cosmonic

Any Cloud, Any Edge, Any Scale

THE FUTURE OF DISTRIBUTED APPLICATIONS, TODAY

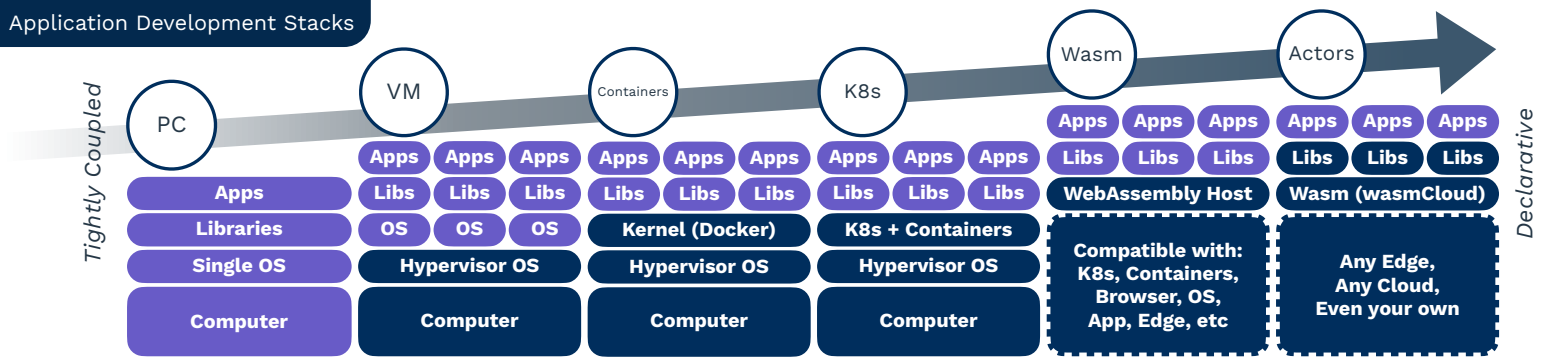
With Cosmonic...

- **Build, deploy, and scale** your applications for any location within minutes.
- **Build any app, flexibly.** From FaaS to monolith, microservices to edge, Cosmonic lets you harness the power of WebAssembly in your own environment.
- **Connect your own infrastructure.** Don't get stuck with one cloud. Connect your own infrastructure and application with a single command.
- **Apps are 200x smaller with 95% less source code.** Actors compile and deploy from 2KB - 2MB vs. more than 4GB using Java Spring Boot.

With wasmCloud...

- **Kubernetes compatible, not dependent.** Your applications can be fully integrated with K8s without being beholden to legacy systems
- **Build faster with components** Fully compatible with ALL Wasm standards, including WASI (when it arrives).
- **Cosmonic built and supports the CNCF sandbox project.** Open source technology is well supported and is growing rapidly with 100% contributor growth, Q4 2022.
- **Scalability is built in.** Horizontal and vertical scaling is simple with stateless actors

Application Development Stacks



FORMAT	PC	CLOUD	CONTAINER	K8S	WASM	COSMONIC
EXECUTION	*Image (Datacenter)*	*VM (Public Cloud)*	*Container (Docker)*	*Containers (K8s / Cloud)*	*WASM (Everywhere)*	*Distributed WASM (Everywhere)*
Dev Responsibility	Full	OS, App, Lib	App, Lib	App, Lib	Wasm	Business Logic
Abstraction	-	CPU	Linux Kernel	K8s	Secure Sandbox	Sandbox + Capabilities
Compatibility	All	Most	Most	Most	Most	Most
Size	Large	Med	Small	Small	Tiny	Minuscule
Portability	-	Low	Med (CPU, Linux)	Med (CPU, Linux)	High	Highest
Security	System	OS	Process Boundary	Process Boundary	Capability	Actor
Location	On Prem & Co-location	Proprietary Cloud & Edge	Dev, Edge, Cloud, K8s	Dev, Edge, Cloud, K8s	Dev, App, Edge, Cloud, K8s, Browser, Devices	Dev, App, Edge, Cloud, K8s, Browser, Devices

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Legend: **Developer Provided** **Service Provided** **Flexible**

WASM
THE *FINAL* ABSTRACTION

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wasmCloud

Virtual Machines, the public cloud, containers, and Kubernetes changed how we orchestrated and delivered applications. Now, WebAssembly couples pure business logic with runtime capabilities.

- **Open W3C Standard.** Developed with transparent, community-led governance, WebAssembly has been adopted in thousands of common applications. Capabilities are growing with more emerging in WASI standards.
- **Component Model.** Portable, composable, interoperable, and virtualizable WebAssembly modules allowing maximum flexibility and boilerplate reduction.
- **Sandboxed & Secure.** Code executes in a secure sandbox, preventing access to resources not allocated to it by the host runtime.
- **Deny-by-Default.** Code only runs with host-granted permissions. Just as mobile apps are required to request location, Wasm modules must declare their permissions before they run.
- **Polyglot.** Broad support for languages like C, C++, Rust, .Net—and emerging support for Python, Go, Typescript and others—allows teams to compose applications from many polyglot components.
- **Portable.** Components are compiled once and are delivered across a diverse range of hardware architecture (x86, ARM, etc), operating systems, and devices.
- **Contract Driven Design.** Grants component-level portability across standard APIs: SQL, Key-Value, Logging, Tracing, and more.
- **Runtime Pluggability.** Attach the latest most up-to-date versions of components at runtime vs compile time embedding.