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How to Use Ansible Vault in Playbooks to Protect Sensitive Data – Part 10

James Kiarie | Last Updated: December 23, 2019 | Read Time: 3 mins | Ansible | Leave a comment

As you go about using [Ansible](#), you may be required to key in some confidential or secret information in playbooks. This includes SSH private and public keys, passwords, and SSL certificates to mention just a few. As we already know, its bad practice to save this sensitive information in plain text for obvious reasons. This information requires to be kept under lock and key because we can only imagine what would happen if hackers or unauthorized users got a hold of it.

Thankfully, Ansible provides us with a handy feature known as Ansible Vault. As the name suggests, the Ansible Vault helps secure vital secret information as we have discussed earlier. Ansible Vault can encrypt variables, or even entire files and YAML playbooks as we shall later demonstrate. It's a very handy and user-friendly tool that requires the same password when encrypting and decrypting files.

Let's now dive in and have an overview of the various operations that can be carried out using Ansible vault.

How to Create an Encrypted File in Ansible

If you want to create an encrypted Playbook file simply use the ansible-vault create command and provide the filename as shown.

```
# ansible-vault create filename
```

For example, to create an encrypted file mysecrets.yml execute the command.

```
# ansible-vault create mysecrets.yml
```

You will thereafter be prompted for a password, and after confirming it, a new window will open using the [vi editor](#) where you can begin writing your plays.

```
[root@rhel-8 ~]#
[root@rhel-8 ~]# ansible-vault create mysecrets.yml
New Vault password:
Confirm New Vault password:
```

Create an Encrypted File in Ansible

Below is a sample of some information. Once you are done simply save and exit the playbook. And that's just about it when creating an encrypted file.

```
This is very confidential information.

~
~
~
~
~
~
~
```

Encrypted File in Ansible

To verify the file encryption, use the [cat command](#) as shown.

```
# cat mysecrets.yml
```

```
[root@rhel-8 ~]#
[root@rhel-8 ~]# cat mysecrets.yml
$ANSIBLE_VAULT;1.1;AES256
30633536343539366653535396165653654393434393635376563303634623973830336334643861
35306162333366353966353030363061616633343639623439a353039663534643362333534613661
656264623433633034373233373938656636323262343731353934393736386239333830303936433
653863303839663733a0a313033336386534356131376231336630373434636561366313336166346 2
356135363939663532333534633632643036313632376263646663636162614333737336165383 8
35393763339643135376533337656263386539323532373339 3837
[root@rhel-8 ~]#
```

Verify Encrypted File in Ansible

How to View an Encrypted File in Ansible

If you want to view an encrypted file, simply pass the ansible-vault view command as shown below.

```
# ansible-vault view mysecrets.yml
```

Once again, you will be prompted for a password. Once again, you will have access to your information.

```
[root@rhel-8 ~]#
[root@rhel-8 ~]# ansible-vault view mysecrets.yml
Vault password:
This is very confidential information.
```

View Encrypted File in Ansible

How to Edit an Encrypted File in Ansible

To make changes to an encrypted file use the ansible-vault edit command as shown.

```
# ansible-vault edit mysecrets.yml
```

As always, provide the password and thereafter proceed editing the file.

```
[root@rhel-8 ~]#
[root@rhel-8 ~]# ansible-vault edit mysecrets.yml
Vault password:
[root@rhel-8 ~]#
```

Edit Encrypted File in Ansible

After you are done editing, save and exit the vim editor.

How to Change Ansible Vault Password

In case you feel the need to change the Ansible vault password, you can easily do so using the **ansible-vault rekey** command as shown below.

```
# ansible-vault rekey mysecrets.yml
```


Change Ansible Vault Password

This prompts you for the vault password and later requests you to enter the new password and later confirm it.

How to Encrypt an Unencrypted File in Ansible

Suppose you want to encrypt an unencrypted file, you can do so by running the **ansible-vault encrypt** command as shown.

```
# ansible-vault encrypt classified.txt
```


Encrypt an Unencrypted File

You can later view the file using the [cat command](#) as indicated below.

View Encrypted File

How to Decrypt an Encrypted File

To view the contents of an encrypted file, simply decrypt the file using the ansible-vault encrypt as illustrated in the example below.

```
# ansible-vault decrypt classified.txt
```


Decrypt an Encrypted File

How to Encrypt Specific Variables in Ansible

Additionally, Ansible vault grants you the ability to encrypt certain variables. This is done using the ansible-vault encrypt_string command as shown.

```
# ansible-vault encrypt_string
```

```
[root@rhel-8 ~]#
[root@rhel-8 ~]# ansible-vault encrypt_string
New Vault password:
Confirm New Vault password:
Reading plaintext input from stdin. (ctrl-d to end input)
secret_key
!vault |
        $ANSIBLE_VAULT;1.1;AES256
        643463333764663839643265663336313961353333338663131666537356631343566656439326166
        643766633365326233613236353539366161653134333234 0a37363333663646632343031663034 30
        303638373330343031636564373564734653330323639633363635666431303938366336656332 32
        3961396562646465380a386462353137666566637623434386134333366231626362262653065393564
        3933
Encryption successful
```

Ansible vault will prompt you for the password and later require you to confirm it. Next, type the string value that you want to encrypt. Finally, press `ctrl + d`. Thereafter, you can begin assigning the encrypted value in a playbook.

This can be achieved in a single line as shown below.

```
# ansible-vault encrypt_string 'string' --name 'variable_name'
```

```
[root@rhel-8 ~]#
[root@rhel-8 ~]# ansible-vault encrypt_string 'My_secret_key' --name 'password'
New Vault password:
Confirm New Vault password:
password: !vault |
        $ANSIBLE_VAULT;1.1;AES256
        383736666264616232316630356137363431363431323838431653962626563646631633264303665
        346331636332663630363336365653066356264353535635360a35336638732633633366539323335
        333964323963331363335333536663862303766653139646432626665616235633367643237643539
        3834396465623835620a363633613263330961376563393538303738303333536386331643138373 5
        3663
Encryption successful
[root@rhel-8 ~]#
```

How to Decrypt a Playbook File During Runtime

If you have a playbook file and want to decrypt it during runtime, use the `--ask-vault-pass` option as illustrated.

```
# ansible-playbook deploy.yml --ask-vault-pass
```

```
[root@rhel-8 ~]#
[root@rhel-8 ~]# ansible-playbook deploy.yml --ask-vault-pass
Vault password:
```

Decrypt Playbook File During Runtime

This decrypts all the files that are used in the playbook provided that they were encrypted using the same password.

The password prompts can be annoying at times. These prompts make automation untenable, especially when automation is key. To streamline the process of decrypting playbooks during runtime, it's recommended to have a separate password file that contains the Ansible vault password. This file can then be passed during runtime as shown.

```
# ansible-playbook deploy.yml --vault-password-file  /home/tecmint/vault_pa
```

This brings us to the conclusion of this topic and the [Ansible automation series](#). We hope that the tutorials have infused some useful knowledge on how you can automate tasks across multiple servers from one central system.

🏷 [Ansible Exam Guide](#), [Ansible Tips](#)

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