

# Introducing





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#### An open-source project that streamlines developing, deploying and operating WebAssembly workloads in Kubernetes











The developer tool for building WebAssembly microservices and web applications Hyper-efficient serverless on Kubernetes, powered by WebAssembly





#### SpinKube

Utilizing Spin WebAssembly with SpinKube on Microsoft's Azure Kubernetes Service helps us to achieve faster scalability, and reach higher density without the need to dramatically change our operational posture. With that we've been able to take a Kubernetes batch process of tens of thousands of orders and cut the compute cost by 60% without trading off performance,"

Kai Walter, Distinguished Architect, ZEISS

....

OPEN SOURCE			
	SELF-HOST IN YOUR KUBER	NETES FERMYON Platform For Kubernetes	HOST ON FERMYON FREE « PAID TIERS FERMYON Cloud
	ANY CLOUD PROVIDER		CLOUD INFRA, STORAGE, DOMAINS & SERVICES ARE INCLUDED



#### Spin Operator

A Kubernetes operator to deploy Spin applications. Containerd-shim-spin

A containerd shim for running Spin Applications.

Runtime-class manager

A simple way to install Wasm runtimes.

SpinKube plug-in

A Spin plugin for interacting with Kubernetes.



## Let's try it out!





### Spin kube plug-in

#### **Application Development**

**spin kube** used to convert Spin app into Kubernetes YAML.



### **Spin Operator**



#### Runtime class and shim



#### **Runtime Management**

Containerd-shim-spin - helper process to translate between containerd and Wasm runtime

Runtime-class-manager - operator used to install & manage shim, along with apply the appropriate node labels and runtime class modifications

# Why do we need Spin WebAssembly applications in Kubernetes?

Small packages

A hello-world Spin WebAssembly application written in Rust is a 284kB OCI Artifact. They start up almost immediately

A Spin WebAssembly component will start in less than a millisecond. They are sandboxed

WebAssembly components are sandboxed and are by default denied access to resources on the system. They are portable across processing architectures

You can swap out the underlying nodes processing architecture without having to produce separate pipelines and deploy artifacts.

#### Resources

### SpinKube – <u>https://spinkube.dev</u> Spin – <u>https://fermyon.com/spin</u>