PostgreSQL & DTrace Lightning Talk

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Agenda

- Supported OS
- Existing probes
- How to add new probes
- Proposed new probes
- Demo

Supported OS

- Solaris
- OS X Leopard
- FreeBSD

Existing probes

- probe transaction__start(int);
- probe transaction__commit(int);
- probe transaction__abort(int);
- probe lwlock__acquire(int, int);
- probe lwlock__release(int);
- probe lwlock__startwait(int, int);
- probe lwlock__endwait(int, int);
- probe lwlock__condacquire(int, int);
- probe lwlock__condacquire__fail(int, int);
- probe lock__startwait(int, int);
- probe lock__endwait(int, int);

How to add new probes

- Three simple steps
  - > Add the probe definitions to src/backend/src/utils/probes.d
  - > Include pg_trace.h and insert a one-line probe macros at the desired locations in the source code
  - > Recompile and verify that the new probes are available

Proposed new probes

- query-parse-start (int, char *)
- query-parse-done (int, char *)
- query-plan-start ()
- query-plan-done ()
- query-execute-start ()
- query-execute-done ()
- query-statement-start (int, char *)
- query-statement-done (int, char *)
- dirty-buffer-write-start (int, int, int, int)
- dirty-buffer-write-done (int, int, int, int)
- buffer-write-start (int, int, int, int)
- buffer-write-done (int, int, int, int, int)
- sort-start (int, int, int, int, int)
- sort-done (int, long)
- buffer-read-start (int, int, int, int, int)

- buffer-read-done (int, int, int, int, int, int)
- buffer-hit ()
- buffer-miss ()
- wal-buffer-write-start ()
- wal-buffer-write-done ()
- checkpoint-start (int)
- checkpoint-done (int, int, int, int, int)
- idle-transaction-start (int, int)
- Idle-transaction-done ()
- deadlock-found ()
- deadlock-notfound (int)
- smgr-read-start (int, int, int, int)
- smgr-read-end (int, int, int, int, int, int)
- smgr-write-start (int, int, int, int)
- smgr-write-end (int, int, int, int, int, int)

Demo

Resources

- PostgreSQL 8.4dev online doc
  http://developer.postgresql.org/pgdocs/postgres/dynamic-trace.html

- Solaris DTrace doc
  http://wikis.sun.com/display/DTrace/Documentation

- Open Solaris DTrace community page
  http://www.opensolaris.org/os/community/dtrace/

- DTrace toolkit contains a lot of very useful scripts
  http://www.opensolaris.org/os/community/dtrace/dtracetoolkit/

Q & A