

Using the Vault Agent



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Overview



Integration challenges

Vault Agent capabilities

Agent setup and configuration



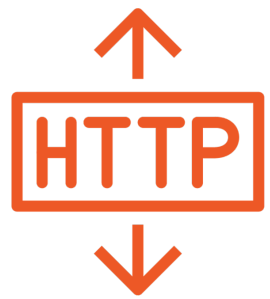
Application Integration



Integration Options



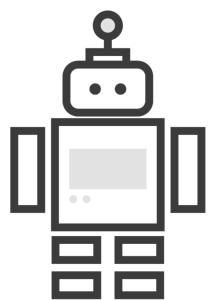
Use an existing library



Write your own HTTP client



Script with the Vault binary



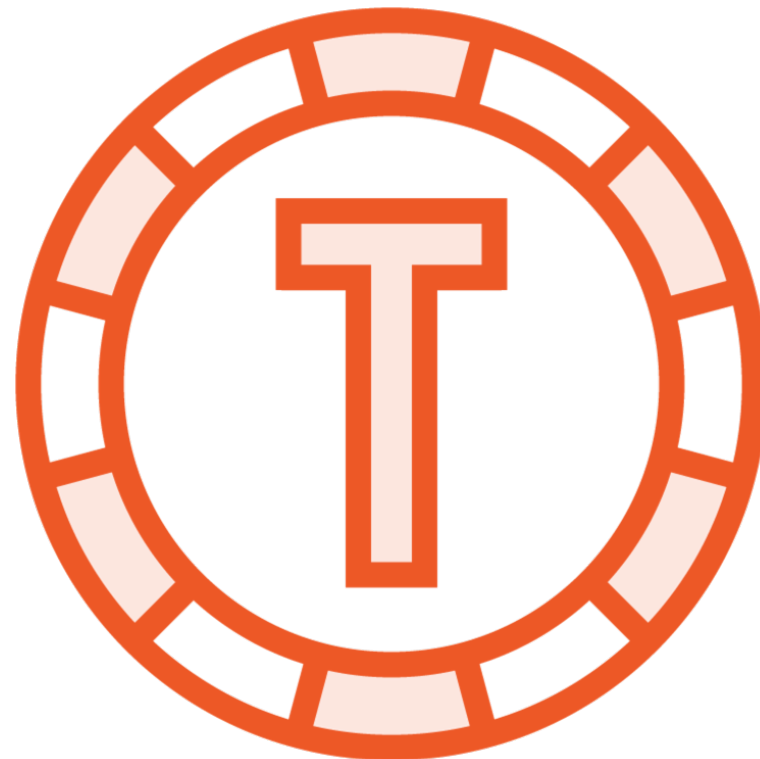
Use the Vault Agent



Integration Challenges



**Handling
authentication**



**Managing tokens and
leases**



**Secret storage and
renewal**

Vault Agent

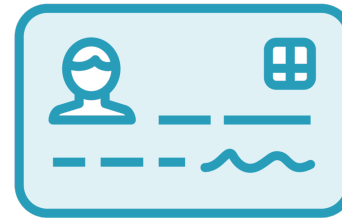
Part of Vault binary

Run as daemon or service

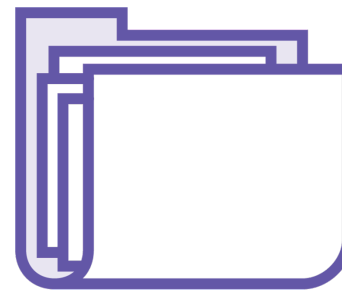
Config file in HCL

Vault server address

Listener stanza



Auto-auth



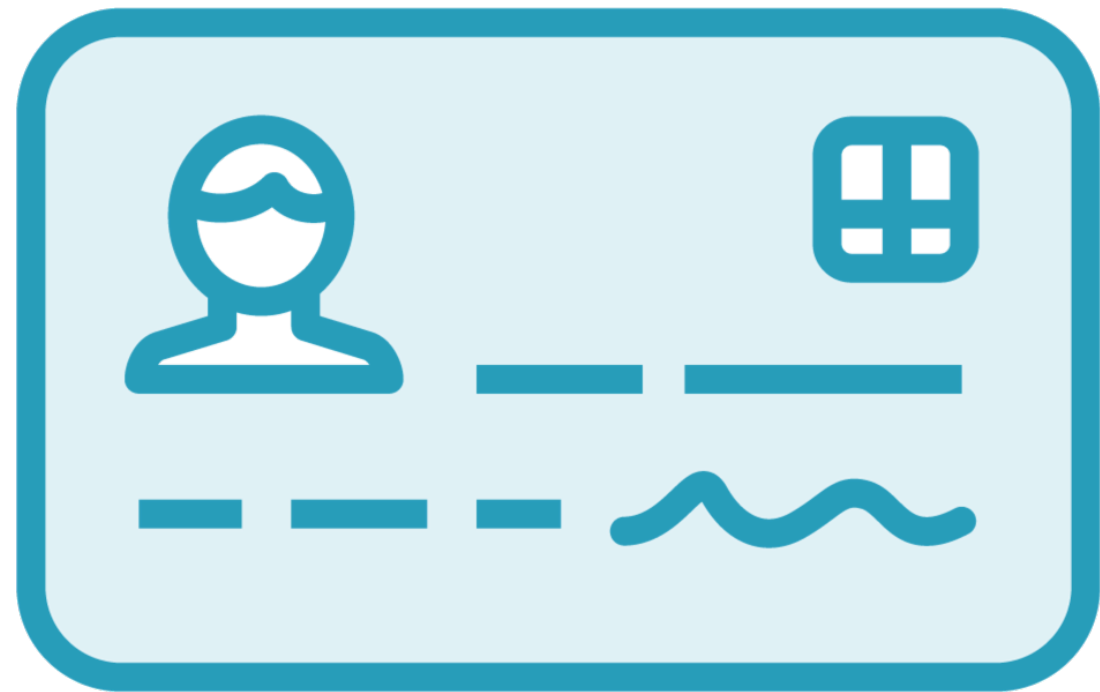
Caching



Templates



Auto-Auth



Composed of method and sink

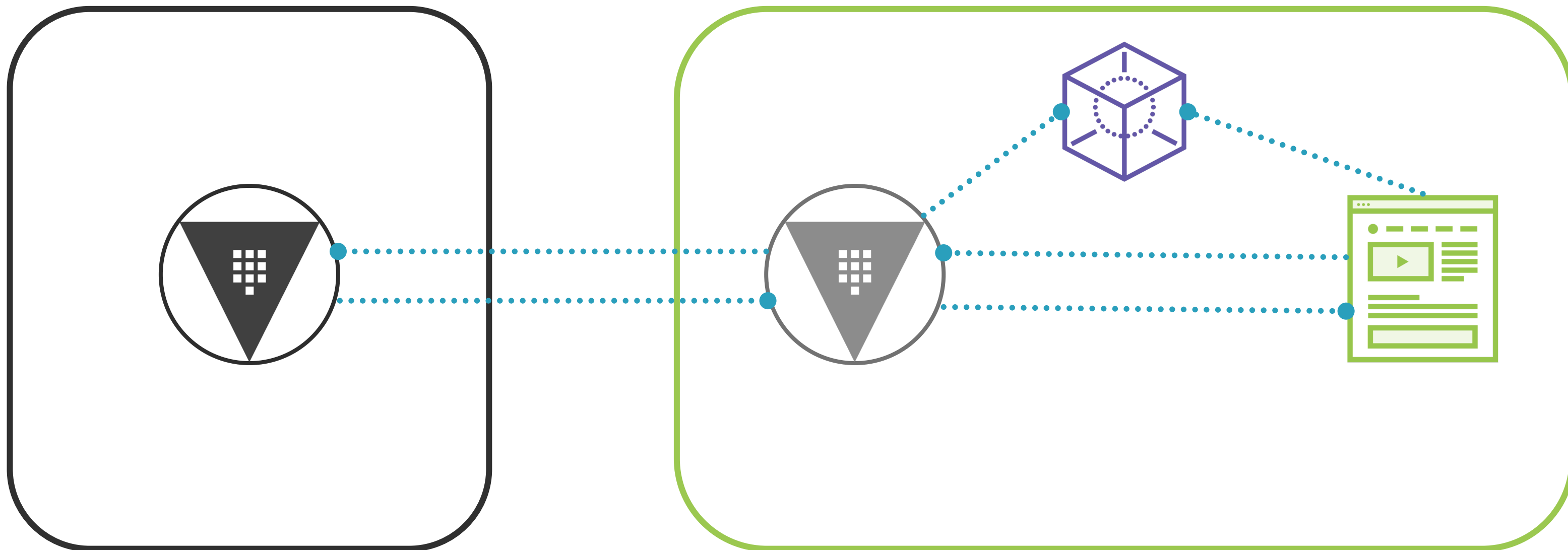
Authenticates using the method

Store token using the sink

Renews token when possible

Token can be response-wrapped and/or encrypted

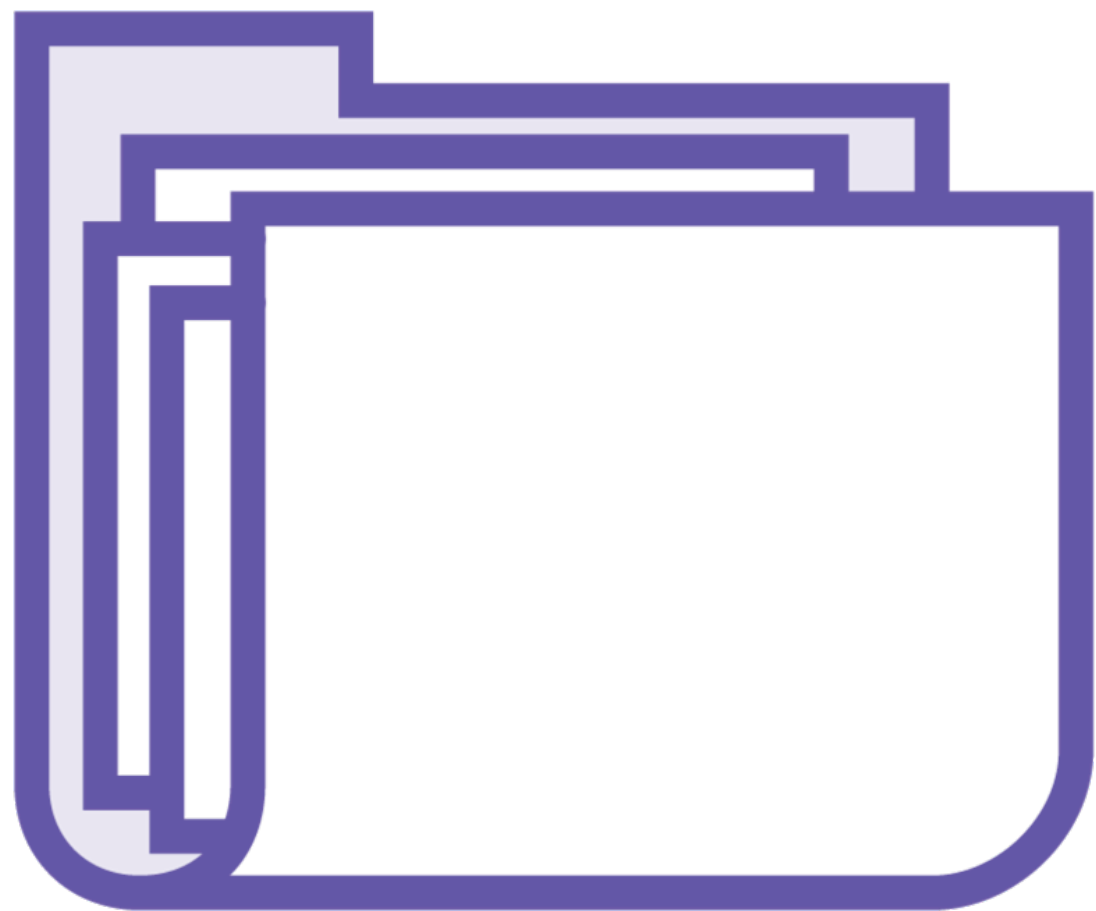
Vault Agent Auth Flow



Vault-agent.hcl

```
auth_auth {  
  method "name" {  
    mount_path = "path/to/auth_method"  
    config = {}  
  }  
  sink "file" {  
    config = {}  
  }  
}
```

Secrets Caching



Cache tokens and secrets

Requests must use Vault Agent

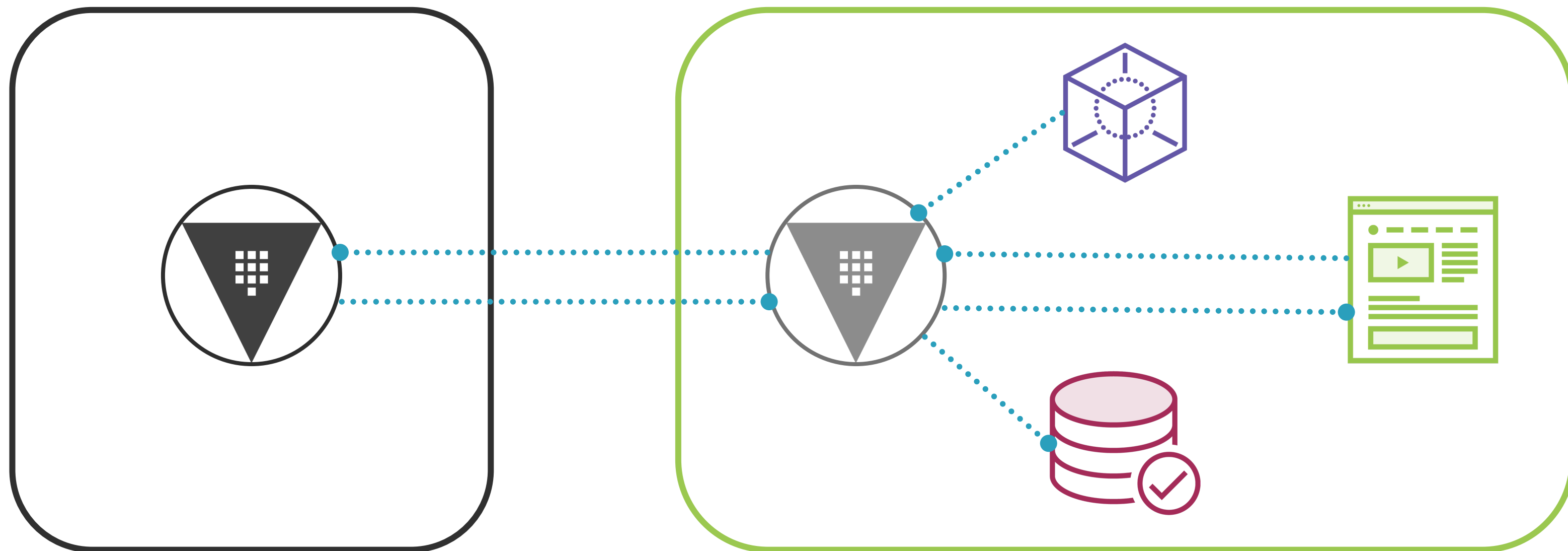
Improve performance with local cache

Works with auto-auth to skip authentication

Renews secrets and tokens when possible



Vault Agent Cache Flow



Vault-agent.hcl

```
cache {  
    use_auto_auth_token = true  
}
```

```
listener "tcp" {  
    address = "127.0.0.1:8100"  
    tls_disable = true  
}
```

Template



Uses Consul template markup

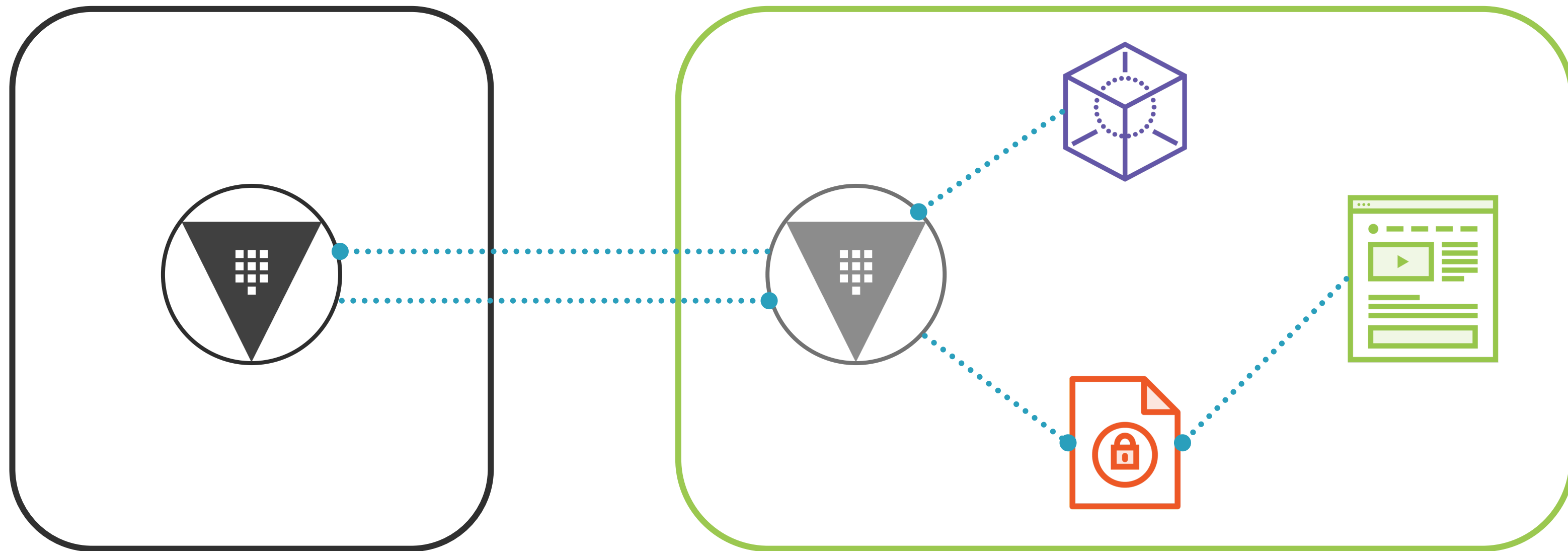
Renders secrets to files

Set permissions on files

Run an arbitrary command

- Create an environment variable**
- Update the application**

Vault Agent Template Flow



Vault-agent.hcl

```
template {  
    source = "template.ctmpl"  
    destination = "render.txt"  
    perm = "640"  
}
```

Globomantics Scenario



Use Case

- Integrate Vault with finance application
- No access to finance app source code
- Finance app can read files for secrets

Solution

- Add the Vault Agent to finance app server
- Configure auto-auth and caching
- Configure template to write secrets to files

Demo

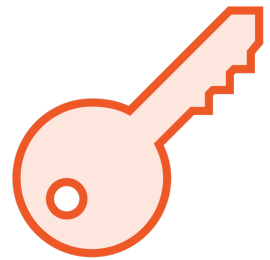


Tasks:

- Review Agent configuration
- Add value to K/V engine
- Start Vault Agent and check results



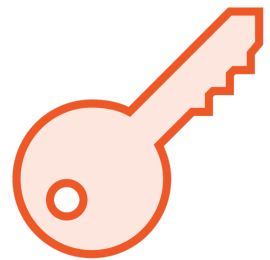
Key Takeaways



Vault Agent assists with application integration and secrets caching.



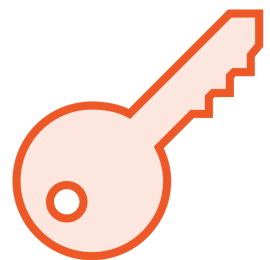
Client requests must go through the Vault Agent.



Auto-auth allows the Agent to handle Vault authentication and token renewal for the client.



Caching allows the Agent to improve performance by serving secrets locally and manage renewal for the client.



Templates enable the extraction of secrets to a file without client interaction.



Up Next: Course Review and Exam Prep Tips

