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LDF704 - Gestion de la Configuration des Clients

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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	web01.i2tch.loc	10.0.2.54	Debian	9.7	2	256	20	trainee	trainee	fenestros
VM	web02.i2tch.loc	10.0.2.55	Debian	9.7	2	256	20	trainee	trainee	fenestros
VM	web03.i2tch.loc	10.0.2.56	Debian	9.7	2	256	20	trainee	trainee	fenestros
VM	targeta.i2tch.loc	10.0.2.52	Debian	9.7	2	2048	20	trainee	trainee	fenestros
VM	targetb.i2tch.loc	10.0.2.53	CentOS	7.6.1810	2	2048	20	trainee	trainee	fenestros

LAB #1 - La Commande chef-run

1.1 - Présentation

La commande **chef-run** permet d'exécuter des commandes ad-hoc localement ou sur des clients.

Cette commande :

- ne nécessite pas de Chef Infra Server,
- ne nécessite pas de pré-installation de Chef Client sur le(s) client(s),
- peut aussi exécuter une Recette ou un Cookbook,
- peut configurer de multiples clients dans la même commande.

1.2 - Utiliser chef-run sur un Client Unique

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
10.0.2.54       web01.i2tch.loc          web01
10.0.2.55       web02.i2tch.loc          web02
10.0.2.56       web03.i2tch.loc          web03

# 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
```

Utilisez la commande **chef-run** pour arrêter le service apache2 sur la VM **web01.i2tch.loc** :

```
root@workstation:~/chef-repo/cookbooks# chef-run web01 service apache2 action=stop --password fenestros
Creating config file in /root/.chef-workstation/config.toml.
```

Telemetry has been enabled by default for this beta release
of chef-run. The anonymous data we gather is used to
determine how we can improve your chef-run experience.

To disable it, add the following entry to
`/root/.chef-workstation/config.toml`:

```
[telemetry]
enable=false
```

For more information about what we data gather and additional opt-out
options, visit <https://chef.sh/docs/chef-workstation/privacy/>
[✓] Packaging cookbook... done!
[✓] Generating local policyfile... exporting... done!
[✓] Applying service[apache2] from resource to target.

```
└ [✓] [web01] Successfully converged service[apache2].
```

Connectez-vous à la VM **web01.i2tch.loc** à partir de votre VM **workstation.ittraining.loc** :

```
root@workstation:~/chef-repo/cookbooks# ssh -l trainee web01
The authenticity of host 'web01 (10.0.2.54)' can't be established.
ECDSA key fingerprint is SHA256:sEfHBv9azmK60cjF/aJgUc9jg56slNaZQdAUcvB0vE.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added 'web01,10.0.2.54' (ECDSA) to the list of known hosts.
Debian GNU/Linux 9
trainee@web01's password: trainee
Linux web01.i2tch.loc 4.9.0-8-amd64 #1 SMP Debian 4.9.130-2 (2018-10-27) x86_64
```

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the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/*copyright.

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permitted by applicable law.

Last login: Thu Nov 2 13:35:52 2023 from 10.0.2.1

Devenez root :

```
trainee@web01:~$ su -
Mot de passe : fenestros
root@web01:~#
```

Vérifiez le statut du service apache2 :

```
root@web01:~# systemctl status apache2
● apache2.service - The Apache HTTP Server
  Loaded: loaded (/lib/systemd/system/apache2.service; enabled; vendor preset: enabled)
    Active: inactive (dead) since Thu 2023-11-02 13:49:44 CET; 42s ago
      Process: 1946 ExecStop=/usr/sbin/apachectl stop (code=exited, status=0/SUCCESS)
```

```
Process: 449 ExecStart=/usr/sbin/apachectl start (code=exited, status=0/SUCCESS)
Main PID: 479 (code=exited, status=0/SUCCESS)
```

```
nov. 02 13:29:31 web01.i2tch.loc systemd[1]: Starting The Apache HTTP Server...
nov. 02 13:29:32 web01.i2tch.loc systemd[1]: Started The Apache HTTP Server.
nov. 02 13:49:44 web01.i2tch.loc systemd[1]: Stopping The Apache HTTP Server...
nov. 02 13:49:44 web01.i2tch.loc systemd[1]: Stopped The Apache HTTP Server.
```

Déconnectez-vous de votre VM **web01.i2tch.loc** :

```
root@web01:~# exit
déconnexion
trainee@web01:~$ exit
déconnexion
Connection to web01 closed.
```

La journalisation de l'activité de la commande **chef-run** est consignée dans le fichier **/root/.chef-workstation/logs/default.log**. Pour activer la journalisation, il convient d'éditer le fichier **/root/.chef-workstation/config.toml** :

```
root@workstation:~/chef-repo/cookbooks# vi /root/.chef-workstation/config.toml
root@workstation:~/chef-repo/cookbooks# cat /root/.chef-workstation/config.toml
[log]
level="debug"
```

Important - Il existe 5 niveaux de journalisation : **debug**, **info**, **warn**, **error** et **fatal**. Pour plus d'information concernant la journalisation, consultez [cette page](#).

Utilisez maintenant la commande **chef-run** pour démarrer le service apache2 sur la VM **web01.i2tch.loc** :

```
root@workstation:~/chef-repo/cookbooks# chef-run web01 service apache2 action=start --password fenestros
[✓] Packaging cookbook... done!
[✓] Generating local policyfile... exporting... done!
[✓] Applying service[apache2] from resource to target.
└─ [✓] [web01] Successfully converged service[apache2].
```

Constatez le bon démarrage du service :

```
root@workstation:~/chef-repo/cookbooks# ssh -l trainee web01
Debian GNU/Linux 9
trainee@web01's password: trainee
Linux web01.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: Thu Nov  2 13:50:12 2023 from 10.0.2.111
```

```
trainee@web01:~$ su -
```

```
Mot de passe : fenestros
```

```
root@web01:~# systemctl status apache2
● apache2.service - The Apache HTTP Server
  Loaded: loaded (/lib/systemd/system/apache2.service; enabled; vendor preset: enabled)
  Active: active (running) since Thu 2023-11-02 13:52:27 CET; 1min 29s ago
    Process: 1946 ExecStop=/usr/sbin/apachectl stop (code=exited, status=0/SUCCESS)
    Process: 2134 ExecStart=/usr/sbin/apachectl start (code=exited, status=0/SUCCESS)
   Main PID: 2138 (apache2)
     Tasks: 55 (limit: 4915)
    CGroup: /system.slice/apache2.service
            ├─2138 /usr/sbin/apache2 -k start
            ├─2139 /usr/sbin/apache2 -k start
```

```
└─2140 /usr/sbin/apache2 -k start
```

```
nov. 02 13:52:27 web01.i2tch.loc systemd[1]: Starting The Apache HTTP Server...
nov. 02 13:52:27 web01.i2tch.loc systemd[1]: Started The Apache HTTP Server.
```

Visualisez ensuite le contenu du fichier **/root/.chef-workstation/logs/default.log** :

```
root@workstation:~/chef-repo/cookbooks# more /root/.chef-workstation/logs/default.log
[2023-11-02T14:30:35+01:00] DEBUG: No chefignore file found. No files will be ignored!
[2023-11-02T14:30:35+01:00] DEBUG: No chefignore file found. No files will be ignored!
[2023-11-02T14:30:35+01:00] DEBUG: No chefignore file found. No files will be ignored!
[2023-11-02T14:30:35+01:00] DEBUG: No chefignore file found. No files will be ignored!
root/.chef-workstation/telemetry/telemetry-payload-1.yml
[2023-11-02T14:30:32+01:00] INFO: Submitting telemetry entry 1/5: {:event=>:run,
:properties=>{:installation_id=>"6f4cafea-73a3-4058-8c01-c0212fcaa97f", :run_timestamp=>"2023-11-02T13:29:02Z",
:host_platform=>"linux", :event_data=>{:arguments=>[:redacted], :duration=>8.209635892999358}}}
[2023-11-02T14:30:33+01:00] INFO: Entry 1/5 submitted.
[2023-11-02T14:30:33+01:00] INFO: Submitting telemetry entry 2/5: {:event=>:action,
:properties=>{:installation_id=>"6f4cafea-73a3-4058-8c01-c0212fcaa97f", :run_timestamp=>"2023-11-02T13:29:02Z",
:host_platform=>"linux", :event_data=>{:action=>"ConvergeTarget", :target=>{:platform=>{:name=>:linux, :version=>"9.7",
:architecture=>"x86_64"}, :hostname_sha1=>"7f1f968061faac1f2881018c5bbb473f498af24a", :transport_type=>"ssh"}, :duration=>5.424575929995626}}}
[2023-11-02T14:30:33+01:00] INFO: Entry 2/5 submitted.
[2023-11-02T14:30:33+01:00] INFO: Submitting telemetry entry 3/5: {:event=>:action,
:properties=>{:installation_id=>"6f4cafea-73a3-4058-8c01-c0212fcaa97f", :run_timestamp=>"2023-11-02T13:29:02Z",
:host_platform=>"linux", :event_data=>{:action=>"InstallChef", :target=>{:platform=>{:name=>:linux, :version=>"9.7",
:architecture=>"x86_64"}, :hostname_sha1=>"7f1f968061faac1f2881018c5bbb473f498af24a", :transport_type=>"ssh"}, :duration=>0.15079596400028095}}}
[2023-11-02T14:30:33+01:00] DEBUG: [ChefApply::Action::GenerateCookbookFromResource] Action: generating, Action Data: []
[2023-11-02T14:30:33+01:00] DEBUG: Generating cookbook for ad-hoc resource service[apache2]
```

```
[2023-11-02T14:30:33+01:00] DEBUG: Generating cookbook for single resource 'service[apache2]'  
[2023-11-02T14:30:33+01:00] DEBUG: [ChefApply::Action::GenerateCookbookFromResource] Action: success, Action Data: []  
[2023-11-02T14:30:33+01:00] DEBUG: [ChefApply::Action::GenerateLocalPolicy] Action: generating, Action Data: []  
[2023-11-02T14:30:33+01:00] INFO: Entry 3/5 submitted.  
[2023-11-02T14:30:33+01:00] INFO: Submitting telemetry entry 4/5: {:event=>:action,  
:properties=>{:installation_id=>"6f4cafea-73a3-4058-8c01-c0212fcaa97f", :run_timestamp=>"2023-11-02T13:29:02Z",  
:host_plat  
form=>"linux", :event_data=>{:action=>"GenerateLocalPolicy", :target=>{:platform=>{}, :hostname_shal=>nil,  
:transport_type=>nil}, :duration=>1.7424296090030111}}}  
[2023-11-02T14:30:33+01:00] INFO: Entry 4/5 submitted.  
[2023-11-02T14:30:33+01:00] INFO: Submitting telemetry entry 5/5: {:event=>:action,  
:properties=>{:installation_id=>"6f4cafea-73a3-4058-8c01-c0212fcaa97f", :run_timestamp=>"2023-11-02T13:29:02Z",  
:host_plat  
form=>"linux", :event_data=>{:action=>"GenerateCookbookFromResource", :target=>{:platform=>{},  
:hostname_shal=>nil, :transport_type=>nil}, :duration=>0.0006251430022530258}}}  
[2023-11-02T14:30:33+01:00] INFO: Entry 5/5 submitted.  
[2023-11-02T14:30:33+01:00] INFO: Terminating, nothing more to do.  
[2023-11-02T14:30:35+01:00] DEBUG: [ChefApply::Action::GenerateLocalPolicy] Action: exporting, Action Data: []  
[2023-11-02T14:30:35+01:00] DEBUG: [ChefApply::Action::GenerateLocalPolicy] Action: success, Action Data: []  
[2023-11-02T14:30:35+01:00] DEBUG: [SSH] root@web01<{:user_known_hosts_file=>/dev/null, :port=>22,  
:compression=>false, :compression_level=>0, :keepalive=>true, :keepalive_interval=>60, :timeout=>15, :auth_methods=>["none", "password", "keyboard-interactive"], :keys_only=>nil, :keys=>nil, :password=><hidden>,  
:forward_agent=>nil, :non_interactive=>true, :verify_host_key=>:never}> (cmd.exe /c ver)  
[2023-11-02T14:30:35+01:00] DEBUG: [SSH] opening connection to root@web01<{:user_known_hosts_file=>/dev/null,  
:port=>22, :compression=>false, :compression_level=>0, :keepalive=>true, :keepalive_interval=>  
60, :timeout=>15, :auth_methods=>["none", "password", "keyboard-interactive"], :keys_only=>nil, :keys=>nil,  
:password=><hidden>, :forward_agent=>nil, :non_interactive=>true, :verify_host_key=>:never}>  
[2023-11-02T14:30:35+01:00] DEBUG: [SSH] root@web01<{:user_known_hosts_file=>/dev/null, :port=>22,  
:compression=>false, :compression_level=>0, :keepalive=>true, :keepalive_interval=>60, :timeout=>15, :auth_methods=>["none", "password", "keyboard-interactive"], :keys_only=>nil, :keys=>nil, :password=><hidden>,  
:forward_agent=>nil, :non_interactive=>true, :verify_host_key=>:never}> (Get-WmiObject Win32_OperatingSystem | Select Caption,Version | ConvertTo-Json)  
[2023-11-02T14:30:35+01:00] DEBUG: [SSH] root@web01<{:user_known_hosts_file=>/dev/null, :port=>22,
```

```
:compression=>false, :compression_level=>0, :keepalive=>true, :keepalive_interval=>60, :timeout=>15, :aut
h_methods=>["none", "password", "keyboard-interactive"], :keys_only=>nil, :keys=>nil, :password=>"<hidden>",
:forward_agent=>nil, :non_interactive=>true, :verify_host_key=>:never}> (uname -s)
[2023-11-02T14:30:35+01:00] DEBUG: [SSH] root@web01<{:user_known_hosts_file=>/dev/null, :port=>22,
:compression=>false, :compression_level=>0, :keepalive=>true, :keepalive_interval=>60, :timeout=>15, :aut
h_methods=>["none", "password", "keyboard-interactive"], :keys_only=>nil, :keys=>nil, :password=>"<hidden>",
:forward_agent=>nil, :non_interactive=>true, :verify_host_key=>:never}> (uname -m)
[2023-11-02T14:30:35+01:00] DEBUG: [SSH] root@web01<{:user_known_hosts_file=>/dev/null, :port=>22,
:compression=>false, :compression_level=>0, :keepalive=>true, :keepalive_interval=>60, :timeout=>15, :aut
h_methods=>["none", "password", "keyboard-interactive"], :keys_only=>nil, :keys=>nil, :password=>"<hidden>",
:forward_agent=>nil, :non_interactive=>true, :verify_host_key=>:never}> (test -f /etc/debian_vers
ion && cat /etc/debian_version)
[2023-11-02T14:30:35+01:00] DEBUG: [SSH] root@web01<{:user_known_hosts_file=>/dev/null, :port=>22,
:compression=>false, :compression_level=>0, :keepalive=>true, :keepalive_interval=>60, :timeout=>15, :aut
h_methods=>["none", "password", "keyboard-interactive"], :keys_only=>nil, :keys=>nil, :password=>"<hidden>",
:forward_agent=>nil, :non_interactive=>true, :verify_host_key=>:never}> (test -f /etc/lsb-release
&& cat /etc/lsb-release)
[2023-11-02T14:30:35+01:00] DEBUG: [SSH] root@web01<{:user_known_hosts_file=>/dev/null, :port=>22,
:compression=>false, :compression_level=>0, :keepalive=>true, :keepalive_interval=>60, :timeout=>15, :aut
h_methods=>["none", "password", "keyboard-interactive"], :keys_only=>nil, :keys=>nil, :password=>"<hidden>",
:forward_agent=>nil, :non_interactive=>true, :verify_host_key=>:never}> (test -f /usr/bin/lsb-rel
ease && cat /usr/bin/lsb-release)
[2023-11-02T14:30:36+01:00] DEBUG: [SSH] root@web01<{:user_known_hosts_file=>/dev/null, :port=>22,
:compression=>false, :compression_level=>0, :keepalive=>true, :keepalive_interval=>60, :timeout=>15, :aut
h_methods=>["none", "password", "keyboard-interactive"], :keys_only=>nil, :keys=>nil, :password=>"<hidden>",
:forward_agent=>nil, :non_interactive=>true, :verify_host_key=>:never}> (test -f /etc/os-release
&& cat /etc/os-release)
[2023-11-02T14:30:36+01:00] DEBUG: [SSH] root@web01<{:user_known_hosts_file=>/dev/null, :port=>22,
:compression=>false, :compression_level=>0, :keepalive=>true, :keepalive_interval=>60, :timeout=>15, :aut
h_methods=>["none", "password", "keyboard-interactive"], :keys_only=>nil, :keys=>nil, :password=>"<hidden>",
:forward_agent=>nil, :non_interactive=>true, :verify_host_key=>:never}> (test -f /usr/bin/raspi-c
--More-- (55%)
```

Visualisez la fin de ce fichier :

```
root@workstation:~/chef-repo/cookbooks# tail /root/.chef-workstation/logs/default.log
Recipe: cw_service::default
  * service[apache2] action start
    - start service service[apache2]

Running handlers:
  - ChefApply::Reporter
Running handlers complete
Infra Phase complete, 1/1 resources updated in 02 seconds

[2023-11-02T14:30:41+01:00] DEBUG: [ChefApply::Action::ConvergeTarget] Action: success, Action Data: []
```

1.3 - Utiliser chef-run avec la Commande sudo

La commande **chef-run** peut être utiliser pour configurer plusieurs clients dans la même ligne de commande. Utilisez la commande pour arrêter le service apache2 sur les deux clients **web02.i2tch.loc** et **web03.i2tch.loc** :

```
root@workstation:~/chef-repo/cookbooks# chef-run web0[2:3] service apache2 action=stop --sudo --user trainee --
password trainee
[✓] Packaging cookbook... done!
[✓] Generating local policyfile... exporting... done!
[✓] Applying service[apache2] from resource to targets.
  └─ [✓] [web02] Successfully converged service[apache2].
  └─ [✓] [web03] Successfully converged service[apache2].
```

Important - Notez l'utilisation de l'utilisateur **trainee** à la place de l'utilisateur **root** grâce à l'exécution de la commande **sudo**, préalablement configurée sur les clients concernés.

Vérifiez ensuite le statut du service apache2 sur les deux clients **web02.i2tch.loc** et **web03.i2tch.loc** :

```
root@workstation:~/chef-repo/cookbooks# ssh -l trainee web02
The authenticity of host 'web02 (10.0.2.55)' can't be established.
ECDSA key fingerprint is SHA256:sEfHBv9azmK60cjF/aJgUc9jg56s1NaZQdAUcvB0vE.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added 'web02,10.0.2.55' (ECDSA) to the list of known hosts.
Debian GNU/Linux 9
trainee@web02's password: trainee
Linux web02.i2tch.loc 4.9.0-8-amd64 #1 SMP Debian 4.9.130-2 (2018-10-27) x86_64
```

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individual files in /usr/share/doc/*copyright.

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permitted by applicable law.

Last login: Thu Nov 2 13:56:42 2023 from 10.0.2.1

```
trainee@web02:~$ su -
Mot de passe : fenestros
```

```
root@web02:~# systemctl status apache2
● apache2.service - The Apache HTTP Server
   Loaded: loaded (/lib/systemd/system/apache2.service; enabled; vendor preset: enabled)
   Active: inactive (dead) since Thu 2023-11-02 14:12:37 CET; 57s ago
     Process: 1406 ExecStop=/usr/sbin/apachectl stop (code=exited, status=0/SUCCESS)
    Process: 445 ExecStart=/usr/sbin/apachectl start (code=exited, status=0/SUCCESS)
   Main PID: 473 (code=exited, status=0/SUCCESS)
```

```
nov. 02 13:59:22 web02.i2tch.loc systemd[1]: Starting The Apache HTTP Server...
nov. 02 13:59:22 web02.i2tch.loc systemd[1]: Started The Apache HTTP Server.
nov. 02 14:12:37 web02.i2tch.loc systemd[1]: Stopping The Apache HTTP Server...
nov. 02 14:12:37 web02.i2tch.loc systemd[1]: Stopped The Apache HTTP Server.
```

```
root@web02:~# exit
```

déconnexion

```
trainee@web02:~$ exit  
déconnexion  
Connection to web02 closed.
```

```
root@workstation:~/chef-repo/cookbooks# ssh -l trainee web03  
The authenticity of host 'web03 (10.0.2.56)' can't be established.  
ECDSA key fingerprint is SHA256:sEfHBv9azmK60cjF/aJgUc9jg56s1NaZQdAUcvB0vE.  
Are you sure you want to continue connecting (yes/no)? yes  
Warning: Permanently added 'web03,10.0.2.56' (ECDSA) to the list of known hosts.  
Debian GNU/Linux 9  
trainee@web03's password: trainee  
Linux web03.i2tch.loc 4.9.0-8-amd64 #1 SMP Debian 4.9.130-2 (2018-10-27) x86_64
```

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permitted by applicable law.

Last login: Thu Nov 2 13:57:50 2023 from 10.0.2.1

```
trainee@web03:~$ su -  
Mot de passe : fenestros
```

```
root@web03:~# systemctl status apache2  
● apache2.service - The Apache HTTP Server  
   Loaded: loaded (/lib/systemd/system/apache2.service; enabled; vendor preset: enabled)  
   Active: inactive (dead) since Thu 2023-11-02 14:12:37 CET; 2min 59s ago  
     Process: 1390 ExecStop=/usr/sbin/apachectl stop (code=exited, status=0/SUCCESS)  
     Process: 463 ExecStart=/usr/sbin/apachectl start (code=exited, status=0/SUCCESS)  
Main PID: 497 (code=exited, status=0/SUCCESS)
```

```
nov. 02 13:59:37 web03.i2tch.loc systemd[1]: Starting The Apache HTTP Server...
nov. 02 13:59:38 web03.i2tch.loc systemd[1]: Started The Apache HTTP Server.
nov. 02 14:12:36 web03.i2tch.loc systemd[1]: Stopping The Apache HTTP Server...
nov. 02 14:12:37 web03.i2tch.loc systemd[1]: Stopped The Apache HTTP Server.
```

Déconnectez-vous de la VM **web03.i2tch.loc** :

```
root@web03:~# exit
déconnexion
trainee@web03:~$ exit
déconnexion
Connection to web03 closed.
root@workstation:~/chef-repo/cookbooks#
```

Dans le cas d'une erreur de l'exécution, des traces sont générées dans le fichier **/root/.chef-workstation/logs/errors.txt** :

```
root@workstation:~/chef-repo/cookbooks# chef-run web0[2:3] service apache2 action=disbale --sudo --user trainee --password trainee
[✓] Packaging cookbook... done!
[✓] Generating local policyfile... exporting... done!
[*] Applying service[apache2] from resource to targets.
  └─ [✗] [web02] Failed to converge service[apache2].
  └─ [✗] [web03] Failed to converge service[apache2].
```

One or more actions has failed.

A complete list of failures and possible resolutions can
be found in the file below:

`/root/.chef-workstation/logs/errors.txt`

```
root@workstation:~/chef-repo/cookbooks# cat /root/.chef-workstation/logs/errors.txt
Host: web02 Error: CHEFCCR003: The action 'disbale' is not valid. Valid actions are: :nothing, :enable, :disable, :start, :stop, :restart, :reload, :mask, :unmask For more information, please consult the documentation for this
```

```
resource: https://docs.chef.io/resource_reference.html
Host: web03 Error: CHEFCCR003: The action 'disbale' is not valid. Valid actions are: :nothing, :enable, :disable,
:start, :stop, :restart, :reload, :mask, :unmask For more information, please consult the documentation for this
resource: https://docs.chef.io/resource_reference.html
```

Corrigez l'erreur et désactivez le service **apache2** :

```
root@workstation:~/chef-repo/cookbooks# chef-run web0[2:3] service apache2 action=disable --sudo --user trainee --
-password trainee
[✓] Packaging cookbook... done!
[✓] Generating local policyfile... exporting... done!
[✓] Applying service[apache2] from resource to targets.
└─ [✓] [web02] Successfully converged service[apache2].
└─ [✓] [web03] Successfully converged service[apache2].
```

1.4 - Utiliser chef-run avec un Cookbook

Installez le paquet **git** :

```
root@workstation:~/chef-repo/cookbooks# apt install git
```

Utilisez la commande **git init** pour initialiser le répertoire **/root/chef-repo/cookbooks** en tant que **repository git** :

```
root@workstation:~/chef-repo/cookbooks# git init
```

Utilisez maintenant la commande **chef-run** pour exécuter la Recette **default** du Cookbook **apache2** dans la VM **web01.i2tch.loc** :

```
root@workstation:~/chef-repo/cookbooks# chef-run web01 apache2::default --password fenestros
[✓] Packaging cookbook... done!
[✓] Generating local policyfile... exporting... done!
[✓] Applying apache2::default from /root/chef-repo/cookbooks/apache2 to target.
└─ [✓] [web01] Successfully converged apache2::default.
```

Le service apache2 ayant été arrêté précédemment, vérifiez que clui-ci a été re-démarré :

```
root@workstation:~/chef-repo/cookbooks# ssh -l trainee web01
Debian GNU/Linux 9
trainee@web01's password: trainee
Linux web01.i2tch.loc 4.9.0-8-amd64 #1 SMP Debian 4.9.130-2 (2018-10-27) x86_64
```

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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: Thu Nov 2 14:08:53 2023 from 10.0.2.1

```
trainee@web01:~$ su -
Mot de passe : fenestros
```

```
root@web01:~# systemctl status apache2
● apache2.service - The Apache HTTP Server
  Loaded: loaded (/lib/systemd/system/apache2.service; enabled; vendor preset: enabled)
  Active: active (running) since Thu 2023-11-02 14:40:59 CET; 32s ago
    Process: 4208 ExecStop=/usr/sbin/apachectl stop (code=exited, status=0/SUCCESS)
    Process: 4360 ExecStart=/usr/sbin/apachectl start (code=exited, status=0/SUCCESS)
   Main PID: 4364 (apache2)
     Tasks: 55 (limit: 4915)
    CGroup: /system.slice/apache2.service
            └─4364 /usr/sbin/apache2 -k start
              ├─4365 /usr/sbin/apache2 -k start
              └─4366 /usr/sbin/apache2 -k start
```

```
nov. 02 14:40:59 web01.i2tch.loc systemd[1]: Starting The Apache HTTP Server...
nov. 02 14:40:59 web01.i2tch.loc systemd[1]: Started The Apache HTTP Server.
```

Déconnectez-vous de la VM **web01.i2tch.loc** :

```
root@web01:~# exit  
déconnexion  
  
trainee@web01:~$ exit  
déconnexion  
Connection to web01 closed.
```

LAB #2 - Configuration des Clients en utilisant des Rôles

2.1 - Présentation

Un **Rôle** est une façon logique de regrouper des clients ou **noeuds**. Chaque Rôle possède des **run-lists** pour pouvoir configurer les noeuds associés avec le Rôle. Une Run-List est un groupement de Cookbooks ou de Recettes. Pour associer un noeud à un Rôle, Chef utilise des **tags**. La manipulation des Rôles s'effectue grâce à l'utilisation de la commande **knife**.

2.2 - Création de Rôles

Commencez par définir l'éditeur par défaut dans la VM **workstation.ittraining.loc** :

```
root@workstation:~/chef-repo/cookbooks# export EDITOR=$(which vi)
```

Placez-vous dans le répertoire **/root/chef-repo/** créez un Rôle dénommé **web** en utilisant la commande **knife role create** :

```
root@workstation:~/chef-repo/cookbooks# cd ..  
  
root@workstation:~/chef-repo# knife role create web
```

L'éditeur VI est lancé. Editez la section **run_list** en y ajoutant “**recipe[apache2]**”. Sauvegardez et quittez le fichier :

```
{  
  "name": "web",  
  "description": "",  
  "json_class": "Chef::Role",  
  "default_attributes": {  
  },  
  "override_attributes": {  
  },  
  "chef_type": "role",  
  "run_list": [  
    "recipe[apache2]"  
  ],  
  "env_run_lists": {  
  }  
}
```

Vous obtiendrez :

```
root@workstation:~/chef-repo# knife role create web  
Created role[web]
```

Visualisez le Rôle que vous avez créé grâce à la commande **knife role show** :

```
root@workstation:~/chef-repo# knife role show web  
chef_type:          role  
default_attributes:  
description:  
env_run_lists:  
json_class:        Chef::Role  
name:              web  
override_attributes:
```

```
run_list: recipe[apache2]
```

Connectez-vous ensuite à votre VM **ChefServer_10.0.2.110_VNC**.

Ouvrez le navigateur Web et naviguez à l'adresse **10.0.2.110** :



Cliquez sur l'onglet **Policy** :



Cliquez sur **Roles** pour visualiser le Rôle **web** :



Sélectionnez le Rôle **web** pour voir le contenu de la **Run List** :



Cliquez sur l'onglet **Nodes**, puis sur le client **client**. Constatez la présence du Rôle **web** dans la **Run List** :



Cliquez sur le lien **Edit Run List** dans le menu de gauche et constatez la présence de **web** dans la **Current Run List** :



Connectez-vous ensuite à votre VM **ChefServer_10.0.2.110_SSH**.

Modifiez maintenant la configuration du client **client.ittraining.loc** en référençant le Rôle dans le **run_list**. Sauvegardez et quittez le fichier :

```
root@workstation:~/chef-repo# knife node edit client
```

```
{
  "name": "client",
  "chef_environment": "_default",
  "normal": {
    "tags": [
      ]
  },
  "policy_name": null,
  "policy_group": null,
  "run_list": [
    "role[web]"
]
}
```

Vous obtiendrez :

```
root@workstation:~/chef-repo# knife node edit client
Saving updated run_list on node client
```

Appliquez le Rôle grâce à la commande **knife ssh** :

```
root@workstation:~/chef-repo# knife ssh 'role:web' 'chef-client' --ssh-user root --ssh-password fenestros
client.ittraining.loc Starting Chef Infra Client, version 15.17.4
client.ittraining.loc resolving cookbooks for run list: ["apache2"]
client.ittraining.loc Synchronizing Cookbooks:
client.ittraining.loc   - apache2 (0.1.0)
client.ittraining.loc Installing Cookbook Gems:
client.ittraining.loc Compiling Cookbooks...
client.ittraining.loc Converging 3 resources
```

```
client.ittraining.loc Recipe: apache2::default
client.ittraining.loc      * apt_package[apache2] action install (up to date)
client.ittraining.loc      * service[apache2] action enable (up to date)
client.ittraining.loc      * service[apache2] action start (up to date)
client.ittraining.loc      * template[/var/www/html/index.html] action create (up to date)
client.ittraining.loc
client.ittraining.loc Running handlers:
client.ittraining.loc Running handlers complete
client.ittraining.loc Chef Infra Client finished, 0/4 resources updated in 01 seconds
client.ittraining.loc [2023-11-02T16:30:46+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.
```

LAB #3 - Configuration des Clients en fonction de l'Environnement

3.1 - Présentation

La gestion des **Environnements** est similaire à la gestion des Rôles. Un environnement est une phase de développement telle **Développement** ou **Production**. Tous les clients font parti de l'environnement par défaut, appelé **_default**. Il est possible d'appliquer des Recettes ou des Cookbooks différents en fonction de l'environnement.

3.2 - Crédit des Cookbooks

Téléchargez le fichier **nginx.tar** :

```
root@workstation:~/chef-repo/cookbooks# wget
https://files-accl.zohoexternal.com/public/workdrive-external/download/p9zfo77176af8ccf44e4a9cff3dc316a00cf0
--2023-11-03 13:37:07--
https://files-accl.zohoexternal.com/public/workdrive-external/download/p9zfo77176af8ccf44e4a9cff3dc316a00cf0
Resolving files-accl.zohoexternal.com (files-accl.zohoexternal.com)... 169.148.154.32, 169.62.46.83,
```

169.148.154.31, ...

Connecting to files-accl.zohoexternal.com (files-accl.zohoexternal.com)|169.148.154.32|:443... connected.

HTTP request sent, awaiting response... 200 OK

Length: 30720 (30K) [application/x-unknown]

Saving to: 'p9zfo77176af8ccf44e4a9cff3dc316a00cf0'

p9zfo77176af8ccf44e4a9cff3dc316a00cf0

100%[=====>] 30,00K ---KB/s in 0,08s

2023-11-03 13:37:08 (372 KB/s) - 'p9zfo77176af8ccf44e4a9cff3dc316a00cf0' saved [30720/30720]

Renommez le fichier téléchargé et désarchivez-le :

```
root@workstation:~/chef-repo/cookbooks# mv p9zfo77176af8ccf44e4a9cff3dc316a00cf0 nginx.tar
root@workstation:~/chef-repo/cookbooks# tar xvf nginx.tar
nginx/
nginx/.gitignore
nginx/.delivery/
nginx/.delivery/project.toml
nginx/Policyfile.rb
nginx/kitchen.yml
nginx/chefignore
nginx/recipes/
nginx/recipes/default.rb
nginx/CHANGELOG.md
nginx/spec/
nginx/spec/spec_helper.rb
nginx/spec/unit/
nginx/spec/unit/recipes/
nginx/spec/unit/recipes/default_spec.rb
nginx/metadata.rb
nginx/files/
nginx/files/default/
```

```
nginx/files/default/index.html
nginx/LICENSE
nginx/test/
nginx/test/integration/
nginx/test/integration/default/
nginx/test/integration/default/default_test.rb
nginx/README.md
```

Modifiez le fichier **/root/chef-repo/cookbooks/nginx/files/default/index.html** :

```
root@workstation:~/chef-repo/cookbooks# vi nginx/files/default/index.html
root@workstation:~/chef-repo/cookbooks# cat nginx/files/default/index.html
<html>
  <head>
    <title>Hello from chef</title>
  </head>
  <body>
    <h1>This is a nginx server</h1>
    <p>Happy Production!</p>
  </body>
</html>
```

Téléversez maintenant le Cookbook vers le Chef Infra Server :

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

Modifiez de nouveau le fichier **/root/chef-repo/cookbooks/nginx/files/default/index.html** :

```
root@workstation:~/chef-repo/cookbooks# vi nginx/files/default/index.html
root@workstation:~/chef-repo/cookbooks# cat nginx/files/default/index.html
<html>
  <head>
```

```
<title>Hello from chef</title>
</head>
<body>
  <h1>This is a nginx server</h1>
  <p>Happy Development!</p>
</body>
</html>
```

Afin de ne pas écraser le Cookbook déjà téléchargé, créez une nouvelle version de celui-ci en éditant le fichier **/root/chef-repo/cookbooks/metadata.rb** :

```
root@workstation:~/chef-repo/cookbooks# vi nginx/metadata.rb
root@workstation:~/chef-repo/cookbooks# cat nginx/metadata.rb
name 'nginx'
maintainer 'The Authors'
maintainer_email 'you@example.com'
license 'All Rights Reserved'
description 'Installs/Configures nginx'
version '0.1.1'
chef_version '>= 14.0'

# The `issues_url` points to the location where issues for this cookbook are
# tracked. A `View Issues` link will be displayed on this cookbook's page when
# uploaded to a Supermarket.
#
# issues_url 'https://github.com/<insert_org_here>/nginx/issues'

# The `source_url` points to the development repository for this cookbook. A
# `View Source` link will be displayed on this cookbook's page when uploaded to
# a Supermarket.
#
# source_url 'https://github.com/<insert_org_here>/nginx'
```

Téléversez ensuite le nouveau Cookbook vers le Chef Infra Server :

```
root@workstation:~/chef-repo/cookbooks# knife cookbook upload nginx
Uploading nginx [0.1.1]
Uploaded 1 cookbook.
```

3.3 - Ajout de Clients au Chef Infra Server

Configurez deux nouveaux clients **targeta** et **targetb** :

```
root@workstation:~/chef-repo/cookbooks# ssh -l trainee 10.0.2.52
The authenticity of host '10.0.2.52 (10.0.2.52)' can't be established.
ECDSA key fingerprint is SHA256:sEfHBv9azmK60cjF/aJgUc9jg56slNaZQdAUcvB0vE.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added '10.0.2.52' (ECDSA) to the list of known hosts.
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
```

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the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*copyright.

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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
```

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       web02.i2tch.loc        web02
10.0.2.53       web03.i2tch.loc        web03

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

Modifiez le FQDN de la VM :

```
root@targeta:~# hostnamectl set-hostname web02.i2tch.loc
```

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.
```

Créez le répertoire **/var/www/html** :

```
root@targeta:~# mkdir -p /var/www/html
```

Quittez la VM **targeta** :

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

Utilisez la commande **knife bootstrap** pour référencer le client avec le Chef Infra Server :

```
root@workstation:~/chef-repo/cookbooks# knife bootstrap 10.0.2.52 --ssh-user root --ssh-password fenestros --
node-name web02
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 web02
Creating new node for web02
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.1340/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.1344/metadata.txt
[10.0.2.52] trying wget...
[10.0.2.52] sha1      168e534c58f9e17394bc9ba7112ee2280fecdd79
sha256   a50884a3c0be26875c329de9a1cea854eacb0a0a1ed031301ee6c29aad0f19ed
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.1344/chef_15.17.4-1_amd64.deb
...
[10.0.2.52] Chef Infra Client finished, 0/0 resources updated in 01 seconds
[10.0.2.52]
[10.0.2.52] [2023-11-03T15:53:49+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** :

```
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      web02.i2tch.loc       web02
10.0.2.53      web03.i2tch.loc       web03
```

Modifiez le FQDN de la VM :

```
[root@targetb ~]# hostnamectl set-hostname web03.i2tch.loc
```

La VM **targetb** étant une CentOS 7, le paquet **nginx** est disponible dans le dépôt **epel-release**. Installez donc ce dépôt :

```
[root@targetb ~]# yum install epel-release
```

Créez le répertoire **/var/www/html** :

```
[root@targetb ~]# mkdir -p /var/www/html
```

Déconnectez-vous de la VM :

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

trainee@targetb:~$ exit
déconnexion
```

Utilisez maintenant la commande **knife bootstrap** pour référencer le client avec le Chef Infra Server :

```
root@workstation:~/chef-repo/cookbooks# knife bootstrap 10.0.2.53 --ssh-user root --ssh-password fenestros --node-name web03
--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 web03
Creating new node for web03
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.14275/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.14285/metadata.txt
[10.0.2.53] trying wget...
[10.0.2.53] sha1      9e066d888611971a1dceb7c3eaf0375a6c61ebd0
sha256  0aaf56d149bdddc73b501322777ac378e2ffb63aa6eb714d93b16714e166e4f0
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.14285/chef-15.17.4-1.el7.x86_64.rpm
...
Chef Infra Client finished, 0/0 resources updated in 03 seconds
[2023-11-03T16:07:23+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.

3.4 - Configuration des Environnements

Editez 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      web02.i2tch.loc        web02
10.0.2.53      web03.i2tch.loc        web03

# 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
```

Connectez-vous ensuite à votre VM **ChefServer_10.0.2.110_VNC**.

Ouvrez le navigateur Web et naviguez à l'adresse **10.0.2.110** :



Cliquez sur l'onglet **Policy** :



Cliquez sur la ligne **nginx** :



Important - Notez les deux versions présentes - **0.1.1 et 0.1.0**

Cliquez sur **Environments** dans le menu de gauche :



Cliquez sur **Create** dans le menu de gauche et renseignez la création de l'environnement appelé **Dev**. Cliquez ensuite sur le bouton **Create Environment** :



Vous obtiendrez :



Répétez le processus pour créer l'environnement appelé **Prod** :



Vous obtiendrez :



Cliquez sur la ligne **Dev** puis sur le lien **Edit** dans le panneau **Cookbook Constraints** Renseignez une contrainte afin que l'environnement utilise la version **0.1.1** du Cookbook **nginx** :



Cliquez sur le bouton **Add** puis sur le bouton **Save Constraints** :



Répétez le processus pour créer une contrainte pour l'environnement **Prod** en spécifiant la version **0.1.0** du Cookbook :



Cliquez sur l'onglet **Nodes** :



Cliquez sur la ligne **web02** et modifiez l'environnement à **Dev** puis cliquez sur le bouton **Save** :



Cliquez sur la ligne **web03** et modifiez l'environnement à **Prod** puis cliquez sur le bouton **Save** :



Cliquez sur la roue dentée à dans la ligne **web03** puis cliquez sur le lien **Edit Run List**. Dans la fenêtre qui apparaît, faites glisser **nginx** de **Available Recipes** vers **Current Run List**. Cliquez ensuite sur le bouton **Save Run List** :



Utilisez le même processus pour affecter **nginx** à la **Current Run List** de **web02** :



Cliquez sur la ligne **web03** et vérifiez que la **Run List** contient **nginx** versions **0.1.0** :



Cliquez sur la ligne **web02** et vérifiez que la **Run List** contient **nginx** versions **0.1.1** :



3.5 - Exécution avec Environnements

Connectez-vous à la VM **web02.i2tch.loc** et devenez l'utilisateur **root** puis exéutez la commande **chef-client** :

```
root@web02:~# chef-client
Starting Chef Infra Client, version 15.17.4
resolving cookbooks for run list: ["nginx"]
Synchronizing Cookbooks:
  - nginx (0.1.1)
Installing Cookbook Gems:
Compiling Cookbooks...
Converging 3 resources
Recipe: nginx::default
* apt_package[nginx] action install
  - install version 1.10.3-1+deb9u4 of package nginx
* service[nginx] action enable (up to date)
* service[nginx] action start (up to date)
* cookbook_file[/var/www/html/index.html] action create
  - create new file /var/www/html/index.html
  - update content in file /var/www/html/index.html from none to bfe461
    --- /var/www/html/index.html      2023-11-04 13:17:29.520612571 +0100
    +++ /var/www/html/.chef-index20231104-5615-1pw0ng9.html      2023-11-04 13:17:29.520612571 +0100
@@ -1 +1,10 @@
+<html>
+  <head>
+    <title>Hello from chef</title>
+  </head>
```

```
+ <body>
+   <h1>This is a nginx server</h1>
+   <p>Happy Development!</p>
+ </body>
+</html>
- change mode from '' to '0644'
```

Running handlers:

Running handlers complete

Chef Infra Client finished, 2/4 resources updated in 19 seconds

[2023-11-04T13:17:29+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 la sortie **Synchronizing Cookbooks**: qui indique la version **nginx (0.1.1)**.

Vérifiez le contenu du fichier **/var/www/html/index.html** :

```
root@web02:~# cat /var/www/html/index.html
<html>
  <head>
    <title>Hello from chef</title>
  </head>
  <body>
    <h1>This is a nginx server</h1>
    <p>Happy Development!</p>
  </body>
</html>
```

Important - Notez que vous êtes dans l'environnement **Dev**.

Connectez-vous à la VM **web03.i2tch.loc** et devenez l'utilisateur **root** puis exécutez la commande **chef-client** :

```
[root@web03 ~]# chef-client
Starting Chef Infra Client, version 15.17.4
resolving cookbooks for run list: ["nginx"]
Synchronizing Cookbooks:
  - nginx (0.1.0)
Installing Cookbook Gems:
Compiling Cookbooks...
Converging 3 resources
Recipe: nginx::default
  * yum_package[nginx] action install (up to date)
  * service[nginx] action enable (up to date)
  * service[nginx] action start (up to date)
  * cookbook_file[/var/www/html/index.html] action create
    - update content in file /var/www/html/index.html from bfe461 to a89b2b
      --- /var/www/html/index.html      2023-11-04 12:40:57.072941692 +0100
      +++ /var/www/html/.chef-index20231104-19702-1kw3xch.html      2023-11-04 12:54:51.404871486 +0100
    @@ -4,7 +4,7 @@
      </head>
      <body>
        <h1>This is a nginx server</h1>
      - <p>Happy Development!</p>
      + <p>Happy Production!</p>
      </body>
    </html>
  - restore selinux security context

Running handlers:
Running handlers complete
Chef Infra Client finished, 1/4 resources updated in 04 seconds
[2023-11-04T12:54:51+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.
```

Important - Notez la sortie **Synchronizing Cookbooks**: qui indique la version **nginx (0.1.0)**.

Vérifiez le contenu du fichier **/var/www/html/index.html** :

```
[root@web03 ~]# cat /var/www/html/index.html
<html>
  <head>
    <title>Hello from chef</title>
  </head>
  <body>
    <h1>This is a nginx server</h1>
    <p>Happy Production!</p>
  </body>
</html>
```

Important - Notez que vous êtes dans l'environnement **Prod.**