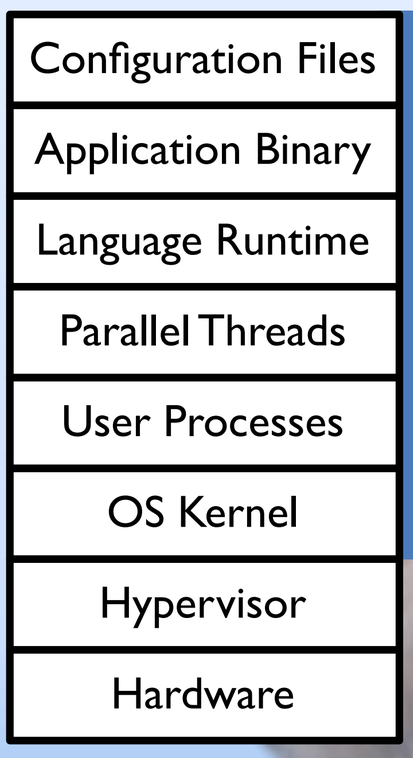
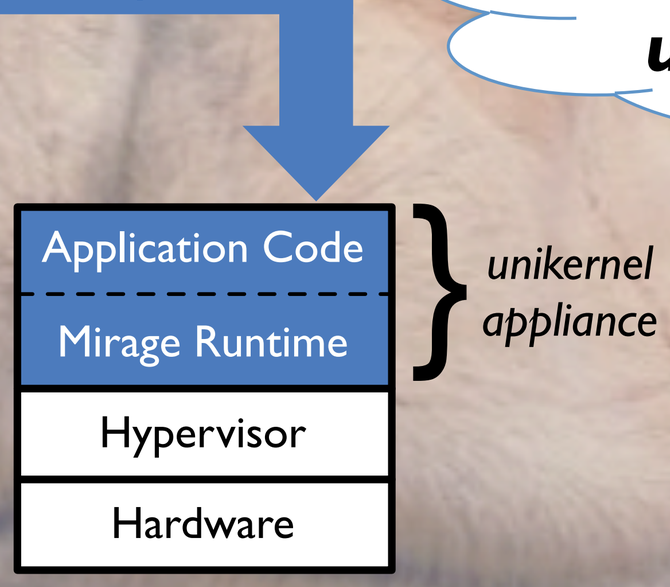
Mirage: Cloud appliances

horizon
DIGITAL ECONOMY RESEARCH

Modern cloud applications comprise millions of lines of code and complex configuration

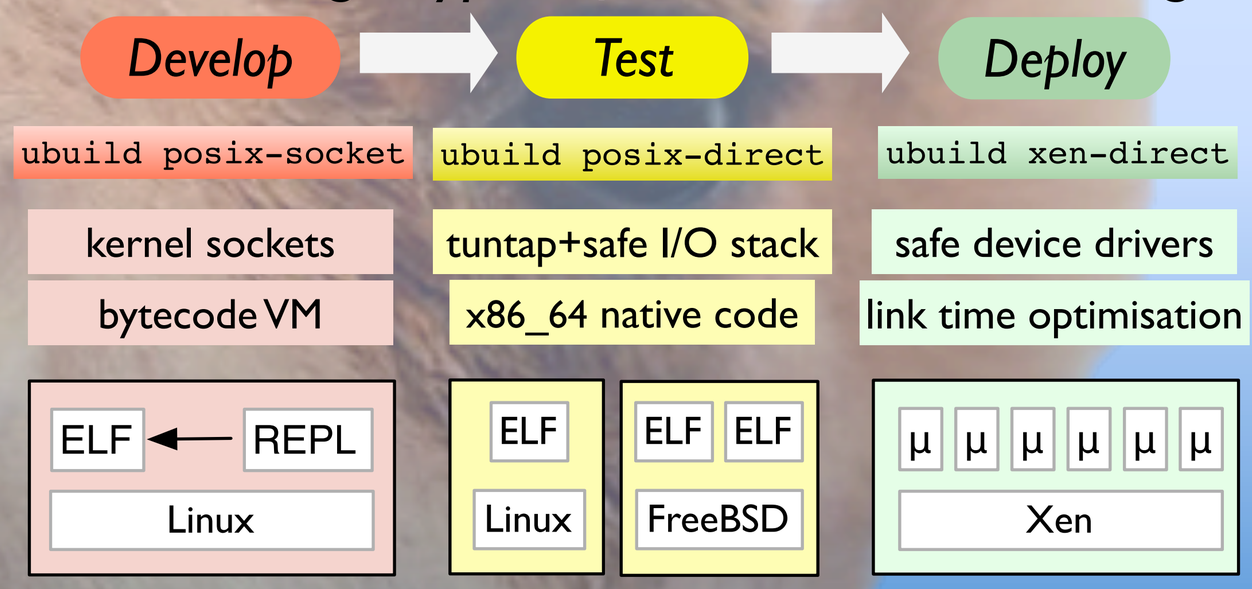


Mirage Compiler

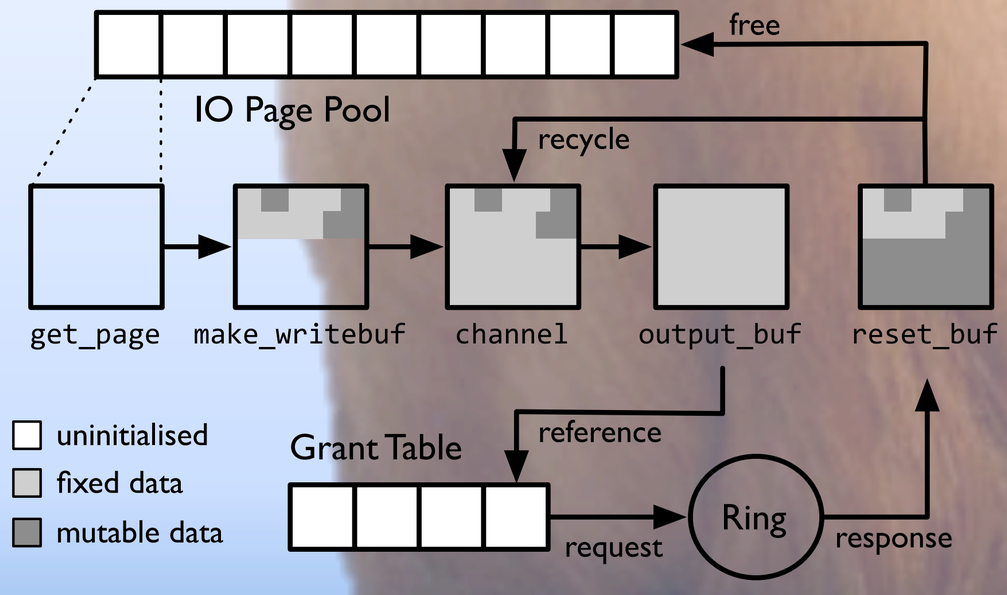


Cloud applications, hosted in multi-tenant datacenters, are under constant network attack

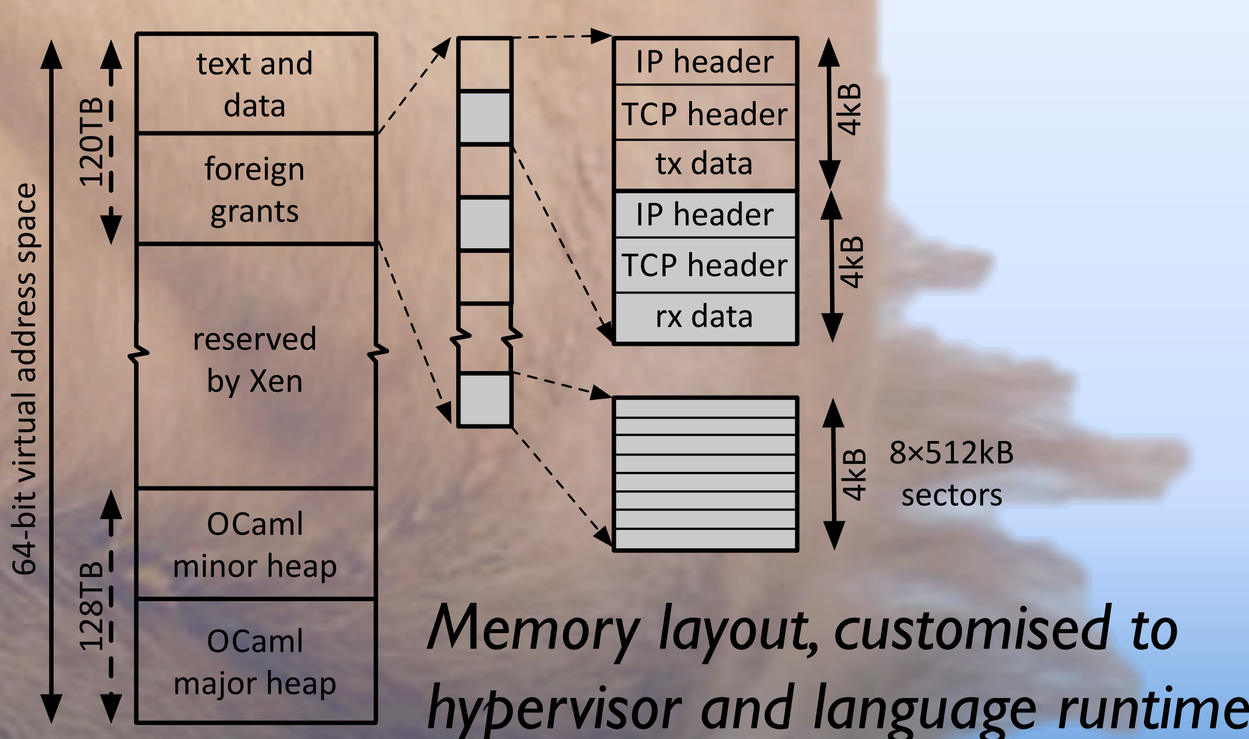
Mirage builds the whole system into a single type-safe virtual machine image



Design



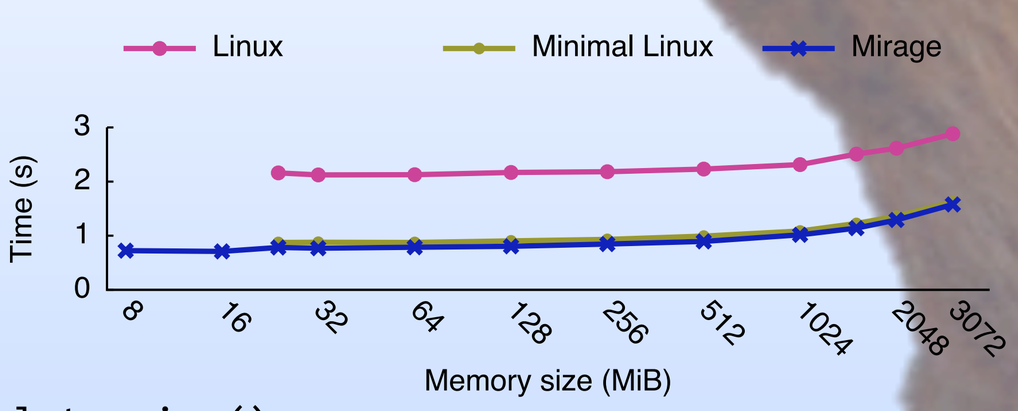
Careful management of memory for IO



Memory layout, customised to hypervisor and language runtime

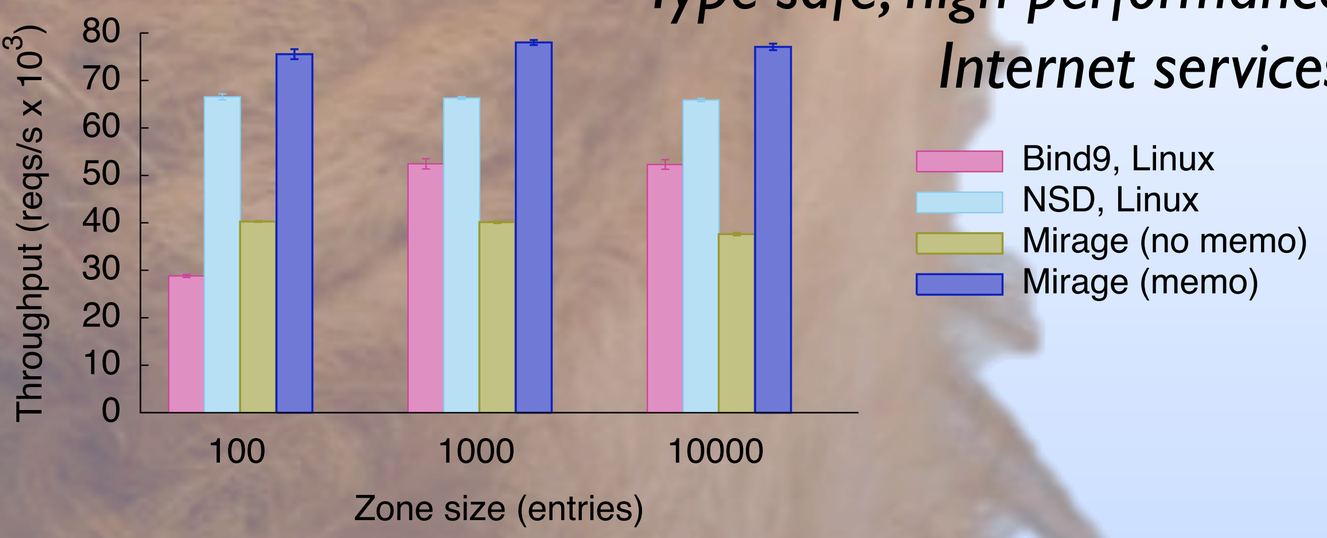
Code

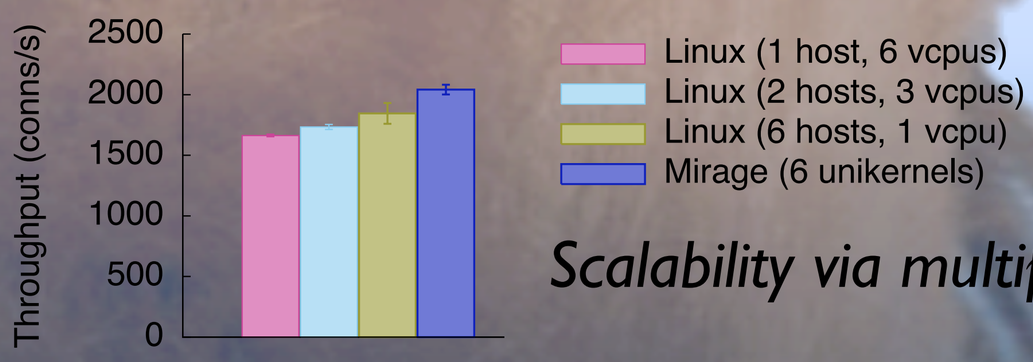
Reduced memory footprint and boot times




```
let main () =
  lwt zones = read key "zones" "zone.db" in
  Net.Manager.bind (fun mgr dev →
    let src = 'any_addr, 53 in
    Dns.Server.listen dev src zones)
```

Type-safe, high-performance Internet services





Scalability via multiple instances

Win!

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