

GraphChi performance

Top-down and bottom-up BFS

Starting GraphChi

```
pagerank: ./src/util/cmdopts.hpp:67: std::string graphchi::get_config_option_string  
(const char*): Assertion `false' failed.
```

```
ERROR: could not find option file from config.Aborted (core dumped)
```

```
ERROR: Could not read configuration file: /home/david/Documents/graphchi-  
cpps/conf/graphchi.local.cnf
```

```
Please define environment variable GRAPHCHI_ROOT or run the program from  
that directory.
```

```
pagerank: ./src/util/configfile.hpp:91: std::map<std::basic_string<char>, std::  
basic_string<char> > graphchi::loadconfig(std::string, std::string): Assertion `f !=  
__null' failed.
```

```
Aborted (core dumped)
```

Starting GraphChi

```
david@ubuntu:~/Documents/graphchi-cpp/bin/example_apps$ ll ../../conf
total 20
drwxrwxr-x  4 david david 4096 Nov 30 19:13 ./
drwxrwxr-x 12 david david 4096 Nov 30 18:25 ../
drwxrwxr-x  6 david david 4096 Nov 23 18:37 adminhtml/
drwxrwxr-x  2 david david 4096 Nov 23 18:37 doxygen/
-rw-rw-r--  1 david david  574 Nov 23 18:37 graphchi.cnf
```

```
export GRAPHCHI_ROOT=/home/david/Documents/graphchi-cpp
```

```
david@ubuntu:~/Documents/graphchi-cpp/bin/example_apps$ ./pagerank file cit-
HepPh.txt
```

Running pagerank

```
david@ubuntu:~/Documents/graphchi-cpp/bin/example_apps$ ./pagerank file cit-HepPh.txt
INFO:  chifilenames.hpp(find_shards:265): Detected number of shards: 1
INFO:  chifilenames.hpp(find_shards:266): To specify a different number of shards, use
command-line parameter 'nshards'
INFO:  conversions.hpp(convert_if_notexists:758): Found preprocessed files for cit-HepPh.txt,
num shards=1
DEBUG:  stripedio.hpp(stripedio:271): Start io-manager with 2 threads.
INFO:  graphchi_engine.hpp(graphchi_engine:154): Initializing graphchi_engine. This engine
expects 4-byte edge data.
INFO:  chifilenames.hpp(load_vertex_intervals:400): shard: 0 - 9912553
INFO:  pagerank.cpp(main:168): Running Pagerank by holding vertices in-memory mode!
INFO:  graphchi_engine.hpp(run:744): GraphChi starting
INFO:  graphchi_engine.hpp(run:745): Licensed under the Apache License 2.0
INFO:  graphchi_engine.hpp(run:746): Copyright Aapo Kyrola et al., Carnegie Mellon University
(2012)
```

INFO: graphchi_engine.hpp(print_config:132): Engine configuration:
INFO: graphchi_engine.hpp(print_config:133): exec_threads = 4
INFO: graphchi_engine.hpp(print_config:134): load_threads = 4
INFO: graphchi_engine.hpp(print_config:135): membudget_mb = 800
INFO: graphchi_engine.hpp(print_config:136): blocksize = 1048576
INFO: graphchi_engine.hpp(print_config:137): scheduler = 0
INFO: graphchi_engine.hpp(run:780): Start iteration: 0
INFO: graphchi_engine.hpp(run:859): 0.009016s: Starting: 0 -- 9912553
INFO: graphchi_engine.hpp(run:872): Iteration 0/3, subinterval: 0 - 9912553
DEBUG: graphchi_engine.hpp(run:887): Allocation 9912554 vertices, sizeof:64
total:634403456
INFO: graphchi_engine.hpp(run:896): Start updates
INFO: graphchi_engine.hpp(exec_updates_inmemory_mode:470): In-memory
mode: Iteration 0 starts. (0.46763 secs)
INFO: graphchi_engine.hpp(exec_updates_inmemory_mode:470): In-memory
mode: Iteration 1 starts. (0.603409 secs)
INFO: graphchi_engine.hpp(exec_updates_inmemory_mode:470): In-memory
mode: Iteration 2 starts. (0.744883 secs)
INFO: graphchi_engine.hpp(exec_updates_inmemory_mode:470): In-memory
mode: Iteration 3 starts. (0.89134 secs)
INFO: graphchi_engine.hpp(run:906): Finished updates
DEBUG: stripedio.hpp(stripedio:271): Start io-manager with 2 threads.

Print top 20 vertices:

1. 9303255 95.8461
2. 9209205 73.8592
3. 9310316 69.4009
4. 9206203 61.5282
5. 9208254 59.2051
6. 9203203 46.8899
7. 9306289 43.2146
8. 9303230 42.1461
9. 9207214 40.8227
10. 9803315 40.462
11. 9206236 40.3707
12. 9908362 39.7891
13. 9404270 39.3181
14. 9206205 39.1169
15. 9211266 37.7268
16. 9206242 37.2386
17. 9205238 34.2901
18. 9406315 34.0251
19. 9212203 33.8095
20. 9305306 33.4359

=== REPORT FOR pagerank() ===

[Numeric]

cache_size_mb: 0

compression: 0

exec_threads: 4

load_threads: 4

mem_budget_mb: 800

num_threads: 2

num_iters: 4

num_shards: 1

num_vertices: 9.91255e+06

scheduler: 0

serialized_updates: 138184 (count: 4, min: 34546, max: 34546, avg: 34546)

stripe_size: 1.07374e+09

updates: 3.96502e+07

work: 0

[Timings]

execute-updates: 0.574323s (count: 4, min: 0.135755s, max: 0.150804,
avg: 0.143581s)

inmem-exec: 0.57434s (count: 4, min: 0.135759s, max: 0.150808,
avg: 0.143585s)

iomgr_init: 0.000251 s

memoryshard_create_edges: 0.016291 s

preada_now: 0.071013s (count: 3, min: 0.001281s, max: 0.036798,
avg: 0.023671s)

pwritea_now: 0.012644 s

runtime: 1.12748 s

stripedio_wait_for_reads: 1e-06 s

stripedio_wait_for_writes: 6e-06s (count: 3, min: 0s, max: 5e-06,
avg: 2e-06s)

[Other]

app: pagerank

engine: default

file: cit-HepPh.txt

BFS

