

The background of the slide features a complex, abstract pattern of thin, intersecting red lines and circles, resembling a network or a stylized orbital diagram. The lines and circles are of varying thicknesses and are scattered across the entire slide, creating a sense of dynamic movement and interconnectedness.

Monitoring software performance with LHCbPR

Maciej Szymański
University of Chinese Academy of Sciences
Kraków, 25 Jun 2018

LHCb Performance and Regression framework

- **LHCbPR** is a framework for systematic monitoring of the LHCb software
- Provides performance baseline in **controlled conditions**
- Enables to **inspect any changes** due to e.g. MC generators, physics of Geant4, new external libraries, new MRs, DDDDB tags, ...
- **Compare results** across different compilers and architectures
- Not only to monitor resource consumption, but also to **measure the physics performance**
- Cf. nightly tests: larger statistics and more than boolean value

Infrastructure

► TWiki

- Periodic tests started by the **Jenkins** job
 - ► Configuration of Jenkins job
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- Periodic tests started by the **Jenkins** job



- ► Configuration of Jenkins job

- tests triggered when corresponding nightly builds ready (using RabbitMQ)

- Configuration in **XML** files

- ► LHCbNightlyConf

- Machines that tests are currently running on

- 1blhcbpr1 with CC7 dedicated for timing tests (single executor in Jenkins), label: `perf-centos7-timing`
 - 1blhcbpr4 with CC7 (8 executors), labels: `perf-centos7`, `perf`
 - volhcb05 with SLC6 (8 executors), labels: `perf-slc6`, `perf`
 - hltperf-quanta01-e52630v4 for HLT throughput test

Infrastructure

- Results of the tests **parsed by the specific handlers**



- ▶ LHCbPR2HD
- to save relevant metrics (int, float, string, files, json)

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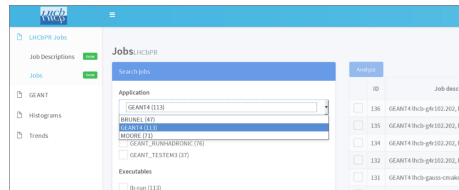
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- ▶ LHCbPR2BE

- **Web front-end** ▶ lhlhcbpr.cern.ch

- ▶ LHCbPR2FE
- generic ROOT files viewer
- trend analysis
- custom modules



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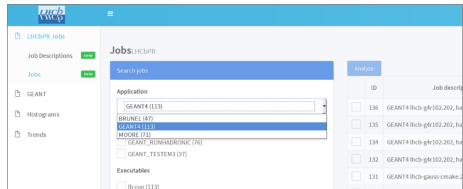
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- ▶ LHCbPR2FE
- generic ROOT files viewer
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- custom modules

- Flexibility to push the results as HTML to EOS (at the level of LHCbPR2HD)

- HLT case (rate and throughput tests)

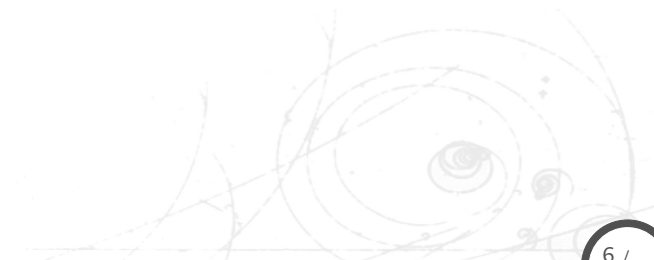


Some statistics as of today

- 5 applications
 - Brunel
 - Gauss
 - Geant4
 - Moore
 - MooreOnline
- 44 option files
- 115 tests (running on several slots and platforms)
- 20–51 tests daily
- 14 tests dedicated for timing (thus running only on 1b1hcbpr1 machine)
- Single tests run from several minutes up to 10 hours

How to take part

- Prepare the **options file** for the test and push to e.g. PRConfig



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- Specify the **command** to run
 - see whether it's already defined: [lhlhcbpr.cern.ch/api/executables](https://lblhcbpr.cern.ch/api/executables), if not, we'll add it

```
"name": "lb-run-gaudirun",  
"content": "lb-run -c {platform} --user-area={build} {app_name}/{app_version}  
gaudirun.py {options}"
```

```
"name": "lb-run-callgrind",  
"content": "( lb-run -c {platform} --user-area={build} {app_name}/{app_version} gaudirun.py  
--printsequence {options} ; lb-run -c {platform} --user-area={build}  
{app_name}/{app_version} valgrind --tool=callgrind --dump-instr=yes  
--instr-atstart=no --cache-sim=yes --branch-sim=yes python  
$(lb-run -c {platform} --user-area={build} {app_name}/{app_version}  
which gaudirun.py) {options} )"
```

```
"name": "perf-lb-run-gaudirun",  
"content": "( perf record --call-graph=lbr -o perf.log lb-run -c {platform}  
--user-area={build} {app_name}/{app_version} gaudirun.py {options} ;  
perf report -i perf.log > perf.lbr.txt )"
```

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```

- Create the **handler** to parse the output
 - many handlers already there, e.g. to parse TimingAuditor, output of perf, etc.
 - see README on: [LHCbPR2HD](#)

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<periodictest>
  <schedule type="week" time="10:00">Mon,Tue,Wed,Thu,Fri</schedule>
  <slot>lhcb-future</slot>
  <project>Brunel</project>
  <platform>x86_64-slc6-gcc62-opt</platform>
  <test runner="lhcbpr" group="MiniBrunel" env="lb-run-gaudirun|TimeLineHandler"/>
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machine label

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- (Optionally) create custom **analysis module** [▶ LHCbPR2FE](#)
 - or re-use existing one ...

Trend module with predefined parameters

Plot last 10 measurements for a given algorithm

The screenshot displays the MiniBrunel trend module interface. On the left, a sidebar lists navigation options: LHCbPR Jobs, Gauss, GEANT, Histograms, Trends, HLT Test Results, and Brunel. The Brunel section is expanded, showing various job configurations like MiniBrunel on slc6, MiniBrunel on centos7, and MiniBrunel_HLT1. The main panel is titled 'MiniBrunel centos7 trend' and contains a 'Search jobs' bar, an 'Application' dropdown set to 'BRUNEL (9521)', and sections for 'Options' (MiniBrunel (1559) is checked), 'Executables' (several options are unchecked), 'Platforms' (x86_64-centos7-gcc62-opt (4849) is checked), and 'Hosts' (several options are unchecked). A 'Versions' section at the bottom has a 'Show Nightly versions' checkbox and a 'Number of nightly versions to show' input set to 10. On the right, a 'Filter Attributes' section contains a table with 10 rows of attributes. Each row has an ID, a Name, and a 'Show' button. The attributes are: 8176 min_RichPhotonRecoDown, 8177 max_RichPhotonRecoDown, 8178 mean_RichPhotonRecoDown, 8179 sigma_RichPhotonRecoDown, 8180 min_RichTrackGloPointsDown, 8181 max_RichTrackGloPointsDown, 8182 mean_RichTrackGloPointsDown, 8183 sigma_RichTrackGloPointsDown, 8184 min_PrStoreFTHit, and 8185 max_PrStoreFTHit. At the bottom of the table, there is a pagination bar showing '1' as the current page, with a total of 2127 items, and a dropdown for the number of items per page (10, 25, 50, 100).

MiniBrunel centos7 trend
Attributes values by version

Search jobs

Application
BRUNEL (9521)

Options
☒ MiniBrunel (1559)

Executables
☐ lb-run-gaudirun (4326)
☐ lb-run-callgrind (678)
☐ lb-run-gaudirun-prconfig (4424)
☐ lb-run-gaudirun-prconfig-no-auto-override (92)
☐ gaudirun (1)

Platforms
☒ x86_64-centos7-gcc62-opt (4849)

Hosts
☐ lbhcbpr1.cern.ch (3515)
☐ lbhcbpr3.cern.ch (1599)
☐ lbhcbpr4.cern.ch (603)
☐ pclhcb10 (1)
☐ volhcb05.cern.ch (3803)

Versions
☒ Show Nightly versions
Number of nightly versions to show 10

Filter Attributes

| ID | Name | |
|------|------------------------------|------|
| 8176 | min_RichPhotonRecoDown | Show |
| 8177 | max_RichPhotonRecoDown | Show |
| 8178 | mean_RichPhotonRecoDown | Show |
| 8179 | sigma_RichPhotonRecoDown | Show |
| 8180 | min_RichTrackGloPointsDown | Show |
| 8181 | max_RichTrackGloPointsDown | Show |
| 8182 | mean_RichTrackGloPointsDown | Show |
| 8183 | sigma_RichTrackGloPointsDown | Show |
| 8184 | min_PrStoreFTHit | Show |
| 8185 | max_PrStoreFTHit | Show |

1 2 3 4 5 6 7 ... 2127 »
10 25 50 100

Using trend analysis

Plot the time spent by EVENT LOOP in Brunel test as a function of the software version

The screenshot shows the LHCbPR web interface. On the left sidebar, the 'Trends' tab is selected. A blue arrow points from the 'Trends' tab to the 'Filter Attributes' section, which currently displays 'No data was found!'. The interface includes a search bar, a list of jobs with checkboxes, and a filter attributes section.

Search jobs

Application

BRUNEL (8006)

Options

- ☐ MiniBrunel (1358)
- ☐ MiniBrunel-Callgrind (638)
- ☐ MiniBrunel_HLT1_NoFF (496)
- ☐ MiniBrunel_HLT1_NoFF_MC (490)
- ☐ MiniBrunel_HLT1 (475)
- ☐ MiniBrunel_HLT1_MC (461)
- ☐ MiniBrunel_PrChecker (122)
- ☒ PRTEST-COLLISION13-1000 (3965)
- ☐ 10Evts-COLLISION12-Beam4000GeV-VeloClosed-MagDown (1)

Executables

- ☐ lb-run-gaudiun (3405)
- ☐ lb-run-callgrind (638)
- ☐ lb-run-gaudiun-prconfig (3870)
- ☐ lb-run-gaudiun-prconfig-no-auto-override (92)
- ☐ gaudiun (1)

Platforms

- ☐ x86_64+avx2+fm-centos7-gcc62-opt (538)
- ☐ x86_64-centos7-gcc62-opt (3737)
- ☐ x86_64-slc5-gcc43-opt (1)
- ☐ x86_64-slc6-gcc49-opt (1666)
- ☐ x86_64-slc6-gcc62-opt (2064)

Hosts

- ☐ lbhcbpr1.cern.ch (2330)
- ☐ lbhcbpr3.cern.ch (1599)
- ☒ lbhcbpr4.cern.ch (404)
- ☐ pc1hcb10 (1)

Filter Attributes

No data was found!

Using trend analysis

Plot the time spent by EVENT LOOP in Brunel test as a function of the software version

The screenshot shows the LHCbPR web interface in a Firefox browser. The left sidebar contains navigation links: LHCbPR Jobs, Gauss, GEANT, Histograms, Trends (highlighted), and HLT Test Results. The 'Trends' section is active, showing a 'Search jobs' panel with a dropdown menu for 'Application' set to 'BRUNEL (8006)'. Below this are sections for 'Options', 'Executables', 'Platforms', and 'Hosts', each with a list of checkboxes and their corresponding counts. A blue arrow points from the text 'select Brunel from the list of applications' to the 'BRUNEL (8006)' entry in the 'Application' dropdown menu.

Search jobs

Application

BRUNEL (8006)

Options

- ☐ MiniBrunel (1358)
- ☐ MiniBrunel-Callgrind (538)
- ☐ MiniBrunel_HLT1_NoFF (496)
- ☐ MiniBrunel_HLT1_NoFF_MC (490)
- ☐ MiniBrunel_HLT1 (475)
- ☐ MiniBrunel_HLT1_MC (461)
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Platforms

- ☐ x86_64-avx2-fma-centos7-gcc62-opt (538)
- ☐ x86_64-centos7-gcc62-opt (3737)
- ☐ x86_64-slc5-gcc43-opt (1)
- ☐ x86_64-slc6-gcc49-opt (1666)
- ☐ x86_64-slc6-gcc62-opt (2064)

Hosts

- ☐ lbhcbpr1.cern.ch (2330)
- ☐ lbhcbpr3.cern.ch (1599)
- ☒ lbhcbpr4.cern.ch (404)
- ☐ pchcb10 (1)

Filter Attributes

No data was found!

select Brunel from the list of applications

Using trend analysis

Plot the time spent by EVENT LOOP in Brunel test as a function of the software version

The screenshot shows the LHCbPR web interface. On the left sidebar, 'Trends' is selected. The main content area is titled 'Search jobs'. Under 'Application', 'BRUNEL (8006)' is selected. Under 'Options', 'PRTEST-COLLISION15-1000 (3965)' is selected, indicated by a blue arrow. The 'Filter Attributes' section shows 'No data was found!'. The 'Executables' section lists 'lb-run-gaudiun (3405)', 'lb-run-callgrind (638)', 'lb-run-gaudiun-prconfig (3870)', 'lb-run-gaudiun-prconfig-no-auto-override (92)', and 'gaudiun (1)'. The 'Platforms' section lists 'x86_64+avx2+fsma-centos7-gcc62-opt (538)', 'x86_64-centos7-gcc62-opt (3737)', 'x86_64-slc5-gcc43-opt (1)', 'x86_64-slc6-gcc49-opt (1666)', and 'x86_64-slc6-gcc62-opt (2064)'. The 'Hosts' section lists 'lbhcbpr1.cern.ch (2330)', 'lbhcbpr3.cern.ch (1599)', 'lbhcbpr4.cern.ch (404)', and 'pclhcb10 (1)'.

select the option, platform and host you are interested in

Using trend analysis

Plot the time spent by EVENT LOOP in Brunel test as a function of the software version

The screenshot shows the LHCbPR web interface in a Mozilla Firefox browser. The left sidebar contains a menu with items: LHCbPR Jobs, Gauss, GEANT, Histograms, Trends (highlighted), Trends (with a sub-menu icon), and HLT Test Results. The main content area is titled 'Versions' and includes the following sections:

- Show Nightly versions** (checked)
- Number of nightly versions to show**: 10 (input field)
- Select latest versions** (radio button)
- Select specific versions** (radio button)
- Releases**: v43r2 (1) (checkbox)
- lhc-b-future**:
 - lhc-b-future.600 (1) (checkbox)
 - lhc-b-future.597 (1) (checkbox)
 - lhc-b-future.596 (1) (checkbox)
 - lhc-b-future.582 (14) (checkbox)
 - lhc-b-future.579 (11) (checkbox)
 - lhc-b-future.578 (8) (checkbox)
 - lhc-b-future.575 (1) (checkbox)
 - lhc-b-future.572 (11) (checkbox)
 - lhc-b-future.571 (11) (checkbox)
 - lhc-b-future.570 (11) (checkbox)
- lhc-b-gaudi-head**:
 - lhc-b-gaudi-head.1657 (5) (checked)
 - lhc-b-gaudi-head.1653 (15) (checked)
 - lhc-b-gaudi-head.1652 (10) (checked)
 - lhc-b-gaudi-head.1651 (5) (checked)
 - lhc-b-gaudi-head.1643 (18) (checkbox)
 - lhc-b-gaudi-head.1642 (15) (checkbox)
 - lhc-b-gaudi-head.1641 (15) (checkbox)
 - lhc-b-gaudi-head.1638 (15) (checked)
 - lhc-b-gaudi-head.1637 (6) (checkbox)
 - lhc-b-gaudi-head.1636 (1) (checked)

A blue arrow points from the text 'choose versions' to the 'Number of nightly versions to show' input field.

Using trend analysis

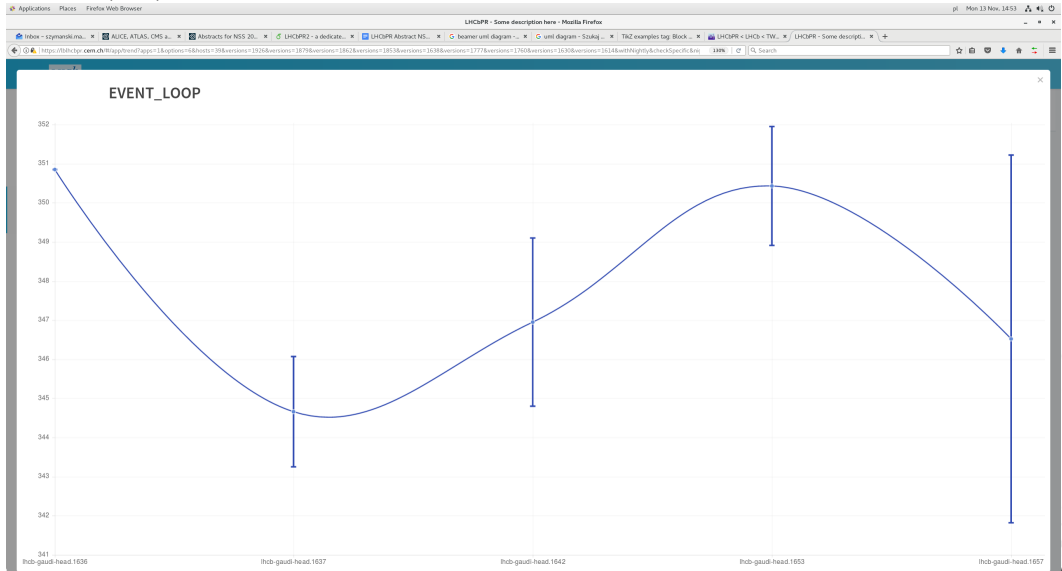
Plot the time spent by EVENT LOOP in Brunel test as a function of the software version

The screenshot shows the LHCbPR web interface. On the left is a sidebar with navigation links: LHCbPR Jobs, Gauss, GEANT, Histograms, Trends (selected), and HLT Test Results. The main content area is titled 'Trends' with the subtitle 'Attributes values by version'. It features a 'Search Jobs' section with a dropdown for 'Application' set to 'BRUNEL (8006)' and a list of 'Options' where 'PRETEST-COLLISION15-1000 (3965)' is selected. Below this is an 'Executables' section with several options. The 'Platforms' section lists various system configurations. The 'Hosts' section is partially visible. A 'Filter Attributes' search bar is present, with a blue arrow pointing to it and the text 'type the name of the algorithm'. Below the search bar is a table with columns 'ID', 'Name', and 'Show'. The table lists various event loop related tasks. At the bottom of the table are pagination controls showing '1' of 32 items.

| ID | Name | Show |
|------|------------------------|------|
| 5 | EVENT_LOOP | Show |
| 1952 | BrunelEventCount | Show |
| 2387 | EVENT_LOOP_count | Show |
| 2388 | EVENT_LOOP_rank | Show |
| 2390 | EVENT_LOOP_id | Show |
| 2407 | BrunelEventCount_count | Show |
| 2408 | BrunelEventCount_rank | Show |
| 2410 | BrunelEventCount_id | Show |
| 2512 | EventAccount | Show |
| 2513 | EventAccount_count | Show |

Using trend analysis

Plot the time spent by EVENT LOOP in Brunel test as a function of the software version



Using ROOT file viewer

ROOT file viewer

No jobs selected!

No plots selected!

Select jobs

Search jobs

Application

No data was found!

Show debug info

© 2017 - LHCbPR

go to LHCbPR Jobs/ROOT file viewer tab

Using ROOT file viewer

The screenshot shows the LHCbPR ROOT file viewer interface. The left sidebar contains navigation links: LHCbPR Jobs, Job Descriptions, Jobs, ROOT file viewer, Gauss, GEANT, Histograms, Trends, and HLT Test Results. The main content area is titled 'ROOT file viewer' and 'LHCbPR'. A blue banner at the top says 'No plots selected!'. Below it, a blue bar says 'Use the 'Select plots' tab to chose plots to view'. The 'Select jobs' tab is active, showing a search bar and a list of jobs. A blue arrow points from the text 'select applications, filter options etc' to the 'Select jobs' tab and the 'Application' dropdown menu.

select applications, filter options etc

| ID | Job description | Host | Start/End |
|---|---|---|---|
| <input checked="" type="checkbox"/> 19733 | GEANT4 lhc-sim09.357, G4MScInThinLayerTest.py | lbhcbpr4.cern.ch, x86_64-slc6-gcc49-opt | 2017-11-12 05:06:00+0100 / 2017-11-12 09:58:53+0100 |
| <input checked="" type="checkbox"/> 19734 | GEANT4 lhc-g4103.162, G4MScInThinLayerTest.py | lbhcbpr4.cern.ch, x86_64-slc6-gcc49-opt | 2017-11-12 05:00:42+0100 / 2017-11-12 09:53:03+0100 |
| <input type="checkbox"/> 19690 | GEANT4 lhc-sim09-upgrade.536, G4MScInThinLayerTest.py | lbhcbpr4.cern.ch, x86_64-slc6-gcc49-opt | 2017-11-12 00:55:22+0100 / 2017-11-12 05:59:31+0100 |
| <input type="checkbox"/> 19692 | GEANT4 lhc-sim09-cmake.69, G4MScInThinLayerTest.py | lbhcbpr4.cern.ch, x86_64-slc6-gcc49-opt | 2017-11-12 00:55:22+0100 / 2017-11-12 05:59:24+0100 |
| <input type="checkbox"/> 18515 | GEANT4 lhc-sim09-cmake.62, G4MScInThinLayerTest.py | lbhcbpr4.cern.ch, x86_64-slc6-gcc49-opt | 2017-11-05 00:57:23+0100 / 2017-11-05 05:46:46+0100 |
| <input type="checkbox"/> 18514 | GEANT4 lhc-sim09.550, G4MScInThinLayerTest.py | lbhcbpr4.cern.ch, x86_64-slc6-gcc49-opt | 2017-11-05 00:56:51+0100 / 2017-11-05 05:46:07+0100 |
| <input type="checkbox"/> 16704 | GEANT4 lhc-sim09-cmake.53, G4MScInThinLayerTest.py | volhcb05.cern.ch, x86_64-slc6-gcc49-opt | 2017-10-29 00:57:56+0200 / 2017-10-29 02:59:14+0200 |
| <input type="checkbox"/> 16705 | GEANT4 lhc-sim09.541, G4MScInThinLayerTest.py | volhcb05.cern.ch, x86_64-slc6-gcc49-opt | 2017-10-29 00:57:57+0200 / 2017-10-29 02:59:12+0200 |
| <input type="checkbox"/> 14982 | GEANT4 lhc-sim09-cmake.46, G4MScInThinLayerTest.py | volhcb05.cern.ch, x86_64-slc6-gcc49-opt | 2017-10-22 00:58:06+0200 / 2017-10-22 03:11:46+0200 |
| <input type="checkbox"/> 14983 | GEANT4 lhc-sim09.534, G4MScInThinLayerTest.py | volhcb05.cern.ch, x86_64-slc6-gcc49-opt | 2017-10-22 00:58:03+0200 / 2017-10-22 03:11:00+0200 |

Using ROOT file viewer

ROOT file viewer

No plots selected!

Use the 'Select plots' tab to chose plots to view

Select jobs Select plots

Search jobs

Application

GEANT4 (506)

Options

☐ GEANT_RUNHADRONIC (269)

☐ GEANT_RichTbSimHTest (9)

☒ GEANT_TESTEM5 (90)

☐ GEANT_TESTEM3 (140)

Executables

☐ lb-run (508)

Platforms

☐ x86_64-centos7-gcc62-opt (24)

☐ x86_64-slc6-gcc48-opt (151)

☐ x86_64-slc6-gcc49-opt (110)

☐ x86_64-slc6-gcc62-opt (23)

Hosts

☐ 796f23726d01 (1)

☐ lbhcbpr3.cern.ch (2)

☐ lbhcbpr4.cern.ch (43)

☐ volhcb05.cern.ch (462)

Versions

☐ atlas-frameworks-key - ATL-SOF...

☐ PerformanceStudies < Main < TW...

☐ hCLIS00185 - graph for statisti...

☐ Spark Programming Guide - Spark...

☐ tests-polkiewicz [Periodic Tests] [...]

☐ naczynan@0515113142551~

☐ naczynan@kylus008~

☐ naczynan@pchb157~

☐ LHCbPR - Some description here

☐ naczynan@pchb157~

select jobs to analyze and click Analyze

| ID | Job description | Host | Start/End |
|---|--|---|---|
| <input checked="" type="checkbox"/> 19733 | GEANT4 lbcb-sim09.557, G4MScInThinLayerTest.py | lbhcbpr4.cern.ch, x86_64-slc6-gcc49-opt | 2017-11-12 05:06:00+0100 / 2017-11-12 09:58:53+0100 |
| <input checked="" type="checkbox"/> 19734 | GEANT4 lbcb-g4103.162, G4MScInThinLayerTest.py | lbhcbpr4.cern.ch, x86_64-slc6-gcc49-opt | 2017-11-12 05:00:42+0100 / 2017-11-12 09:53:03+0100 |
| <input type="checkbox"/> 19690 | GEANT4 lbcb-sim09-upgrade.536, G4MScInThinLayerTest.py | lbhcbpr4.cern.ch, x86_64-slc6-gcc49-opt | 2017-11-12 00:55:22+0100 / 2017-11-12 05:59:31+0100 |
| <input type="checkbox"/> 19692 | GEANT4 lbcb-sim09-cmake.69, G4MScInThinLayerTest.py | lbhcbpr4.cern.ch, x86_64-slc6-gcc49-opt | 2017-11-12 00:55:22+0100 / 2017-11-12 05:59:24+0100 |
| <input type="checkbox"/> 18515 | GEANT4 lbcb-sim09-cmake.62, G4MScInThinLayerTest.py | lbhcbpr4.cern.ch, x86_64-slc6-gcc49-opt | 2017-11-05 00:57:23+0100 / 2017-11-05 05:46:46+0100 |
| <input type="checkbox"/> 18514 | GEANT4 lbcb-sim09.550, G4MScInThinLayerTest.py | lbhcbpr4.cern.ch, x86_64-slc6-gcc49-opt | 2017-11-05 00:56:51+0100 / 2017-11-05 05:46:07+0100 |
| <input type="checkbox"/> 16704 | GEANT4 lbcb-sim09-cmake.53, G4MScInThinLayerTest.py | volhcb05.cern.ch, x86_64-slc6-gcc49-opt | 2017-10-29 00:57:56+0200 / 2017-10-29 02:59:14+0200 |
| <input type="checkbox"/> 16705 | GEANT4 lbcb-sim09.541, G4MScInThinLayerTest.py | volhcb05.cern.ch, x86_64-slc6-gcc49-opt | 2017-10-29 00:57:57+0200 / 2017-10-29 02:59:12+0200 |
| <input type="checkbox"/> 14982 | GEANT4 lbcb-sim09-cmake.46, G4MScInThinLayerTest.py | volhcb05.cern.ch, x86_64-slc6-gcc49-opt | 2017-10-22 00:58:06+0200 / 2017-10-22 03:11:46+0200 |
| <input type="checkbox"/> 14983 | GEANT4 lbcb-sim09.534, G4MScInThinLayerTest.py | volhcb05.cern.ch, x86_64-slc6-gcc49-opt | 2017-10-22 00:58:03+0200 / 2017-10-22 03:11:00+0200 |

Using ROOT file viewer

The screenshot shows the LHCbPR ROOT file viewer interface. The browser address bar displays the URL: <https://lhcbrpr.cern.ch/lhcbrpr/ROOTfileviewer?apps=2&options=4&withNightly=false&checkSpecific=false&withNightlyVersionNumber=10&jobs=19734&jobs=19733>.

The interface includes a sidebar on the left with navigation options: LHCbPR Jobs, Job Descriptions, Jobs, ROOT file viewer, Gauss, GEANT, Histograms, Trends, and HLT Test Results.

The main content area is titled "ROOT file viewer" and "LHCbPR". It features a blue header bar with the text "No plots selected!" and a blue bar below it with the text "Use the 'Select plots' tab to choose plots to view".

The "Select plots" tab is active, and a blue arrow points to it with the text "click on Select plots".

The "Select jobs" section on the left lists the following options:

- Application: GEANT4 (506)
- Options:
 - ☐ GEANT_RUNHADRONIC (269)
 - ☐ GEANT_RichTbSimTest (9)
 - ☒ GEANT_TESTEM5 (90)
 - ☐ GEANT_TESTEM3 (340)
- Executables:
 - ☐ lb-run (508)
- Platforms:
 - ☐ x86_64-centos7-gcc62-opt (24)
 - ☐ x86_64-slc6-gcc48-opt (151)
 - ☐ x86_64-slc6-gcc49-opt (110)
 - ☐ x86_64-slc6-gcc62-opt (23)
- Hosts:
 - ☐ 796f23726d01 (1)
 - ☐ lbhcbpr3.cern.ch (2)
 - ☐ lbhcbpr4.cern.ch (43)
 - ☐ volhcb05.cern.ch (462)
- Versions:
 - ☐ atlas-frameworks-key - ATL-SOF...
 - ☐ PerformanceStudies - Main < TW...
 - ☐ hCLIS00185 - graph for statisti...
 - ☐ Spark Programming Guide - Spark...
 - ☐ tests-polkiewicz [Periodic Tests] [...]
 - ☐ naczynan@0515113142551-...
 - ☐ naczynan@kylus008-...
 - ☐ naczynan@pchb157-...
 - ☐ LHCbPR - Some description here...
 - ☐ naczynan@pchb157-...

The "Analyze" section on the right displays a table of jobs:

| | ID | Job description | Host | Start/End |
|-------------------------------------|-------|---|---|---|
| <input checked="" type="checkbox"/> | 19733 | GEANT4 lhc-sim09.557, G4MScInThinLayerTest.py | lbhcbpr4.cern.ch, x86_64-slc6-gcc49-opt | 2017-11-12 05:06:00+0100 / 2017-11-12 09:58:53+0100 |
| <input checked="" type="checkbox"/> | 19734 | GEANT4 lhc-g4103.162, G4MScInThinLayerTest.py | lbhcbpr4.cern.ch, x86_64-slc6-gcc49-opt | 2017-11-12 05:00:42+0100 / 2017-11-12 09:53:03+0100 |
| <input type="checkbox"/> | 19690 | GEANT4 lhc-sim09-upgrade.536, G4MScInThinLayerTest.py | lbhcbpr4.cern.ch, x86_64-slc6-gcc49-opt | 2017-11-12 00:55:22+0100 / 2017-11-12 05:59:31+0100 |
| <input type="checkbox"/> | 19692 | GEANT4 lhc-sim09-cmake.69, G4MScInThinLayerTest.py | lbhcbpr4.cern.ch, x86_64-slc6-gcc49-opt | 2017-11-12 00:55:22+0100 / 2017-11-12 05:59:24+0100 |
| <input type="checkbox"/> | 18515 | GEANT4 lhc-sim09-cmake.62, G4MScInThinLayerTest.py | lbhcbpr4.cern.ch, x86_64-slc6-gcc49-opt | 2017-11-05 00:57:23+0100 / 2017-11-05 05:46:46+0100 |
| <input type="checkbox"/> | 18514 | GEANT4 lhc-sim09.550, G4MScInThinLayerTest.py | lbhcbpr4.cern.ch, x86_64-slc6-gcc49-opt | 2017-11-05 00:56:51+0100 / 2017-11-05 05:46:07+0100 |
| <input type="checkbox"/> | 16704 | GEANT4 lhc-sim09-cmake.53, G4MScInThinLayerTest.py | volhcb05.cern.ch, x86_64-slc6-gcc49-opt | 2017-10-29 00:57:56+0200 / 2017-10-29 02:59:14+0200 |
| <input type="checkbox"/> | 16705 | GEANT4 lhc-sim09.541, G4MScInThinLayerTest.py | volhcb05.cern.ch, x86_64-slc6-gcc49-opt | 2017-10-29 00:57:57+0200 / 2017-10-29 02:59:12+0200 |
| <input type="checkbox"/> | 14982 | GEANT4 lhc-sim09-cmake.46, G4MScInThinLayerTest.py | volhcb05.cern.ch, x86_64-slc6-gcc49-opt | 2017-10-22 00:58:06+0200 / 2017-10-22 03:11:46+0200 |
| <input type="checkbox"/> | 14983 | GEANT4 lhc-sim09.534, G4MScInThinLayerTest.py | volhcb05.cern.ch, x86_64-slc6-gcc49-opt | 2017-10-22 00:58:03+0200 / 2017-10-22 03:11:00+0200 |

The bottom status bar shows various application links and the user's current session information.

Using ROOT file viewer

ROOT file viewer

No plots selected!

Use the 'Select plots' tab to chose plots to view

Select jobs Select plots

Plot Selected (1) Select Defaults Clear All

- TESTEM5_RMSResults.root
- ☒ Distribution for Energy 1000
- ☐ Distribution for Energy 2000
- ☐ Distribution for Energy 3000
- ☐ Distribution for Energy 4000
- ☐ Distribution for Energy 5000
- ☐ Distribution for Energy 7000
- ☐ Distribution for Energy 9000
- ☐ Distribution for Energy 12000
- ☐ Distribution for Energy 15000
- ☐ Distribution for Energy 20000
- ☐ Distribution for Energy 25000
- ☐ Distribution for Energy 30000
- ☐ Distribution for Energy 40000
- ☐ Fitted Distribution for Energy 1000
- ☐ Fitted Distribution for Energy 2000
- ☐ Fitted Distribution for Energy 3000
- ☐ Fitted Distribution for Energy 4000
- ☐ Fitted Distribution for Energy 5000
- ☐ Fitted Distribution for Energy 7000
- ☐ Fitted Distribution for Energy 9000
- ☐ Fitted Distribution for Energy 12000
- ☐ Fitted Distribution for Energy 15000

select your histogram

Using ROOT file viewer

Applications Places Firefox Web Browser

LHCbPR - Some description here - Mozilla Firefox

Inbox - szymanski.ma... AJICE, ATLAS, CMS a... Abstracts for NSS 20... LHCbPR2 - a dedicate... LHCbPR Abstract NS... beamer uml diagram -... uml diagram - Szukaj... T&Z examples tag: Block... LHCbPR < LHCb < TW... LHCbPR - Some descrip...

https://blhcpr.cern.ch/ROOTfileviewer?apps=2&options=4&withNightly=false&checkSpecific=false&nightlyVersionNumber=10&jobs=19733&jobs=19734

120% Search

ROOT file viewer
LHCbPR

No plots selected!

Use the 'Select plots' tab to chose plots to view

Select jobs Select plots

Plot Selected Select Defaults Clear All

- TESTEM5_RMSResults.root

- ☒ Distribution for Energy 1000
- ☐ Distribution for Energy 2000
- ☐ Distribution for Energy 3000
- ☐ Distribution for Energy 4000
- ☐ Distribution for Energy 5000
- ☐ Distribution for Energy 7000
- ☐ Distribution for Energy 9000
- ☐ Distribution for Energy 12000
- ☐ Distribution for Energy 15000
- ☐ Distribution for Energy 20000
- ☐ Distribution for Energy 25000
- ☐ Distribution for Energy 30000
- ☐ Distribution for Energy 40000
- ☐ Fitted Distribution for Energy 1000
- ☐ Fitted Distribution for Energy 2000
- ☐ Fitted Distribution for Energy 3000
- ☐ Fitted Distribution for Energy 4000
- ☐ Fitted Distribution for Energy 5000
- ☐ Fitted Distribution for Energy 7000
- ☐ Fitted Distribution for Energy 9000
- ☐ Fitted Distribution for Energy 12000
- ☐ Fitted Distribution for Energy 15000

click on Plot selected

Using ROOT file viewer

Applications Places Firefox Web Browser

Firefox Web Browser

LHCbPR - Some description here - Mozilla Firefox

Inbox - szymanski.m... AJUCE, ATLAS, CMS a... Abstracts for NSS 20... LHCbPR2 - a dedicate... LHCbPR Abstract NS... beamer uml diagram -... uml diagram - Szukaj... T&Z examples tag: Block... LHCbPR < LHCb < TW... LHCbPR - Some descrip...

https://blhncpr.cern.ch/ROOTfileviewer?apps=2&options=4&withNightly=false&checkSpecific=false&withNightlyVersionNumber=10&jobs=19733&jobs=19734

120% | | | Search

LHCb ROOT file viewer

ROOT file viewer

LHCbPR

Distribution for Energy 1000

choose the way of display

Split Superimposed Supersuperimposed Ratio (with JSROOT) Ratio (with d3) Difference (with d3)

Select jobs Select plots

Plot Selected (1) Select Defaults Clear All

- TESTEM5_RMSResults.root

- ☒ Distribution for Energy 1000
- ☐ Distribution for Energy 2000
- ☐ Distribution for Energy 3000
- ☐ Distribution for Energy 4000
- ☐ Distribution for Energy 5000
- ☐ Distribution for Energy 7000
- ☐ Distribution for Energy 9000
- ☐ Distribution for Energy 12000
- ☐ Distribution for Energy 15000
- ☐ Distribution for Energy 20000
- ☐ Distribution for Energy 25000
- ☐ Distribution for Energy 30000

atlas-frameworks key - ATL-SOF... PerformanceStudies < Main < TW... hC1500185 - graph for statisti... Spark Programming Guide - Spark... tests-poolqueue [Periodic Tests] |... naczynan@p0515113142551... naczynan@kglus008... naczynan@p0chb157... LHCbPR - Some description here... naczynan@p0chb157...

1 / 7

Thank you!
Please give feedback on our [mattermost channel](#)

LHCbPR - Resources

- Web application:
<https://lblhcbpr.cern.ch>
<https://lblhcbpr.cern.ch/api/>
<https://gitlab.cern.ch/lhcb-core/LHCbPR2FE>
- API service:
<https://gitlab.cern.ch/lhcb-core/LHCbPR2BE>
- ROOT HTTP service:
<https://gitlab.cern.ch/lhcb-core/LHCbPR2ROOT>
- Tests' output handlers:
<https://gitlab.cern.ch/lhcb-core/LHCbPR2HD>
- Project builder:
<https://gitlab.cern.ch/lhcb-core/LHCbPR2>
- Jenkins configuration
<https://gitlab.cern.ch/lhcb-core/LbNightlyTools>
- Configuration of the periodic tests
<https://gitlab.cern.ch/lhcb-core/LHCbNightlyConf/>