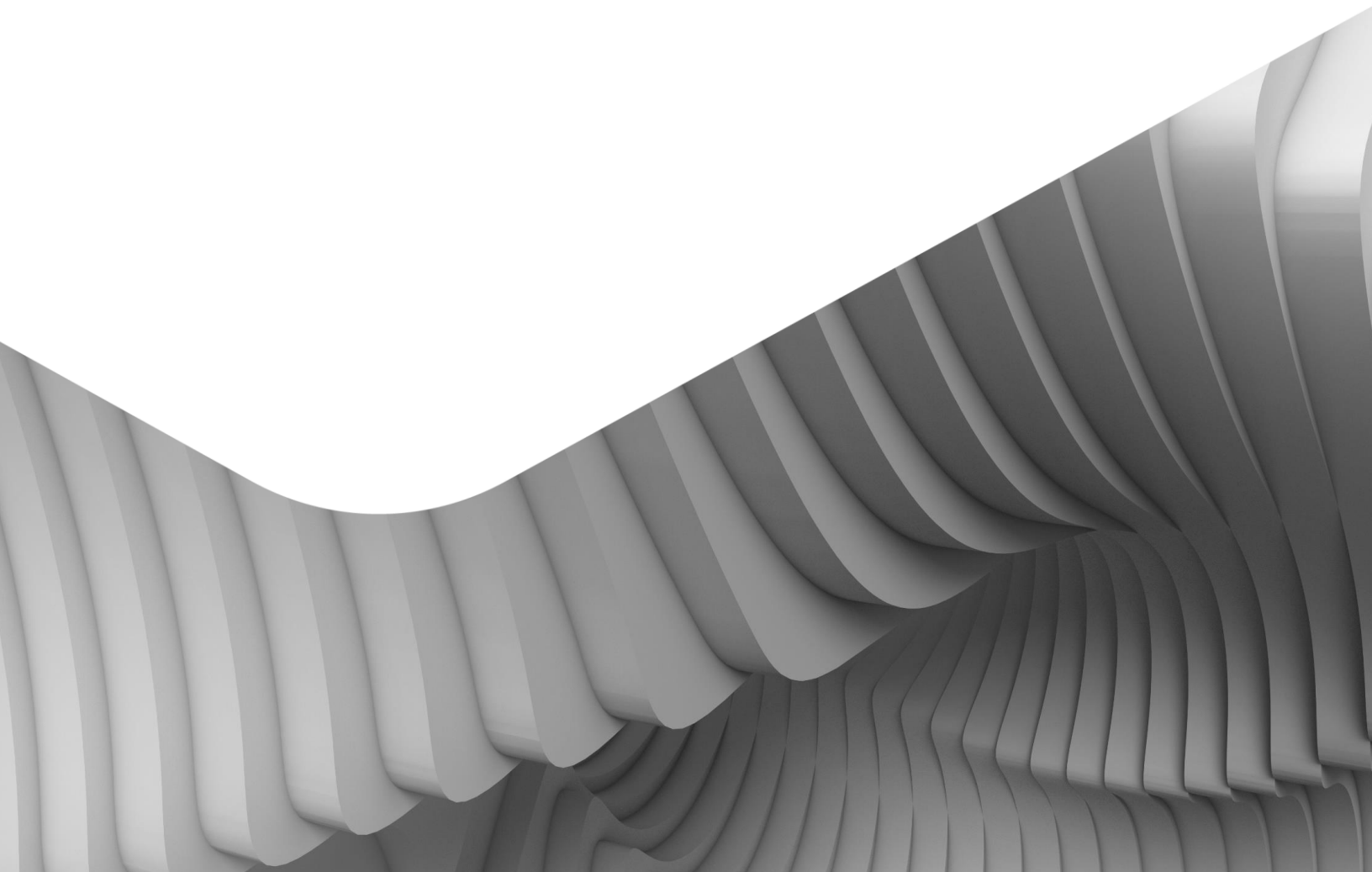
Kemp Ansible Module

Evaluators Guide



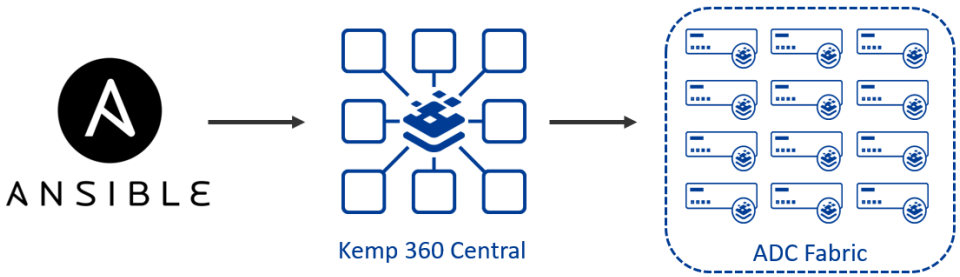
Overview

As organizations continue to grow and operate in more complex environments, the need for automation and configuration management is vital. With so many tools available many organizations are looking at open source solutions, such as Ansible. This getting started guide will provide the necessary set up and configuration to leverage Kemp's Ansible module for LoadMaster.

Requirements

The Ansible module builds off Kemp 360 Central's Configuration Management features. This allows for automation of any LoadMaster being managed through Kemp 360 Central. To utilize the Kemp Ansible Module the following components are required:

1. Kemp 360 Central Instance (Production or Evaluation License)
2. At least one instance of LoadMaster (Production or Evaluation License)
3. A server running a Linux Distribution with Ansible Installed



Prepare the Ansible Server

In this guide, CentOS 7 is the Linux distribution being used but other distributions that support Ansible are also supported.

1. Install Ansible using the following installation guide: https://docs.ansible.com/ansible/latest/installation_guide/intro_installation.html.

```
CentOS Linux 7 (Core)
Kernel 3.10.0-862.el7.x86_64 on an x86_64

localhost login: root
Password:
[root@localhost ~]# sudo yum install ansible
```

2. Install python-requests using the following command:
   sudo yum install python-requests

```
[root@localhost examples]#
[root@localhost examples]# sudo yum install python-requests
```

3. Download the Kemp Ansible Module from kemp.ax and extract it: https://kemp.ax/techpreviews/ansible/

4. Create a directory to store the Kemp Ansible Modules (/home/configuration/, for example). Upload the kemp_ansible folder which includes the library and module_utils directories as well as the examples directory which includes some sample playbooks.

```
[root@localhost configuration]# ls
examples  kemp_ansible
[root@localhost configuration]#
```

5. Modify the System Variables to ensure Ansible is aware of the new Kemp Modules:
   a. Modify **profile** to ensure the variables are set system-wide by typing the following:
   sudo vi /etc/profile

```
[root@localhost configuration]#
[root@localhost configuration]#
[root@localhost configuration]# sudo vi /etc/profile
```

   b. Scroll to the bottom of the file and use insert to modify the file. Enter the following two lines to direct Ansible to the Kemp Modules:

   export ANSIBLE_LIBARARY="/home/configuration/kemp_ansible/library/"
   export ANSIBLE_MODULE_UTILS="/home/configuration/kemp_ansible/module_utils/"

```
unset i
unset -f pathmunge

export ANSIBLE_LIBRARY="/home/configuration/kemp_ansible/library/"
export ANSIBLE_MODULE_UTILS="/home/configuration/kemp_ansible/module_utils/"
```

   c. Hit "Esc" key and then type :wq and enter to save and close the file.

```
unset i
unset -f pathmunge

export ANSIBLE_LIBRARY="/home/configuration/kemp_ansible/library/"
export ANSIBLE_MODULE_UTILS="/home/configuration/kemp_ansible/module_utils/"

:wq
```

   d. Log out of the Ansible Server and back in to apply the variables. Type export to confirm the variables are set:

```
[root@localhost ~]# export
declare -x ANSIBLE_LIBRARY="/home/configuration/kemp_ansible/library/"
declare -x ANSIBLE_MODULE_UTILS="/home/configuration/kemp_ansible/module_utils/"
```

6. Modify the Ansible Host file to allow the scripts to run on the localhost.
    a. Type the following to modify the Host file
    sudo vi /etc/ansible/hosts

```
[root@localhost configuration]#
[root@localhost configuration]# sudo vi /etc/ansible/hosts
```

    b. Scroll the bottom and use insert to modify the host file. Add the following:
    [localhost]
    Ansible Server IP

```
[localhost]
10.10.10.191
```

    c. Hit “Esc” key and then type :wq and enter to save and close the file.

7. Create SSH Keys to allow running of the playbook on the local server
    a. Type following command to generate the necessary keys:
    ssh-keygen

```
[root@localhost ansible]#
[root@localhost ansible]# ssh-keygen
```

    b. Accept the defaults

```
Generating public/private rsa key pair.
Enter file in which to save the key (/root/.ssh/id_rsa):
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /root/.ssh/id_rsa.
Your public key has been saved in /root/.ssh/id_rsa.pub.
The key fingerprint is:
SHA256:JhTgkM22zxJMqI7l7cJl6tnT95mKZUScP8SEbHyInd8 root@localhost.localdomain
The key's randomart image is:
+---[RSA 2048]----+
|  .=...= +.      |
|  oo= .oO+.      |
| . +....+oo.     |
|. . +. . o. E    |
|oo . +. S o      |
|... = o+   .     |
| . = o  o        |
|  +oo .+.  o     |
| .o.....o+       |
+----[SHA256]-----+
[root@localhost ansible]#
```

    c. Type the following command to create the authorized key:
    ssh-copy-id -I ~/.ssh/id_rsa root@10.10.10.191

```
[root@localhost .ssh]#
[root@localhost .ssh]# ssh-copy-id -i ~/.ssh/id_rsa root@10.10.10.191
/usr/bin/ssh-copy-id: INFO: Source of key(s) to be installed: "/root/.ssh/id_rsa.pub"
/usr/bin/ssh-copy-id: INFO: attempting to log in with the new key(s), to filter out any that are already installed
/usr/bin/ssh-copy-id: INFO: 1 key(s) remain to be installed -- if you are prompted now it is to install the new keys
root@10.10.10.191's password:

Number of key(s) added: 1

Now try logging into the machine, with:   "ssh 'root@10.10.10.191'"
and check to make sure that only the key(s) you wanted were added.

[root@localhost .ssh]#
```

Run the Ansible-Playbook

Now that the Ansible Server has been prepared, the sample playbook can be modified to automation the configuration of a LoadMaster.

The following modules have been developed to allow for service configurations:

- Virtual Service
- Sub Virtual Service (SubVS)
- Real Server
- Upload Certificate
- Add Header Rule
- Delete Header Rule
- Replace Body Rule
- Replace Header Rule
- Match Content Rule
- Modify URL Rule

1. The API Key from Kemp 360 Central is required to authenticate and run the Ansible Playbooks. Copy the following command into the Ansible Server to obtain the API Key:

curl -k -X POST -d '{"username":"Username","password":"Password"}' https://Kemp360CentralIPAddress/api/v1/user/authenticate/

Example:

curl -k -X POST -d '{"username":"admin","password":"Ansible4Demo"}' https://10.10.10.213/api/v1/user/authenticate/

```
[root@localhost examples]# curl -k -X POST -d '{"username":"admin","password":"Ansible4Demo"}'
 https://10.10.10.213/api/v1/user/authenticate/
{"apikey": "11d83bd5b384e032c90fbeaf3f26654db12d6fd4", "id": 1, "success": true}[root@localhos
t examples]#
```

2. Modify the Playbook and enter the required vars:
   a) Navigate to the examples directory /home/configuration/examples
   b) Use vi to edit one of the example playbooks:
   sudo vi smallConfig.yml

```
[root@localhost ~]# cd /home/configuration/examples/
[root@localhost examples]# sudo vi smallConfig.yml
```

c) Click “Insert” key and provide the following information:
- Kemp 360 Central IP Address
- Kemp 360 Central Username
- Kemp 360 Central API key
- LoadMaster Address and port
- IP address for the Virtual Service
- Port for the Virtual Service
- Protocol for the Virtual Service
- Real Server IP address

```
- name: Create a small configuration for LoadMaster
  hosts: localhost

  vars:
    central_address: 10.10.10.213
    central_username: Admin2
    central_api_key: 15682b8e368975cccc001c2cf92d22306c951c66
    lm_address: 192.168.10.40:443
    ip: 192.168.10.40
    port: 443
    prot: 'tcp'
    rs_ip: 192.168.10.122
```

d) Hit “Esc” Key, type :wq and click Enter

3. Run the Playbook with the following command:
ansible-playbook smallConfig.yml

```
PLAY [Create a small configuration for LoadMaster] ********************************

TASK [Gathering Facts] *************************************************************
ok: [10.10.10.191]

TASK [Create Virtual Service Pathos on LM] *****************************************
changed: [10.10.10.191]

TASK [Create 10 real servers in sequence] ******************************************
changed: [10.10.10.191] => (item=8000)
changed: [10.10.10.191] => (item=8001)
changed: [10.10.10.191] => (item=8002)
changed: [10.10.10.191] => (item=8003)
changed: [10.10.10.191] => (item=8004)
changed: [10.10.10.191] => (item=8005)
changed: [10.10.10.191] => (item=8006)
changed: [10.10.10.191] => (item=8007)
changed: [10.10.10.191] => (item=8008)
changed: [10.10.10.191] => (item=8009)
changed: [10.10.10.191] => (item=8010)

PLAY RECAP *************************************************************************
10.10.10.191               : ok=3    changed=2    unreachable=0    failed=0

[root@localhost examples]#
```