

Тестирование производительности разных пулеров сезон - "Лето-Осень 2019"

Чего тестировали:

1. Для тестирования внешних пулеров был взят релиз Postgresql 12.
2. Текущая master-ветка conn_proxu
3. Текущая DEV ветка EE11

Как тестировали:

По инструкциям от производителей собрали из исходников все версии Postgres и пулеров.

В меру сил и способностей настройки серверов сделали идентичными (конечно не без накладок, поэтому тесты затянулись).

Для всех пулеров сделали несколько серий тестов с разными размерами пула.

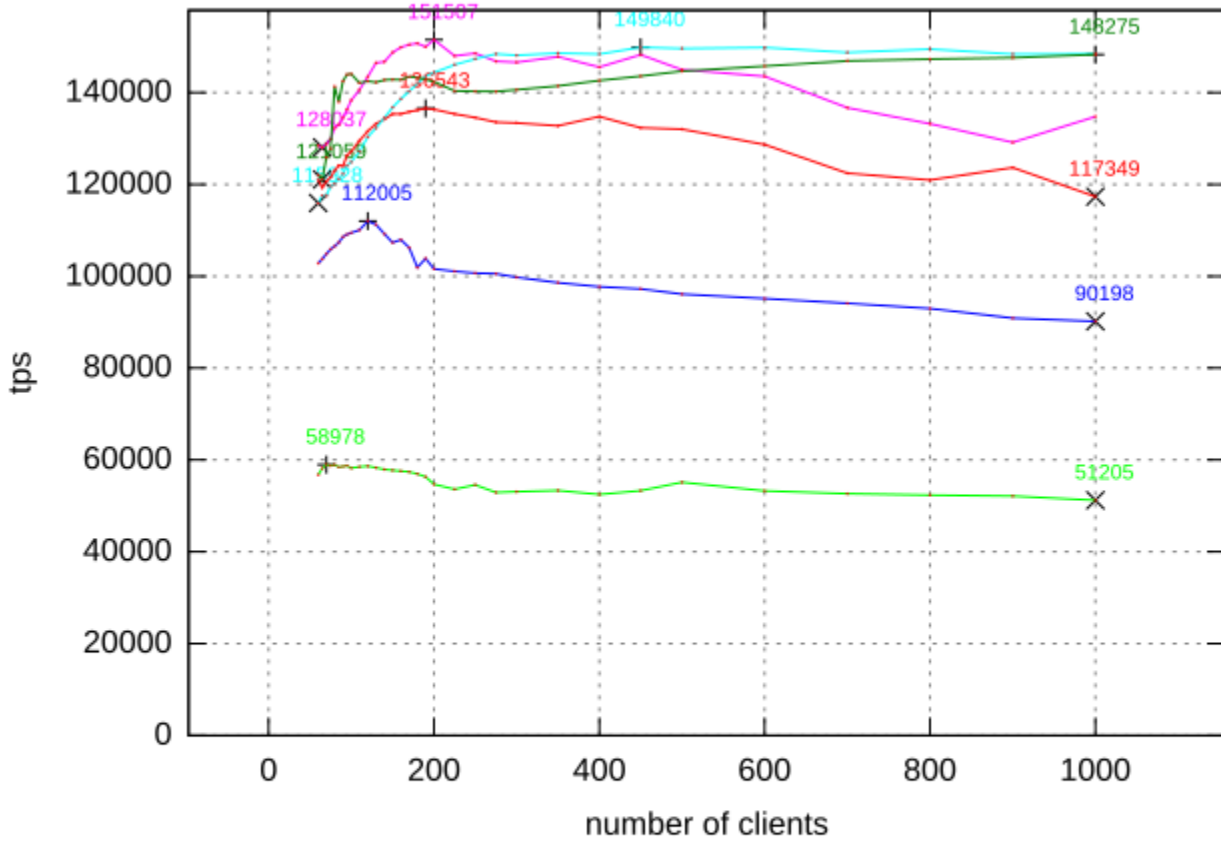
Тесты делали стандартные select, tpc-b и дополнительно yscb от Константина Книжника.

Из всех результатов для каждого пулера были выбраны наилучшие, которые и были добавлены на три общих графика для сравнения. Для наглядности добавлены результаты работы ванилы и энтерпрайза без пулера.

scaling factor - 1

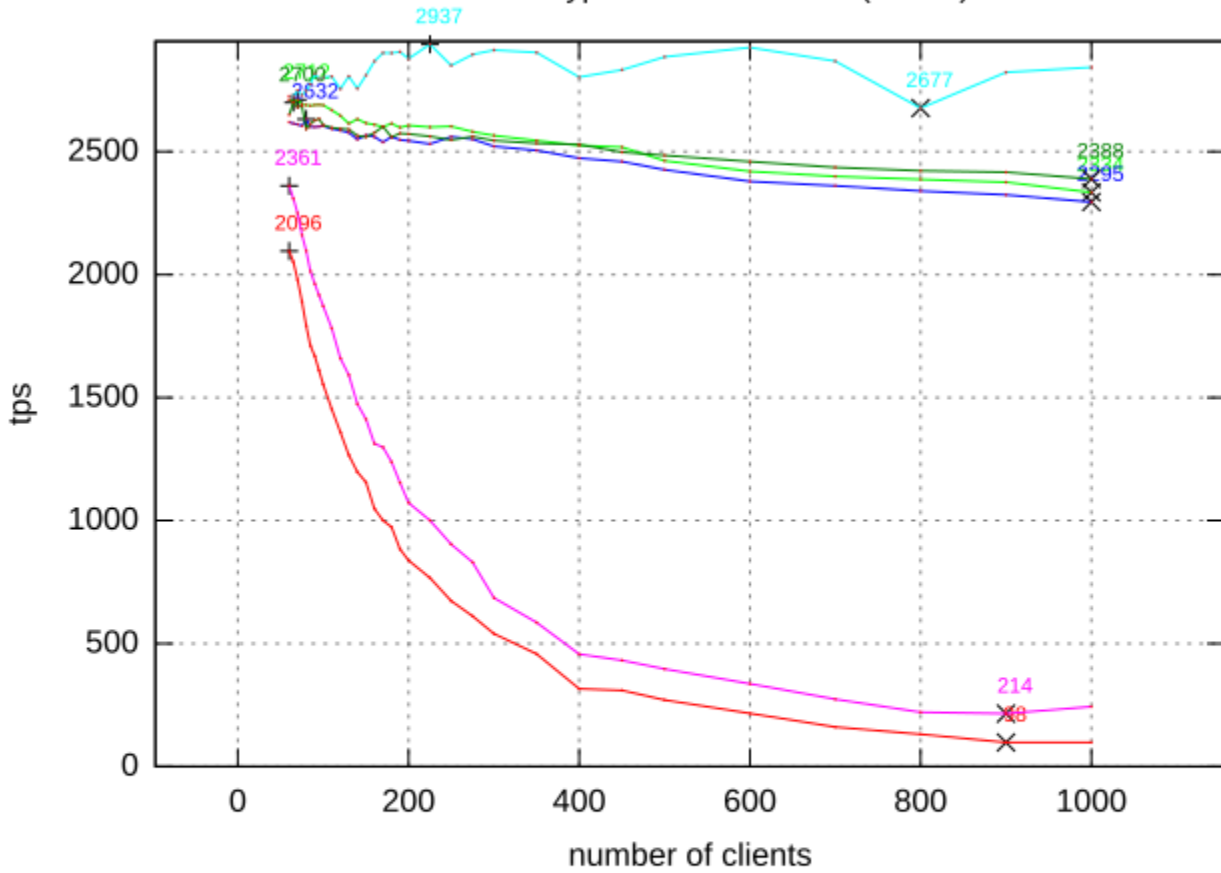
Сравнение результатов

transaction type: <builtin: select only>

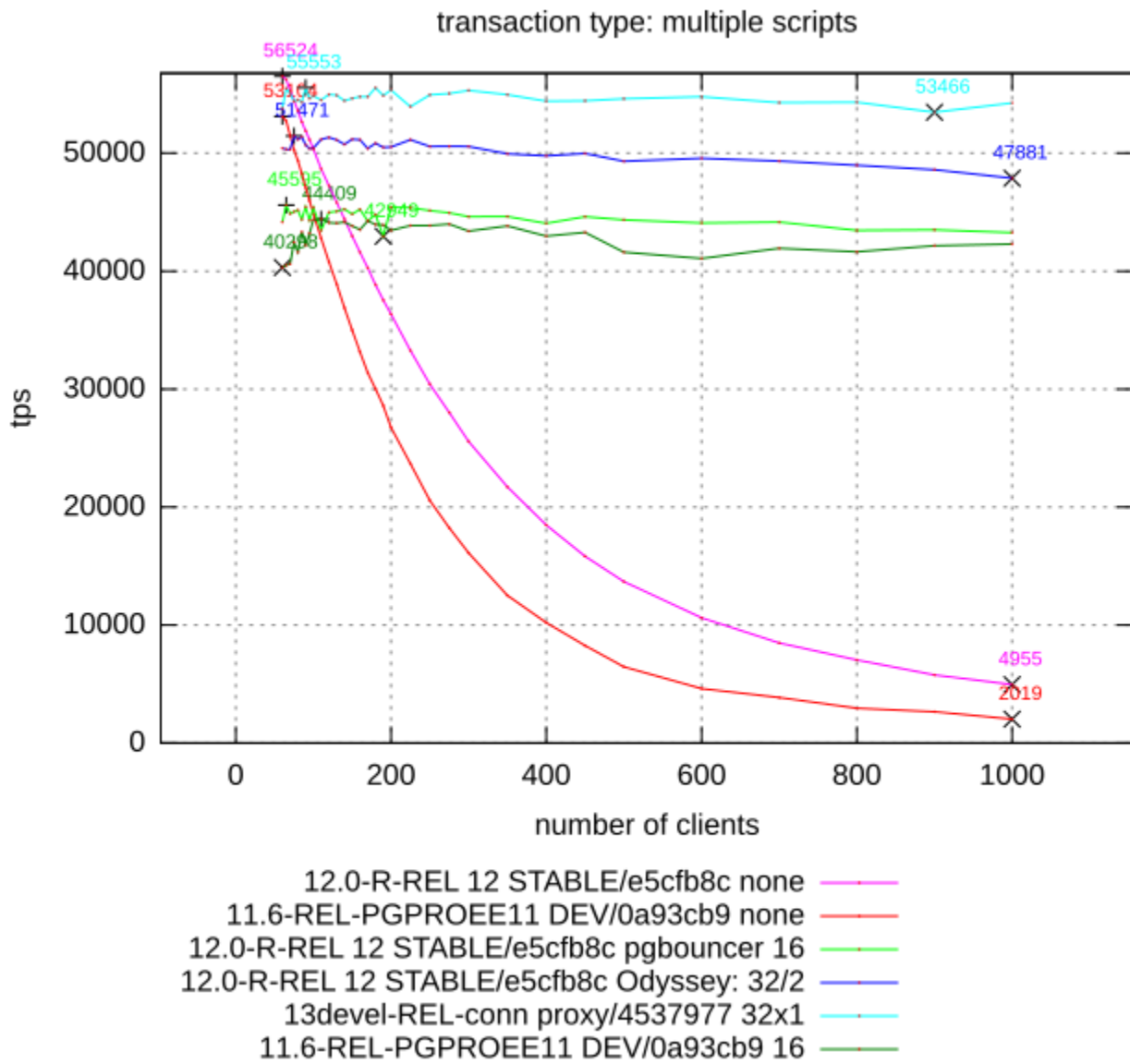


- 12.0-R-REL 12 STABLE/e5cfb8c none
- 11.6-REL-PGPROEE11 DEV/0a93cb9 none
- 12.0-R-REL 12 STABLE/e5cfb8c pgbouncer 16
- 12.0-R-REL 12 STABLE/e5cfb8c Odyssey: 64/4
- 13devel-REL-conn proxy/4537977 16x4
- 11.6-REL-PGPROEE11 DEV/0a93cb9 64

transaction type: <builtin: TPC-B (sort of)>



- 12.0-R-REL 12 STABLE/e5cfb8c none
- 11.6-REL-PGPROEE11 DEV/0a93cb9 none
- 12.0-R-REL 12 STABLE/e5cfb8c pgbouncer 16
- 12.0-R-REL 12 STABLE/e5cfb8c Odyssey: 16/1
- 13devel-REL-conn proxy/4537977 4x4
- 11.6-REL-PGPROEE11 DEV/0a93cb9 16

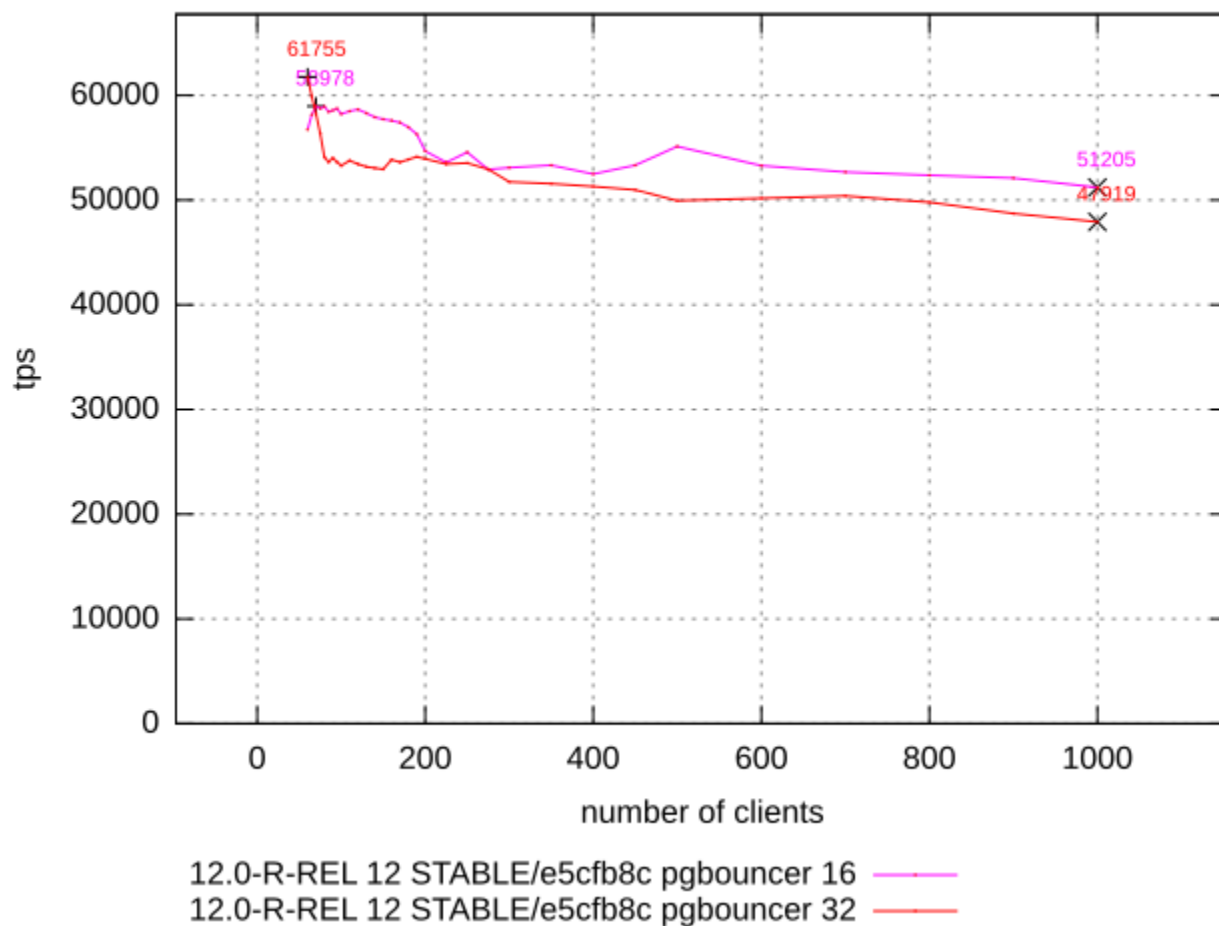


[sfl_ycsb.svg](#)

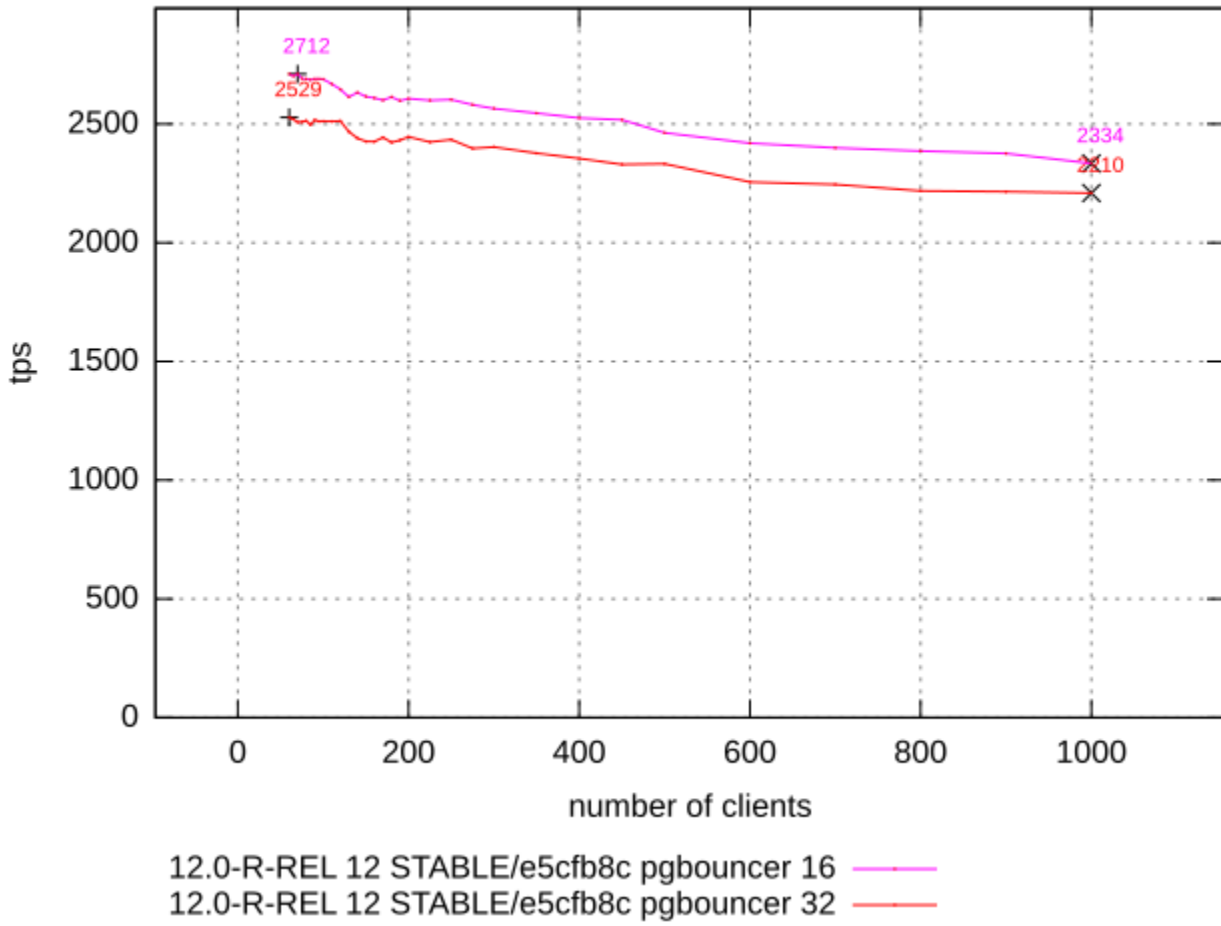
Результаты для разных настроек пулеров

pgbouncer

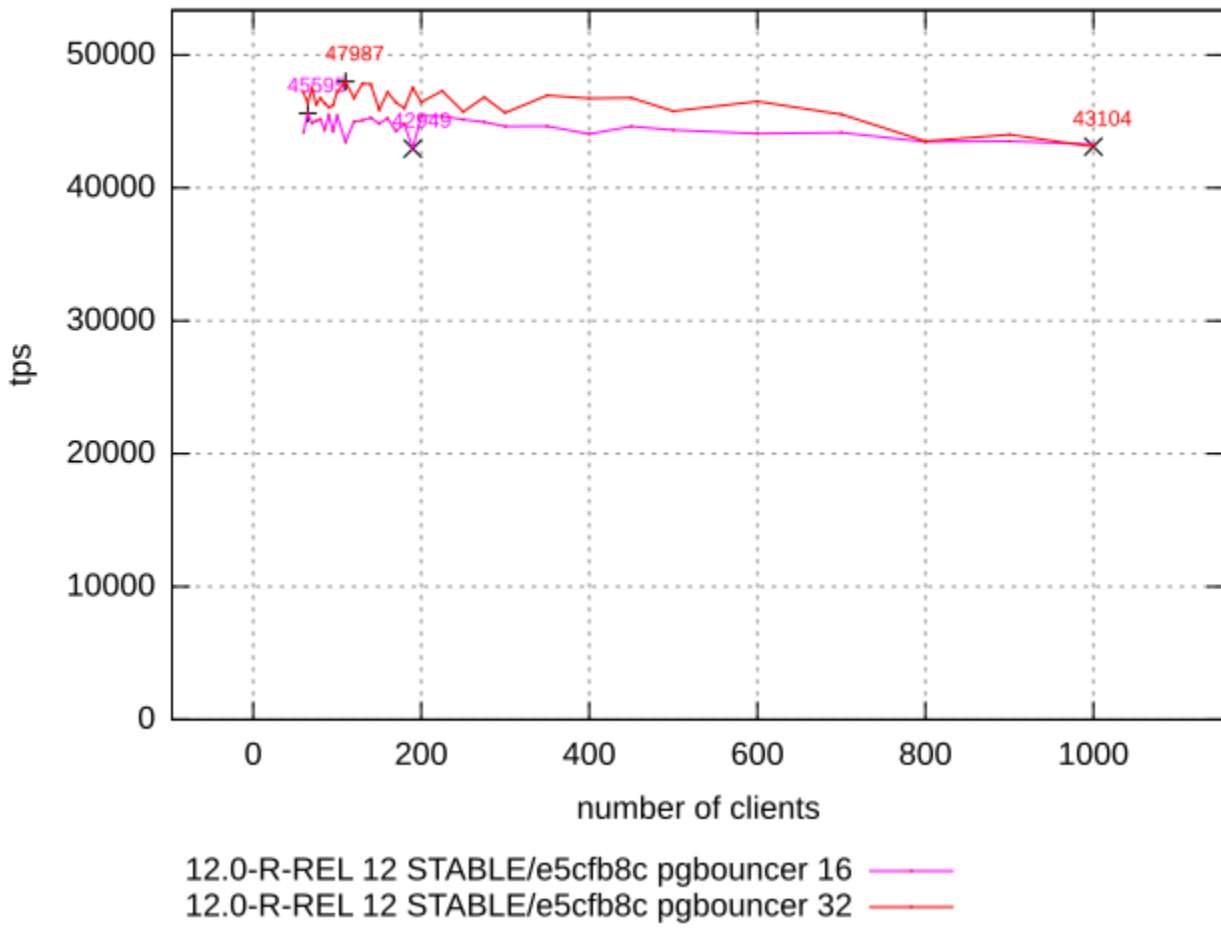
transaction type: <builtin: select only>



transaction type: <builtin: TPC-B (sort of)>



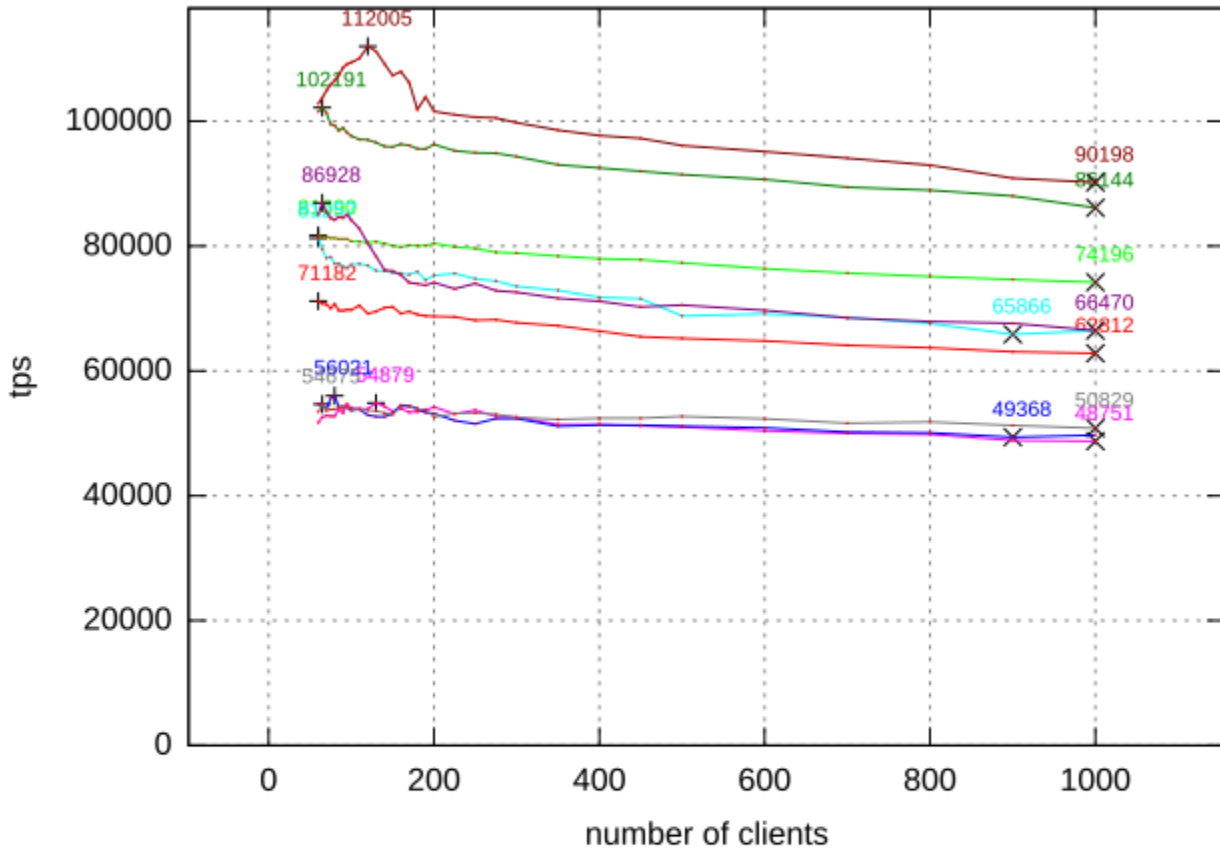
transaction type: multiple scripts



[sfl_1575012061-BOUNCER-yesb.svg](#)

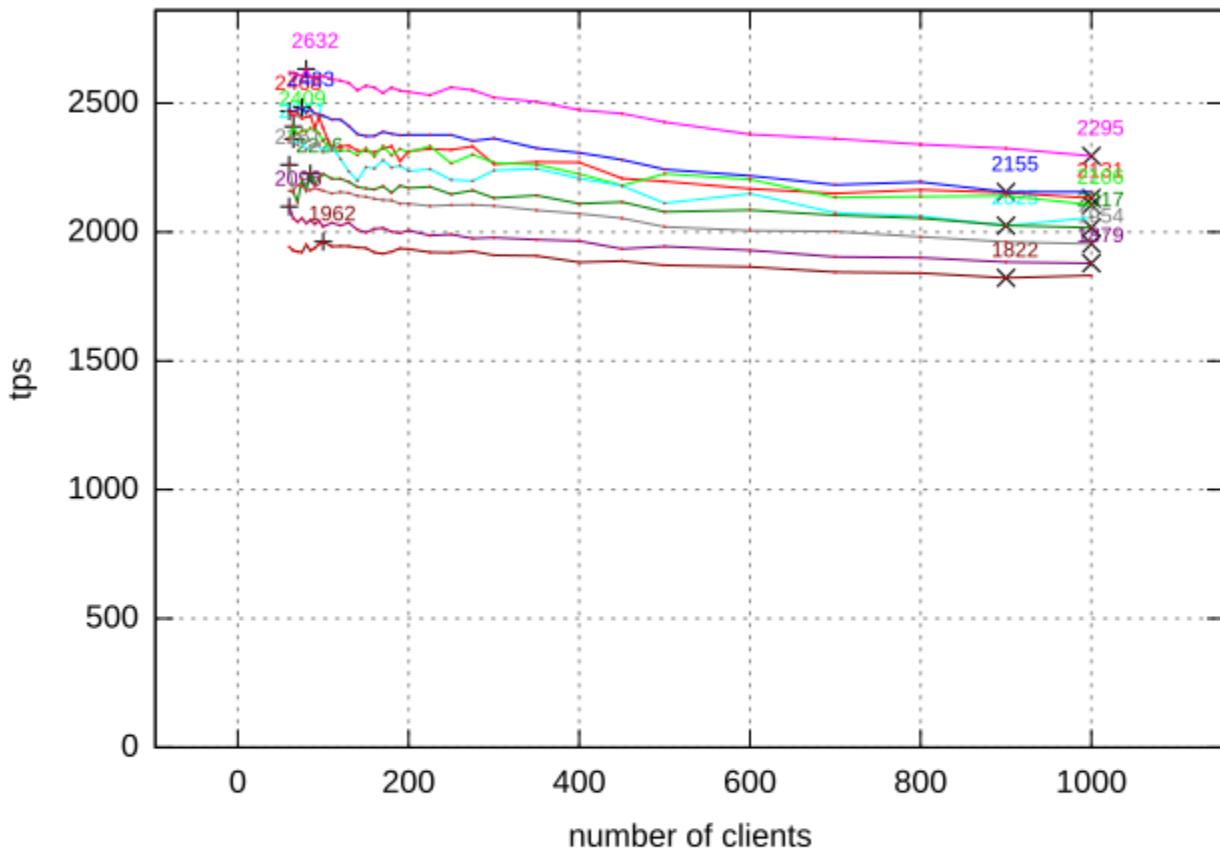
yandex odyssey

transaction type: <builtin: select only>



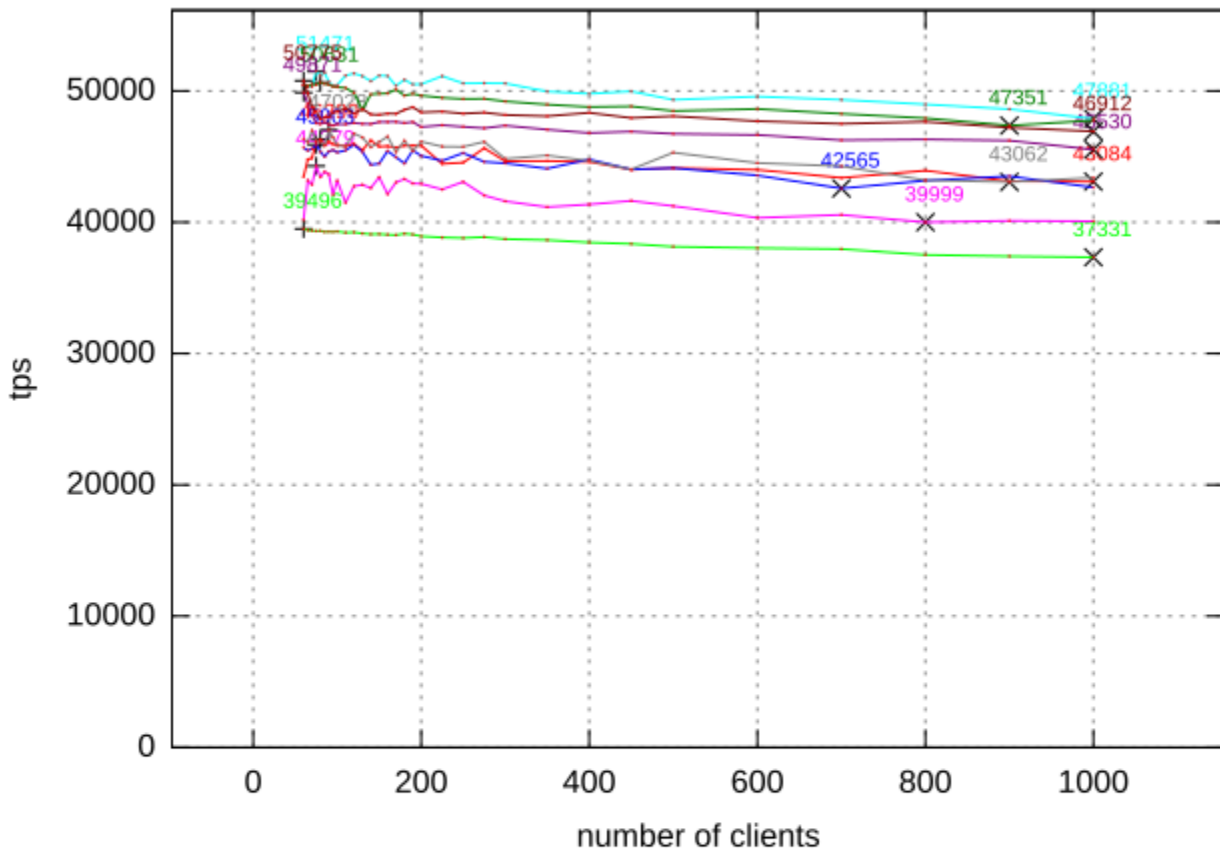
- 12.0-R-REL 12 STABLE/e5cfb8c Odysseey: 16/1
- 12.0-R-REL 12 STABLE/e5cfb8c Odysseey: 16/2
- 12.0-R-REL 12 STABLE/e5cfb8c Odysseey: 16/4
- 12.0-R-REL 12 STABLE/e5cfb8c Odysseey: 32/1
- 12.0-R-REL 12 STABLE/e5cfb8c Odysseey: 32/2
- 12.0-R-REL 12 STABLE/e5cfb8c Odysseey: 32/4
- 12.0-R-REL 12 STABLE/e5cfb8c Odysseey: 64/1
- 12.0-R-REL 12 STABLE/e5cfb8c Odysseey: 64/2
- 12.0-R-REL 12 STABLE/e5cfb8c Odysseey: 64/4

transaction type: <builtin: TPC-B (sort of)>



- 12.0-R-REL 12 STABLE/e5cfb8c Odyssey: 16/1
- 12.0-R-REL 12 STABLE/e5cfb8c Odyssey: 16/2
- 12.0-R-REL 12 STABLE/e5cfb8c Odyssey: 16/4
- 12.0-R-REL 12 STABLE/e5cfb8c Odyssey: 32/1
- 12.0-R-REL 12 STABLE/e5cfb8c Odyssey: 32/2
- 12.0-R-REL 12 STABLE/e5cfb8c Odyssey: 32/4
- 12.0-R-REL 12 STABLE/e5cfb8c Odyssey: 64/1
- 12.0-R-REL 12 STABLE/e5cfb8c Odyssey: 64/2
- 12.0-R-REL 12 STABLE/e5cfb8c Odyssey: 64/4

transaction type: multiple scripts

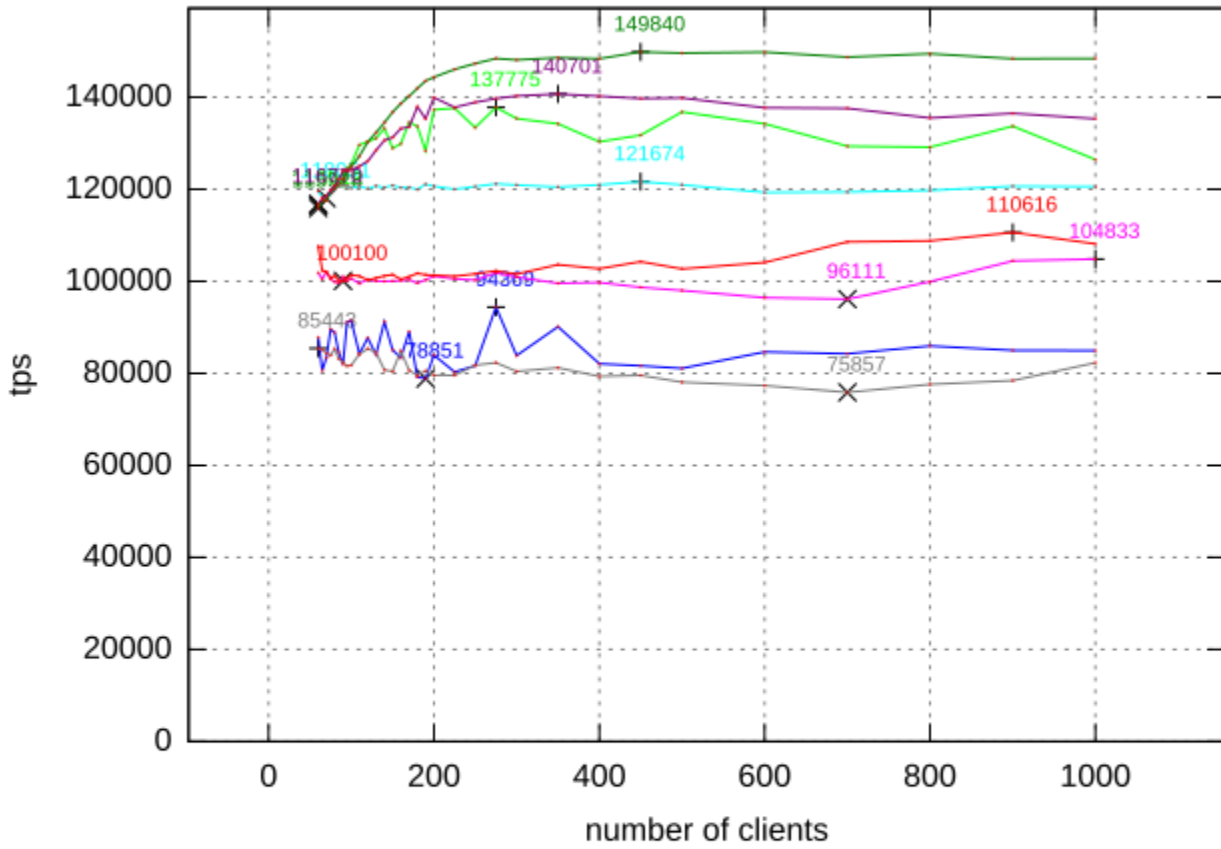


- 12.0-R-REL 12 STABLE/e5cfb8c Odyssees: 16/1
- 12.0-R-REL 12 STABLE/e5cfb8c Odyssees: 16/2
- 12.0-R-REL 12 STABLE/e5cfb8c Odyssees: 16/4
- 12.0-R-REL 12 STABLE/e5cfb8c Odyssees: 32/1
- 12.0-R-REL 12 STABLE/e5cfb8c Odyssees: 32/2
- 12.0-R-REL 12 STABLE/e5cfb8c Odyssees: 32/4
- 12.0-R-REL 12 STABLE/e5cfb8c Odyssees: 64/1
- 12.0-R-REL 12 STABLE/e5cfb8c Odyssees: 64/2
- 12.0-R-REL 12 STABLE/e5cfb8c Odyssees: 64/4

[sf1_1575173039-ODYSSEY-ycsb.svg](#)

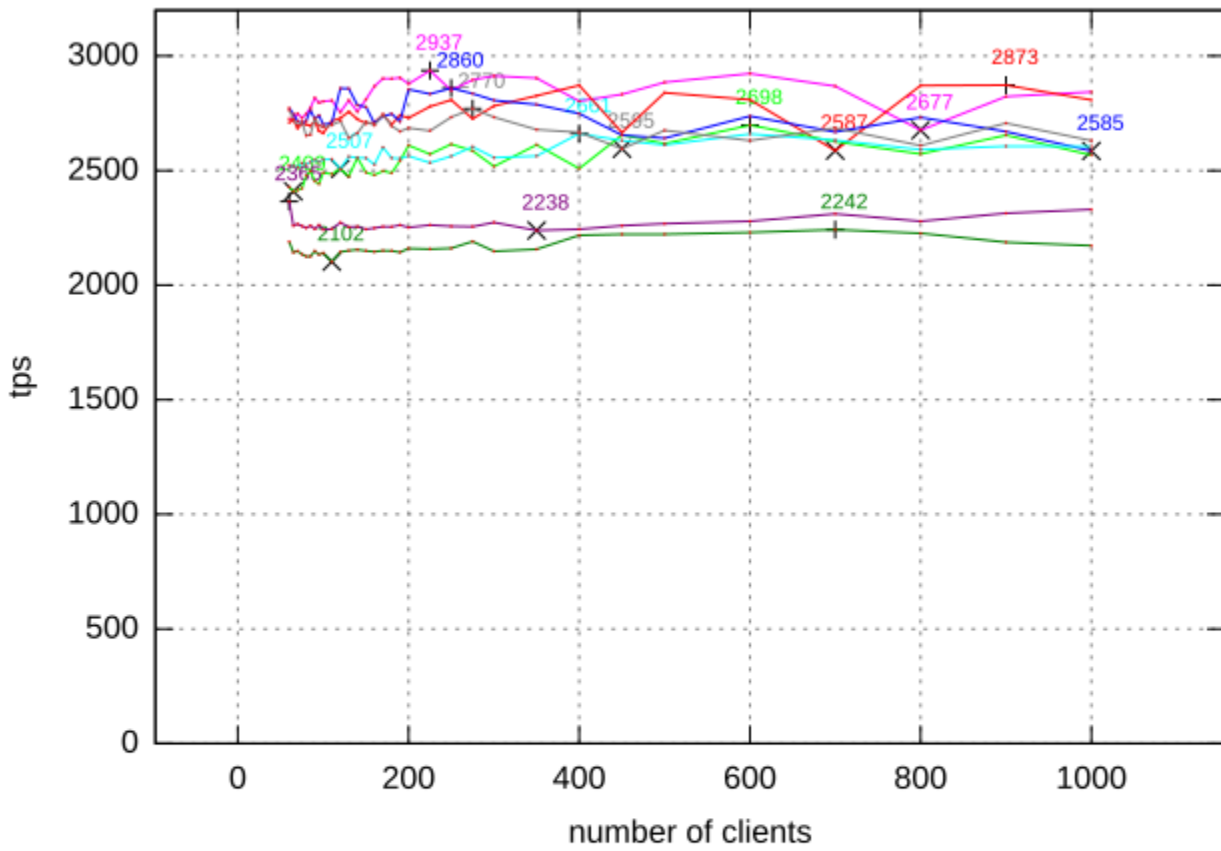
conn_проху встроенный connection pool

transaction type: <builtin: select only>



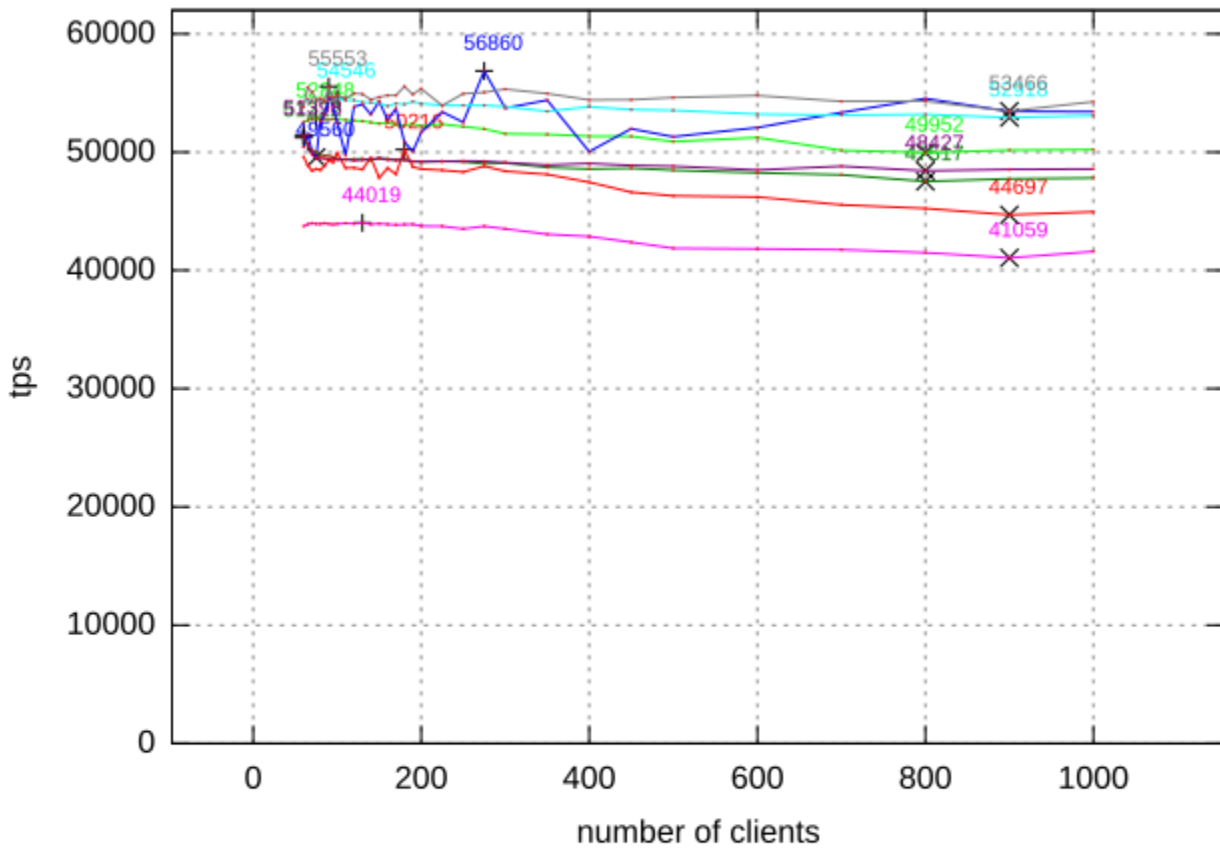
- 13devel-REL-conn proxy/4537977 4/4
- 13devel-REL-conn proxy/4537977 8/2
- 13devel-REL-conn proxy/4537977 8/4
- 13devel-REL-conn proxy/4537977 16/1
- 13devel-REL-conn proxy/4537977 16/2
- 13devel-REL-conn proxy/4537977 16/4
- 13devel-REL-conn proxy/4537977 32/1
- 13devel-REL-conn proxy/4537977 32/2

transaction type: <builtin: TPC-B (sort of)>



- 13devel-REL-conn proxy/4537977 4/4
- 13devel-REL-conn proxy/4537977 8/2
- 13devel-REL-conn proxy/4537977 8/4
- 13devel-REL-conn proxy/4537977 16/1
- 13devel-REL-conn proxy/4537977 16/2
- 13devel-REL-conn proxy/4537977 16/4
- 13devel-REL-conn proxy/4537977 32/1
- 13devel-REL-conn proxy/4537977 32/2

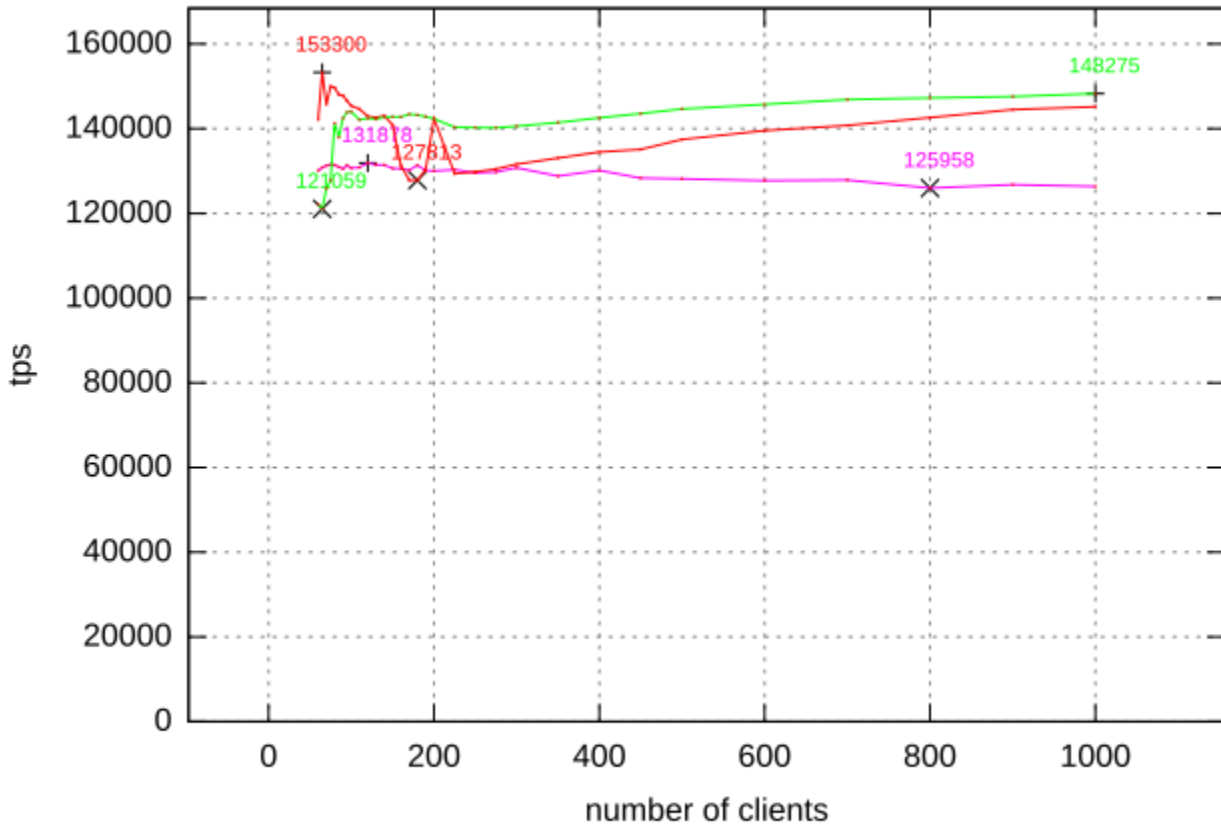
transaction type: multiple scripts



[sf1_1575436445-CONN_PROXY-yescb.svg](#)

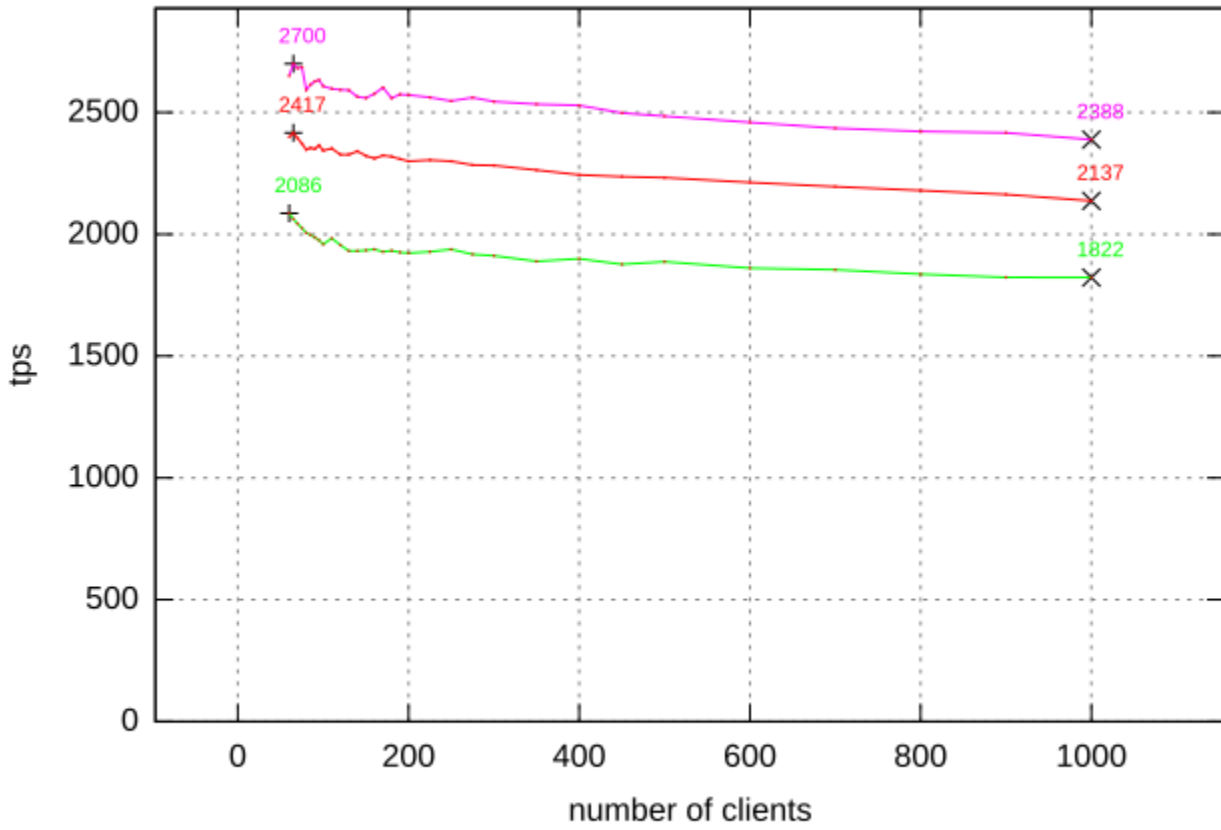
conn_pool встроенный connection pool

transaction type: <builtin: select only>



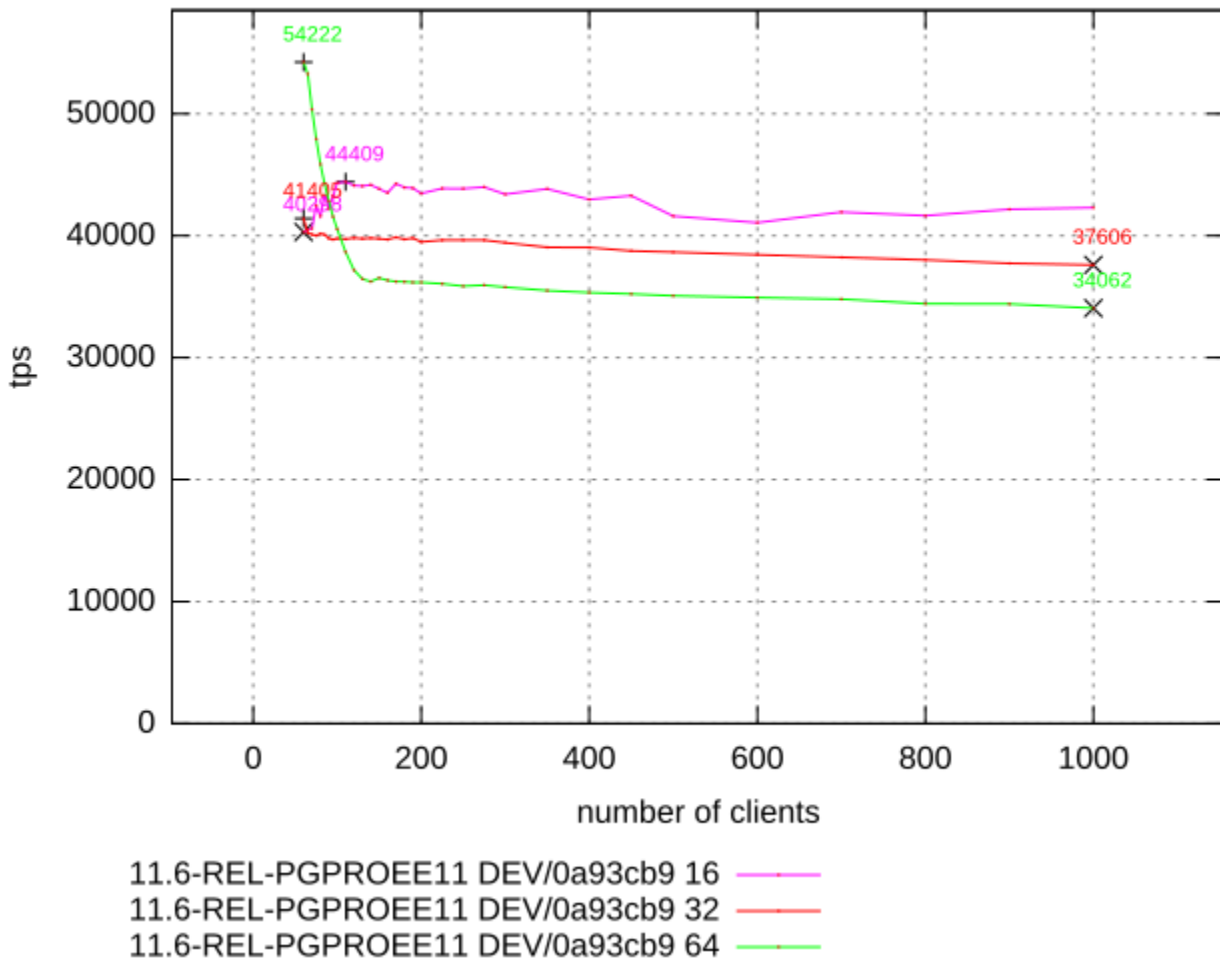
11.6-REL-PGPROEE11 DEV/0a93cb9 16
11.6-REL-PGPROEE11 DEV/0a93cb9 32
11.6-REL-PGPROEE11 DEV/0a93cb9 64

transaction type: <builtin: TPC-B (sort of)>



11.6-REL-PGPROEE11 DEV/0a93cb9 16
11.6-REL-PGPROEE11 DEV/0a93cb9 32
11.6-REL-PGPROEE11 DEV/0a93cb9 64

transaction type: multiple scripts

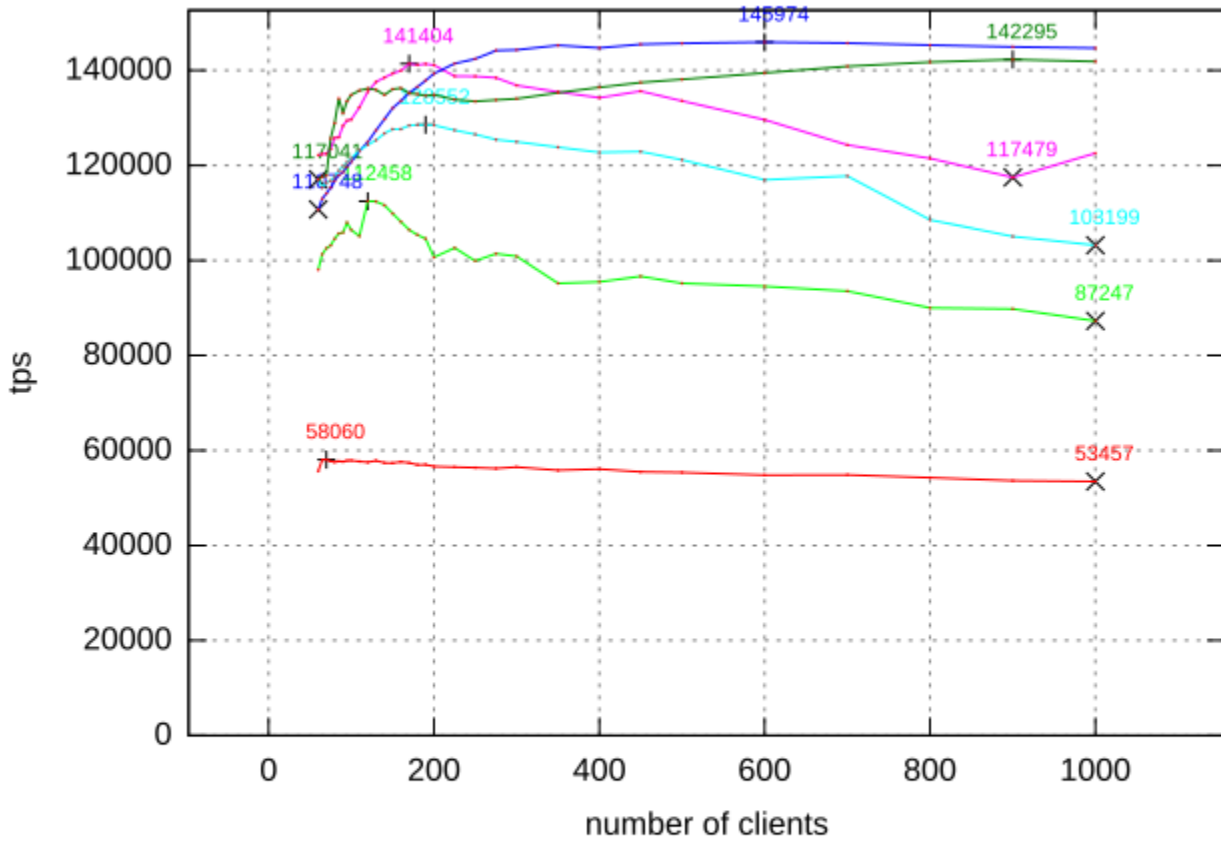


[sf1_1575640152-CONN_POOL-yesb.svg](#)

scaling factor - 1000

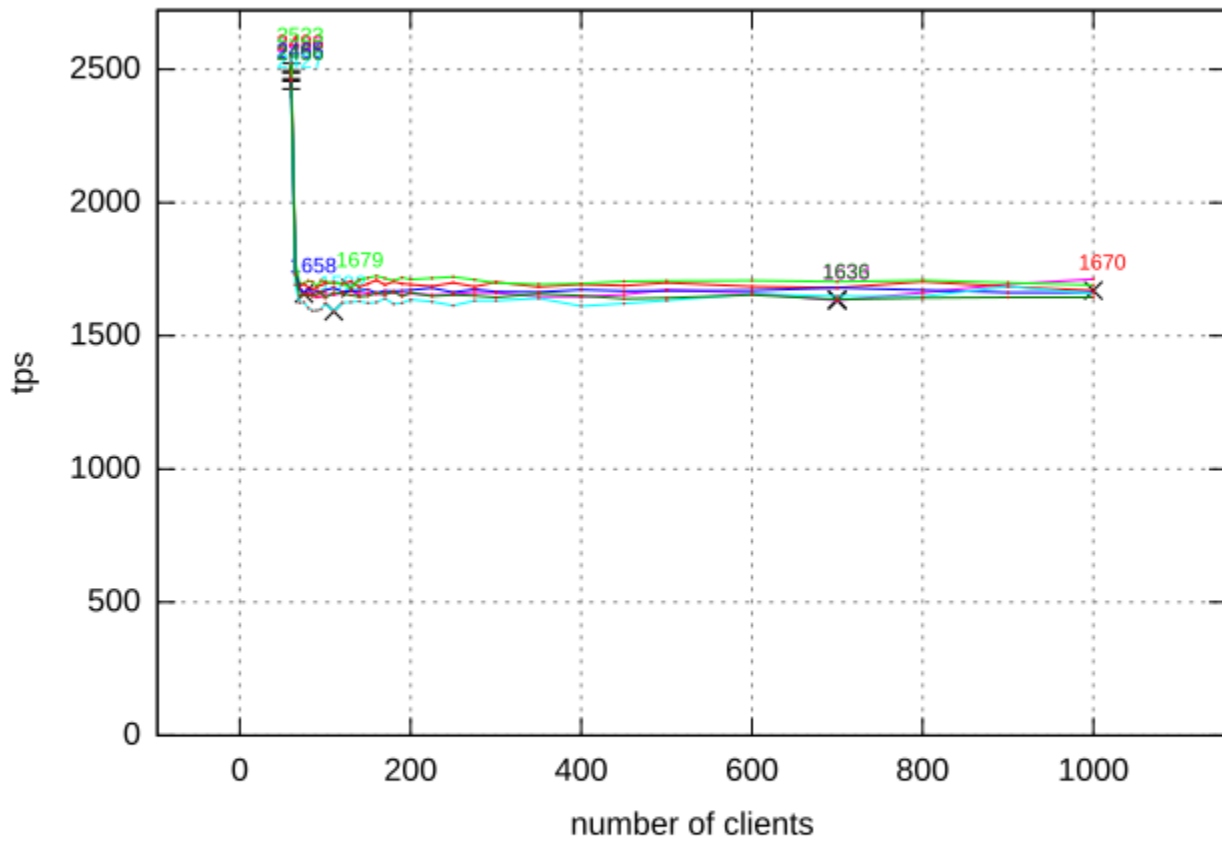
Сравнение результатов

transaction type: <builtin: select only>



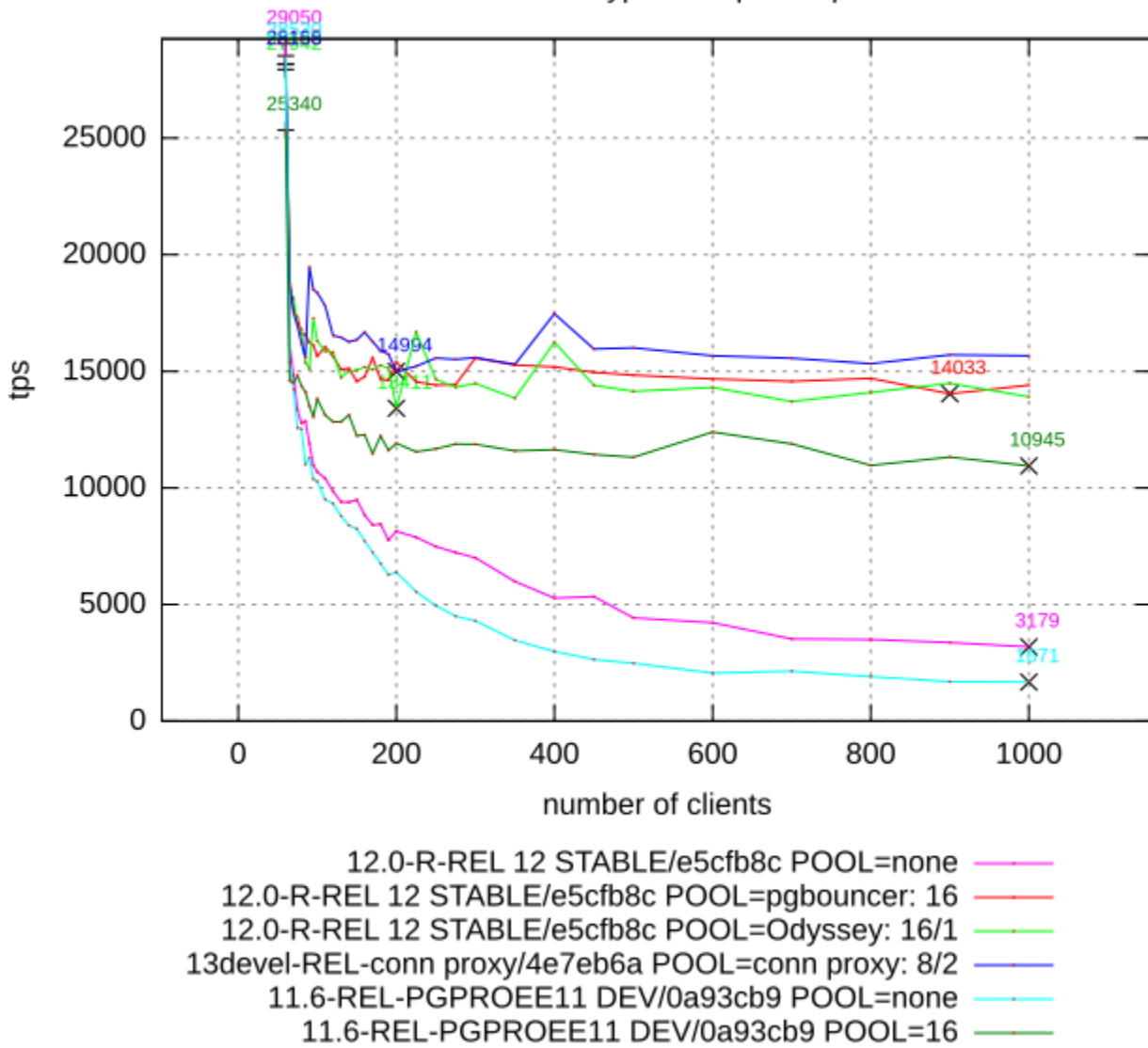
- 12.0-R-REL 12 STABLE/e5cfb8c POOL=none
- 12.0-R-REL 12 STABLE/e5cfb8c POOL=pgbouncer: 16
- 12.0-R-REL 12 STABLE/e5cfb8c POOL=Odyssey: 64/4
- 13devel-REL-conn proxy/4537977 POOL=conn proxy: 16/4
- 11.6-REL-PGPROEE11 DEV/0a93cb9 POOL=none
- 11.6-REL-PGPROEE11 DEV/0a93cb9 POOL=64

transaction type: <builtin: TPC-B (sort of)>



- 12.0-R-REL 12 STABLE/e5cfb8c POOL=none
- 12.0-R-REL 12 STABLE/e5cfb8c POOL=pgbouncer: 32
- 12.0-R-REL 12 STABLE/e5cfb8c POOL=Odyssey: 32/1
- 13devel-REL-conn proxy/4e7eb6a POOL=conn proxy: 8/4
- 11.6-REL-PGPROEE11 DEV/0a93cb9 POOL=none
- 11.6-REL-PGPROEE11 DEV/0a93cb9 POOL=16

transaction type: multiple scripts

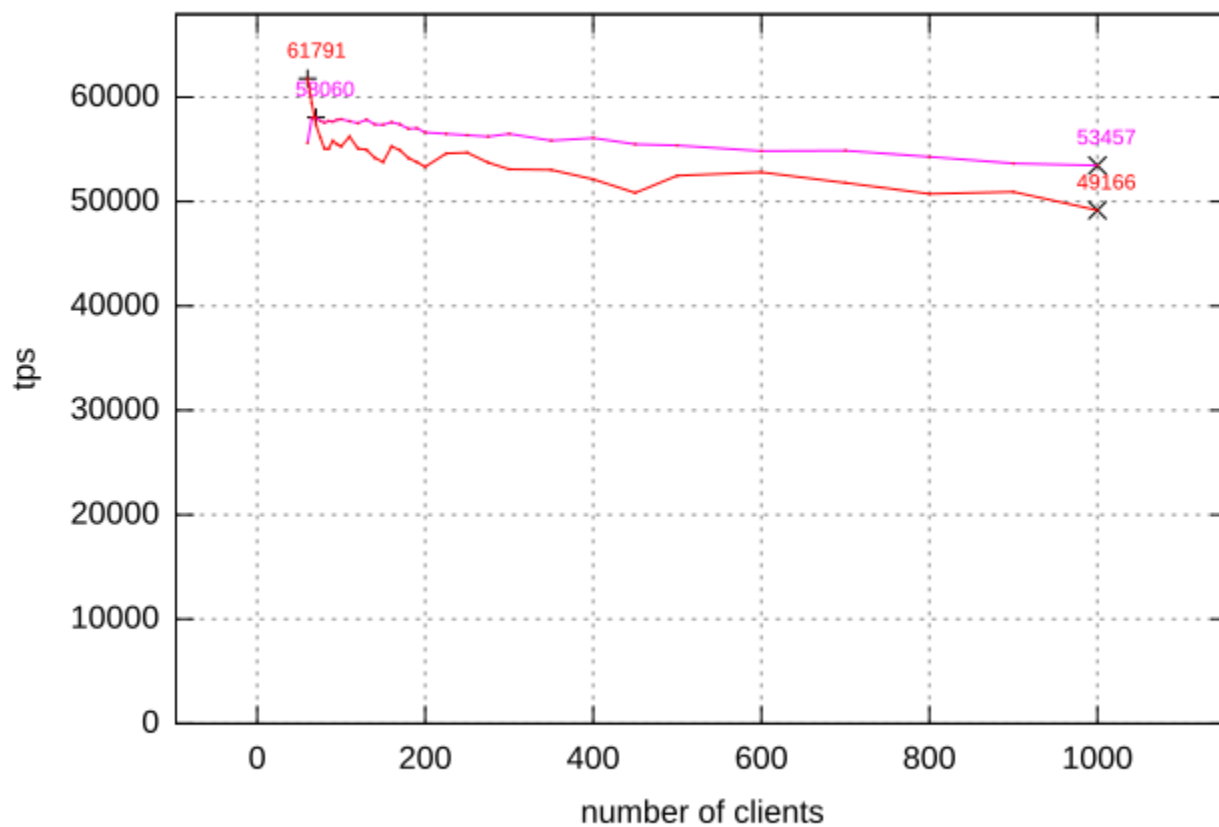


ycsb.svg

Результаты для разных настроек пулеров

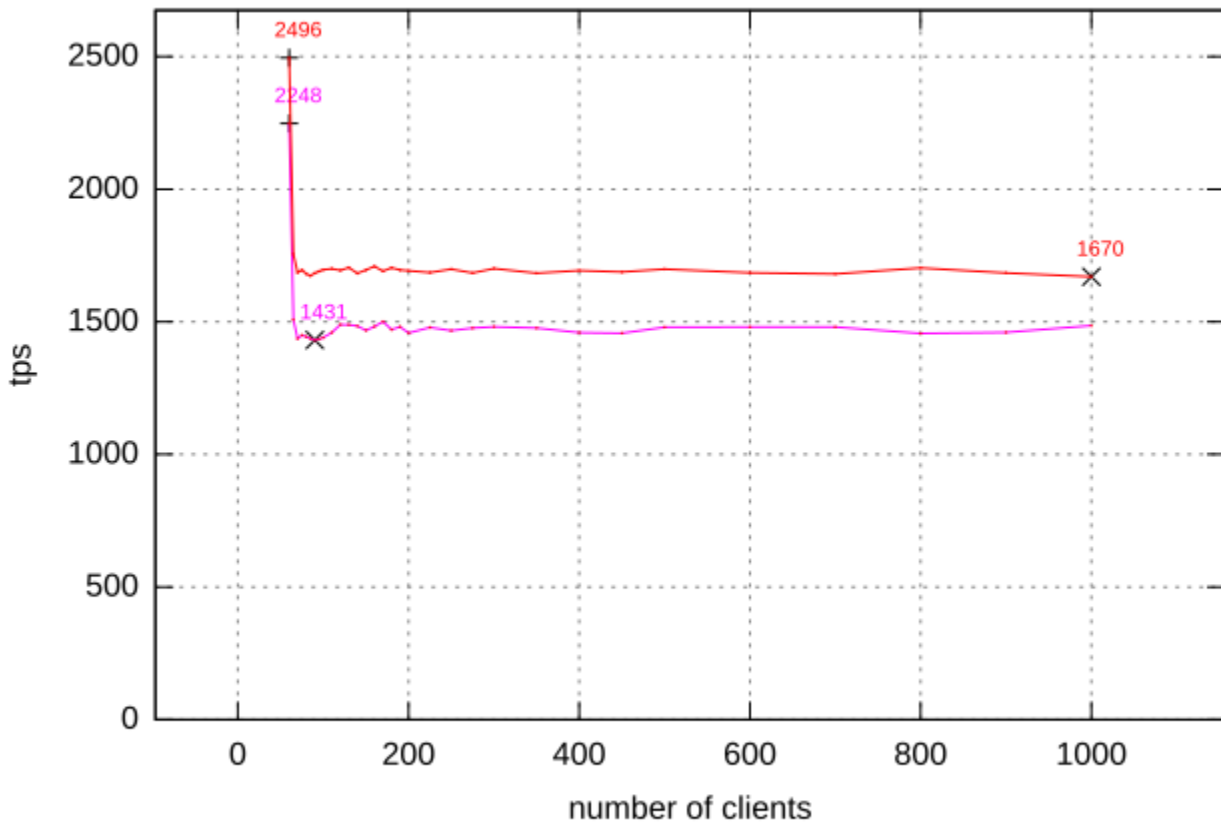
pgbouncer

transaction type: <builtin: select only>



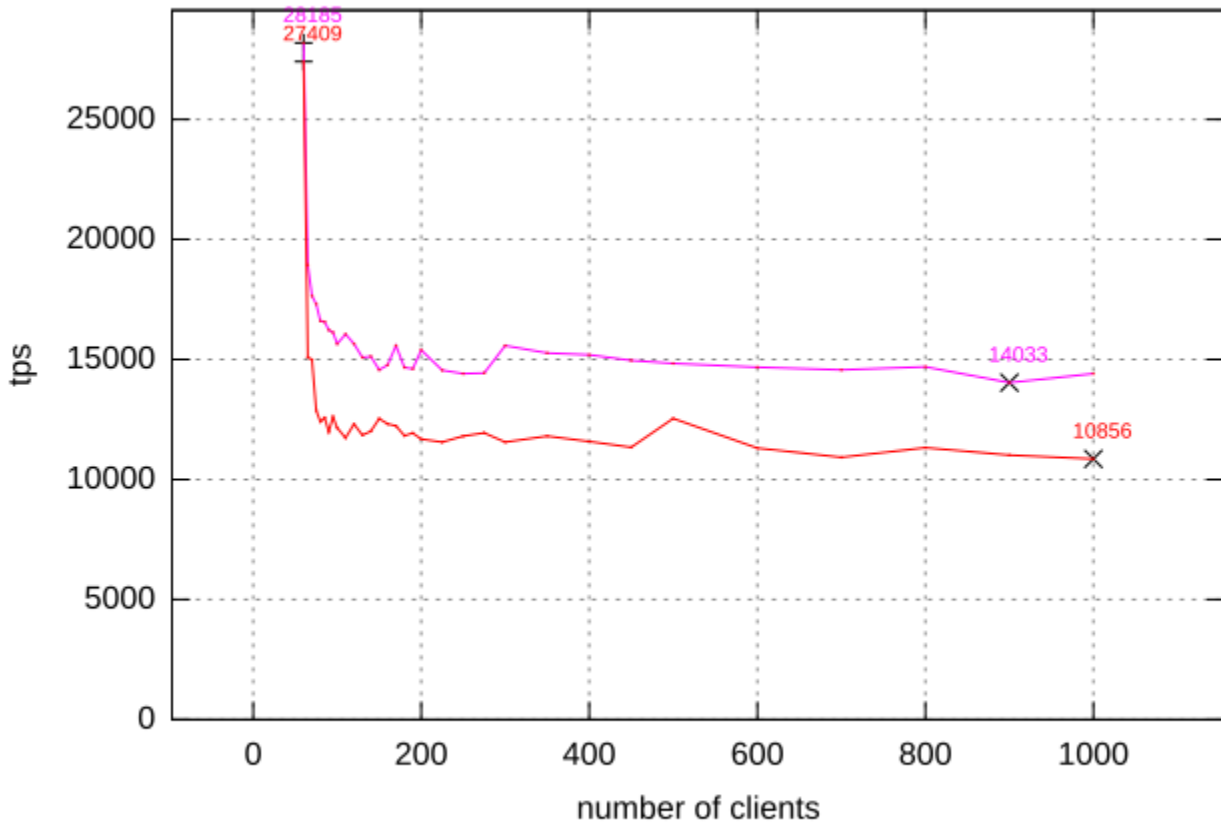
12.0-R-REL 12 STABLE/e5cfb8c POOL=16 — magenta line
12.0-R-REL 12 STABLE/e5cfb8c POOL=32 — red line

transaction type: <builtin: TPC-B (sort of)>



12.0-R-REL 12 STABLE/e5cfb8c POOL=16 — magenta
12.0-R-REL 12 STABLE/e5cfb8c POOL=32 — red

transaction type: multiple scripts

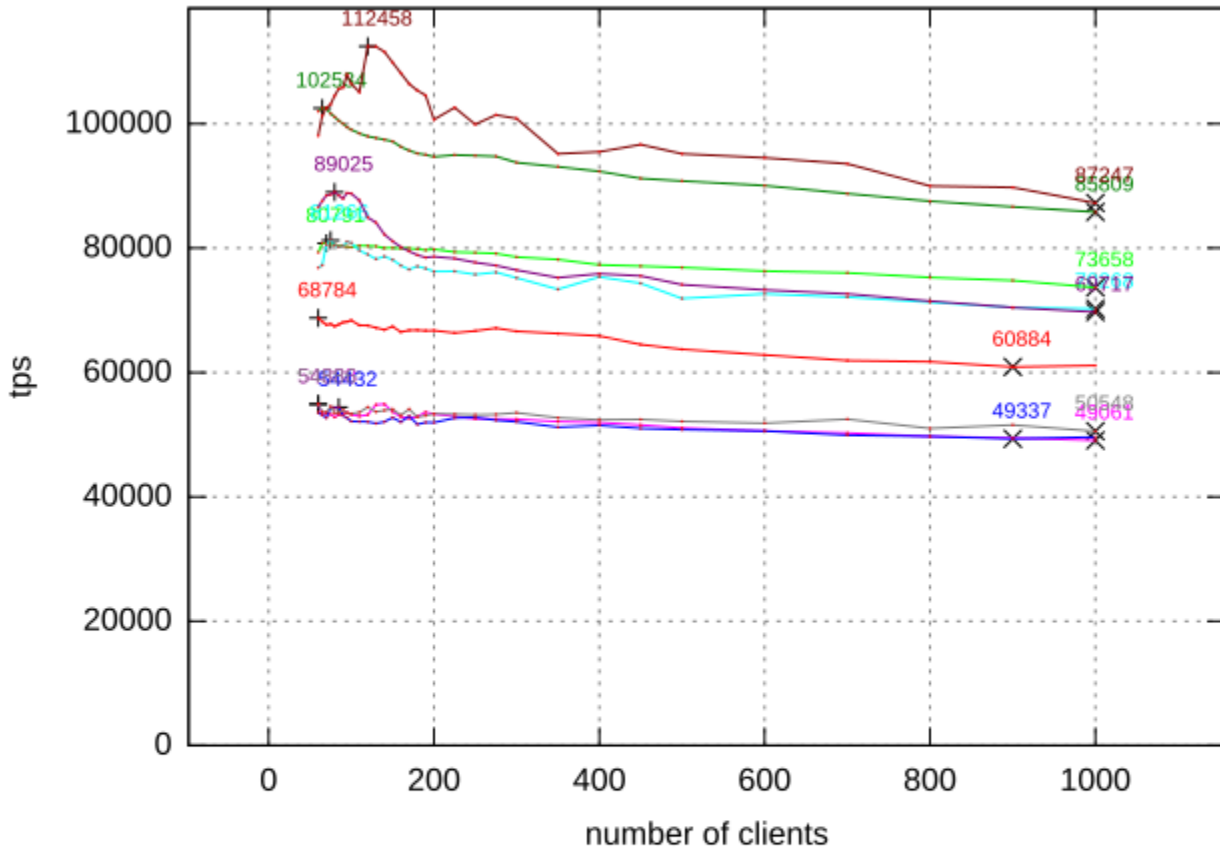


12.0-R-REL 12 STABLE/e5cfb8c POOL=16 — magenta
12.0-R-REL 12 STABLE/e5cfb8c POOL=32 — red

[1573123494-BOUNCER-ycsb.svg](#)

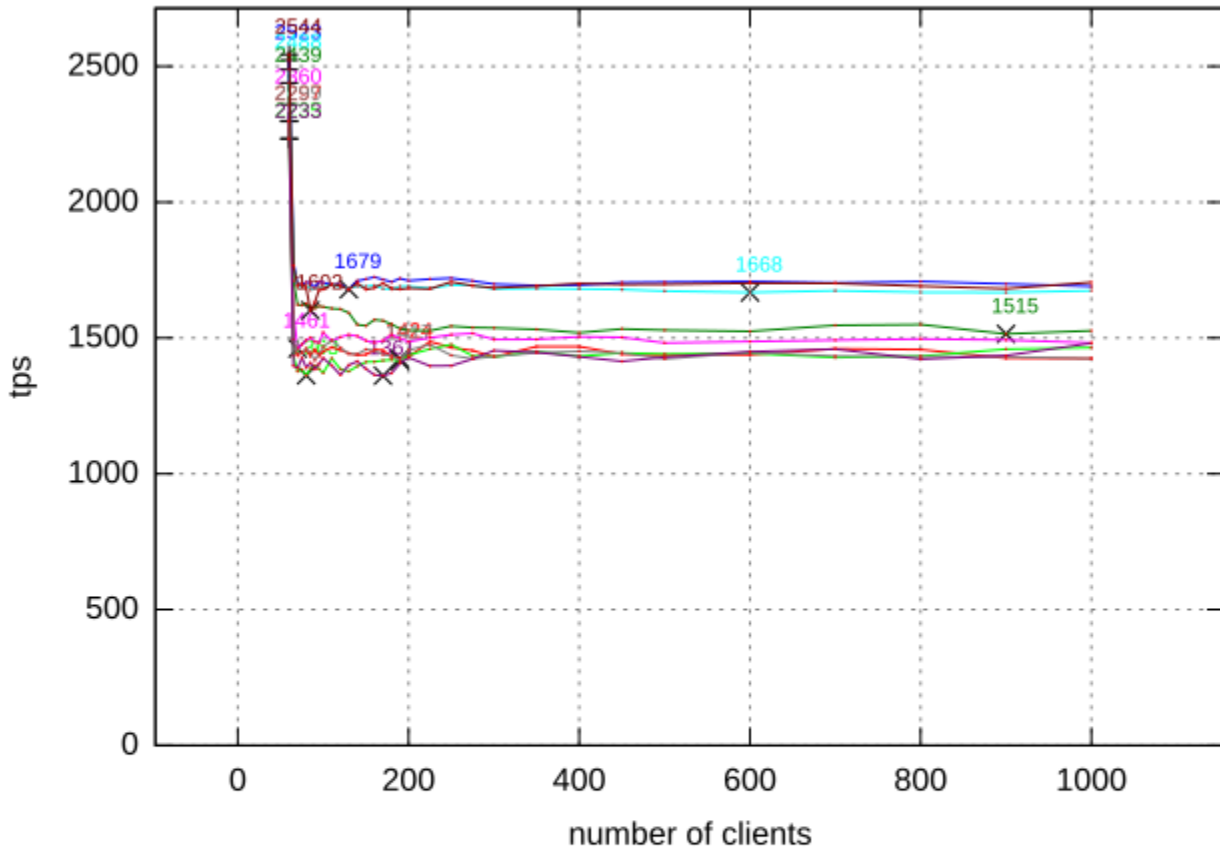
yandex odyssey

transaction type: <builtin: select only>



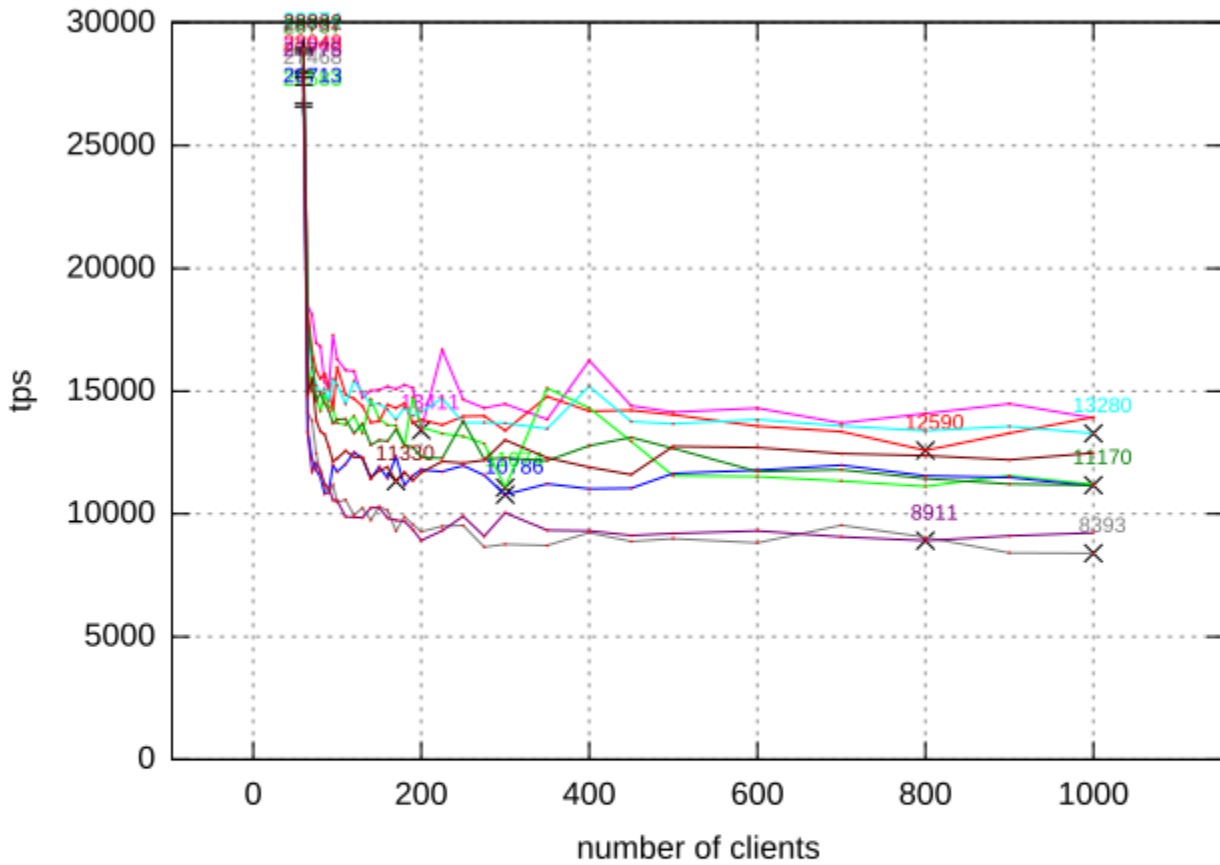
- 12.0-R-REL 12 STABLE/e5cfb8c POOL=Odyssey: 16/1
- 12.0-R-REL 12 STABLE/e5cfb8c POOL=Odyssey: 16/2
- 12.0-R-REL 12 STABLE/e5cfb8c POOL=Odyssey: 16/4
- 12.0-R-REL 12 STABLE/e5cfb8c POOL=Odyssey: 32/1
- 12.0-R-REL 12 STABLE/e5cfb8c POOL=Odyssey: 32/2
- 12.0-R-REL 12 STABLE/e5cfb8c POOL=Odyssey: 32/4
- 12.0-R-REL 12 STABLE/e5cfb8c POOL=Odyssey: 64/1
- 12.0-R-REL 12 STABLE/e5cfb8c POOL=Odyssey: 64/2
- 12.0-R-REL 12 STABLE/e5cfb8c POOL=Odyssey: 64/4

transaction type: <builtin: TPC-B (sort of)>



- 12.0-R-REL 12 STABLE/e5cfb8c POOL=Odyssey: 16/1
- 12.0-R-REL 12 STABLE/e5cfb8c POOL=Odyssey: 16/2
- 12.0-R-REL 12 STABLE/e5cfb8c POOL=Odyssey: 16/4
- 12.0-R-REL 12 STABLE/e5cfb8c POOL=Odyssey: 32/1
- 12.0-R-REL 12 STABLE/e5cfb8c POOL=Odyssey: 32/2
- 12.0-R-REL 12 STABLE/e5cfb8c POOL=Odyssey: 32/4
- 12.0-R-REL 12 STABLE/e5cfb8c POOL=Odyssey: 64/1
- 12.0-R-REL 12 STABLE/e5cfb8c POOL=Odyssey: 64/2
- 12.0-R-REL 12 STABLE/e5cfb8c POOL=Odyssey: 64/4

transaction type: multiple scripts

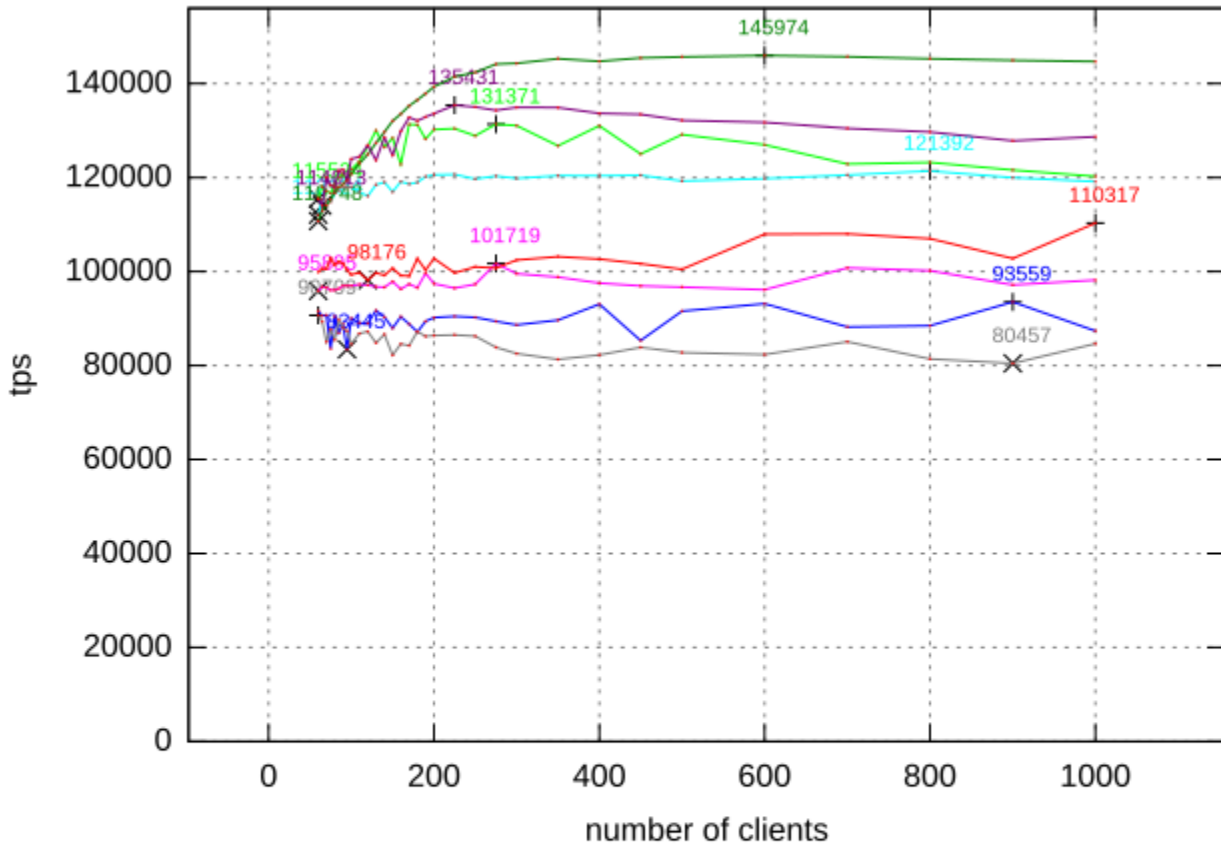


- 12.0-R-REL 12 STABLE/e5cfb8c POOL=Odyssey: 16/1
- 12.0-R-REL 12 STABLE/e5cfb8c POOL=Odyssey: 16/2
- 12.0-R-REL 12 STABLE/e5cfb8c POOL=Odyssey: 16/4
- 12.0-R-REL 12 STABLE/e5cfb8c POOL=Odyssey: 32/1
- 12.0-R-REL 12 STABLE/e5cfb8c POOL=Odyssey: 32/2
- 12.0-R-REL 12 STABLE/e5cfb8c POOL=Odyssey: 32/4
- 12.0-R-REL 12 STABLE/e5cfb8c POOL=Odyssey: 64/1
- 12.0-R-REL 12 STABLE/e5cfb8c POOL=Odyssey: 64/2
- 12.0-R-REL 12 STABLE/e5cfb8c POOL=Odyssey: 64/4

1573867321-ODYSSEY.svg

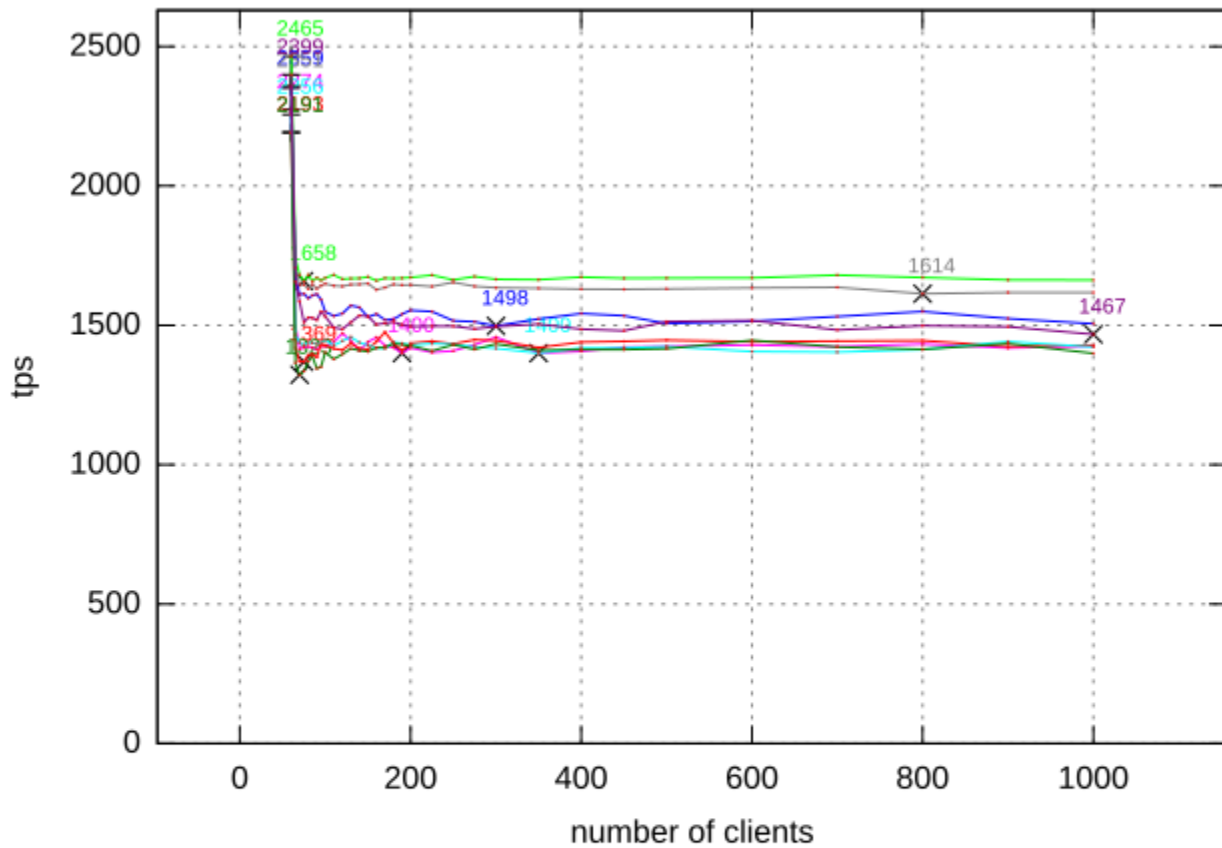
conn_проху встроенный connection pool

transaction type: <builtin: select only>



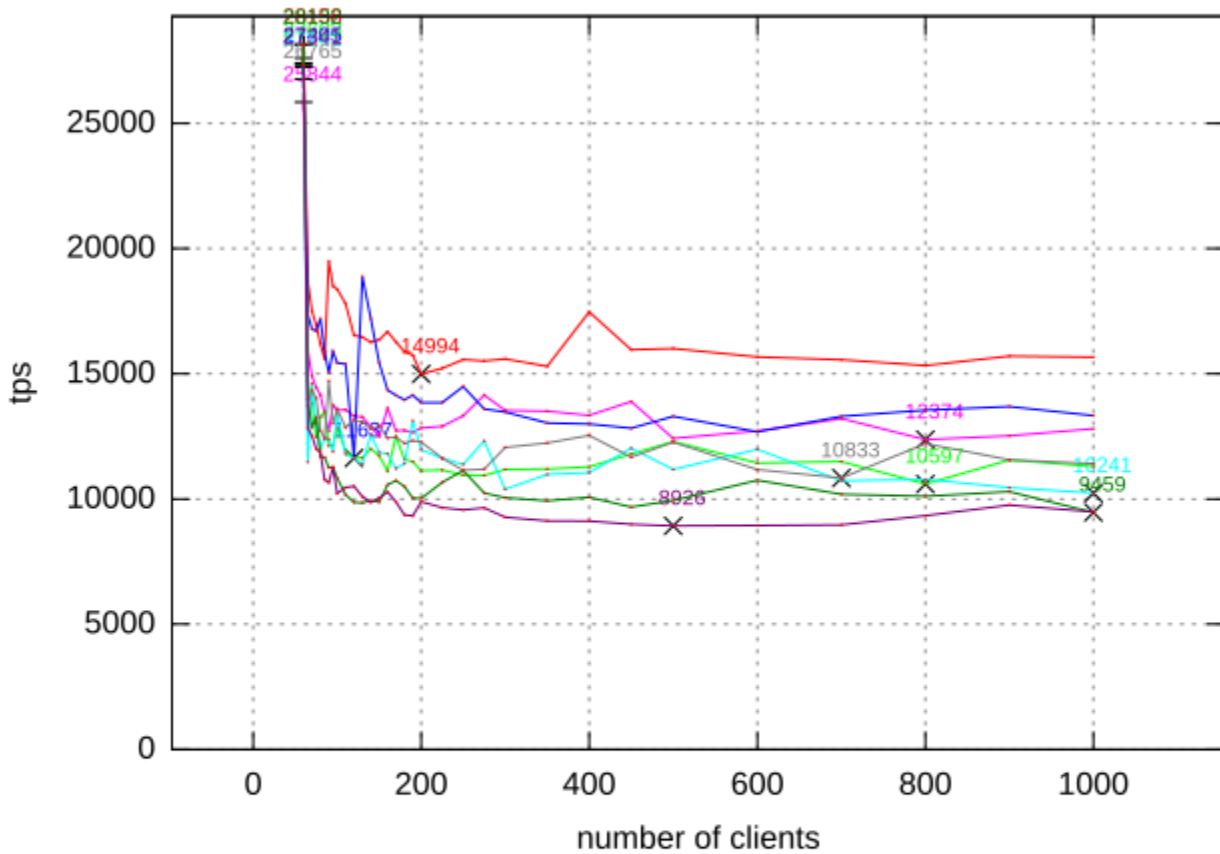
- 13devel-REL-conn proxy/4537977 POOL=4/4
- 13devel-REL-conn proxy/4537977 POOL=8/2
- 13devel-REL-conn proxy/4537977 POOL=8/4
- 13devel-REL-conn proxy/4537977 POOL=16/1
- 13devel-REL-conn proxy/4537977 POOL=16/2
- 13devel-REL-conn proxy/4537977 POOL=16/4
- 13devel-REL-conn proxy/4537977 POOL=32/1
- 13devel-REL-conn proxy/4537977 POOL=32/2

transaction type: <builtin: TPC-B (sort of)>



- 13devel-REL-conn proxy/4e7eb6a POOL=4/4
- 13devel-REL-conn proxy/4e7eb6a POOL=8/2
- 13devel-REL-conn proxy/4e7eb6a POOL=8/4
- 13devel-REL-conn proxy/4e7eb6a POOL=16/1
- 13devel-REL-conn proxy/4e7eb6a POOL=16/2
- 13devel-REL-conn proxy/4e7eb6a POOL=16/4
- 13devel-REL-conn proxy/4e7eb6a POOL=32/1
- 13devel-REL-conn proxy/4e7eb6a POOL=32/2

transaction type: multiple scripts

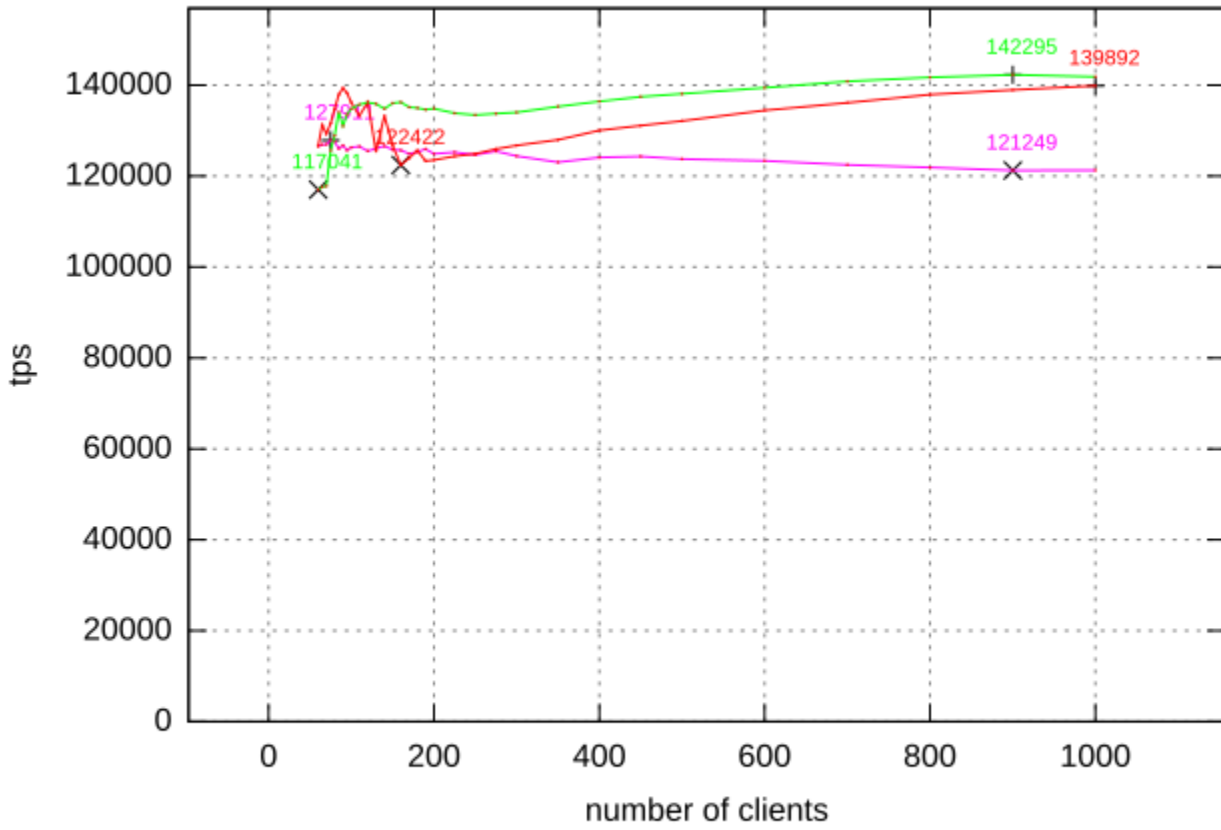


- 13devel-REL-conn proxy/4e7eb6a POOL=4/4
- 13devel-REL-conn proxy/4e7eb6a POOL=8/2
- 13devel-REL-conn proxy/4e7eb6a POOL=8/4
- 13devel-REL-conn proxy/4e7eb6a POOL=16/1
- 13devel-REL-conn proxy/4e7eb6a POOL=16/2
- 13devel-REL-conn proxy/4e7eb6a POOL=16/4
- 13devel-REL-conn proxy/4e7eb6a POOL=32/1
- 13devel-REL-conn proxy/4e7eb6a POOL=32/2

1572521668-CONN_PROXY.svg

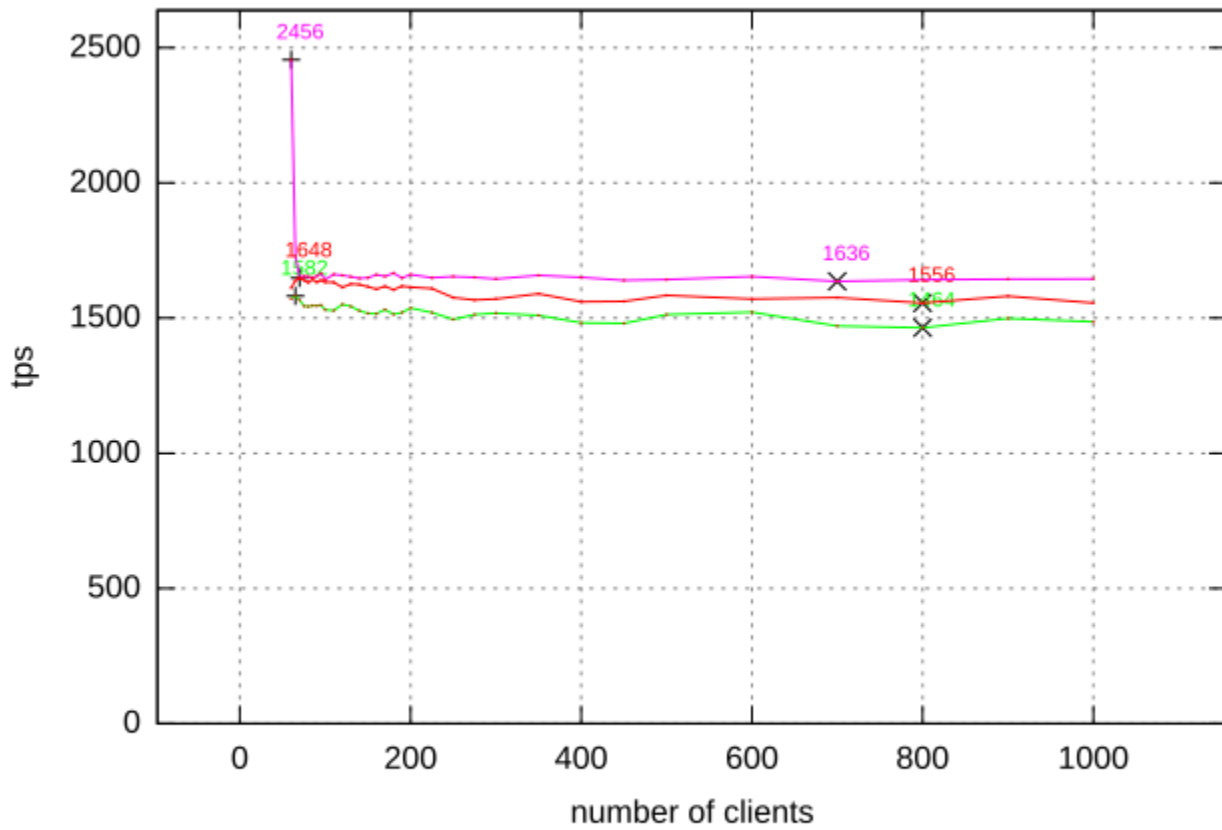
conn_pool встроенный connection pool

transaction type: <builtin: select only>



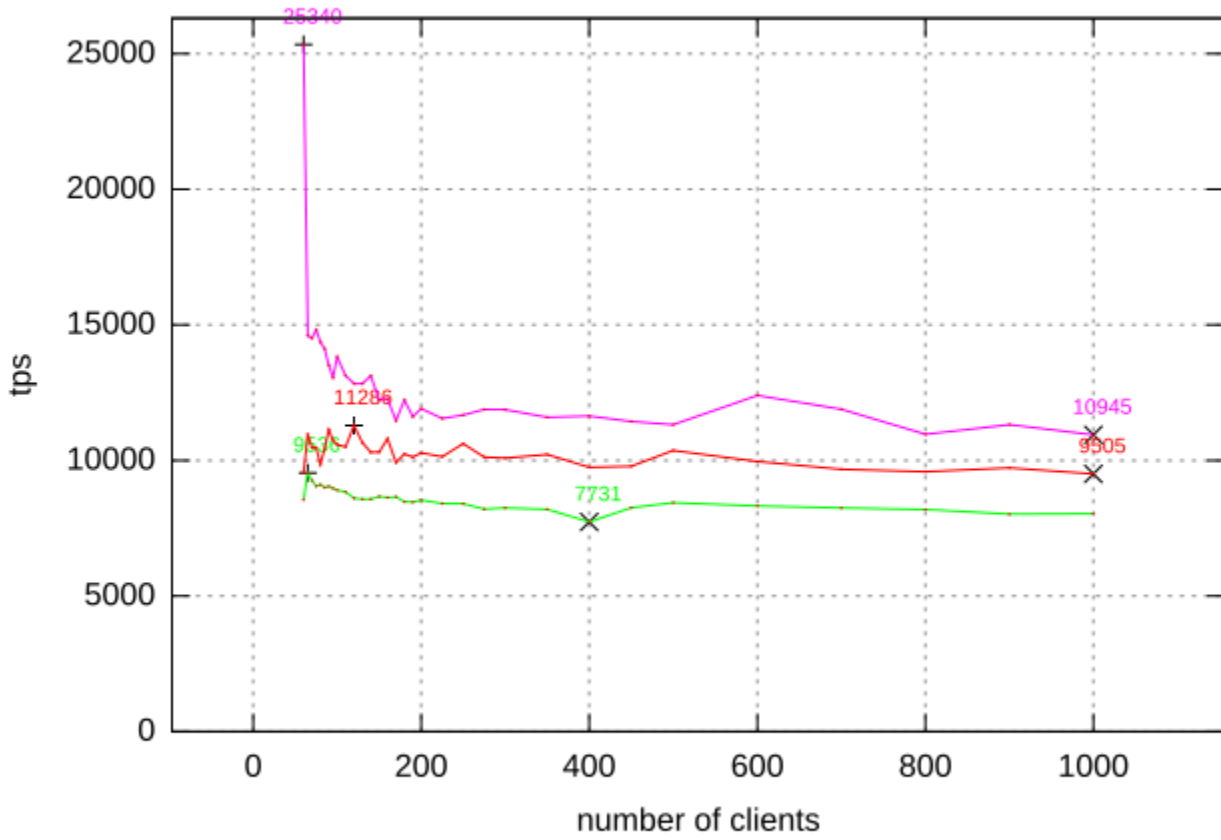
11.6-REL-PGPROEE11 DEV/0a93cb9 POOL=16
11.6-REL-PGPROEE11 DEV/0a93cb9 POOL=32
11.6-REL-PGPROEE11 DEV/0a93cb9 POOL=64

transaction type: <builtin: TPC-B (sort of)>



11.6-REL-PGPROEE11 DEV/0a93cb9 POOL=16 ———
11.6-REL-PGPROEE11 DEV/0a93cb9 POOL=32 ———
11.6-REL-PGPROEE11 DEV/0a93cb9 POOL=64 ———

transaction type: multiple scripts



11.6-REL-PGPROEE11 DEV/0a93cb9 POOL=16
11.6-REL-PGPROEE11 DEV/0a93cb9 POOL=32
11.6-REL-PGPROEE11 DEV/0a93cb9 POOL=64

