# Getting Started with HashiCorp Consul

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**Objective 4: Access the Consul key/ value (KV)**

## Objective 4a: Understand the capabilities and limitations of the KV store

- what is the KV store
  - distributed architecture - replicated across all server nodes
  - used to store arbitrary data in Consul
  - not a database/datastore
  - often used to store runtime configs
  - limitations
    - no restrictions on type of object stored
    - limit of 512KB object size
  - accesible from any agent
  - always enabled in Consul
- organizing data
  - common to use / to organize data
  - does not have a directory structure
  - / is treated like any other character
- backups
  - consul snapshot save
  - consul snapshot agent
- data security
  - data is NOT encrypted
  - store only non-sensitive data → use Vault instead
- organization (structure)

## Objective 4b: Interact with the KV store using both the Consul CLI and UI

- access via the CLI
  - commands to add data
  - commands to retrieve data
- access via the API → base64 encoded
- access via the UI
- limit access to KV with ACLs

## Objective 4c: Monitor KV changes using watch

- monitor values for updates
  - take action
  - alert
- data updates cause a watch to trigger a handler
  - run an executable
  - call to an API endpoint
- changes supported
  - key
  - keyprefix
  - nodes
  - etc
- configure using the CLI or API
- built-in to Consul
  - doesn't need additional binary
  - no additional configuration
- data returned
  - returns updated data
  - returns any additional matching entries
- consul watch CLI command

## Objective 4d: Monitor KV changes using envconsul and consul-template

- separate binary for each
- use cases
  - application integration
  - populate a templated file
    - populate with KV data
    - populate with data from a registered service
  - set values for environment variables