

Version : **2023.01**

Dernière mise-à-jour : 2023/11/12 11:48

LDF705 - OHAI et Attributs Automatiques, Databags

Contenu du Module

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Infrastructure

L'infrastructure utilisée dans ce module est la suivante.

| Type Machine | FQDN | IP | OS | Version | CPUs | RAM (Mo) | HDD (Go) | User | MdP | MdP root |
|--------------|----------------------------|------------|--------|-------------|------|----------|----------|---------|---------|-----------|
| VM | workstation.ittraining.loc | 10.0.2.111 | Ubuntu | 18.04.6 LTS | 8 | 8192 | 50 | trainee | trainee | S/O |
| VM | client.ittraining.loc | 10.0.2.112 | Ubuntu | 18.04.6 LTS | 4 | 4096 | 50 | trainee | trainee | S/O |
| VM | targeta.i2tch.loc | 10.0.2.52 | Debian | 9.7 | 2 | 2048 | 20 | trainee | trainee | fenestros |

| Type Machine | FQDN | IP | OS | Version | CPUs | RAM (Mo) | HDD (Go) | User | MdP | MdP root |
|--------------|-------------------|-----------|--------|----------|------|----------|----------|---------|---------|-----------|
| VM | targetb.i2tch.loc | 10.0.2.53 | CentOS | 7.6.1810 | 2 | 2048 | 20 | trainee | trainee | fenestros |

LAB #1 - OHAI et Attributs Automatiques

1.1 - Création du Cookbook

Commencez par modifier le fichier `/etc/hosts` de votre VM **workstation.ittraining.loc** :

```
root@workstation:~/chef-repo/cookbooks# vi /etc/hosts
root@workstation:~/chef-repo/cookbooks# cat /etc/hosts
127.0.0.1    localhost
127.0.1.1    workstation
10.0.2.110   chefserver.ittraining.loc  chefserver
10.0.2.111   workstation.ittraining.loc workstation
10.0.2.112   client.ittraining.loc      client
10.0.2.52    targeta.i2tch.loc          targeta
10.0.2.53    targetb.i2tch.loc          targetb

# The following lines are desirable for IPv6 capable hosts
::1         ip6-localhost ip6-loopback
fe00::0     ip6-localnet
ff00::0     ip6-mcastprefix
ff02::1     ip6-allnodes
ff02::2     ip6-allrouters
```

Créez un Cookbook nommé **apache** :

```
root@workstation:~/chef-repo/cookbooks# cd ..
root@workstation:~/chef-repo# chef generate cookbook cookbooks/apache
Generating cookbook apache
```

- Ensuring correct cookbook content

Your cookbook is ready. Type ``cd cookbooks/apache`` to enter it.

There are several commands you can run to get started locally developing and testing your cookbook. Type ``delivery local --help`` to see a full list of local testing commands.

Why not start by writing an InSpec test? Tests for the default recipe are stored at:

```
test/integration/default/default_test.rb
```

If you'd prefer to dive right in, the default recipe can be found at:

```
recipes/default.rb
```



A faire - Pour plus d'information concernant la commande **chef generate cookbook**, consultez [cette page](#).

Lors de la création du Cookbook, une arborescence est créée dans le répertoire **chef-repo/cookbooks/apache** :

```
root@workstation:~/chef-repo# ls -l cookbooks/apache
total 40
-rw-r--r-- 1 root root 150 nov. 6 10:11 CHANGELOG.md
-rw-r--r-- 1 root root 1176 nov. 6 10:11 cheignore
-rw-r--r-- 1 root root 741 nov. 6 10:11 kitchen.yml
-rw-r--r-- 1 root root 70 nov. 6 10:11 LICENSE
-rw-r--r-- 1 root root 676 nov. 6 10:11 metadata.rb
-rw-r--r-- 1 root root 507 nov. 6 10:11 Policyfile.rb
-rw-r--r-- 1 root root 54 nov. 6 10:11 README.md
drwxr-xr-x 2 root root 4096 nov. 6 10:11 recipes
drwxr-xr-x 3 root root 4096 nov. 6 10:11 spec
```

```
drwxr-xr-x 3 root root 4096 nov.  6 10:11 test
```

Une Recette par défaut, appelé **default.rb** a été créée dans le sous-répertoire **recipes** :

```
root@workstation:~/chef-repo# ls -l cookbooks/apache/recipes/
total 4
-rw-r--r-- 1 root root 97 nov.  6 10:11 default.rb
```

Ce fichier prend la forme suivante :

```
root@workstation:~/chef-repo# cat cookbooks/apache/recipes/default.rb
#
# Cookbook:: apache
# Recipe:: default
#
# Copyright:: 2023, The Authors, All Rights Reserved.
```

Étudions maintenant une Recette destinée à installer, activer et démarrer Apache sur un système CentOS **et** un système Debian en utilisant des **Attributs Automatiques** :

```
root@workstation:~/chef-repo# vi cookbooks/apache/recipes/default.rb

root@workstation:~/chef-repo# cat cookbooks/apache/recipes/default.rb
#
# Cookbook:: apache
# Recipe:: default
#
# Copyright:: 2023, The Authors, All Rights Reserved.
package_name = "httpd"
service_name = "httpd"
doc_root = "/var/www/html"

if node["platform"] == "centos"
  package_name = "httpd"
```

```
  service_name = "httpd"
  doc_root = "/var/www/html"
elsif node["platform"] == "debian"
  package_name = "apache2"
  service_name = "apache2"
  doc_root = "/var/www/html"
end

package package_name do
  action :install
end

service service_name do
  action [:start, :enable]
end

cookbook_file "#{doc_root}/index.html" do
  source "index.html"
  mode "0644"
end
```

Ce fichier commence avec la déclaration des valeurs par défaut de trois variables :

- **package_name**,
- **service_name**,
- **doc_root**“.



Important - Notez que ces variables ont une portée du Cookbook. Ces trois lignes sont **nécessaires** pour déclarer les variables.

Il continue avec la mise en place d'un test. Dans ce test, la valeur de l'Attribut Automatique **platform** est examinée. Dans le cas où la valeur est :

- **centos**, les valeurs de trois variables **package_name**, **service_name** et **doc_root** sont fixées aux valeurs par défaut, * debian, les valeurs de trois variables **package_name**, **service_name** et **doc_root** sont modifiées à **apache2**, **apache2** et **/var/www** respectivement.

Ensuite la Ressource :

- **package** utilise la valeur de la variable **package_name** pour installer le bon paquet sur le Noeud concerné,
- **service** utilise la valeur de la variable **service_name** pour activer et démarrer le bon service sur le Noeud concerné,
- **cookbook_file** utilise la valeur de la variable **doc_root** pour copier le fichier référencé par **source** vers la bonne destination sur le Noeud concerné.

Créez le répertoire **/root/chef-repo/apache/files/** :

```
root@workstation:~/chef-repo# mkdir cookbooks/apache/files
```

Créez maintenant le fichier **/root/chef-repo/apache/files/index.html** :

```
root@workstation:~/chef-repo# vi cookbooks/apache/files/index.html

root@workstation:~/chef-repo# cat cookbooks/apache/files/index.html
<html>
<title>OHIO et Chef</title>
<body> Wow! It works!</body>
</html>
```

Téléversez le Cookbook vers le Chef Infra Server :

```
root@workstation:~/chef-repo# knife cookbook upload apache
Uploading apache      [0.1.0]
Uploaded 1 cookbook.
```

1.2 - Préparer les Noeuds **targeta** et **targetb**

Configurez les deux nouveaux clients **targeta** et **targetb**.

```
root@workstation:~/chef-repo# ssh -l trainee 10.0.2.52
Debian GNU/Linux 9
trainee@10.0.2.52's password: trainee
Linux targeta.i2tch.loc 4.9.0-8-amd64 #1 SMP Debian 4.9.130-2 (2018-10-27) x86_64

The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
Last login: Sun Mar 21 08:47:45 2021 from 10.0.2.10
trainee@targeta:~$ su -
Mot de passe : fenestros
root@targeta:~# systemctl status apache2
Unit apache2.service could not be found.
root@targeta:~#
```

Editez la directive **PermitRootLogin** du fichier **/etc/ssh/sshd_config** afin de permettre l'utilisateur **root** de se connecter au client :

```
root@targeta:~# vi /etc/ssh/sshd_config
root@targeta:~# cat /etc/ssh/sshd_config
...
PermitRootLogin yes
...

root@targeta:~# systemctl restart ssh
```

Editez ensuite le fichier **/etc/hosts** :

```
root@targeta:~# vi /etc/hosts
root@targeta:~# cat /etc/hosts
```

```
127.0.0.1    localhost
10.0.2.110   chefserver.ittraining.loc  chefserver
10.0.2.111   workstation.ittraining.loc workstation
10.0.2.52    targeta.i2tch.loc    targeta
10.0.2.53    targetb.i2tch.loc    targetb

# The following lines are desirable for IPv6 capable hosts
::1    localhost ip6-localhost ip6-loopback
ff02::1 ip6-allnodes
ff02::2 ip6-allrouters
```

Mettez à jour les dépôts des paquets :

```
root@targeta:~# sed -i s/ftp.fr.debian.org/archive.debian.org/g /etc/apt/sources.list

root@targeta:~# sed -i '/debian-security/d' /etc/apt/sources.list

root@targeta:~# sed -i '/stretch-updates/d' /etc/apt/sources.list

root@targeta:~# apt update
Ign:1 http://archive.debian.org/debian stretch InRelease
Réception de:2 http://archive.debian.org/debian stretch Release [118 kB]
Réception de:3 http://archive.debian.org/debian stretch Release.gpg [3 177 B]
Réception de:4 http://archive.debian.org/debian stretch/main Sources [6 736 kB]
Réception de:5 http://archive.debian.org/debian stretch/main amd64 Packages [7 080 kB]
Réception de:6 http://archive.debian.org/debian stretch/main Translation-fr [1 894 kB]
Réception de:7 http://archive.debian.org/debian stretch/main Translation-en [5 377 kB]
21,2 Mo réceptionnés en 6s (3 302 ko/s)
Lecture des listes de paquets... Fait
Construction de l'arbre des dépendances
Lecture des informations d'état... Fait
226 packages can be upgraded. Run 'apt list --upgradable' to see them.
```

Consultez la liste des **Attributs Automatiques** :

```
root@targeta:~# ohai | more
{
  "init_package": "systemd",
  "keys": {
    "ssh": {
      "host_rsa_public":
"AAAAB3NzaC1yc2EAAAADAQABAAQACyniXxtEUmEsWSRkTc6fbNhGVEvTmu+3YD/JleRkDSMRGy0i58Vbao2Cu7Rhg/tC6FbYOMKBvveZhFa8gp
hUneSqSsLdyxokubj4f04PEW/wv0SSo2rEfuGXp6oLm4EQgWrLI0JPPRDy5kwRIU8XPc
PduyiRFInMEBv62BYqpxS9DBaz40oH0bif+WgrI001Led/mZ2A0rUzr+9gUFUcpUxX9tZC4geCxsKcW1i/FuWTrWr7f4+Zwbz89bt9eA+BK4trJ5h
UhAdHUxcX3rAKGZU9ruAxcIUQVzQ8f/HYNVSwg3cNB4g08+0/rHSasMFrhIkk86RX/16mGTHGKpuyId",
      "host_ecdsa_public":
"AAAAE2VjZHNhLXNoYTItbmlzdHAyNTYAAAAIbmlzdHAyNTYAAABBBKVU5pimWmTgKKazpAyInMjuQYlCvJ2GmX68P+81m1KfypeD8N8QiQfPtguc
evPfAXraDtzAZjSTRK+2DcRwnmM=",
      "host_ecdsa_type": "ecdsa-sha2-nistp256",
      "host_ed25519_public": "AAAAC3NzaC1lZDI1NTE5AAAAILL1bKUqdrZiqXicr229LWK9iKNveAbKM5UiQPA7VFoH"
    }
  },
  "memory": {
    "swap": {
      "cached": "0kB",
      "total": "2095100kB",
      "free": "2095100kB"
    },
    "hugepages": {
      "total": "0",
      "free": "0",
      "reserved": "0",
      "surplus": "0"
    },
    "directmap": {
      "4k": "55160kB",
      "2M": "2041856kB"
    },
    "total": "2052288kB",
  }
}
```

```
"free": "1460856kB",
"available": "1805260kB",
"buffers": "38048kB",
"cached": "411952kB",
"active": "213712kB",
"inactive": "284764kB",
"dirty": "8kB",
"writeback": "0kB",
"anon_pages": "48532kB",
"mapped": "41324kB",
"slab": "72612kB",
"slab_reclaimable": "59524kB",
"slab_unreclaim": "13088kB",
"page_tables": "4440kB",
"nfs_unstable": "0kB",
"bounce": "0kB",
"commit_limit": "3121244kB",
"committed_as": "697488kB",
"vmalloc_total": "34359738367kB",
"vmalloc_used": "0kB",
"vmalloc_chunk": "0kB",
"hugepage_size": "2048kB"
},
"network": {
  "interfaces": {
    "lo": {
      "mtu": "65536",
--Plus--
```

Quittez la VM **targeta** :

```
root@targeta:~# exit
déconnexion
trainee@targeta:~$ exit
```

```
déconnexion  
Connection to 10.0.2.52 closed.
```

Connectez-vous à la VM **targetb** :

```
root@workstation:~/chef-repo/cookbooks# ssh -l trainee 10.0.2.53  
The authenticity of host '10.0.2.53 (10.0.2.53)' can't be established.  
ECDSA key fingerprint is SHA256:Rg0sp/XI7JHNq+oIfHKw+jkHdtTnBIh+Dd7kVmHRxtU.  
Are you sure you want to continue connecting (yes/no)? yes  
Warning: Permanently added '10.0.2.53' (ECDSA) to the list of known hosts.  
trainee@10.0.2.53's password: trainee  
Last login: Sun Mar 21 08:53:18 2021 from 10.0.2.10  
[trainee@targetb ~]$ su -  
Password: fenestros  
Last login: dim. mars 21 08:53:25 CET 2021 on pts/0
```

Modifiez la directive **PermitRootLogin** du fichier **/etc/ssh/sshd_config** afin de permettre l'utilisateur **root** de se connecter au client :

```
[root@targetb ~]# vi /etc/ssh/sshd_config  
  
[root@targetb ~]# cat /etc/ssh/sshd_config  
#      $OpenBSD: sshd_config,v 1.100 2016/08/15 12:32:04 naddy Exp $  
  
# This is the sshd server system-wide configuration file.  See  
# sshd_config(5) for more information.  
  
# This sshd was compiled with PATH=/usr/local/bin:/usr/bin  
  
# The strategy used for options in the default sshd_config shipped with  
# OpenSSH is to specify options with their default value where  
# possible, but leave them commented.  Uncommented options override the  
# default value.  
  
# If you want to change the port on a SELinux system, you have to tell
```

```
# SELinux about this change.
# semanage port -a -t ssh_port_t -p tcp #PORTNUMBER
...
PermitRootLogin yes
...

[root@targetb ~]# systemctl restart sshd
```

Editez ensuite le fichier **/etc/hosts** :

```
[root@targetb ~]# vi /etc/hosts

[root@targetb ~]# cat /etc/hosts
127.0.0.1          localhost.localdomain localhost
::1              localhost6.localdomain6 localhost6
10.0.2.110       chefserver.ittraining.loc  chefserver
10.0.2.111       workstation.ittraining.loc workstation
10.0.2.52        targeta.i2tch.loc   targeta
10.0.2.53        targetb.i2tch.loc   targetb
```

Consultez la liste des **Attributs Automatiques** :

```
[root@targetb ~]# ohai | more
{
  "kernel": {
    "name": "Linux",
    "release": "3.10.0-957.1.3.el7.x86_64",
    "version": "#1 SMP Thu Nov 29 14:49:43 UTC 2018",
    "machine": "x86_64",
    "processor": "x86_64",
    "os": "GNU/Linux",
    "modules": {
      "ip6t_rpfilter": {
        "size": "12595",
```

```
    "refcount": "1"
  },
  "ipt_REJECT": {
    "size": "12541",
    "refcount": "2"
  },
  "nf_reject_ipv4": {
    "size": "13373",
    "refcount": "1"
  },
  "ip6t_REJECT": {
    "size": "12625",
    "refcount": "2"
  },
  "nf_reject_ipv6": {
    "size": "13717",
    "refcount": "1"
  },
  "xt_conntrack": {
    "size": "12760",
    "refcount": "13"
  },
  "ip_set": {
    "size": "45644",
    "refcount": "0"
  },
  "nfnetlink": {
    "size": "14490",
    "refcount": "1"
  },
  "ehtable_nat": {
    "size": "12807",
    "refcount": "1"
  },
  },
```

```
"ehtable_broute": {
  "size": "12731",
  "refcount": "1"
},
"bridge": {
  "size": "151336",
  "refcount": "1",
  "version": "2.3"
},
"stp": {
--More--
```

Déconnectez-vous de la VM :

```
[root@targetb ~]# exit
déconnexion

trainee@targetb:~$ exit
déconnexion
```

1.3 - Bootstraper les Clients

Commencez avec la VM **targeta** :

```
root@workstation:~/chef-repo# knife bootstrap 10.0.2.52 --ssh-user root --ssh-password fenestros --node-name
targeta
--ssh-user: This flag is deprecated. Use -U/--connection-user instead.
--ssh-password: This flag is deprecated. Use -P/--connection-password instead.
Connecting to 10.0.2.52
The authenticity of host '10.0.2.52 ()' can't be established.
fingerprint is SHA256:Tk/PXJFmWnE96DhFsYAaFqgHQXPJhw+ArPP/GG9IJTw.

Are you sure you want to continue connecting
```

```
? (Y/N) y
Connecting to 10.0.2.52
Creating new client for targeta
Creating new node for targeta
Bootstrapping 10.0.2.52
 [10.0.2.52] -----> Installing Chef Omnibus (stable/15)
downloading https://omnitruck.chef.io/chef/install.sh
  to file /tmp/install.sh.1583/install.sh
trying wget...
 [10.0.2.52] debian 9 x86_64
Getting information for chef stable 15 for debian...
downloading https://omnitruck.chef.io/stable/chef/metadata?v=15&p=debian&pv=9&m=x86_64
  to file /tmp/install.sh.1587/metadata.txt
 [10.0.2.52] trying wget...
 [10.0.2.52] sha1      168e534c58f9e17394bc9ba7112ee2280fecdd79
sha256  a50884a3c0be26875c329de9a1cea854eacb0a0aled031301ee6c29aad0f19ed
url      https://packages.chef.io/files/stable/chef/15.17.4/debian/9/chef_15.17.4-1_amd64.deb
version 15.17.4
 [10.0.2.52]
 [10.0.2.52] downloaded metadata file looks valid...
 [10.0.2.52] downloading https://packages.chef.io/files/stable/chef/15.17.4/debian/9/chef_15.17.4-1_amd64.deb
  to file /tmp/install.sh.1587/chef_15.17.4-1_amd64.deb
 [10.0.2.52] trying wget...
 [10.0.2.52] Comparing checksum with sha256sum...
 [10.0.2.52] Installing chef 15
installing with dpkg...
 [10.0.2.52] Sélection du paquet chef précédemment désélectionné.
 [10.0.2.52] (Lecture de la base de données... 91215 fichiers et répertoires déjà installés.)
 [10.0.2.52] Préparation du dépaquetage de ../chef_15.17.4-1_amd64.deb ...
 [10.0.2.52] Dépaquetage de chef (15.17.4-1) ...
 [10.0.2.52] Paramétrage de chef (15.17.4-1) ...
 [10.0.2.52] Thank you for installing Chef Infra Client! For help getting started visit https://learn.chef.io
 [10.0.2.52] Starting the first Chef Infra Client Client run...
 [10.0.2.52] +-----+
```

```
✓ 2 product licenses accepted.
+-----+
[10.0.2.52] Starting Chef Infra Client, version 15.17.4
[10.0.2.52]
[10.0.2.52] resolving cookbooks for run list: []
[10.0.2.52]
[10.0.2.52] Synchronizing Cookbooks:
[10.0.2.52]
[10.0.2.52] Installing Cookbook Gems:
Compiling Cookbooks...
[2023-11-07T12:51:58+01:00] WARN: Node targeta has an empty run list.
[10.0.2.52] Converging 0 resources
[10.0.2.52]
[10.0.2.52]
[10.0.2.52] Running handlers:
[10.0.2.52]
[10.0.2.52] Running handlers complete

[10.0.2.52] Chef Infra Client finished, 0/0 resources updated in 01 seconds
[10.0.2.52]
[10.0.2.52] [2023-11-07T12:51:58+01:00] WARN: This release of Chef Infra Client became end of life (EOL) on May
1st 2021. Please update to a supported release to receive new features, bug fixes, and security updates.
```



Important - Notez l'avertissement **[2023-11-07T12:51:58+01:00]**
WARN: Node targeta has an empty run list. Cet avertissement est du
au fait qu'aucune Recette n'a été précisée lors de l'exécution de la
commande.

Ré-exécutez la commande **knife bootstrap** en y ajoutant **-r 'recipe[apache]'** :

```
root@workstation:~/chef-repo# knife bootstrap 10.0.2.52 --ssh-user root --ssh-password fenestros --node-name
targeta -r 'recipe[apache]'
--ssh-user: This flag is deprecated. Use -U/--connection-user instead.
--ssh-password: This flag is deprecated. Use -P/--connection-password instead.
Connecting to 10.0.2.52
The authenticity of host '10.0.2.52 ()' can't be established.
fingerprint is SHA256:Tk/PXJFmWnE96DhFsYAaFqgHQXPJhw+ArPP/GG9IJTw.

Are you sure you want to continue connecting
? (Y/N) Y
Connecting to 10.0.2.52
Node targeta exists, overwrite it? (Y/N) Y
Client targeta exists, overwrite it? (Y/N) Y
Creating new client for targeta
Creating new node for targeta
Bootstrapping 10.0.2.52
[10.0.2.52] -----> Existing Chef Infra Client installation detected
[10.0.2.52] Starting the first Chef Infra Client Client run...
[10.0.2.52] Starting Chef Infra Client, version 15.17.4
[10.0.2.52]
[10.0.2.52] resolving cookbooks for run list: ["apache"]
[10.0.2.52]
[10.0.2.52] Synchronizing Cookbooks:
[10.0.2.52]
[10.0.2.52] - apache (0.1.0)
[10.0.2.52]
[10.0.2.52] Installing Cookbook Gems:
[10.0.2.52] Compiling Cookbooks...
[10.0.2.52]
[10.0.2.52] Converging 3 resources
[10.0.2.52]
[10.0.2.52] Recipe: apache::default
[10.0.2.52]
```

```
[10.0.2.52]
[10.0.2.52] * apt_package[apache2] action install
[10.0.2.52]
  - install version 2.4.25-3+deb9u9 of package apache2
  * service[apache2] action start
[10.0.2.52] (up to date)
  * service[apache2] action enable
[10.0.2.52] (up to date)
[10.0.2.52] * cookbook_file[/var/www/html/index.html] action create
[10.0.2.52]
[10.0.2.52]
[10.0.2.52] - create new file /var/www/html/index.html
[10.0.2.52]
[10.0.2.52]
[10.0.2.52] - update content in file /var/www/html/index.html from none to 10664a
[10.0.2.52]
[10.0.2.52]
[10.0.2.52] --- /var/www/html/index.html      2023-11-07 13:13:02.181522947 +0100
[10.0.2.52]
[10.0.2.52]
[10.0.2.52] +++ /var/www/html/.chef-index20231107-2029-1nw15nc.html 2023-11-07 13:13:02.177522927 +0100
[10.0.2.52]
[10.0.2.52]
[10.0.2.52] @@ -1 +1,5 @@
[10.0.2.52]
[10.0.2.52]
[10.0.2.52] +<html>
[10.0.2.52]
[10.0.2.52]
[10.0.2.52] +<title>OHIO et Chef</title>
[10.0.2.52]
[10.0.2.52]
[10.0.2.52] +<body> Wow! It works!</body>
[10.0.2.52]
```

```
[10.0.2.52]
[10.0.2.52] +</html>
[10.0.2.52]
[10.0.2.52]
[10.0.2.52] - change mode from '' to '0644'
[10.0.2.52]

[10.0.2.52]
[10.0.2.52]
[10.0.2.52] Running handlers:
[10.0.2.52]
[10.0.2.52] Running handlers complete

[10.0.2.52] Chef Infra Client finished, 2/4 resources updated in 17 seconds
[10.0.2.52]
[10.0.2.52] [2023-11-07T13:13:02+01:00] WARN: This release of Chef Infra Client became end of life (EOL) on May
1st 2021. Please update to a supported release to receive new features, bug fixes, and security updates
```

Connectez-vous à la VM **targeta** et vérifiez l'installation du paquet **apache2** :

```
root@workstation:~/chef-repo# ssh -l trainee 10.0.2.52
Debian GNU/Linux 9
trainee@10.0.2.52's password: trainee
Linux targeta.i2tch.loc 4.9.0-8-amd64 #1 SMP Debian 4.9.130-2 (2018-10-27) x86_64

The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
Last login: Tue Nov  7 13:25:32 2023 from 10.0.2.111
trainee@targeta:~$ su -
Mot de passe : fenestros
```

```
root@targeta:~# systemctl status apache2
● apache2.service - The Apache HTTP Server
   Loaded: loaded (/lib/systemd/system/apache2.service; enabled; vendor preset: enabled)
   Active: active (running) since Tue 2023-11-07 13:13:00 CET; 14min ago
   Main PID: 2717 (apache2)
   CGroup: /system.slice/apache2.service
           └─2717 /usr/sbin/apache2 -k start
             └─2719 /usr/sbin/apache2 -k start
               └─2721 /usr/sbin/apache2 -k start

nov. 07 13:13:00 targeta.i2tch.loc systemd[1]: Starting The Apache HTTP Server...
nov. 07 13:13:00 targeta.i2tch.loc systemd[1]: Started The Apache HTTP Server.

root@targeta:~# exit
déconnexion

trainee@targeta:~$ exit
déconnexion
Connection to 10.0.2.52 closed.
```

Procédez ensuite avec la VM **targetb** :

```
root@workstation:~/chef-repo# knife bootstrap 10.0.2.53 --ssh-user root --ssh-password fenestros --node-name
targetb -r 'recipe[apache]'
--ssh-user: This flag is deprecated. Use -U/--connection-user instead.
--ssh-password: This flag is deprecated. Use -P/--connection-password instead.
Connecting to 10.0.2.53
The authenticity of host '10.0.2.53 ()' can't be established.
fingerprint is SHA256:PokJEptX8i3G+Qdy2WFX9xWby1d+l/0FhVyN1onGXnQ.

Are you sure you want to continue connecting
? (Y/N) Y
Connecting to 10.0.2.53
Creating new client for targetb
```

```
Creating new node for targetb
Bootstrapping 10.0.2.53
[10.0.2.53] -----> Installing Chef Omnibus (stable/15)
downloading https://omnitruck.chef.io/chef/install.sh
  to file /tmp/install.sh.21113/install.sh
trying wget...
[10.0.2.53] el 7 x86_64
Getting information for chef stable 15 for el...
downloading https://omnitruck.chef.io/stable/chef/metadata?v=15&p=el&pv=7&m=x86_64
  to file /tmp/install.sh.21123/metadata.txt
[10.0.2.53] trying wget...
[10.0.2.53] sha1          9e066d888611971a1dceb7c3eaf0375a6c61ebd0
sha256 0aaf56d149bddd73b501322777ac378e2fffb63aa6eb714d93b16714e166e4f0
url    https://packages.chef.io/files/stable/chef/15.17.4/el/7/chef-15.17.4-1.el7.x86_64.rpm
version 15.17.4
[10.0.2.53]
[10.0.2.53] downloaded metadata file looks valid...
[10.0.2.53] downloading https://packages.chef.io/files/stable/chef/15.17.4/el/7/chef-15.17.4-1.el7.x86_64.rpm
  to file /tmp/install.sh.21123/chef-15.17.4-1.el7.x86_64.rpm
[10.0.2.53] trying wget...
[10.0.2.53] Comparing checksum with sha256sum...
[10.0.2.53] Installing chef 15
installing with rpm...
[10.0.2.53] warning: /tmp/install.sh.21123/chef-15.17.4-1.el7.x86_64.rpm: Header V4 DSA/SHA1 Signature, key ID
83ef826a: NOKEY
[10.0.2.53] Preparing...
[10.0.2.53] #####
[10.0.2.53] Updating / installing...
chef-15.17.4-1.el7
[10.0.2.53] #
...
[10.0.2.53] #
[10.0.2.53] Thank you for installing Chef Infra Client! For help getting started visit https://learn.chef.io
[10.0.2.53] Starting the first Chef Infra Client Client run...
```

```
[10.0.2.53] +-----+
✓ 2 product licenses accepted.
+-----+
[10.0.2.53] Starting Chef Infra Client, version 15.17.4
[10.0.2.53] resolving cookbooks for run list: ["apache"]
[10.0.2.53] Synchronizing Cookbooks:
[10.0.2.53]   - apache (0.1.0)
[10.0.2.53] Installing Cookbook Gems:
Compiling Cookbooks...
[10.0.2.53] Converging 3 resources
Recipe: apache::default
  * yum_package[httpd] action install
[10.0.2.53]
  - install version 0:2.4.6-99.el7.centos.1.x86_64 of package httpd
  * service[httpd] action start
[10.0.2.53]
  - start service service[httpd]
  * service[httpd] action enable
[10.0.2.53]
  - enable service service[httpd]
  * cookbook_file[/var/www/html/index.html] action create
[10.0.2.53]
  - create new file /var/www/html/index.html
  - update content in file /var/www/html/index.html from none to 10664a
  --- /var/www/html/index.html      2023-11-07 13:09:34.001959916 +0100
  +++ /var/www/html/.chef-index20231107-23588-8oklnl.html      2023-11-07 13:09:34.001959916 +0100
  @@ -1 +1,5 @@
  +<html>
  +<title>OHIO et Chef</title>
  +<body> Wow! It works!</body>
  +</html>
  - change mode from '' to '0644'
[10.0.2.53]
  - restore selinux security context
```

```
[10.0.2.53]
Running handlers:
Running handlers complete
Chef Infra Client finished, 4/4 resources updated in 32 seconds
[10.0.2.53] [2023-11-07T13:09:34+01:00] WARN: This release of Chef Infra Client became end of life (EOL) on May 1st 2021. Please update to a supported release to receive new features, bug fixes, and security updates.
```

Connectez-vous à la VM **targetb** et vérifiez l'installation du paquet **httpd** :

```
root@workstation:~/chef-repo# ssh -l trainee 10.0.2.53
trainee@10.0.2.53's password: trainee
Last login: Tue Nov  7 13:22:36 2023 from workstation.ittraining.loc
[trainee@targetb ~]$ su -
Password: fenestros
Last login: mar. nov.  7 13:22:46 CET 2023 on pts/0

[root@targetb ~]# systemctl status httpd
● httpd.service - The Apache HTTP Server
   Loaded: loaded (/usr/lib/systemd/system/httpd.service; enabled; vendor preset: disabled)
   Active: active (running) since Tue 2023-11-07 13:09:33 CET; 20min ago
     Docs: man:httpd(8)
           man:apachectl(8)
  Main PID: 24003 (httpd)
   Status: "Total requests: 0; Current requests/sec: 0; Current traffic:  0 B/sec"
    CGroup: /system.slice/httpd.service
            └─24003 /usr/sbin/httpd -DFOREGROUND
            └─24004 /usr/sbin/httpd -DFOREGROUND
            └─24005 /usr/sbin/httpd -DFOREGROUND
            └─24006 /usr/sbin/httpd -DFOREGROUND
            └─24007 /usr/sbin/httpd -DFOREGROUND
            └─24008 /usr/sbin/httpd -DFOREGROUND

Nov 07 13:09:33 targetb.i2tch.loc systemd[1]: Starting The Apache HTTP Server...
Nov 07 13:09:33 targetb.i2tch.loc systemd[1]: Started The Apache HTTP Server.
```

```
[root@targetb ~]# exit
logout

[trainee@targetb ~]$ exit
logout
Connection to 10.0.2.53 closed.
```

LAB #2 - Data Bags

2.1 - Présentation

Les Data Bags regroupent des informations sous la forme de fichiers au format JSON. Ces informations peuvent être ensuite ré-utilisées dans des Recettes. Les Data Bags sont manipulés par la commande **knife data bag**.

2.2 - Création de Data Bags

Commencez par créer le répertoire **data_bags** et **data_bags/users** :

```
root@workstation:~/chef-repo# mkdir -p data_bags/users
```

L'information concernant les sous-commandes de la commande **knife data bag** peut être affichée en passant l'option **-help** à la commande :

```
root@workstation:~/chef-repo# knife data bag --help
FATAL: Cannot find subcommand for: 'data bag --help'
Available data bag subcommands: (for details, knife SUB-COMMAND --help)

** DATA BAG COMMANDS **
knife data bag create BAG [ITEM] (options)
knife data bag delete BAG [ITEM] (options)
knife data bag edit BAG ITEM (options)
```

```
knife data bag from file BAG FILE|FOLDER [FILE|FOLDER..] (options)
knife data bag list (options)
knife data bag show BAG [ITEM] (options)
```

Actuellement, aucun Data Bag n'existe :

```
root@workstation:~/chef-repo# knife data bag list
```

Créez donc un Data Bag dénommé **users** sur le Chef Infra Server :

```
root@workstation:~/chef-repo# knife data bag create users
Created data_bag[users]
```

Créez ensuite les fichiers **user1.json** et **user2.json** contenant des informations concernant **user1** et **user2** respectivement :

```
root@workstation:~/chef-repo# vi data_bags/users/user1.json
```

```
root@workstation:~/chef-repo# cat data_bags/users/user1.json
```

```
{
  "id": "user1",
  "comment": "This is user1",
  "uid": "1001",
  "gid": "100",
  "home": "/home/user1",
  "shell": "/bin/bash",
  "platform": "centos"
}
```

```
root@workstation:~/chef-repo# vi data_bags/users/user2.json
```

```
root@workstation:~/chef-repo# cat data_bags/users/user2.json
```

```
{
  "id": "user2",
  "comment": "This is user2",
```

```
"uid": "1002",  
"gid": "100",  
"home": "/home/user2",  
"shell": "/bin/bash",  
"platform": "centos"  
}
```

Pour téléverser les informations, il convient d'utiliser la commande **knife data bag from file <data_bag> <fichier1.json> <fichier1.json> ...** :

```
root@workstation:~/chef-repo# knife data bag from file users data_bags/users/user1.json  
data_bags/users/user2.json  
Updated data_bag_item[users::user1]  
Updated data_bag_item[users::user2]
```

Listez maintenant les Data Bags disponibles :

```
root@workstation:~/chef-repo# knife data bag list  
users
```

Pour voir le contenu du Data Bag, utilisez la commande **knife data bag show <data_bag>** :

```
root@workstation:~/chef-repo# knife data bag show users  
user1  
user2
```

Pour voir les informations du Data Bag, utilisez la commande **knife data bag show <data_bag>/<fichier.json>** :

```
root@workstation:~/chef-repo# knife data bag show users/user1  
comment  
gid  
home  
id  
platform  
shell
```

```
uid
```

Vous pouvez rechercher des informations dans un Data Bag avec la commande **knife search <data_bag>** :

```
root@workstation:~/chef-repo# knife search users "*:*"
2 items found
```

```
chef_type: data_bag_item
comment:   This is user1
data_bag:  users
gid:      100
home:     /home/user1
id:       user1
platform: centos
shell:    /bin/bash
uid:      1001
```

```
chef_type: data_bag_item
comment:   This is user2
data_bag:  users
gid:      100
home:     /home/user2
id:       user2
platform: centos
shell:    /bin/bash
uid:      1002
```

```
root@workstation:~/chef-repo# knife search users "comment:This*"
2 items found
```

```
chef_type: data_bag_item
comment:   This is user1
data_bag:  users
gid:      100
```

```
home:    /home/user1
id:      user1
platform: centos
shell:   /bin/bash
uid:     1001

chef_type: data_bag_item
comment:  This is user2
data_bag: users
gid:     100
home:    /home/user2
id:      user2
platform: centos
shell:   /bin/bash
uid:     1002
```

Pour isoler une seule information, utilisez l'option **-a** :

```
root@workstation:~/chef-repo# knife search users "platform:centos" -a comment
2 items found

:
  comment: This is user1

:
  comment: This is user2
```

Dans le cas où, le groupe affecté aux utilisateurs ne soit pas présent sur les noeuds, il faudrait créer un Data Bag **groups** :

```
root@workstation:~/chef-repo# mkdir data_bags/groups
```

```
root@workstation:~/chef-repo# knife data bag create groups
Created data_bag[groups]
```

```
root@workstation:~/chef-repo# vi data_bags/groups/group1.json
```

```
root@workstation:~/chef-repo# cat data_bags/groups/group1.json
```

```
{
  "id": "100",
  "gid": "100",
  "members": ["user1", "user2"]
}
```

```
root@workstation:~/chef-repo# knife data bag from file groups data_bags/groups/group1.json
Updated data_bag_item[groups::100]
```

```
root@workstation:~/chef-repo# knife data bag show groups
100
```

```
root@workstation:~/chef-repo# knife data bag show groups 100
gid:      100
id:       100
members:
  user1
  user2
```

2.3 - Utilisation de Data Bags

Créez un Cookbook dénommé **users** :

```
root@workstation:~/chef-repo# chef generate cookbook cookbooks/users
Generating cookbook users
- Ensuring correct cookbook content
```

```
Your cookbook is ready. Type `cd cookbooks/users` to enter it.
```

There are several commands you can run to get started locally developing and testing your cookbook. Type ``delivery local --help`` to see a full list of local testing commands.

Why not start by writing an InSpec test? Tests for the default recipe are stored at:

```
test/integration/default/default_test.rb
```

If you'd prefer to dive right in, the default recipe can be found at:

```
recipes/default.rb
```

Installez le paquet **tree** :

```
root@workstation:~/chef-repo# apt install tree
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following packages were automatically installed and are no longer required:
  gir1.2-goa-1.0 gir1.2-snapd-1
Use 'apt autoremove' to remove them.
The following NEW packages will be installed:
  tree
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
Need to get 40,7 kB of archives.
After this operation, 105 kB of additional disk space will be used.
Get:1 http://fr.archive.ubuntu.com/ubuntu bionic/universe amd64 tree amd64 1.7.0-5 [40,7 kB]
Fetched 40,7 kB in 1s (66,2 kB/s)
Selecting previously unselected package tree.
(Reading database ... 223000 files and directories currently installed.)
Preparing to unpack .../tree_1.7.0-5_amd64.deb ...
Unpacking tree (1.7.0-5) ...
Setting up tree (1.7.0-5) ...
Processing triggers for man-db (2.8.3-2ubuntu0.1) ...
```

Utilisez la commande **tree** pour visualiser l'arborescence du Cookbook créé :

```
root@workstation:~/chef-repo# tree cookbooks/users
cookbooks/users
├── CHANGELOG.md
├── cheffignore
├── kitchen.yml
├── LICENSE
├── metadata.rb
├── Policyfile.rb
├── README.md
├── recipes
│   └── default.rb
├── spec
│   ├── spec_helper.rb
│   └── unit
│       └── recipes
│           └── default_spec.rb
└── test
    ├── integration
    └── default
        └── default_test.rb

7 directories, 11 files
```

Créez une recette pour extraire les informations du Data Bag **users** pour chaque instance de la valeur de l'**id** et de créer l'utilisateur concerné :

```
root@workstation:~/chef-repo# vi cookbooks/users/recipes/default.rb
root@workstation:~/chef-repo# cat cookbooks/users/recipes/default.rb
#
# Cookbook:: users
# Recipe:: default
#
# Copyright:: 2023, The Authors, All Rights Reserved.
```

```
search("users", "platform:centos").each do |user_data|
  user user_data['id'] do
    comment user_data['comment']
    uid user_data['uid']
    gid user_data['gid']
    home user_data['home']
    shell user_data['shell']
  end
end
```

Connectez-vous à **targeta.i2tch.loc** et exécutez la commande **chef-client** :

```
root@workstation:~/chef-repo# ssh -l trainee 10.0.2.52
Debian GNU/Linux 9
trainee@10.0.2.52's password: trainee
Linux targeta.i2tch.loc 4.9.0-8-amd64 #1 SMP Debian 4.9.130-2 (2018-10-27) x86_64
```

The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.

Last login: Tue Nov 7 16:34:29 2023 from 10.0.2.111

trainee@targeta:~\$ su -

Mot de passe : fenestros

```
root@targeta:~# chef-client
Starting Chef Infra Client, version 15.17.4
resolving cookbooks for run list: ["apache", "users"]
Synchronizing Cookbooks:
  - apache (0.1.0)
  - users (0.1.0)
Installing Cookbook Gems:
```

```
Compiling Cookbooks...
Converging 5 resources
Recipe: apache::default
  * apt_package[apache2] action install (up to date)
  * service[apache2] action start (up to date)
  * service[apache2] action enable (up to date)
  * cookbook_file[/var/www/html/index.html] action create (up to date)
Recipe: users::default
  * linux_user[user1] action create
    - create user user1
  * linux_user[user2] action create
    - create user user2

Running handlers:
Running handlers complete
Chef Infra Client finished, 2/6 resources updated in 02 seconds
[2023-11-07T16:45:51+01:00] WARN: This release of Chef Infra Client became end of life (EOL) on May 1st 2021.
Please update to a supported release to receive new features, bug fixes, and security updates.
```

Vérifiez le contenu du fichier ****/etc/passwd**** :

```
<code>
root@targeta:~# cat /etc/passwd
root:x:0:0:root:/root:/bin/bash
daemon:x:1:1:daemon:/usr/sbin:/usr/sbin/nologin
bin:x:2:2:bin:/bin:/usr/sbin/nologin
sys:x:3:3:sys:/dev:/usr/sbin/nologin
sync:x:4:65534:sync:/bin:/bin/sync
games:x:5:60:games:/usr/games:/usr/sbin/nologin
man:x:6:12:man:/var/cache/man:/usr/sbin/nologin
lp:x:7:7:lp:/var/spool/lpd:/usr/sbin/nologin
mail:x:8:8:mail:/var/mail:/usr/sbin/nologin
news:x:9:9:news:/var/spool/news:/usr/sbin/nologin
uucp:x:10:10:uucp:/var/spool/uucp:/usr/sbin/nologin
```

```
proxy:x:13:13:proxy:/bin:/usr/sbin/nologin
www-data:x:33:33:www-data:/var/www:/usr/sbin/nologin
backup:x:34:34:backup:/var/backups:/usr/sbin/nologin
list:x:38:38:Mailing List Manager:/var/list:/usr/sbin/nologin
irc:x:39:39:ircd:/var/run/ircd:/usr/sbin/nologin
gnats:x:41:41:Gnats Bug-Reporting System (admin):/var/lib/gnats:/usr/sbin/nologin
nobody:x:65534:65534:nobody:/nonexistent:/usr/sbin/nologin
systemd-timesync:x:100:102:systemd Time Synchronization,,,:/run/systemd:/bin/false
systemd-network:x:101:103:systemd Network Management,,,:/run/systemd/netif:/bin/false
systemd-resolve:x:102:104:systemd Resolver,,,:/run/systemd/resolve:/bin/false
systemd-bus-proxy:x:103:105:systemd Bus Proxy,,,:/run/systemd:/bin/false
_apt:x:104:65534::/nonexistent:/bin/false
rtkit:x:105:109:RealtimeKit,,,:/proc:/bin/false
dnsmasq:x:106:65534:dnsmasq,,,:/var/lib/misc:/bin/false
avahi-autoipd:x:107:110:Avahi autoip daemon,,,:/var/lib/avahi-autoipd:/bin/false
messagebus:x:108:111::/var/run/dbus:/bin/false
usbmux:x:109:46:usbmux daemon,,,:/var/lib/usbmux:/bin/false
speech-dispatcher:x:110:29:Speech Dispatcher,,,:/var/run/speech-dispatcher:/bin/false
sshd:x:111:65534::/run/sshd:/usr/sbin/nologin
lightdm:x:112:115:Light Display Manager:/var/lib/lightdm:/bin/false
pulse:x:113:116:PulseAudio daemon,,,:/var/run/pulse:/bin/false
avahi:x:114:119:Avahi mDNS daemon,,,:/var/run/avahi-daemon:/bin/false
saned:x:115:120::/var/lib/saned:/bin/false
trainee:x:1000:1000:trainee,,,:/home/trainee:/bin/bash
ntp:x:116:121::/home/ntp:/bin/false
user1:x:1001:100:This is user1:/home/user1:/bin/bash
user2:x:1002:100:This is user2:/home/user2:/bin/bash
```

Sortez de la machine :

```
root@targeta:~# exit
déconnexion

trainee@targeta:~$ exit
```

```
déconnexion  
Connection to 10.0.2.52 closed.
```

Connectez-vous à **targetb.i2tch.loc** et exécutez la commande **chef-client** :

```
root@workstation:~/chef-repo# ssh -l trainee 10.0.2.53  
trainee@10.0.2.53's password: trainee  
Last login: Tue Nov 7 16:35:22 2023 from workstation.ittraining.loc  
[trainee@targetb ~]$ su -  
Password: fenestros  
Last login: mar. nov. 7 13:37:44 CET 2023 on pts/0  
  
[root@targetb ~]# chef-client  
Starting Chef Infra Client, version 15.17.4  
resolving cookbooks for run list: ["apache", "users"]  
Synchronizing Cookbooks:  
  - apache (0.1.0)  
  - users (0.1.0)  
Installing Cookbook Gems:  
Compiling Cookbooks...  
Converging 5 resources  
Recipe: apache::default  
  * yum_package[httpd] action install (up to date)  
  * service[httpd] action start (up to date)  
  * service[httpd] action enable (up to date)  
  * cookbook_file[/var/www/html/index.html] action create (up to date)  
Recipe: users::default  
  * linux_user[user1] action create  
    - create user user1  
  * linux_user[user2] action create  
    - create user user2  
  
Running handlers:  
Running handlers complete
```

```
Chef Infra Client finished, 2/6 resources updated in 05 seconds
[2023-11-07T16:48:07+01:00] WARN: This release of Chef Infra Client became end of life (EOL) on May 1st 2021.
Please update to a supported release to receive new features, bug fixes, and security updates.
```

Vérifiez le contenu du fichier **/etc/passwd** :

```
[root@targetb ~]# cat /etc/passwd
root:x:0:0:root:/root:/bin/bash
bin:x:1:1:bin:/bin:/sbin/nologin
daemon:x:2:2:daemon:/sbin:/sbin/nologin
adm:x:3:4:adm:/var/adm:/sbin/nologin
lp:x:4:7:lp:/var/spool/lpd:/sbin/nologin
sync:x:5:0:sync:/sbin:/bin/sync
shutdown:x:6:0:shutdown:/sbin:/sbin/shutdown
halt:x:7:0:halt:/sbin:/sbin/halt
mail:x:8:12:mail:/var/spool/mail:/sbin/nologin
operator:x:11:0:operator:/root:/sbin/nologin
games:x:12:100:games:/usr/games:/sbin/nologin
ftp:x:14:50:FTP User:/var/ftp:/sbin/nologin
nobody:x:99:99:Nobody:/:/sbin/nologin
avahi-autoipd:x:170:170:Avahi IPv4LL Stack:/var/lib/avahi-autoipd:/sbin/nologin
systemd-bus-proxy:x:999:997:systemd Bus Proxy:/:/sbin/nologin
systemd-network:x:998:996:systemd Network Management:/:/sbin/nologin
dbus:x:81:81:System message bus:/:/sbin/nologin
polkitd:x:997:995:User for polkitd:/:/sbin/nologin
abrt:x:173:173::/etc/abrt:/sbin/nologin
usbmuxd:x:113:113:usbmuxd user:/:/sbin/nologin
colord:x:996:993:User for colord:/var/lib/colord:/sbin/nologin
libstoragemgmt:x:995:992:daemon account for libstoragemgmt:/var/run/lsm:/sbin/nologin
setroubleshoot:x:994:991::/var/lib/setroubleshoot:/sbin/nologin
rpc:x:32:32:Rpcbind Daemon:/var/lib/rpcbind:/sbin/nologin
rtkit:x:172:172:RealtimeKit:/proc:/sbin/nologin
chrony:x:993:990::/var/lib/chrony:/sbin/nologin
unbound:x:992:989:Unbound DNS resolver:/etc/unbound:/sbin/nologin
```

```
tss:x:59:59:Account used by the trousers package to sandbox the tcsd daemon:/dev/null:/sbin/nologin
geoclue:x:991:988>User for geoclue:/var/lib/geoclue:/sbin/nologin
ntp:x:38:38::/etc/ntp:/sbin/nologin
sssd:x:990:987>User for sssd:/:/sbin/nologin
rpcuser:x:29:29:RPC Service User:/var/lib/nfs:/sbin/nologin
nfsnobody:x:65534:65534:Anonymous NFS User:/var/lib/nfs:/sbin/nologin
pulse:x:171:171:PulseAudio System Daemon:/var/run/pulse:/sbin/nologin
gdm:x:42:42::/var/lib/gdm:/sbin/nologin
gnome-initial-setup:x:989:984::/run/gnome-initial-setup:/sbin/nologin
avahi:x:70:70:Avahi mDNS/DNS-SD Stack:/var/run/avahi-daemon:/sbin/nologin
postfix:x:89:89::/var/spool/postfix:/sbin/nologin
sshd:x:74:74:Privilege-separated SSH:/var/empty/sshd:/sbin/nologin
tcpdump:x:72:72:::/sbin/nologin
trainee:x:1000:1000:trainee:/home/trainee:/bin/bash
vboxadd:x:988:1::/var/run/vboxadd:/bin/false
saned:x:987:981:SANE scanner daemon user:/usr/share/sane:/sbin/nologin
gluster:x:986:980:GlusterFS daemons:/run/gluster:/sbin/nologin
apache:x:48:48:Apache:/usr/share/httpd:/sbin/nologin
user1:x:1001:100:This is user1:/home/user1:/bin/bash
user2:x:1002:100:This is user2:/home/user2:/bin/bash
```

Sortez de la machine :

```
[root@targetb ~]# exit
logout
[trainee@targetb ~]$ exit
logout
Connection to 10.0.2.53 closed.
```

2.4 - Data Bags Cryptés

Pour chiffrer le contenu d'un Data Bag, commencez par créer une clef :

```
root@workstation:~/chef-repo# openssl rand -base64 512 | tr -d '\r\n' > secret.key
root@workstation:~/chef-repo# ls
cookbooks  data_bags  groups  README.md  roles  secret.key
```

Créez maintenant le Data Bag **secret-users** en spécifiant le fichier de la clef :

```
root@workstation:~/chef-repo# knife data bag create secret-users --secret-file secret.key
Created data_bag[secret-users]
```

Listez les Dta Bags présents sur le Chef Infra Server :

```
root@workstation:~/chef-repo# knife data bag list
groups
secret-users
users
```

Chiffrez maintenant le fichier **user1.json** :

```
root@workstation:~/chef-repo# knife data bag from file secret-users data_bags/users/user1.json --secret-file
secret.key
Updated data_bag_item[secret-users::user1]
```

Listez le contenu du Data Bag **secret-users** :

```
root@workstation:~/chef-repo# knife data bag show secret-users
user1
```

Essayez de voir les informations concernant **user1** :

```
root@workstation:~/chef-repo# knife data bag show secret-users user1
WARNING: Encrypted data bag detected, but no secret provided for decoding. Displaying encrypted data.
comment:
  auth_tag:      iJISCqTL09YCeTfXXQ3GMw==
```

```
  cipher:      aes-256-gcm
  encrypted_data: 2h3z057qS837n28peJgau72e6jAex4jRxWuhxX8UAm4=
  iv:          g5iYClDnxsdnwbhs
  version:     3
gid:
  auth_tag:    xXjGcMe0eagiBmJSuNhxA==
  cipher:      aes-256-gcm
  encrypted_data: lqzRYH/jentz4lQ7uf37fiN+knypDA==
  iv:          r1xKr2yqpDesrf7V
  version:     3
home:
  auth_tag:    Eog/Q9hdRakkJecxev3kBQ==
  cipher:      aes-256-gcm
  encrypted_data: KsU8l/lgkfV06zHiJ/k5/b16N+QrJiJLdirNCm3g
  iv:          Fftm8pXUXecILNoI
  version:     3
id:          user1
platform:
  auth_tag:    Z3qppY9e9/96hP63E2fSCQ==
  cipher:      aes-256-gcm
  encrypted_data: U++00En5iv9yLjviKzHa04ZE+AVkTnI6dA==
  iv:          rjKccpgF910u+Vkm
  version:     3
shell:
  auth_tag:    aoRh+XxNEFEcCt7nhjqoBw==
  cipher:      aes-256-gcm
  encrypted_data: 5DcNDaX6oeQDE7mQSmM/efJ451Eorw+Hyt7EXw==
  iv:          Ttg9HlPH80mMjLEv
  version:     3
uid:
  auth_tag:    tSan3VvGegSVUWq97M0WhA==
  cipher:      aes-256-gcm
  encrypted_data: 3f6x4Xcb60aXtfG9M1/ZN/RG3av0VIY=
  iv:          C1+YZeWp50QHonPq
```

```
version:      3
```

Pour pouvoir consulter les informations en clair, il est nécessaire d'utiliser la clef :

```
root@workstation:~/chef-repo# knife data bag show secret-users user1 --secret-file secret.key
Encrypted data bag detected, decrypting with provided secret.
comment:  This is user1
gid:      100
home:     /home/user1
id:       user1
platform: centos
shell:    /bin/bash
uid:      1001
```