

Encryption as a Service with the Vault Transit Secrets Engine

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Stop Storing Data in Plaintext!

Vault and Transit make it super easy to encrypt data.

About Me



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I'm a consultant at Arctiq Inc. out of Toronto, Canada. I focus on enabling customers with HashiCorp tooling, specifically Terraform, Vault and Consul. I also spend a lot of time in the microservices space working with all things Kubernetes.

Transit Secrets Engine Overview



- Handles cryptographic functions on data in-transit
- Vault does not store the data it encrypts
- Primary use case for **Transit** is to encrypt data from applications while storing that data in some primary datastore
- Transit can sign and verify cryptographic signatures

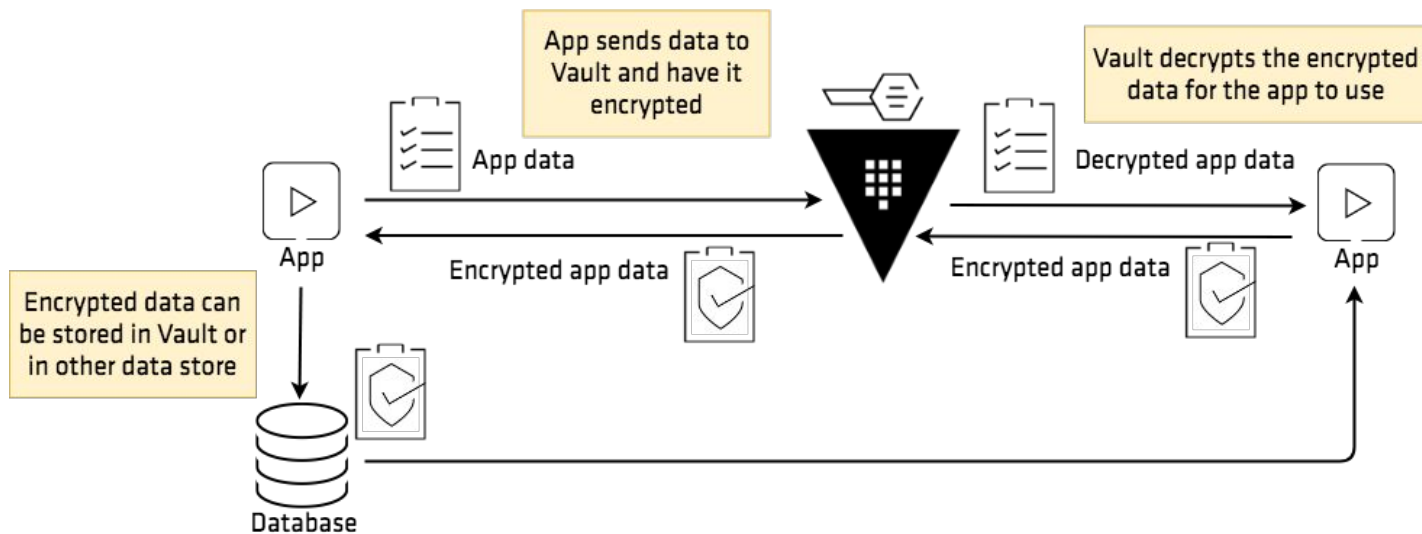


Convergent Encryption

Use Transit to generate the same ciphertext based on plaintext and a context.

The screenshot shows the Google Cloud console interface for creating an encryption key. The breadcrumb navigation at the top indicates the path: < transit < convergent-key. The main heading is "Create encryption key". Below this, there are two input fields: "Name" with the value "convergent-key" and "Type" with the value "aes256-gcm96". There are three checkboxes: "Exportable" (unchecked), "Derived" (checked), and "Enable convergent encryption" (checked and highlighted with a red border). At the bottom, there are two buttons: "Create encryption key" (blue) and "Cancel" (grey).

Transit Encryption Workflow





Enable Transit

Enabling the Secrets Engine and setting up an encryption key is simple.

```

$ vault secrets enable transit
Success! Enabled the transit secrets engine at:
transit/

$ vault write transit/keys/demo-key type=aes256-gcm96
Success! Data written to: transit/keys/demo-key

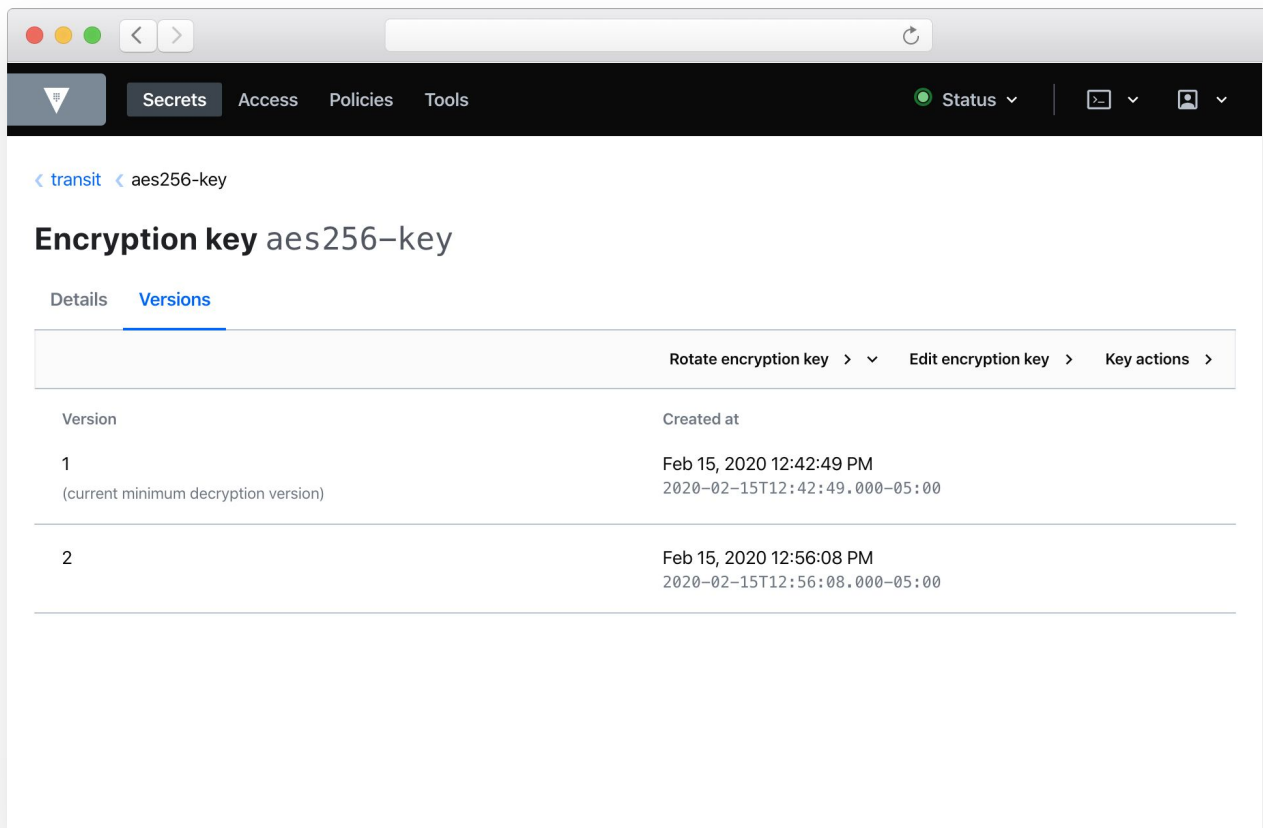
$ vault write transit/encrypt/demo-key \
  plaintext=$(base64 <<< "my secret data")

Key          Value
---          -
ciphertext
vault:v1:zltup9jDYN6vf2Pqfdff3dfdf7dg2...
```



Transit in the UI

A look at the encryption key in the Vault UI.





Demo!