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Europe 2019

Merging Quickly in a Cloud Native World

Lucas Roesler

We all hate waiting



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#15 opened 28 days ago by LucasRoesler

Plan



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How can we make this faster?



How can we make this faster?

- What I've learned
 - contributing to OpenFaaS
 - maintaining OpenFaaS
- What we/community are doing to make contributing easier & faster

Plan



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How can we make this faster?

- What I've learned
 - contributing to OpenFaaS
 - maintaining OpenFaaS
- What we/community are doing to make contributing easier & faster



Lessons Learned



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As a contributor:

- *Communicate with the team*
 - work on known issues, say hi on slack/chat, *remind people*
- *Make contributions approachable*
 - small changes are better changes
 - better commit messages
 - write tests

Sometimes, Hard Learned



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- *Make contributions approachable:*
 - small changes are better changes



kenfdev left a comment

Member + 🗨️ ⋮

Thank you Lucas! The formatting is pretty crucial for people to easily contribute but it was quite hard to find where you changed the code (I looked at the specific [commit](#)).

I'm assuming it was the following line:

<https://github.com/openfaas/faas/pull/996/files#diff-5295f7f0080732c0f900cd58ac2c76f8R206>

Sometimes, Hard Learned



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Sometimes, Hard Learned



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- *Make contributions approachable:*
 - small changes are better changes
 - Your best friend(s):

```
git add -p
```

and/or

Current Repository: ofc-bootstrap

Current Branch: feature-102-use-non-root...

Publish branch: Publish this branch to the rem...

Changes 1 | History

1 changed file

scripts/install-openfaas.sh

Line	Line	Diff
18	18	@@ -18,4 +18,5 @@ helm upgrade openfaas --install openfaas/openfaas \ --set gateway.replicas=2 \ --set queueWorker.replicas=2 \ --set faasIdler.dryRun=true \ + --set faasIdler.setNonRootUser=true \ --set faasnetes.httpProbe=false

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 - small changes are better changes

```
git add -p
```

```
diff --git a/scripts/install-openfaas.sh b/scripts/install-openfaas.sh
index b08cede..1dc6493 100755
--- a/scripts/install-openfaas.sh
+++ b/scripts/install-openfaas.sh
@@ -18,4 +18,5 @@ helm upgrade openfaas --install openfaas/openfaas \
    --set gateway.replicas=2 \
    --set queueWorker.replicas=2 \
    --set faasIdler.dryRun=true \
+   --set faasIdler.setNonRootUser=true \
    --set faasnetes.httpProbe=false
Stage this hunk [y,n,q,a,d,/,e,]?
```

Sometimes, Hard Learned



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- *Write better commit messages:*

Sometimes, Hard Learned



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- *Write better commit messages:*
 - more context!



```
commit abc123
Author: Lucas Roesler <roesler.lucas@gmail.com>
Date: Sat Apr 27 08:43:59 2019 +0200

Fix secret handling
```

Sometimes, Hard Learned



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- *Write better commit messages:*
 - more context!



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Fix secret handling
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Sometimes, Hard Learned



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- *Write better commit messages: more context!*

1. Create a `.gitmessage` file in your home folder
2. Put this in it

```
Capitalized, short (50 chars or less) summary

**What**
-

**Why**
-

**Notes**
```

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- *Write better commit messages: more context!*


Add generic secret handling ...

Verified



ea23308



 LucasRoesler committed on Nov 15, 2017

****What****

- During deploy, inspect the secret type and mount docker config secrets as image pull secrets and all other secrets as files
- fix import name in the tests

Signed-off-by: Lucas Roesler <roesler.lucas@gmail.com>


Update rbac permissions to access secrets ...

Verified



54aef99



 LucasRoesler committed on Nov 27, 2017 ✓

****What****

- Add read permissions for secrets

****Why****

- We need this to create the projected volume that merges each of the required secrets into a single volume

ase enter the commit message for your changes. Lines starting

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- *Write better commit messages: explain the impact!*

```
commit abc123
Author: Lucas Roesler <roesler.lucas@gmail.com>
Date: Sat Apr 27 08:43:59 2019 +0200

Support image pull secrets for functions

**What**
- The current secret implementation does not correctly
  support image pull secrets. This breaks the documented
  behavior.
- When creating the function Deployment object, inspect the
  secret's Type to determine if it is a docker config. If
  it is, use it as an image pull secret. All other secrets
  are mounted as files for the function.
- Fix RBAC permissions to ensure that we can read the
- Improve secrets documentation so that the support and
  behavior of image pull secrets are easier to find
```


Sometimes, Hard Learned



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- *Write tests:*

Sometimes, Hard Learned



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- *Write tests:*
 - in Go use the `kubernetes.Interface`

```
func MakeSecretHandler(namespace string, kube
kubernetes.Interface) http.HandlerFunc {}
```

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- *Write tests:*
 - in Go use the `kubernetes.Interface`

```
func Test_SecretsHandler(t *testing.T) {
    kube := testclient.NewSimpleClientset()
    secretsHandler := MakeSecretHandler("of-fnc", kube).ServeHTTP

    // ...
    secretsHandler(w, req)
    actualSecret, _ := kube.CoreV1().
        Secrets("of-fnc").
        Get("testsecret", metav1.GetOptions{})

    if actualSecret.Name != "testsecret" {
        t.Errorf("...", actualSecret.Name)
    }
}
```

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```
$ go test -count=1 github.com/openfaas/faas-netes/handlers -run
'^Test_SecretsHandler$' -v
=== RUN    Test_SecretsHandler
=== RUN    Test_SecretsHandler/create_managed_secrets
=== RUN    Test_SecretsHandler/update_managed_secrets
=== RUN    Test_SecretsHandler/update_non-existing_secrets_returns_404
=== RUN    Test_SecretsHandler/list_managed_secrets_only
=== RUN    Test_SecretsHandler/delete_managed_secrets
=== RUN    Test_SecretsHandler/delete_missing_secret_returns_404
--- PASS: Test_SecretsHandler (0.00s)
    --- PASS: Test_SecretsHandler/create_managed_secrets (0.00s)
    --- PASS: Test_SecretsHandler/update_managed_secrets (0.00s)
    --- PASS: Test_SecretsHandler/update_non-existing_secrets_returns_404
(0.00s)
    --- PASS: Test_SecretsHandler/list_managed_secrets_only (0.00s)
    --- PASS: Test_SecretsHandler/delete_managed_secrets (0.00s)
    --- PASS: Test_SecretsHandler/delete_missing_secret_returns_404 (0.00s)
PASS
ok      github.com/openfaas/faas-netes/handlers 0.046s
```

Lessons Learned



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As a maintainer:

- *Write contributor docs*
- *Make contributions approachable:*
 - **make setting up a dev environment easy**
 - **make testing easy**

Lessons Learned



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As a maintainer:

- *Write contributor docs*
- *Make contributions approachable:*
 - **make setting up a dev environment easy**
 - **make testing easy**
 - **tell people how to use it**
 - **even better, automate it!**

Dev and Test Env



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- **docker-for-***
- **kind / minikube / microk8s**



- *Easy dev and test*
 - Non-example: <https://github.com/openfaas/faas-netes/pull/340>

How Has This Been Tested?

Manually tested by deploying into a cluster using the standard instructions found in the readme and then installing and invoking a the `nodeinfo` function from the store.

- Not easy for anyone else to validate



- Easy dev and test
 - Want <https://github.com/openfaas/faas-netes/pull/417>

A new unit test has been added and I have started testing it manually with various functions.

I have pushed a public docker image so that others can also test it

1. I used <https://gist.github.com/LucasRoesler/c029f7b7446f7c051522b8edb456b703> to create an OpenFaaS installation in KinD.
2. I then update the installation to use my dev image

```
export KUBECONFIG="$(kind get kubeconfig-path --name="devopenfaas")"
helm upgrade openfaas --install ./chart/openfaas \
  --namespace openfaas \
  --set basic_auth=true \
  --set openfaasImagePullPolicy=IfNotPresent \
  --set faasnetes.imagePullPolicy=IfNotPresent \
```

Dev and Test Env



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Use kind it makes manual testing / validation easier.

With 35 lines of bash we start a basic K8S OpenFaaS development environment on "any" laptop

<https://gist.github.com/LucasRoesler/c029f7b7446f7c051522b8edb456b703>

Dev and Test Env



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DEMO!

Dev and Test Env



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While we wait:

Standout commands

```
kind create cluster --name "$DEVENV"  
kubectl rollout status deploy coredns  
kind load openfaas/faas-netes:latest
```

Dev and Test Env



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- **kind** <https://kind.sigs.k8s.io/>

Has made it easier for people to contribute more automated tests

The screenshot shows a GitHub pull request titled "CI for Helm using KinD #382". It is marked as "Merged" and shows that "alexellis" merged 9 commits into the "openfaas:master" branch from the "zeerorg:helm_chart_ci" branch. The pull request statistics are: 38 Conversations, 9 Commits, 0 Checks, and 5 Files changed. A comment from "zeerorg" dated "Mar 7" is visible, with the signature "Signed-off-by: Rishabh Gupta" and a redacted name.

Contributing



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- Contributing to faas-netes
 - create feature branch
 - build locally & run in `kind`
 - verify feature or fix
 - write down steps used during verification
 - write a test or two
 - commit & push
 - create PR

Contributing



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 - create feature branch
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YOUR WORK HERE IS DONE



Get Involved



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1. Join us on Slack <https://docs.openfaas.com/community>
2. Try it out <https://github.com/openfaas/workshop>
3. Help us continue improving the dev experience
4. Ping me @Lucas Roesler



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Thanks!

Lucas Roesler

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<https://lucasroesler.com>