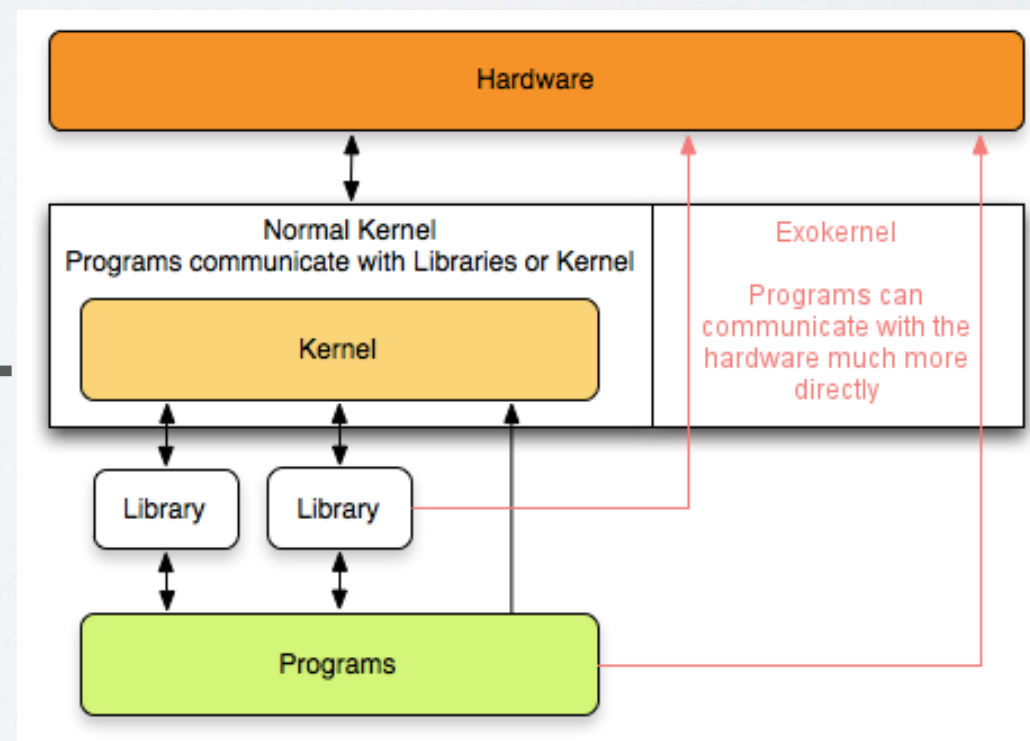
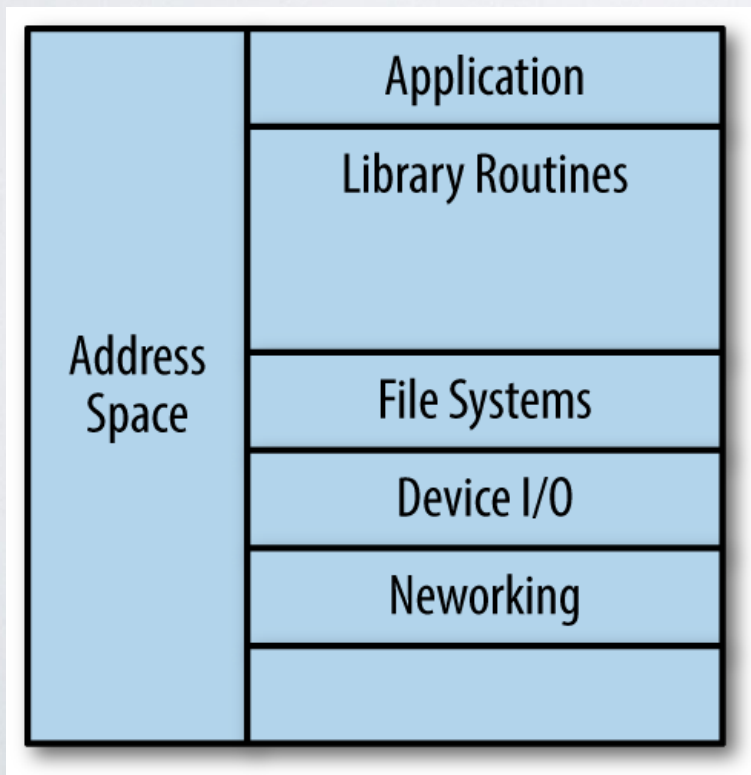
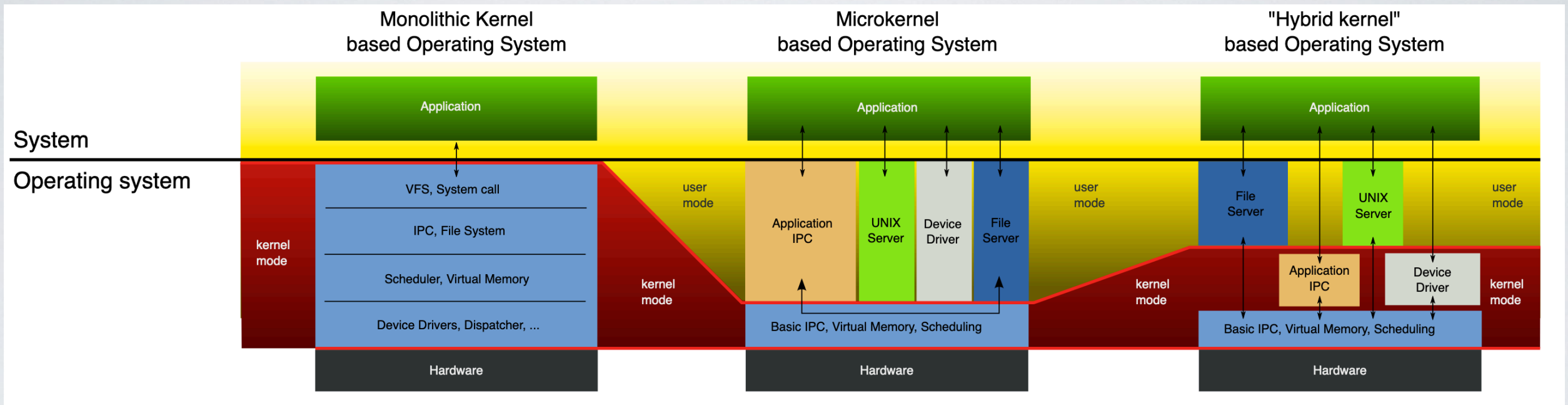


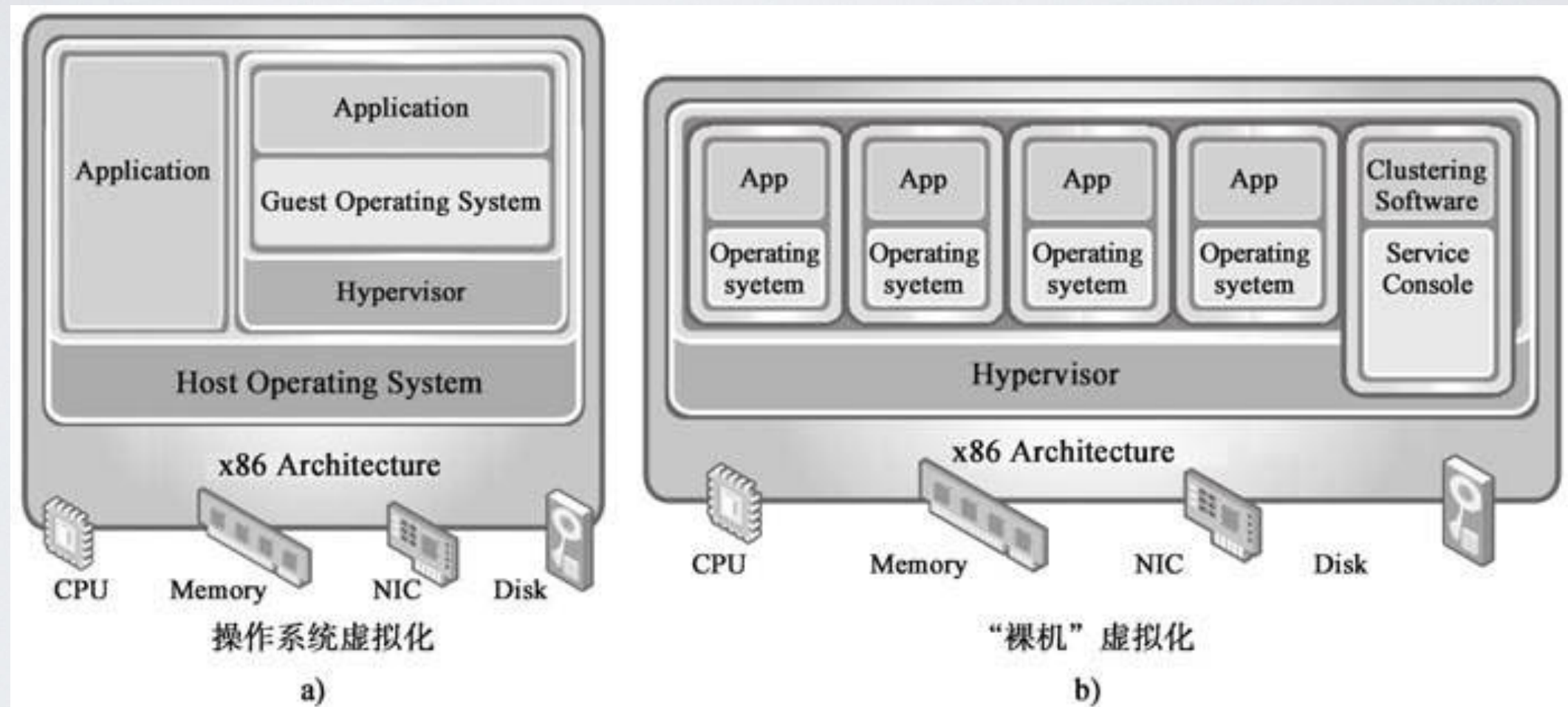
# Unikernel as Service

an approach to use unikernel more efficiently

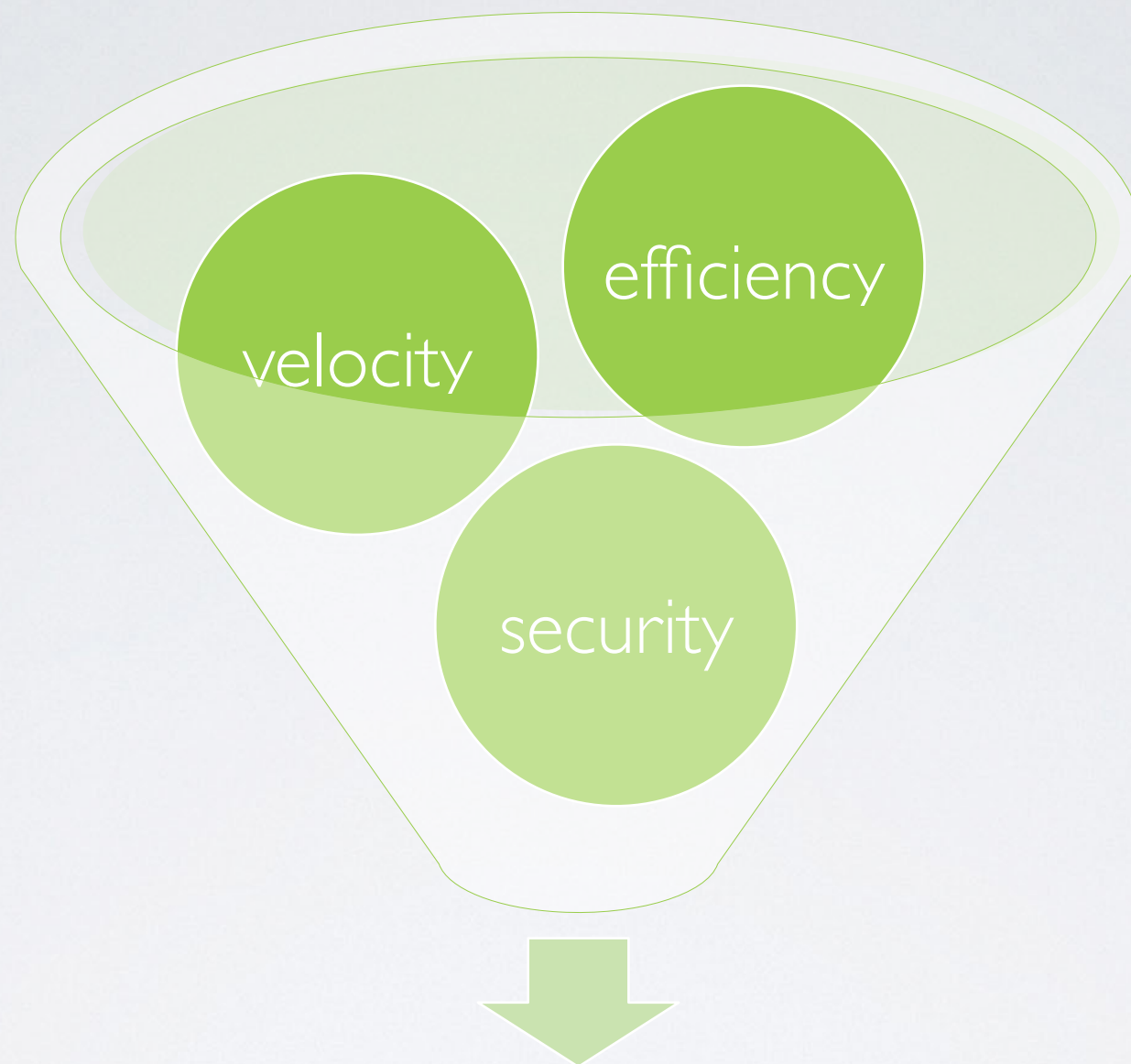
# Background: OS



# Background: Hypervisor







Unikernel

# Unikernel

User Space	Application
	Library Routines
Kernel Space	
	File Systems
	Device I/O
	Networking
	Process Management

VS

Address Space	Application
	Library Routines
	File Systems
	Device I/O
	Networking



Name:

acorn

Type:

executable (application/x-executa...

Size:

3.8 MB (3,764,536 bytes)

Activities Firefox Web Browser — 14:29

Acorn Web Appliance - Mozilla Firefox

Acorn Web Appliance x +

10.0.0.42

includeOS

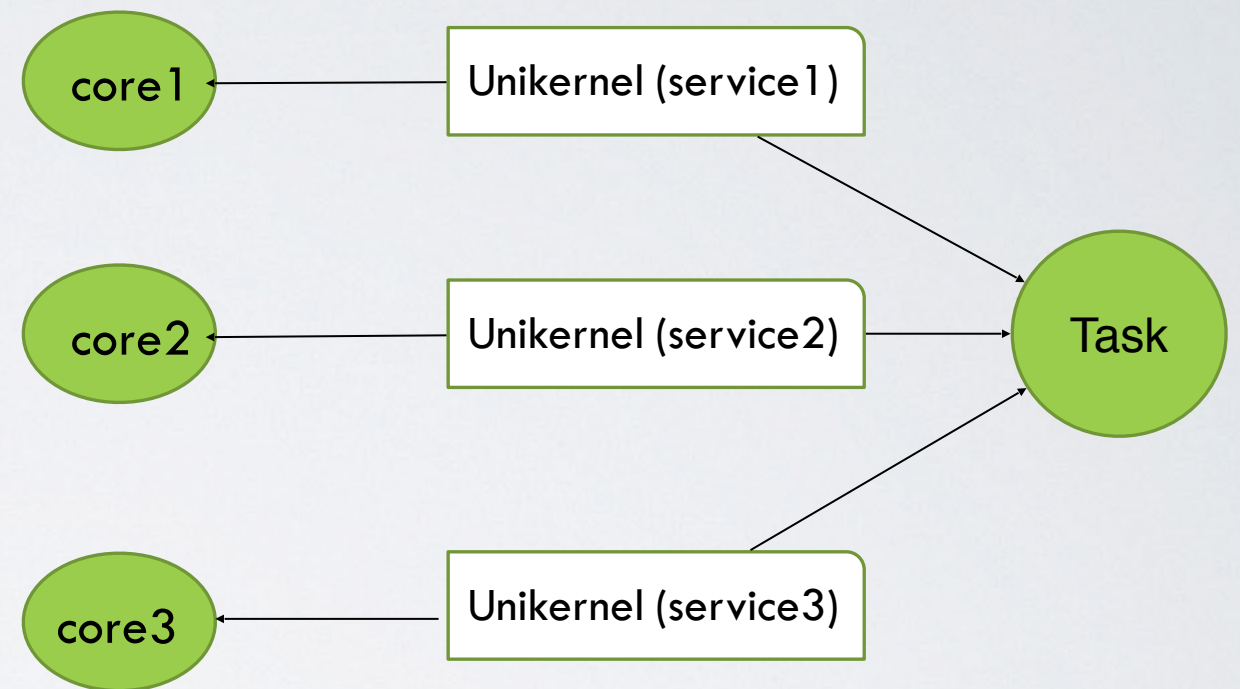
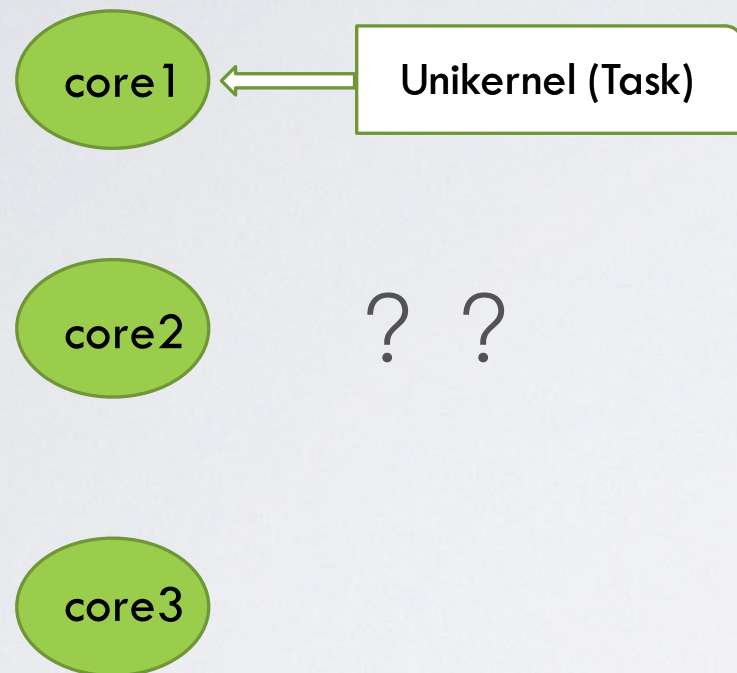
# IncludeOS web application

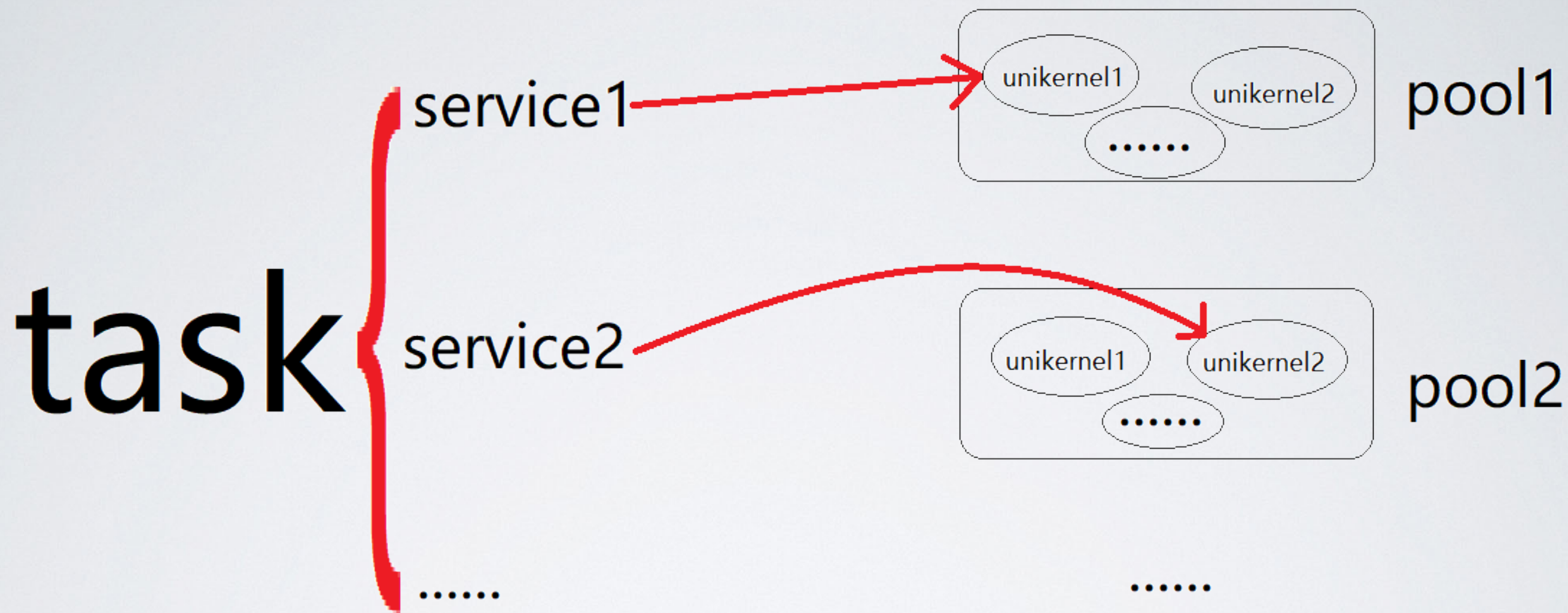
Codename: Acorn

Written in C++ and running on the IncludeOS unikernel, Acorn is a highly efficient web application with direct access to the library operating system's facilities

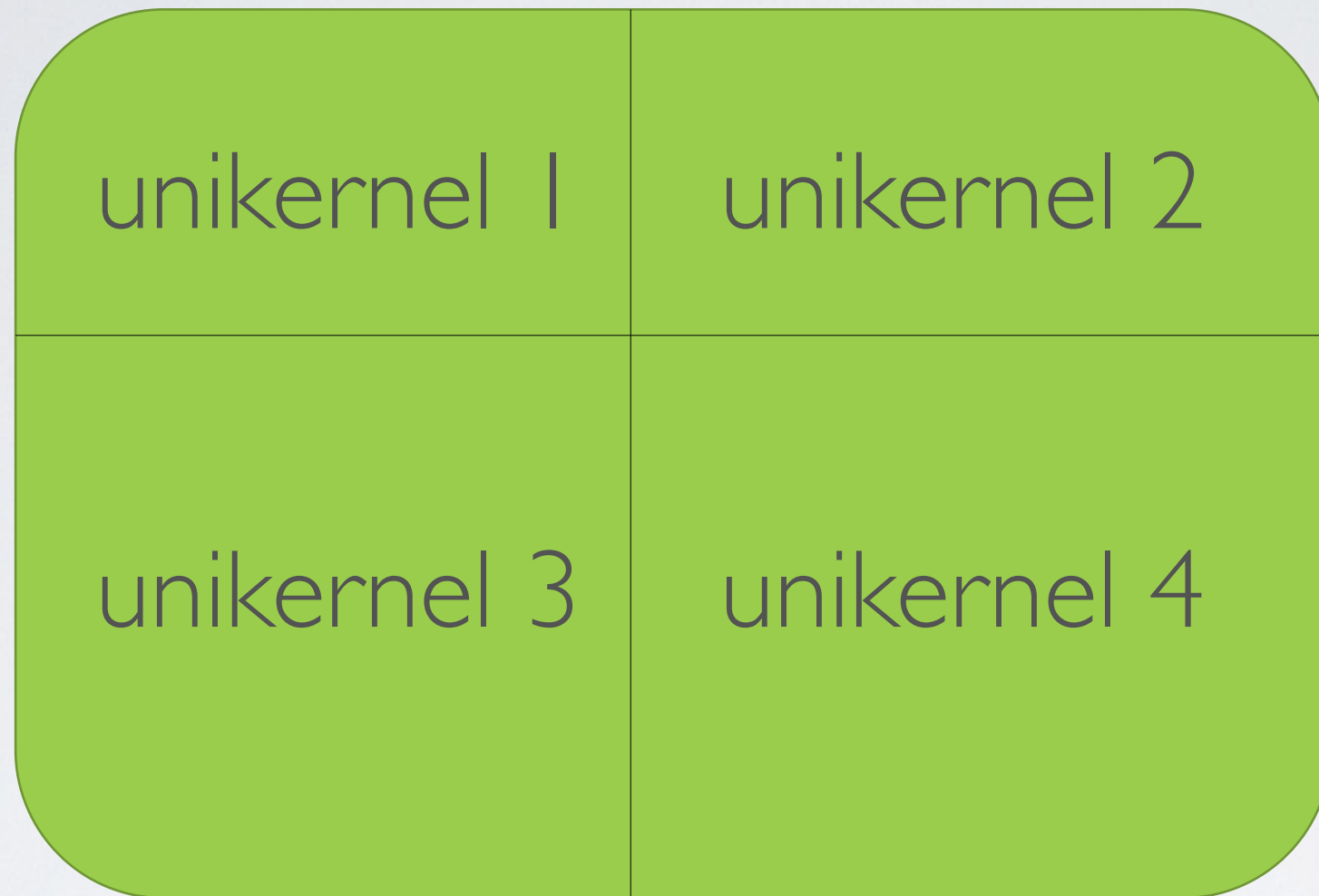
C++ web application framework



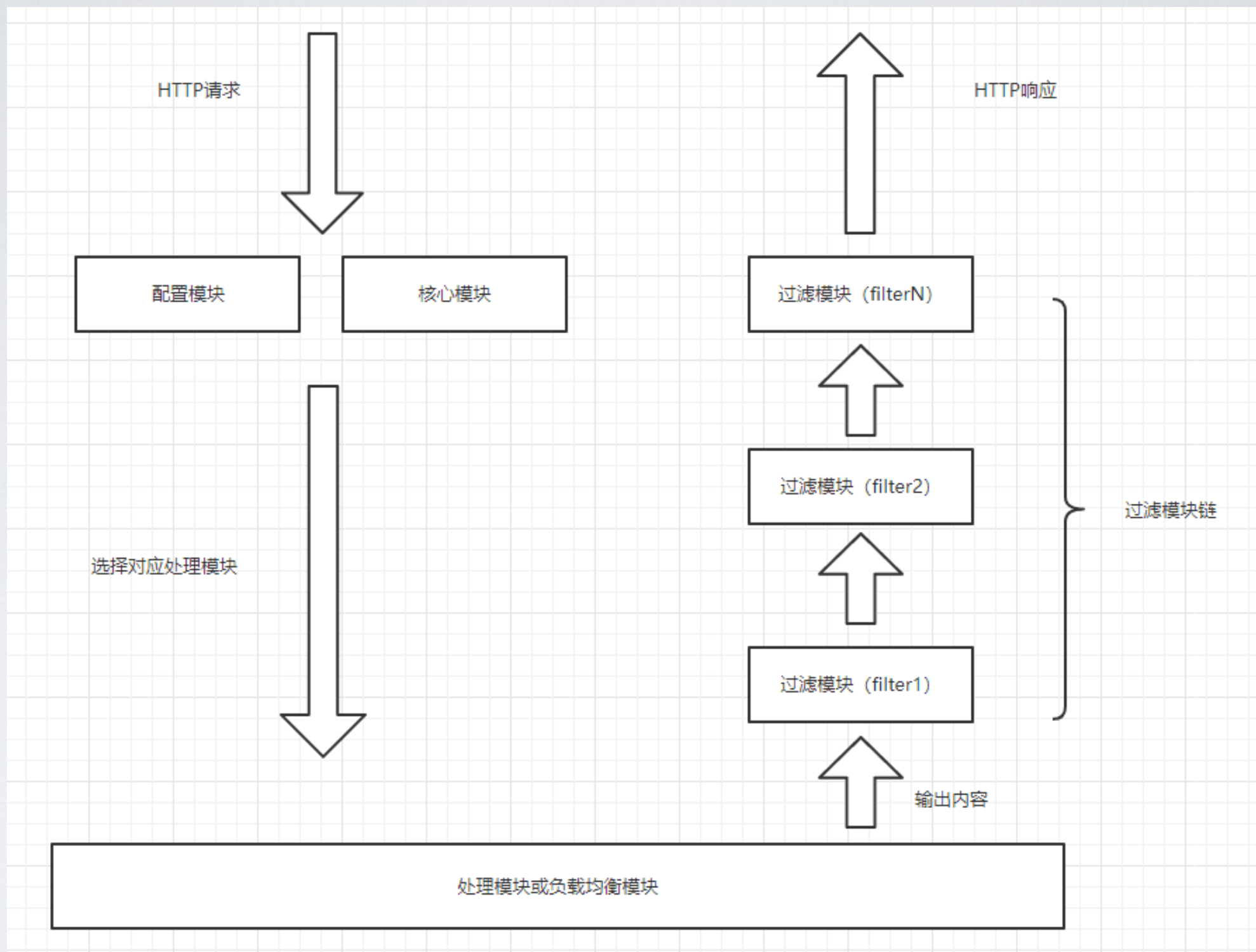


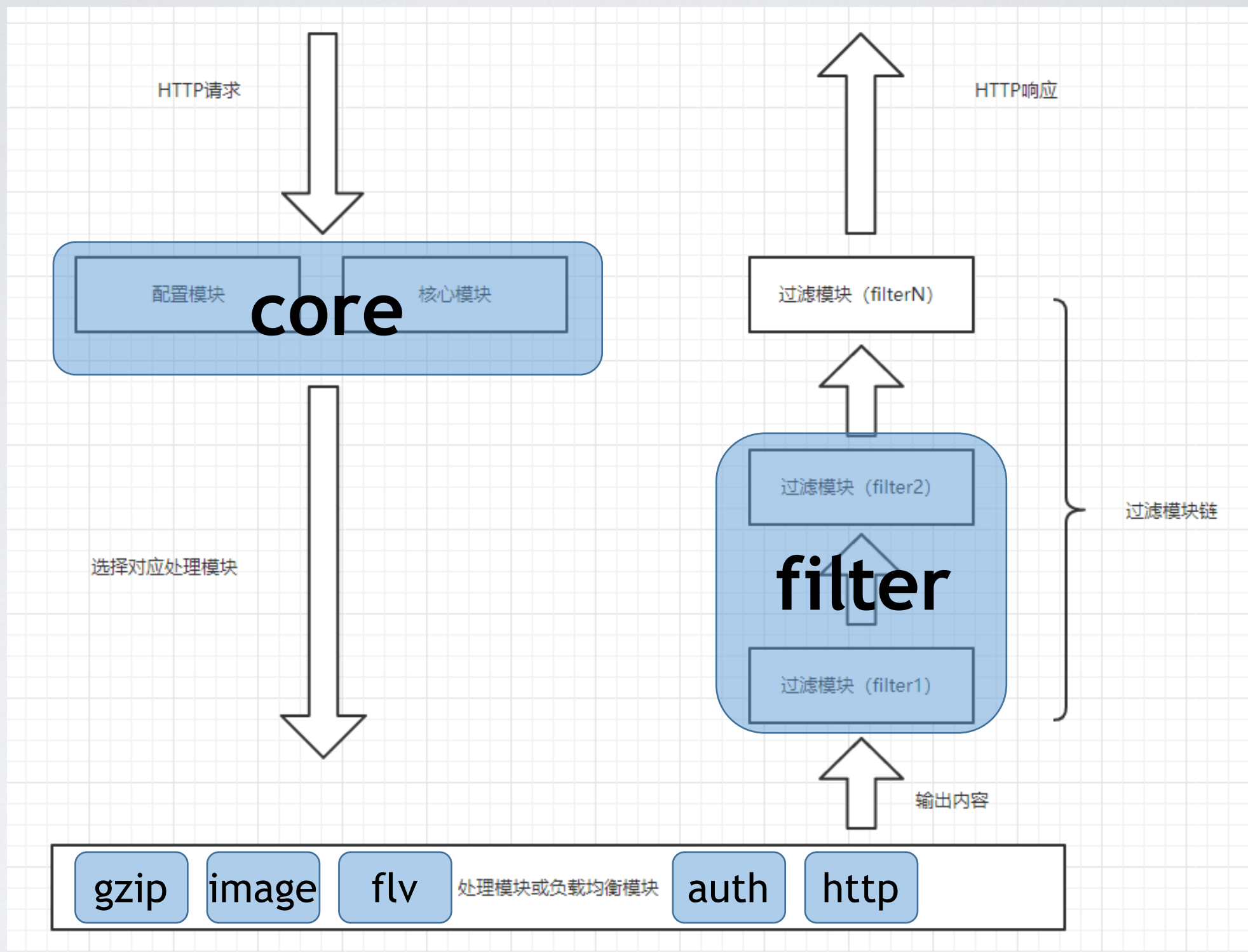






应用

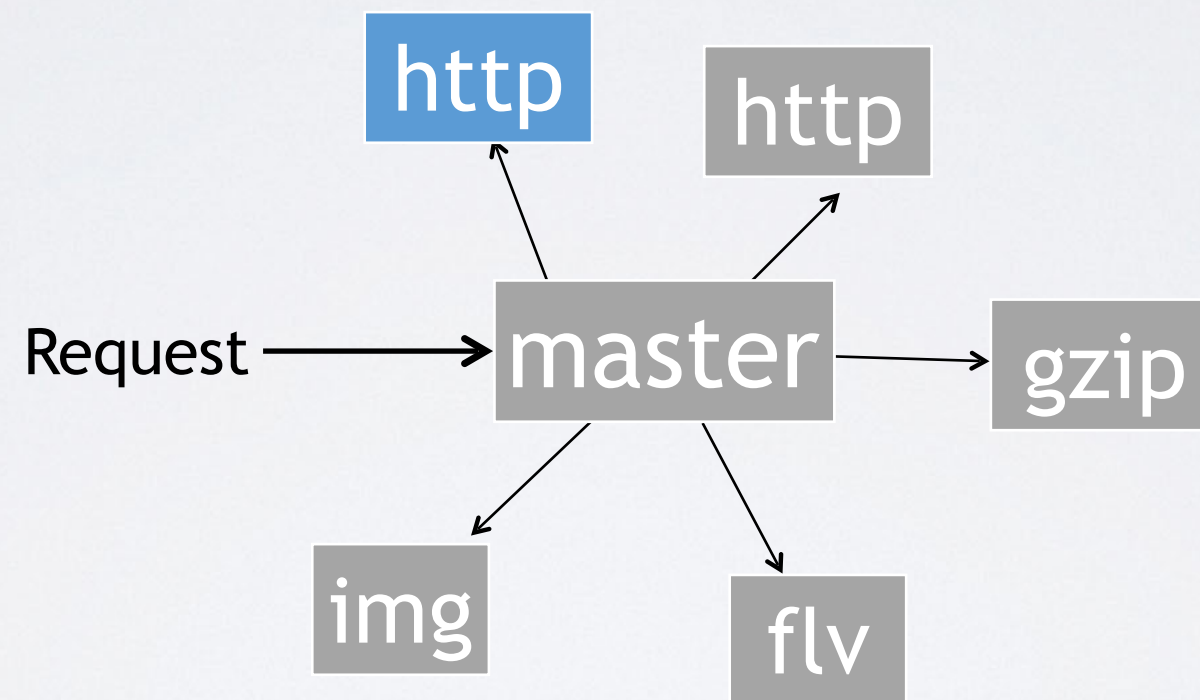






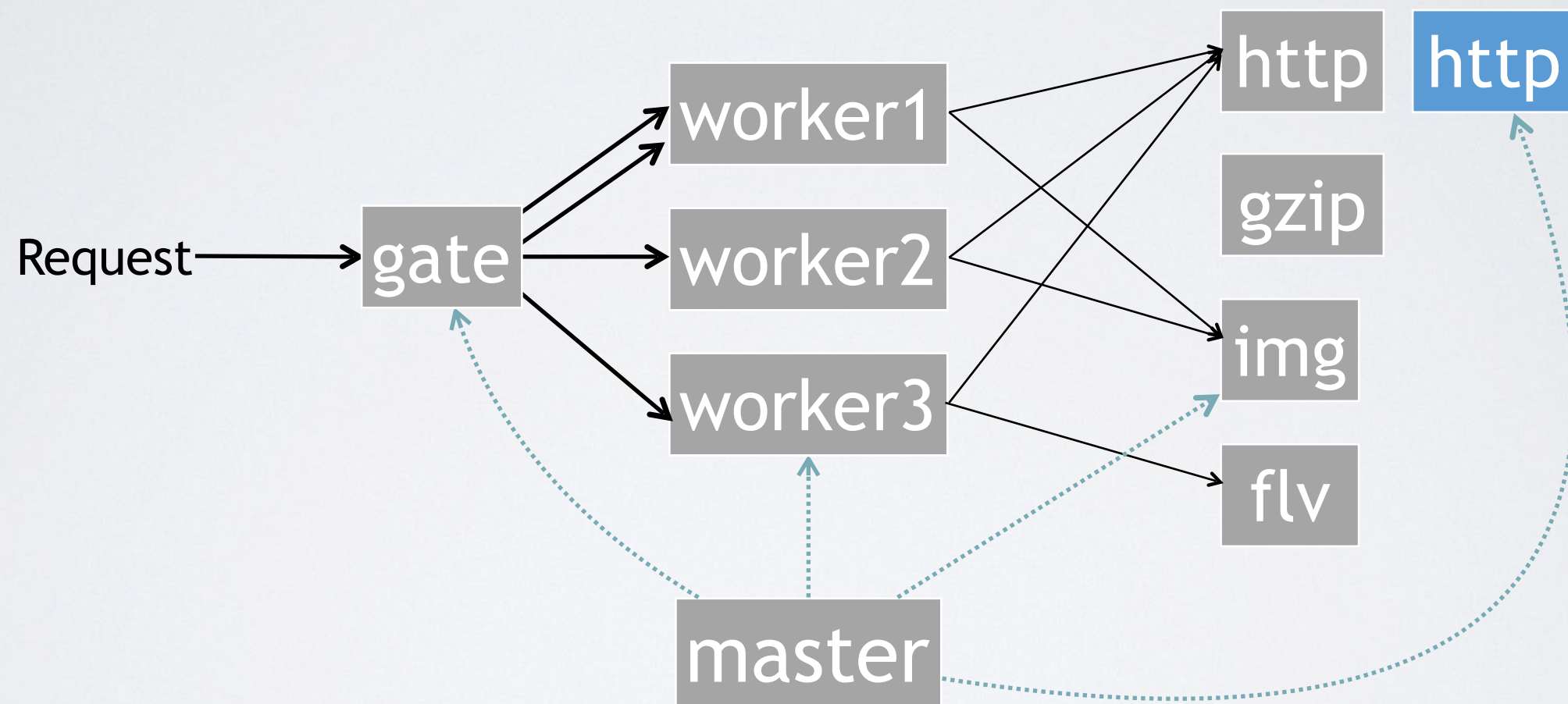
# run web services on unikernels

## Approach I



# run web services on unikernels

## Approach 2



# Todo List

- service unikernel 的封装 (http, img, flv)
- master 模块 (service unikernel 的管理和调度)
- unikernel 间通信 (localhost)



# Tool Chain

- KVM+QEMU / Solo5
- IncludeOS (and toolchains)
- Nginx Module

Thanks