



Moving Linux in CMS

Vincenzo

Generic Certification

backward compatibility

- SLC4 is binary backward compatible:
 - Binaries built on SLC3 are usable on SLC4 producing identical (bit by bit) results (same HW!)
 - Binaries built on SLC4 with gcc323 compiler are usable on SLC3 with no regression
- SLC4 is binary compatible with any SL4 and RHL4

CMSSW certification

1) compatibility

- Compatibility running environment available since “ever”
 - CMS builds and ships all libraries needed by its applications including the compiler, python, libshift, valgrind

```
setenv SCRAM_ARCH slc3_ia32_gcc323
scramv1 project CMSSW CMSSW_0_5_0
cd CMSSW_0_5_0/src
eval `scramv1 runtime -csh`
cmRun abc.cfg
```

- Compatibility development environment available since last autumn

```
setenv SCRAM_ARCH slc3_ia32_gcc323
scramv1 b
cmRun abc.cfg (on sl4 or sl3)
```

CMSW Certification

2) port to gcc 3.4

- CMS has ported its development, building and local running environment to SL4 gcc 3.4
- Almost all physics software applications (simulation, reconstruction, calibration, analysis) has been ported to gcc3.4
 - Missing few components mostly because of dependences from “unmaintained” externals
 - Nightly builds available since ~15/11/2006
 - Official Release available since 20/12/2006
- Working on full regression validation
- Expect to make slc4_ia32_gcc34 default in March

Certification

3) port to amd64

- At Present no firm plan for a port to native amd64
 - First tests show regressions
 - Need to investigate implications on performance
 - Speed
 - Memory footprint
- Will support compatibility mode (-m32)

“Grid” Software: CMS specific components

- Compatibility mode already exploited on WN
- Compatibility mode in job preparation under test (prepare scl3_gcc323 job on SL4)
 - Job submission relies on lcg/UI: needs native scl3
- Work started to port CMS “grid” tools to native SL4 environment
 - Expected to be ready for March 1st
 - Job submission most probably will still require login on a scl3 lcg/UI



Summary

- IA32
 - Physics Applications (CMSSW)
 - OK (few components missing)
 - Interactive environment (including IGUANA)
 - OK
 - Building environment (SCRAM, NICOS)
 - OK
 - Running environment (including GRID?)
 - OK local
 - Grid OK in compatibility mode
 - Data Management, Workflow Management
 - Compatibility mode under test
 - SL4 native: Migration Started
- Native 64 bits
 - First investigation starting

Background Material

- [Presentation at CMS Week March 2006](#)
 - [SLC4 web home](#)
 - [wiki Feature List For SLC4](#)
 - [LCG/AA Architect Forum \(minutes\)](#)
-
- [La marche de l'empereur](#)