

Installation of Grivon 2.0 alpha

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1. Prerequisite

To setup virtual cluster hosting environment, the followings are required.

- VLAN Switch

Since virtual clusters uses tagged VLAN as local networks, the system requires network switch that transparently pass through packets with VLAN tags. Fortunately, most switches on the market fulfill this requirement.

- frontend Node (x1)

A frontend node for the physical cluster is required. Virtual Cluster management system resides on the node.

Prerequisite for the node configuration is the same as the one for NPACI Rocks v5.1 frontend node. The node have to have more than two network interface; one is for cluster internal network and another is for global Internet. Therefore, a global IP address is required for the node.

- Gateway Nodes (one or more)

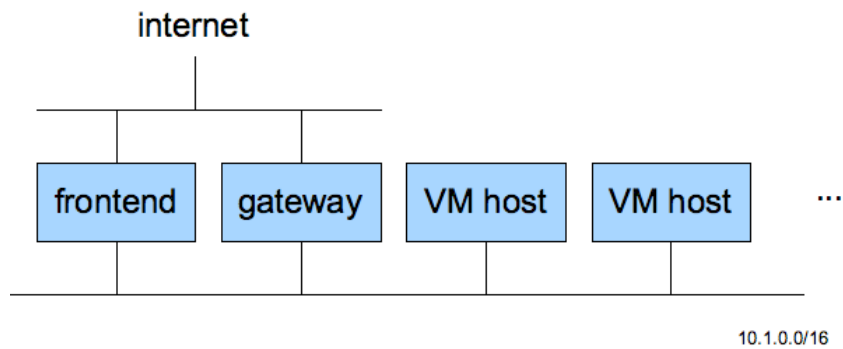
On the nodes, frontend nodes for virtual clusters will be hosted. The node have to have more than two network interface; one is for cluster internal network and another is for global Internet.

One global IP address is required for each gateway node. The nodes have to have extra memory (1GB) for the guest virtual frontend, adding to the memory required for Rocks nodes (1GB). For Disks, it will require extra space(30GB) adding to the default 30GB for Rocks nodes.

- VM Host Node (One or more)

This kind of nodes will host the virtual cluster compute nodes.

The nodes have to have extra memory (1GB) for the guest virtual frontend, adding to the memory required for Rocks nodes (1GB). For Disks, it will require extra space(30GB) adding to the default 30GB for Rocks nodes.



2. Preparation

2.1 Preparation of Install media

1. Download and burn NPACI Rocks v5.1 ISO image.

Download Rocks5.1 Jumbo Roll (Base, Core, & OS Roll) from <http://www.rocksclusters.org/> i386 (dvd), and burn it on a DVD-ROM.

2.2 Preparation of Install environment

Prepare physical cluster as described above.

3. Installation

3.1. frontend installation

Install frontend using the Rocks v5.1 DVD.

Install Grivon on to the frontend.

1. Download Grivon DVD image, and
2. Execute following commands

```
rocks add roll clean=1 Grivon-5.1-0.i386.disk1.iso
rocks enable roll Grivon
cd /export/rocks/install && rocks create distro
export MYSQL_AUTH="-u root -p"
kroll Grivon |bash
```

kroll might prompt you to input root password.

3. Make sure to reboot the frontend after the previous commands.

```
init 6
```

Once you've done the frontend installation, go on to the gateway and vm host node installation

3.2. Gateway Installation

Gateway and VM Host nodes have to be installed as 'vm-container' appliances.

1. log-in to the frontend and run 'insert-ethers'.

Make sure to choose 'vm-container', as an appliance for the nodes.

2. Power on the gateway nodes one by one and install it from PXE network boot.

"boot:" prompt will show up. You should just ignore that. Automatically the nodes will proceed to installation phase.

3. After installation, stop the 'insert-ethers' on the frontend.

3.3. VM host installation

VM host node have to be installed as vm-container.

1. log-in to the frontend and run 'insert-ethers'.

Make sure to choose 'vm-container', as an appliance for the nodes.

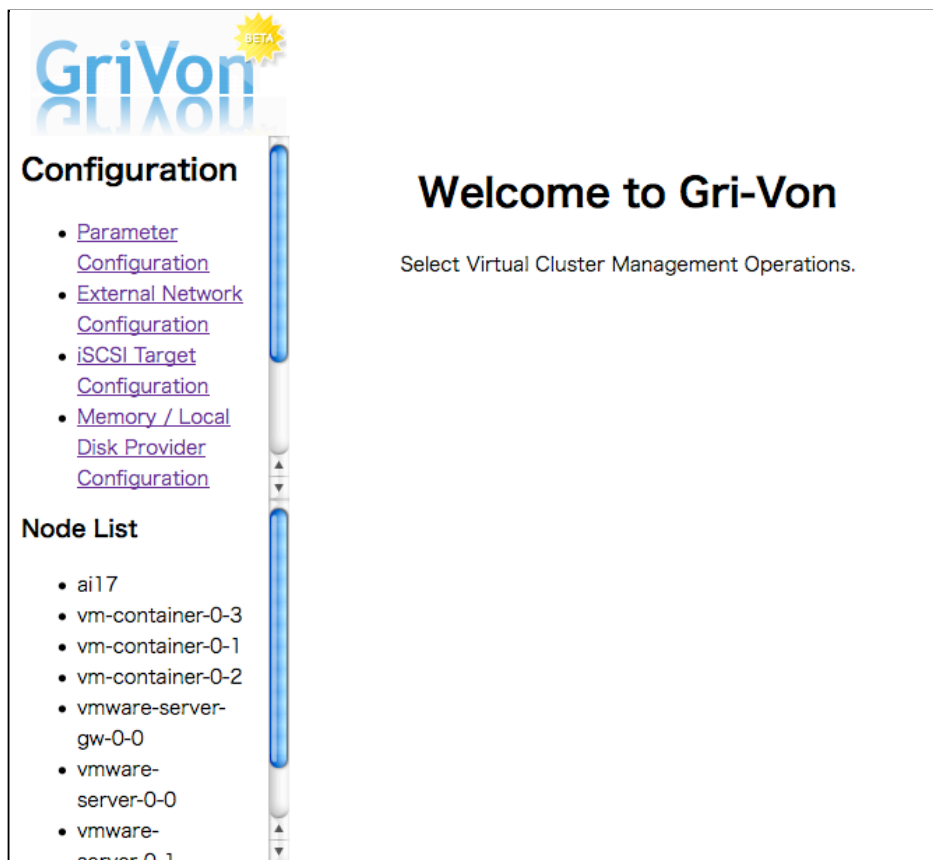
2. Power on the VM host nodes one by one and install it from PXE network boot.

"boot:" prompt will show up. You should just ignore that. Automatically the nodes will proceed to installation phase.

3. After installation, stop the 'insert-ethers' on the frontend.

4. Initial Configuration

Initial Configuration is required once. For that visit http://<FRONTEND_ADDRESS>/vc/admin.html.



Configure Virtual Frontend Global Address (Mandatory)

Click "External Network Configuration" on the left pane. On the right pane, you will see configuration panel to setup virtual frontend nodes global address/netmask/gateway.

Virtual Frontend External Network Configuration				
ID	IP address	Netmask	Gateway	Delete
new	<input type="text"/>	<input type="text"/>	<input type="text"/>	
<input type="button" value="UPDATE"/>				

Input global address, netmask, and gateway for the virtual frontend nodes.

ID	IP address	Netmask	Gateway	Delete
new	<input type="text" value="192.50.74.171"/>	<input type="text" value="255.255.255.0"/>	<input type="text" value="192.168.74.1"/>	

Pressing 'update' will register the edited information.

ID	IP address	Netmask	Gateway	Delete
1	<input type="text" value="192.50.74.171"/>	<input type="text" value="255.255.255.0"/>	<input type="text" value="192.168.74.1"/>	<input type="checkbox"/> DELETE
new	<input type="text"/>	<input type="text"/>	<input type="text"/>	

Configure Maximum Memory/Disk size for VM (Mandatory)

Select "External Network Configuration".

Memory / Local Disk Provider Configuration							
node name	appliance	memory	disk	device	IP address	netmask	MAC address
ai17	frontend	--	--	eth0	10.1.1.1	--	00:0e:0c:65:0a:49
				eth1	<input type="text" value="192.50.74.172"/>	--	00:11:2f:a9:89:18
vm-container-0-3	vm-container	--	--	eth1	<input type="text" value="192.50.74.174"/>	--	00:17:31:91:d3:d1
				eth0	10.255.255.254	255.0.0.0	00:16:01:3e:50:00
vm-container-0-1	vm-container	--	--	eth0	10.255.255.253	255.0.0.0	00:17:31:91:d3:a1
vm-container-0-2	vm-container	--	--	eth0	10.255.255.252	255.0.0.0	00:17:31:91:d3:b1
vmware-server-gw-0-0	vmware-server-gw	<input type="text" value="2048"/>	<input type="text" value="20480"/>	eth0	10.255.255.251	255.0.0.0	00:0e:0c:65:0a:63
				eth1	<input type="text" value="192.50.74.173"/>	--	00:11:2f:a9:8d:bd
vmware-server-0-0	vmware-server	<input type="text" value="2048"/>	<input type="text" value="20480"/>	eth0	10.255.255.250	255.0.0.0	00:0e:0c:65:0a:63
vmware-server-0-1	vmware-server	<input type="text" value="2048"/>	<input type="text" value="20480"/>	eth0	10.255.255.249	255.0.0.0	00:0e:0c:65:0a:4e
compute-0-3-0	compute	--	--	eth0	10.255.255.248	--	00:16:3e:00:00:00
				eth1	--	--	00:16:3e:00:00:00

Specify VM Maximum Memory/Disk size for each node. The page will fill the default values for you. If the defaults are OK for you, just press 'Update'.

5. How to Use

5.1 Reservation of Virtual Clusters

Browse http://<FRONTEND_ADDRESS>/vc/user.html.



Select "Register a New Virtual Cluster" menu.

Register a New Virtual Cluster

Append Nodes To :

Period: 2008 / 10 / 9 : 2008 / 10 / 9

Passwd:

PublicKey:

Virtual Node Type	Number Of Nodes	Memory Size (MB/nodes)	Storage Type	Storage Size (MB/node)
frontend	1	2048	local	20480
compute	0	2048	local	20480

Specify followings, and press "Register".

- Period (Reservation start time/ end time)
- Password / ssh public key (Copy and paste your ssh public key string to the text field)
- Memory Size/ Disk Size for Frontend node
- Memory Size/ Disk Size for Compute node

On success of the reservation, the browser will show you reserved virtual cluster configuration.

5.2 Browsing Virtual Clusters

Selecting "View Registration" on http://<FRONTEND_ADDRESS>/vc/user.html will show you a list of reserved virtual clusters. You can also see the details by clicking specific cluster.

Limitation

As of this version, following features are not supported.

1. Attaching iSCSI volumes to virtual nodes.
2. Attaching shared volume with NFS
3. User defined Rolls
4. Multi-site hosted virtual clusters

We are working hard on them to support them in the successive releases.
