



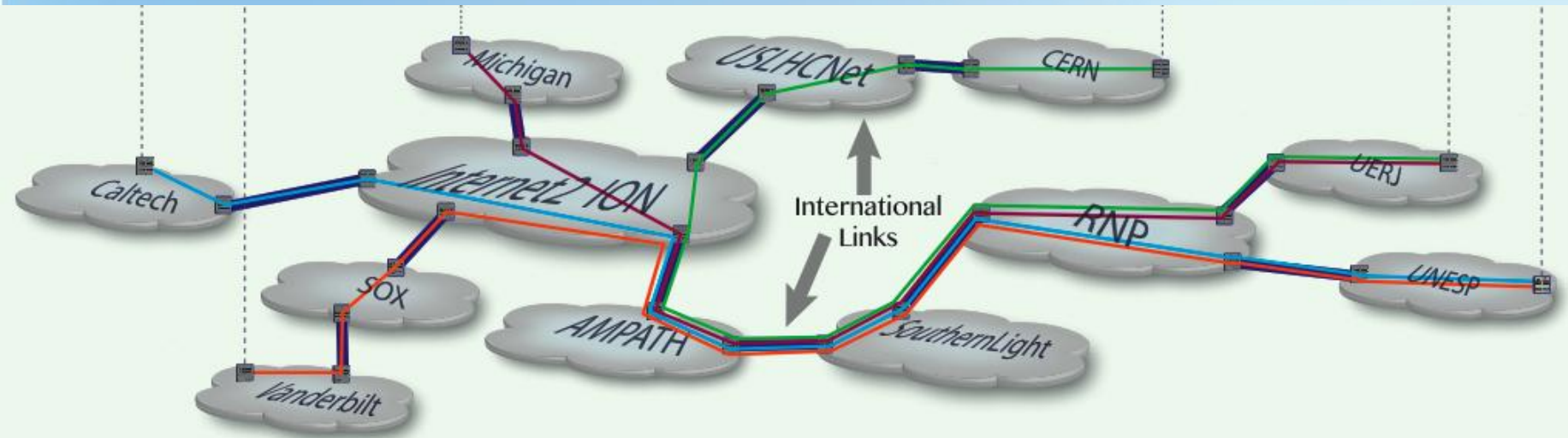
October 11th 2011 – USATLAS Facilities Meeting

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DYNES Demo (Canned)

Topology



Global Dynamic Layer2 Networking

What We are Showing

- From the one end site (Caltech) we can set up a circuit/transfer directly to the other side (SPO in Brazil)
- Command:
 - `./dynesfdt fdt -co bandwidth=1000,dstvlan=719,userremoteip=true,ntcpstreams=128 /dev/zero spo1:/dev/null`
- Current Idea:
 - Pick a dataset, pick an endpoint. Use FDT to set up the network stuff ‘in the middle’
- How it would be ‘better’:
 - Don’t have to worry about using FDT, or caring about the network. The software should just know...

Setup – Waiting for Circuit

```
dynes@fdt-caltech:~/FDTAgent/bin — ssh — ttys004 — 80x24
true, src=urn:ogf:network:domain=caltech.edu:node=vlsr7:port=1-0-21:link=fdtdynesPort1g}

Oct 11, 2011 2:32:15 PM fdt.agent.session.CreateCircuitTask run
INFO: Params to pass to OSCARS call: CreateRequestParams [gri=, src=urn:ogf:network:domain=caltech.edu:node=vlsr7:port=1-0-21:link=fdtdynesPort1g, dst=urn:ogf:network:domain=cipo.rnp.br:node=SP0:port=ge-2/3/4:link=10.0.4.1, pathSetupMode=timer-automatic, srcVlan=any, dstVlan=719, srcTagged=true, dstTagged=true, layer=2, bandwidth=1000, description=Dynes Circuit by FDTAgent with SessionID: aba2e228-c050-3548-ae22-05b196e38af8, path=[], startTime=1318357935, endTime=1318361535]

Oct 11, 2011 2:32:15 PM fdt.agent.session.CreateCircuitTask run
INFO:

[ CreateCircuitTask ] Global reservation ID: GRI= caltech.edu-1340

Oct 11, 2011 2:32:15 PM fdt.agent.session.CreateCircuitTask waitForIDCCreate
INFO: [ waitForIDCCreate ] Waiting for IDC to create the circuit. reservation GRI: 'caltech.edu-1340'. IDC create circuit deadline finishes in 10 minutes.
```

INTERNET2

Circuit Enabled, Setting VLANs

```
dynes@fdt-caltech:~/FDTAgent/bin — ssh — ttys004 — 80x24
e in: 6 minutes 38 seconds

Oct 11, 2011 2:35:46 PM fdt.agent.session.AgentSession circuitCreationFinished
INFO: [AgentSesion] circuit creation finished OK. Details:
IDCCircuitDetails [resDetails=net.es.oscars.wsdTypes.ResDetails@14109ea6, creat
eReply=null, status=OK, statusDescription=Status from IDC: ACTIVE]
Oct 11, 2011 2:35:46 PM fdt.agent.session.AgentSession circuitCreationFinished
INFO: [ AgentSession ] [ circuitCreationFinished ] src vlan: 1794; remote vlan:
719

Oct 11, 2011 2:35:49 PM fdt.agent.session.AgentSession commitLocalResources
INFO:
[ commitLocalResources ] { Virtual interface } Executed:
/usr/bin/sudo /sbin/vconfig add eth3 1794 Resp : Added VLAN with VID == 1794 to
IF -:eth3:-
OK

Oct 11, 2011 2:35:49 PM fdt.agent.session.AgentSession commitLocalResources
INFO:
[ commitLocalResources ] { Virtual interface IP } Executed:
/usr/bin/sudo /sbin/ip address add 10.200.4.1/30 brd + dev eth3.1794 Resp : OK
```



Transfer Starting

```
dynes@fdt-caltech:~/FDTAgent/bin — ssh — ttys004 — 80x24

Oct 11, 2011 2:36:34 PM ExtProcess stdout
INFO: 11/10 14:36:34      Net Out: 0.000 b/s      Avg: 0.000 b/s

Oct 11, 2011 2:36:35 PM ExtProcess stdout
INFO: Oct 11, 2011 2:36:35 PM lia.util.net.copy.transport.TCPTransportProvider t
ryToConnect

Oct 11, 2011 2:36:35 PM ExtProcess stdout
INFO: INFO: Requested window size -1. Using window size: 32768

Oct 11, 2011 2:36:39 PM ExtProcess stdout
INFO: 11/10 14:36:39      Net Out: 465.137 Mb/s      Avg: 77.515 Mb/s

Oct 11, 2011 2:36:44 PM ExtProcess stdout
INFO: 11/10 14:36:44      Net Out: 945.590 Mb/s      Avg: 201.509 Mb/s

—
```

ION Web Interface (We are 1340)

The screenshot shows a web browser window with the URL <https://ion.net.internet2.edu/ion/>. The page features a navigation menu with links for 'about', 'support', 'my profile', and 'sign out'. Below the navigation is a header with the 'Internet2 ION' logo and a 'Reserve Circuit' button. The main content area is titled 'View Circuits' and includes a 'current' tab and a 'history' tab. A table of circuit reservations is displayed, with columns for ID, Fav, Description, Creator, Start, End, and Status. A 'Refresh' button is located to the right of the table. The footer contains the text 'Powered by OSCARS, DRAGON and perfSONAR.' and a navigation bar with links for 'Statistics | Administration | Internet2 | Internet2 ION NOC'.

Internet2 ION

about support my profile sign out

Reserve Circuit View Circuits

current history

10 Per Page Click the column header to sort by that column Refresh

ID	Fav	Description	Creator	Start	End	Status	
8677		Fenius reservation	fenias	10/11/2011 13:34	10/11/2011 13:49	ACTIVE	View/Edit Clone Cancel
1340		Dynes Circuit by ...	caltech	10/11/2011 13:32	10/11/2011 14:32	ACTIVE	View/Edit Clone Cancel
7527		GPN-KS-OpenFlow-2	pj	09/20/2011 11:58	12/30/2011 12:58	ACTIVE	View/Edit Clone Cancel
7526		KS-OpenFlow-1	pj	09/20/2011 11:53	12/30/2011 12:53	ACTIVE	View/Edit Clone Cancel
7200		RUTGERS 3716 to O...	rutgers1	09/14/2011 16:13	10/14/2011 16:13	ACTIVE	View/Edit Clone Cancel
7199		RUTGERS 3715 to O...	rutgers1	09/14/2011 16:05	10/14/2011 16:05	ACTIVE	View/Edit Clone Cancel
6879		BBN 3746 to OF.NE...	tupty	09/08/2011 16:11	11/09/2011 13:00	ACTIVE	View/Edit Clone Cancel
6878		BBN 3745 to OF.NE...	tupty	09/08/2011 16:06	11/09/2011 13:00	ACTIVE	View/Edit Clone Cancel

Powered by [OSCARS](#), [DRAGON](#) and [perfSONAR](#).

Statistics | Administration | Internet2 | Internet2 ION NOC

Circuit Details (US Only)

Internet2 ION

https://ion.net.internet2.edu/ion/#

MLab Apple Yahoo! Google Maps YouTube Wikipedia News (666) Popular

Internet2 ION SNAPP - Home

about support my profile sign out

Internet2 ION

Reserve Circuit View Circuits

current history details

Circuit ID: 1340

Description: Dynes Circuit by FDTAgent with SessionID: aba2e228-c050-3548-ae22-05b196e38af8

Created By: caltech

Status: ACTIVE

Source: Domain: caltech.edu, Node: vlsr7, Port: 1-0-21

Destination: Domain: cipo.rnp.br, Node: SPO, Port: ge-2/3/4

Duration: 1 hour

Start Date: 10/11/2011

Start Time: 13:32

End Date: 10/11/2011

End Time: 14:32

Bandwidth: 1000 Mbps

VLAN (Source): 1794

Refresh

Internet2 Map

The map displays the United States with state abbreviations. A blue line indicates the circuit path, starting from a red pin in California (likely San Francisco) and ending at a red pin in Texas (likely Dallas). The path follows the West Coast and then heads inland to Texas. The map includes labels for the Gulf of California, Mexico, Gulf of Mexico, and North Atlantic Ocean. A navigation interface is visible on the left side of the map.

Map data ©2011 Europa Technologies, INEGI -

Transfer Ramping Up

```
dynes@fdt-caltech:~/FDTAgent/bin — ssh — ttys004 — 80x24
INFO: 11/10 14:37:49      Net Out: 1.057 Gb/s      Avg: 603.211 Mb/s

Oct 11, 2011 2:37:54 PM ExtProccess stdout
INFO: 11/10 14:37:54      Net Out: 1.099 Gb/s      Avg: 626.789 Mb/s

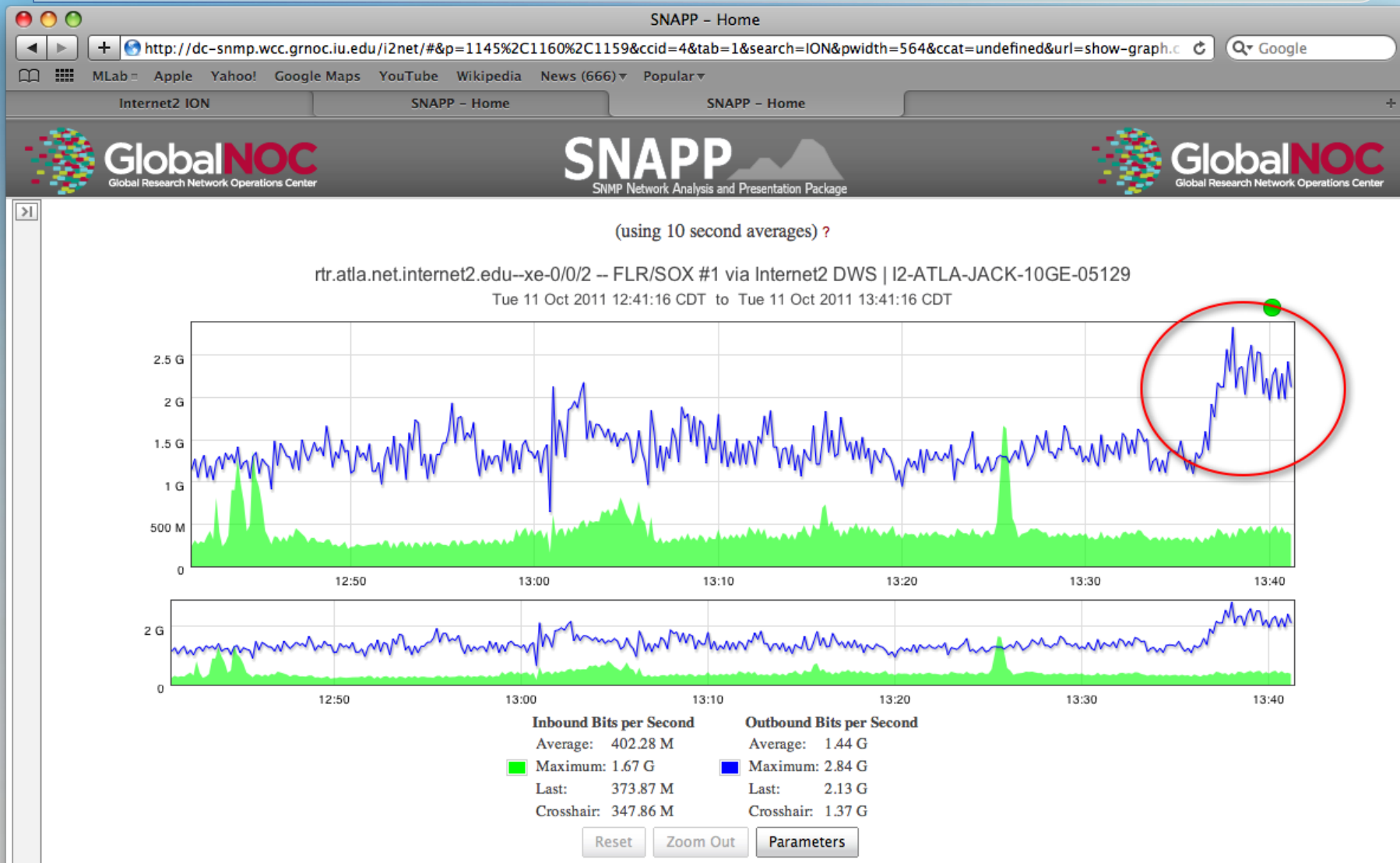
Oct 11, 2011 2:37:59 PM ExtProccess stdout
INFO: 11/10 14:37:59      Net Out: 1.065 Gb/s      Avg: 646.698 Mb/s

Oct 11, 2011 2:38:04 PM ExtProccess stdout
INFO: 11/10 14:38:04      Net Out: 1.091 Gb/s      Avg: 666.022 Mb/s

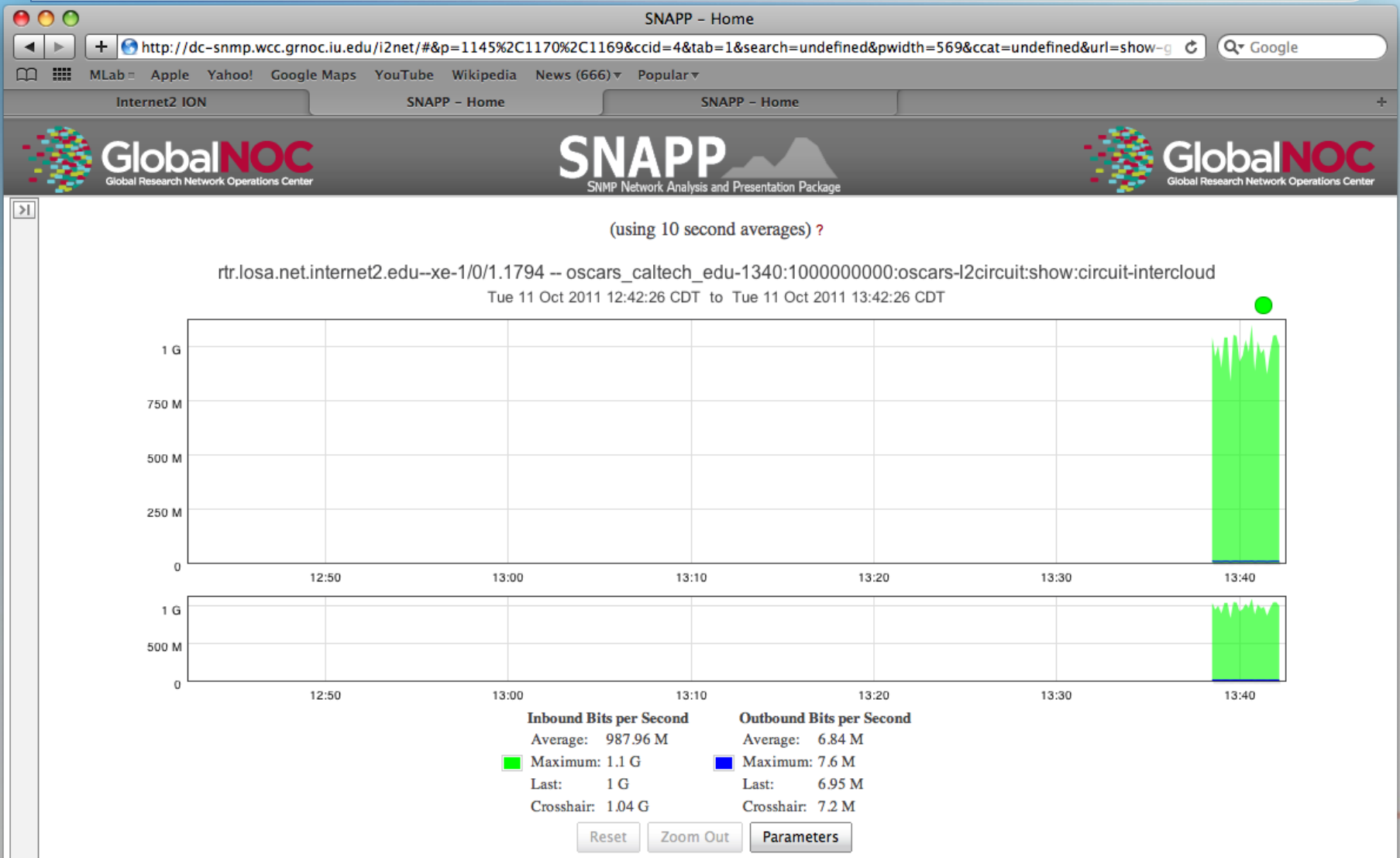
Oct 11, 2011 2:38:09 PM ExtProccess stdout
INFO: 11/10 14:38:09      Net Out: 1.082 Gb/s      Avg: 683.336 Mb/s

Oct 11, 2011 2:38:14 PM ExtProccess stdout
INFO: 11/10 14:38:14      Net Out: 1.034 Gb/s      Avg: 697.361 Mb/s
```

View on FLR/SOX Peering (to AMPATH)



Circuit (Caltech to Internet2 LOSA)



Starting Teardown

```
dynes@fdt-caltech:~/FDTAgent/bin — ssh — ttys004 — 80x24
INFO: [ waitForIDCTearDown ] Waiting for IDC to cancel the reservation GRI: calt
ech.edu-1340. Will wait for max: 600 seconds for IDC to tear down the circuit.

Oct 11, 2011 2:47:17 PM fdt.agent.session.CancelCircuitTask waitForIDCTearDown
INFO: [ waitForIDCTearDown ] Reservation caltech.edu-1340 Status: ACTIVE; Deadl
ine in: 9 minutes 57 seconds

Oct 11, 2011 2:47:19 PM fdt.agent.session.CancelCircuitTask waitForIDCTearDown
INFO: [ waitForIDCTearDown ] Reservation caltech.edu-1340 Status: ACTIVE; Deadl
ine in: 9 minutes 55 seconds

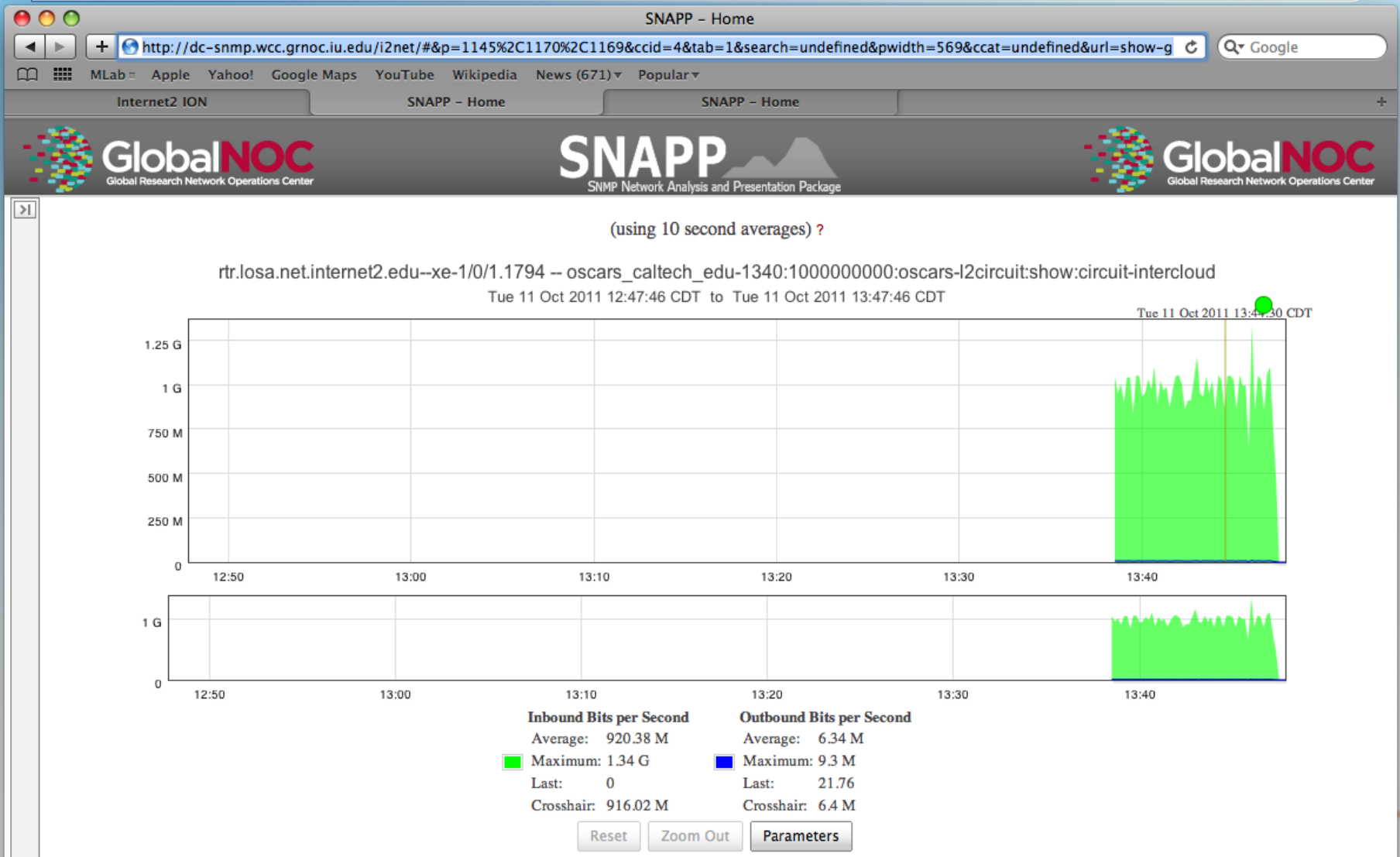
Oct 11, 2011 2:47:21 PM fdt.agent.session.CancelCircuitTask waitForIDCTearDown
INFO: [ waitForIDCTearDown ] Reservation caltech.edu-1340 Status: ACTIVE; Deadl
ine in: 9 minutes 53 seconds

Oct 11, 2011 2:47:24 PM fdt.agent.session.CancelCircuitTask waitForIDCTearDown
INFO: [ waitForIDCTearDown ] Reservation caltech.edu-1340 Status: ACTIVE; Deadl
ine in: 9 minutes 50 seconds

Oct 11, 2011 2:47:26 PM fdt.agent.session.CancelCircuitTask waitForIDCTearDown
INFO: [ waitForIDCTearDown ] Reservation caltech.edu-1340 Status: ACTIVE; Deadl
ine in: 9 minutes 48 seconds

_
```

Complete Circuit Performance



Done

```
dynes@fdt-caltech:~/FDTAgent/bin — ssh — ttys004 — 80x24
INFO: [ waitForIDCTearDown ] Circuit went down OK: Down Status=CANCELLED
Oct 11, 2011 2:48:54 PM fdt.agent.session.AgentSession circuitCancelingFinished
INFO: [ circuitCancelingFinished ] Circuit was canceled: caltech.edu-1340
Oct 11, 2011 2:48:54 PM fdt.agent.session.AgentSession releaseLocalResources
INFO: [ AgentSession ] releaseLocalResources FINISHED DT 1 minutes 39.825 seconds
Oct 11, 2011 2:48:54 PM fdt.agent.session.AgentSession shutdown
INFO: [ Shutdown ] shutting down remote session: AgentSessionID [id=aba2e228-c050-3548-ae22-05b196e38af8]

Oct 11, 2011 2:48:56 PM fdt.agent.session.AgentSession shutdown
INFO: [ Shutdown ] started for AgentSessionID [id=aba2e228-c050-3548-ae22-05b196e38af8]

[ FDTAGENT ] [ INFO ] ControlConnection closed
Oct 11, 2011 2:48:56 PM fdt.agent.session.AgentSession shutdown
INFO: [ Shutdown ] Detaching remote logger ...
Oct 11, 2011 2:48:56 PM fdt.agent.session.AgentSession shutdown
INFO: [ Shutdown ] Notifying remote attached clients ...

[ FDTAGENT ] [ INFO ] Finished fdt cmd. Total Time = 16 minutes 45.982 seconds
seconds
[ FDTAGENT ] [ INFO ] [ GenericAgentCmd ] [SHUTDOWN] ControlConnection closed wait time: 1 minutes 42.38 seconds timedOut: false
[dynes@fdt-caltech bin]$
```

INTERNET