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LCF605 - Installation de Machines Virtuelles KVM

Contenu du Module

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LAB #1 - Installation d'une Machine Virtuelle CentOS 8

1.1 - Identification du Short ID

KVM sait virtualiser un grand nombre de systèmes d'exploitations. Pour consulter la liste complète des systèmes, il convient d'utiliser la commande **osinfo-query os** :

```
[root@centos8 ~]# osinfo-query os | more
```

Short ID	Name	Version	ID
-----+-----+-----+-----			
alpinelinux3.10	Alpine Linux 3.10	3.10	
http://alpinelinux.org/alpinelinux/3.10			
alpinelinux3.11	Alpine Linux 3.11	3.11	
http://alpinelinux.org/alpinelinux/3.11			
alpinelinux3.12	Alpine Linux 3.12	3.12	
http://alpinelinux.org/alpinelinux/3.12			
alpinelinux3.13	Alpine Linux 3.13	3.13	
http://alpinelinux.org/alpinelinux/3.13			
alpinelinux3.5	Alpine Linux 3.5	3.5	
http://alpinelinux.org/alpinelinux/3.5			
alpinelinux3.6	Alpine Linux 3.6	3.6	
http://alpinelinux.org/alpinelinux/3.6			
alpinelinux3.7	Alpine Linux 3.7	3.7	
http://alpinelinux.org/alpinelinux/3.7			
alpinelinux3.8	Alpine Linux 3.8	3.8	
http://alpinelinux.org/alpinelinux/3.8			
alpinelinux3.9	Alpine Linux 3.9	3.9	
http://alpinelinux.org/alpinelinux/3.9			
alt.p8	ALT p8 StarterKits	p8	
http://altlinux.org/alt/p8.starterkits			
alt.p9	ALT p9 StarterKits	p9	

http://altlinux.org/alt/p9.starterkits			
alt.sisyphus	ALT regular	sisyphus	
http://altlinux.org/alt/sisyphus			
alt8.0	ALT 8 Education	8.0	
http://altlinux.org/alt/8.0			
alt8.1	ALT 8.1	8.1	
http://altlinux.org/alt/8.1			
alt8.2	ALT 8.2	8.2	
http://altlinux.org/alt/8.2			
alt9.0	ALT 9.0	9.0	
http://altlinux.org/alt/9.0			
alt9.1	ALT 9.1	9.1	
http://altlinux.org/alt/9.1			
altlinux1.0	Mandrake RE Spring 2001	1.0	
http://altlinux.org/altlinux/1.0			
altlinux2.0	ALT Linux 2.0	2.0	
http://altlinux.org/altlinux/2.0			
altlinux2.2	ALT Linux 2.2	2.2	
http://altlinux.org/altlinux/2.2			
altlinux2.4	ALT Linux 2.4	2.4	
http://altlinux.org/altlinux/2.4			
altlinux3.0	ALT Linux 3.0	3.0	
http://altlinux.org/altlinux/3.0			
altlinux4.0	ALT Linux 4.0	4.0	
http://altlinux.org/altlinux/4.0			
altlinux4.1	ALT Linux 4.1	4.1	
http://altlinux.org/altlinux/4.1			
altlinux5.0	ALT Linux 5.0	5.0	
http://altlinux.org/altlinux/5.0			
altlinux6.0	ALT Linux 6.0	6.0	
http://altlinux.org/altlinux/6.0			
altlinux7.0	ALT Linux 7.0	7.0	
http://altlinux.org/altlinux/7.0			
android-x86-8.1	Android-x86 8.1	8.1	

```

http://android-x86.org/android-x86/8.1
  android-x86-9.0      | Android-x86 9.0          | 9.0      |
http://android-x86.org/android-x86/9.0
  archlinux           | Arch Linux              |          |
http://archlinux.org/archlinux/rolling
  asianux-unknown     | Asianux unknown         | unknown  |
http://asianux.com/asianux/unknown
  asianux4.6           | Asianux Server 4 SP6    |          |
http://asianux.com/asianux/4.6
  asianux4.7           | Asianux Server 4 SP7    |          |
http://asianux.com/asianux/4.7
  asianux7.0           | Asianux Server 7        | 7.0      |
http://asianux.com/asianux/7.0
  asianux7.1           | Asianux Server 7 SP1    | 7.1      |
http://asianux.com/asianux/7.1
  asianux7.2           | Asianux Server 7 SP2    | 7.2      |
http://asianux.com/asianux/7.2
  asianux7.3           | Asianux Server 7 SP3    | 7.3      |
http://asianux.com/asianux/7.3
  asianux8.0           | Asianux Server 8        | 8.0      |
http://asianux.com/asianux/8.0
  caasp-unknown        | SUSE CaaS Platform Unknown | unknown  |
http://suse.com/caasp/unknown
  caasp1.0             | SUSE CaaS Platform 1.0   | 1.0      | http://suse.com/caasp/1.0
  caasp2.0             | SUSE CaaS Platform 2.0   | 2.0      | http://suse.com/caasp/2.0
  caasp3.0             | SUSE CaaS Platform 3.0   | 3.0      | http://suse.com/caasp/3.0
--More--

```

La liste des versions de Red Hat peut être consultée en recherchant la chaîne **Red Hat** dans la sortie de la commande précédente :

```

[root@centos8 ~]# osinfo-query os | grep "Red Hat"
  rhel-atomic-7.0      | Red Hat Enterprise Linux Atomic Host 7.0 | 7.0      |
http://redhat.com/rhel-atomic/7.0
  rhel-atomic-7.1      | Red Hat Enterprise Linux Atomic Host 7.1 | 7.1      |

```

http://redhat.com/rhel-atomic/7.1			
rhel-atomic-7.2	Red Hat Enterprise Linux Atomic Host 7.2	7.2	
http://redhat.com/rhel-atomic/7.2			
rhel-atomic-7.3	Red Hat Enterprise Linux Atomic Host 7.3	7.3	
http://redhat.com/rhel-atomic/7.3			
rhel-atomic-7.4	Red Hat Enterprise Linux Atomic Host 7.4	7.4	
http://redhat.com/rhel-atomic/7.4			
rhel-unknown	Red Hat Enterprise Linux Unknown	unknown	
http://redhat.com/rhel/unknown			
rhel2.1	Red Hat Enterprise Linux 2.1	2.1	
http://redhat.com/rhel/2.1			
rhel2.1.1	Red Hat Enterprise Linux 2.1 Update 1	2.1.1	
http://redhat.com/rhel/2.1.1			
rhel2.1.2	Red Hat Enterprise Linux 2.1 Update 2	2.1.2	
http://redhat.com/rhel/2.1.2			
rhel2.1.3	Red Hat Enterprise Linux 2.1 Update 3	2.1.3	
http://redhat.com/rhel/2.1.3			
rhel2.1.4	Red Hat Enterprise Linux 2.1 Update 4	2.1.4	
http://redhat.com/rhel/2.1.4			
rhel2.1.5	Red Hat Enterprise Linux 2.1 Update 5	2.1.5	
http://redhat.com/rhel/2.1.5			
rhel2.1.6	Red Hat Enterprise Linux 2.1 Update 6	2.1.6	
http://redhat.com/rhel/2.1.6			
rhel2.1.7	Red Hat Enterprise Linux 2.1 Update 7	2.1.7	
http://redhat.com/rhel/2.1.7			
rhel3	Red Hat Enterprise Linux 3	3	http://redhat.com/rhel/3
rhel3.1	Red Hat Enterprise Linux 3 Update 1	3.1	
http://redhat.com/rhel/3.1			
rhel3.2	Red Hat Enterprise Linux 3 Update 2	3.2	
http://redhat.com/rhel/3.2			
rhel3.3	Red Hat Enterprise Linux 3 Update 3	3.3	
http://redhat.com/rhel/3.3			
rhel3.4	Red Hat Enterprise Linux 3 Update 4	3.4	
http://redhat.com/rhel/3.4			

rhel3.5	Red Hat Enterprise Linux 3 Update 5	3.5	
http://redhat.com/rhel/3.5			
rhel3.6	Red Hat Enterprise Linux 3 Update 6	3.6	
http://redhat.com/rhel/3.6			
rhel3.7	Red Hat Enterprise Linux 3 Update 7	3.7	
http://redhat.com/rhel/3.7			
rhel3.8	Red Hat Enterprise Linux 3 Update 8	3.8	
http://redhat.com/rhel/3.8			
rhel3.9	Red Hat Enterprise Linux 3 Update 9	3.9	
http://redhat.com/rhel/3.9			
rhel4.0	Red Hat Enterprise Linux 4.0	4.0	
http://redhat.com/rhel/4.0			
rhel4.1	Red Hat Enterprise Linux 4.1	4.1	
http://redhat.com/rhel/4.1			
rhel4.2	Red Hat Enterprise Linux 4.2	4.2	
http://redhat.com/rhel/4.2			
rhel4.3	Red Hat Enterprise Linux 4.3	4.3	
http://redhat.com/rhel/4.3			
rhel4.4	Red Hat Enterprise Linux 4.4	4.4	
http://redhat.com/rhel/4.4			
rhel4.5	Red Hat Enterprise Linux 4.5	4.5	
http://redhat.com/rhel/4.5			
rhel4.6	Red Hat Enterprise Linux 4.6	4.6	
http://redhat.com/rhel/4.6			
rhel4.7	Red Hat Enterprise Linux 4.7	4.7	
http://redhat.com/rhel/4.7			
rhel4.8	Red Hat Enterprise Linux 4.8	4.8	
http://redhat.com/rhel/4.8			
rhel4.9	Red Hat Enterprise Linux 4.9	4.9	
http://redhat.com/rhel/4.9			
rhel5.0	Red Hat Enterprise Linux 5.0	5.0	
http://redhat.com/rhel/5.0			
rhel5.1	Red Hat Enterprise Linux 5.1	5.1	
http://redhat.com/rhel/5.1			

rhel5.10	Red Hat Enterprise Linux 5.10	5.10	
http://redhat.com/rhel/5.10			
rhel5.11	Red Hat Enterprise Linux 5.11	5.11	
http://redhat.com/rhel/5.11			
rhel5.2	Red Hat Enterprise Linux 5.2	5.2	
http://redhat.com/rhel/5.2			
rhel5.3	Red Hat Enterprise Linux 5.3	5.3	
http://redhat.com/rhel/5.3			
rhel5.4	Red Hat Enterprise Linux 5.4	5.4	
http://redhat.com/rhel/5.4			
rhel5.5	Red Hat Enterprise Linux 5.5	5.5	
http://redhat.com/rhel/5.5			
rhel5.6	Red Hat Enterprise Linux 5.6	5.6	
http://redhat.com/rhel/5.6			
rhel5.7	Red Hat Enterprise Linux 5.7	5.7	
http://redhat.com/rhel/5.7			
rhel5.8	Red Hat Enterprise Linux 5.8	5.8	
http://redhat.com/rhel/5.8			
rhel5.9	Red Hat Enterprise Linux 5.9	5.9	
http://redhat.com/rhel/5.9			
rhel6-unknown	Red Hat Enterprise Linux 6 Unknown	6-unknown	
http://redhat.com/rhel/6-unknown			
rhel6.0	Red Hat Enterprise Linux 6.0	6.0	
http://redhat.com/rhel/6.0			
rhel6.1	Red Hat Enterprise Linux 6.1	6.1	
http://redhat.com/rhel/6.1			
rhel6.10	Red Hat Enterprise Linux 6.10	6.10	
http://redhat.com/rhel/6.10			
rhel6.2	Red Hat Enterprise Linux 6.2	6.2	
http://redhat.com/rhel/6.2			
rhel6.3	Red Hat Enterprise Linux 6.3	6.3	
http://redhat.com/rhel/6.3			
rhel6.4	Red Hat Enterprise Linux 6.4	6.4	
http://redhat.com/rhel/6.4			

rhel6.5	Red Hat Enterprise Linux 6.5	6.5	
http://redhat.com/rhel/6.5			
rhel6.6	Red Hat Enterprise Linux 6.6	6.6	
http://redhat.com/rhel/6.6			
rhel6.7	Red Hat Enterprise Linux 6.7	6.7	
http://redhat.com/rhel/6.7			
rhel6.8	Red Hat Enterprise Linux 6.8	6.8	
http://redhat.com/rhel/6.8			
rhel6.9	Red Hat Enterprise Linux 6.9	6.9	
http://redhat.com/rhel/6.9			
rhel7-unknown	Red Hat Enterprise Linux 7 Unknown	7-unknown	
http://redhat.com/rhel/7-unknown			
rhel7.0	Red Hat Enterprise Linux 7.0	7.0	
http://redhat.com/rhel/7.0			
rhel7.1	Red Hat Enterprise Linux 7.1	7.1	
http://redhat.com/rhel/7.1			
rhel7.2	Red Hat Enterprise Linux 7.2	7.2	
http://redhat.com/rhel/7.2			
rhel7.3	Red Hat Enterprise Linux 7.3	7.3	
http://redhat.com/rhel/7.3			
rhel7.4	Red Hat Enterprise Linux 7.4	7.4	
http://redhat.com/rhel/7.4			
rhel7.5	Red Hat Enterprise Linux 7.5	7.5	
http://redhat.com/rhel/7.5			
rhel7.6	Red Hat Enterprise Linux 7.6	7.6	
http://redhat.com/rhel/7.6			
rhel7.7	Red Hat Enterprise Linux 7.7	7.7	
http://redhat.com/rhel/7.7			
rhel7.8	Red Hat Enterprise Linux 7.8	7.8	
http://redhat.com/rhel/7.8			
rhel7.9	Red Hat Enterprise Linux 7.9	7.9	
http://redhat.com/rhel/7.9			
rhel8-unknown	Red Hat Enterprise Linux 8 Unknown	8-unknown	
http://redhat.com/rhel/8-unknown			

rhel8.0	Red Hat Enterprise Linux 8.0	8.0	
http://redhat.com/rhel/8.0			
rhel8.1	Red Hat Enterprise Linux 8.1	8.1	
http://redhat.com/rhel/8.1			
rhel8.2	Red Hat Enterprise Linux 8.2	8.2	
http://redhat.com/rhel/8.2			
rhel8.3	Red Hat Enterprise Linux 8.3	8.3	
http://redhat.com/rhel/8.3			
rhel8.4	Red Hat Enterprise Linux 8.4	8.4	
http://redhat.com/rhel/8.4			
rhel9-unknown	Red Hat Enterprise Linux 9 Unknown	9-unknown	
http://redhat.com/rhel/9-unknown			
rhel9.0	Red Hat Enterprise Linux 9.0	9.0	
http://redhat.com/rhel/9.0			
rhl1.0	Red Hat Linux 1.0	1.0	http://redhat.com/rhl/1.0
rhl1.1	Red Hat Linux 1.1	1.1	http://redhat.com/rhl/1.1
rhl2.0	Red Hat Linux 2.0	2.0	http://redhat.com/rhl/2.0
rhl2.1	Red Hat Linux 2.1	2.1	http://redhat.com/rhl/2.1
rhl3.0.3	Red Hat Linux 3.0.3	3.0.3	
http://redhat.com/rhl/3.0.3			
rhl4.0	Red Hat Linux 4.0	4.0	http://redhat.com/rhl/4.0
rhl4.1	Red Hat Linux 4.1	4.1	http://redhat.com/rhl/4.1
rhl4.2	Red Hat Linux 4.2	4.2	http://redhat.com/rhl/4.2
rhl5.0	Red Hat Linux 5.0	5.0	http://redhat.com/rhl/5.0
rhl5.1	Red Hat Linux 5.1	5.1	http://redhat.com/rhl/5.1
rhl5.2	Red Hat Linux 5.2	5.2	http://redhat.com/rhl/5.2
rhl6.0	Red Hat Linux 6.0	6.0	http://redhat.com/rhl/6.0
rhl6.1	Red Hat Linux 6.1	6.1	http://redhat.com/rhl/6.1
rhl6.2	Red Hat Linux 6.2	6.2	http://redhat.com/rhl/6.2
rhl7	Red Hat Linux 7	7	http://redhat.com/rhl/7
rhl7.1	Red Hat Linux 7.1	7.1	http://redhat.com/rhl/7.1
rhl7.2	Red Hat Linux 7.2	7.2	http://redhat.com/rhl/7.2
rhl7.3	Red Hat Linux 7.3	7.3	http://redhat.com/rhl/7.3
rhl8.0	Red Hat Linux 8.0	8.0	http://redhat.com/rhl/8.0

rh19	Red Hat Linux 9	9	http://redhat.com/rhl/9
------	-----------------	---	---

Afin d'installer une machine virtuelle nous avons besoin d'identifier le **Short ID** de la version à installer. Cette information se trouve dans la première colonne de la sortie de la commande. Les trois autres colonnes indiquent :

- Colonne 2,
 - **Name**,
 - Le nom officiel du système d'exploitation,
- Colonne 3,
 - **Version**,
 - La version du système d'exploitation,
- Colonne 4,
 - **ID**,
 - Un URL censé pointer vers la page officielle de la version de la distribution. Attention : ces URLs sont bien souvent inexactes,

Pour rechercher le Short ID de CentOS 8, recherchez **centos** dans la sortie de la commande **osinfo-query os** :

```
[root@centos8 ~]# osinfo-query os | grep centos
centos-stream8      | CentOS Stream 8      | 8      |
http://centos.org/centos-stream/8
centos5.0           | CentOS 5.0           | 5.0     |
http://centos.org/centos/5.0
centos5.1           | CentOS 5.1           | 5.1     |
http://centos.org/centos/5.1
centos5.10          | CentOS 5.10          | 5.10    |
http://centos.org/centos/5.10
centos5.11          | CentOS 5.11          | 5.11    |
http://centos.org/centos/5.11
centos5.2           | CentOS 5.2           | 5.2     |
http://centos.org/centos/5.2
centos5.3           | CentOS 5.3           | 5.3     |
http://centos.org/centos/5.3
centos5.4           | CentOS 5.4           | 5.4     |
http://centos.org/centos/5.4
```

centos5.5	CentOS 5.5	5.5	
http://centos.org/centos/5.5			
centos5.6	CentOS 5.6	5.6	
http://centos.org/centos/5.6			
centos5.7	CentOS 5.7	5.7	
http://centos.org/centos/5.7			
centos5.8	CentOS 5.8	5.8	
http://centos.org/centos/5.8			
centos5.9	CentOS 5.9	5.9	
http://centos.org/centos/5.9			
centos6.0	CentOS 6.0	6.0	
http://centos.org/centos/6.0			
centos6.1	CentOS 6.1	6.1	
http://centos.org/centos/6.1			
centos6.10	CentOS 6.10	6.10	
http://centos.org/centos/6.10			
centos6.2	CentOS 6.2	6.2	
http://centos.org/centos/6.2			
centos6.3	CentOS 6.3	6.3	
http://centos.org/centos/6.3			
centos6.4	CentOS 6.4	6.4	
http://centos.org/centos/6.4			
centos6.5	CentOS 6.5	6.5	
http://centos.org/centos/6.5			
centos6.6	CentOS 6.6	6.6	
http://centos.org/centos/6.6			
centos6.7	CentOS 6.7	6.7	
http://centos.org/centos/6.7			
centos6.8	CentOS 6.8	6.8	
http://centos.org/centos/6.8			
centos6.9	CentOS 6.9	6.9	
http://centos.org/centos/6.9			
centos7.0	CentOS 7	7	
http://centos.org/centos/7.0			

centos8 | CentOS 8
<http://centos.org/centos/8>



Important : Notez que le Short ID de CentOS 8 est actuellement **centos8** quelque soit la version.

1.2 - Configuration du Stockage des ISOs

Afin d'installer la machine virtuelle il est nécessaire d'avoir accès à l'ISO de celui-ci. Pour des raisons de performances il est souhaitable que cet ISO soit stocké localement ou bien sur un système de fichiers distant sans latence. Un ISO de CentOS 8 a été préchargé dans le répertoire **/root** de votre VM. Cet ISO doit être placé dans un endroit accessible par l'utilisateur et le groupe **qemu**. Créez donc le répertoire **/isos**, placez l'ISO dans ce répertoire et accordez les permissions adéquates :

```
[root@centos8 ~]# ls -l | grep CentOS
-rw-r--r--. 1 root root 625999872 Sep  3 04:44 CentOS-8.1.1911-x86_64-boot.iso

[root@centos8 ~]# chmod 755 CentOS-8.1.1911-x86_64-boot.iso

[root@centos8 ~]# mkdir /isos

[root@centos8 ~]# mv CentOS-8.1.1911-x86_64-boot.iso /isos

[root@centos8 ~]# chown -R qemu:qemu /isos
```

1.3 - Installation du Domain

Démarrez maintenant l'installation d'une machine virtuelle **CentOS 8** grâce à la commande **virt-install** :

```
[root@centos8 ~]# virt-install --network bridge:virbr0 --name testvm1 --os-variant=centos8 --ram=2048 --vcpus=1 -  
-disk path=/var/lib/libvirt/images/testvm1-os.qcow2,bus=virtio,size=5 --graphics none --  
location=/isos/CentOS-8.1.1911-x86_64-boot.iso --extra-args="console=tty0 console=ttyS0,115200" --check all=off  
  
Starting install...  
Retrieving file vmlinuz...  
| 7.7 MB 00:00:00  
Retrieving file initrd.img...  
| 59 MB 00:00:00  
Allocating 'testvm1-os.qcow2'  
| 5.0 GB 00:00:00  
WARNING Overriding memory to 3072 MiB needed for centos8 network install.  
Connected to domain testvm1  
Escape character is ^]  
[ 0.000000] Linux version 4.18.0-147.el8.x86_64 (mockbuild@kbuilder.bsys.centos.org) (gcc version 8.3.1  
20190507 (Red Hat 8.3.1-4) (GCC)) #1 SMP Wed Dec 4 21:51:45 UTC 2019  
...
```



Important : Notez que la quantité de mémoire est automatiquement et provisoirement augmentée à 3072 Mo afin que l'installation se déroule correctement. Notez aussi l'utilisation du mot **domain**. Un domain sous KVM est un terme utilisé pour décrire une machine virtuelle.

Dans cette commande on peut constater l'utilisation de plusieurs options importantes :

Option	Commentaire
-network bridge:	Fixe la valeur du pont à utiliser par la VM à virbr0
-name	Indique le nom de la VM
-os-variant=	Egal à la valeur du Short ID identifié au-dessus
-ram=	Fixe la quantité de la RAM de la VM en Mo
-vcpus=	Fixe le nombre de vCPUs de la VM

Option	Commentaire
-disk path=	Crée une image pour la VM, au format indiqué et de la taille indiquée en Go, à l'emplacement spécifié
-graphics	La valeur none indique que l'installation aura lieu en mode texte. Notez que dans le cas d'une VM Windows™, la valeur doit être spice
-location=	Indique l'emplacement de l'ISO à utiliser pour l'installation
-extra-args=	Indique les options de la connectivité de la console

Format des Images

Une image est un disque virtuel. KVM reconnaît les formats d'image suivants :

```
[root@centos8 ~]# qemu-img -h | grep Supported
Supported formats: blkdebug blklogwrites blkreplay blkverify copy-on-read file ftp ftps gluster host_cdrom
host_device http https iscsi iser luks nbd null-aio null-co nvme qcow2 quorum raw rbd ssh throttle vhdx vmdk vpc
```



Important : Consultez [cette page](#) pour plus d'informations.

Convertir le Format de l'Image

Il est possible de convertir un format d'image existante au format qcow2 avec la commande **qemu-img convert**, notamment les images au format **qed**, **raw**, **vdi**, **vhd** et **vmdk**. Par exemple :

```
# qemu-img convert -f vmdk -O qcow2 myimage.vmdk mynewimage.qcow2
```

Dans le cas d'une image au format **vdi** d'Oracle VirtualBox, il est préférable de créer une image au format **raw** en utilisant la commande **VBoxManage** :

```
# VBoxManage clonehd myimage.vdi myrawimage.img --format raw
```

Ensuite il convient d'utiliser la commande **qemu-img convert** pour convertir l'image au format raw en qcow2 :

```
# qemu-img convert -f raw -O qcow2 myrawimage.img mynewimage.qcow2
```

1.4 - Configuration de l'Installation de l'OS Invité

Language Settings

Commencez par appuyer sur le choix **1** :

```
...
Starting installer, one moment...
anaconda 29.19.1.13-1.el8 for CentOS Linux 8 started.
* installation log files are stored in /tmp during the installation
* shell is available on TTY2
* if the graphical installation interface fails to start, try again with the
  inst.text bootoption to start text installation
* when reporting a bug add logs from /tmp as separate text/plain attachments
14:08:33 Not asking for VNC because we don't have a network
=====
=====
Installation

1) [x] Language settings                2) [x] Time settings
    (English (United States))           (America/New_York timezone)
3) [!] Installation source              4) [!] Software selection
    (Processing...)                     (Processing...)
5) [!] Installation Destination          6) [x] Kdump
    (No disks selected)                 (Kdump is enabled)
7) [!] Network configuration            8) [!] Root password
    (Not connected)                     (Password is not set.)
9) [!] User creation
```

(No user will be created)

Please make a selection from the above ['b' to begin installation, 'q' to quit,
'r' to refresh]: 1

```
=====
=====

3) Arabic                29) Hebrew                55) Norwegian Nynorsk
4) Assamese              30) Hindi                  56) Northern Sotho
5) Asturian              31) Croatian              57) Odia
6) Belarusian            32) Hungarian             58) Punjabi
7) Bulgarian             33) Interlingua           59) Polish
8) Bangla                34) Indonesian            60) Portuguese
9) Tibetan               35) Icelandic             61) Romanian
10) Bosnian              36) Italian                62) Russian
11) Catalan              37) Japanese               63) Sinhala
12) Czech                38) Georgian               64) Slovak
13) Welsh                39) Kazakh                 65) Slovenian
14) Danish               40) Khmer                  66) Albanian
15) German               41) Kannada                67) Serbian
16) Greek                42) Korean                 68) Swedish
17) English              43) Lithuanian             69) Tamil
18) Spanish              44) Latvian                70) Telugu
19) Estonian             45) Maithili               71) Tajik
20) Basque               46) Macedonian             72) Thai
21) Persian              47) Malayalam              73) Turkish
22) Finnish              48) Marathi                74) Ukrainian
23) Filipino             49) Malay                  75) Urdu
24) French               50) Burmese                76) Vietnamese
25) Friulian             51) Norwegian Bokmål      77) Mandarin Chinese

Press ENTER to continue:
26) Irish                52) Low German             78) Zulu
```

Choisissez l'option **24** puis l'option **1** :

```
Please select language support to install ['b' to return to language list, 'c'
to continue, 'q' to quit, 'r' to refresh]: 24
```

```
=====
=====
Language settings
```

```
Available locales
```

- | | | |
|--------------------|-------------------------|------------------------|
| 1) French (France) | 3) French (Belgium) | 5) French (Luxembourg) |
| 2) French (Canada) | 4) French (Switzerland) | |

```
Please select language support to install ['b' to return to language list, 'c'
to continue, 'q' to quit, 'r' to refresh]: 1
```

```
=====
=====
Installation
```

- | | |
|---|---|
| 1) [x] Language settings
(French (France)) | 2) [x] Time settings
(America/New_York timezone) |
| 3) [!] Installation source
(Error setting up software
source) | 4) [!] Software selection
(Error checking software
selection) |
| 5) [!] Installation Destination
(No disks selected) | 6) [x] Kdump
(Kdump is enabled) |
| 7) [!] Network configuration
(Not connected) | 8) [!] Root password
(Password is not set.) |
| 9) [!] User creation
(No user will be created) | |

```
Please make a selection from the above ['b' to begin installation, 'q' to quit,
'r' to refresh]:
```

```
[anaconda]1:main* 2:shell 3:log 4:storage-log >Switch tab: Alt+Tab | Help: F1
```

Network configuration

Choisissez maintenant l'option **7** :

```
=====
=====
Installation

1) [x] Language settings                2) [x] Time settings
    (French (France))                  (America/New_York timezone)
3) [!] Installation source              4) [!] Software selection
    (Error setting up software          (Error checking software
    source)                             selection)
5) [!] Installation Destination          6) [x] Kdump
    (No disks selected)                 (Kdump is enabled)
7) [!] Network configuration             8) [!] Root password
    (Not connected)                     (Password is not set.)
9) [!] User creation
    (No user will be created)

Please make a selection from the above ['b' to begin installation, 'q' to quit,
'r' to refresh]: 7
=====
=====
Network configuration

Wired (enp1s0) disconnected

Host Name: localhost.localdomain

Current host name: localhost

1) Set host name
```

2) Configure device enp1s0

<code>

Choisissez ensuite l'option ****1**** pour définir le nom d'hôte de la VM :

<code>

Please make a selection from the above ['c' to continue, 'q' to quit, 'r' to refresh]: 1

```
=====
=====
Enter a new value for 'Host Name' and press ENTER: testvm1.ittraining.network
=====
=====
```

Network configuration

Wired (enp1s0) disconnected

Host Name: testvm1.ittraining.network

Current host name: localhost

1) Set host name

2) Configure device enp1s0

<code>

Choisissez l'option ****2**** pour configurer la connexion réseau :

<code>

Please make a selection from the above ['c' to continue, 'q' to quit, 'r' to refresh]: 2

```
=====
=====
Device configuration
```

- 1) IPv4 address or "dhcp" for DHCP
dhcp
- 2) IPv4 netmask
- 3) IPv4 gateway
- 4) IPv6 address[/prefix] or "auto" for automatic, "dhcp" for DHCP, "ignore" to turn off
auto
- 5) IPv6 default gateway
- 6) Nameservers (comma separated)
- 7) [] Connect automatically after reboot
- 8) [] Apply configuration in installer

Configuring device enpls0.

<code>

Laissez l'option ****1**** en ****dhcp**** puis choisissez l'option ****6**** pour définir les serveurs DNS en ****8.8.8.8,8.8.4.4**** :

<code>

Please make a selection from the above ['c' to continue, 'q' to quit, 'r' to refresh]: 6

=====

=====

Enter a new value for 'Nameservers (comma separated)' and press ENTER: 8.8.8.8,8.8.4.4

=====

=====

Device configuration

- 1) IPv4 address or "dhcp" for DHCP
dhcp
- 2) IPv4 netmask
- 3) IPv4 gateway
- 4) IPv6 address[/prefix] or "auto" for automatic, "dhcp" for DHCP, "ignore" to

```
    turn off
    auto
5) IPv6 default gateway
6) Nameservers (comma separated)
   8.8.8.8,8.8.4.4
7) [ ] Connect automatically after reboot
8) [ ] Apply configuration in installer

Configuring device enpls0.
```

Il est important de configurer la prise en compte automatique de la configuration après le re-démarrage. Choisissez donc l'option **7** :

```
Please make a selection from the above ['c' to continue, 'q' to quit, 'r' to
refresh]: 7
=====
=====
Device configuration

1) IPv4 address or "dhcp" for DHCP
   dhcp
2) IPv4 netmask
3) IPv4 gateway
4) IPv6 address[/prefix] or "auto" for automatic, "dhcp" for DHCP, "ignore" to
   turn off
   auto
5) IPv6 default gateway
6) Nameservers (comma separated)
   8.8.8.8,8.8.4.4
7) [x] Connect automatically after reboot
8) [ ] Apply configuration in installer

Configuring device enpls0.
```

Pour pouvoir installer les paquets logiciels, la configuration réseau doit être appliquée immédiatement. Choisissez donc l'option **8** :

```
Please make a selection from the above ['c' to continue, 'q' to quit, 'r' to
refresh]: 8
```

```
=====
=====
Device configuration
```

- 1) IPv4 address or "dhcp" for DHCP
dhcp
- 2) IPv4 netmask
- 3) IPv4 gateway
- 4) IPv6 address[/prefix] or "auto" for automatic, "dhcp" for DHCP, "ignore" to
turn off
auto
- 5) IPv6 default gateway
- 6) Nameservers (comma separated)
8.8.8.8,8.8.4.4
- 7) [x] Connect automatically after reboot
- 8) [x] Apply configuration in installer

```
Configuring device enp1s0.
```

Validez les configurations actuelles en appuyant sur la touche **c** :

```
Please make a selection from the above ['c' to continue, 'q' to quit, 'r' to
refresh]: c
```

```
=====
=====
Network configuration
```

```
Wired (enp1s0) disconnected
```

```
Host Name: testvm1.ittraining.network
```

```
Current host name: localhost
```

- 1) Set host name
- 2) Configure device enpls0

Pour retourner au menu principal, appuyez sur la touche **c** de nouveau :

```
Please make a selection from the above ['c' to continue, 'q' to quit, 'r' to
refresh]: c
```

```
=====
=====
```

Installation

- | | |
|---|---|
| 1) [x] Language settings
(French (France)) | 2) [x] Time settings
(America/New_York timezone) |
| 3) [!] Installation source
(Error setting up software
source) | 4) [!] Software selection
(Error checking software
selection) |
| 5) [!] Installation Destination
(No disks selected) | 6) [x] Kdump
(Kdump is enabled) |
| 7) [x] Network configuration
(Wired (enpls0) connected) | 8) [!] Root password
(Password is not set.) |
| 9) [!] User creation
(No user will be created) | |

```
Please make a selection from the above ['b' to begin installation, 'q' to quit,
'r' to refresh]:
```

```
[anaconda]1:main* 2:shell 3:log 4:storage-log >Switch tab: Alt+Tab | Help: F1
```



Important : **Important** - Si la configuration en DHCP n'est pas prise en compte. Refaites la configuration en IP fixe en indiquant une adresse 192.168.56.50, un masque de sous-réseau de 255.255.255.0 et une adresse de passerelle de 192.168.56.1.

Time settings

Choisissez maintenant l'option **2** pour définir le fuseau d'horaire de la VM :

```
=====
=====
Installation

1) [x] Language settings                2) [x] Time settings
    (French (France))                  (America/New_York timezone)
3) [!] Installation source              4) [!] Software selection
    (Error setting up software          (Error checking software
    source)                             selection)
5) [!] Installation Destination          6) [x] Kdump
    (No disks selected)                 (Kdump is enabled)
7) [x] Network configuration            8) [!] Root password
    (Wired (enpls0) connected)          (Password is not set.)
9) [!] User creation
    (No user will be created)

Please make a selection from the above ['b' to begin installation, 'q' to quit,
'r' to refresh]: 2
=====
=====
Time settings

Timezone: America/New_York

NTP servers: not configured

1) Change timezone
2) Configure NTP servers
```

Choisissez l'option **1** pour modifier le fuseau d'horaire :

```
Please make a selection from the above ['c' to continue, 'q' to quit, 'r' to
refresh]: 1
```

```
=====
=====
Timezone settings
```

```
Available regions
```

1) Europe	5) Antarctica	9) Indian
2) Asia	6) Pacific	10) Arctic
3) America	7) Australia	11) US
4) Africa	8) Atlantic	12) Etc

```
<code>
```

Appuyez sur la touche ****1**** pour choisir ****Europe**** :

```
<code>
```

```
Please select the timezone. Use numbers or type names directly ['b' back to
region list, 'c' to continue, 'q' to quit, 'r' to refresh]: 1
```

```
=====
=====
```

1) Amsterdam	21) Kaliningrad	41) San_Marino
2) Andorra	22) Kiev	42) Sarajevo
3) Astrakhan	23) Kirov	43) Saratov
4) Athens	24) Lisbon	44) Simferopol
5) Belgrade	25) Ljubljana	45) Skopje
6) Berlin	26) London	46) Sofia
7) Bratislava	27) Luxembourg	47) Stockholm
8) Brussels	28) Madrid	48) Tallinn
9) Bucharest	29) Malta	49) Tirane
10) Budapest	30) Mariehamn	50) Ulyanovsk
11) Busingen	31) Minsk	51) Uzhgorod

- | | | |
|-----------------|---------------|----------------|
| 12) Chisinau | 32) Monaco | 52) Vaduz |
| 13) Copenhagen | 33) Moscow | 53) Vatican |
| 14) Dublin | 34) Oslo | 54) Vienna |
| 15) Gibraltar | 35) Paris | 55) Vilnius |
| 16) Guernsey | 36) Podgorica | 56) Volgograd |
| 17) Helsinki | 37) Prague | 57) Warsaw |
| 18) Isle_of_Man | 38) Riga | 58) Zagreb |
| 19) Istanbul | 39) Rome | 59) Zaporozhye |
| 20) Jersey | 40) Samara | 60) Zurich |

Puis choisissez l'option **35** pour Paris :

```
Please select the timezone. Use numbers or type names directly ['b' back to
region list, 'c' to continue, 'q' to quit, 'r' to refresh]: 35
```

```
=====
=====
Installation
```

- | | |
|---|---|
| 1) [x] Language settings
(French (France)) | 2) [x] Time settings
(Europe/Paris timezone) |
| 3) [!] Installation source
(Error setting up software
source) | 4) [!] Software selection
(Error checking software
selection) |
| 5) [!] Installation Destination
(No disks selected) | 6) [x] Kdump
(Kdump is enabled) |
| 7) [x] Network configuration
(Wired (enp1s0) connected) | 8) [!] Root password
(Password is not set.) |
| 9) [!] User creation
(No user will be created) | |

```
Please make a selection from the above ['b' to begin installation, 'q' to quit,
'r' to refresh]:
```

Root password

Pour définir le mot de passe root de la VM, choisissez l'option **8** et indiquez le mot de passe **fenestros** :

```
=====
=====
Installation

1) [x] Language settings                2) [x] Time settings
    (French (France))                  (Europe/Paris timezone)
3) [!] Installation source              4) [!] Software selection
    (Error setting up software         (Error checking software
    source)                             selection)
5) [!] Installation Destination          6) [x] Kdump
    (No disks selected)                (Kdump is enabled)
7) [x] Network configuration            8) [!] Root password
    (Wired (enpls0) connected)         (Password is not set.)
9) [!] User creation
    (No user will be created)

Please make a selection from the above ['b' to begin installation, 'q' to quit,
'r' to refresh]: 8
=====
=====
Root password

Please select new root password. You will have to type it twice.

Password: fenestros
Password (confirm): fenestros
=====
=====
Question
```

```
The password you have provided is weak: The password fails the dictionary check
- it is based on a dictionary word
Would you like to use it anyway?
```

```
Please respond 'yes' or 'no': yes
```

```
=====
Installation
```

- | | |
|--|--|
| 1) ☒ Language settings
(French (France)) | 2) ☒ Time settings
(Europe/Paris timezone) |
| 3) ☐ Installation source
(Error setting up software
source) | 4) ☐ Software selection
(Error checking software
selection) |
| 5) ☐ Installation Destination
(No disks selected) | 6) ☒ Kdump
(Kdump is enabled) |
| 7) ☒ Network configuration
(Wired (enp1s0) connected) | 8) ☒ Root password
(Password is set.) |
| 9) ☐ User creation
(No user will be created) | |

```
Please make a selection from the above ['b' to begin installation, 'q' to quit,
'r' to refresh]:
```

Installation source

Choisissez l'option **3** :

```
=====
Installation
```

- | | |
|--|--|
| 1) ☒ Language settings | 2) ☒ Time settings |
|--|--|

- | | |
|--|--|
| (French (France)) | (Europe/Paris timezone) |
| 3) [!] Installation source
(Error setting up software source) | 4) [!] Software selection
(Error checking software selection) |
| 5) [!] Installation Destination
(No disks selected) | 6) [x] Kdump
(Kdump is enabled) |
| 7) [x] Network configuration
(Wired (enpls0) connected) | 8) [x] Root password
(Password is set.) |
| 9) [] User creation
(No user will be created) | |

Please make a selection from the above ['b' to begin installation, 'q' to quit, 'r' to refresh]: 3

=====

Installation source

Choose an installation source type.

- 1) CD/DVD
- 2) local ISO file
- 3) Network

L'ISO utilisé est de type **net-install**. Choisissez donc l'option **3** :

Please make a selection from the above ['c' to continue, 'q' to quit, 'r' to refresh]: 3

=====

Installation source

- 1) Closest mirror
- 2) http://
- 3) https://
- 4) ftp://

5) nfs

Choisissez l'option **1** pour utiliser le miroir le plus proche :

```
Please make a selection from the above ['c' to continue, 'q' to quit, 'r' to
refresh]: 1
```

```
=====
=====
Installation
```

- | | |
|--|---|
| 1) [x] Language settings
(French (France)) | 2) [x] Time settings
(Europe/Paris timezone) |
| 3) [x] Installation source
(Closest mirror) | 4) [!] Software selection
(Nothing selected) |
| 5) [!] Installation Destination
(No disks selected) | 6) [x] Kdump
(Kdump is enabled) |
| 7) [x] Network configuration
(Wired (enpls0) connected) | 8) [x] Root password
(Password is set.) |
| 9) [] User creation
(No user will be created) | |

```
Please make a selection from the above ['b' to begin installation, 'q' to quit,
'r' to refresh]:
```

Software selection

Choisissez l'option **4** puis l'option **3** pour indiquer une installation minimale du système :

```
=====
=====
Installation
```

- | | |
|--|---|
| 1) ☒ Language settings
(French (France)) | 2) ☒ Time settings
(Europe/Paris timezone) |
| 3) ☒ Installation source
(Closest mirror) | 4) ☐ Software selection
(Nothing selected) |
| 5) ☐ Installation Destination
(No disks selected) | 6) ☒ Kdump
(Kdump is enabled) |
| 7) ☒ Network configuration
(Wired (enpls0) connected) | 8) ☒ Root password
(Password is set.) |
| 9) ☐ User creation
(No user will be created) | |

Please make a selection from the above ['b' to begin installation, 'q' to quit, 'r' to refresh]: 4

=====

Software selection

Base environment

- | | |
|---|---|
| 1) ☐ Server with GUI | 4) ☐ Workstation |
| 2) ☐ Server | 5) ☐ Virtualization Host |
| 3) ☐ Minimal Install | 6) ☐ Custom Operating System |

Please make a selection from the above ['c' to continue, 'q' to quit, 'r' to refresh]: 3

=====

Software selection

Base environment

- | | |
|--|---|
| 1) ☐ Server with GUI | 4) ☐ Workstation |
| 2) ☐ Server | 5) ☐ Virtualization Host |
| 3) ☒ Minimal Install | 6) ☐ Custom Operating System |

Appuyez ensuite sur la touche **c** pour pouvoir éventuellement choisir des installations supplémentaires :

```
Please make a selection from the above ['c' to continue, 'q' to quit, 'r' to
refresh]: c
```

```
=====
=====
Software selection
```

```
Additional software for selected environment
```

- | | |
|--|---|
| 1) ☐ Guest Agents | 8) ☐ Headless Management |
| 2) ☐ Standard | 9) ☐ Legacy UNIX Compatibility |
| 3) ☐ Container Management | 10) ☐ Network Servers |
| 4) ☐ .NET Core Development | 11) ☐ Scientific Support |
| 5) ☐ RPM Development Tools | 12) ☐ Security Tools |
| 6) ☐ Development Tools | 13) ☐ Smart Card Support |
| 7) ☐ Graphical Administration Tools | 14) ☐ System Tools |

Ne choisissez rien dans la liste et appuyez simplement sur la touche **c** pour revenir au menu principal :

```
Please make a selection from the above ['c' to continue, 'q' to quit, 'r' to
refresh]: c
```

```
=====
=====
Installation
```

- | | |
|--|---|
| 1) ☒ Language settings
(French (France)) | 2) ☒ Time settings
(Europe/Paris timezone) |
| 3) ☐ Installation source
(Processing...) | 4) ☐ Software selection
(Processing...) |
| 5) ☐ Installation Destination
(No disks selected) | 6) ☒ Kdump
(Kdump is enabled) |
| 7) ☒ Network configuration
(Wired (enpls0) connected) | 8) ☒ Root password
(Password is set.) |

```
9) [ ] User creation
    (No user will be created)
```

```
Please make a selection from the above ['b' to begin installation, 'q' to quit,
'r' to refresh]: r
```

```
=====
=====
```

Installation

- | | |
|--|---|
| 1) [x] Language settings
(French (France)) | 2) [x] Time settings
(Europe/Paris timezone) |
| 3) [x] Installation source
(Closest mirror) | 4) [x] Software selection
(Minimal Install) |
| 5) [!] Installation Destination
(No disks selected) | 6) [x] Kdump
(Kdump is enabled) |
| 7) [x] Network configuration
(Wired (enp1s0) connected) | 8) [x] Root password
(Password is set.) |
| 9) [] User creation
(No user will be created) | |

```
Please make a selection from the above ['b' to begin installation, 'q' to quit,
'r' to refresh]:
```

Installation Destination

Choisissez l'option **5** pour définir l'emplacement de l'installation :

```
=====
=====
```

Installation

- | | |
|---|---|
| 1) [x] Language settings
(French (France)) | 2) [x] Time settings
(Europe/Paris timezone) |
|---|---|

```
3) [x] Installation source          4) [x] Software selection
   (Closest mirror)                (Minimal Install)
5) [!] Installation Destination    6) [x] Kdump
   (No disks selected)             (Kdump is enabled)
7) [x] Network configuration       8) [x] Root password
   (Wired (enp1s0) connected)      (Password is set.)
9) [ ] User creation
   (No user will be created)
```

```
Please make a selection from the above ['b' to begin installation, 'q' to quit,
'r' to refresh]: 5
Probing storage...
```

Sélectionnez le disque **vda** et appuyez sur la touche **c** :

```
=====
=====
Installation Destination

1) [x] : 5 GiB (vda)

1 disk selected; 5 GiB capacity; 5 GiB free ...

Please make a selection from the above ['c' to continue, 'q' to quit, 'r' to
refresh]: c
```

A ce stade il vous est possible de choisir l'option **4** et de créer des partitions spécifiques en termes de points de montage en fonction de l'utilisation prévue pour la VM. Dans le cas de ce LAB, appuyez simplement sur le choix **2** puis sur la touche **c** :

```
=====
=====
Partitioning Options

1) [ ] Replace Existing Linux system(s)
```

- 2) ☐ Use All Space
- 3) ☐ Use Free Space
- 4) ☐ Manually assign mount points

Installation requires partitioning of your hard drive. Select what space to use for the install target or manually assign mount points.

Please make a selection from the above ['c' to continue, 'q' to quit, 'r' to refresh]: 2

```
=====
=====
Partitioning Options
```

- 1) ☐ Replace Existing Linux system(s)
- 2) ☒ Use All Space
- 3) ☐ Use Free Space
- 4) ☐ Manually assign mount points

Installation requires partitioning of your hard drive. Select what space to use for the install target or manually assign mount points.

Please make a selection from the above ['c' to continue, 'q' to quit, 'r' to refresh]: c

A ce stade il vous est possible de choisir le type d'installation, soit **Standard Partition**, **LVM** ou **LVM Thin Provisioning**. Notez que le choix par défaut proposé est **LVM** :

```
=====
=====
Partition Scheme Options
```

- 1) ☐ Standard Partition
- 2) ☒ LVM
- 3) ☐ LVM Thin Provisioning

Select a partition scheme configuration.

Bien que préférable de choisir l'option par défaut pour des VMs en production . Par contre, pour des raisons liées à la suite de ce LAB, choisissez l'option **1** puis sur la touche **c** :

```
Please make a selection from the above ['c' to continue, 'q' to quit, 'r' to
refresh]: 1
```

```
=====
=====
```

Partition Scheme Options

- 1) ☒ Standard Partition
- 2) ☐ LVM
- 3) ☐ LVM Thin Provisioning

Select a partition scheme configuration.

```
Please make a selection from the above ['c' to continue, 'q' to quit, 'r' to
refresh]: c
```

```
Generating updated storage configuration
Checking storage configuration...
```

Démarrer l'Installation

De retour au menu principal, choisissez l'option **b** pour démarrer l'installation :

```
=====
=====
```

Installation

- | | |
|--|--|
| 1) ☒ Language settings | 2) ☒ Time settings |
| (French (France)) | (Europe/Paris timezone) |

- | | |
|---|--|
| 3) ☒ Installation source
(Closest mirror) | 4) ☒ Software selection
(Minimal Install) |
| 5) ☒ Installation Destination
(Automatic partitioning
selected) | 6) ☒ Kdump
(Kdump is enabled) |
| 7) ☒ Network configuration
(Wired (enp1s0) connected) | 8) ☒ Root password
(Password is set.) |
| 9) ☐ User creation
(No user will be created) | |

Please make a selection from the above ['b' to begin installation, 'q' to quit,
'r' to refresh]: b



Important : Notez que nous n'avons pas spécifié d'utilisateurs. Cette décision n'est pas bloquante pour la suite de l'installation.

L'installation démarre et se poursuit :

```
...
Configuring storage
.
Installing boot loader
.
Performing post-installation setup tasks
.

Configuring installed system
.....
Writing network configuration
.
Creating users
```

```
....  
Configuring addons  
Executing com_redhat_kdump addon  
Executing org_fedora_oscaps addon  
.  
Generating initramfs  
.  
Running post-installation scripts  
.  
Storing configuration files and kickstarts  
..
```

Démarrer la VM

À l'issue de l'installation, appuyez sur la touche [Enter] pour démarrer la VM :

```
Installation complete. Press ENTER to quit:  
...  
[ OK ] Started Network Manager.  
        Starting Network Manager Wait Online...  
[ OK ] Reached target Network.  
        Starting OpenSSH server daemon...  
        Starting Permit User Sessions...  
        Starting Dynamic System Tuning Daemon...  
        Starting Hostname Service...  
[ OK ] Started OpenSSH server daemon.  
[ OK ] Started Permit User Sessions.  
        Starting Hold until boot process finishes up...  
[ OK ] Started Command Scheduler.  
        Starting Terminate Plymouth Boot Screen...  
[ 18.386454] IPv6: ADDRCONF(NETDEV_UP): enp1s0: link is not ready
```

1.5 - Vérification de la VM Invitée

Au prompt, connectez-vous en tant que **root** avec le mot de passe **fenestros** :

```
CentOS Linux 8
Kernel 4.18.0-305.12.1.el8_4.x86_64 on an x86_64

testvm1 login: root
Mot de passe : fenestros
[root@testvm1 ~]#
```

Réseau

Vérifiez la prise en compte d'une adresse IPv4 dans le réseau 192.168.56.0/24 :

```
[root@testvm1 ~]# ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
        valid_lft forever preferred_lft forever
2: enp1s0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 52:54:00:44:af:a1 brd ff:ff:ff:ff:ff:ff
    inet 192.168.56.83/24 brd 192.168.56.255 scope global dynamic noprefixroute enp1s0
        valid_lft 3534sec preferred_lft 3534sec
    inet6 fe80::6191:6417:8b53:bcb9/64 scope link noprefixroute
        valid_lft forever preferred_lft forever
```

Internet

Vérifiez la connectivité de la VM :

```
[root@testvm1 ~]# ping www.free.fr
PING www.free.fr (212.27.48.10) 56(84) bytes of data.
64 bytes from www.free.fr (212.27.48.10): icmp_seq=1 ttl=46 time=29.9 ms
64 bytes from www.free.fr (212.27.48.10): icmp_seq=2 ttl=46 time=30.1 ms

--- www.free.fr ping statistics ---
2 packets transmitted, 2 received, 0% packet loss, time 1001ms
rtt min/avg/max/mdev = 29.887/29.989/30.091/0.102 ms
[root@testvm1 ~]# [ALT GR]+[CTRL]+[)]
[root@centos8 ~]#
```



Important : Notez l'utilisation de la séquence de touches [ALT GR]+[CTRL]+[)] sur un clavier français afin de se détacher de la VM. C'est-à-dire, la touche [AltGr] et rester appuyer plus la touche [Ctrl] et rester appuyer plus la touche [)].