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Ansible with Semaphore

A brand new honest howto about Ansible with Semaphore.

Tested in a clean installation of CentOS 7.x, must works in RHEL 7.x and Oracle 7.x.

Installation

Check download link of Semaphore from: https://github.com/ansible-semaphore/semaphore/releases and replace <link>

```
$ curl -L
https://dl.fedoraproject.org/pub/epel/epel-release-latest-7.noarch.rpm -o
/tmp/epel-release-latest-7.noarch.rpm
$ sudo yum localinstall /tmp/epel-release-latest-7.noarch.rpm
$ sudo yum update
$ sudo yum install mariadb-server git ansible
$ sudo curl -L <link> -o /usr/bin/semaphore
$ sudo chmod +x /usr/bin/semaphore
$ sudo useradd semaphore
$ sudo passwd semaphore
```

Configure mariadb-server, if you don't have it installed:

```
$ sudo systemctl start mariadb
$ sudo systemctl enable mariadb
$ sudo mysql_secure_installation
$ sudo firewall-cmd --zone=public --add-port=3000/tcp --permanent
$ sudo firewall-cmd --reload
```

As root user create a database, change username and password if you want:

```
$ mysql -u root -p
$ MariaDB [(none)]> create database semaphore;
$ MariaDB [(none)]> grant all privileges on semaphore.* to
semaphore@localhost identified by 'semaphore';
$ MariaDB [(none)]> exit
```

Start and configure the server as semaphore user:

```
$ su - semaphore
$ cd /home/semaphore
$ semaphore -setup
```

The wizard will guide you to configure all data about database and temporal folder, you need to configure /home/semaphore or any folder writable by semaphore user.



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Executing [6/6]	migration	v0.1.0	(at	2017-06-15	19:39:20.7360932	51 -0600	CST)		
Executing [4/4]	migration	v1.6.0	(at	2017-06-15	19:39:20.8184620	7 -0600 0	ST)		
Executing	migration	v1.7.0	(at	2017-06-15	19:39:20.9091459	78 -0600	CST)		
Executing	migration	v1.8.0	(at	2017-06-15	19:39:20.9322264	42 -0600	CST)		
Executing	migration	v1.9.0	(at	2017-06-15	19:39:20.9661220	15 -0600	CST)		
Executing	migration	v2.2.1	(at	2017-06-15	19:39:20.9938258	15 -0600	CST)		
Executing	migration	v2.3.0	(at	2017-06-15	19:39:21.0431561	87 -0600	CST)		
Executing	migration	v2.3.1	(at	2017-06-15	19:39:21.1157896	69 -0600	CST)		
Executing [1/1]	migration	v2.3.2	(at	2017-06-15	19:39:21.1406541	82 -0600	CST)		
> Usernam > Email:	ne: semapho emonge@gbn	ore 1.net							

- > Your name: Esteban Monge
- > Password: semaphore

Now you can start the server:

\$ nohup semaphore -config /home/semaphore/semaphore_config.json &

With this command you can check any issue in configuration. For example:

\$ tail -f /home/semaphore/nohup.out

Last step is the creation of ssh key, as semaphore user, do no use password:

\$ ssh-keygen

Copy /home/semaphore/.ssh/id_rsa in a safe place, you will need the content of this file to get work Ansible.

A classic ¡Hola Mundo!

Login screen





Create a new project

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Cuente	New Project							
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	Project Name	9024						
	dismiss		create					

Project configuration

Click on project name, you will see the Project activity screen:

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Select Key Store option:

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(♦) ③ ▶ 192.168.122.59 3000/project/1/keys			♥ @ Q, Search	公白同	• n • ⊛ ≡
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Dashboard					
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Inventory					
Environment					
Key Store					
Playbook Repositories					
Team					

Select create and put a name and select "SSH Key", copy and paste the content of the file id_rsa that you extract from semaphore user.



Select Environment option:

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Playbook Repositories			
Team			

Select create and put a friendly name and paste a content similar to this:

```
{
"username":"semaphore",
"mgmthost":"192.168.122.59",
"logserver":"192.168.122.59",
"vrfmgmt":"vrf-mgmt"
}
```

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Select Inventory option:

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(€) () P 192.168.122.59 3000/project/1/inventory		✓ C Q, Search	♡ ↓ #	• •	=
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Dashboard					
Task Templates					
inventory					
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Key Store					
Playbook Repositories					
Team					

Select create and put a name, select Static in type and select the previous created SSH Key:



Select edit inventory content and add content similar to this:

192.168.122.76



Repository configuration

You will need a git repository, for example one from www.github.com

Select Playbook Repositories option:

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Deshboard	Name	Git URL	55H Key	
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Inventory				
Environment				
Key Store				
Playbook Repositories				
Team				

Select create repository and put a friendly name, put the URL of the repository and select one SSH Key.

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Repositories - Semaph: * +								
(♠) () ▶ 192.168.122.59 3000/project/1/repositories				V C Q, Search		合自 🖾	• * •	⊜ ≡
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GBM	Repositories	ate Repository						de repository
Dashboard	Name	Name	GBM		SSH Key			
Task Templates		Repository	ub.com/EstebanMonge/ansiblegbm.git					
Inventory		SSH Key	OSR .					
Environment				_				
Key Store	de	striisis		create				
Playbook Repositories								
Team								

Task Templates

Select Task Templates option. You will store all task templates that will execute the automatic tasks in each server defined in the inventory.

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# Templates - Semaphore * +								
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Yask Templates								
inventory								
Environment								
Key Store								
Playbook Repositories								
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Select new template, put a name to the task, in Playbook Name write the exact name of the file in the repository, select SSH Key, Inventory, Playbook Repository and Environment.

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Templates - Semaphore * +										
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semaphore dashboard users										
GBM	Task Templates	New Template								template
Dashboard	Alian Pl	Playbook Alias	Hola Mundo		Environment	Repository				
Task Templates		Playbook Name	HolaMundo.yml							
Inventory		SSH Key*	OSR .							
Environment		inventory*	OSR .							
Key Store		Playbook Repository*	GBM .							
Playbook Repositories		Environment	OSR .							
Team		(*) required fields								
		Estra CLI Arguments dismiss	"MUST" be a JSON array! Each argument must be an dement of the argury, for example [1*] "genyinversity of,"-private- key-vithentid_mail_verv1 @ Override semaphore arguments Dataily semaphore prependia arguments.	create						

Client configuration

In the client create a user named semaphore:

```
$ sudo useradd semaphore
```

```
$ sudo passwd semaphore
```

The client must have Python installed, in our case CentOS, RHEL and Oracle must have installed Python.

You need copy the SSH key to the client server, in our example 192.168.122.76, in the Semaphore server execute:

```
$ su - semaphore
$ ssh-copy-id semaphore@192.168.122.76
```

Write the password.

Execute the task

Select Task Templates option and choose run:

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inventory							
Environment							
Key Store							
Playbook Repositories							
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Select dry run, select this option every time that you create a new Task Template o when you change anything in the git repository.

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Deshboerd		Alias		Optional parameters		Environment	Repository			
Task Templates		Hola Mundo	Playbook Override	Enter playbook name to override templa		OSR	GBM			
Inventory			Environment Override	Override playbook environment,						
Environment				*MUST* be valid JSON						
Key Store										
Playbook Repositories										
Team										
				Debug(-wvvr)						
			darniaa		run curl					

If everything is OK you will get a line similar to this in Task Log screen:

20:34:48: PLAY RECAP ************************************	*******	**********	****
20:34:48: 192.168.122.76 failed=0	: ok=2	changed=0	unreachable=0

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SeMaphore dashboard users			
CRM	TaskLog		new template
Deshboard	Status success User Esteban Monge	Repository	
Task Templates	Started	GBM	
Inventory	Raw output		
Environment	20:34:46: Startad: 6		
Key Store	20:24:44: Run task with teeplate: Hola Hunde		
Playbook Repositories	20:34:44: Updating repuiltory https://github.com/Estabanhanga/unsiblegbs.git 20:34:44: Updating repuiltory https://github.com/Estabanhanga/unsiblegbs.git		
Team	20:34:47: From https://github.com/EstabanHange/anxiblegbm 20:34:47: * branch master -> FETCH_HEAD		
	2013419: direct yet-s-date. 2013447: installing static investory 2013447: installing static investory 2013447: 201347: 20134		
	damas dekra		

Also you can check that in the client server 192.168.122.76 in the directory /tmp a file named testfile.txt:

	root@localhost:/tmp	- 0 😣		
emonge@angello:~\$ ls				
AMDOCS.gan	git	netbeans-8.2		
AMDOCS.mpx	ibm	ownCloud		
Android	id_rsa	Pictures		
android-studio	isos	prueba		
AndroidStudioProjects	libssl1.0.0_1.0.1t-1+deb8u6_amd64.deb	Public		
bin	machote.csv	stkeystore.p12		
Desktop	mail.php	Templates		
Desktop-1	monero-linux-x64-v0.10.3.1.tar.bz2	user		
Documents	monero-v0.10.3.1	Videos		
Downloads	Music	vpnc		
firefoxos	Musica			
emonge@angello:~\$ scite id_rsa				
emonge@angello:~\$ ssh root@192.168.122.76				
root@192.168.122.76's password:				
Last login: Thu Jun 15 20:23:33 2017 from gateway				
[root@localhost ~]# cd /tmp/				
[root@localhost tmp]# cat testfile.txt				
hello world				
[root@localhost tmp]# [

Automatic start with systemd

\$ sudo vi /etc/systemd/system/semaphore.service

Put this content:

```
[Unit]
Description=Semaphore
After=network.target
```

[Service]
User=semaphore
Group=semaphore
ExecStart=/usr/bin/semaphore -config /home/semaphore/semaphore_config.json
Restart=always

[Install]
WantedBy=multi-user.target

Finally start and enable the service:

\$ sudo systemctl start semaphore
\$ sudo systemctl enable semaphore

Configure HTTPs with Apache

```
$ sudo yum install httpd mod_ssl
```

Edit /etc/httpd/conf.d/ssl.conf, add the following code:

```
ProxyPreserveHost On
```

ProxyPass / http://0.0.0.0:3000/ ProxyPassReverse / http://0.0.0.0:3000/ </VirtualHost>

Configure SELinux if you don't have down:

\$ sudo semanage port -a -t http_port_t -p tcp 3000

If you don't have semanage installed:

\$ sudo yum install policycoreutils-python

Enable ports and restart Apache:

```
$ sudo firewall-cmd --zone=public --add-port=443/tcp --permanent
$ sudo firewall-cmd --reload
$ sudo systemctl restart httpd
$ sudo systemctl enable httpd
```

Check the URL, for example: https://192.168.122.59

I recommend remove from firewalld the http port:

```
$ sudo firewall-cmd --zone=public --remove-port=3000/tcp --permanent
$ sudo firewall-cmd --reload
```

Local git repository

```
$ mkdir /home/semaphore/semaphore.git
$ cd /home/semaphore/semaphore.git
$ git --bare init
$ ssh-copy-id semaphore@SERVERNAME
```

In repository put the next address:

semaphore@SERVERNAME:/home/semaphore/semaphore.git

FreeIPA or RedHat IdM

Edit semaphore_config.json, replace:

```
"ldap_enable": true,
    "ldap_binddn": "uid=USER,cn=users,cn=accounts,dc=EXAMPLE,dc=COM",
    "ldap_bindpassword": "PASSWORD",
    "ldap_server": "SERVER:389",
    "ldap_needtls": true,
    "ldap_searchdn": "cn=users,cn=accounts,dc=EXAMPLE,dc=COM",
    "ldap_searchfilter":
    "(&(uid=%s)(member0f=cn=semaphore,cn=groups,cn=accounts,dc=EXAMPLE,dc=COM))"
,
    "ldap_mappings": {
        "dn": "dn",
        "mail": "mail",
        "uid": "uid",
        "cn": "cn"
    },
```

Replace:

- USER = username to connect LDAP
- PASSWORD = password of the USER to connect LDAP
- dc=EXAMPLE,dc=COM = FQDN
- SERVER=hostname or IP of LDAP server
- The users must belong to semaphore group (change if you want)

FreeIPA and RedHat IdM doesn't allow anonymous queries about groups, that is the reason why you need the user for connection.

References

- http://codingbee.net/tutorials/ansible/ansible-example-playbook
- https://github.com/ansible-semaphore/semaphore/wiki/First-Steps
- https://github.com/EstebanMonge/ansiblegbm
- https://techbloc.net/archives/1502
- https://www.digitalocean.com/community/tutorials/how-to-use-apache-as-a-reverse-proxy-withmod_proxy-on-centos-7
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- https://www.digitalocean.com/community/tutorials/how-to-create-an-ssl-certificate-on-apache-fo r-centos-7

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