

How to clone a VM

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I. General preparation

- Cloning a VM is actually creating a template from a VM and use that template to clone additional identical VMs
- Before cloning a VM, few steps need to be taken first to make the template work
- Note that the steps to create a template are not all mandatory, but they are recommended so that your VM is clean to use. You may want to make some slight changes here and there to adapt the template to your needs

A. Cloning a Windows VM

1. Using Leap GIO Public free templates

- Clean up your template:
 - o Delete temporary settings, cache, download
 - o Change Computer name: Set to 'localhost' and reboot the system
 - o Delete Internet Browsing history:
 - Temporary Internet files, Cookies History, Form data, Passwords,
 - InPrivate Filtering data of Administrator account
 - o Delete files in Downloads and Documents folder of Administrator account
 - o Delete unnecessary programs
 - o Delete Sysprep TAG file (if it exists): C:\Windows\System32\Sysprep\Sysprep_succeeded.tag
 - o Clear Windows Event log (Application, Security, System)
 - o Delete VM Instance Manager log:
 - Stop "Cloud.com VM Instance Manager" service, and then delete the following file:
 - C:\Program Files (x86)\Cloud.com, Inc\Cloud.com VM Instance Manager\cloud.log
 - C:\Program Files (x86)\Cloud.com, Inc\Cloud.com VM Instance Manager\cloud.log.bak
 - o Empty the Recycle bin
- Once your template is ready, open the **command** console **as administrator** to execute the sysprep tool:

What this command does: *It removes system-specific data from Windows. Sysprep can remove all system-specific information from an installed Windows image, including the computer security identifier (SID). The Windows installation can then be captured and installed throughout an organization.*

 - o cd \Windows\system32\sysprep
 - o sysprep /generalize /oobe /shutdown /unattend:unattend.xml
- Finally, the System is shutting down.
- Once done, you are ready to go to **Chapter II**

2. Using your own .iso file

- When using your own .iso file, because there are many different types of Windows versions out there, we are not able to cover all template preparation/creation. However, the steps are pretty similar to the ones that are described above. Customers can adapt the steps provided to the release they would like to create a template from.
- We also recommend customers to check online in order to create their own templates from their own .iso files.

B. Cloning a Linux VM

1. Using Leap GIO Public free templates

- By using our free templates that are provided on the portal, the main benefit is that these templates are already prepared and ready to be used on our Leap GIO Public environment. You just need to customize them based on your needs
- There are only few steps to be done before the VM is ready to become a template after customers have modified their VM to fit their needs

a) Ubuntu 16.04

- Clean up your template: login as **root** via **console**
 - o Shutdown the network interface eth0: **ifdown eth0**
 - o Remove the udev persistent rules: **rm -f /etc/udev/rules.d/70***
 - o Remove the DHCP release: **rm -f /var/lib/dhcp/dhclient.***
 - o Remove the SSH key: **rm -f /etc/ssh/*key***
 - o Change the hostname:
 - **hostname localhost**
 - **vi /etc/hostname**
 - Change to **localhost**
 - **vi /etc/hosts**
 - Remove the **127.0.1.1** record which is put there by the Debian installer
 - o Permit Root Login over SSH with non-interactive authentication methods and set to disable Password Authentication:
 - **vi /etc/ssh/sshd_config**
 - PermitRootLogin prohibit-password
 - PasswordAuthentication no
 - **service ssh restart**
 - o Enable firewall
 - **vi /etc/default/ufw**
 - IPV6=no
 - **service ufw restart**
 - Configure firewall to allow SSH server to work: **ufw allow 22/tcp**
 - **ufw enable**
 - **ufw status verbose**
 - o Check filters
 - **ufw status verbose**

```
Status: active
Logging: on (low)
Default: deny (incoming), allow (outgoing), disabled (routed)
New profiles: skip
To          Action      From
--          -
22/tcp     ALLOW IN   Anywhere
```

- Clean up log files
 - **logrotate -f /etc/logrotate.conf**
 - **rm -f /var/lib/logrotate/status**
 - **rm -Rf /var/log/***
 - **rm /root/.bash_history**
 - **history -c**
 - **unset HISTFILE**
- Shutdown your VM: **shutdown -h now**
- Once done, you are ready to go to **Chapter II**

b) CentOS 7

- Clean up your template: login as **root** via **console**
 - Remove the udev persistent rules: **rm -f /etc/udev/rules.d/70***
 - Remove the DHCP release:
 - **dhclient -r**
 - **rm -f /var/lib/dhclient/***
 - **rm -f /var/lib/NetworkManager/dhclient***
 - Remove the SSH key: **rm -f /etc/ssh/*key***
 - Change the hostname:
 - **hostname localhost**
 - **echo "localhost" > /etc/hostname**
 - set to disable Password Authentication:
 - **vi /etc/ssh/sshd_config**
 - PasswordAuthentication no
 - **systemctl restart sshd**
 - Clean up log files
 - **logrotate -f /etc/logrotate.conf**
 - **rm -f /var/lib/logrotate.status**
 - **rm -Rf /var/log/***
 - **rm -f /root/anaconda***
 - **rm -f /root/install.log***
 - **rm -f /root/.bash_history**
 - **history -c**
 - **unset HISTFILE**
- Shutdown your VM: **shutdown -h now**
- Once done, you are ready to go to **Chapter II**

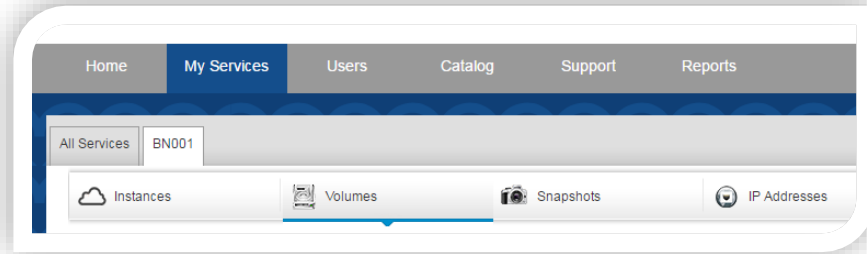
2. Using your own .iso file

- When using your own .iso file, because there are so many different types of Linux versions and releases out there, we are not able to provide a general step by step guide to explain how to create a template for all of them. However, the steps are pretty similar to the ones that we provide for the CentOS 7 and the Ubuntu 16.04 releases. Customers can adapt the steps provided to the release they would like to create a template from. We also recommend customers to check online in order to create their own templates from their own .iso files.

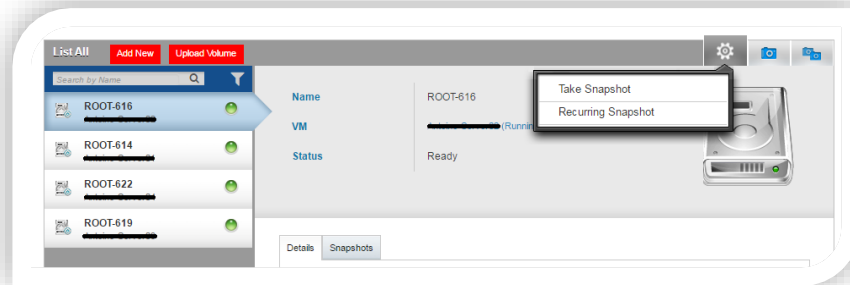
II. Create a template

A. VM is started

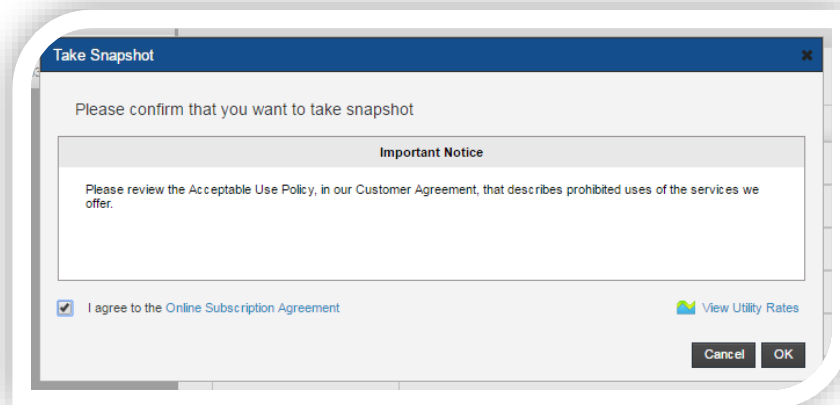
- From the GIOCloud Portal, click on the **My Services** tab located on the top horizontal menu
- Click on **Manage Resources**
- Click on the **Volumes** tab



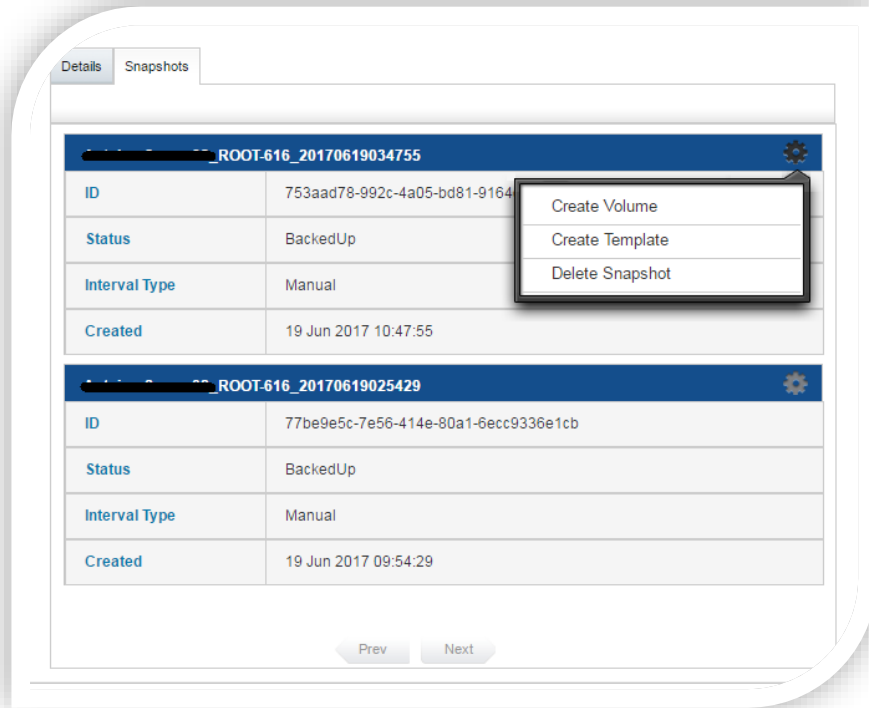
- Select the **volume** (ROOT only) from the left menu which you need to schedule a snapshot for (this case assumes that the VM/instance is **started**)
- Click on the **gear icon** and select **Take Snapshot**



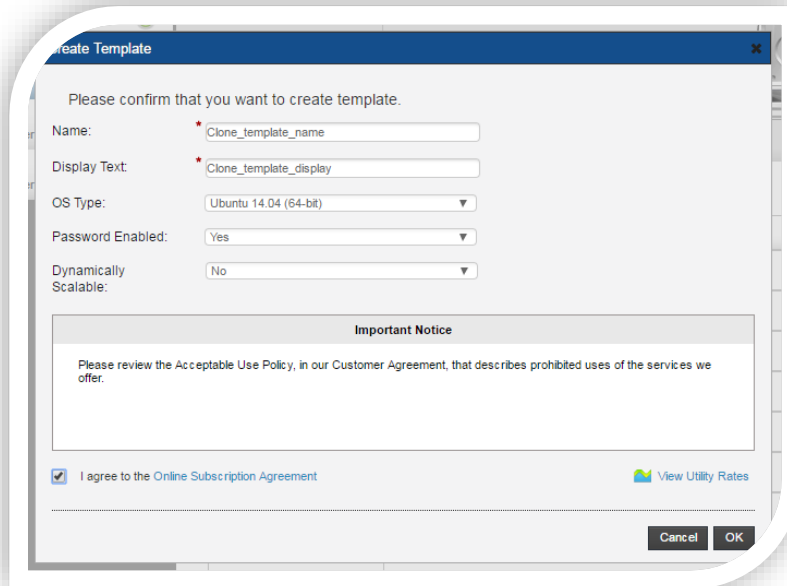
- On the windows that pops-up, check **I agree to the Online Subscription Agreement** after reading it and click on **OK**



- After the snapshot has completed, click on the **Snapshots** tab of the selected ROOT volume. Click on the **gear icon** of the snapshot that needs to be cloned (if you have more than one snapshot) and select **Create Template**



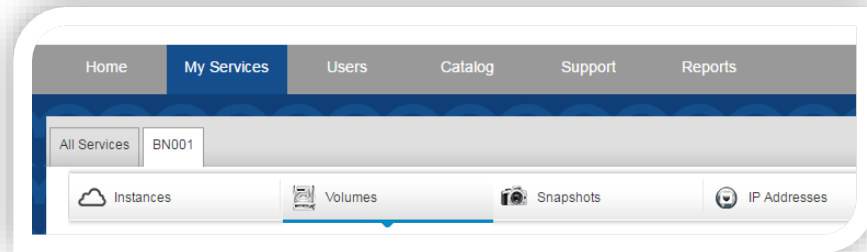
- On the next window, fill up all the information for your template. Check **I agree to the Online Subscription Agreement** after reading it and click on **OK**. Wait for the template to create



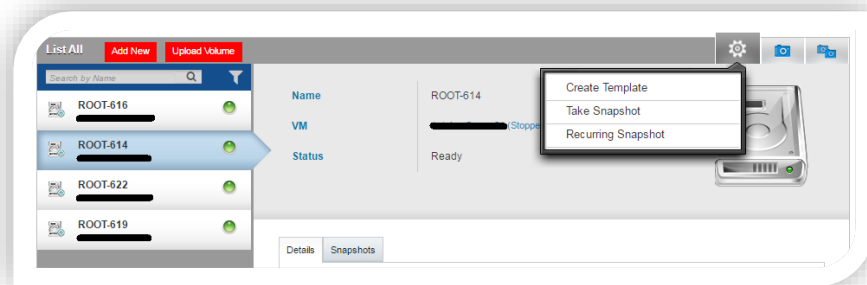
- Once the template has been created, go to **Chapter III**

B. VM is stopped

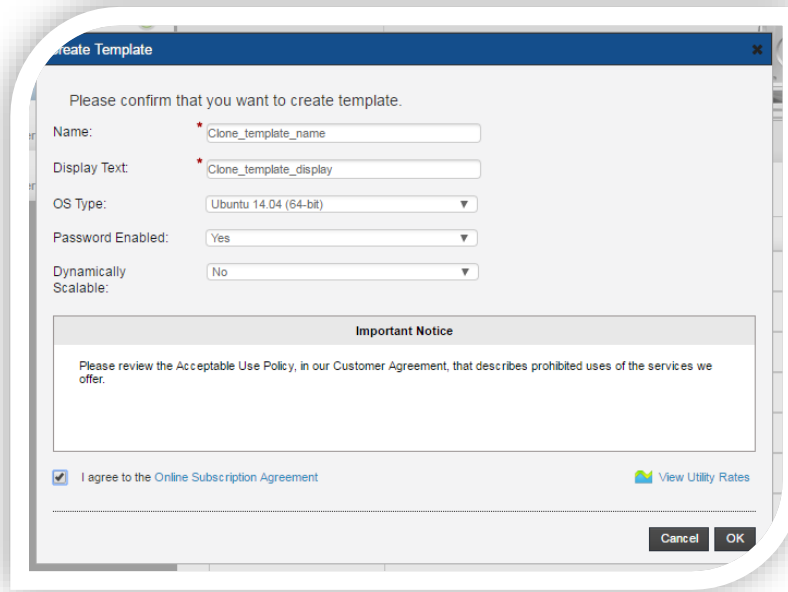
- From the GIOCloud Portal, click on the **My Services** tab located on the top horizontal menu
- Click on **Manage Resources**
- Click on the **Volumes** tab



- Select the **volume** (ROOT only) from the left menu which you need to schedule a snapshot for (this case assumes that the VM/instance is **stopped**)
- Click on the **gear icon** and select **Create Template**



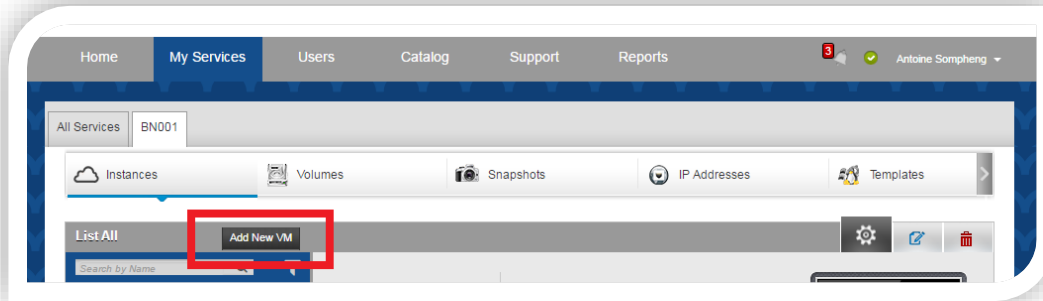
- On the next window, fill up all the information for your template. Check **I agree to the Online Subscription Agreement** after reading it and click on **OK**. Wait for the template to create



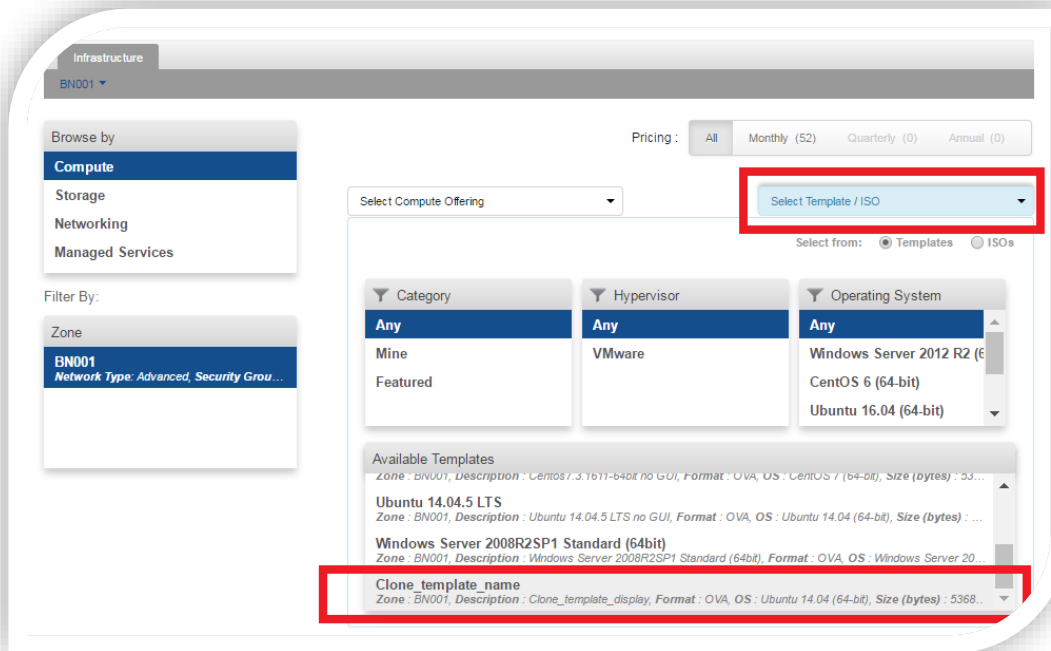
- Once the template has been created, go to **Chapter III**

III. Create the clone

- Once the template has been created, the main task has already been completed
- Using a template to create/close a VM is **not available through the Web Portal**. From the GIOCloud portal you will now be able to create a new VM with that template.
- On the **GIOCloud Portal**, go to **My Services => BN001 => Instances** and click on **Add New VM**



- You can now select your template from the list of **Available Templates**



- Note that the computing resources that you select during the creation must be at least equal or higher to the computing resources of the VM which the template has been created from.

If you have any questions please check our FAQ section. If you still cannot find what you are looking for or believe that there is a careless mistake in this document, please contact our support at support@leapsolutions.co.th or send us your inquiry through our [Inquiry Form](#) located on your Web Portal.