KubeCon | CloudNativeCon

North America 2024

`kubectl debug` is Missing an IDE Option

Let's Fix That!

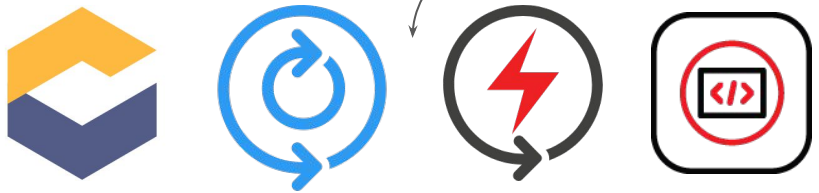
Mario Loriedo
Red Hat, Inc.

Hi, I am Mario 👋🎩

Currently

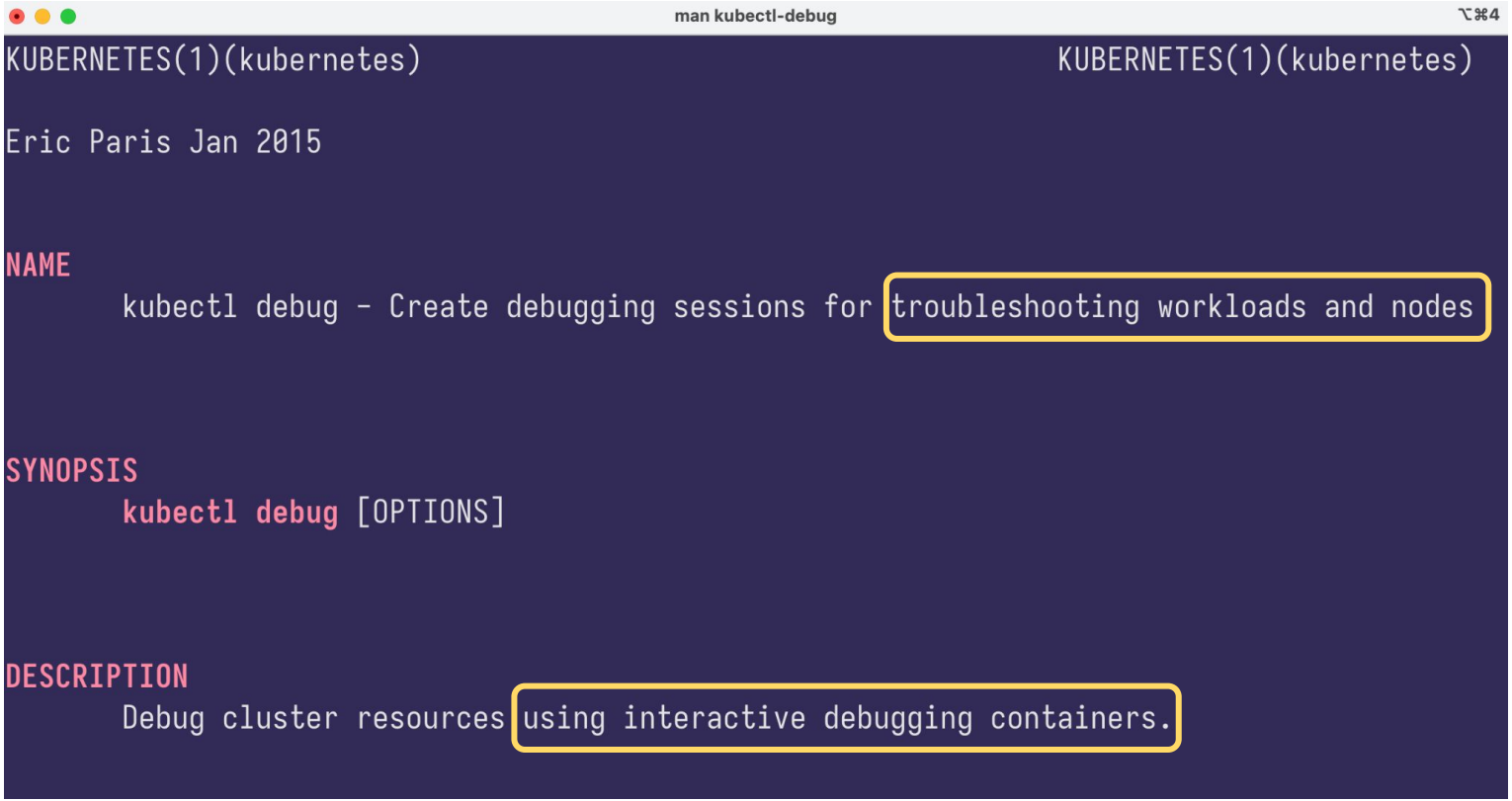
Podman

For the last 7 years



Cloud Development Environments

kubectl debug


man kubectl-debug
⌥⌘4
KUBERNETES(1)(kubernetes) KUBERNETES(1)(kubernetes)
Eric Paris Jan 2015
NAME
kubectl debug - Create debugging sessions for troubleshooting workloads and nodes
SYNOPSIS
kubectl debug [OPTIONS]
DESCRIPTION
Debug cluster resources using interactive debugging containers.

`kubectl debug` is awesome!

```
kubectl get pod
```

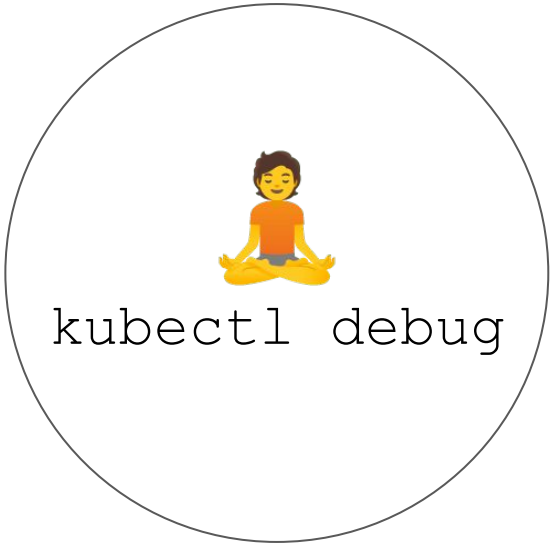
```
kubectl describe pod
```

```
kubectl get pod -o json
```

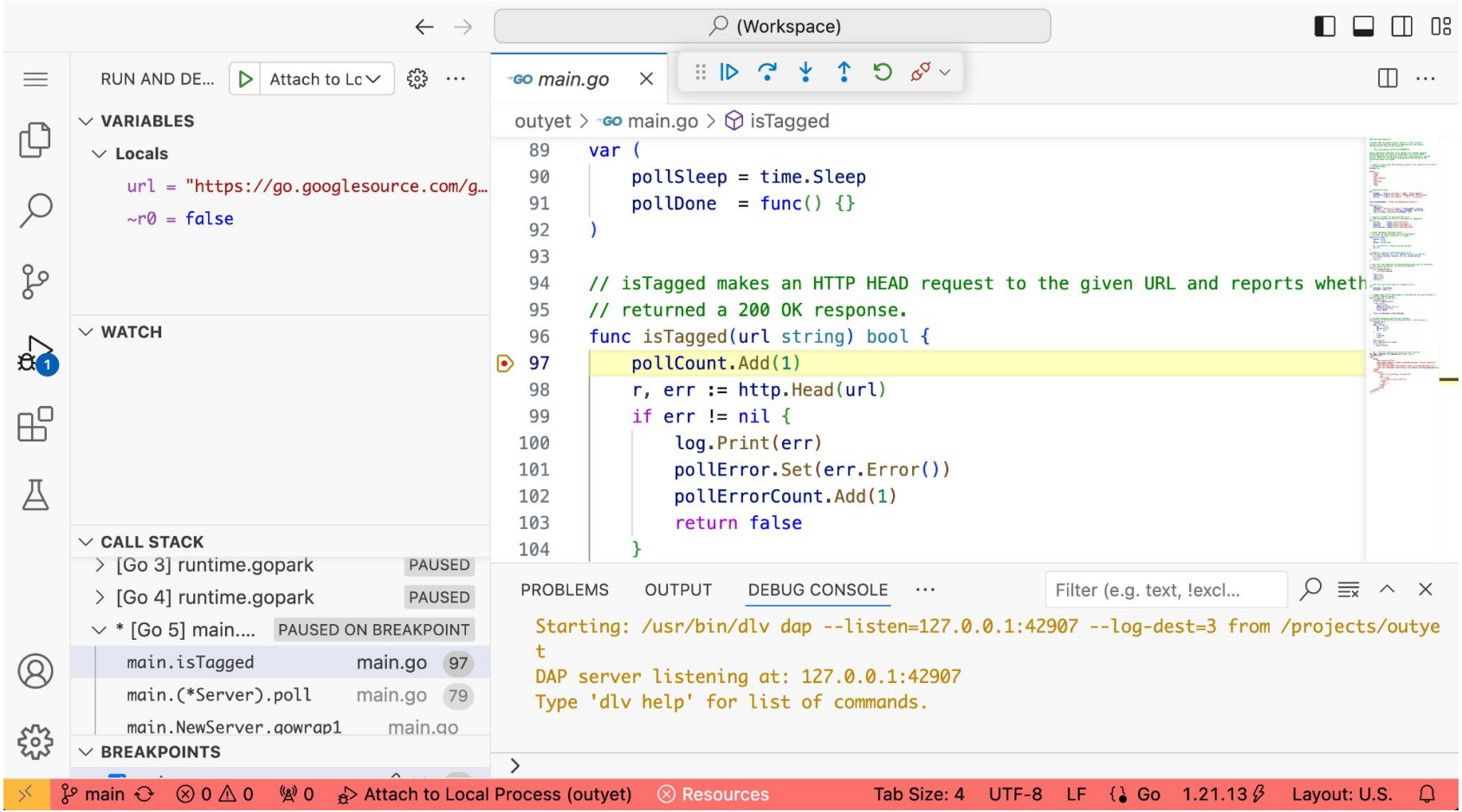
```
kubectl get events
```

```
kubectl logs
```

```
kubectl exec
```



`kubectl debug` is missing something!


(Workspace)
RUN AND DE...
Attach to Lc
VARIABLES
Locals
url = "https://go.googlesource.com/g...
~r0 = false
WATCH
CALL STACK
[Go 3] runtime.gopark PAUSED
[Go 4] runtime.gopark PAUSED
* [Go 5] main.... PAUSED ON BREAKPOINT
main.isTagged main.go 97
main.(*Server).poll main.go 79
main.NewServer.gowrap1 main.go
BREAKPOINTS
main.go
outyet > main.go > isTagged
89 var (
90 pollSleep = time.Sleep
91 pollDone = func() {}
92)
93
94 // isTagged makes an HTTP HEAD request to the given URL and reports wheth
95 // returned a 200 OK response.
96 func isTagged(url string) bool {
97 pollCount.Add(1)
98 r, err := http.Head(url)
99 if err != nil {
100 log.Print(err)
101 pollError.Set(err.Error())
102 pollErrorCount.Add(1)
103 return false
104 }
PROBLEMS
OUTPUT
DEBUG CONSOLE
Filter (e.g. text, !excl...
Starting: /usr/bin/dlv dap --listen=127.0.0.1:42907 --log-dest=3 from /projects/outye
t
DAP server listening at: 127.0.0.1:42907
Type 'dlv help' for list of commands.
main
0 0 0
Attach to Local Process (outyet)
Resources
Tab Size: 4
UTF-8
LF
Go
1.21.13
Layout: U.S.

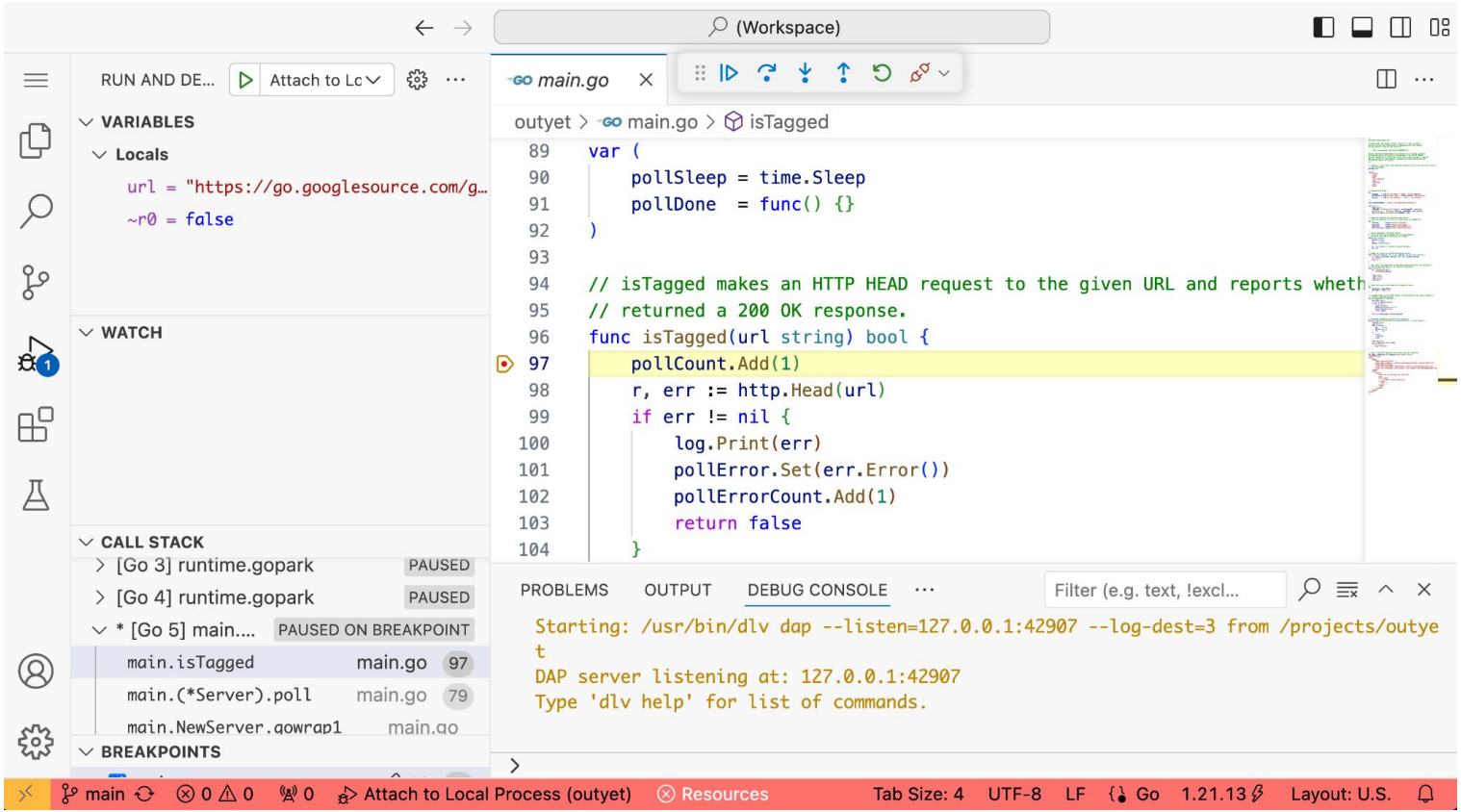
kubectl debug-ide

kubectl debug-ide


```
outyet   1/1     Running   0          12m
>
>
> kubectl debug-ide outyet \
>   --image ghcr.io/l0rd/outyet-dev:latest \
>   --copy-to outyet-debug \
>   --share-processes \
>   --git-repository https://github.com/l0rd/outyet.git
🎯 found the target pod outyet in namespace mloriedo-dev.
▪ created devworkspace outyet-dw in namespace mloriedo-dev.
⌛ waiting for the deployment workspace9cfd803192d54911 to be available.........done
🥑 waiting for the pod workspace9cfd803192d54911-5769d4496c-csmv2 to be ready...done
🐞 click on the following link ⬇ and start debugging

https://workspace9cfd803192d54911.apps.sandbox-m2.ll9k.p1.openshiftapps.com/che-code/
>
```

kubectl debug-ide



kubectl debug-ide

Design Choices

- Same UX and flags as `kubectl debug`
- Part of the Devfile, a CNCF Sandbox Project
- Requires the DevWorkspace Operator
- Multiple IDE support

Next Steps

- Submit it to krew
- Support debugging using an Ephemeral Container
- Support local IDE to connecting to the remote container

To Learn More

github.com/devfile/kubectl-debug-ide

Thank You