

1. Introduction

3 parts (pieces):

1. Virtualization: CPU, memory
2. Concurrency: threads [and processes]
3. Persistence: file system

OS Design Goals:

- Abstractions (APIs)
- Performance (minimize overhead)
- Protection (isolation)
- Reliability
- Other: security, energy-efficiency, mobility (dynamic networking)

How:

- Software: operating system (kernel)
- Hardware: user mode vs. kernel mode, privileged instructions, system calls, traps