

Platforms

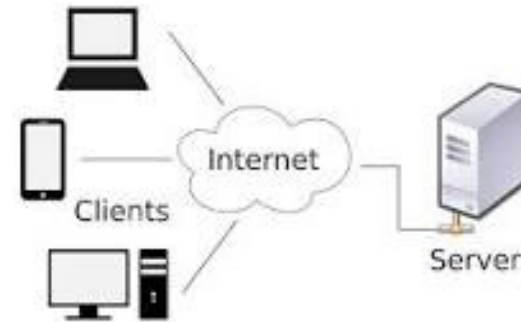
Server

- a computer (or computer program) to manage access to a centralized resource or service in a network
- Typical Server Operating Systems:
 - Windows Server 2016 (GUI)
 - Ubuntu Server (CLI)
 - LTS
 - OS X Server (macOS Server)
 - Obsolete https://www.theregister.co.uk/2018/01/29/farewell_to_macos_server/
- Clients connect to servers

Client

- A client is a piece of computer hardware or software that **accesses** a service made available by a **server**.

- PC
- Mobile
- Tablet



- Thin Client
 - Designed to be especially small so that the bulk of the data processing occurs on the server.
- Thick Client
 - A client that performs the bulk of the data processing operations. The data itself can be stored on the server.

Client S/W

- Windows 10 / 8.1 / 8 / 7
- Linux – many flavours
 - Mint
 - Ubuntu
- Apple OS X
- Mobile
 - iOS
 - Android

Virtualisation

- The *host machine* is the actual machine on which the virtualization takes place, and the *guest machine* is the virtual machine.
- Key Software is called the Hypervisor
- Also called Virtual Machine Manager (VMM)

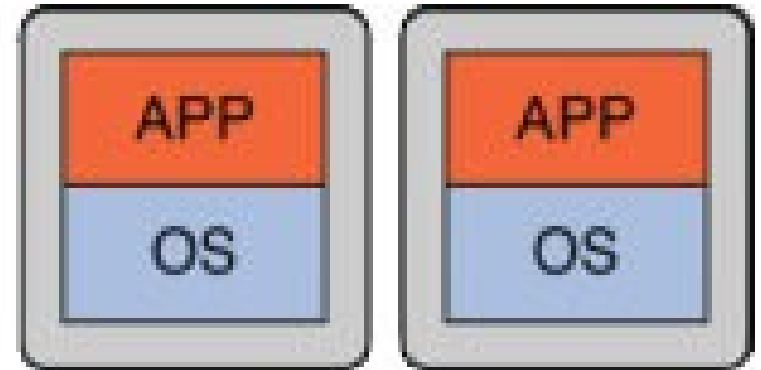
Types of Hypervisor



Hypervisor

Hardware

Type 1 Bare Metal

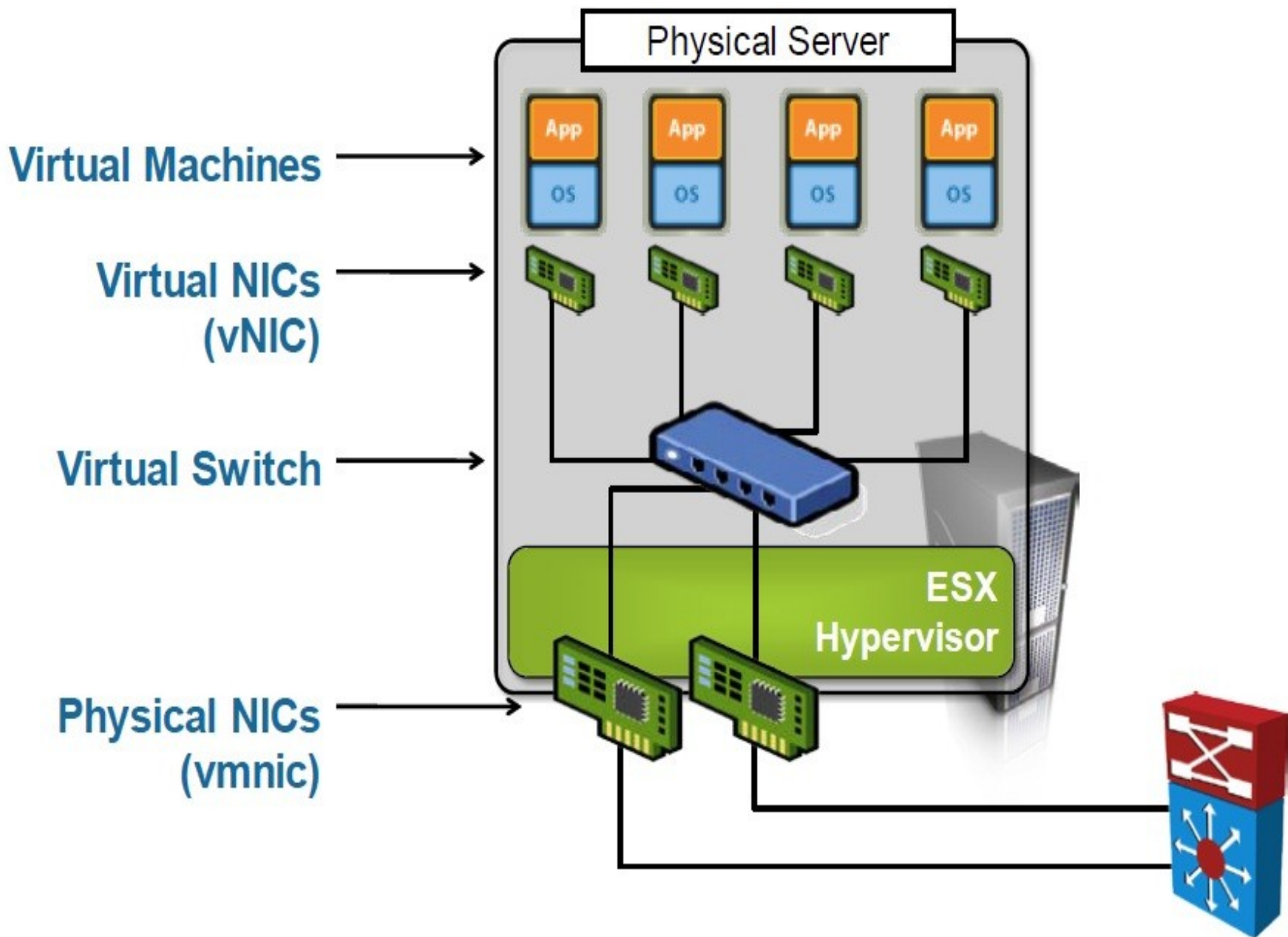


Hypervisor

Operating System

Hardware

Type 2 Hosted



Hyper-V Host

Virtual Machine



Network Application

Virtual NIC

Virtual Machine



Network Application

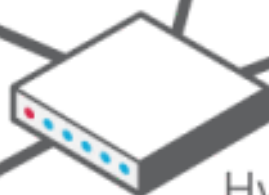
Virtual NIC

Virtual Machine



Network Application

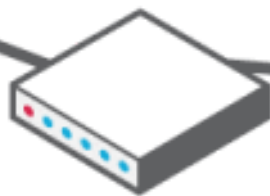
Virtual NIC



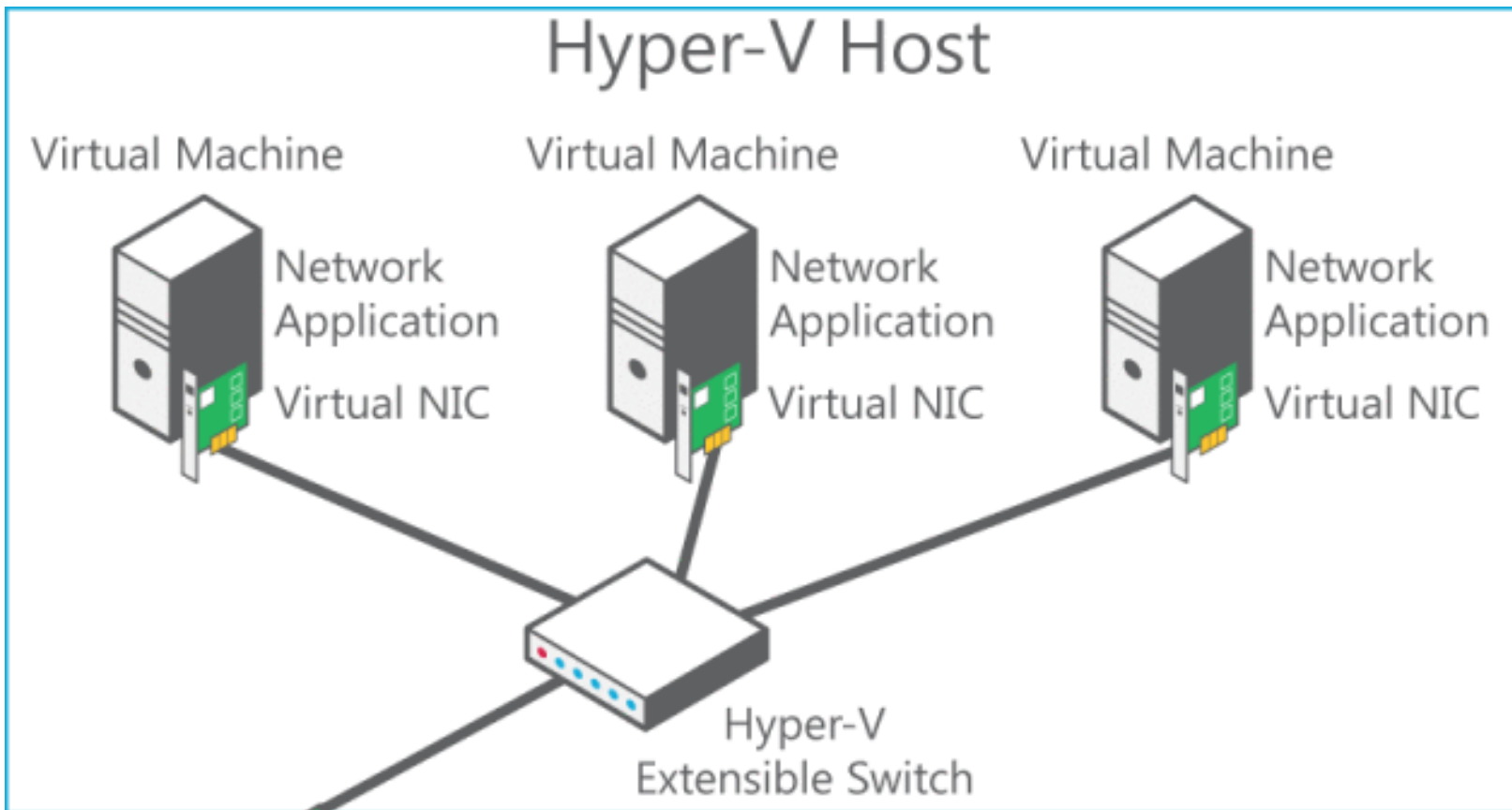
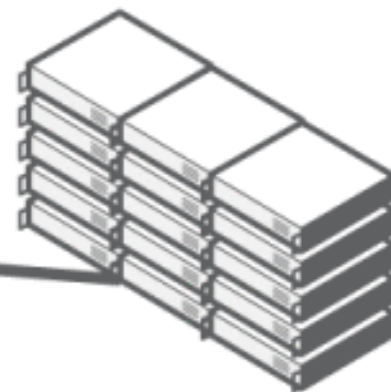
Hyper-V
Extensible Switch



Physical NIC



Physical Switch



Physical Components

- What physical components would you need to build a server?
- What physical components would you need to build an office PC?
- What if anything would you add for a home PC?

Firmware

- specific software that provides the low-level control for the device's specific hardware.
 - Provide a standardized operating environment for a device's more complex software
 - Or for less complex devices, act as the device's complete operating system, performing all control, monitoring and data manipulation functions.
- Stored in non-volatile memory devices (e.g. ROM, EPROM, or flash memory.)
- Updating Firmware
 - Some firmware memory devices are permanently installed and cannot be changed after manufacture.
 - fixing bugs or adding features to the device.
- Firmware on the BIOS of a personal computer contains only elementary basic functions of a device to provide services to higher-level software.

Native Applications

- IOS
 - Safari
 - Maps
 - App Store
- Windows
 - IE
 - Edge
 - Notepad
 - Paint
 - Command Prompt
- Linux
 - Nano
 - Terminal
- Android
 - Chrome
 - Maps
 - Play Store