DynaSis

‹IT for the SMB›

DynaSis Quick Reference Guide

Virtualization

What is Virtualization?

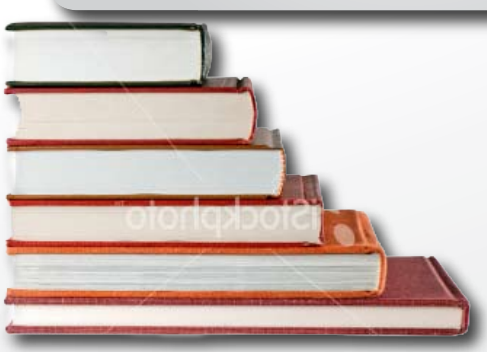
Virtualization is a proven software technology that is rapidly transforming the IT landscape and fundamentally changing the way that people compute. Virtualization lets you run multiple virtual servers or desktops on a single physical machine (host), sharing the resources of that single computer across multiple environments.

How does Virtualization Work?

Virtualization works by inserting a thin layer of software directly on the computer hardware or host and then loading multiple versions of the operating systems on top of it. This contains a virtual machine monitor or "hypervisor" that allocates hardware resources dynamically and transparently. Multiple operating systems run concurrently on a single physical computer and share hardware resources with each other. You can safely run several operating systems and applications at the same time on a single computer, with each having access to the resources it needs when it needs them.

A Brief History

Virtualization was first implemented more than 30 years ago by IBM as a way to logically partition mainframe computers into separate virtual machines. These partitions allowed mainframes to "multitask": run multiple applications and processes at the same time. Since mainframes were expensive resources at the time, they were designed for partitioning as a way to fully leverage the investment. Virtualization was effectively abandoned during the 1980s and 1990s when client-server applications and inexpensive servers and desktops led to distributed computing. The broad adoption of Windows and the emergence of Linux as server operating systems in the 1990s established the framework for personal computing but also brought challenges.



Why use Virtualization?

Virtualization addresses the challenges that arise when computing becomes widely distributed and moves away from the "mainframe" model:

» ***Low Infrastructure Utilization.***
Typical server deployments achieve an average utilization of only 10% to 15% of total capacity, according to International Data Corporation (IDC), a market research firm. Organizations typically run one application per server to avoid the risk of vulnerabilities in one application affecting the availability of another application on the same server.

» ***Increasing Physical Infrastructure Costs.***

The operational costs to support growing physical infrastructure have steadily increased. Most computing infrastructure must remain operational at all times, resulting in power consumption, cooling and facilities costs that do not vary with utilization levels.

» ***Increasing IT Management Costs.*** As computing environments become more complex, the level of specialized education and experience required for infrastructure management personnel and the associated costs of such personnel have increased. Organizations spend disproportionate time and resources on manual tasks associated with server maintenance, and thus require more personnel to complete these tasks.

» ***Insufficient Failover and Disaster Protection.***
Organizations are increasingly affected by the downtime of critical server applications and inaccessibility of critical end user desktops. The threat of security attacks, natural disasters, health pandemics and terrorism has elevated the importance of business continuity planning for both desktops and servers.

» ***High Maintenance end-user desktops.***

Managing and securing enterprise desktops present numerous challenges. Controlling a distributed desktop environment and enforcing management, access and security policies without impairing users' ability to work effectively is complex and expensive. Numerous patches and upgrades must be continually applied to desktop environments to eliminate security vulnerabilities.

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Top 5 Reasons to Adopt Virtualization Software

1. Get more out of your existing resources: Pool common infrastructure resources and break the legacy "one application to one server" model with server consolidation.

2. Reduce datacenter costs by reducing your physical infrastructure and improving your server to admin ratio: Fewer servers and related IT hardware means reduced real estate and reduced power and cooling requirements. Better management tools let you improve your server to admin ratio so personnel requirements are reduced as well.

3. Increase availability of hardware and applications for improved business continuity: Securely backup and migrate entire virtual environments with no interruption in service. Eliminate planned downtime and recover immediately from unplanned issues.

4. Gain operational flexibility: Respond to market changes with dynamic resource management, faster server provisioning and improved desktop and application deployment.

5. Improve desktop manageability and security: Deploy, manage and monitor secure desktop environments that users can access locally or remotely, with or without a network connection, on almost any standard desktop, laptop or tablet PC.

Common Virtualization Applications

» Run multiple operating systems on a single computer including Windows, Linux and more.

» Let your Mac run Windows creating a virtual PC environment for all your Windows applications.

» Reduce capital costs by increasing energy efficiency and requiring less hardware and increasing your server to admin ratio

» Ensure your enterprise applications perform with the highest availability and performance

» Build up business continuity through improved disaster recovery solutions and deliver high availability throughout the datacenter

» Improve enterprise desktop management & control with faster deployment of desktops and fewer support calls due to application conflicts