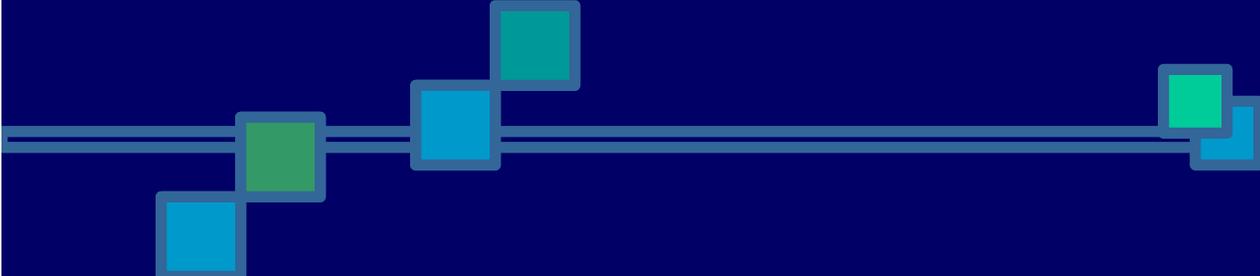


Automated Builds for CMS

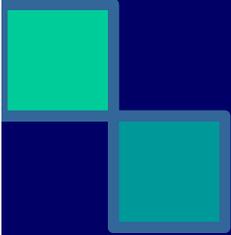
(use cases and requirements)

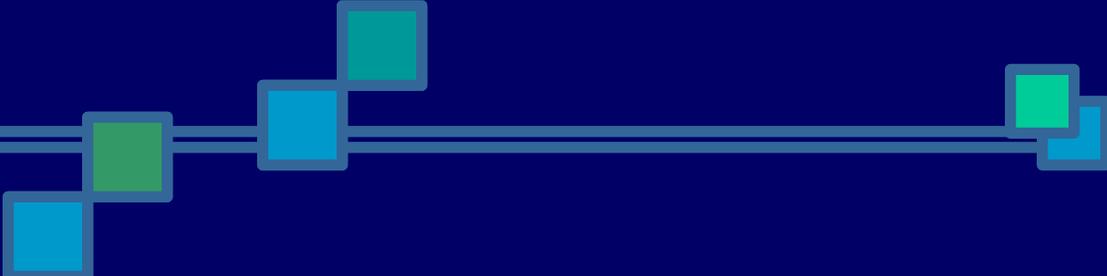


Natalia Ratnikova, FNAL



SQ Task 3.2-b

- Set up tools to collect code tags and automatically build the corresponding software on the range of supported CMS platforms. Hyperlinked log files for builds should be provided. The system should also support building of pre-releases, releases and even private test builds.
 - This task should start with an assessment of systems already developed in the LHC experiments, followed by a proposal to CCS on how to develop the nightly build system.
 - ...
- 
- 



Analyzing existing systems

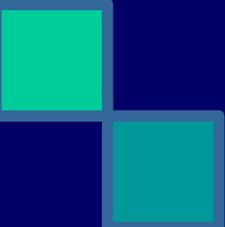
- Nightly ATLAS software releases on Linux Platform
http://www.usatlas.bnl.gov/computing/software/nightlies/www/nightly_builds.html
- Night builds of ALICE off-line software
<http://alisoft.cern.ch/offline/aliroot-pro/nightbuilds.html>
- CDF Run II Software Management
<http://cdfkits.fnal.gov/>
- GCC Testing Efforts
<http://gcc.gnu.org/testing/>

And LCG plans:

- Thoughts on Software Process
<http://wenaus.home.cern.ch/wenaus/peb-app/process.html>

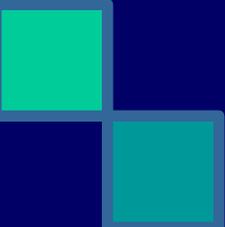


Submitting New Code to the Regular Build (Use Case 1)

- 
- Regular build (RB) is based on a base release (BR).
 - Developer checks new code against BR and tags his/her package with a "magic" tag (MT) (e.g. `buildme_any_comment`).
 - RB uses packages with MT (most recent one in case of many) and the rest from BR.
 - Once the BR for the RB changes, all packages are reset to the new BR.
- 

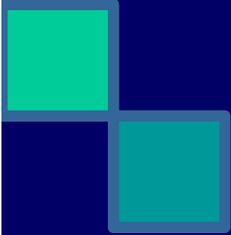


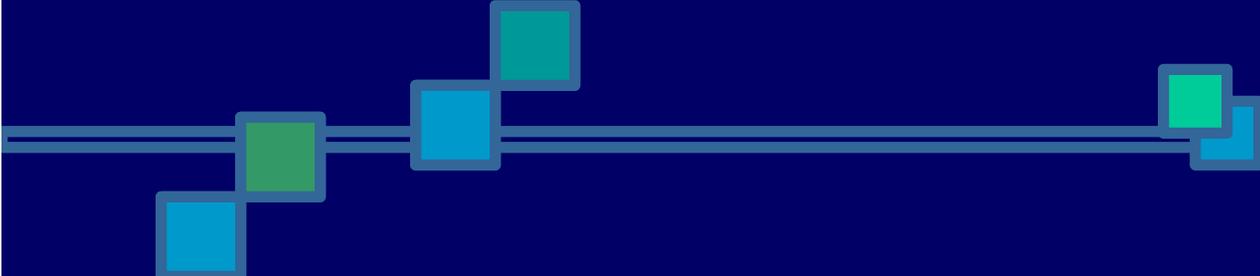
Software Integration for Releases (Use Case 2)

- 
- Project Code Manager (CM) declares a deadline (DL) for the new release (NR).
 - Developers tag their packages with the tag associated with the NR before the DL.
 - On the DL CM submits collected list of tags to the Integration Build (IB). CM can review the list of packages, tags, and tests performed by the IB, and re-submit it to the IB until he/she gets satisfactory results from the build.
 - CM tags this combination and issues a NR.
- 

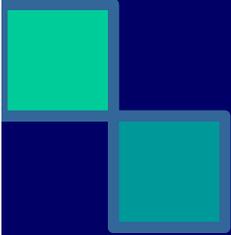


Building Releases (Use Case 3)

- 
- Software User (SU) may install a given release on his/her system or subscribe to install new releases automatically.
 - SU may choose installation with the reduced functionality, e.g. just for one platform or skip steps like generating documentation, metrics, regression checks.
 - SU may need to adjust his/her local configuration of the external products.
 - RB services can be supported on multiple sites (based on the same code repository though).
- 



Summary of cervices:

- 
- Support development
 - traditional nightly builds
 - Support release management
 - services for librarian
 - software quality control
 - regression checks
 - metrics ...
 - Install releases
 - software distribution system
- 