Inca Data Display
(data consumers)
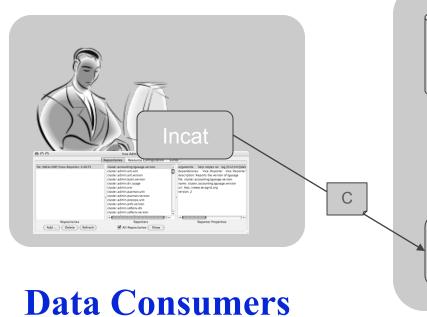
Kate Ericson

Inca Workshop
August 27, 2010

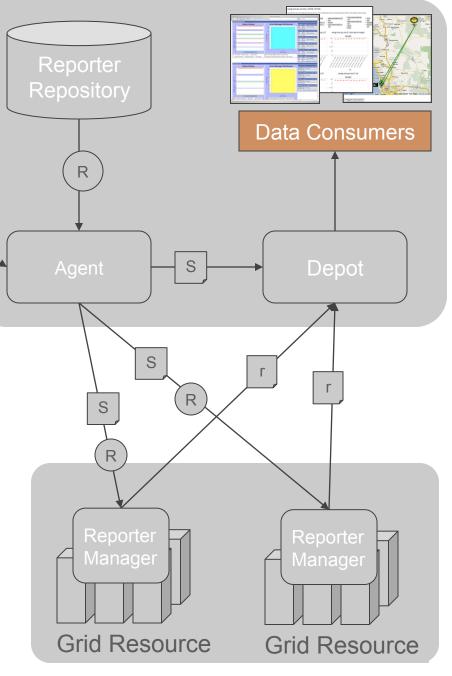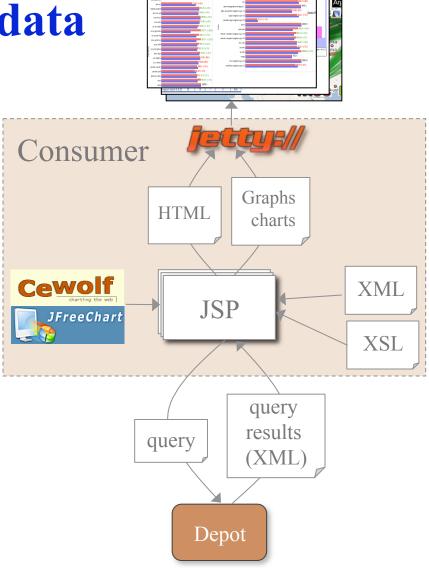**SDSC** SAN DIEGO SUPERCOMPUTER CENTER

Data Consumers

- Anything that queries and digests data from the depot

- Inca distribution includes a container and webapp to provide Web view of Inca deployment

- Designed for grid operators, system administrators, and users

Incat

Reporter Repository

Data Consumers

R

C

Agent

S

Depot

S

S

r

r

R

R

Reporter Manager

Reporter Manager

Grid Resource

Grid Resource

Consumer displays data

- Current and historical views

- Web application packaged with Jetty

- JSP 2.0 pages/tags to query data and format using XSLT

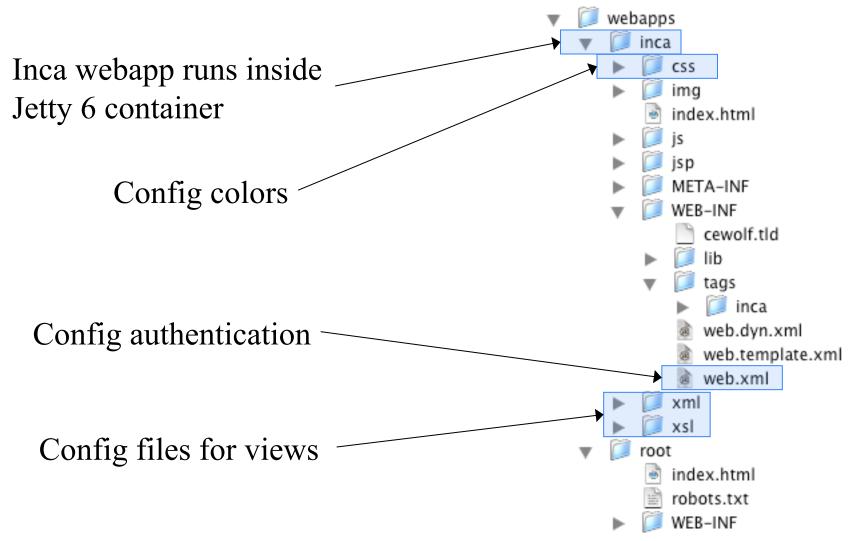- CeWolf/JFreeChart to graph data

- Extensible

Consumer

jetty://

HTML

Graphs charts

Cewolf charting the web

JFreeChart

JSP

XML

XSL

query

query results (XML)

Depot

SDSC

inca

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Files for customization
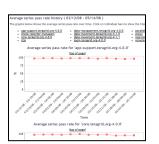
Inca webapp runs inside
Jetty 6 container

Config colors

Config authentication

Config files for views

```
▼  📁 webapps
   ▼  📁 inca
      ▶  📁 css
      ▶  📁 img
         🌐 index.html
      ▶  📁 js
      ▶  📁 jsp
      ▶  📁 META-INF
      ▼  📁 WEB-INF
            📄 cewolf.tld
         ▶  📁 lib
         ▼  📁 tags
            ▶  📁 inca
            @ web.dyn.xml
            @ web.template.xml
            @ web.xml
      ▶  📁 xml
      ▶  📁 xsl
   ▼  📁 root
         🌐 index.html
         📄 robots.txt
      ▶  📁 WEB-INF
```

Default Status Pages

Display latest results in a table or Google Map

Query current and historical data interactively

INCA STATUS PAGES	CURRENT DATA	REPORTS	QUERY	ADMIN

Welcome to the Inca Consumer web pages!

Display historical result details and summary information in reports

Display series configuration information and configure web status pages

Series Summary ↑
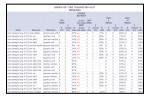
Suite & resource histories

Weekly status report

Cumulative series status by resource

Error history summary

Inca's status pages provide multiple levels of details

Series status by package and resource

Related series histories

Series Details

Individual series history

Individual report details
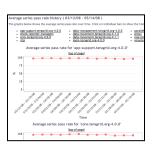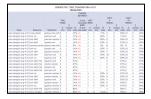
Historical →

Current status

Series Summary (vertical axis label)

Series Details (vertical axis label)

Historical (horizontal axis label, left)

Current status (horizontal axis label, right)

Suite & resource histories

Weekly status report

Cumulative series status by resource

Error history summary

CURRENT DATA
Table of sampleSuite results
Map of sampleSuite results

Resource: ds-gridftp.sdsc.edu
Availability: 100% (passed 17/17 tests)

Availability: 100% (passed 17/17 tests)

Series status by package and resource

Related series histories

Individual series history

Individual report details
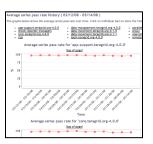
View cumulative series status by resource

- Register for a Google Map API key

http://code.google.com/apis/maps/signup.html

- Specify size of map, center of map, zoom level

- Define sites -- logo and resources
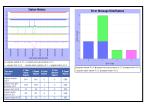
- Optionally change icons or colors

Series Summary (y-axis top)

Series Details (y-axis bottom)

Historical (x-axis left) — **Current status** (x-axis right)

Average suite & resource series pass rate history

Weekly status report

Cumulative series status by resource

Error history summary

Related series histories

Series status by package and resource

Individual series history

Individual report details

Table (Series status by package and resource):

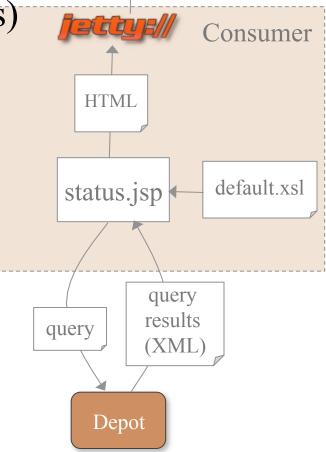| gsi-openssh	resource1	resource2	resource3	resource4
version: >= 3.9	4.6p1	4.6p1	4.5p1	4.5p1
gsissh-unit	pass	pass	error	pass
gx-map	resource1	resource2	resource3	resource4
version: 0.5.3.3|0.5.3.2p1	0.5.3.2p1	0.5.3.2p1	0.5.3.2p1	0.5.3.2p1
myproxy	resource1	resource2	resource3	resource4
version: >= 3.4	3.4	3.4	3.4	3.4
softenv	resource1	resource2	resource3	resource4
version: 1.6.2	1.6.2	1.6.2	1.6.2	1.6.2
softenv-unit	pass	pass	pass	pass
tgproxy	resource1	resource2	resource3	resource4
tgproxy-unit	pass	pass	pass	pass

View series status by package and resource

- Specify list of suite(s) and resource(s) in URL

http://host:8080/inca/jsp/**status.jsp** ?

  suiteNames=s1[,s2,…]

  resourceIds=r1[,r2,…]

REST equivalent:

http://host:8080/inca/HTML/rest/s1/r1

Series Summary

Series Details

Historical

Current status

Suite & resource histories

Weekly status report

Cumulative series status by resource

Error history summary

Related series histories

Individual series history

Series status by package and resource

Individual report details

Details for sput-sget series

Result:

completed — view result history

Reporter details:

reporter name — data.access.srb.unit.sput_sget
(click name for more info)

reporter version — 6

Execution information:

ran at — 05-08-2008 07:45 AM (PDT)

age — 13 hours 26 mins

cron — ?=45 ?=7 * * *

ran on (hostname) — tg-login1.sdsc.teragrid.org

memory usage (MB) — 13.8594

cpu time (secs) — 1.49512

wall clock time (secs) — 5.68423

Input parameters:

help — no

log — 5

verbose — 1

version — no
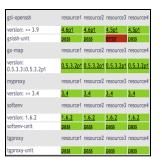
View individual report details

- Linked from other views

- Specify series nickname, resource, and collected time
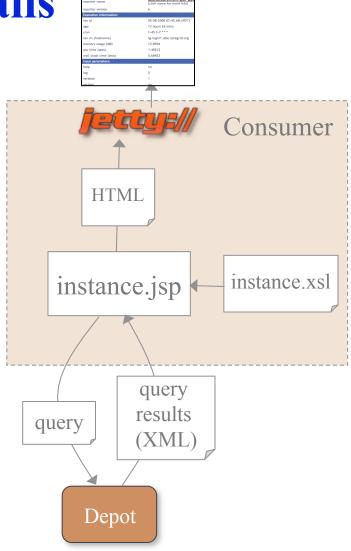
http://host:8080/inca/jsp/**instance.jsp** ?

    nickname=ant_version &

    resource=localResource &

    collected=2010-08-11T20:51:08.000-07:00

REST equivalent (latest instance):

http://host:8080/inca/HTML/rest/sampleSuite/
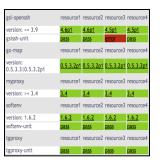   localResource/ant_version

Series Summary *(vertical axis label)*

Series Details *(vertical axis label)*

Historical *(horizontal axis label)*

Current status *(horizontal axis label)*

Suite & resource histories

Weekly status report

Cumulative series status by resource

Error history summary
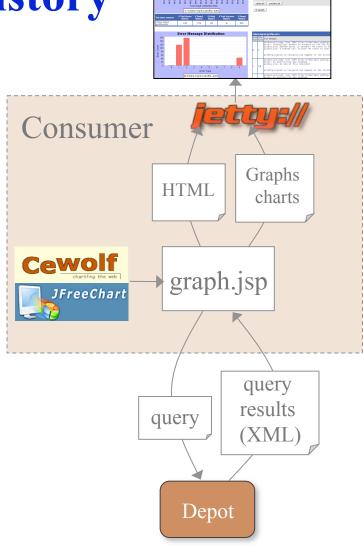
Series status by package and resource

Related series histories

Individual series history

Individual report details

View individual series history

- Linked from individual report details page

- Requires series nickname, resource, and title

- By default for week, month, quarter or year

- Options:
  - Mouseovers and links
  - Legend (and position)
  - Width, Height
  - Background color

Choose selected series histories

- Is an error related to the resource or the software?

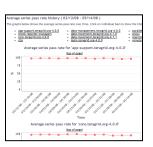- What is the reliability of a service (viewing multiple tests)?

data-management.teragrid.org-4.0.0							
		psc-bigben	purdue-condor	purdue-steele	sdsc-bg	sdsc-datastar	sdsc-ia64
select row or column:		☐	☐	☐	☐	☐	☐
ctss-data-management-4.0.0-registration	☐	☐	☐	☐	☐	☐	☐
sls-dm-4.0.0	☑	☑	☑	☑	☑	☑	☑
sput-sget-dm-4.0.0	☐	☐	☐	☐	☐	☐	☐

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Series Summary (vertical axis label)

Series Details (vertical axis label)

Suite & resource histories

Weekly status report

Cumulative series status by resource

Error history summary

Related series histories

Series status by package and resource

Individual series history

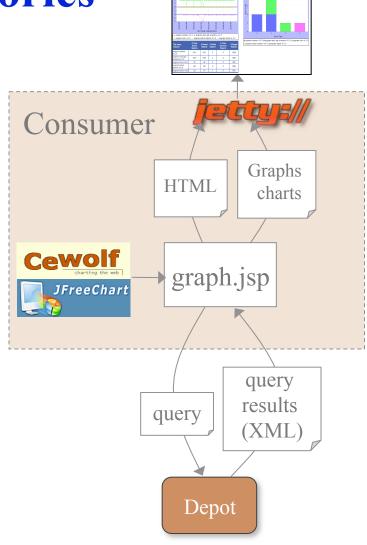*Individual report details*

Historical (horizontal axis label)

Current status (horizontal axis label)

View related series histories

- Requires multiple series nickname, resource, and title

- Two weeks of history by default

- Options:
  - Mouseovers and links
  - Legend (and position)
  - Width, Height
  - Background color

View related series histories as report

- REPORTS
  - Past week: sampleSuite pass/fail graphs and err msgs
  - Past week: avg pass rate by resource/suite
  - Past 4 weeks: series error summary
  - Resource avg pass history
  - Suite avg pass history
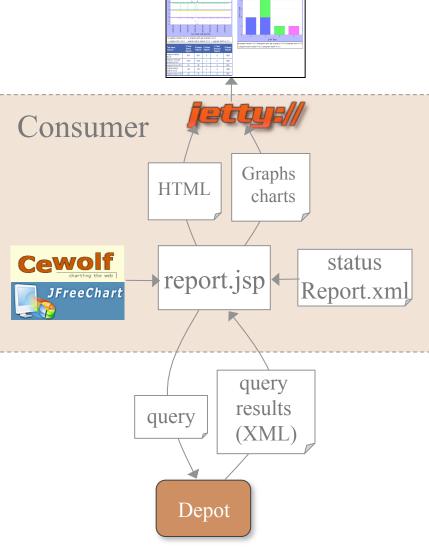
- Requires multiple series nickname, resource, and titles described in XML file

- Two weeks of history by default

Options:
- Mouseovers and links
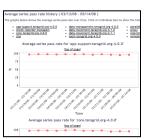- Legend (and position)
- Width, Height
- Background color
- Metrics

Consumer

jetty://

HTML | Graphs charts

Cewolf
JFreeChart → report.jsp ← status Report.xml

query | query results (XML)

Depot

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inca

Series Summary

Suite & resource histories

Weekly status report

Cumulative series status by resource

Resource: ds-gridftp.sdsc.edu
Availability: 100% (passed 17/17 tests)

Error history summary

Related series histories

Series Details

Individual series history

Individual report details

Historical

Current status

Nickname	THIS WEEK # errs	# unique errs	% pass	CHANGE BETWEEN # errs this week AND # errs last week	% pass this week AND % pass last week	LAST WEEK # errs	# unique errs	% pass	PAST 4 WEEKS # errs	# unique errs	
gridftp-auth	3	3	100%	-103	+11%	106	4	89%	1957	14	5
wsgram-fork	6	1	0%	-1		7	1	0%	24	4	0
prews-gram-batch	7	1	46%	+4	-33%	3	1	79%	33	5	5
wsgram-batch	7	1	0%	0	0%	7	1	0%	25	4	
wsgram-batch-submit	7	1	0%	0	0%	7	1	0%	25	4	
wsgram-fork	7	1	0%	0	0%	7	1	0%	25	5	
wsgram-netstat	2	1	86%	+1	-4%	1	1	90%	3	2	
wsgram-wsrf-get-property	7	1	0%	0	0%	7	1	0%	25	4	
wsgram-batch	1	1	83%	+1	-17%	0	0	100%	1	1	9
wsgram-netstat	7	1	0%	0	0%	7	1	0%	24	4	

View error history summary ("diff")

- Designed for daily/ weekly review

- Uses cached historical query

- Four weeks of history by default

- Sortable by column

Series Summary

Suite & resource histories

Weekly status report

Cumulative series status by resource

Resource: ds-gridftp.sdsc.edu

Availability: 100% (passed 17/17 tests)

Error history summary

Average series pass rate for 'data-movement.teragrid.org-4.1.0'

[top of page]

Time

Average series pass rate for 'data-movement.teragrid.org-4.1.2'

[top of page]

Series status by package and resource

Related series histories

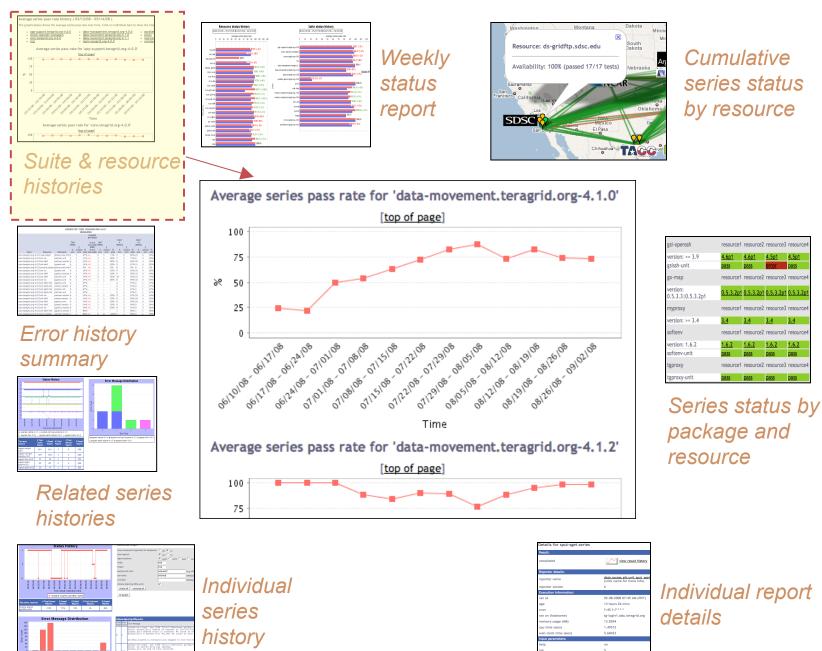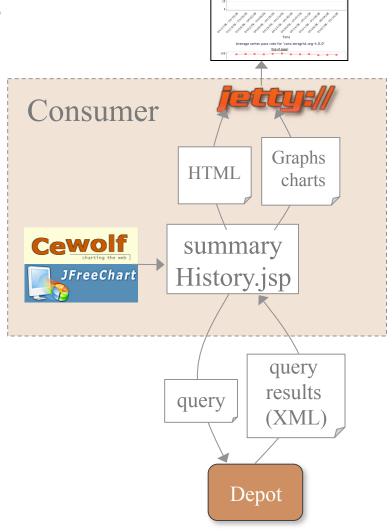*Individual series history*

Individual report details

Series Details

Historical

Current status

View average suite and resource histories
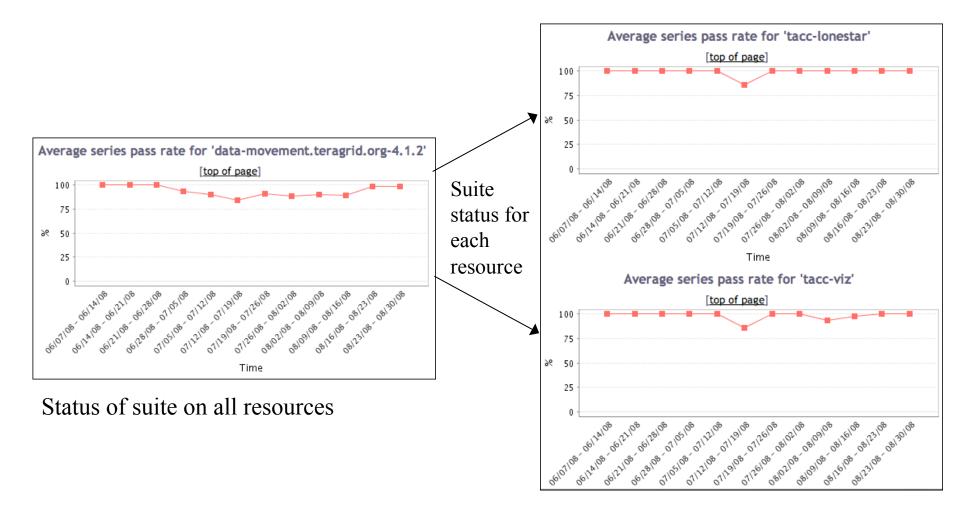
- Designed for daily/ weekly review

- Uses cached historical query

- Four weeks of history by default

- Click to view further details

View suite or resource history details

Status of suite on all resources

Suite status for each resource

Series Summary

Suite & resource histories

Weekly status report

Cumulative series status by resource

Error history summary

Suite status history
■ 05/01/08 – 05/08/08 ■ 04/24/08 – 05/01/08

Average series pass rate
0 10 20 30 40 50 60 70 80 90 100 110 120

Suite	
app-support.teragrid.org-4.0.0	93.1% (−2%)
check-reporter-managers	96.3%
core.teragrid.org-4.0.0	93.6% (−1%)
ctss	93.9% (−1%)
data-management.teragr...	99.4%
data-movement.teragrid.o...	85.0% (+3%)
login.teragrid.org-4.0.0	91.3% (−4%)
parallel-app.teragrid.org-4.0.0	23.5% (+1%)
proxy	100.0%
real-time	92.9% (+8%)
remote-compute.teragrid.o...	90.6% (+4%)
remote-compute.teragrid.o...	90.0% (+3%)
sdsc-ops	91.9% (+0%)

Series status by package and resource

Related series histories

Individual series history
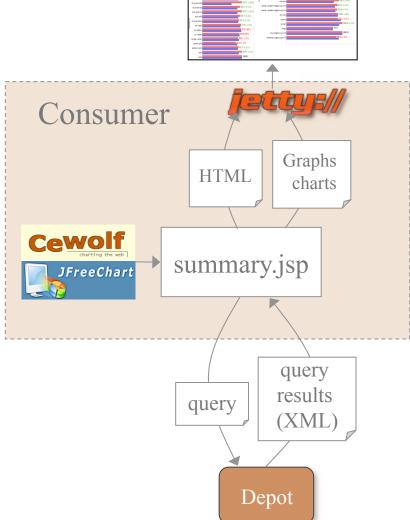
Individual report details

Series Details

Historical → *Current status*

View weekly suite and resource status

- Designed for daily/ weekly review

- Uses cached historical query

- Four weeks of history by default

- Click to view further details

View suite and resource details

Suite status for each resource
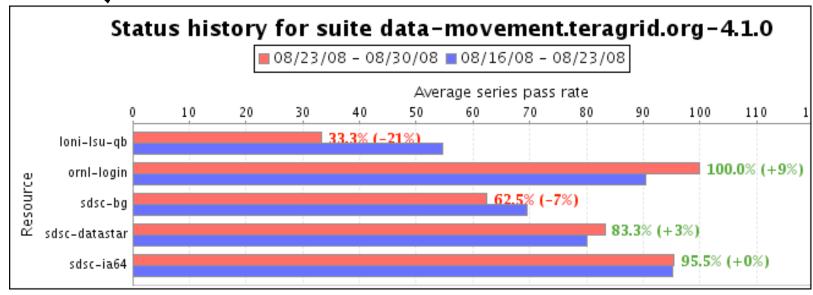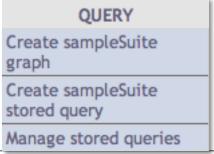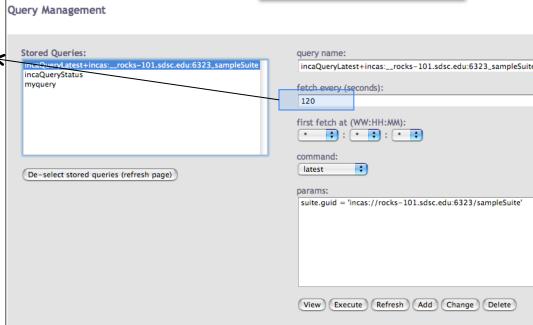
Caching provides quick page load times

- Periodically load and store large queries

- Latest suite instances cached by default -- frequency from **reload** property

- Query management page allows view, execute, refresh, and modification action on queries (requires authentication)
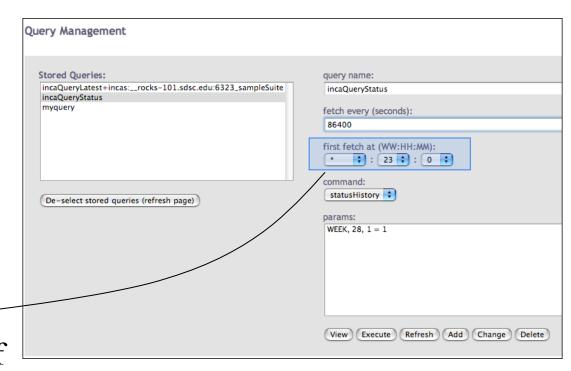

Query management page

Daily history query analyzes errors

PERIOD, DAYS, CONDITION

where

PERIOD = DAY | WEEK | MONTH | QUARTER

- Four weeks of history loaded every day -- time of day from **reloadAt** property

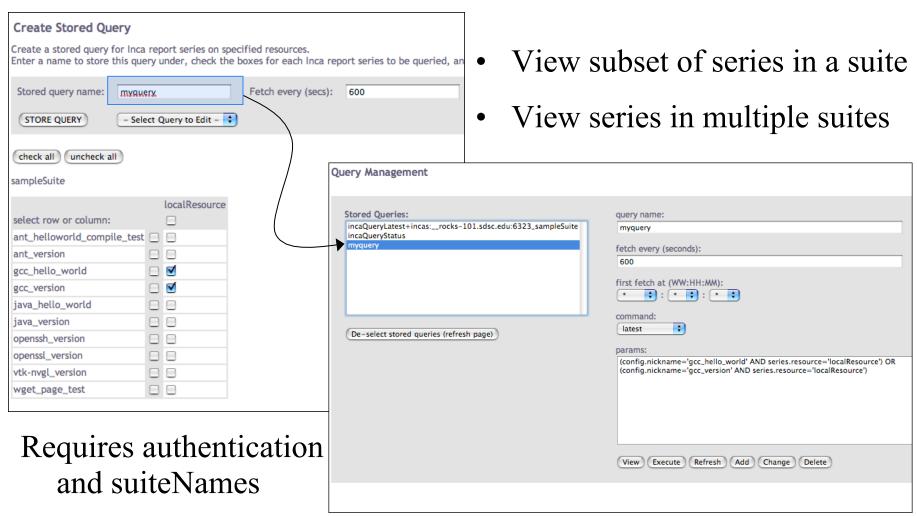- TeraGrid - 10 weeks of history (WEEK, 70, 1 = 1)

Query management page

Daily history query output

```
<quer:object>
 <row><series>
  <guid>incas://rocks-101.sdsc.edu:6323/sampleSuite</guid>          ← suite
  <nickname>gcc_hello_world</nickname>
  <resource>localResource</resource>                               ← series
 <period>
  <begin>1217830004174</begin>
  <end>1218434804173</end>                                         ← period 1
  <success>1008</success>                                          ← num successes
  <failure>
   <message>gcc: Command not found</message>
   <count>2</count>                                                ← failure
  </failure>
 </period>  <period>
  <begin>1218434804174</begin>
...
```

Create a custom query

- View subset of series in a suite

- View series in multiple suites

Requires authentication
and suiteNames

Use custom query name in views

- Use **queryNames** in place of suiteNames

http://host:8080/inca/jsp/**status.jsp** ?
    queryNames=myquery
    resourceIds=defaultGrid
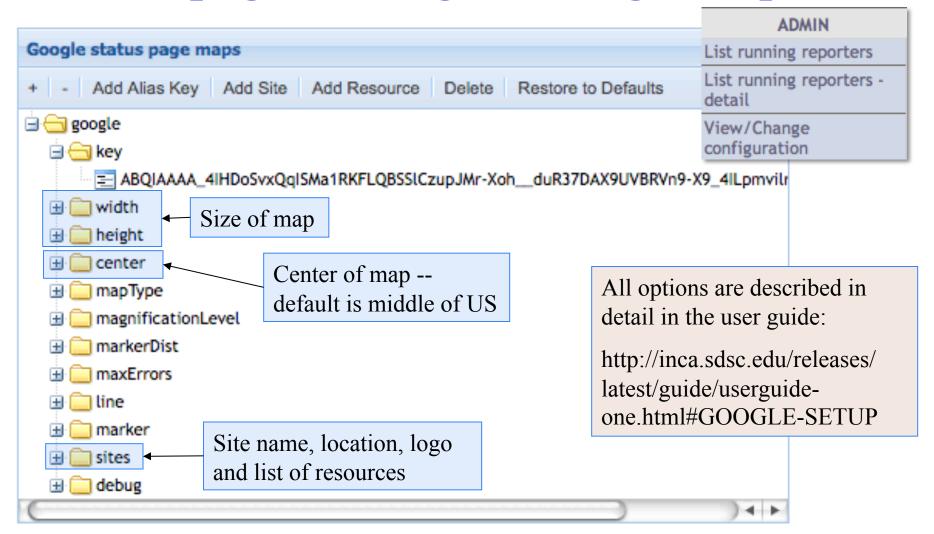

REST equivalent:

http://host:8080/inca/HTML/rest/myquery/defaultGrid

Admin pages: configure Google map view

Google status page maps
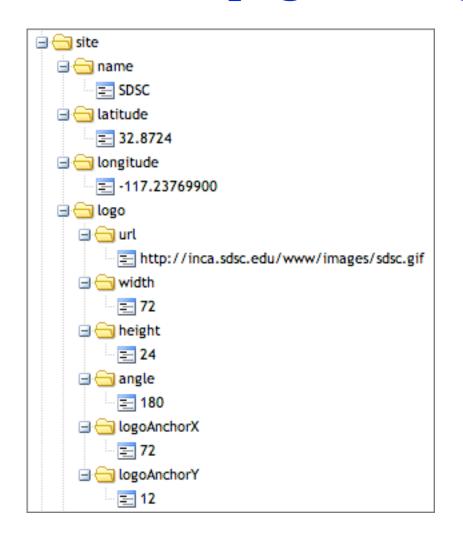
+ | - | Add Alias Key | Add Site | Add Resource | Delete | Restore to Defaults

- 📁 google
  - 📁 key
    - ≡ ABQIAAAA_4IHDoSvxQqISMa1RKFLQBSSlCzupJMr-Xoh__duR37DAX9UVBRVn9-X9_4ILpmvilr
  - 📁 width
  - 📁 height
  - 📁 center
  - 📁 mapType
  - 📁 magnificationLevel
  - 📁 markerDist
  - 📁 maxErrors
  - 📁 line
  - 📁 marker
  - 📁 sites
  - 📁 debug

Size of map

Center of map -- default is middle of US

Site name, location, logo and list of resources

ADMIN

List running reporters

List running reporters - detail

View/Change configuration

All options are described in detail in the user guide:

http://inca.sdsc.edu/releases/ latest/guide/userguide- one.html#GOOGLE-SETUP

Admin pages: Google map site logos

site
  name
    SDSC
  latitude
    32.8724
  longitude
    -117.23769900
  logo
    url
      http://inca.sdsc.edu/www/images/sdsc.gif
    width
      72
    height
      24
    angle
      180
    logoAnchorX
      72
    logoAnchorY
      12

Degrees from 0

(72, 12)   180°   0°

Logo anchor coordinates

Site coordinates

Admin pages: Run Nows

Run nows from web page
Restore to Defaults
Allow?
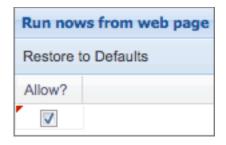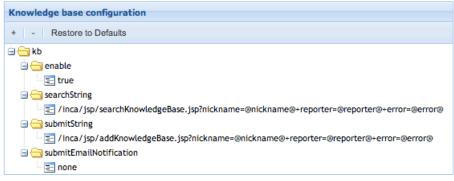☑

- triggers reporter execution on the local machine
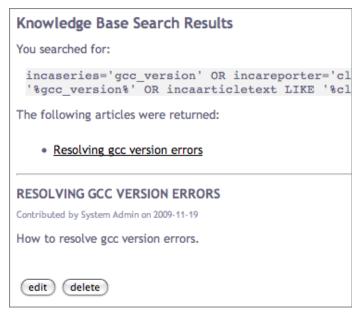- useful for admin who have worked on an issue and want to verify that a problem has been resolved

Command used to execute the reporter:

% /home/inca/incaReporterManager/var/reporter-packages/bin/cluster.compiler.any.unit-2 -compiler="javac" -help="no" -lang="java" -log="3" -verbose="1" -version="no"

(Run Now) (requires authentication)

System commands executed by the reporter:

Note that the reporte... ...ween system commands (e.g., change directories)

Force reporter to re-execute immediately (before its next scheduled execution).

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inca

Admin pages: Knowledge Base

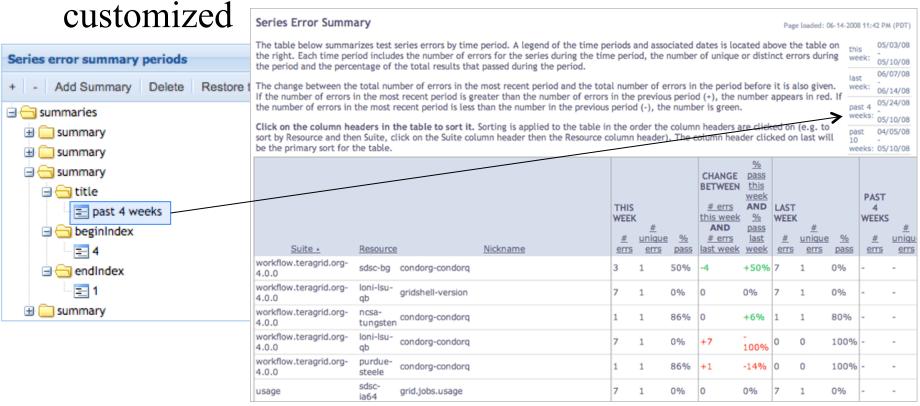- designed to collect problem resolution information for tests

- used to debug problems

Admin pages: Series Error Summary

- summarize test series errors by time period
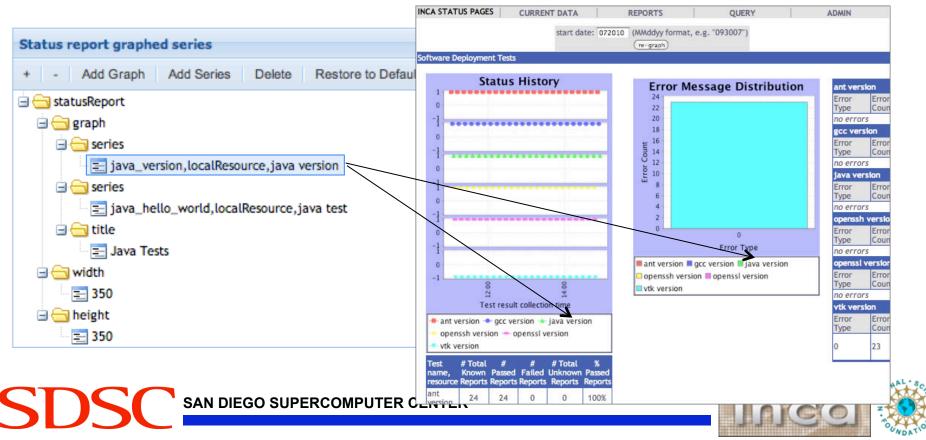- time periods and titles (i.e., PAST 4 WEEKS) can be customized

Admin pages: Pass/Fail Reports

- historical summary reports with pass/fail status and error information

- selected series can be customized

Password authentication can be customized

- Ports: HTTP on 8080, HTTPS on 8443

- Password protection on query.jsp and status-auth.jsp (change in $INCA_DIST/webapps/inca/WEB-INF/web.xml)

- Password set in $INCA_DIST/etc/realm.properties username: password

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REST Syntax

- Fetch suite or stored query data in XML or HTML format using REST URLs.

- By default, the consumer recognizes a REST URL using the following format:
  http://localhost:8080/inca/XML|HTML/rest/<suiteName>|<queryName>[/<resourceId>[/<seriesNickname>[/week|month|quarter|year]]]

- http://inca.sdsc.edu/releases/2.6/guide/userguide-one.html#REST

SDSC **SAN DIEGO SUPERCOMPUTER CENTER**

Customize the header

Add logo or background color here

INCA STATUS PAGES	CURRENT DATA	REPORTS	QUERY	ADMIN
	Table of sampleSuite results	Past week: sampleSuite pass/fail graphs and err msgs	Create sampleSuite graph	List running reporters
	Map of sampleSuite results	Past week: avg pass rate by resource/suite	Create sampleSuite stored query	List running reporters - detail
		Past 4 weeks: series error summary	Manage stored queries	View/Change configuration
		Resource avg pass history		
		Suite avg pass history		

- Header can be customized by editing unordered list in header.xsl -- change for your suites

- Add logo at top or background color by adding row to table

SDSC SAN DIEGO SUPERCOMPUTER CENTER

…

```
<table width="100%" class="subheader">
  <tr> <td> <a href="http://www.geongrid.org">
     <img src="http://www.geongrid.org/images/logo_lofi.gif"/>
   </a></td>
</tr> <tr>
```

Add GEON logo to top of page


```
  …
  <ul>
   <li><h2>Current Data</h2>
    <ul>
     <li>
      <a href="{concat($jsp, 'status.jsp?', $all)}">Table View </a>
       <ul>
        <li><a href="{concat($jsp, 'status.jsp?', $all)}">All Tests</a></li>
        <li>
         <a href="{concat($jsp,'status.jsp?suiteNames=Common&amp;resourceIds=ROCKS')}">
          Common Tests
         </a></li>
```
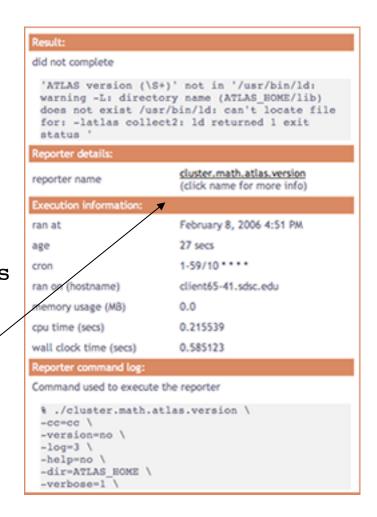
…

Changing colors in CSS

- Edit CSS (Cascading Style Sheet) to change colors and fonts

- E.g. change .header background-color

```
$INCA_INSTALL/webapps/inca/css/inca.css


.header {
        background-color: #D07651;
```

Summary

- A data consumer is anything that queries and digests data from the depot

- Inca includes a data consumer -- an embedded Jetty web container that includes a webapp

- Inca's status pages provide multiple levels of details from historical to current data and summary and detail views

- Caching of queries is automated to optimize page load times and can be customized

- Status pages' content, look, and security can be customized