README

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This research work is based on ProtoGENI/GENI functionality, and an effort to find security issues in ProtoGENI: By Fnu Shalini, December 2010 at University of Alabama as partial requirement for MS in Computer Science

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Initial installation:

Linux machine: Ubuntu 9.0 through VMware Player 3.1 on Windows 7 machine

Python and SSH client program is also installed on host machine with installation of Ubuntu.

Other Software installation:

M2Crypto:

sudo apt-get install m2crypto

 SSH Server

sudo apt-get install openssh-server

Emulab Account: only registered users at Emulab can interact with ProtoGENI.

For student researchers: Get Emulab account through project head (Advisor or Professor)

Get membership to some project as registered user of Emulab (http://emulab.net/)

Generate SSL certificate at your Emulab account options, and download it to your host linux machine in .ssl directory of home folder. If not there already, create a new one with .ssl name. Save the file as "encrypted.pem"

At host machine, generate SSH key pair, and save it in .ssh directory of home folder. Create a new one if not exists. Rename the generated key files as id_rsa and id_rsa.pub files. Passphrase should be strong and save it to as file "password" in .ssl directory. It will save some typing time.

Upload the public SSH key id_rsa.pub to the Emulab account through option "Edit SSH Keys"

At host machine, create sub directory "protogeni" in home folder, and then create a sub-directory "test" in protogeni folder.

Download test scripts suite from ProtoGENI website in Home/protogeni/test

   Home/protogeni/test *sudo wget* http://www.emulab.net/downloads/protogeni-tests.tar.gz

Unpack the tar file.

Modification in test-common.py: verify the portion of this file containing below section for XMLRPC_SERVER. Change it to "www.emulab.net" as shown below:

XMLRPC_SERVER   = { "ch" : "www.emulab.net",

"default" : "www.emulab.net"}

Verification: first **run getcredential.py** test script on host machine

Save the details of getcredential.py if users wants for reference, not essential to store as requirement for further functioning.

Run lookupuser.py and discover.py to see user details and interaction with ProtoGENI resources as discover.py will display the all available resources with the system which can be utilized by the user.

Go through the details for using test scripts and rspec example files which are available on ProtoGENI website

Create resource specification file as per requirement of the experiment.

Create slice/sliver with required resources.

Extend the holding time for resources if required other than default settings by ProtoGENI.

Verify the status of your sliver and resources in your sliver.

Utilize and experiment as per observation targets for a particular experiment.

Document the findings with the help of screen-shots and other supporting data to back-up the results and analysis.

Release the resources after completion of the network experiments by deleting the slice.

Summarize the findings, their associated effects and importance, and any suggestions to improve current setup of the experiments.