ASSIGNMENT-2

AIM: Study and analysis Host OS And Guests OS. Differentiate Host OS and Guest OS.

HOST OS:

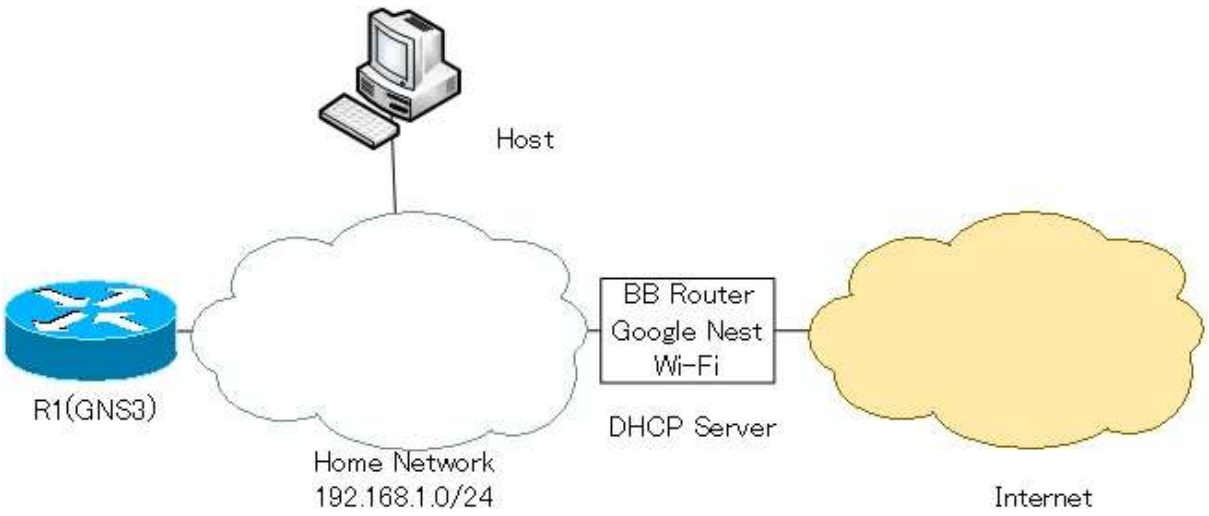
The host operating system is probably the trickiest bit of the puzzle. Too many people have access to it, no matter how far you lock it down. There are system administrators, security administrators, and of course backup/restore folks. Each of these roles need to have a level of access, however, at no point should these folks be able to alter the system logs.

This is where Security Information Management (SIM) becomes quite handy in the area of system lockdown. When configuring the host, install a SNARE agent on it. Configure the agent to send the host system logs to your log collector. Also, configure the host to not retain logs for longer than 48 hours locally.

By configuring the host in this fashion, you have some local log data that is valuable to your administrators for technical reasons, but you've also moved the log data to a remote location. You've made it impossible for a hacker to cover his tracks.

A very important point: don't just move the logs then deleted them locally. Your system administrators and other support staff need these logs as well.

Example of link to the host OS:

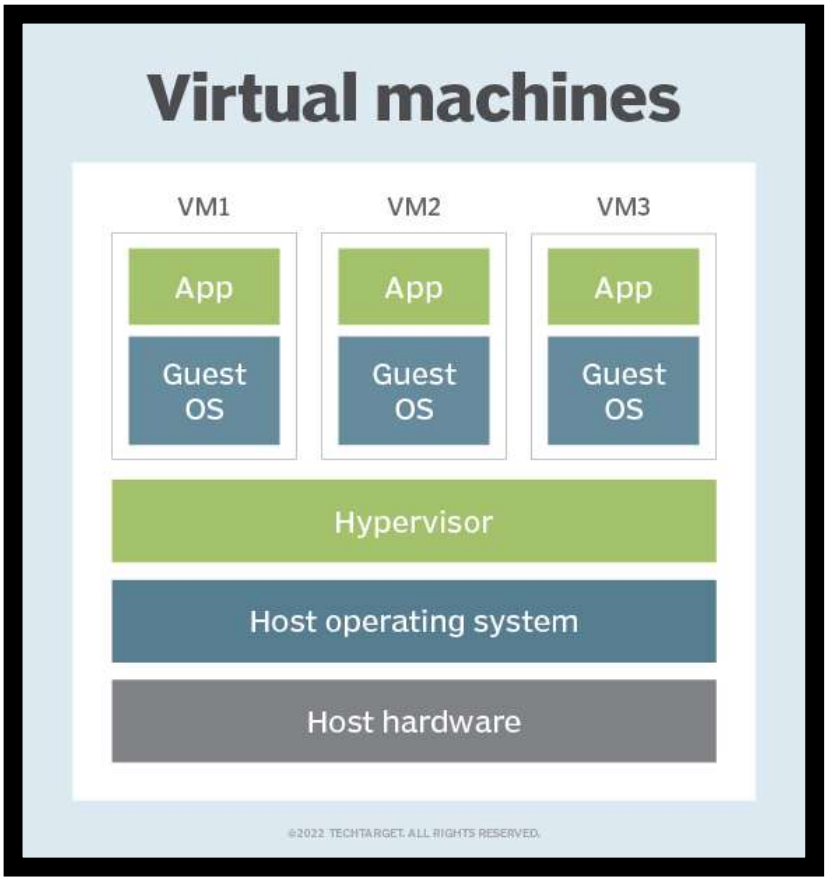


GUEST OS :

A guest operating system is the operating system installed on either a virtual machine (VM) or partitioned disk. It is usually different from the host operating system. Simply put, a host OS runs on hardware, while a guest OS runs on a VM.

Virtulization and Guest OS:

Virtulization technology allows a single computer to run more than one OS at the same time. Thus, a single physical machine can be configured as multiple VMs. These VMs are isolated sections of hardware with storage, processing, memory and network capacity. Virtualization also allows resource sharing between the host OS and guest OS.



A guest OS provides an additional OS for applications and is required before a VM can be deployed. It can be used for testing by developers without impacting anything outside that VM, such as the data already in production use. An example of a guest OS would be Windows Server 2022 in a VM created by the VMware ESXi hypervisor. Another example would be Boot Camp, which allows Mac users to run a Windows OS as the guest OS within a VM on their Mac.

DIFFERENTIATE HOST OS AND GUEST OS:

Host Operating System:

A host operating system is a piece of software that runs on a computer and allows it to communicate with its hardware. It has the ability to run a type 2 hypervisor. Type 2 hypervisors, in other words, run on the host operating system.

Container-based virtualization may also be used by the host OS. The logical partitioning of server programs is aided by the use of containers. As a result, containers can be used without requiring each application to have its own operating system. It enables apps to share the operating system kernel while accessing distinct hardware resources. This form of the shared operating system is also known as a host operating system.

A single physical server can be separated into numerous virtual machines, which are separate pieces of hardware with loads of processing, storage, network capacity, and memory, thanks to virtualization. When it comes to sharing resources between the host and guest operating systems, virtualization is more efficient and less expensive.

Guest Operating System:

Hypervisors of type 2 can produce several Virtual Machines. Each computer has its own operating system, which is referred to as the guest OS. In other words, a guest OS is a piece of software that runs inside a virtual machine. As a result, the guest operating system is run by the virtual machine. In virtualization, the guest operating system differs from the host operating system in numerous respects, and it can be used as a portioned system component or a virtual machine part. It's primarily used for apps that run on a different operating system.

While the visitor and host operating systems share resources, their operations are completely separate. Although it is possible for these operating systems to run in parallel, the host operating system should be started first. Running applications and programs that are incompatible with the host OS is one of the main benefits of using a guest OS.

Key Differences:

The main distinctions between the Host OS and the Guest OS are explained here. The following are some of the major differences between the host and guest operating systems:

- A host operating system is a piece of software that runs on a computer and connects with the hardware. A guest OS, on the other hand, is software that is installed on a virtual computer.
- It's possible that the host OS is a single one. The guest OS can be single or numerous.
- The host OS runs on the hardware directly. The guest OS runs on a virtual machine.

Feature-based Comparison:

the The following are some examples of head-to-head comparisons between the host OS and guest OS:

Features	Guest Operating System	Host Operating System
Definition	A guest operating system is a piece of software that runs inside a virtual computer.	A host operating system is a piece of software that runs on a computer and connects with the hardware.
Execution	It executes on a virtual machine	It executes directly on the hardware
Functionality	The guest operating system interacts with the virtual machine.	The host operating system interacts with the hardware.
Quantity	It is possible for the guest OS to be several or single.	It's possible that the host OS is all-in-one.
operating system on computer	It is secondary to the originally installed operating system on a computer,	Host operating systems use container-based virtualization
Uses	It is used to run more than one application requiring different operating system on the same hardware.	It helps to partition the application in a server