# Encrypting Ansible secrets with SOPS

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# Roadmap

- Unrelated things
- 2 What is SOPS?
- 3 How does it compare to Ansible Vault?
- 4 Using SOPS with community.sops

## Who am I?

## Felix Fontein ('feːliks 'fɔntaɪ̯n)

• Ofelixfontein felixfontein:matrix.org (Matrix)

#### Ansible contributor

- (co-)maintainer of several community collections
  - → among them community.sops
- co-maintainer of antsibull tools
- member of Ansible Community Steering Committee

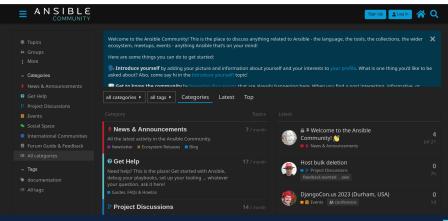
#### SOPS contributor

co-maintainer of SOPS (for 3 weeks by now)

### Ansible Forum

Officially available since September 11th:

# forum.ansible.com



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  - values and comments are encrypted.

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  - values and comments are encrypted.
- Multiple identities can have access
  - GPG, Age, AWS KMS, Google Cloud KMS, Azure Key Vault, Hashicorp Vault
  - supports Shamir's Secret Sharing (need access to multiple identities to decrypt)

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- Effectively unmaintained since June 2022
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- May 2023: CNCF sandbox application accepted!
- August 25th: 3.8.0-rc.1 pre-release

# Quick demo!

- Contents:
  - .sops.yaml config
  - example.sops.yaml file

#### **SOPS**

asymmetric crypto

## Ansible Vault

• symmetric crypto

## Other service (via plugin)

• "trust by contract"

 $\begin{array}{c} \mathsf{HashiVault}, \; \mathsf{BitWarden}, \; \longrightarrow \\ \mathsf{OnePasword}, \; \dots \end{array}$ 

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## Ansible community.sops collection: roles and playbooks

#### Roles

• community.sops.install

#### **Playbooks**

- community.sops.install
- community.sops.install\_localhost
  - → Useful for setting up Execution Environments

- Documentation on docs.ansible.com
- Vars plugin: community.sops.sops
- Action plugin: community.sops.load\_vars
- Lookup: community.sops.sops
- Filter: community.sops.decrypt
- Module: community.sops.sops\_encrypt

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#### Vars plugin community.sops.sops

Load encrypted files directly from host\_vars and group\_vars as \(\infty\) variables.

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## Action plugin community.sops.load\_vars

Load encrypted file similar to ansible.builtin.include\_vars as \( \int \) facts. Caveat: interpolation must be done at load time.

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## Lookup community.sops.sops

```
Load encrypted file from disk:
lookup('community.sops.sops', '/path/to/file').
```

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## Filter community.sops.decrypt

```
Decrypt data in Jinja2 expressions:
encrypted_data | community.sops.decrypt.
```

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## Module community.sops.sops\_encrypt

Encrypt data with SOPS, for example output of another task:  $community.crypto.openssl_privatekey_pipe \rightarrow$ community.sops.sops\_encrypt

# Load encrypted data files as variables

```
- hosts: webserver
1
      vars_files:
2
        - data/letsencrypt.yml
3
      pre_tasks:
4
        - name: Load encrypted credentials
5
          community.sops.load_vars:
6
            file: keys/credentials.sops.yml
7
            expressions: ignore # or: evaluate-on-load
8
          tags: always
9
          no_log: true
10
      roles:
11
12
```

#### Note

Expressions must be evaluated on load time ( $\neq$  include\_vars).

# Create or update SOPS encrypted private key

```
- block:
1
     - community.crypto.openssl_privatekey_pipe:
2
        content: "{{lookup('community.sops.sops',
3
         'keys/private_key.pem.sops',
4
         empty_on_not_exist=true) | default(omit, true) }} "
5
       no_log: true
6
       register: private_key_temp
7
8
     - community.sops.sops_encrypt:
9
        path: keys/private_key.pem.sops
10
        content_text: "{{ private_key_temp.privatekey}}"
11
       when: private_key_temp.changed
12
13
     always:
14
     - ansible.builtin.set_fact:
15
        private_key_temp:
16
```

Questions? Comments?

Link to demo repository