Crust

A unikernel for fast, secure cloud computing

# Target: Xen

Unikernels run on special software systems called **hypervisors.**

One hypervisor is **Xen**, used by Amazon to run their massive cloud infrastructure (>1M servers worldwide).

# Project Scope

* Initially: build on top of existing solutions (MiniOS, Newlib)
* Later: build from scratch
* **Iterative refinement of scope**

# Design Strategy

* Modular design
* Type-driven design and development
* Abstract away Xen for portability

# Challenges

* Cross-compiling
* Building kernel binaries
* Remote debugging
* Testing
* Rust-specific constraints

# Testing

* Observable effects
* Remote GDB support
* “Printf debugging”
* Memory stress-testing

# Prior Work

**MiniOS:** Reference unikernel for Xen

**Redox**: Unix-like OS written in Rust