FIFE Workshop
Build/CI Service

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Build Service

- **Purpose:** From the project charter, DocDB #5320, https://cd-docdb.fnal.gov:440/cgi-bin/ShowDocument?docid=5320 : "The purpose of this project is to design and implement a system for regular (nightly or other experiment-level) software builds by Frontier experiments and related software providers at Fermilab." (Includes continuous integration.)
- **Requirements:** Surveyed stakeholders; DocDB #5319, https://cd-docdb.fnal.gov:440/cgi-bin/ShowDocument?docid=5319 :
  - automated builds
  - platforms at Fermilab and external
  - build results, statistics
  - and more

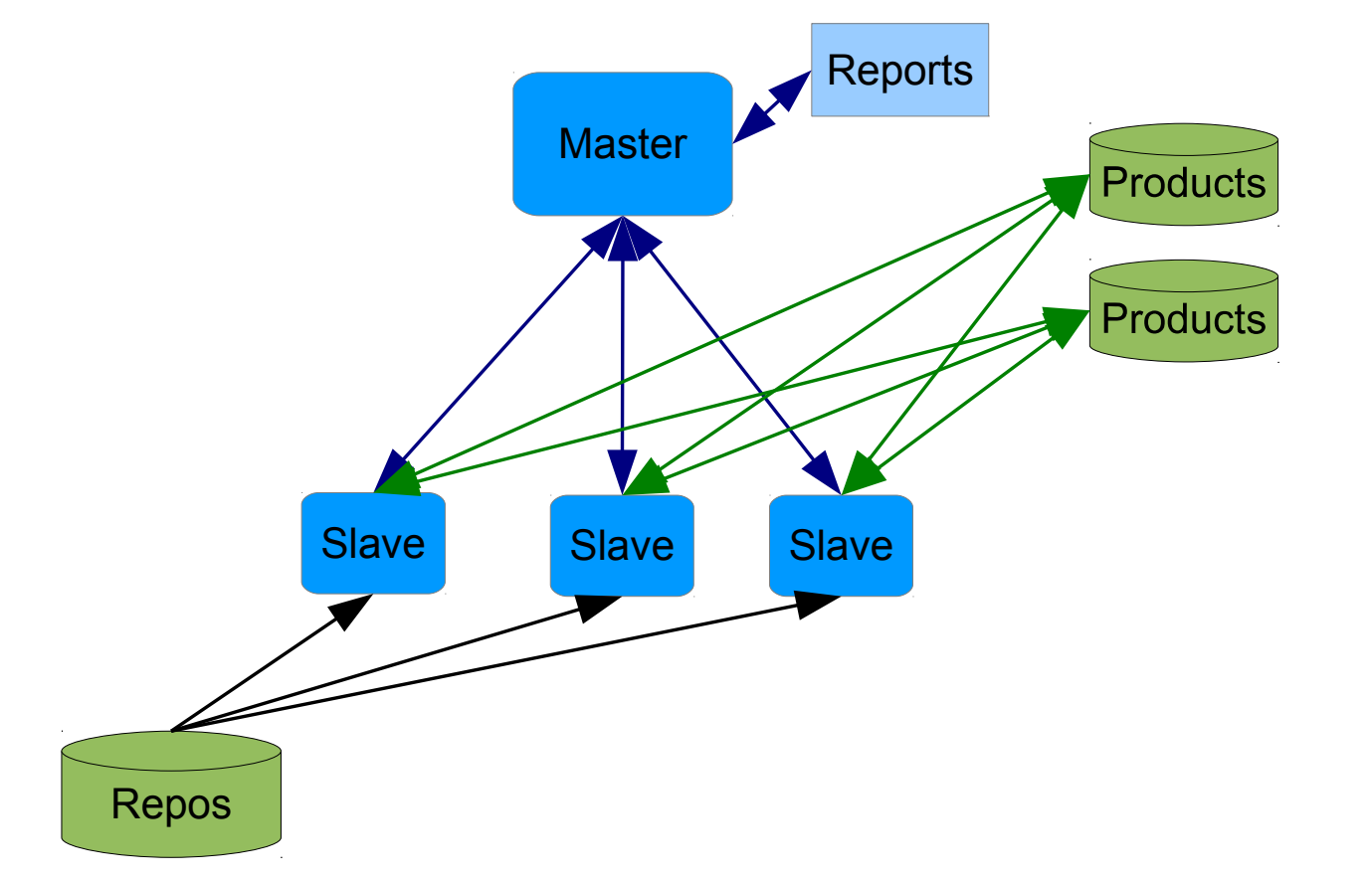
Build Service

Solutions

- Looked at systems used by current experiments:
  - CMS
  - Daya Bay
  - ATLAS
  - LHCb
  - others
- Looked at open-source and other continuous-integration / build management software:
  - Jenkins
  - BuildBot
  - others

Build Service

- Architecture: master/slave



Build Service

- Why you should use it
  - Faster builds/validation/unit tests than on small interactive nodes with NFS-mounted storage
  - Centralized view of defined jobs, current status, history
  - Some platforms provided (SLF5, SLF6, Mac [in progress])
    - Can add your own (Debian, Solaris, …)
  - Full automation for building, testing

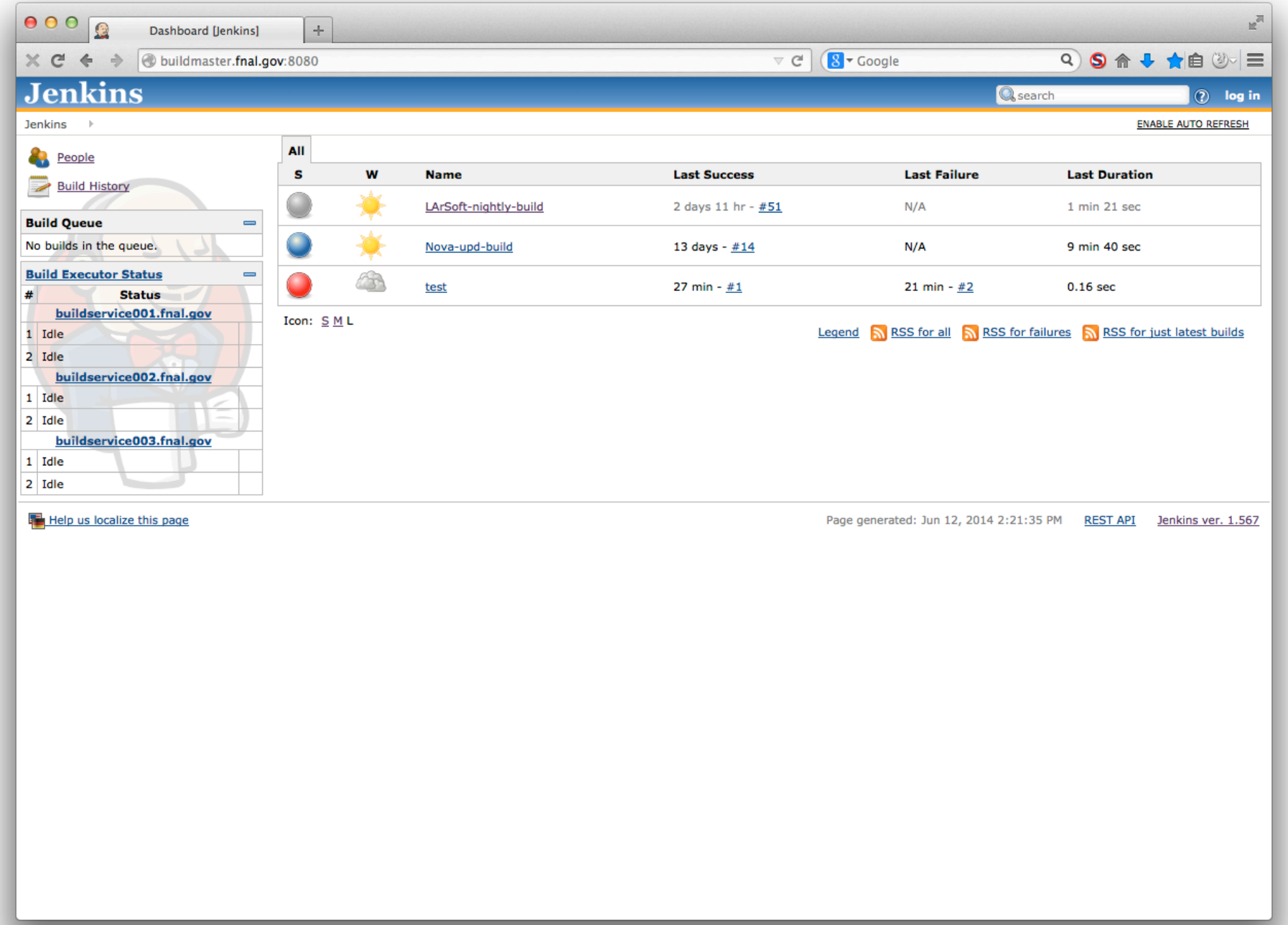
Build Service

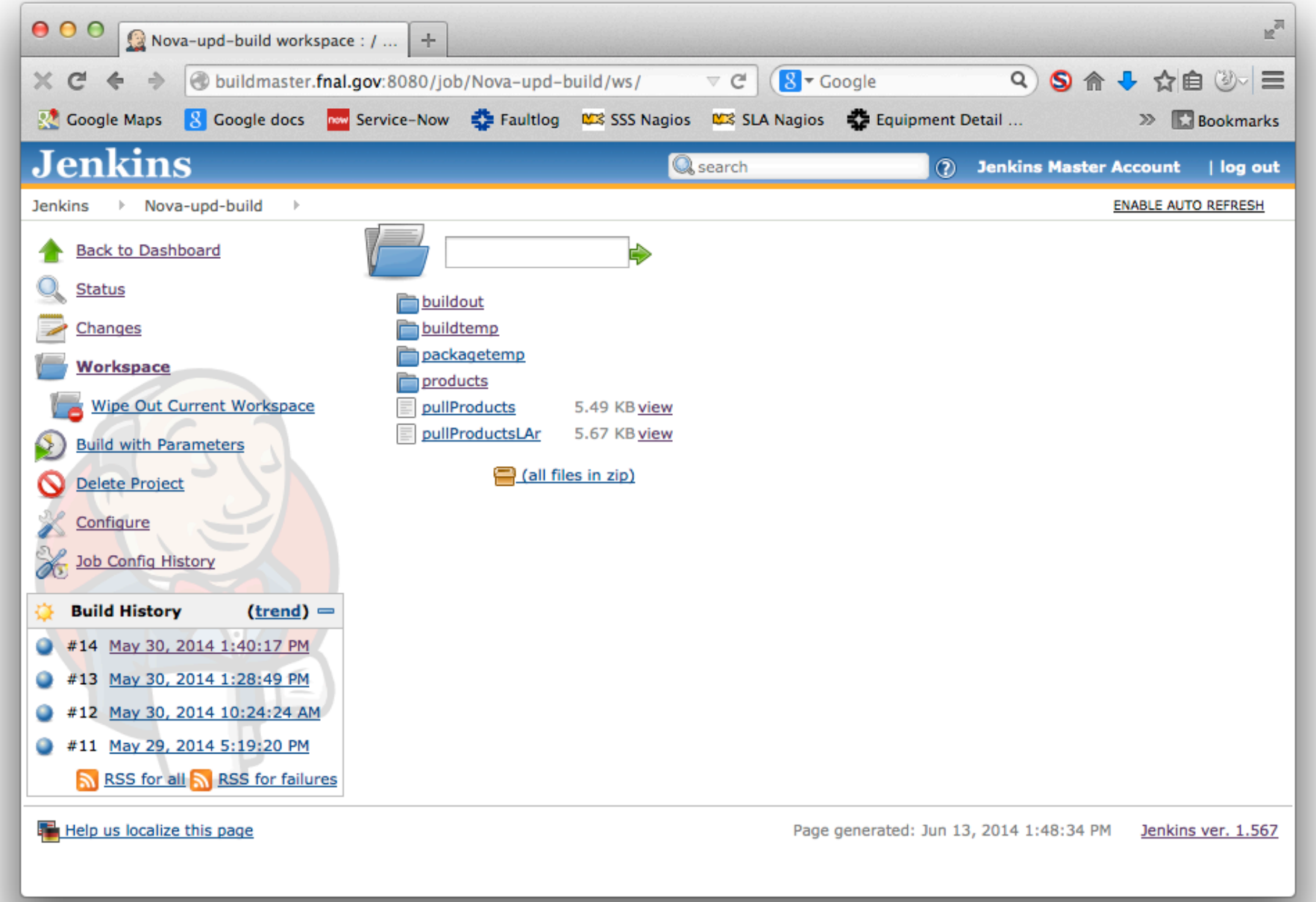
- What the build service is not
  - Only 1-few librarians per experiment or project; others can view results but not define new jobs.
  - Does not provide libraries or other software other than the base operating system—each job must pull in what it needs, via scp, cvmfs, git pull, etc.
  - Does not permanently store job products (executables, etc.)—each job must push/copy what it wants to preserve.

Build Service

Notes:

- Jobs are defined on the master. They can be triggered in various ways:
  - time interval
  - code commits, either by polling or by commit triggers
  - completion of an upstream build
  - manually
- The dashboard on the master tracks status of running and queued builds, build history, users, etc.
- One can also view files, via the dashboard, in the workspace on the slave where a build is running.


Dashboard [Jenkins]
buildmaster.fnal.gov:8080
Google
Jenkins
search
log in
Jenkins
ENABLE AUTO REFRESH
People
Build History
Build Queue
No builds in the queue.
Build Executor Status
Status
buildservice001.fnal.gov
1 Idle
2 Idle
buildservice002.fnal.gov
1 Idle
2 Idle
buildservice003.fnal.gov
1 Idle
2 Idle
All
S W Name Last Success Last Failure Last Duration
LArSoft-nightly-build 2 days 11 hr - #51 N/A 1 min 21 sec
Nova-upd-build 13 days - #14 N/A 9 min 40 sec
test 27 min - #1 21 min - #2 0.16 sec
Icon: S M L
Legend RSS for all RSS for failures RSS for just latest builds
Help us localize this page
Page generated: Jun 12, 2014 2:21:35 PM REST API Jenkins ver. 1.567


Nova-upd-build workspace : / ...
buildmaster.fnal.gov:8080/job/Nova-upd-build/ws/
Google
Google Maps
Google docs
Service-Now
Faultlog
SSS Nagios
SLA Nagios
Equipment Detail ...
Bookmarks
Jenkins
search
Jenkins Master Account
log out
Jenkins
Nova-upd-build
ENABLE AUTO REFRESH
Back to Dashboard
Status
Changes
Workspace
Wipe Out Current Workspace
Build with Parameters
Delete Project
Configure
Job Config History
Build History
(trend)
#14 May 30, 2014 1:40:17 PM
#13 May 30, 2014 1:28:49 PM
#12 May 30, 2014 10:24:24 AM
#11 May 29, 2014 5:19:20 PM
RSS for all
RSS for failures
buildout
buildtemp
packagetemp
products
pullProducts 5.49 KB view
pullProductsLAr 5.67 KB view
(all files in zip)
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Jenkins ver. 1.567

Build Service

- Early adopters invited
  - We have a production service. It will grow, and changes will be needed as we get more experience; but it's ready for use now.
- To request access:
  - Soon: Service Desk request form.
  - But, now: Service Desk → Service Catalog → Create a New Scientific Computing Request; ask in the description that it be assigned to the Software Build Service support group.

Build Service

- Documentation
  - howtos and other docs in redmine: https://cdcvs.fnal.gov/redmine/projects/build_service/documents
  - Please give feedback on documentation (or other topics) to Patrick Gartung, or to build-service-users@fnal.gov.