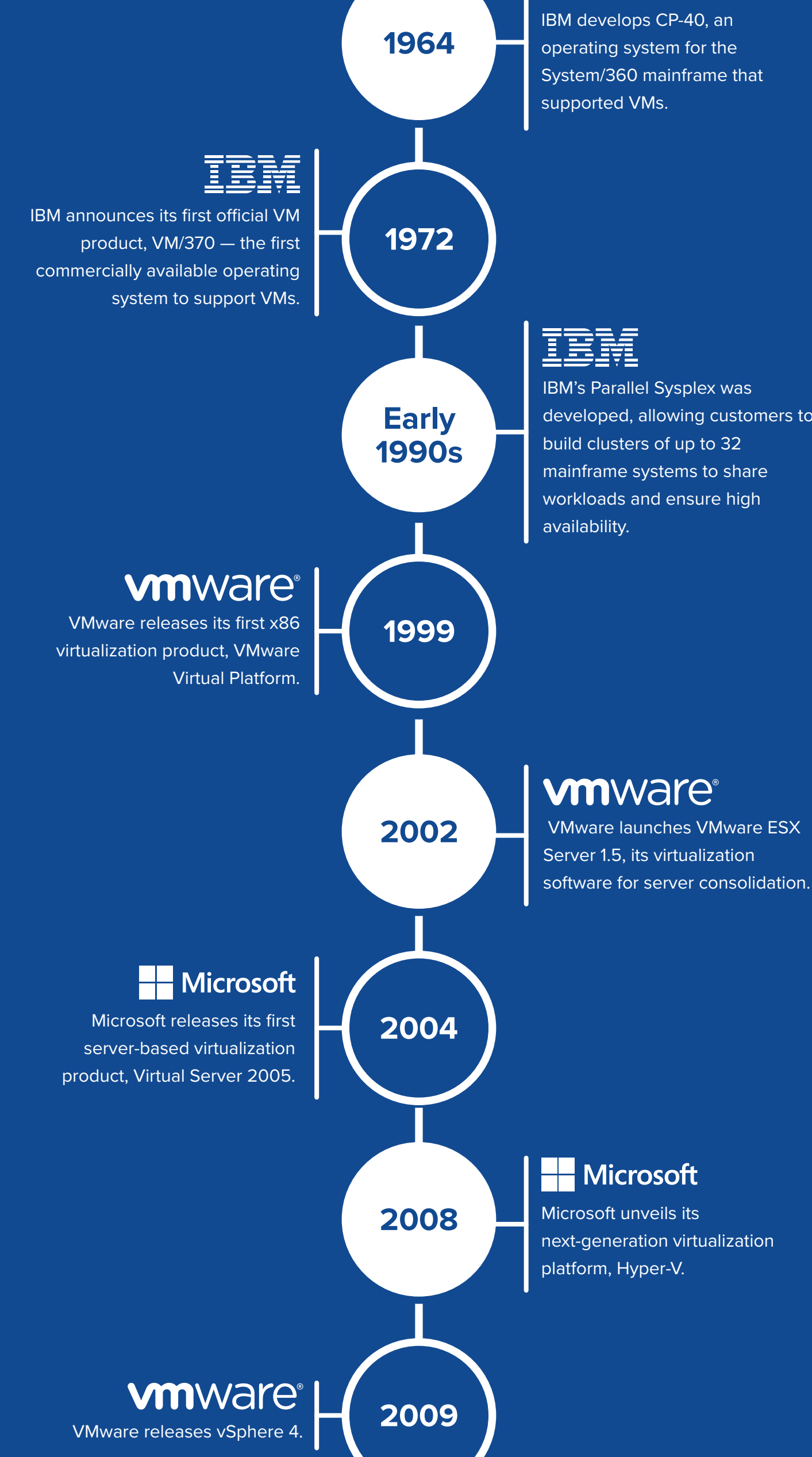


The Changing Face of Virtualization





Nearly two decades have passed since VMware Virtual Platform first enabled companies to run multiple operating systems on a single host computer. Despite the maturity of virtualization technologies, virtual environments continue to increase in popularity and complexity, creating new opportunities and challenges for businesses today.

A Brief History of Virtualization

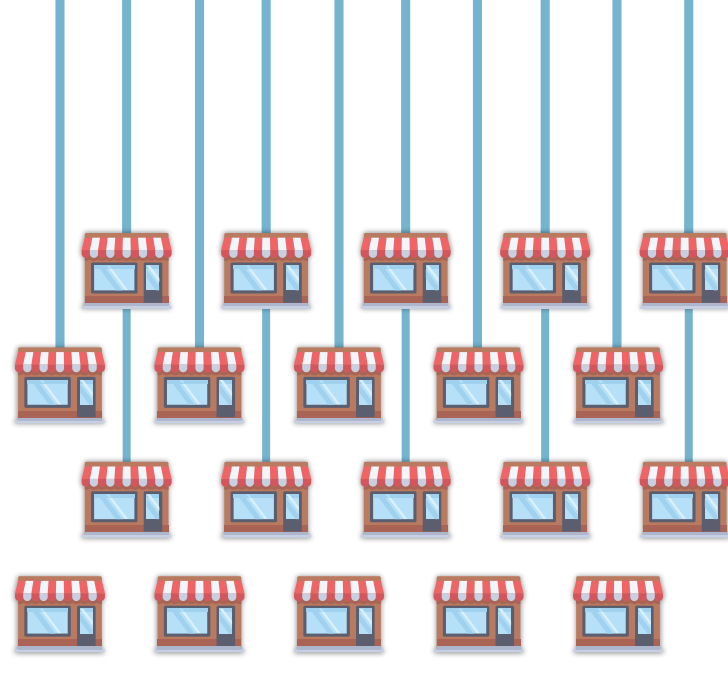


The Value of Virtualization

Virtualization is one of the most pervasive computing technologies. And the reason why is clear. Implementing server virtualization solutions offers compelling benefits, such as:

-  **Reduced server support,** maintenance and resource costs
-  Increased IT operational **efficiency**
-  **Faster time to deployment** and implementation of new services
-  Increased **disaster recovery capabilities** and decreased recovery time
-  **Cost-effective** and consistent development and test environments

More than **75%** of organizations use server virtualization.¹



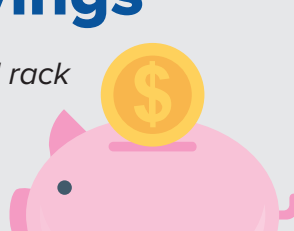
71% Cheaper

Deploying one virtualized server costs about \$2,000 on average compared to \$7,000 for a standard physical server with 2 CPUs, as a result of reduced labor and hardware costs.²



\$2,000 in Annual Savings

Decommissioning one 1U rack server saves companies \$2,000 on average.³



What's Ahead for Virtualization Technologies

As virtualization trends like cloud computing advance, virtual environments are growing in complexity. The benefits they once boasted are no longer givens for organizations that can't properly manage these multi-faceted environments. Here are four virtualization challenges that organizations will need to prepare for to reap the full benefits of this technology:

Broader Security Implications

With complex virtual environments, security threats aren't isolated to one server or VM.

A compromised host can put all guest VMs and their business applications at risk, expanding the threat and potential impact to a business.

IT departments should enforce stringent security and compliance policies and track guest-to-host relationships to better understand these connections and potential vulnerabilities.

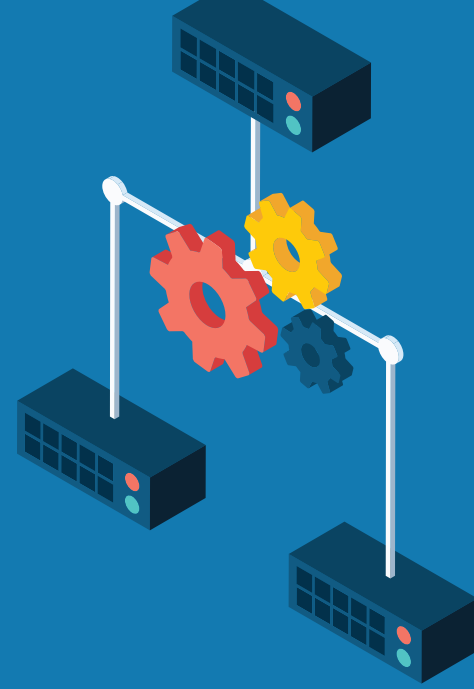


Greater Management Complexity

VMs affect the entire data center, but many built-in VM management tools only account for virtual resources and don't consider external resources.

Managing all the moving parts of individual virtual machines and the data center as a whole requires advanced skills.

IT teams must know which VMs exist, which are active or inactive, which applications are running and how many resources are being leveraged.



Growing Storage Costs

As IT departments spin up more and more VMs, VM sprawl can become a serious issue. When so many VMs exist that they become difficult to manage, it creates orphaned virtual disk images that consume critical storage space.

When data and files that typically reside on internal storage in physical servers are moved to shared storage, the number of files and the size of the storage network can also grow rapidly.



Performance and Bandwidth Issues

Moving from physical to virtual hardware can often cause performance issues.

When one VM utilizes all allocated processors but additional CPUs go unused on the host, VM saturation can occur, causing networking resources to deplete much faster.

Saturation causes performance issues, reduced bandwidth and increased latency.



Prepare for the Next Generation of Virtualization

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Sources

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