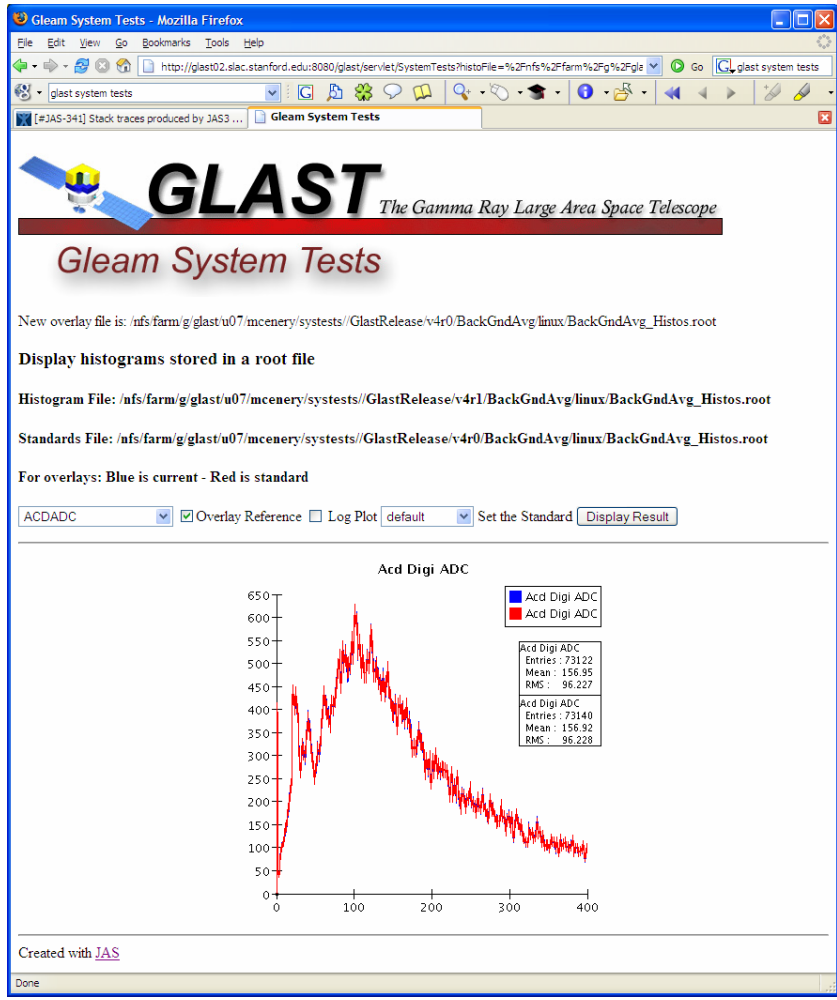
J2EE System Tests

Random Discussion Items

(note many slides are just meant to start discussion, nothing more)

Glast System Tests (Version 1)

- First version of System Tests to incorporate some of our code developed two years ago
  - still works and in use, although not actively maintained since we expected it to be rapidly replaced by something better.
  - http://www-glast.slac.stanford.edu/software/SysTests/TestInfo.asp
- Uses combination of
  - .ASP scripts (developed by Richard and Karen)
  - Oracle database
  - Java Root IO for reading root files
  - Java servlet for plot display.



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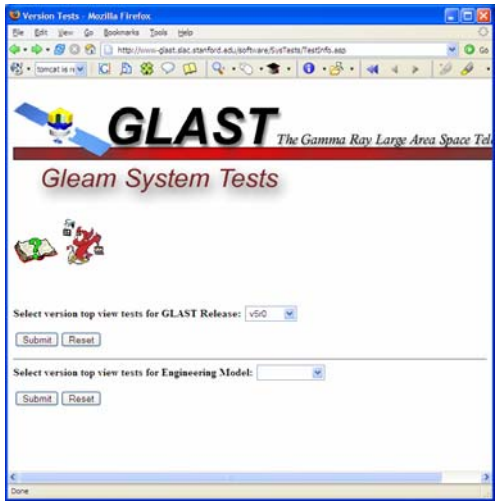
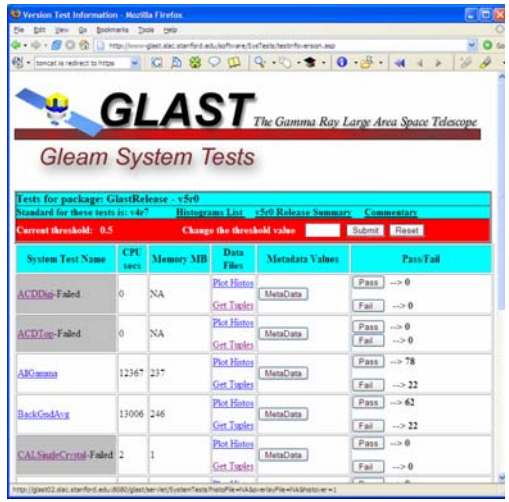
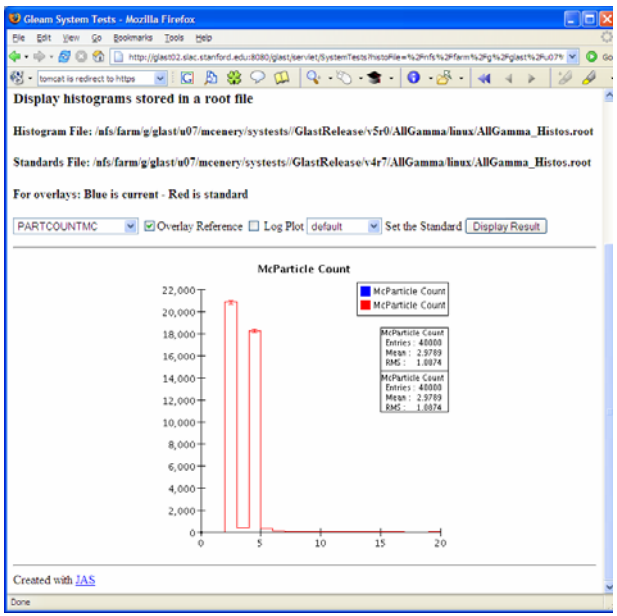
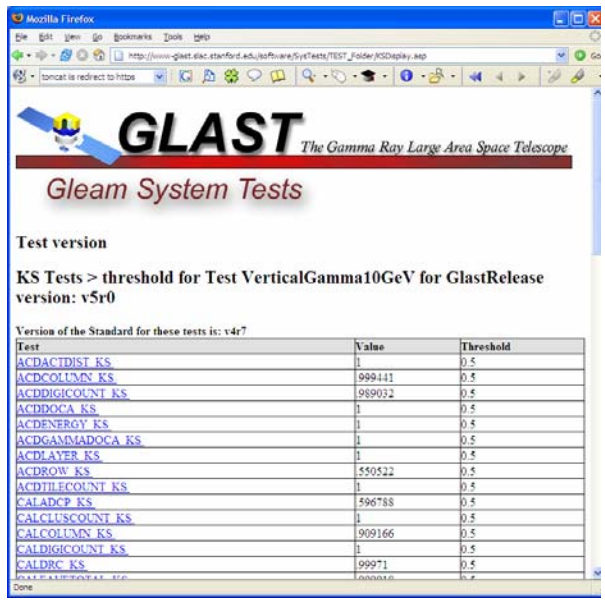




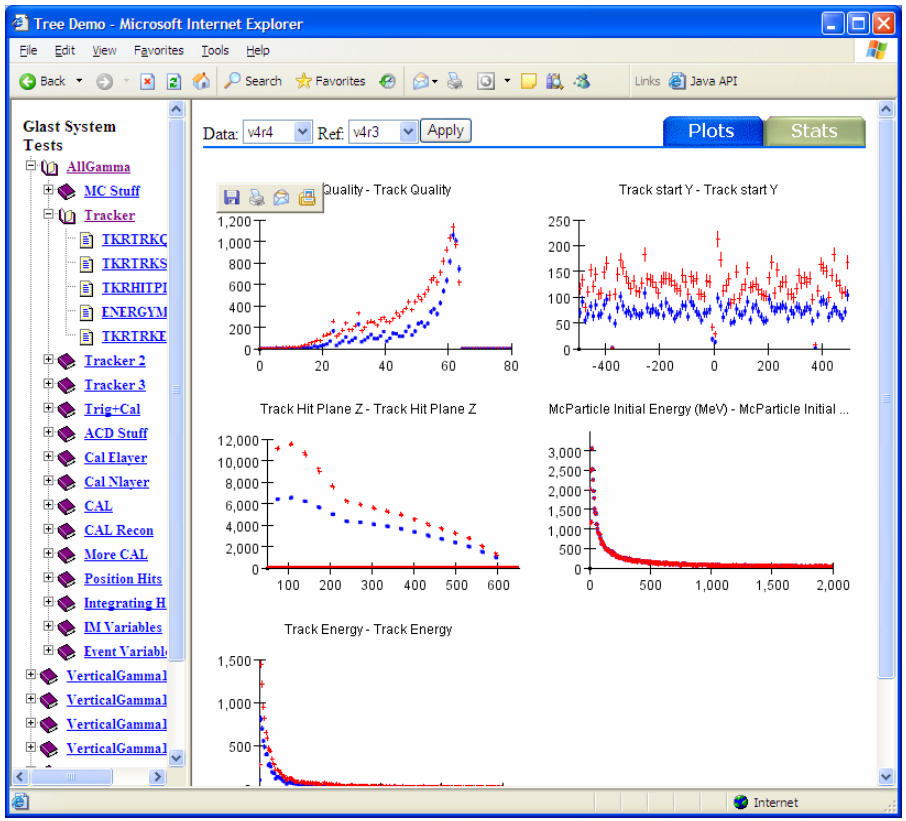


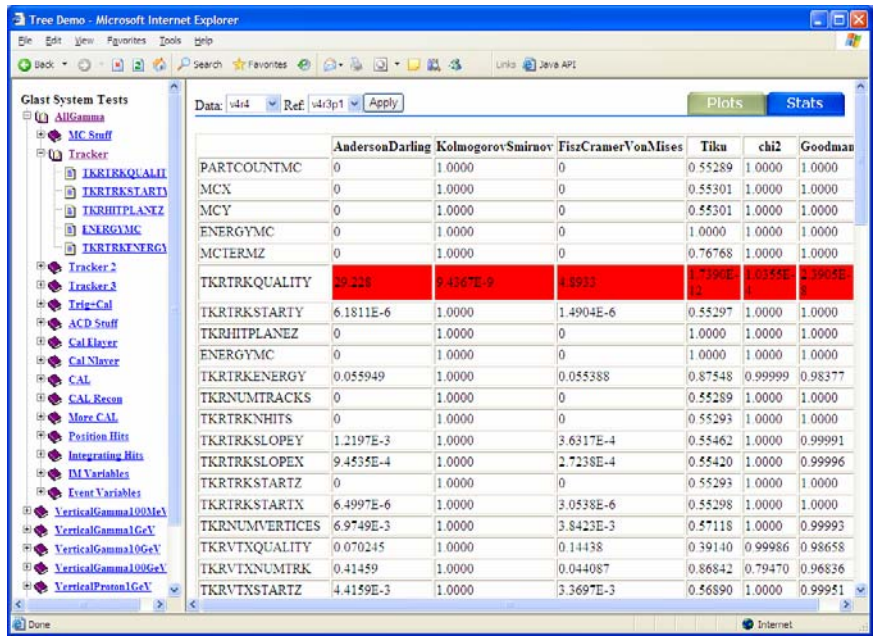


Glast System Tests (Version 2)

- Developed this year
- Java solution
  - Mostly reusable technologies, very little Glast specific code
    - Java IO + xrootd for accessing root files
    - AIDA for plotting, data manipulation
    - Tag Libraries for inserting plots into web pages (AIDATLD)
    - Driven by XML configuration file
      - Currently hand maintained
      - Designed to be dynamically generated from Glast database via JSP page.
- Not yet in production
  - Waiting decision on how to integrate with Matt's stuff
  - Advanced features (user customization etc.) likewise require tighter integration with Glast infrastructure
- http://sldrh2.slac.stanford.edu:8080/GlastSystemTests/

Glast System Tests (Version 2)

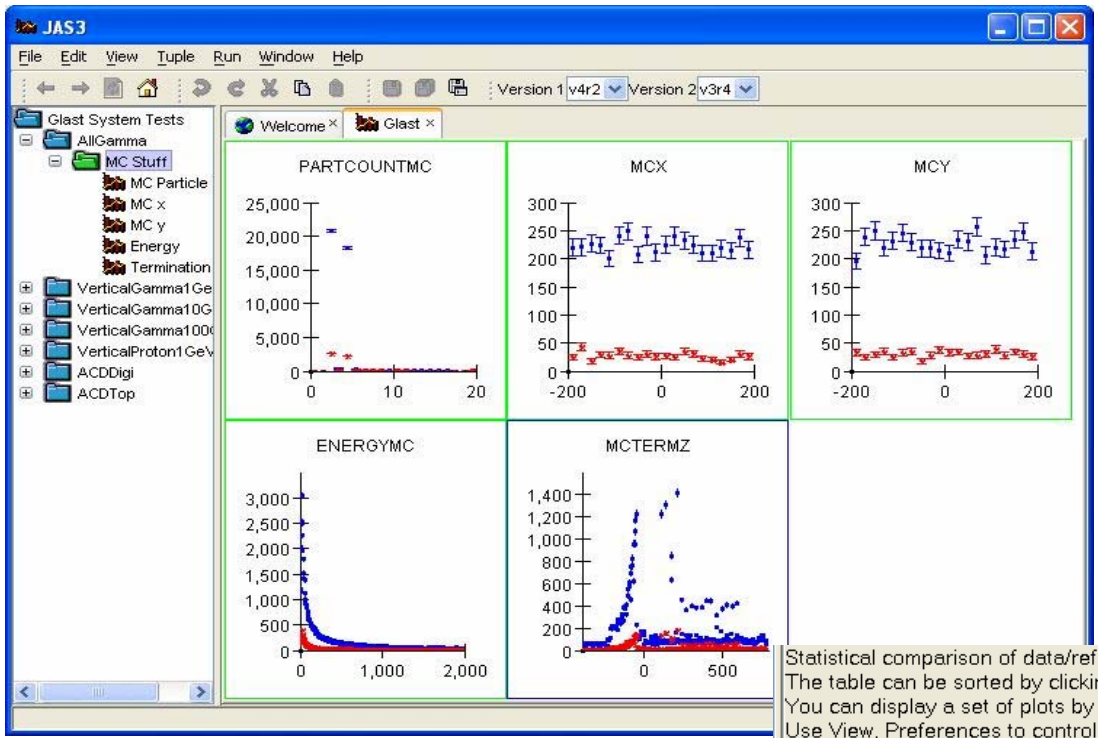




Glast System Tests JAS Plugin

- Designed to be complementary to web based system tests
  - Web based system =
    - zero install
    - limited interactive capabilities
  - Thick client =
    - Prior installation required (but easy to do)
    - Much easier to add interactive features, and allow users to perform one-off exploratory analysis.
  - Both systems share common infrastructure
    - Configuration from same XML file
    - Read data files from same location and same (xrootd technology)
    - Both use AIDA for plotting and data analysis
    - Large amount of shared code

Glast System Tests JAS Plugin



Statistical comparison of data/reference histogram using various algorithms
The table can be sorted by clicking on the column headers.
You can display a set of plots by selecting rows of the table and using the popup menu.
Use View, Preferences to control which tests are displayed.
Comparison from Tracker, recursive = false

Histogram Name	AndersonDarling	KolmogorovSmi...	FiszCramerVon...	Tiku	chi2	Goodman
TKRTRKQUALI...	3.9984	0.058847	0.92983	3.4813E-3	0.99919	0.070262
TKRTRKSTAR...	0.33921	0.91318	0.064515	0.77564	1.0000	0.74075
TKRHITPLANEZ	4.7526	8.6503E-3	157.43	0	0.99947	0.012355
ENERGYMC	0	1.0000	0	0	1.0000	1.0000
TKRTRKENER...	0.36227	0.99202	0.39761	0.075701	1.0000	0.86158

Requirements (Julie McEnery)

- I am happy with the entrance to the system tests - this is the page with several boxes allowing one to select which GlastRelease or EngineeringModel version to look at. We probably need only one submit button.

- The next page (which lists the list of tests for a given release):
- It would be great to reformat this a little. In particular it would be better to reformat things so that each line gets narrower, so that more tests can be viewed in the same screen (this could be done by altering the "plot histos get tuples" box.)

- In the datafiles section, it would be better to make this be a link to the log file and the merit tuple, and the systest name could lead people to the plot histos interface. It would be nice to find a way to show people how to download the raw root files from ths page (they are always in the same dir as the tuple).

- In addition to being able to change the threshold value, it would also be good to be able to change the standard and resubmit and recalc the pass/fail values on the fly. This would be nice but I don't consider it a priority. One could also put a button here to change the test that decides on pass/fail (i.e. to use something other than KS).

- The status of pending/failed jobs is not always correctly handled.
- If the status in the system_tests table is pending or failed then the row should be greyed out (possibly different shade for the two cases).
- If the entry is "NA" in the histogram_file field, then there should not be a link to "plot histos".

- It would be nice to actually see the histos that fail when one clicks on the fail button. Would it be possible to display them (maybe with a limit on how many per page) in addition to the meta data that is already displayed? It would be great if these plots were clickable and that clicking on one would lead you back to the single plot page where one could do more fiddling.

- It would be nice to pick up and use the axis labels associated with each root histo when making the plots. It would also be nice to display the values of the under/overflow bins. It would also be nice to see the values of the statisical comparison test(s). Can we add a facility to rebin the histos (into bigger bins), something akin to what you get with a TH1F::Rebin() in root?

- These are the things that are mostly an extension of the things that are already there. The other things to consider is a (much more major) revamp of the plot histos page, and adding a method to flag histos as being different but deemed not a problem (so that we can move towards a method for declaring a release to have passed or failed the systests). I'll continue with my thoughts on these in the next email.

Database Tables

SQL> describe release_tests

Name	Null?	Type
RELTEST_ID	NOT NULL	NUMBER(38)
PKG_NAME	NOT NULL	VARCHAR2(25)
TEST_DATE		DATE
CREATE_DATE		DATE
CREATEDBY		VARCHAR2(20)
UPDATED		DATE
UPDATEDBY		VARCHAR2(50)
VERSION		VARCHAR2(10)

SQL> describe standard_tests

Name	Null?	Type
STANDARDTEST_ID	NOT NULL	NUMBER(38)
SYSTEST_ID	NOT NULL	NUMBER(38)
CREATE_DATE		DATE
CREATEDBY		VARCHAR2(20)
UPDATED		DATE
UPDATEDBY		VARCHAR2(50)

SQL>

SQL> describe standard_test_thresholds

Name	Null?	Type
THRESHOLD_ID	NOT NULL	NUMBER(38)
SYSTEST_ID	NOT NULL	NUMBER(38)
STANDARDTEST_ID	NOT NULL	NUMBER(38)
INFO		NUMBER(38)
INFO_VALUE		VARCHAR2(50)
CREATE_DATE		DATE
CREATEDBY		VARCHAR2(20)
UPDATED		DATE
UPDATEDBY		VARCHAR2(50)

SQL> describe system_tests

Name	Null?	Type
SYSTEST_ID	NOT NULL	NUMBER(38)
TEST_TYPE	NOT NULL	VARCHAR2(25)
RELTEST_ID	NOT NULL	NUMBER(38)
TEST_NAME	NOT NULL	VARCHAR2(30)
VERSION	NOT NULL	VARCHAR2(10)
REVISION	NOT NULL	VARCHAR2(2)
SCRIPT		VARCHAR2(200)
TEST_DATE		DATE
CPU		NUMBER(38)
MEMORY		VARCHAR2(10)
NODE		VARCHAR2(10)
OPERATING_SYSTEM		VARCHAR2(10)
LOG_FILE		VARCHAR2(200)
HISTOGRAM_FILE		VARCHAR2(200)
STANDARDTEST_ID		NUMBER(38)
TEST_RESULT		VARCHAR2(50)
CREATE_DATE		DATE
CREATEDBY		VARCHAR2(20)
UPDATED		DATE
UPDATEDBY		VARCHAR2(50)
MERITTUPLE_FILE		VARCHAR2(200)

Milestones

- Phase1: Reproduce functionality of Version 1 in J2EE taking into account trivial requirements from list – January 15 2005?
- Phase 2: Add ability to update database (flagging plots as ok, adding comments), limited user preferences
- Phase 3:

Technologies

- CVS (Subversion?)
- Maven
- Spring
- AIDA
- Tomcat
- Hibernate
- Java Applets
- Flex
- JAS
- CAS

Road Map

- New CVS module (who)
- Configure Maven (who)
- Initial Spring setup (who)