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DAYS

WHAT IS CONFIGURATION MANAGEMENT?

configuration management (CM) refers to the process of systematically handling changes to a system in a way that it maintains integrity over time. the term is broadly used to refer to server configuration management.

WHAT ARE CONFIGURATION MANAGEMENT TOOLS ?

Configuration management tools are what make implemententing and enforcing these changes possible.

Ansible

is a radically simple IT automation platform that makes your applications and systems easier to deploy. Avoid writing scripts or custom code to deploy and update your applications

You can use Ansible to execute the same command for a list of servers from the command line. You can also use it to automate tasks using "playbooks" written into a YAML file

Advantages Of Using Ansible are what make ansible unique:

1- Simple: Ansible uses a simple syntax written in YAML called playbooks. YAML is a human-readable data serialization language.

2- Powerful & Flexible: Ansible has powerful features that can enable you to model even the most complex IT workflows.

3- Agentless:Ansible further reduces the effort required for your team to start automating right away.

4- Efficient:No extra software on your servers means more resources for your applications. Also, since Ansible modules work via JSON, Ansible is extensible with modules written in a programming language you already know.:

أنسبل هو أداة أتمتة والأتتمة تعني القيام بالأشياء بطريقة ذاتية حيث تصف المهام اللازم إتمامها لإنجاز المطلوب ويتم ذلك بطريقة آلية دون تدخل . وهي تسهل إدارة عدد كبير جدا من الخوادم ووضعها في الحالة المطلوبة.

يستخدم ssh كما أنه آمن

another tools :

CFEngine

Its primary function is to provide automated configuration and maintenance of large-scale computer systems

Chef

A systems integration framework, built to bring the benefits of configuration management to your entire infrastructure

Puppet

an automated administrative engine for your Linux, Unix, and Windows systems, performs administrative tasks

Salt

Software to automate the management and configuration of any infrastructure or application at scale.

WHY USE CONFIGURATION MANAGEMENT TOOLS?

Configuration management tools enable changes and deployments to be faster, repeatable, scalable, predictable, and able to maintain the desired state, which brings controlled assets into an expected state.

Some advantages of using configuration management tools include:

1- Adherence to coding conventions that make it easier to navigate code .
2- Idempotency, which means that the end state remains the same, no matter how many times the code is executed.
3- Distribution design to improve managing large numbers of remote servers .

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install ansible :

```
marian@marian-VirtualBox:~$ sudo apt-get install software-properties-common
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  python3-dateutil python3-software-properties software-properties-gtk
The following NEW packages will be installed:
  python3-dateutil
The following packages will be upgraded:
  python3-software-properties software-properties-common
  software-properties-gtk
3 upgraded, 1 newly installed, 0 to remove and 411 not upgraded.
Need to get 148 kB of archives.
After this operation, 313 kB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://us.archive.ubuntu.com/ubuntu bionic/main amd64 python3-dateutil all 2.6.1-1 [52.
3 kB]
Get:2 http://us.archive.ubuntu.com/ubuntu bionic-updates/main amd64 software-properties-commo
n all 0.96.24.32.9 [9,992 B]
Get:3 http://us.archive.ubuntu.com/ubuntu bionic-updates/main amd64 software-properties-gtk a
ll 0.96.24.32.9 [62.3 kB]
Get:4 http://us.archive.ubuntu.com/ubuntu bionic-updates/main amd64 python3-software-properti
es all 0.96.24.32.9 [23.8 kB]
Fetched 148 kB in 6s (25.3 kB/s)
^[[A^[[ASelecting previously unselected package python3-dateutil.
(Reading database ... 124935 files and directories currently installed.)
Preparing to unpack .../python3-dateutil_2.6.1-1_all.deb ...
Unpacking python3-dateutil (2.6.1-1) ...
Preparing to unpack .../software-properties-common_0.96.24.32.9_all.deb ...
```

```
marian@marian-VirtualBox:~$ sudo apt-get install ansible
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  ieee-data libpython-stdlib libpython2.7 libpython2.7-minimal libpython2.7-stdlib
  libssl1.1 python python-asn1crypto python-certifi python-cffi-backend python-chardet
  python-crypto python-cryptography python-enum34 python-httplib2 python-idna
  python-ipaddress python-jinja2 python-jmespath python-kerberos python-libcloud
  python-lockfile python-markupsafe python-minimal python-netaddr python-openssl
  python-paramiko python-pkg-resources python-pyasn1 python-requests python-selinux
  python-simplejson python-six python-urllib3 python-xmltodict python-yaml python2.7
  python2.7-minimal
Suggested packages:
  cowsay sshpass python-doc python-tk python-crypto-doc python-cryptography-doc
  python-cryptography-vectors python-enum34-doc python-jinja2-doc python-lockfile-doc
  ipython python-netaddr-docs python-openssl-doc python-openssl-dbg python-gssapi
  python-setuptools python-socks python-ntlm python2.7-doc binfmt-support
Recommended packages:
  python-winrm
The following NEW packages will be installed:
  ansible ieee-data libpython-stdlib python python-asn1crypto python-certifi
  python-cffi-backend python-chardet python-crypto python-cryptography python-enum34
  python-httplib2 python-idna python-ipaddress python-jinja2 python-jmespath
  python-kerberos python-libcloud python-lockfile python-markupsafe python-minimal
  python-netaddr python-openssl python-paramiko python-pkg-resources python-pyasn1
  python-requests python-selinux python-simplejson python-six python-urllib3
  python-xmltodict python-yaml python2.7 python2.7-minimal
```

```
marian@marian-VirtualBox:~$ sudo apt-add-repository ppa:ansible/ansible
 Ansible is a radically simple IT automation platform that makes your applications and system
s easier to deploy. Avoid writing scripts or custom code to deploy and update your applicatio
ns— automate in a language that approaches plain English, using SSH, with no agents to instal
l on remote systems.

http://ansible.com/
 More info: https://launchpad.net/~ansible/+archive/ubuntu/ansible
Press [ENTER] to continue or Ctrl-c to cancel adding it.

Get:1 http://security.ubuntu.com/ubuntu bionic-security InRelease [88.7 kB]
Get:2 http://ppa.launchpad.net/ansible/ansible/ubuntu bionic InRelease [15.9 kB]
Hit:3 http://us.archive.ubuntu.com/ubuntu bionic InRelease
Get:4 http://us.archive.ubuntu.com/ubuntu bionic-updates InRelease [88.7 kB]
Ign:5 http://ppa.launchpad.net/rquillo/ansible/ubuntu bionic InRelease
Err:6 http://ppa.launchpad.net/rquillo/ansible/ubuntu bionic Release
  404  Not Found [IP: 91.189.95.83 80]
Get:7 http://us.archive.ubuntu.com/ubuntu bionic-backports InRelease [74.6 kB]
Get:8 http://ppa.launchpad.net/ansible/ansible/ubuntu bionic/main i386 Packages [528 B]
Get:9 http://ppa.launchpad.net/ansible/ansible/ubuntu bionic/main amd64 Packages [528 B]
Get:10 http://ppa.launchpad.net/ansible/ansible/ubuntu bionic/main Translation-en [344 B]
Reading package lists... Done
E: The repository 'http://ppa.launchpad.net/rquillo/ansible/ubuntu bionic Release' does not h
ave a Release file.
N: Updating from such a repository can't be done securely, and is therefore disabled by defau
lt.
```

```
marian@marian-VirtualBox:~$ ansible  --version
ansible 2.5.1
  config file = /etc/ansible/ansible.cfg
  configured module search path = [u'/home/marian/.ansible/plugins/modules', u'/usr/share/ans
ible/plugins/modules']
  ansible python module location = /usr/lib/python2.7/dist-packages/ansible
  executable location = /usr/bin/ansible
  python version = 2.7.15+ (default, Nov 27 2018, 23:36:35) [GCC 7.3.0]
```

ssh:

```
mariam@mariam-VirtualBox:~$ ssh-keygen
Generating public/private rsa key pair.
Enter file in which to save the key (/home/mariam/.ssh/id_rsa): mariam
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in mariam.
Your public key has been saved in mariam.pub.
The key fingerprint is:
SHA256:MHbINnZhBX9jrMyVcKkNqOex0KnVwvTfv4JM2cfwzBA mariam@mariam-VirtualBox
The key's randomart image is:
+---[RSA 2048]----+
|        ++o ..   |
|     . ooo.+.E   |
|      X=o+.+B .  |
|     +o*Oo+=.+   |
|       *S++.o.B  |
|      . o  o...* |
|          o . .. |
|           o .  .|
|                 |
+----[SHA256]-----+
```

Show Applications

```
mariam@mariam-VirtualBox:~$ sudo apt-get install openssh-server
[sudo] password for mariam:
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  ncurses-term openssh-client openssh-sftp-server ssh-import-id
Suggested packages:
  keychain libpam-ssh monkeysphere ssh-askpass molly-guard rssh
The following NEW packages will be installed:
  ncurses-term openssh-server openssh-sftp-server ssh-import-id
The following packages will be upgraded:
  openssh-client
1 upgraded, 4 newly installed, 0 to remove and 407 not upgraded.
Need to get 1,251 kB of archives.
After this operation, 5,316 kB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://us.archive.ubuntu.com/ubuntu bionic-updates/main amd64 openssh-client a
6p1-4ubuntu0.3 [614 kB]
Get:2 http://us.archive.ubuntu.com/ubuntu bionic-updates/main amd64 ncurses-term all
ntu1.18.04 [248 kB]
Get:3 http://us.archive.ubuntu.com/ubuntu bionic-updates/main amd64 openssh-sftp-ser
 1:7.6p1-4ubuntu0.3 [45.6 kB]
Get:4 http://us.archive.ubuntu.com/ubuntu bionic-updates/main amd64 openssh-server a
6p1-4ubuntu0.3 [333 kB]
Get:5 http://us.archive.ubuntu.com/ubuntu bionic-updates/main amd64 ssh-import-id al
untu1.1 [10.9 kB]
Fetched 1,251 kB in 5s (247 kB/s)
Preconfiguring packages ...
```

```
mariam@mariam-VirtualBox:~$ sudo service ssh status
● ssh.service - OpenBSD Secure Shell server
   Loaded: loaded (/lib/systemd/system/ssh.service; enabled; vendor preset: enabled)
   Active: active (running) since Tue 2019-07-16 16:12:32 EDT; 44s ago
 Main PID: 8006 (sshd)
    Tasks: 1 (limit: 1109)
   CGroup: /system.slice/ssh.service
           └─8006 /usr/sbin/sshd -D
```

```
mariam@mariam-VirtualBox:~$ ssh localhost
The authenticity of host 'localhost (127.0.0.1)' can't be established.
ECDSA key fingerprint is SHA256:EbLixCnT7k+fthpDH1kUwdAC9qyWbocIL5IlVMo+UT8.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added 'localhost' (ECDSA) to the list of known hosts.
mariam@localhost's password:
Welcome to Ubuntu 18.04.2 LTS (GNU/Linux 4.18.0-15-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:     https://landscape.canonical.com
 * Support:        https://ubuntu.com/advantage

 * Canonical Livepatch is available for installation.
   - Reduce system reboots and improve kernel security. Activate at:
     https://ubuntu.com/livepatch

413 packages can be updated.
198 updates are security updates.

Your Hardware Enablement Stack (HWE) is supported until April 2023.

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

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.
```

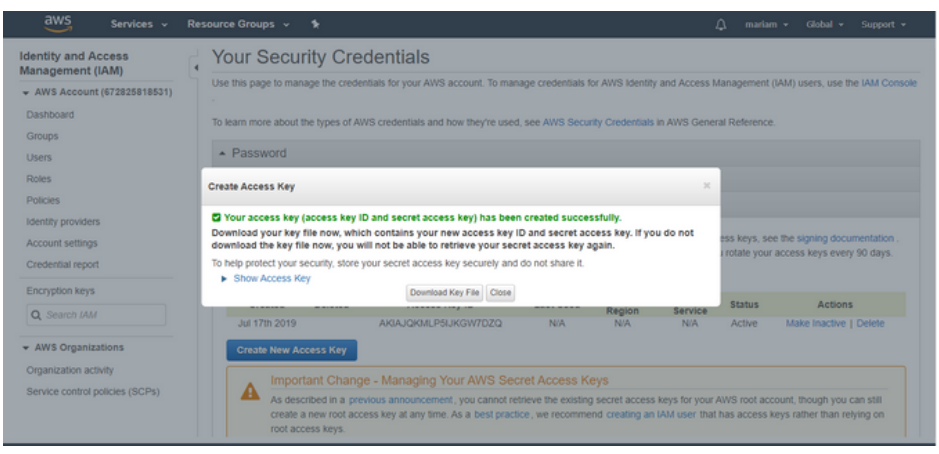
```
mariam@mariam-VirtualBox:~$ ansible localhost -m shell -a id
 [WARNING]: provided hosts list is empty, only localhost is available. Note that the
implicit localhost does not match 'all'

localhost | SUCCESS | rc=0 >>
uid=1000(mariam) gid=1000(mariam) groups=1000(mariam),4(adm),24(cdrom),27(sudo),30(dip),46(pl
ugdev),116(lpadmin),126(sambashare)
```

```
mariam@mariam-VirtualBox:/etc/ansible$ ansible localhost -m ping
localhost | SUCCESS => {
    "changed": false,
    "ping": "pong"
}
```

To launch an ec2 instance using ansible , prerequiste:

AWS account
must have ansible on ubuntu
create access key



I got so many error syntax in yml and another type of error when i tried to setup ec2 aws

try to pip python then boto but no more screen shoots due to many errors

```
mariam@mariam-VirtualBox:~$ sudo apt-get install python-pip
```

```
root@mariam-VirtualBox:/home/mariam# cat .boto
cat: .boto: No such file or directory
root@mariam-VirtualBox:/home/mariam# pip install boto
Collecting boto
  Downloading https://files.pythonhosted.org/packages/23/10/c0b78c27298029e4454a
472a1919bde20cb182dab1662cec7f2ca1dcc523/boto-2.49.0-py2.py3-none-any.whl (1.4MB
)
    100% |                                | 1.4MB 84kB/s
Installing collected packages: boto
```