

rust.cc

WebAssembly Intro

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What's WebAssembly

WebAssembly (abbreviated *Wasm*) is a **binary** instruction format for a stack-based virtual machine. Wasm is designed as a portable target for compilation of high-level languages like C/C++/Rust, enabling deployment on the web for client and server applications (<https://webassembly.org/>)

- ✓ Efficient and fast
- ✓ Safe
- ✓ Open and debuggable
- ✓ Part of the open web platform



What it looks like

.wat format
No meaning for this code

```
1 | (module
2 |   (import "js" "memory" (memory 1))
3 |   (import "js" "table" (table 1 anyfunc))
4 |   (type $void_to_i32 (func (result i32)))
5 |   (func (export "doIt") (result i32)
6 |     i32.const 0
7 |     i32.const 42
8 |     i32.store  ; store 42 at address 0
9 |     i32.const 0
10 |    call_indirect $void_to_i32)
11 |  )
```

C++	Binary	Text
int factorial(int n) { if (n == 0) return 1; else return n * factorial(n-1); }	20 00 42 00 51 04 7e 42 01 05 20 00 20 00 42 01 7d 10 00 7e 0b	get_local 0 i64.const 0 i64.eq if i64 i64.const 1 else get_local 0 get_local 0 i64.const 1 i64.sub call 0 i64.mul end

Linear representation for the code in function bodies



Current State of WebAssembly

WebAssembly 1.0 has shipped in 4 major browser engines.

MVP 1.0



Stable and compatible binary format

Many successful stories already

Used to promote Javascript speed in Browsers.



The background of the slide is a black and white photograph of a winding road through a hilly landscape. The road curves from the bottom left towards the center of the frame, with a guardrail visible on the right side. The hills in the background are covered in vegetation and show signs of erosion or dry land. The sky is overcast and grey.

Let's

Rust All The World

Rust Fullstack Development

 DenisKolodin / **yew**

 Unstar

7,921

Yew(pronounced/ju:/, the same way as "you") is a modern Rust framework inspired by **Elm** and **ReactJS** for creating multi-threaded **frontend** apps with **WebAssembly**.

The web frameworks of choice in the community are:

- [Actix](#)
- [Gotham](#)
- [Rocket](#)
- [Tower Web](#)
- [Warp](#)

For data storage there are mature drivers for:

- [Mysql](#)
- [Postgres](#)
- [Redis](#)

If you'd like to use an ORM there is:

- [Diesel \(Postgres / Mysql / Sqlite\)](#)
- [Rustorm \(Postgres / Sqlite\)](#)

HTML? Yes
CSS? Yes

JavaScript? No, you can't find it.

<https://www.areewebyet.org/>

WASI

The WebAssembly System Interface

WASI is a modular system interface for WebAssembly. Interfaces to outside world! Extends **beyond the Web**.

It's designed to be independent of browsers, so it doesn't depend on Web APIs or JS, and isn't limited by the need to be compatible with JS. And it has integrated capability-based security, so it extends WebAssembly's characteristic sandboxing to include I/O.

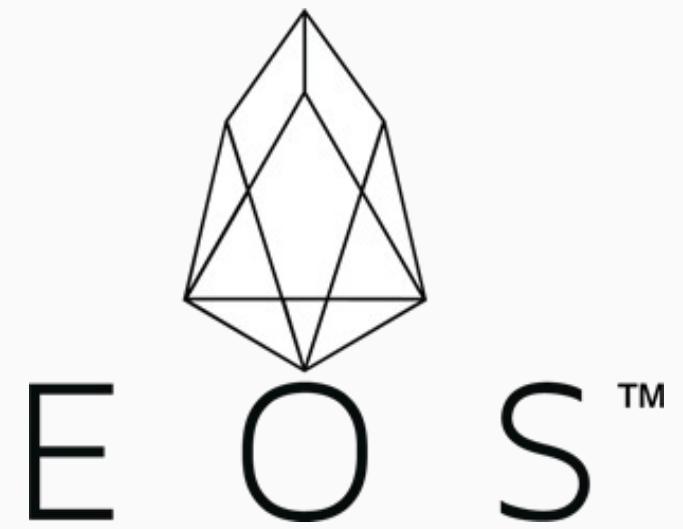
- † wasmtime
- † lucet
- † wasmer

Java's dream,
WebAssembly's next step.
Any language compiled to
wasm.



WebAssembly and Blockchain

Polkadot.



And some other not famous
projects ...



On Research



HYPERLEDGER

CØSMOS

WebAssembly in Polkadot/Substrate

- † Secure
 - † Wasm allows us to reuse existing tooling;
 - † Wasm is easily **verifiable** for **correctness**;
- † Deterministic
 - † Wasm allows us to effectively balance price of deployment against price of execution;
 - † **Wasm allows us to have isomorphic blockchain logic code for fork-free upgrades;**
- † Generic
 - † The benefits of using the formal-verification-oriented option dissolve when you try to apply it to a VM format — a Turing-incomplete language is more suitable as a frontend used by humans instead of a backend interpreted by the blockchain client;
- † Efficient
 - † We can't easily use existing Wasm runtimes since our requirements are much stricter than theirs.

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博文转载

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Wayslog : rust in server side
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Hexilee : 如何理解 rust 中的 Sync、Send ?

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rustup
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我就是随便扯一句

用个 fixed point 不就好了么

我觉得 decimal 就是整数运算

fixed point 指什么类型?

貌似很久没有这个类型了吧

整数类型固定精度

计算机 cpu 原生支持

tide

为啥作者不用他的warp参加 web竞赛，而去用hyper

或者一起上，想看下warp，

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treelike - 一个用于方便地实现树结构的辅助包它
提供了一个 Treelike trait，实现其中的

昨天 晚上11:43

下午12:39

https://seanmonstar.com
/post/176530511587/warp

tide

为啥作者不用他的warp参加 web竞赛，而去用hyper

或者一起上，想看下warp，

历史推送

A black and white photograph of a dense cluster of cacti, likely prickly pears, growing in a desert environment. The cacti have large, rounded, segmented bodies covered in small spines and some larger, more prominent spines along their edges. They are tightly packed together, creating a textured, layered pattern.

Thank You

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