Subject: TMemStat
Posted by StefanoSpataro on Wed, 09 Feb 2011 10:42:04 GMT
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Dear all,
I am trying to investigate the memory usage of our code by using the new TMemStat tool from ROOT.

I have added to my sim macro the following line just at the beginning:

TMemStat mm("gnubuiltin");

and I have processed 10k DPM events.
First of all, I have seen our famous common error:

```
 **** GTRIGI: IEVENT=   2214 IDEVT=   2214 Random Seeds =       4357          0
-I FairPrimaryGenerator: 3 primary tracks from vertex (0, 0, 0)Event Time = 0(ns)
-I- PndStack: Filling MCTrack array...
-I- PndStack: Number of primaries        = 3
              Total number of particles  = 397
              Number of tracks in output = 138
Error: Symbol #include is not defined in current scope  run_sim_tpccombi_dpm.C:131:
Error: Symbol exception is not defined in current scope  run_sim_tpccombi_dpm.C:131:
Syntax Error: #include <exception> run_sim_tpccombi_dpm.C:131:
Error: Symbol G__exception is not defined in current scope  run_sim_tpccombi_dpm.C:131:
Error: type G__exception not defined
FILE:/home/spataro/trunk/pandaroot/macro/pid/mtest/./run_sim_tpccombi_dpm.C LINE:131

 *** Break *** segmentation violation
-I- PndStack: Updating track indizes...Root > Function run_sim_tpccombi_dpm() busy flag
cleared

 *** Break *** segmentation violation
```

and the macro has crashed.
After, if I have understood correctly, I open a new ROOT session and type:

```
spataro@briareos:~/trunk/pandaroot/macro/pid/mtest$ rt
root [0] TMemStat::Show()
Analyzing file: memstat_7796.root
Warning in <TFile::Init>: file memstat_7796.root probably not closed, trying to recover
Info in <TFile::Recover>: memstat_7796.root, recovered key TTree:T at address 332050543
Warning in <TFile::Init>: successfully recovered 1 keys
TMemStat::Show info: you are running on a machine with 4625 free MBytes of memory
TMemStatShow::Show will analyze only 947982432 bytes in its first pass
sel: ivmin=22982432, ivmax=947982432, nentries=28906250
==>The data Tree contains 10831340 entries with addresses in range[22982000,888605000]
root [1] .ls
TFile**  memstat_7796.root
 TFile*  memstat_7796.root
  OBJ: TTree T Memory Statistics : 0 at: 0x237dcc0
  OBJ: TH3F htemp pos:nbytes:time:btid {pos>2.29824e+07 && pos<9.47982e+08} : 1 at:
```

0x87fb5fb0
  OBJ: TH1D h memstat_7796.root : 0 at: 0x89e4c7d0
  OBJ: TH1D fgHalloc memstat_7796.root : 0 at: 0x89e4ccb0
  OBJ: TH1D fgHfree memstat_7796.root : 0 at: 0x89e4d290
  OBJ: TH1I fgHdiff : 0 at: 0x89e4d860
  OBJ: TH1I fgHentry leak entry index : 0 at: 0x8873a1e0
  OBJ: TH1I fgHleaks leaks : 0 at: 0x8871c9d0
  OBJ: TH1I htotleaks main leaks sorted by btids : 0 at: 0x887913b0
  KEY: TTree T;5 Memory Statistics
root [2]

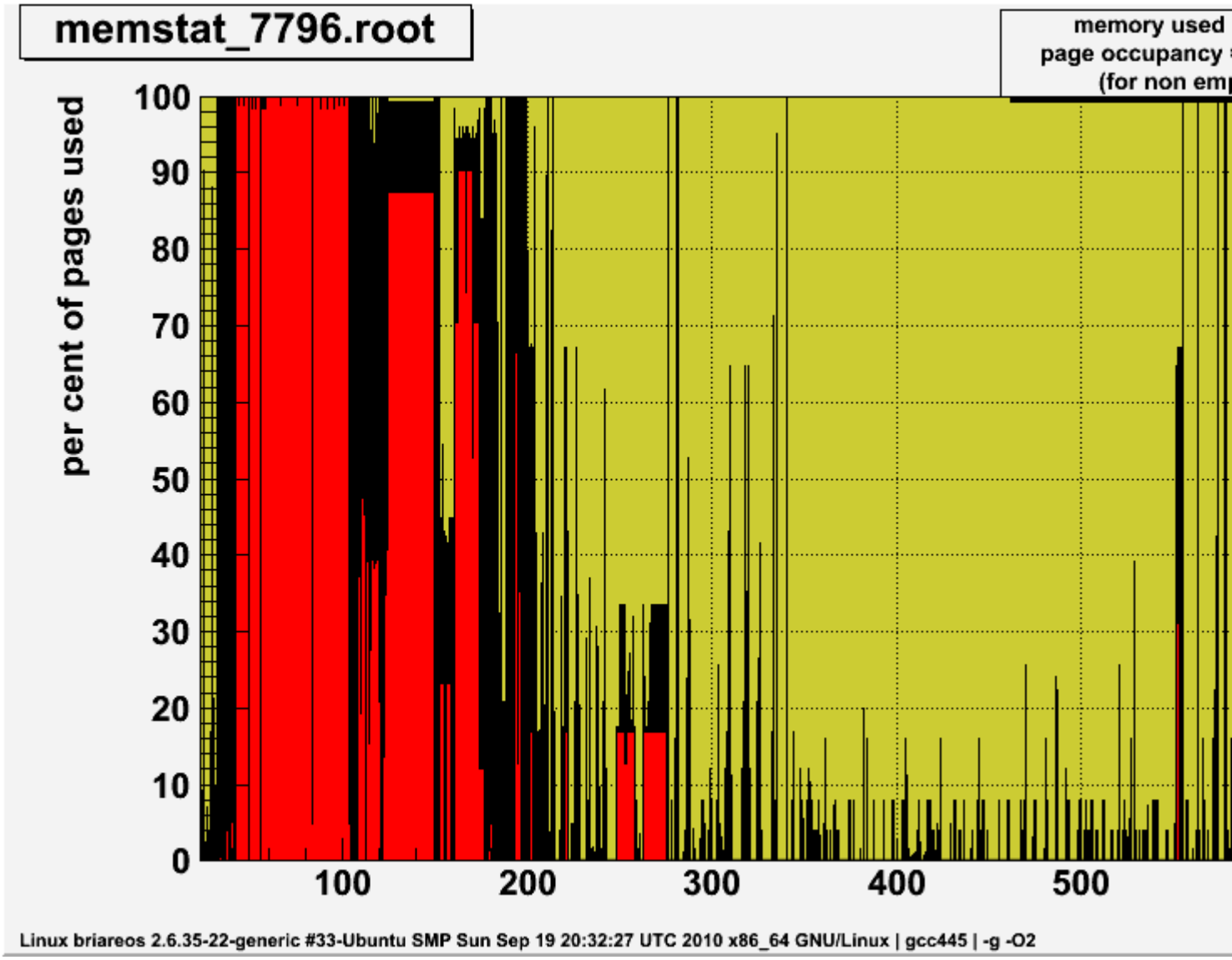
Ok, the file has crashed then he needs to be recovered, no problems.
At the end I have three canvas:

I admit that I am not able to find in these plots what is going wrong. The file contains also a Tree which I can explore, but it does not tell me no many new informations.

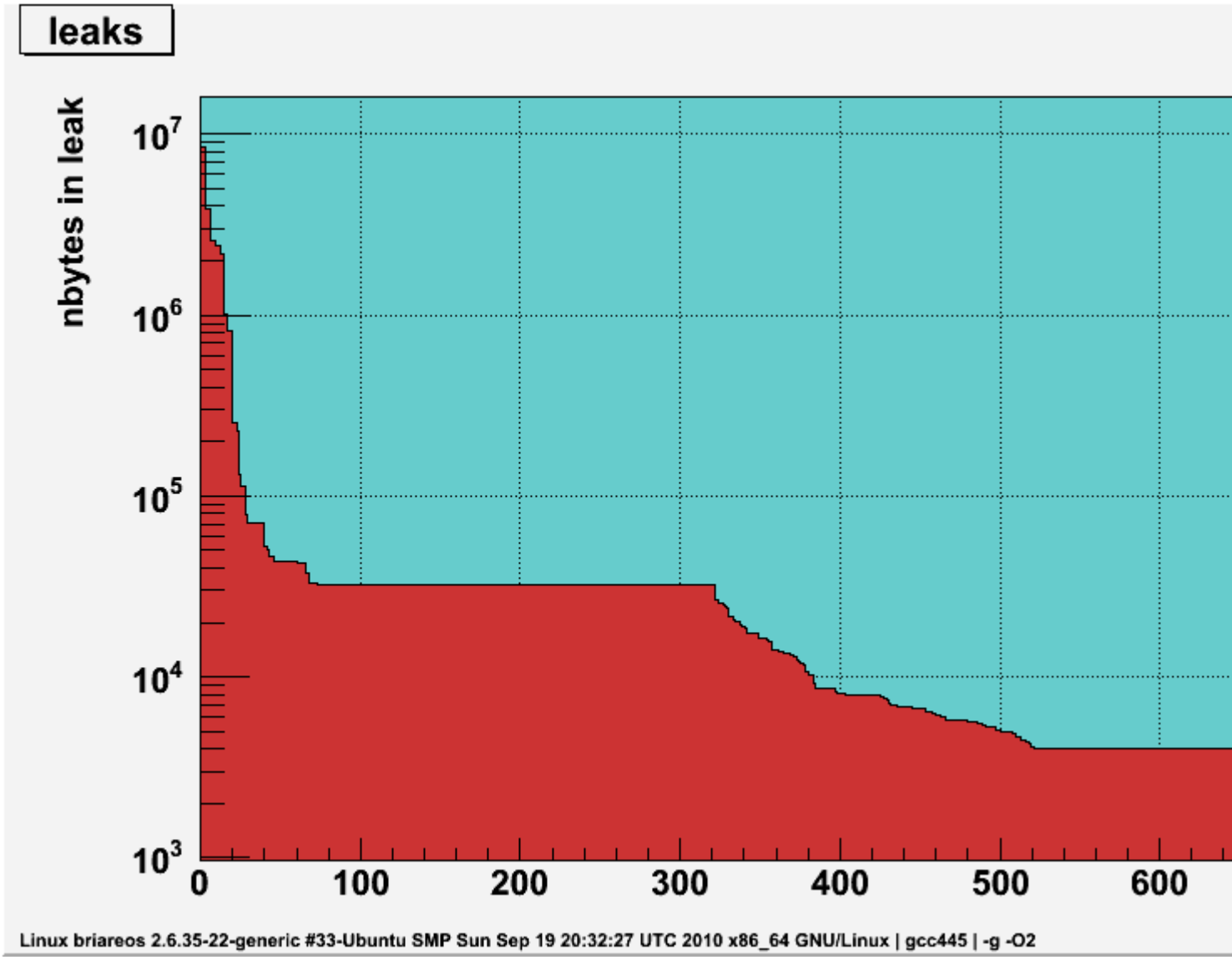
Would the experts please suggest me what to plot and to show, in order to find what is making our simulation faulty?
Thanks in advance

File Attachments

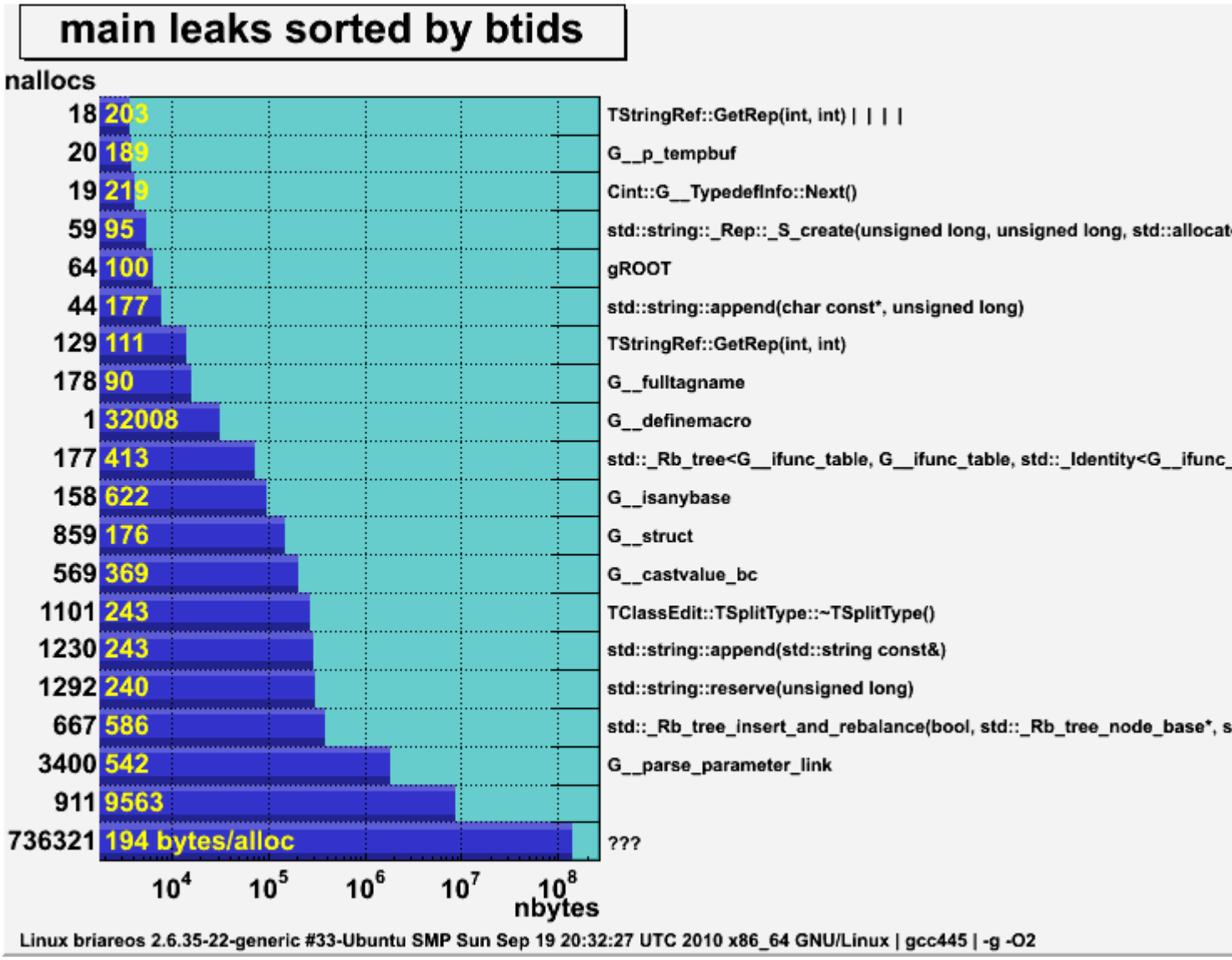
1) fgC1.gif, downloaded 1645 times



2) fgC2.gif, downloaded 1667 times



3) fgC3.gif, downloaded 1542 times


main leaks sorted by btids
nallocs
18 203 TStringRef::GetRep(int, int) | | | |
20 189 G__p_tempbuf
19 219 Cint::G__TypedefInfo::Next()
59 95 std::string::_Rep::_S_create(unsigned long, unsigned long, std::allocat
64 100 gROOT
44 177 std::string::append(char const*, unsigned long)
129 111 TStringRef::GetRep(int, int)
178 90 G__fulltagname
1 32008 G__definemacro
177 413 std::_Rb_tree<G__ifunc_table, G__ifunc_table, std::_Identity<G__ifunc_
158 622 G__isanybase
859 176 G__struct
569 369 G__castvalue_bc
1101 243 TClassEdit::TSplitType::~TSplitType()
1230 243 std::string::append(std::string const&)
1292 240 std::string::reserve(unsigned long)
667 586 std::_Rb_tree_insert_and_rebalance(bool, std::_Rb_tree_node_base*, s
3400 542 G__parse_parameter_link
911 9563
736321 194 bytes/alloc ???
10^4 10^5 10^6 10^7 10^8
nbytes
Linux briareos 2.6.35-22-generic #33-Ubuntu SMP Sun Sep 19 20:32:27 UTC 2010 x86_64 GNU/Linux | gcc445 | -g -O2