

Using SNAPP to Find and Visualize GENI Monitoring Data

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SNAPP

- A suite of tools initially designed to do SNMP collection and display.
 - Time series based data
 - Expanded to do also NON SNMP data collection
 - Data API
 - Planetlab Comon
- Has a very nice UI and API for programmatic access.
 - You can embed it on your own front/end

Terminology

- Collections:

Groups of closely related Time series based data. Such as:

- Interface data (in/out pps, in/out bytes).
- Sliver state

Each collection is of one type. (specifies what is measured and its units).

- Categories

Groups of Collections that are related in some manner.

These can be hierarchical. (think iTunes by: artist, by album)

Using SNAPP

- How to get where you want?
 - Using the browsing (Good for deep categories)
 - Using search (Good for wide categories)
 - Using the portal
- In the GENI world most of us have very wide categories so search is the best option IF you have a keyword(s) for what you are looking for
 - IE. Slice name
 - Resource name

Using SNAPP(2)

- Currently GMOC hosts we have \approx 4000 time series data (most of it is sliver data).
 - when the unification and SNMP of planetlab is done we will be at around 50000.
- Further most data is not hierarchically tagged (only location + aggregate).
 - Browsing thus is not very effective.
 - We will focus on searching

<http://gmoc-db.grnoc.iu.edu/measurement/>

Search

- We use a 'google' like syntax

We support only 2 logic operators: and and not

- We can do group intersection: for example:
 - 'category:atla category:openflow' would match all collections that are both in atla and in openflow.

Use Cases

- Researcher using SNAPP to check his/her experiment
- Campus NOC checking the state of their resources.
- ??? Something else

Demo

Demo

Portal:

[http://gmoc-db.grnoc.iu.edu/measurement/
portal.cgi](http://gmoc-db.grnoc.iu.edu/measurement/portal.cgi)

Regular access:

<http://gmoc-db.grnoc.iu.edu/measurement/>

Scenario: User (slice creator)

- The search parameter -slice is the key here

The screenshot displays the SNAPP (SNMP Network Analysis and Presentation Package) web interface. At the top, there are logos for GlobalNOC (Global Research Network Operations Center), SNAPP, and gMOC (GENI META-OPERATIONS CENTER). The main navigation bar includes 'Search', 'Browse', 'Saved', and 'Advanced' tabs. A search box contains the query '-silver plastic 109'. Below the search box, there are buttons for 'Aggregate Graph', 'All Graphs Side by Side', and 'Save Current View'. A table lists search results with columns for 'Name' and 'Description'. The first result is 'hegen.gpolab.bbn.com-plc_s', with a description 'hegen.gpolab.bbn.com-plc_slice_state-slice_p'. Below the table, it indicates '5 total results'. To the right, a line graph titled 'plc_slice_state-15sec' is shown. The graph has a title 'Aggregate' and a subtitle 'Mon 17 Oct 2011 13:15:57 EDT to Mon 24 Oct 2011 13:15:57 EDT'. The y-axis ranges from 2.5 to 15. The x-axis shows dates from Oct 17 to Oct 23. Two data series are plotted: 'auto-tree-slice_nodes' (orange line) and 'auto-tree-slice_users' (blue line). The orange line starts at approximately 15 and shows some fluctuations, while the blue line starts at approximately 5 and also shows some fluctuations. A legend below the graph indicates 'Crosshair: 15' for the orange series and 'Crosshair: 5' for the blue series. At the bottom of the interface, there is a 'User: Public' label, a copyright notice 'Developed by Global Research NOC Systems Engineering Copyright 2011, The Trustees of Indiana University', and a 'Help' link.

Scenario: Campus NOC

- “clemson -slice -sliver”

GlobalNOC Global Research Network Operations Center

SNAPP SNMP Network Analysis and Presentation Package

gMOC GENI META-OPERATIONS CENTER

Navigation

Search Browse Saved Advanced

sliver clemson -slice

Aggregate Graph All Graphs Side by Side Save Current View

Name	Description
expedient.clemson.edu-flowvisor_dpид_state-d	expedient.clemson.edu-flowvisor_
expedient.clemson.edu-flowvisor_dpид_state-d	expedient.clemson.edu-flowvisor_
expedient.clemson.edu-flowvisor_dpид_state-d	expedient.clemson.edu-flowvisor_
expedient.clemson.edu-flowvisor_dpид_state-d	expedient.clemson.edu-flowvisor_
expedient.clemson.edu-flowvisor_dpид_state-d	expedient.clemson.edu-flowvisor_
expedient.clemson.edu-flowvisor_dpид_state-d	expedient.clemson.edu-flowvisor_
expedient.clemson.edu-flowvisor_state	expedient.clemson.edu-flowvisor_
myplc.clemson.edu-plc_node_count	myplc.clemson.edu-plc_node_co
myplc.clemson.edu-plc_node_state-node_plar	myplc.clemson.edu-plc_node_sta
myplc.clemson.edu-plc_node_state-node_plar	myplc.clemson.edu-plc_node_sta
myplc.clemson.edu-plc_session_count	myplc.clemson.edu-plc_session_
myplc.clemson.edu-plc_site_count	myplc.clemson.edu-plc_site_cour
myplc.clemson.edu-plc_site_state-site_cu	myplc.clemson.edu-plc_site_state
myplc.clemson.edu-plc_site_state-site_pgenig	myplc.clemson.edu-plc_site_state
planetlab4.clemson.edu-plnode_state	planetlab4.clemson.edu-plnode_s
planetlab5.clemson.edu-plnode_state	planetlab5.clemson.edu-plnode_s

15 total results

<< first < prev 1 next > last >>

User: Public

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Help

Click on a graph to see the more detailed version.

plc_node_count-15sec Parameters

myplc.clemson.edu-plc_node_count
myplc.clemson.edu-plc_node_count-auto
Mon 24 Oct 2011 13:24:58 EDT to Mon 24 Oct 2011 14:24:58 EDT

2
1.5
1
0.5
0

13:30 13:40 13:50 14:00 14:10 14:20

- auto-tree-plc_boot_nodes Crosshair: 2
- auto-tree-plc_disabled_nodes Crosshair: 0
- auto-tree-plc_fallboot_nodes Crosshair: 0
- auto-tree-plc_install_nodes Crosshair: 0
- auto-tree-plc_nodes Crosshair: 2
- auto-tree-plc_reinstall_nodes Crosshair: 0
- auto-tree-plc_safeboot_nodes Crosshair: 0

plc_node_state-15sec Parameters

Graph Controls

Parameters:

- Series (what do you want to see)
- Time range. (from when to where)
- For aggregate graphs you also have the options of stacked/overlay graphs.

Getting help

There is documentation on the page:

See the bottom of the page

Campuses:

What do you want on your portal?

Do you want another portal?

SNAPP- Monitoring GMOC Roadmap

- Allow a single snapp frontend to also query data from remote backends (mid 2012)
- Time machine (fall 2012)
- Reporting (fall 2012)
- Auth integration
- Integration with the current monitoring by GPO

END

Nagios

- Public Face of the data reported by our internal collections
 - Currently limited to OF devices on the mesoscale effort

SNAPP UI

- Two mechanisms to get data
 - Browsing
 - Search
- Two types of data
 - Collections: Sets or related time series data
 - Categories: groups of collections with hierarcchy