GIMI

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GEC 18

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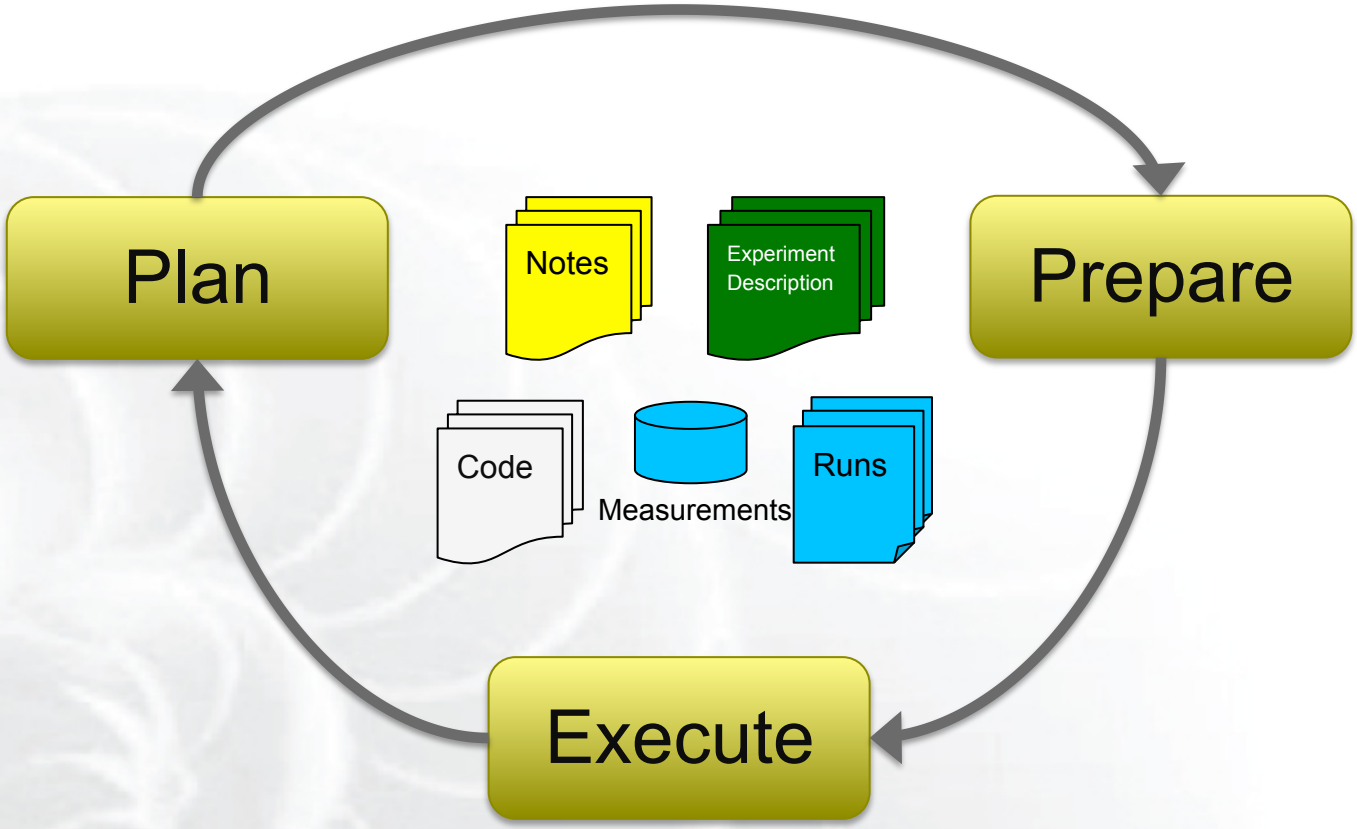
Experiment Design

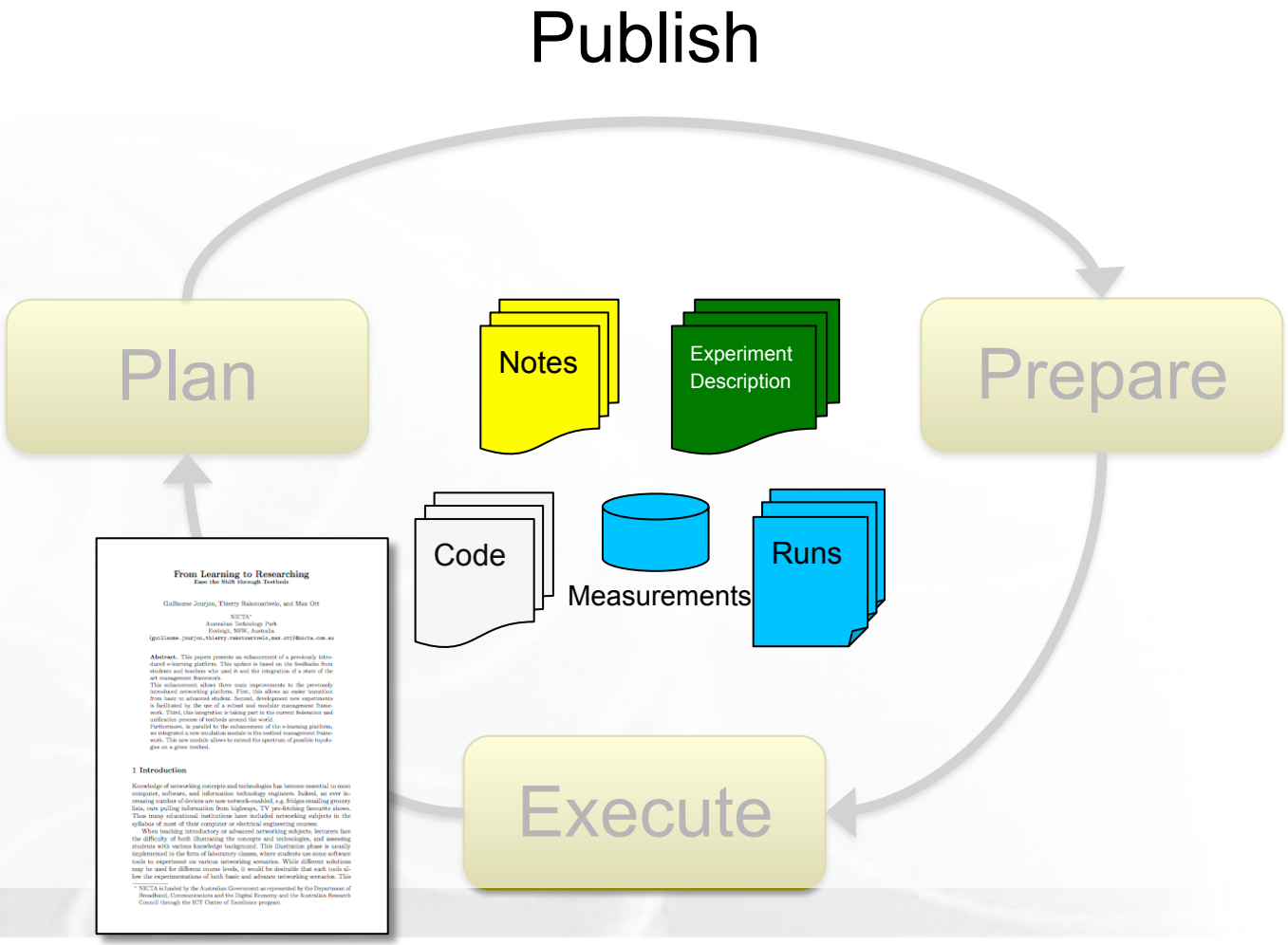
"Perform basic measurements on ExoGENI testbed"

- ✓ Simple topology
- ✓ Repeatable experiment
- ✓ Ability to monitor and document experiment

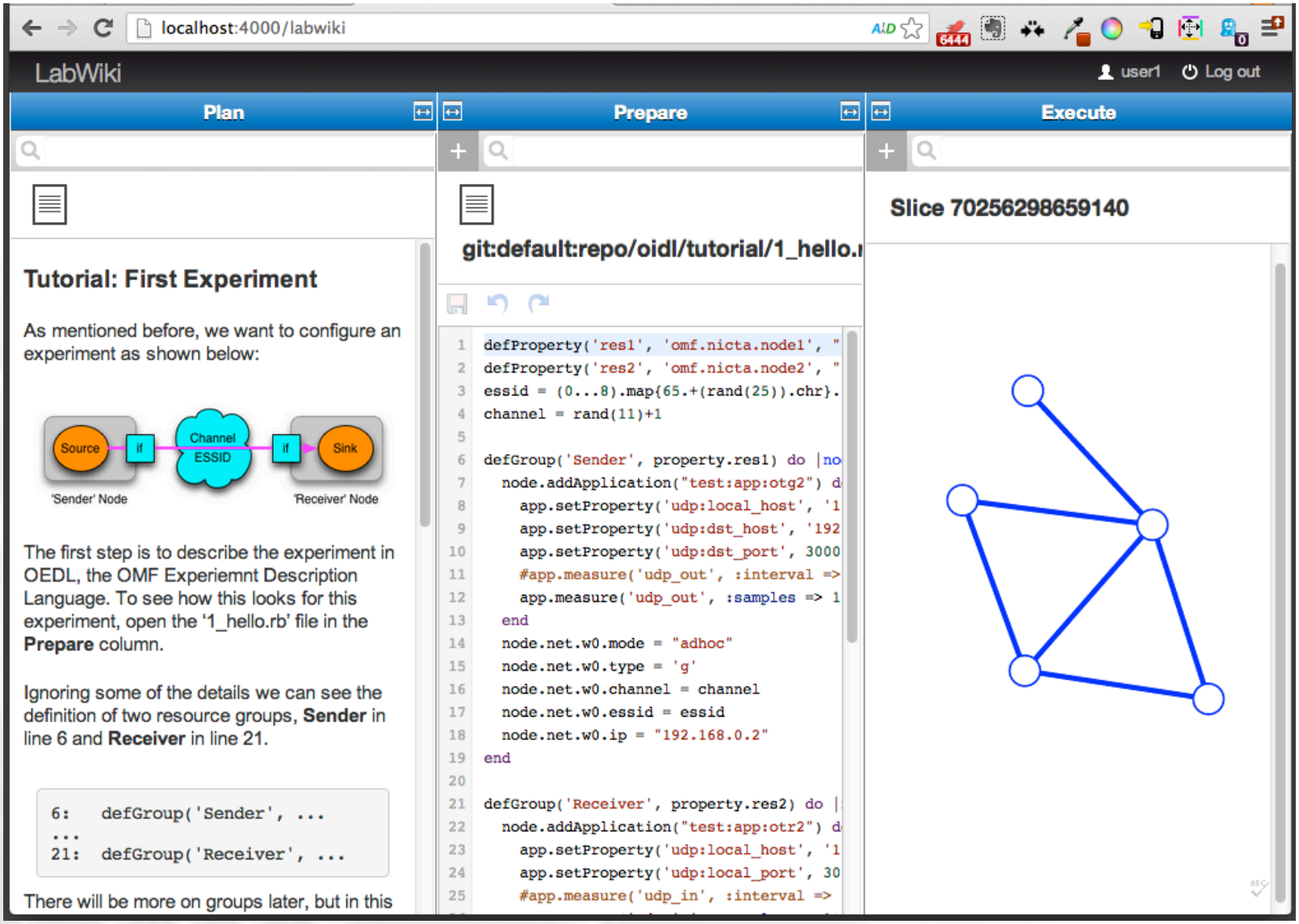
The "Experiment Cycle"

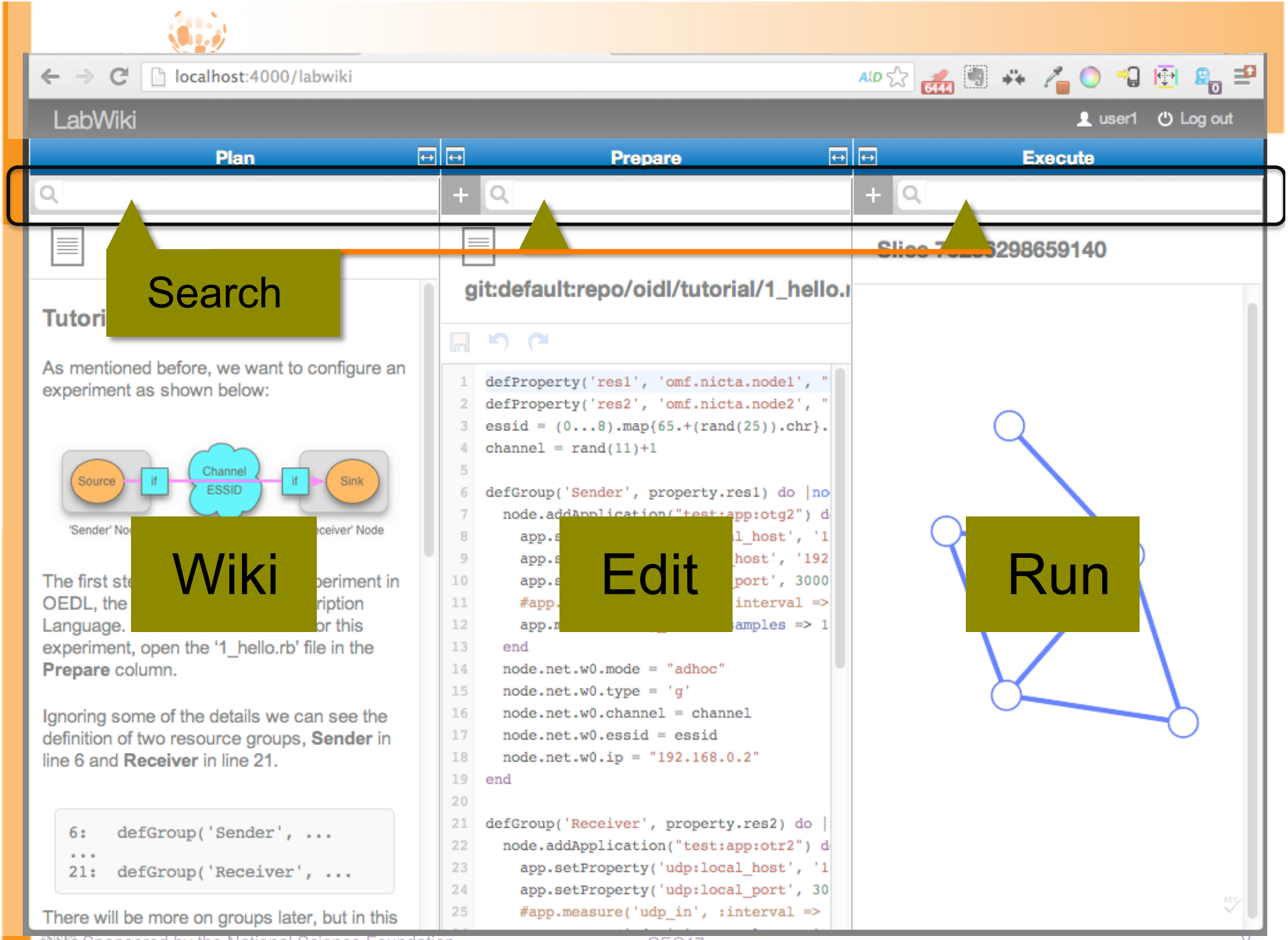


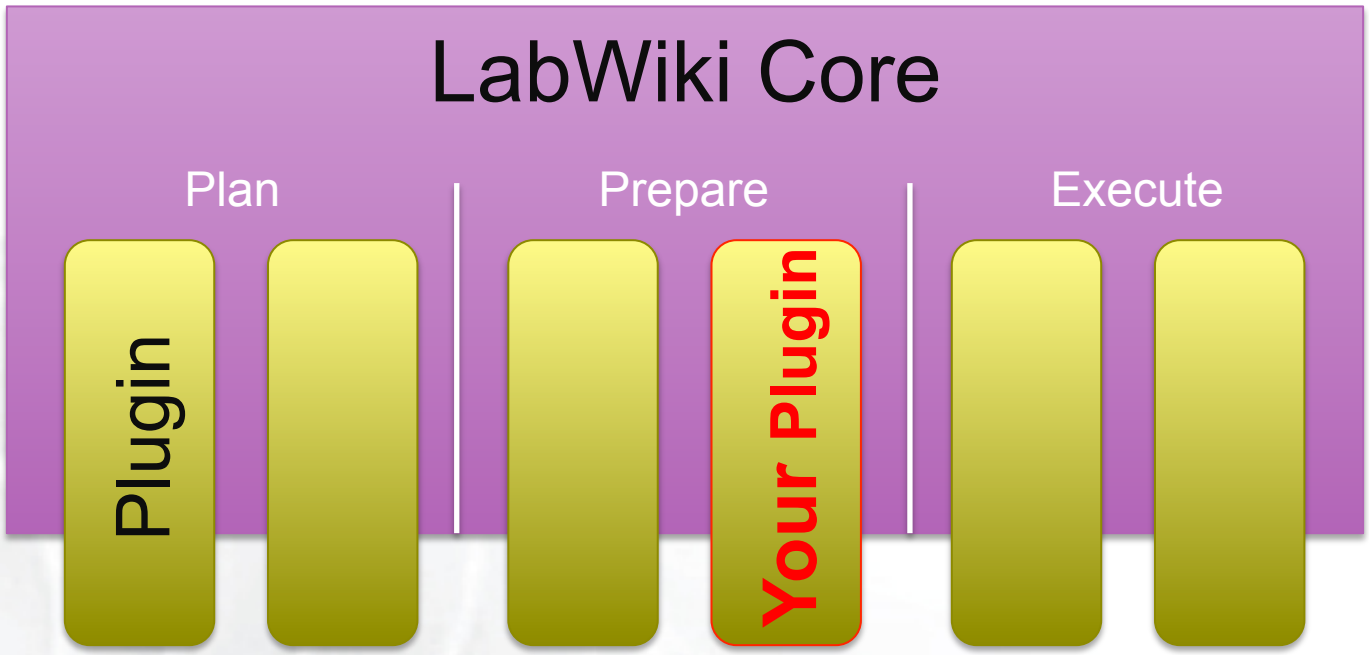
The "Successful Experiment Cycle"



The "Experiment Cycle" in a Tool: LabWiki




localhost:4000/labwiki
LabWiki
user1
Log out
Plan
Prepare
Execute
Search
Wiki
Edit
Run
Source
if
Channel
ESSID
if
Sink
As mentioned before, we want to configure an experiment as shown below:
The first ste
OEDL, the
Language.
experiment, open the '1_hello.rb' file in the
Prepare column.
Ignoring some of the details we can see the definition of two resource groups, Sender in line 6 and Receiver in line 21.
6: defGroup('Sender', ...
...
21: defGroup('Receiver', ...
There will be more on groups later, but in this
git:default:repo/oidl/tutorial/1_hello.r
defProperty('res1', 'omf.nicta.node1', "
defProperty('res2', 'omf.nicta.node2', "
essid = (0...8).map{65.+(rand(25)).chr}.
channel = rand(11)+1
defGroup('Sender', property.res1) do |no
node.addApplication("test:app:otg2") d
app.s l_host', '1
app.s host', '192
app.s port', 3000
#app. interval =>
app.m amples => 1
end
node.net.w0.mode = "adhoc"
node.net.w0.type = 'g'
node.net.w0.channel = channel
node.net.w0.essid = essid
node.net.w0.ip = "192.168.0.2"
end
defGroup('Receiver', property.res2) do |
node.addApplication("test:app:otr2") d
app.setProperty('udp:local_host', '1
app.setProperty('udp:local_port', 30
#app.measure('udp_in', :interval =>
Slice 298659140



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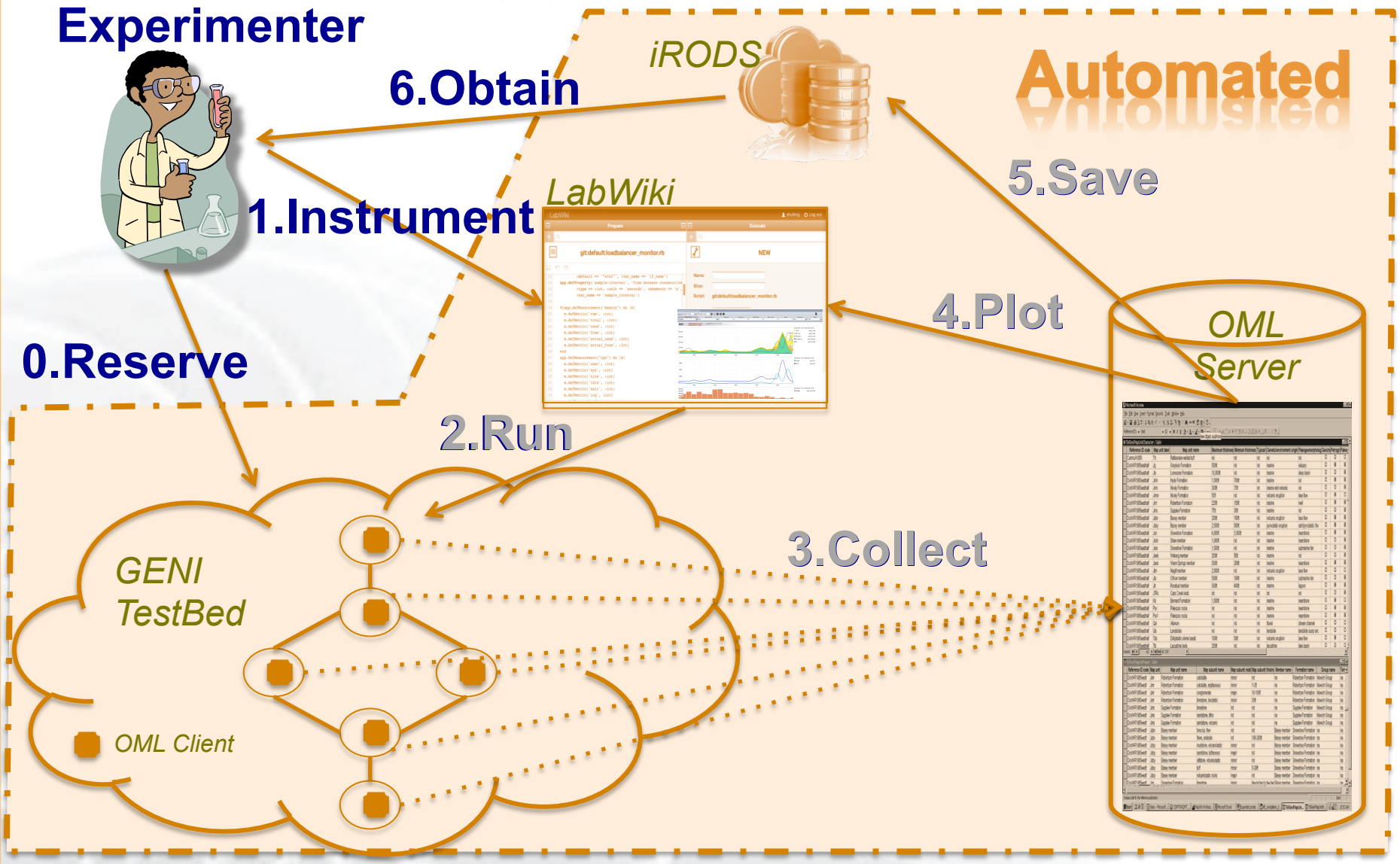
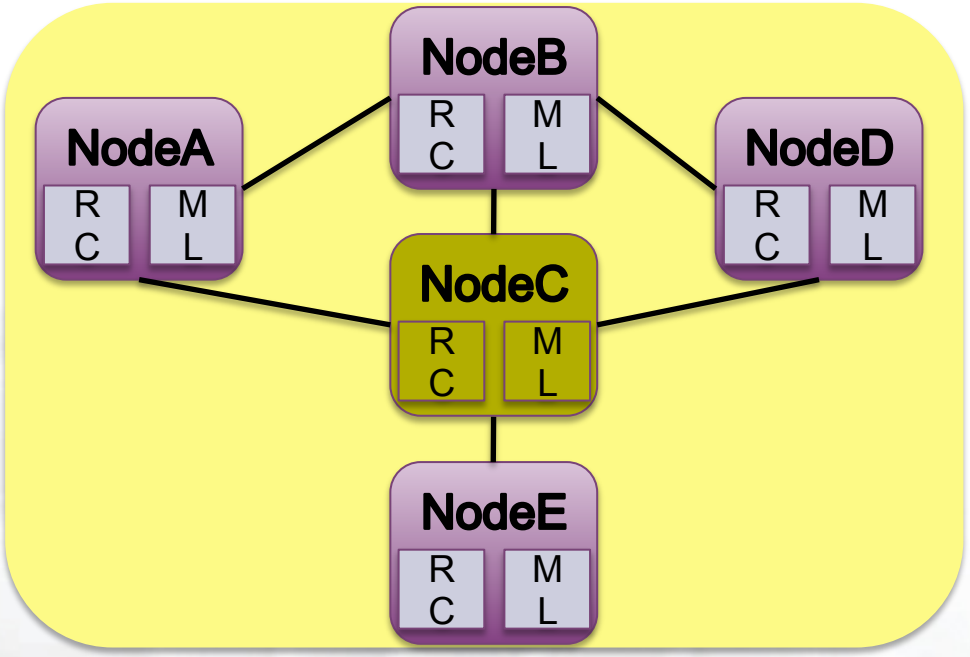
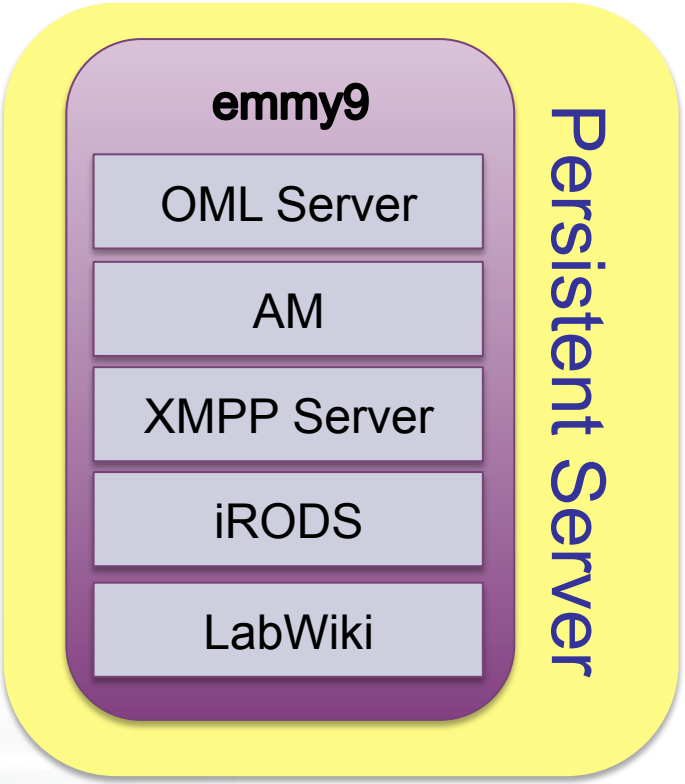
- Status:
  - Open-source MIT License
  - Code:
    - https://github.com/mytestbed/labwiki
  - Bug reports & documentation (hahaha):
    - http://omf.mytestbed.net/projects/labwiki
  - Plugin example:
    - https://github.com/mytestbed/labwiki_topology_plugin

Environment



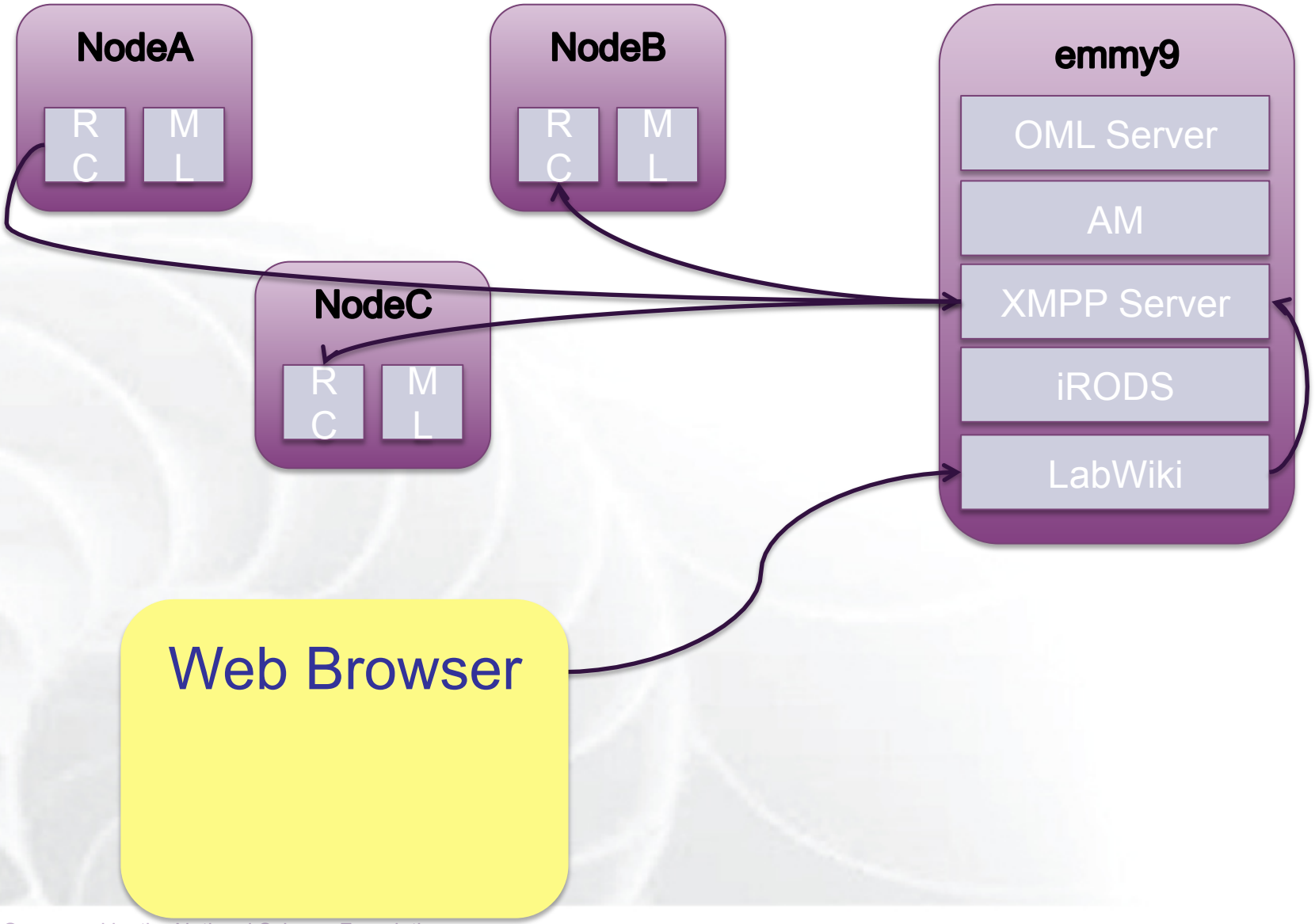
Architecture



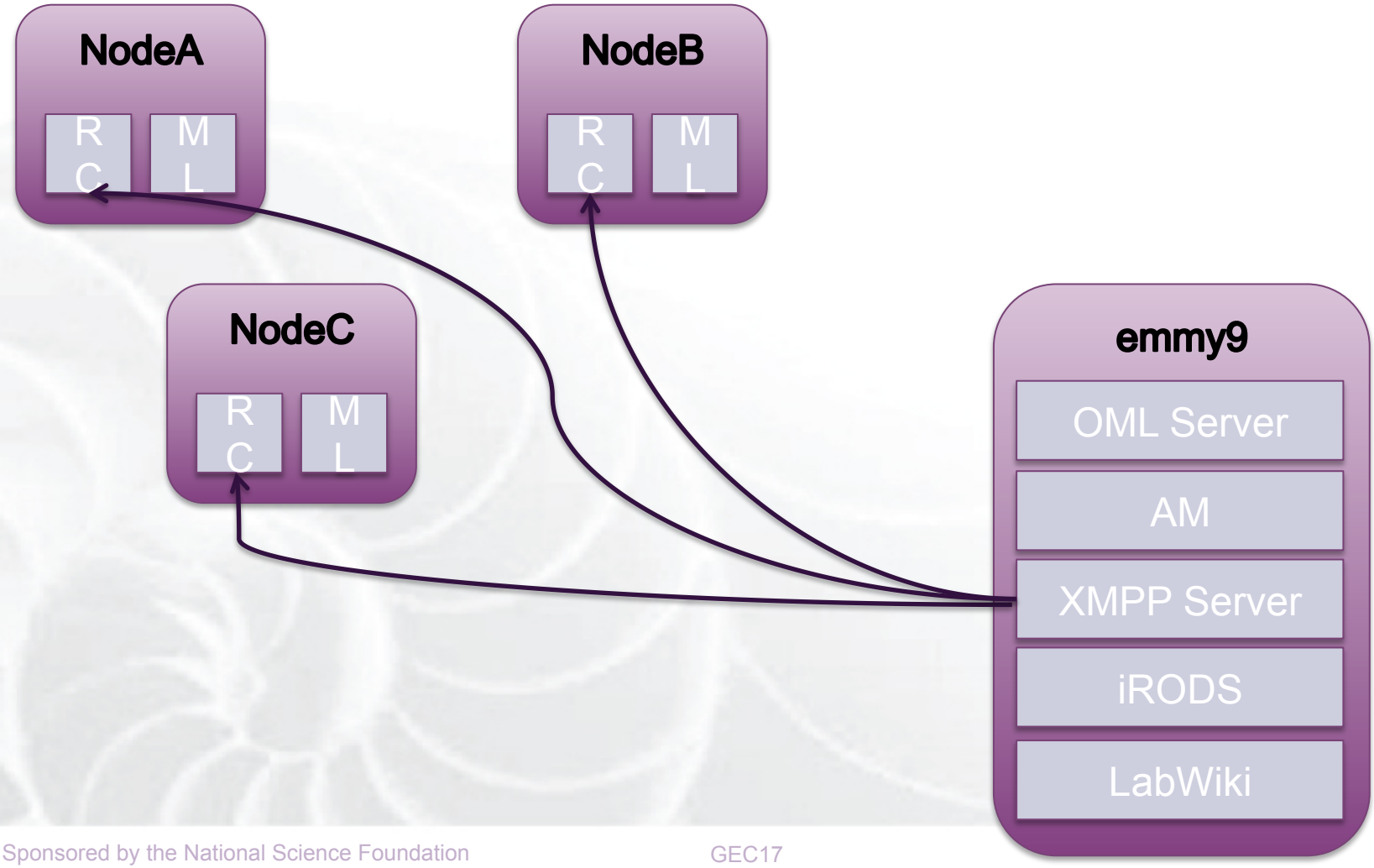


Web Browser

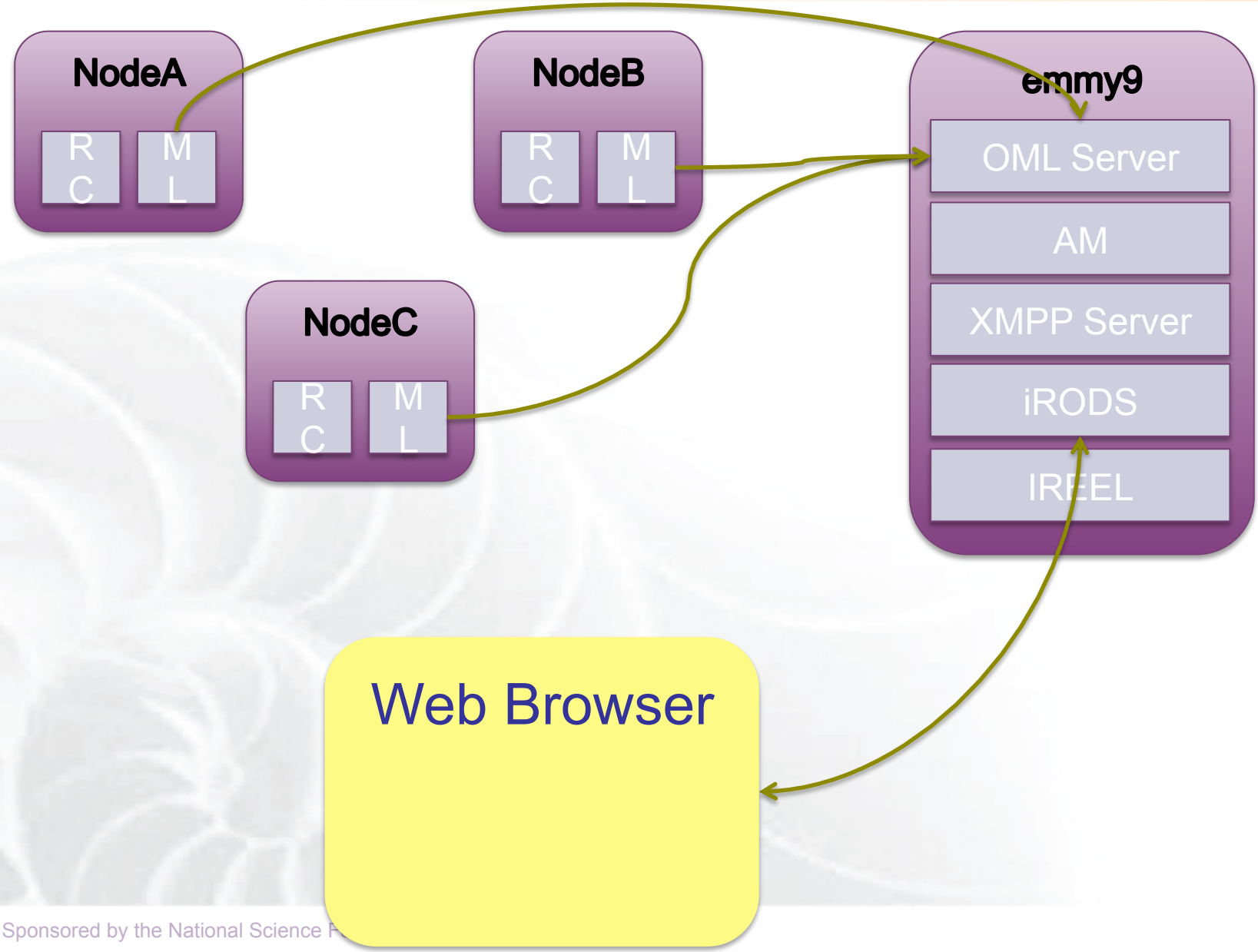
XMPP Messaging



EC/RC Messaging



Data Collection

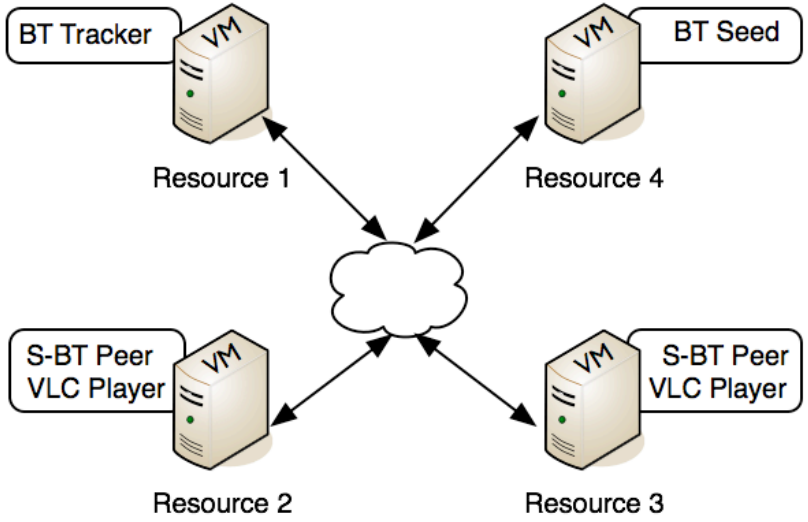


Postboot Script

```
#!/bin/bash
cd /local
read -r slice</var/emulab/boot/nickname
slicename=$(echo $slice | cut -f2 -d.)
host=$(hostname)
host1=$(echo $host | cut -f1 -d.)
hostname $host1
curl http://emmy9.casa.umass.edu/pingWrap.rb -o /root/pingWrap.rb
chmod +x /root/pingWrap.rb
curl
http://emmy9.casa.umass.edu/omf-resctl.yaml -o /etc/omf-resctl-5.4/omf-
resctl.yaml
perl -i.bak -pe "s/\:slice\:/\:slice\: $slicename/g" /etc/omf-resctl-5.4/omf-resctl.yaml
/etc/init.d/omf-resctl-5.4 restart''
VM-3.dbhatslice.emulab-net
```

Overview

- New GIMI functionality
- P2P-based streaming



- Client/server-based, adaptive streaming experiment