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# How to Manage Secrets in Apache Airflow 2.0

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So Where Should Secrets Be Kept?

Best Practices

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# What Are Airflow Secrets?

**Secrets** are sensitive information  
that are used as part of your **DAG**.

Types of Secrets:

- **Variables** are a generic way to

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webinar below on the best practices for Secrets Management in **Airflow 2.0**. You can also use these **example DAGs** from the webinar.

Secrets Management in Airfl...



## Where Are All the Secrets?

### Environment variables

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## Airflow Metastore DB

- Can be accessed from the Airflow UI, CLI, or API.
- Adding Connections with these does the URL-encoding and URI formatting for you.
- Encrypted with Fernet key in the DB.
- Lives and dies with the Airflow Metastore DB.
- Can be exported and imported easily.
- Probably won't be approved by many security teams in production.

```
> curl -X POST "https://<airflow-host>/api/v1/variables" -H "accept: application/json" -H "Content-Type: application/json" -d '{"key": "from_api", "value": "true"}'
```



```
login: admin
password: admin
port: null
schema: ''
string:
  conn_type: string
  description: null
  extra: string
  host: string
  login: string
  password: string
  port: 0
  schema: string
```

## Alternative Secrets Backend

- HashiCorp Vault
- GCP Secret Manager
- AWS Secrets Manager



deployments.

- Can be managed, rotated, versioned, and audited easily.
- Flexibility to choose what combination of Secret types you use with the backend (new in 2.0).

## GCP Workload Identity & AWS IAM Roles

IAM Integration allows you to connect to cloud resources implicitly with Service Accounts.

- **Secure:** No one needs to touch the Service Accounts.
- **Flexible:** Cloud Service Accounts

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# So Where Should Secrets Be Kept?

- Cloud Resources should use Workload Identity / AWS IAM Roles when possible.
- Connections and sensitive Variables should be stored in an Alternative Secrets Backend.
- Variables depend on development and security patterns.
- Ideally use an Alternative Secrets Backend whenever possible.

Use Airflow Metadata DB if you...

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better for other things.

- Do not pass sensitive information around when possible.
- Have a strategy for how to manage your Secrets and controlling access.
- Use the right combination of Secrets Backends.
- Sensitive information should be in an Alternative Backend or integrated with IAM Roles.

This repo contains an **example DAG and configurations** that were used in an Astronomer webinar on Secrets Management with Airflow 2.0.

The easiest way to get started with Apache Airflow 2.0 is by using the



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