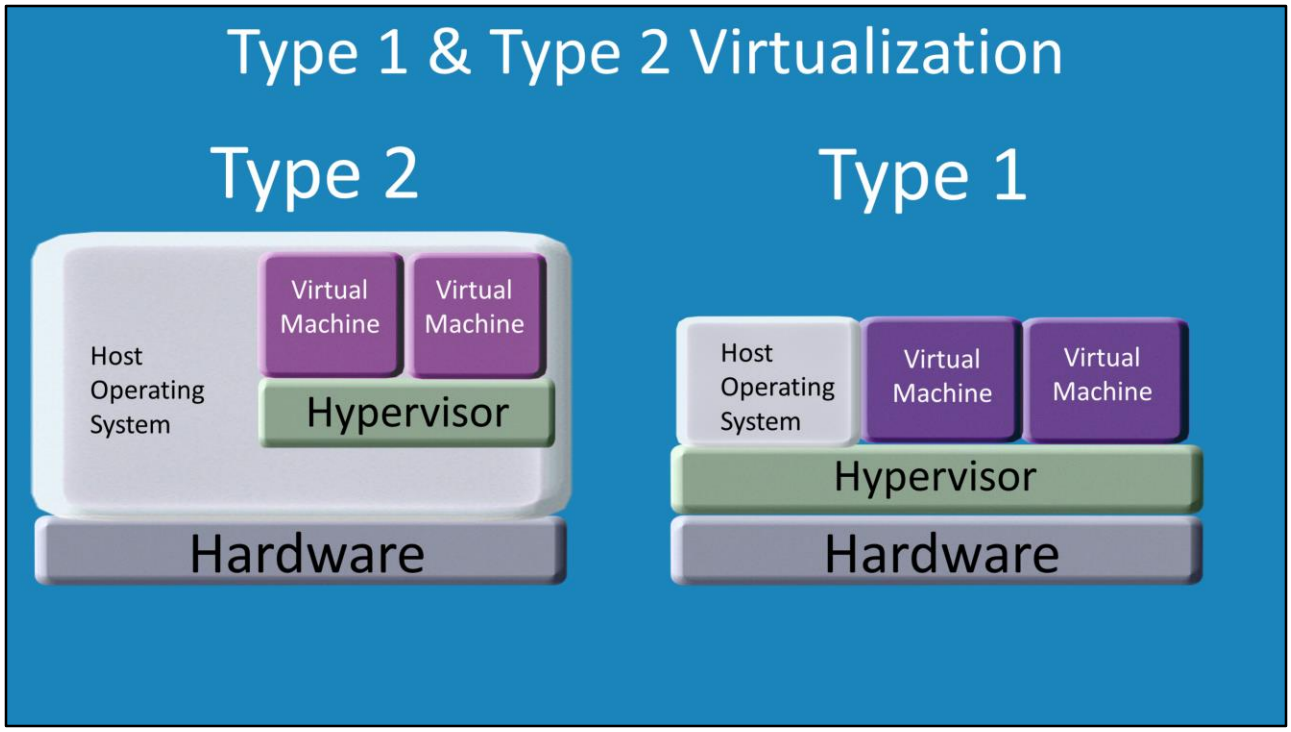
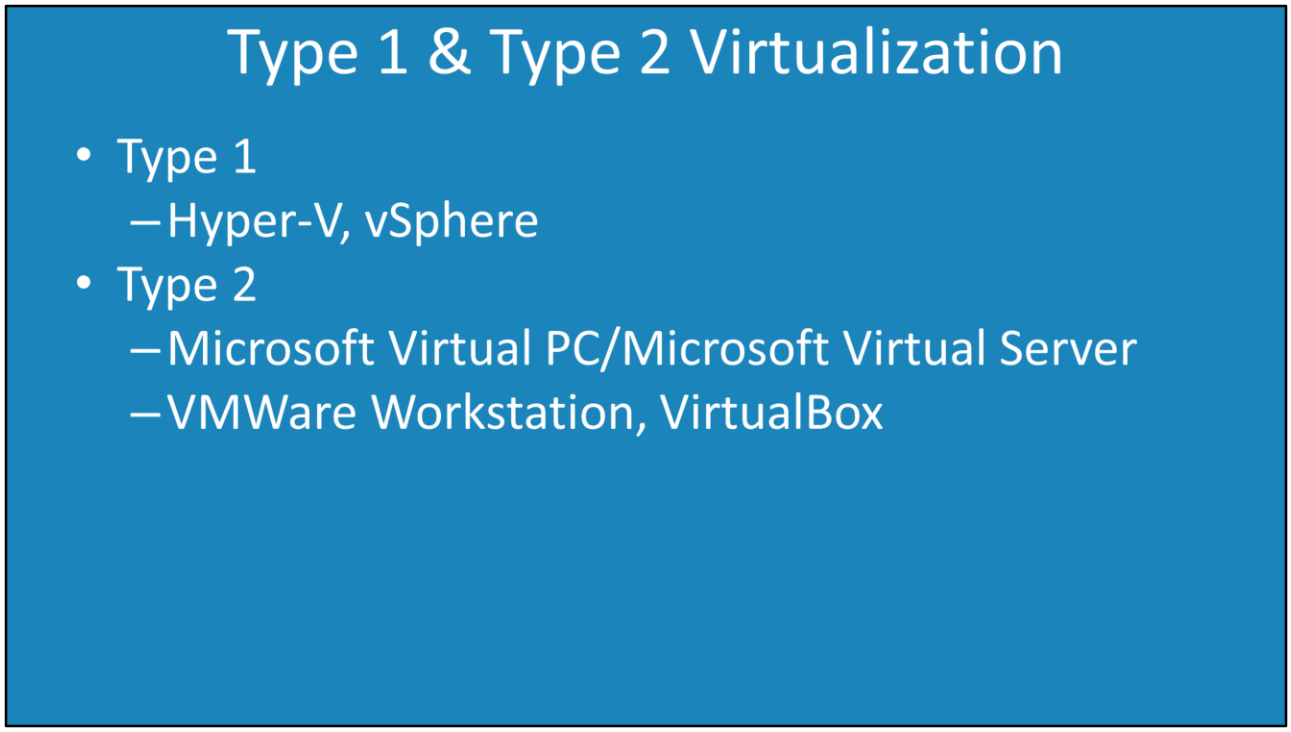
This video will look at the different types of virtualization available on the market referred to as type 1 and type 2. Understanding how these types work will give you a better understanding of which one you should use to meet your needs.



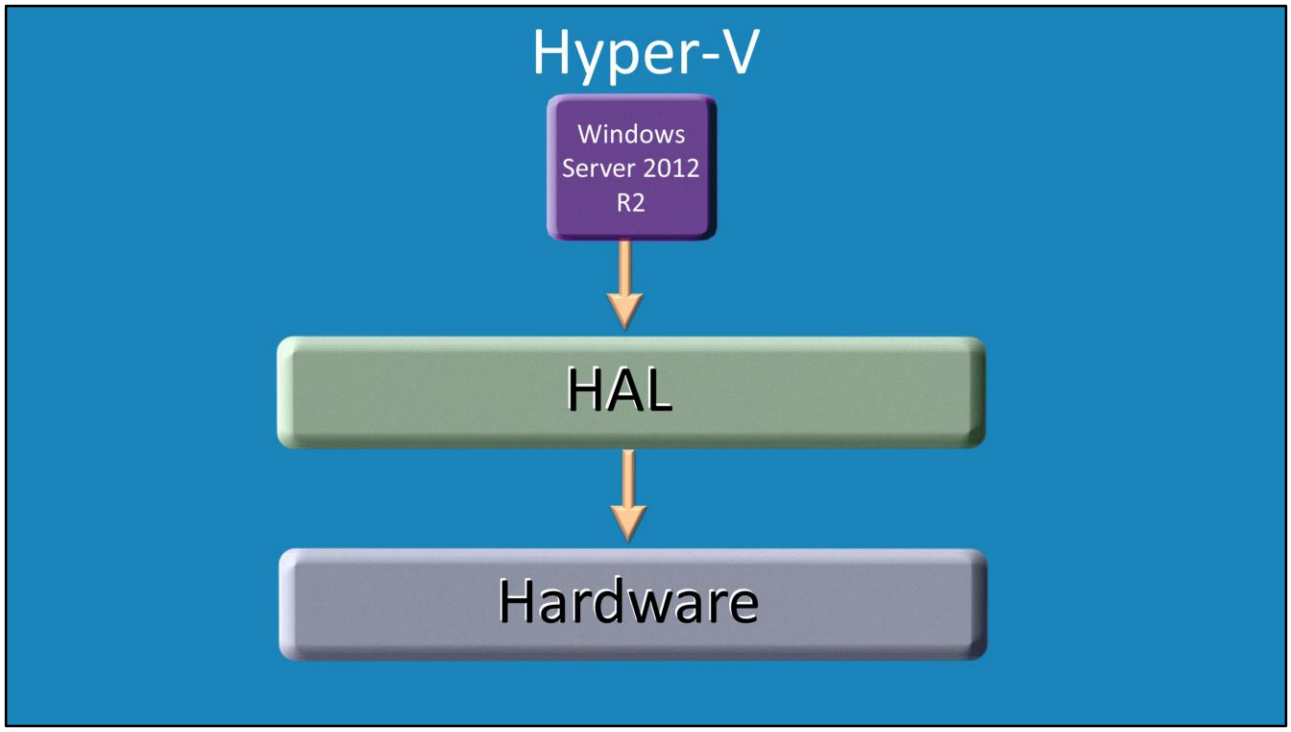
Type 1 & Type 2 Virtualization
00:11 Type 2 was the first virtualization system to be developed. It is designed to run on an existing operating system. The virtual machines running in the virtualization solution connect to a hypervisor which translate the instructions into operating system instructions which are then handled by the operating system. Since the operating system is needed to access the hardware, this is slower than if the virtual machines had a direct route to the hardware. The advantage of type 2 is they do not require any special hardware in order to run.

With Type 1 virtualization, the operating system and any virtual machines run through the same hypervisor. This makes it faster than type 2. In order for type 1 to work, special hardware requirements are required. For example, the CPU and BIOS need to support virtualization.



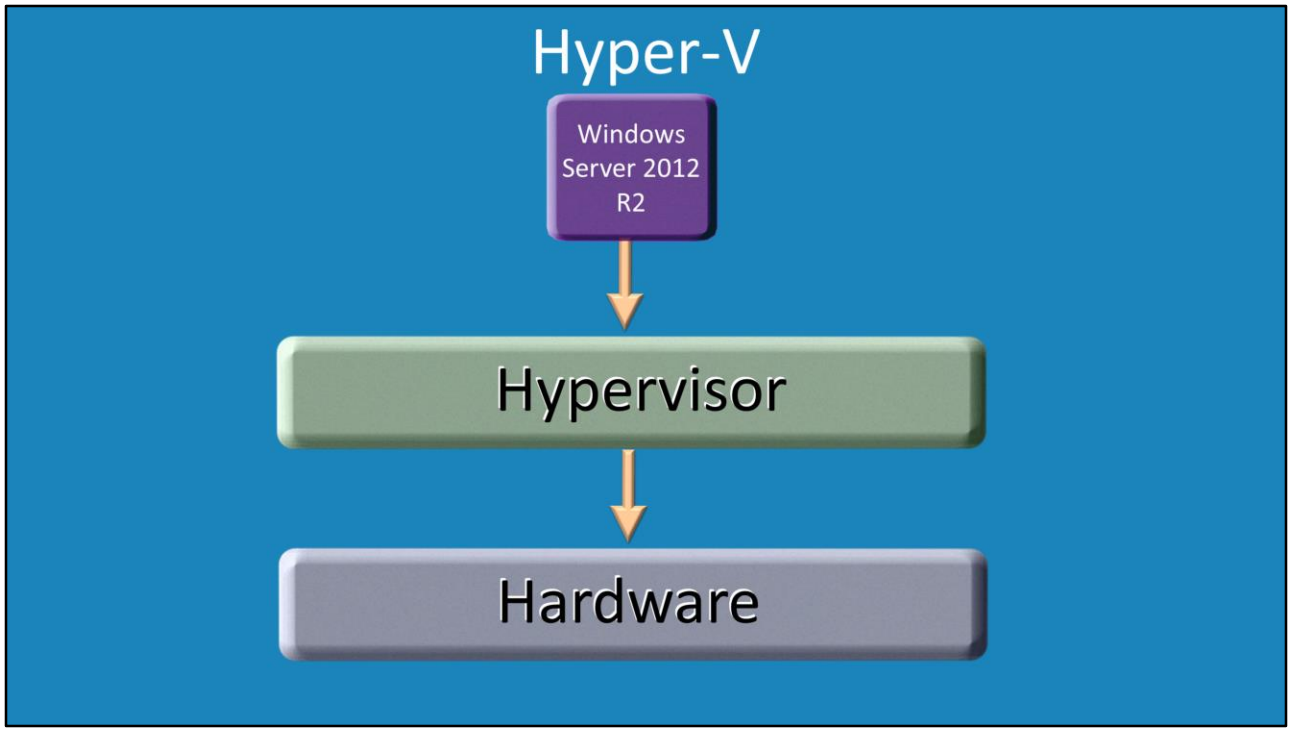
Type 1 & Type 2 Virtualization Examples
01:34 Type 1: Hyper-V and vSphere. The advantage of Hyper-V is that it can be run on the same computer running Windows. vSphere, in contrast, requires a dedicated computer that can only be used to run vSphere. Microsoft has also supplied a Hyper-V standalone version if you want to run Hyper-V on a dedicated computer.

Type2: Microsoft Virtual PC, Microsoft Virtual Server, VMWare Workstation and VirtualBox. The advantage of these is that they can be installed on Windows and do not require special hardware.



Hyper-V

02:20 Hyper-V is sometimes mistaken for a Type 2 virtualization solution. This is because unless you are using the stand-alone version, you require an operating system. Without the Hyper-V role installed, the operating system uses a HAL (Hardware Abstraction Layer) to access the hardware.



When Hyper-V is installed, the HAL is replaced by a Hypervisor and the operating system and virtual machines access the hardware through the hypervisor. So essentially the hypervisor is a HAL with additional features required for virtual machines.

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References

"Installing and Configuring Windows Server 2012 R2 Exam Ref 70-410" pg 132 – 133
"Hypervisor" http://en.wikipedia.org/wiki/Hypervisor