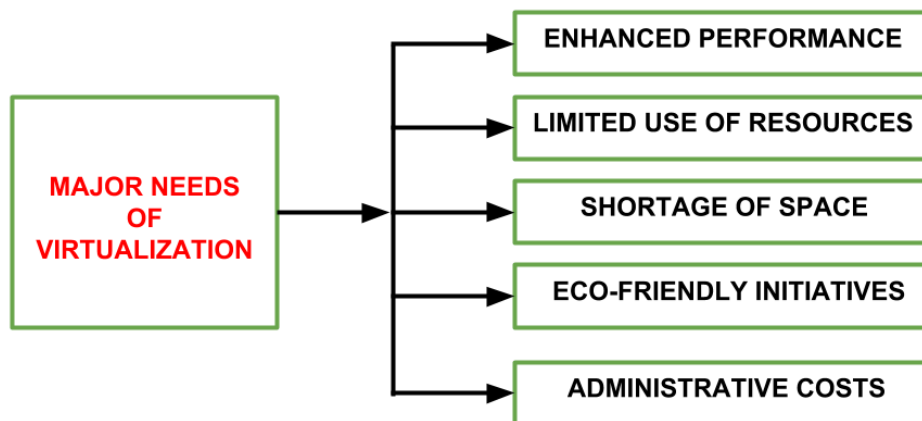


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Need for Virtualisation



1. ENHANCED PERFORMANCE-

Currently, the end user system i.e. PC is sufficiently powerful to fulfill all the basic computation requirements of the user, with various additional capabilities which are rarely used by the user. Most of their systems have sufficient resources which can host a virtual machine manager and can perform a virtual machine with acceptable performance so far.

2. LIMITED USE OF HARDWARE AND SOFTWARE RESOURCES-

The limited use of the resources leads to under-utilization of hardware and software resources. As all the PCs of the user are sufficiently capable to fulfill their regular computational needs that's why many of their computers are used often which can be used 24/7 continuously without any interruption. The efficiency of IT infrastructure could be increase by using these resources after hours for other purposes. This environment is possible to attain with the

help of Virtualization.

3. SHORTAGE OF SPACE-

The regular requirement for additional capacity, whether memory storage or compute power, leads data centers raise rapidly. Companies like Google, Microsoft and Amazon develop their infrastructure by building data centers as per their needs. Mostly, enterprises unable to pay to build any other data center to accommodate additional resource capacity. This heads to the diffusion of a technique which is known as server consolidation.

4. ECO-FRIENDLY INITIATIVES-

At this time, corporations are actively seeking for various methods to minimize their expenditures on power which is consumed by their systems. Data centers are main power consumers and maintaining a data center operations needs a continuous power supply as well as a good amount of energy is needed to keep them cool for well-functioning. Therefore, server consolidation drops the power consumed and cooling impact by having a fall in number of servers. Virtualization can provide a sophisticated method of server consolidation.

5. ADMINISTRATIVE COSTS AND LICENSE COST-

Furthermore, the rise in demand for capacity surplus, that convert into more servers in a data center, accountable for a significant increase in administrative costs. Hardware monitoring, server setup and updates, defective hardware replacement, server resources monitoring, and backups are included in common system administration tasks. These are personnel-intensive operations. The administrative costs is increased as per the number of servers. Virtualization decreases number of required servers for a given workload, hence reduces the cost of administrative employees.

BENEFITS

RESOURCE EFFICIENCY -

Before virtualization, IT staff would allocate a dedicated physical CPU to each application server, buying and setting up a separate server for every application. This approach, favouring one application and one operating system per computer, was adopted for its reliability. Invariably, each physical server would be underused.

In contrast, server virtualization enables you to run several applications—each on its own VM with its own OS—on a single physical computer (typically an x86 server) without sacrificing reliability. This enables maximum use of the physical hardware's computing capacity.

Easier management

Replacing physical computers with software-defined VMs makes it easier to use and manage policies written in software. This allows you to create automated IT service management workflows. For example, automated deployment and configuration tools enable administrators to define collections of virtual machines and applications as services, in software templates.

This means that they can install those services repeatedly and consistently without cumbersome, time-consuming and error-prone manual setup. Admins can use virtualization security policies to mandate certain security configurations based on the role of the virtual machine. Policies can even increase resource efficiency by retiring unused virtual machines to save on space and computing power.

Minimal downtime

OS and application crashes can cause downtime and disrupt user productivity. Admins can run multiple redundant virtual machines alongside each other and failover between them when problems arise. Running multiple redundant physical servers is more expensive.

Faster provisioning

Buying, installing and configuring hardware for each application is time-consuming. If the hardware is already in place, provisioning virtual machines to run all your applications is significantly faster. You can even automate it using management software and build it into existing workflows.