GpENI VINI/Quagga
Status and Configuration

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http://geni-myvini.umkc.gpeni.net
GpENI-VINI

- GpENI-VINI is built by using Princeton’s MyPLC and Trellis software
- It’s now fully operational; several nodes from various sites are now connected.
- Quagga is installed.
Request a site

• Contact to GpENI-VINI Central myvini.umkc@gmail.com to request a site
• After GpENI-VINI Central approves your request, you can create your user account at your site.
Create User Account for existing site

Welcome to your new Drupal-based MyPLC website!
Please follow these steps to set up and start using your website:

1. Use your administrator account
   Enter the site using the credentials that you have provided when configuring MyPLC (see PLC_ROOT_USER and PLC_ROOT_PASSWORD). This account has full administration rights and allows you to configure your website using Drupal tools.

2. Configure your website
   Once logged in, visit the administration section, where you can customize and configure all aspects of your website.

3. Enable additional functionality
   Next, visit the module list and enable features which suit your specific needs. You can find additional modules in the Drupal modules download section.

4. Customize your website design
   To change the “look and feel” of your website, visit the themes section. You may choose from one of the included themes or download additional themes from the Drupal themes download section.

5. Start posting content
   Finally, you can create content for your website. This message will disappear once you have published your first post.

For more information, please refer to the Help section, or the online Drupal handbooks. You may also post at the Drupal forum, or view the wide range of other support options available.
Cont...

- Select your site name
- Select role as User/Principal Investigator/Technical Contact in role option
- After GpENI-VINI central accepts your account registration, you will receive an email.
Node installation at your site

• Add a node to your site through the web interface by adding node configuration data
• Download the ISO image file
• Burn into a CD
• Install the node by booting from the CD
Create an SSH Key

- An SSH key pair must be created for authentication purposes before you can access any GpENI-VINI nodes, including those at your own site.
- Remote access to GpENI-VINI nodes is restricted to SSH login using RSA authentication. RSA authentication is based on public-key cryptography.
- `ssh-keygen -t rsa -f ~/.ssh/id_rsa`
Upload your SSH public key

- Ssh-keygen will generate two files: private key file: id_rsa
  public key file: id_rsa.pub.
- Login to your account through GpENI-VINI Central website
- Upload your public key (id_rsa.pub) to your account.
Create a slice for your project

• Contact the PI at your site to create a slice for your nodes
• Login to the web interface
• Add users and nodes to the slice
• It may take up to an hour for the slice to be created on all nodes and for your ssh public key to propagate to all of the nodes in your slice.
Login to the slice

- Now you can try to login to your slice

    # ssh -l umkc_test1 -i ~/.ssh/id_rsa router-2.umkc.gpeni.net
Create Topology in your slice

- PI can Add tags to your slice
  capabilities (CAP_NET_ADMIN )
  netns (1)
  egre_key (eg. 100)
  vini_topo (eg. iias)
- Topology will automatically created by MyVINI Central cron job
- More tags will be added to the slice
  eg. topo_rspec and hosts
Example map at GpENI-VINI

- Localhost 127.0.0.1
- Router-2.unl 192.168.2.14
  192.168.4.14
  192.168.6.17
- Router-2.umkc 192.168.6.18
- Router-3.umkc 192.168.2.13
- Router-4.umkc 192.168.4.13
Cont...

UNL Site

Router-2.unl

192.168.6.16/30

Router-2.umkc

192.168.2.12/30

192.168.4.12/30

Router-3.umkc

Router-4.umkc

UMKC Site
About Quagga - Overview

• A routing software package that provides TCP/IP based routing services with routing protocol support
• Advanced software architecture
• High quality, multi server routing engine
• Interactive user interface for each routing protocol
About Quagga - Overview

- A system with Quagga installed acts as a dedicated router.
- The machine can exchange information with other routers using routing protocols.
- Setup interface’s flag, address, static routers…
Quagga System Architecture

• A collection of several daemons that work together to build the routing table

bgpd  ripd  ospfd  zebra

UNIX Kernel routing table
Quagga Installation

• Login to the slice in each sliver

```
xl9f2@tux01 xlf9f2]$ ssh -l umkc_test1 -i ~/.ssh/id_rsa router-1.unl.gpeni.net
Last login: Wed Nov 11 18:38:44 2009 from tux01.sce.umkc.edu
[umkc_test1@router-1 ~]$ 
```

• Download Quagga

```
[umkc_test1@router-1 ~]$ su
bash-3.2# wget http://archive.kernel.org/fedora-archive/updates/8/i386.newkey/quagga-0.99.9-4.fc8.i386.rpm
```

• Install it to the slice in each sliver

```
bash-3.2# rpm -ivh quagga-0.99.9-4.fc8.i386.rpm
Preparing... #FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF [100%]
package quagga-0.99.9-4.fc8.i386 is already installed
```