

Inca Data Display: Writing Web Page Data Consumers

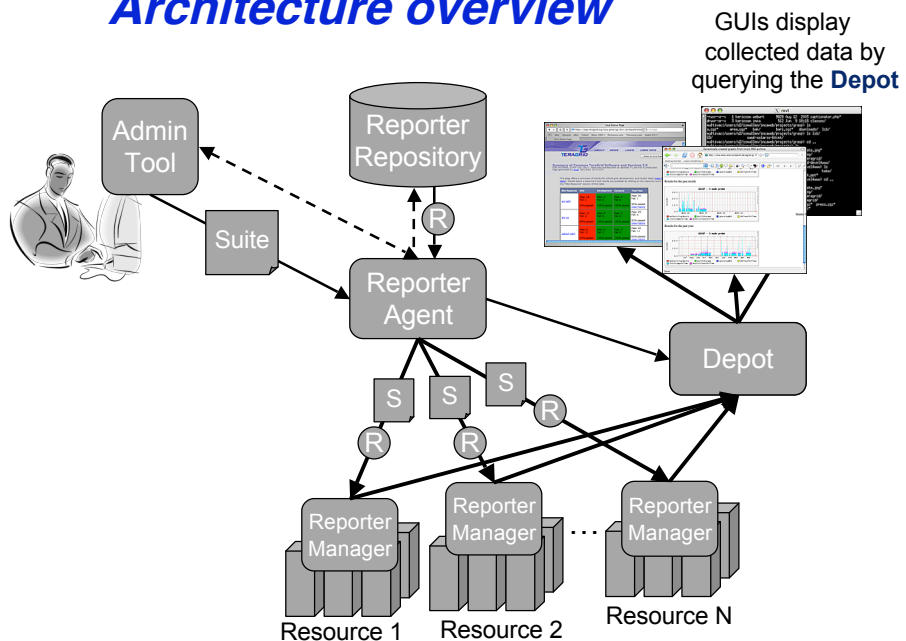
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Architecture overview



Depot Queries

Depot -> XML -> XSL -> CSS -> JSP -> Jetty -> User

- **Currently two types of queries return XML:**
 - Series results
 - Latest suite results
- **Query with Inca protocol**
(soon webservises)
- **Supported queries are easily extended**
(DB backend)
 - historical series queries pre-production
 - graphing post-production

Depot Queries: Series Results

Depot -> XML -> XSL -> CSS -> JSP -> Jetty -> User

Results from a series instance:

```
<suiteId>1</suiteId>
<reportSeriesConfigId>5</reportSeriesConfigId>
<reportSeriesId>5</reportSeriesId>
<reportId>1</reportId>
<instanceId>73</instanceId>
<reportSeries>
  <uri>http://inca.sdsc.edu/2.0/repository/bin/cluster.compiler.any.unit</uri>
  <args>
    <arg>
      <name>version</name>
      <value>no</value>
    </arg>
    ...
  </args>
  <setup/>
  <cleanup/>
  <nice>false</nice>
  <description>java_hello_world</description>
  <hostname>Kate-Ericsons-Computer.local</hostname>
</reportSeries>
```

Depot Queries: Series Results

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Results from a series instance (cont.):

```
<schedule>
  <cron>
    <min>8-59/10</min>
    <hour>*/hour>
    <mday>*/mday>
    <wday>*/wday>
    <month>*/month>
    <suspended>false</suspended>
  </cron>
</schedule>
<report>...</report>
<comparisonResult/>
<sysusage>
  <wallClockTime>3.004813</wallClockTime>
  <memory>10.578125</memory>
  <cpuTime>1.475999</cpuTime>
</sysusage>
<report>
  <gmt>February 7, 2006 6:38 PM</gmt>
  <age>7 mins 4 secs </age>
  <hostname>Kate-Ericsons-Computer.local</hostname>
  <name>cluster.compiler.any.unit</name>
  <args>
    <arg>
      <name>version</name>
      <value>no</value>
    </arg>
    ...
  </args>
</args/>
<body>
  <unitTest>
    <ID>javac</ID>
  </unitTest>
</body>
<exitStatus>
  <completed>true</completed>
  <errorMessage/>
</exitStatus>
</report>
```



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Depot Queries: Suite Results

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Array of report summaries for the latest instance of each series in the suite:

```
<reportSummary>
  <hostname>Kate-Ericsons-Computer.local</hostname>
  <uri>http://repository/cluster.compiler.any.unit</uri>
  <description>java_hello_world</description>
  <reportSeriesConfigId>5</reportSeriesConfigId>
  <instanceId>73</instanceId>
  <body>
    <body>
      <package>
        <ID>openssl</ID>
        <version>0.9.7i</version>
      </package>
    </body>
  </body>
  <completed>true</completed>
</reportSummary>
<reportSummary>...</reportSummary>
<reportSummary>...</reportSummary>
<reportSummary>...</reportSummary>
```



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Displaying Queries: Suite Results

Depot -> XML -> XSL -> CSS -> JSP -> Jetty -> User

Combine XML:

- 1) Suite report summaries (depot)
- 2) Resource config information (agent)

```
<resources>
  <resource>
    <name>siteA</name>
    <macros>
      <macro>
        <name>.regexp</name>
        <value>Kate-Ericsons-Computer.local</value>
      </macro>
    </macros>
  </resource>
</resources>
```

- 3) XML file (\$INCA_INSTALL/etc/common/swStack.xml)

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Displaying Queries: Suite Results

Depot -> XML -> XSL -> CSS -> JSP -> Jetty -> User

Edit \$INCA_INSTALL/etc/common/swStack.xml
to change HTML table:

```
<package>
  <id>gcc</id>
  <category>Compilers</category>
  <version>any</version>
  <versionRE>(^\.<!--
  <tests>
    <version>gcc_version</version>
    <unitalias>new_series_name</unitalias>
  </tests>
</package>
```

<tests>: same as series name in incat

COMPILERS	
gcc	siteA
version: any	4.0.0
new_series_name	n/a
java	siteA
java_hello_world	pass
GRID SERVICES	
openssl	siteA
version: 0.9.*	0.9.7i
openssh	siteA
version: any	3.8.1p1
openssh_to_localhost	fail
MATH LIBRARIES	
atlas	siteA
version: any	fail
SCIENTIFIC VISUALIZATION	
vtk-nvgl-gcc	siteA
version: 4.4.2	fail

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Displaying Queries: Suite Results

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Print combined XML (see slides 6,7):

```
http://localhost:8080/xslt.jsp?
resourceID=defaultvo&
suiteName=TestSuiteLocal
```

XSL (Extensible Stylesheet Language):

- XSL is a language for expressing stylesheets.
- Given arbitrarily structured XML documents, designers use XSL stylesheets to express how the XML should be presented (e.g. transformed into HTML)

Print combined XML and apply XSL (display HTML table):

```
http://localhost:8080/xslt.jsp?
resourceID=defaultvo&
suiteName=TestSuiteLocal&
xsl=http://localhost:8080/swStack.xsl
```

COMPILERS	
gcc	siteA
version: any	4.0.0
java	siteA
java_hello_world	pass
GRID SERVICES	
openssl	siteA
version: 0.9.*	0.9.7i
openssh	siteA
version: any	3.8.1p1
openssh_to_localhost	fail
MATH LIBRARIES	
atlas	siteA
version: any	fail
SCIENTIFIC VISUALIZATION	
vtk-nvgl-gcc	siteA
version: 4.4.2	fail
chromium-gcc	siteA
version: 1.6	fail



Displaying Queries: Series Results

Depot -> XML -> XSL -> CSS -> JSP -> Jetty -> User

Print series XML (see slides 4,5):

```
http://localhost:8080/xslt.jsp?
instanceID=209&
configID=5
```

Print series XML and apply XSL (HTML table):

```
http://localhost:8080/xslt.jsp?
instanceID=209&
configID=5&
xsl=http://localhost:8080/swStack.xsl
```

Result:	
completed	
Reporter details:	
reporter name	cluster_compiler.any.unit (click name for more info)
Execution information:	
ran at	February 7, 2006 6:58 PM
age	5 mins 25 secs
ran on (hostname)	Kate-Ericsons-Computer.local
memory usage (MB)	54,609,375
cpu time (secs)	1.447559
wall clock time (secs)	1.985363
Reporter command log:	
Command used to execute the reporter	
<pre> \$./cluster_compiler.any.unit \ -version=no \ -log=3 \ -compiler=javac \ -help=no \ -verbose=1 \ -lang=java \ </pre>	



Displaying Queries: Customization

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Edit XSL:

`$INCA_INSTALL/etc/swStack.xsl`

- XML formatting (e.g. add row to display cron)
- swStack.xsl has two main templates, "test" to display series results and "suite" to display suite results

Edit CSS (Cascading Style Sheet):

`$INCA_INSTALL/etc/inca.css`

- colors (e.g. change .header background-color)
- fonts

```
Result:
did not complete
'ATLAS version (\S+)' not in '/usr/bin/ld:
warning -L: directory name (ATLAS_HOME/lib)
does not exist /usr/bin/ld: can't locate file
for: -latlas collect2: ld returned 1 exit
status '
```

```
Reporter details:
reporter name      cluster_math_atlas_version
                   (click name for more info)
```

```
Execution Information:
ran at             February 8, 2006 4:51 PM
age                27 secs
cron              1-59/10 * * * *
ran on (hostname) client65-41.sdsc.edu
memory usage (MB) 0.0
cpu time (secs)   0.215539
wall clock time (secs) 0.585123
```

```
Reporter command:
Command used to execute the reporter
% ./cluster_math_atlas_version \
-cc=cc \
-version=no \
-log=3 \
-help=no \
-dir=ATLAS_HOME \
-verbose=1 \
```

Displaying Queries: JSP

Depot -> XML -> XSL -> CSS -> JSP -> Jetty -> User

- **JavaServer Page (xslt.jsp)**
 - create dynamic web content
- **JavaServer Pages (JSP) tag libraries**
 - define declarative, modular functionality that can be reused by any JSP page
 - reduce the amount of Java code in JSP pages (move tag functionality into tag implementation classes)

Displaying Queries: JSP tag libraries

Depot -> XML -> XSL -> CSS -> JSP -> Jetty -> User

Tag Library Descriptor (TLD)

- XML document that describes the library
- contains information about the library and each library tag
- used by a JSP container to validate the tags

```
<tag>
  <name>printXML</name>
  <tagclass>edu.sdsc.inca.consumer.tag.PrintXML</tagclass>
  <info>print a file line by line</info>
  <attribute>
    <name>xml</name>
    <required>true</required>
  </attribute>
</tag>
```

TLD calls in JSP

- xslt.jsp calls getXML, printXML, applyXSL

```
<%@ taglib uri="xslt.tld" prefix="xslt" %>
<xslt:printXML xml="<%=xml%>" />
```

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Displaying Queries: Jetty

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- Jetty, a Java HTTP server and servlet container, runs Inca's xslt.jsp data consumer
- Separate Web server (e.g. Apache) is NOT required
- .jsp, .xsl, .css, and libs packed into a .war (or "web archive") file for Jetty. A war file is a packaged webapp directory created using the Java jar tool.
- Jetty starts on port 8080 by default, but can be configured to start on another port

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