

Virtualisation

The plan

Introduction

Why virtualisation?

What is a Hypervisor?

Types of a Hypervisor

Full Virtualization and Paravirtualization

Introduction

What is virtualisation?



Introduction

Virtual (or **Virtus** in latin):

Something that exists in **effect** but not in a physical form.

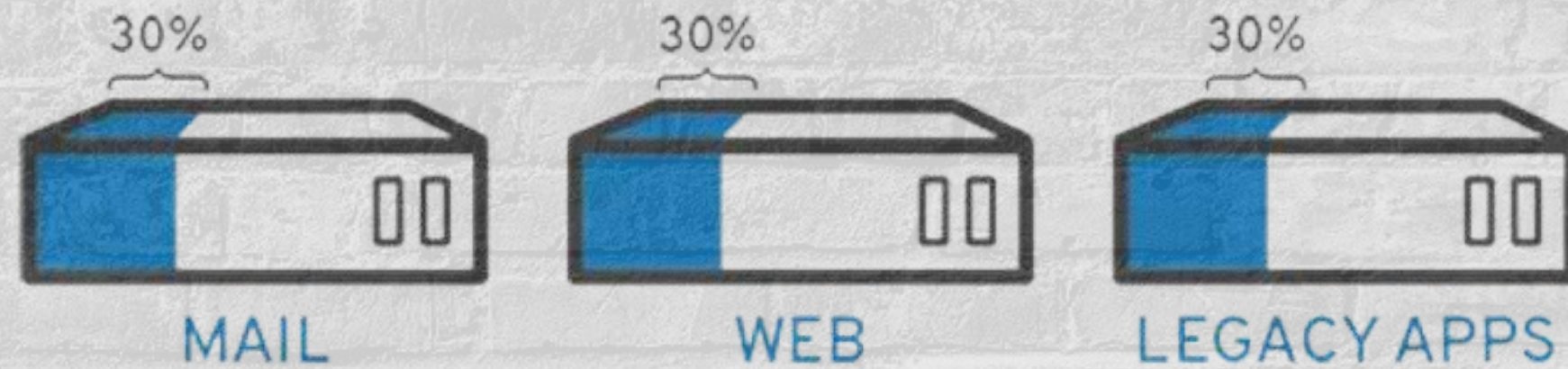
Virtualisation

Virtualization is **technology** that allows you to create **multiple simulated environments** or **dedicated resources** from a single, **physical hardware system**.

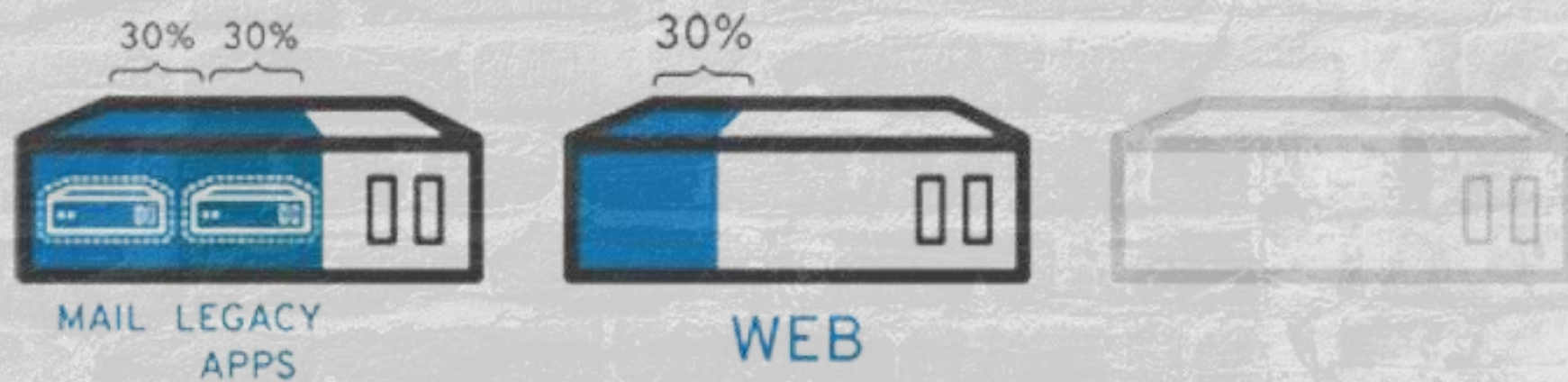


Red Hat's Virtualization Guide

Before



After



**A legacy system is outdated computing software and/or hardware that is still in use.*

Why virtualisation?



Cost savings



**Faster application
migration**



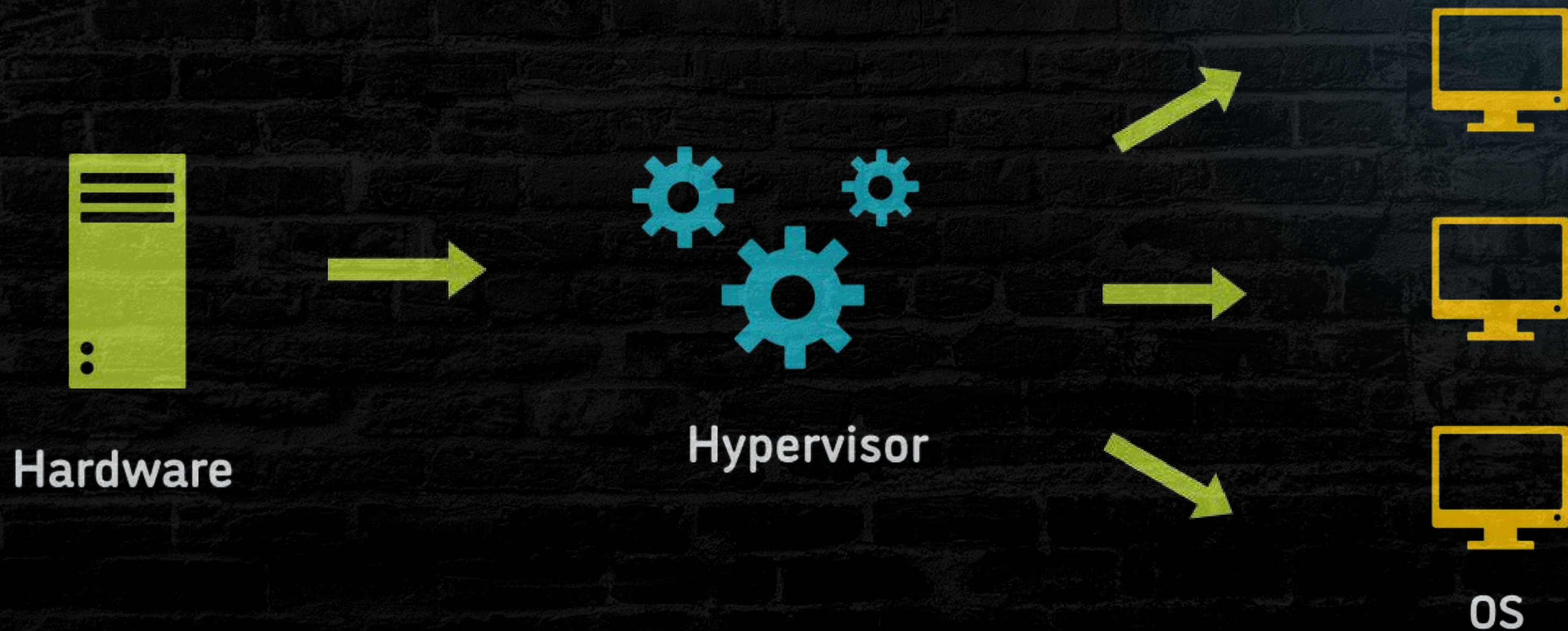
**Efficient
environments**



What is a Hypervisor?

A hypervisor is a software that you can use to run multiple virtual machines on a single physical machine. Every virtual machine has its own operating system and applications.

What is a Hypervisor?

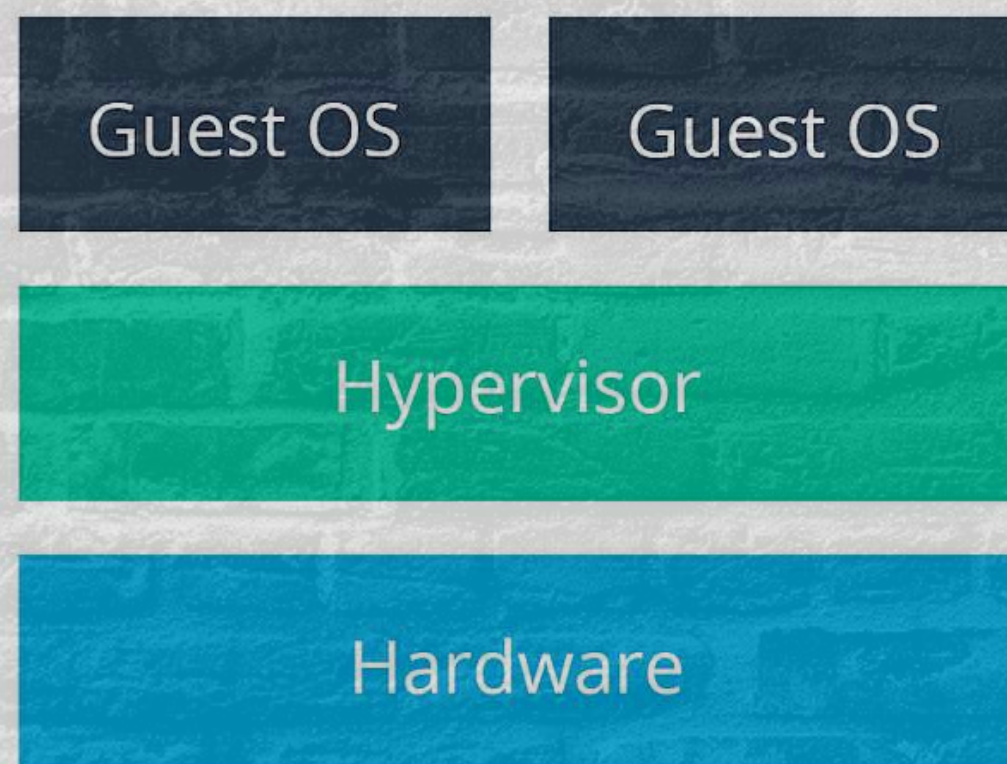




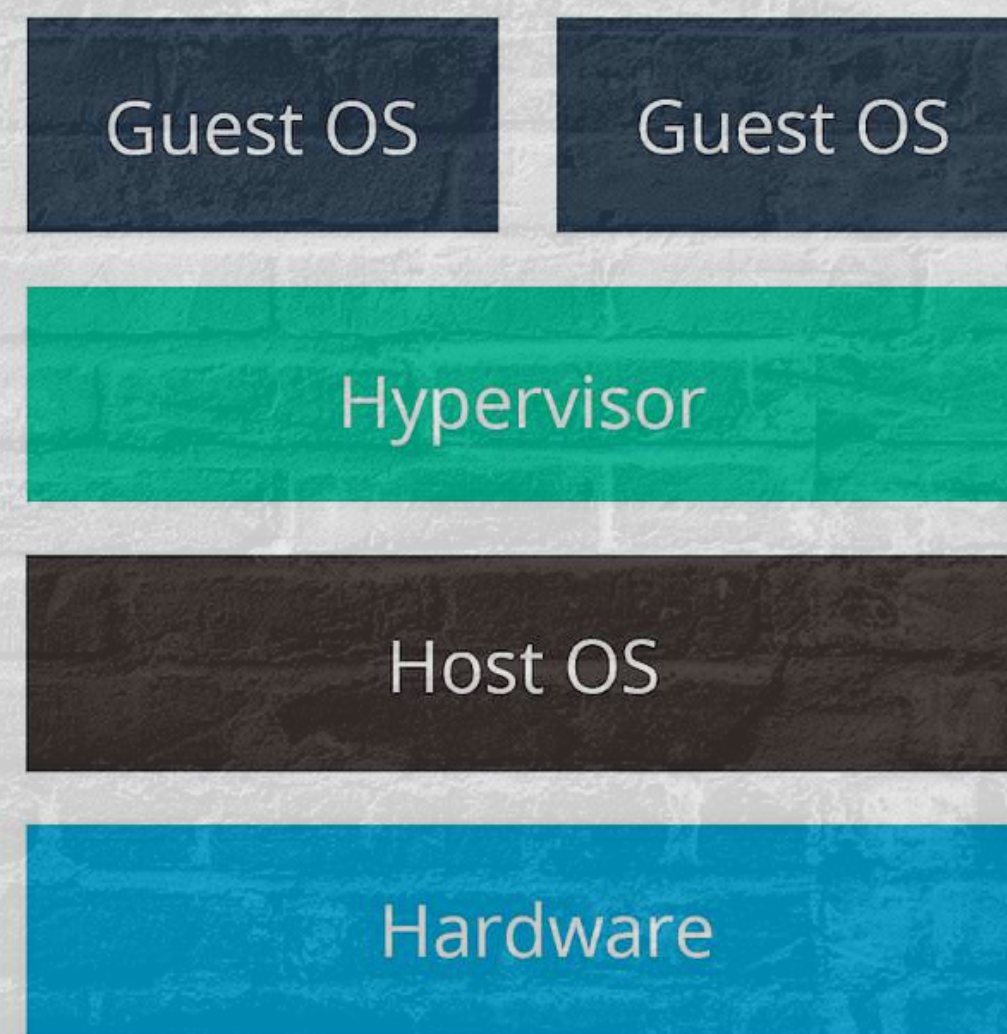
Types of a Hypervisor

Type 1 Hypervisor

Type 2 Hypervisor



TYPE 1 HYPERVISOR



TYPE 2 HYPERVISOR





Full virtualisation Vs Paravirtualisation

Full virtualisation

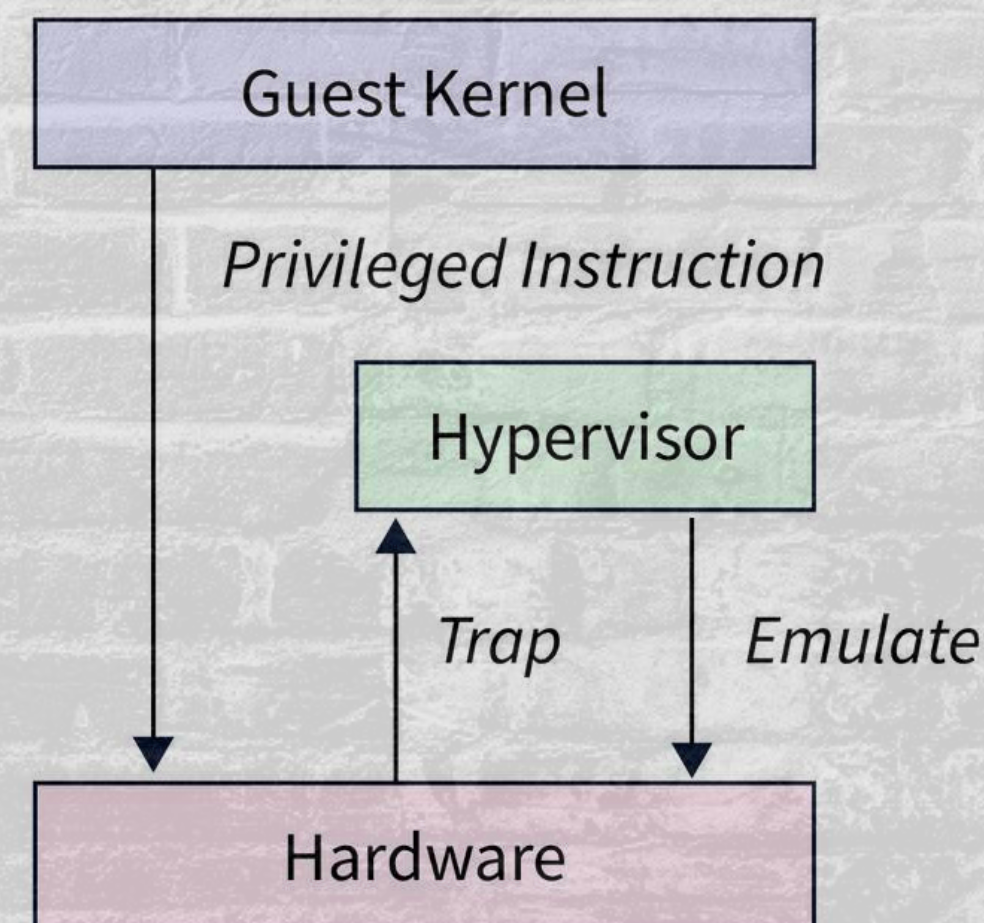
The guest operating system is unaware that it's running in a virtualized environment.

VMs created through full virtualization are completely isolated from each other.



When the Guest Kernel tries to execute a privileged instruction (an operation that typically requires direct hardware access, like managing memory or hardware devices), it doesn't go directly to the hardware. Instead, the hypervisor intercepts it.

“Classical” Full Virtualization

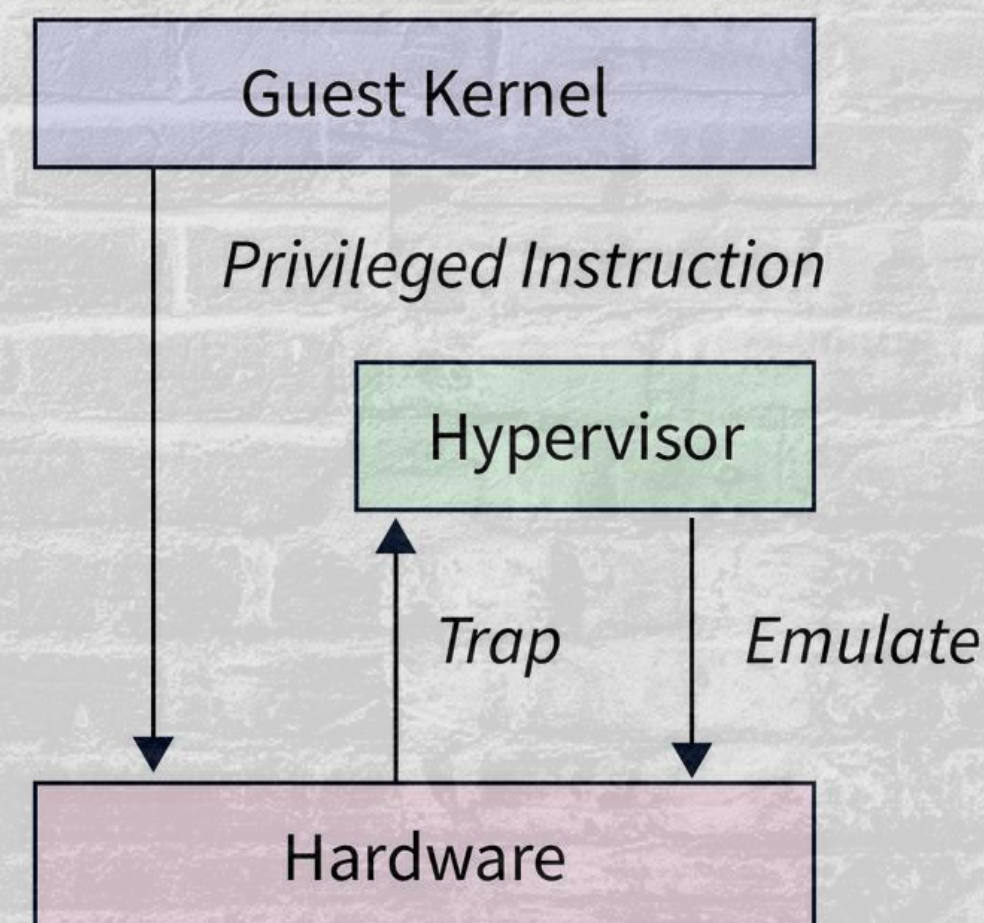




**This interception is called a trap.
The hypervisor "catches" the
instruction before it reaches the
hardware.**

**Once the hypervisor has trapped
the instruction, it emulates the
behavior of the hardware.**

"Classical" Full Virtualization



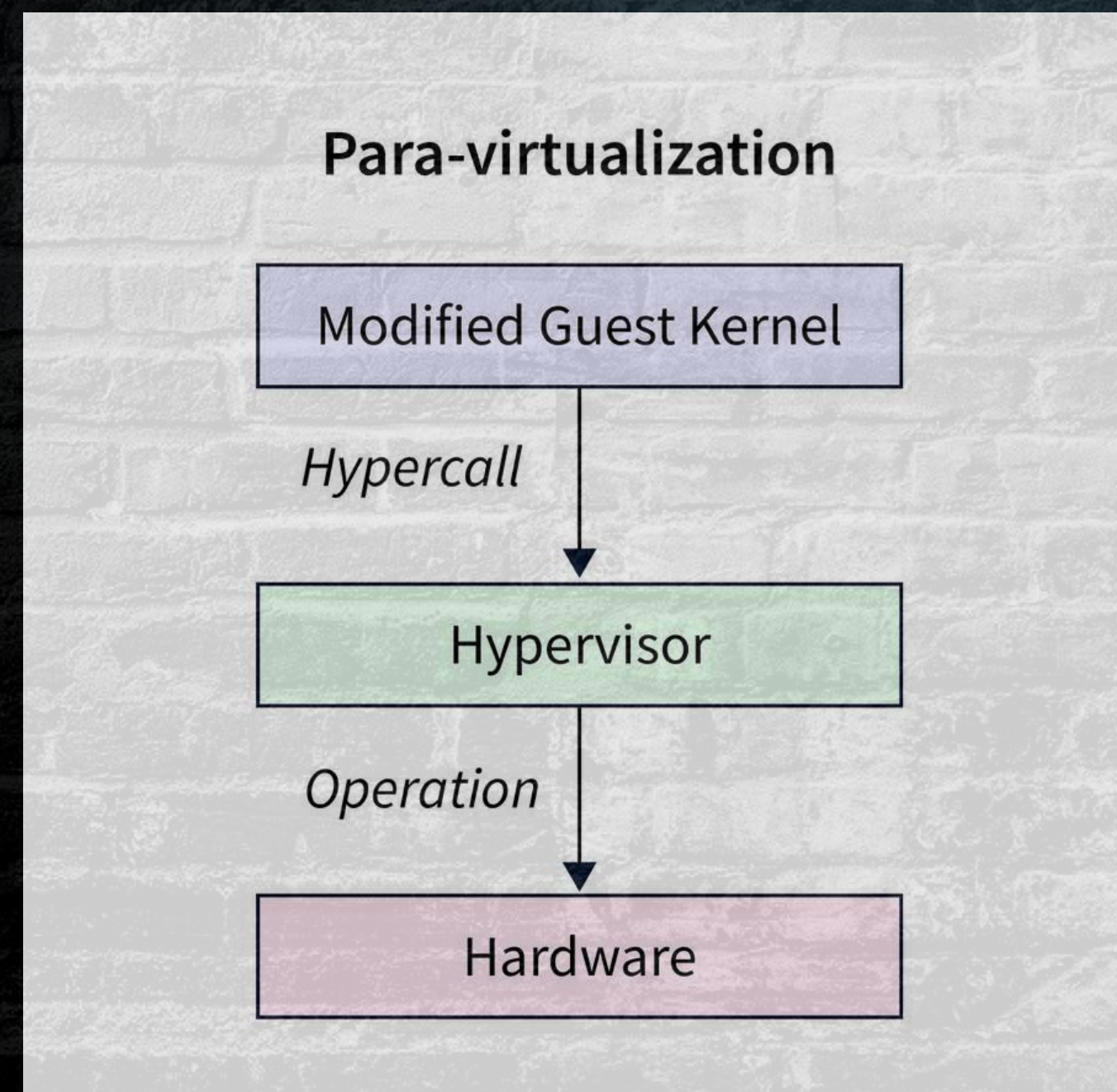
Paravirtualisation

The guest operating system is aware that it's running in a virtualized environment.

Isolation with awareness of other VMs



A hypercall is based on the same concept as a system call. System calls are used by an application to request services from the OS and provide the interface between the application or process and the OS. Hypercalls work the same way, except the hypervisor is used.





The Demo





WHAT THE AUDIENCE LOOKS LIKE WHEN

**THE SPEAKER DELIVERS A BORING
PRESENTATION**

Supermeme.ai

Thank You

