Quarterly Status Report as of Apr 20th 2010

Major accomplishments

Milestones achieved

1. Identify POC for GENI Prototype Response and Escalation Group.
2. Establish 10Gbps connection from LONI to ProtoGENI through Internet 2.
3. Establish a 10Gbps connection from CRON to ProtoGENI through LONI and Internet2.
4. CRON RSpec definition completed and documented

Deliverables made

N/A

Description of work performed during last quarter

Activities and findings

1. LONI network has established a 10Gbps connection to Internet2 since the end of 2009 (see the weathermap of LONI network)
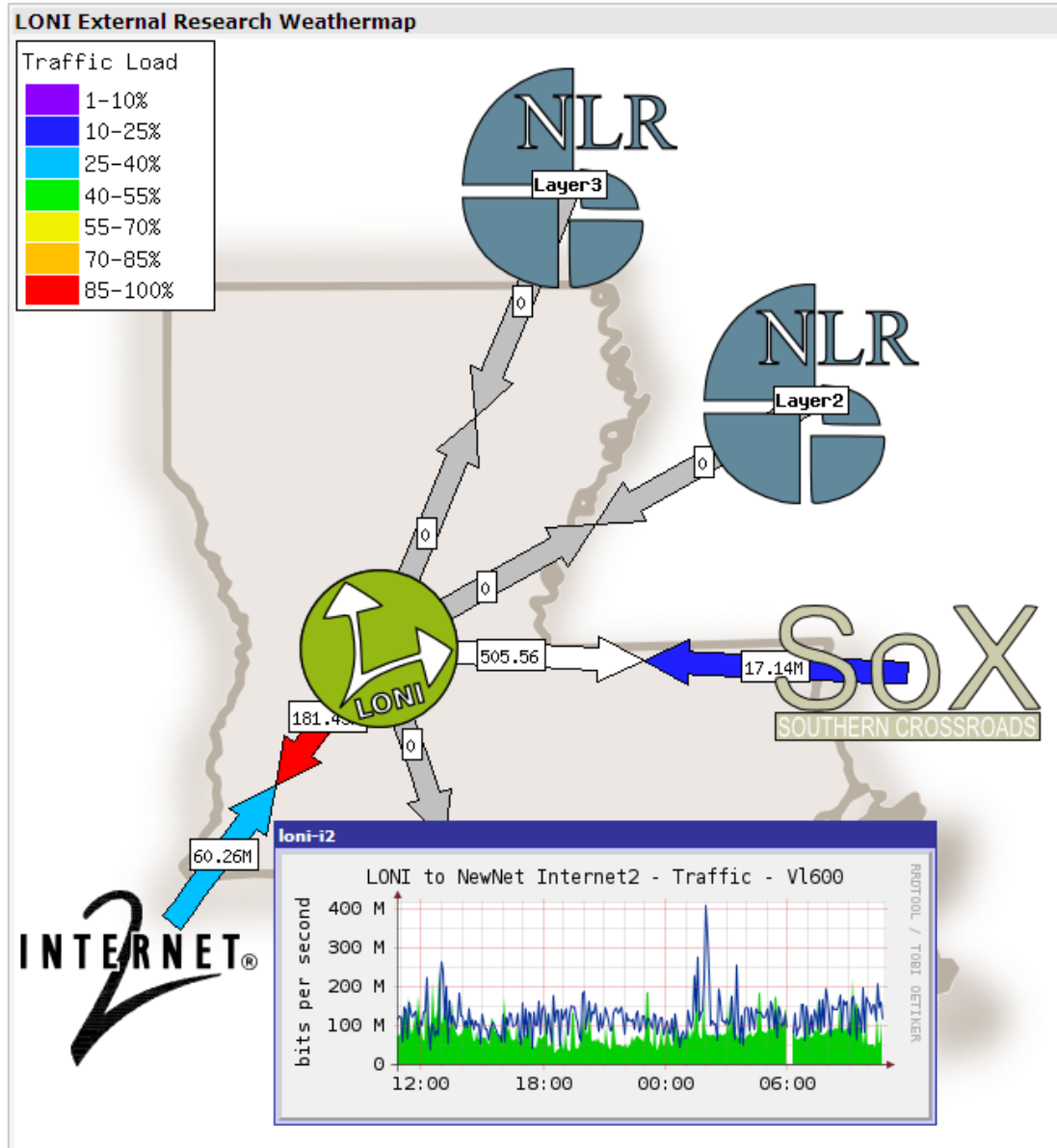
Figure 1 . The status of network connections from LONI to other external networks including Internet2 based on the weathermap (https://its-cacti.lsu.edu/plugins/weathermap/weathermap-cacti-plugin.php?action=viewmap&id=89268ad35f53cb8652ad)

2. Establishing a 10Gbps connection from CRON to ProtoGENI through LONI and Internet2
Milestone date: 5 March 2010 (before GEC).

An optical fiber between CRON testbed (which was deployed at the first floor of the Frey building inside Louisiana State University) and a switch of LONI has been deployed. The LONI switch is connected to the internet2 network through Internet2 ION service. Our connection between CRON testbed and the ION is done using the IDC server. This connection can be maintained and operated through this IDC server. This has been successfully tested by LONI administrators. Through this IDC interface, bandwidth can be reserved in the internet2 for the experiment.
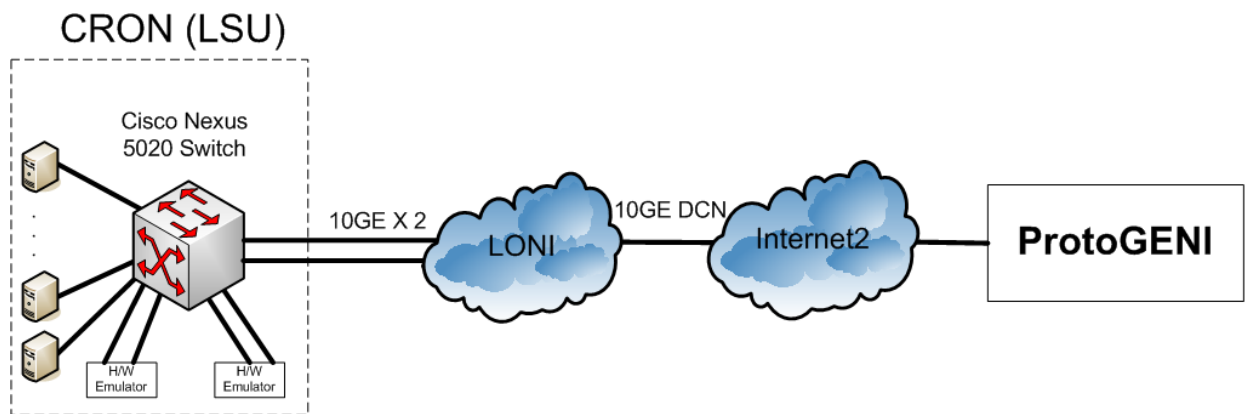

Figure 2. Connection between CRON testbed and GENI sites through Internet2 ION service

After that, we have completed a test (ping test) of the ION connection between the temporary Vlan assignment for CRON on the LONI router (www.loni.bato.dcn.internet2.edu) and BBN (POC of BBN : Heidi Dempsey) successfully (see the following result of test). BBN has also tested the Vlan. (Since there were only few GENI sites which have the Internet2 ION service, we could not perform the connection test from CRON testbed to other ProtoGENI sites.) .

```
Description: BBN/LONI test 1 (minimal connectivity)
Source:         bbn.bost.dcn.internet2.edu
Destination:    loni.bato.dcn.internet2.edu
Start Date:     2/26/2010
Start Time:     10:27
End Date:       2/26/2010
End Time:       11:27
Duration:       1 hour
Bandwidth:      50 Mbps
Source VLAN:    3726
Source VLAN type:       Tagged
Destination VLAN:       2999
Destination VLAN type:  Tagged
```

3. CRON RSpec definition completed and documented

Rspec definition

(1) For 10Gbps Cisco switch inside CRON testbed

```
<node component_manager_uuid="urn:publicid:IDN+cron.cct.lsu.edu+authority+cm"
      component_name="cisco10G"
      component_uuid="urn:publicid:IDN+cron.cct.lsu.edu+node+cisco10G">
      <node_type type_name="switch" type_slots="1" />
      <available>true</available>
      <exclusive>true</exclusive>
      <interface
      component_id="urn:publicid:IDN+cron.cct.lsu.edu+interface+cisco10G:(null)"          />
</node>
```

(2) For workstations which have 10Gbps NIC(Network Interface Card)

```
<node component_manager_uuid="urn:publicid:IDN+cron.cct.lsu.edu+
    authority+cm" component_name="pc1"
      component_uuid="urn:publicid:IDN+cron.cct.lsu.edu+node+pc1">
      <node_type type_name="pc4240" type_slots="1" />
      <node_type type_name="pc" type_slots="1" />
      <node_type type_name="delay" type_slots="1" />
      <node_type type_name="pcvm" type_slots="20" />
      <available>true</available>
      <exclusive>true</exclusive>
      <interface  component_id="urn:publicid:IDN+cron.cct.lsu.edu+
            interface+ pc1:eth4" />
      <interface  component_id="urn:publicid:IDN+cron.cct.lsu.edu+
                                    interface+pc1:eth5" />
</node>

<node component_manager_uuid="urn:publicid:IDN+cron.cct.lsu.edu+
    authority+cm" component_name="pc2"
      component_uuid="urn:publicid:IDN+cron.cct.lsu.edu+node+pc2">
      <node_type type_name="pc4240" type_slots="1" />
      <node_type type_name="pc" type_slots="1" />
      <node_type type_name="delay" type_slots="1" />
      <node_type type_name="pcvm" type_slots="20" />
      <available>true</available>
      <exclusive>true</exclusive>
      <interface  component_id="urn:publicid:IDN+cron.cct.lsu.edu+
      interface+ pc2:eth4" />
      <interface  component_id="urn:publicid:IDN+cron.cct.lsu.edu+
                                    interface+pc2:eth5" />
```

(3) For hardware emulators which have 10Gbps capacity

```
<node component_manager_uuid="urn:publicid:IDN+cron.cct.lsu.edu+
      authority+cm" component_name="em01"
      component_uuid="urn:publicid:IDN+cron.cct.lsu.edu+node+em01">
        <node_type type_name="hwem" type_slots="1" />
```

```
            <available>true</available>
            <exclusive>true</exclusive>
             <interface component_id="urn:publicid:IDN+cron.cct.lsu.edu+
                              interface+em01:eth0" />
```

(4) For 10Gbps link between workstations and a swich

```
<link component_manager_uuid="urn:publicid:IDN+cron.cct.lsu.edu+authority+sa"
      component_name="link-pc1:eth4-cisco10G:(null)"
      component_uuid="urn:publicid:IDN+cron.cct.lsu.edu+link+link-pc1:eth4-
      cisco10G:(null)">

<interface_ref
      component_node_uuid="urn:publicid:IDN+cron.cct.lsu.edu+node+pc1"
      component_interface_id="urn:publicid:IDN+cron.cct.lsu.edu+
                             interface+pc1:eth4" />
<interface_ref
      component_node_uuid="urn:publicid:IDN+cron.cct.lsu.edu+node+     cisco10G"
      component_interface_id="urn:publicid:IDN+cron.cct.lsu.edu+
      interface+cisco10G:(null)" />
  <bandwidth>10000000</bandwidth>
  <latency>0</latency>
  <packet_loss>0</packet_loss>
<link_type type_name="ethernet" />

</link>
```

*More discussion will be done among PIs and other PIS of ProtoGENI projects to
finalize the proposed RSpec for resources of CRON testbed.