 0 }, { comm = "lttng-sesslo", tid = 7828, runtime = 71110, vruntime = 1746552372 }
[11:58:53.914675188] (+0.000000951) sched_stat_wait: { cpu_id = 0 }, { comm = "lttng-sesslo", tid = 7828, delay = 0 }
[11:58:53.914675998] (+0.000000802) sched_switch: { cpu_id = 0 }, { prev_options:
Comm = "lttng-sesslo", prev_tid = 7828, prev_prio = 20, prev_state = 0, next_comm = "lttng", next_tid = 8213, next_prio = 20
} [11:58:53.914706963] (+0.000003097) exit_syscall: { cpu_id = 0 }, { ret = 8784 }
[11:58:53.914715666] (+0.000008703) sys_ioctl: { cpu_id = 0 }, { fd = 101, cmd = 62988, arg = 0 }
[11:58:53.914722291] (+0.000006625) exit_syscall: { cpu_id = 0 }, { ret = 0 }
[11:58:53.914723983] (+0.000001692) sys_ioctl: { cpu_id = 0 }, { fd = 26, cmd = 62988, arg = 139999287980856 }

-h, --help Show this help
--list-options Simple listing of lttng options
--list-commands Simple listing of lttng commands
-v, --verbose Increase verbosity
-q, --quiet Quiet mode
-g, --group NAME Unix tracing group name. (default: tracing)
-n, --no-session Don't spawn a session daemon
-sesslo-path PATH Session daemon full path

Commands:
add-context Add context to event and/or channel
calibrate Quantify LTpng overhead
create Create tracing session
destroy Tear down tracing session
enable-channel Enable tracing channel
enable-event Enable tracing event
disable-channel Disable tracing channel
disable-event Disable tracing event
list List possible tracing options
set-session Set current session name
start Start tracing
stop Stop tracing
version Show version information
view Start trace viewer

Each command also has its own -h, --help option.

Please see the lttng(1) man page for full documentation. See http://lttng.org for updates, bug reports and news.
Resources

https://lttng.org/
https://www.youtube.com/user/lttng