



CLOUD COMPUTING APPLICATIONS

Infrastructure as a Service

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Infrastructure as a Service (IaaS)

- Xen
- XenCloud
- OpenStack

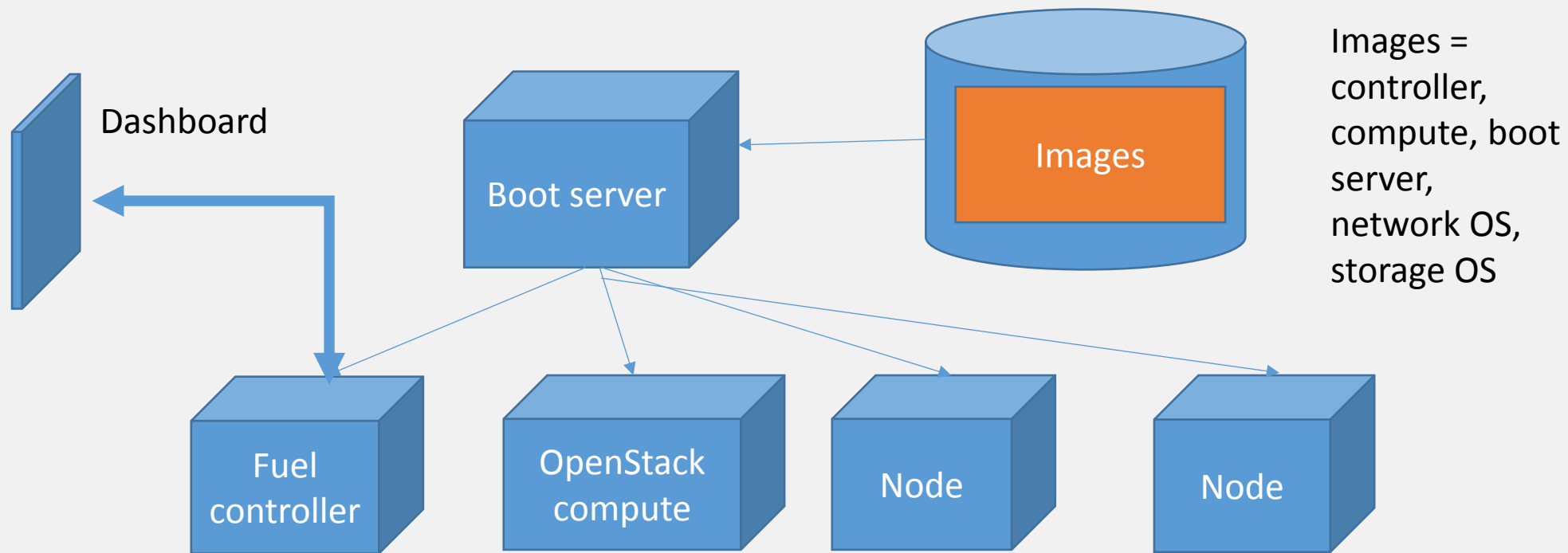
Xen and the Linux Kernel Distributions

- Xen was initially a university research project
- Invasive changes to the kernel to run Linux as a paravirtualized guest
- Even more changes to run Linux as dom0
- Xen support in the Linux kernel; no upstream
- Great maintenance effort on distributions
- Risk of distributions dropping Xen support
- Xen hard to use

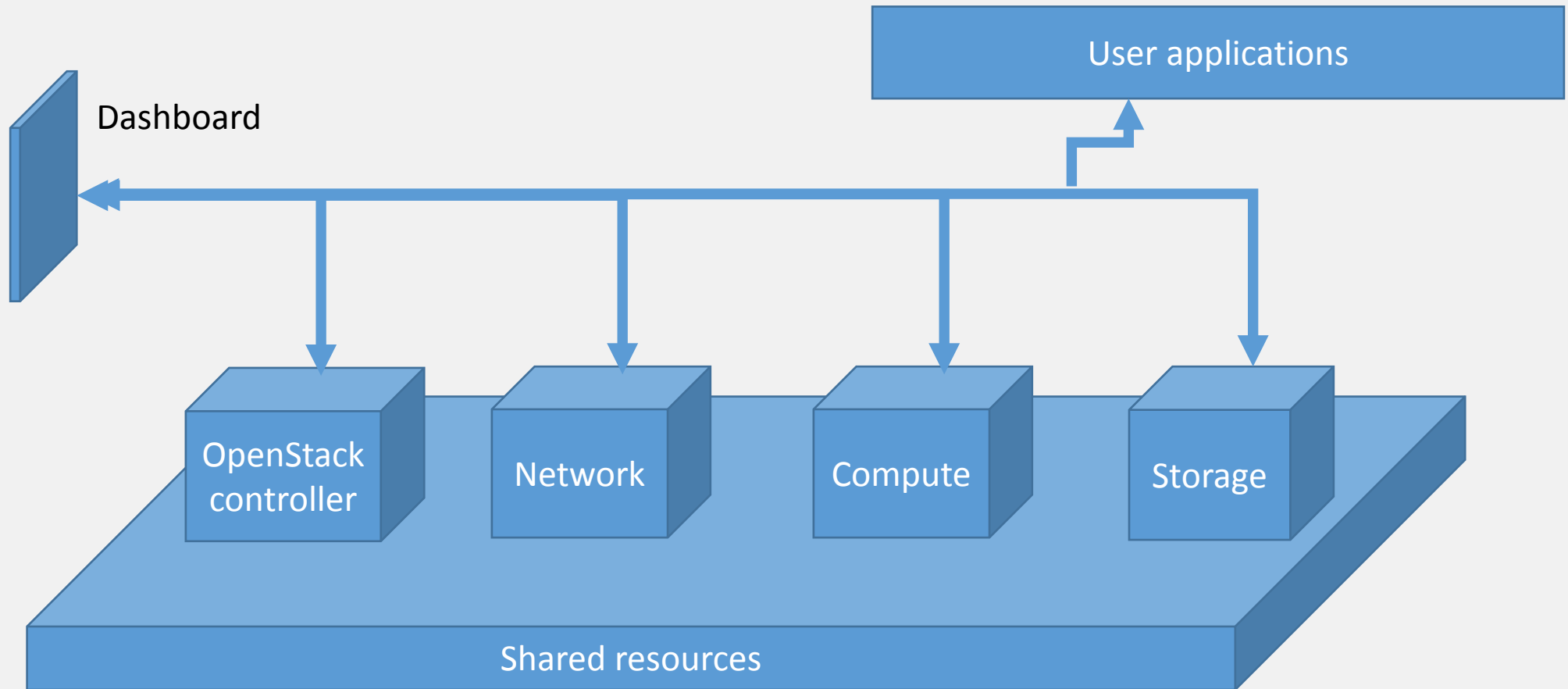
Xen Concepts

- Control Domain a.k.a. Dom0
 - Dom0 kernel with drivers
 - Xen management toolstack
 - Trusted computing base
- Guest Domains
 - Your apps
 - For example, your cloud management stack
- Driver/Stub/Service Domain(s)
 - A "driver, device" model or "control service in a box"
 - De-privileged and isolated
 - Lifetime: start, stop, kill

Mirantis Fuel and OpenStack Architecture



OpenStack Architecture



Mirantis Example

- Mirantis brings up a fuel controller
- The fuel controller allows you to bring up OpenStack controller, networks, compute servers, and storage
- <https://training.mirantis.com/online-resources/fuel-video>