Plans for ROOT 5

Axel Naumann, ALICE Offline Week
2015-07-01

No Plans for ROOT 5

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ROOT 6

- New interpreter: CINT replaced by cling

- Based on compiler library

  - production grade understanding of C++

  - C++11 fully supported, throughout

  - C++14, 17,… support comes in automatically

ROOT 6 Adoption

- ROOT 6 used in production by CMS, LHCb

- Main analysis + dev release by ATLAS

  - switch to ROOT 6 @ Tier 0 planned for September 2015

- ALICE supported ROOT 6 first - **applause to Peter Hristov!** - but migrates last?

ROOT 6 Status

- 6.00 May 2014; no live patches branch

- 6.02 Sept 2014; patch branch used by ATLAS and (for now) LHCb

- 6.04 May 2015; patch branch used by CMS and likely soon by LHCb

- 6.06 not yet scheduled, likely end of the year

ROOT 5 / 6 Comparison

- 5: supports C++98
  6: requires C++>=11

- 6 has several new features based on cling: TFormula, TTreeReader instead of void*& in SetBranchAddress, beautiful palettes, better Python integration, etc

- 6 misses Windows / MSVC, AIX; work on MSVC ongoing, huge progress

ROOT 5 / 6 Comparison

- ROOT 5: past

- ROOT 6: present

- ROOT 7: soon ;-)

Active Branches

- 6.02 and 6.04 and master
  Mostly trivial changes. 6.02 versus master, without TMVA:
  1215 files changed; +71k LOC -39k LOC

- 5.34 very different!
  Without CINT, cling, llvm, TMVA:
  5531 files changed; +380k LOC -314k LOC

Maintenance Issue

- Promised to maintain ROOT 5 "for the coming years" in 2011

- Keeping v5-34-00-patches alive now a large burden without significant advantages

- 6.02, 6.04, master

  - time moves on…

  - ample warning

ROOT5 = Windows XP

- We won't delete ROOT 5 from root.cern.ch

- But starting September 2015, we will not maintain ROOT 5-34-00-patches anymore

  - *unless* operationally critical for an experiment

  - or Windows

In Practice

- No bug fixes, unless ACLICE DAQ breaks down

- But we have no real alternative for Windows

  - relevant Windows patches will be put in (almost never happens)

- No new platforms, compilers

  - frozen at CC7, GCC 5.1 - should be plenty

  - likely problems with future Mac OS / XCode, though

Outlook

- Already planning ROOT 7

  - new user interfaces

  - new C++ interfaces

  - key/value store support,

  - …

- Come and discuss:

ROOT Workshop

- Sept 15-18, 2015 at Saas-Fee, Switzerland

- Celebrating ROOT's 20th birthday

- Presentations and discussions from ROOT dev and ROOT users, planning ROOT's future

- Special speakers: Bjarne Stroustrup, Wolfgang Huber (R / Bioconductor), Electronic Arts

- http://indico.cern.ch/e/root20

Summary

- We are preparing for ROOT 7

- Practically freezing ROOT 5

- Will ALICE still rely on ROOT 5 until 2018?