



# hypervisors: vmware, xen and microsoft

## Benefits of Scalent Hypervisor Solutions

Companies who have used Scalent software to improve their hypervisor implementation have experienced:

- **Removed LAN and Storage constraints:** Companies deploying Scalent were able to place hypervisors in their existing, multi-tier environments, instead of being forced to re-architect to a flat network and universally exposed storage.
- **Reduced deployment time:** Scalent can instantly, remotely, and automatically turn any physical machine or set of machines into any hypervisor or set of hypervisors, networked and connected to storage appropriately.
- **Reduced Risk and Increased Performance:** Hypervisors that fail can failover to new hypervisors without pre-planning or pre-installation. High workloads can be run on bare metal, then moved into hypervisor-run virtual machines when load decreases.

**“Deploying Scalent turbo-charged our existing VMware ESX Server installation. Scalent just made it work faster and better in our existing data center.”**

—Vice President Server Operations,  
Global Bank

## Improved Hypervisor Deployment with Scalent

### Hypervisor / Virtual Machine Deployment & Use Challenges

Do you have high-utilization production servers that can't be run as “Virtual Machines”, even though you would value the flexibility? Are you concerned about the “eggs in one basket” risk posed by hypervisors, in that a loss of one physical machine can bring down multiple virtual servers? Do you want the flexibility of server mobility for your SPARC as well as x86 servers? Do you wish you could deploy hypervisors without lengthy, machine-by-machine installation, network, and storage configuration challenges?

You're not alone. Many people are seeking the flexibility, consolidation, and utilization benefits of hypervisors, but find themselves deterred by the technology's limitations and challenges. The potential benefits of a virtualized server deployment are huge, but include significant barriers to adoption, including:

- **LAN and Storage Constraints:** Typically, for a “Virtual Machine” to be successfully moved between physical machines running hypervisors (such as VMware ESX or Xen), both physical machines must share identical single-layer LAN and Storage connectivity. While connecting even physical machines to the same LAN switch and SAN LUNs may be possible (if annoying), re-architecting the hundreds of servers in your data center into a single-tier flat network and configuring your storage to allow all such machines access to all of the same storage segments is a monumentally complex task, and fraught with security challenges.
- **Deployment Time & Complexity:** Installing hypervisors is a deployment challenge, comparable to installing and configuring bare-metal operating systems. The installation of the hypervisor must be done manually, locally and configured manually, one physical machine at a time. These physical machines are pre-allocated, and often physically re-arranged and cabled outside of the standard processing architecture.
- **Performance & Risk:** Even as the emergence of hypervisors and virtual machines has eased some of the pain of system recreation and hardware compatibility, they've imposed deployment, networking, management and CPU overhead penalties. There is an acknowledged “eggs in one basket” risk posed by hypervisors, in that a loss of one physical machine takes down multiple virtual servers. Again, in an ideal world, customers would be able to run on a flexible, adaptive pool of real, bare metal machines, with no performance overhead or increased risk of server-blocking failure.

These cost and complexity challenges have historically restricted or degraded companies' abilities to effectively deploy hypervisors. In response, leading companies have begun implementing new, non-intrusive, server repurposing solutions based on Scalent Systems' software to extend their hypervisor capabilities and enable easier deployment of hypervisors on to unmodified data center architectures.

### Scalent: Award-Winning Software for Real-Time Adaptive Data Centers

Scalent software lets you rapidly repurpose servers. Using Scalent software, you can transition your data center between different configurations or from bare metal to live, connected servers in five minutes or less, without physical intervention or infrastructure changes.

This flexibility is possible because Scalent software dynamically controls not only what software stacks are running on every server, but also each server's associated network (LAN / WAN) connectivity, storage (SAN / NAS) access, and power state.

The process is straightforward and non-interruptive. Scalent simply captures each production server software stack (x86 or SPARC, running Linux, Windows, Solaris, or virtual machine hypervisors like VMware or Xen) as an image on centralized storage, along with the server's network and storage configuration information. Then, when a business system – for example, an email server cluster – must move to a new physical machine, the system's required software, existing network addresses and topology, and storage connectivity will all automatically be re-established at the push of a button on that new hardware.

With Scalent, there is no need to physically reset switches, re-rack servers, or reconnect cables. Nor is there any impact server performance, as Scalent software is not in the data path: systems are still running directly on their original hardware, virtual or real machines.

**The result:** IT teams can rack once, cable once, then effortlessly reconfigure and repurpose server infrastructure as needed. Server and business system shifts or recovery become a logical, real-time, automatable activity instead of a physical activity. In short, data centers can create an adaptive infrastructure.

## How Scalent Reduces Cost & Complexity

- **Lowers infrastructure overhead** by reducing redundant, underutilized infrastructure.
- **Simplifies management** by removing the need for physical reconfiguration, providing automated real-time monitoring and as-needed reconfiguration.
- **Increases performance** by enabling on-the-fly movement of servers on to or off of disparate types of virtual or real hardware.

## Solving the Hypervisor Constraints Challenge

Data center managers who have deployed Scalent software to augment their hypervisor installations have realized significant reductions in cost, complexity, and need for physical architecture changes. Scalent enables:

**Removed Hypervisor LAN and Storage Constraints (Enabling multi-tier LAN and flexible Storage):** Scalent enables hypervisors to be installed like any other operating system – anywhere, on any machine, in a data center's existing multi-tier network. No new switches or cabling are needed, and each hypervisor machine needs access to only the storage segments it needs at the time, not all segments all the time.

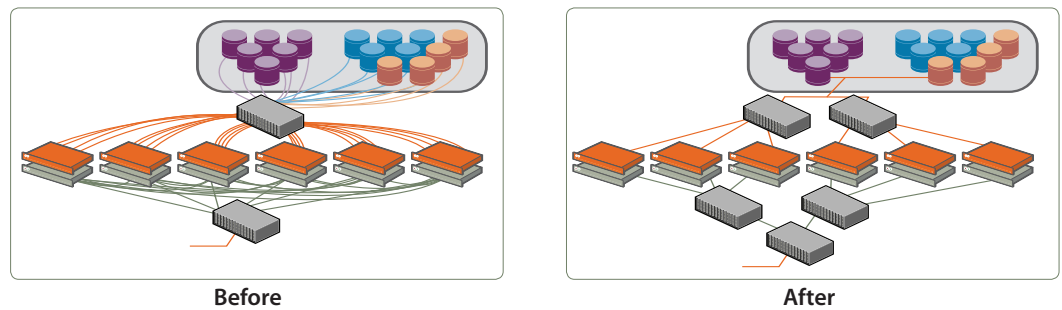
Scalent provides this capability just-in-time, enabling the real-time repurposing of existing infrastructure. With Scalent, a library of images is maintained on a central storage point, enabling physical machines to be rapidly repurposed for different business system servers or hypervisors, on the fly, without any physical network changes. So one minute a physical machine may be running Windows and an Exchange server, or Linux and Apache – and minutes later, it may be a VMware ESX server sharing Virtual Machines with another ESX farm.

**Reduced Hypervisor Deployment Time and Complexity:** Scalent's centralized, automatable rapid-repurposing approach dramatically reduces hypervisor deployment time and complexity. Instead of requiring physical cable movement, SAN or LAN configuration changes, and manual hypervisor installation and configuration, Scalent can instantly, remotely, and automatically turn any physical machine or set of machines into any hypervisor or set of hypervisors, networked and connected to storage appropriately.

Moreover, the WYSIWYG interface guarantees that functional reality matches design – and since Scalent software manages network and storage connection reconfiguration, alleviating the need for physical movement, more time can be spent on design. The result: data center operations become simpler and smarter.

**Improved Performance and Reduced Risk:** With the ability to instantly repurpose any physical machine into any bare-metal operating system stack or hypervisor, the data center becomes more flexible. Heavy workloads can be run on bare metal, and then moved into hypervisor-run virtual machines when load decreases. Hypervisors that fail can failover to new servers without pre-planning or pre-installation. The entire environment becomes safer, more robust, and real-time.

**The result:** hypervisors retain functionality – adding instant server repurposing, without pre-provisioning.



*Without Scalent, every hypervisor (for example, VMware ESX Server) must reside on the same flat network, have access to all storage, and be manually installed if more are needed. With Scalent, every hypervisor (for example, VMware ESX Server) can reside on different network segments, have access to different, segregated storage, and be automatically installed if more are needed – matching the way most data centers are currently architected*

## Summary

By deploying Scalent software to augment hypervisors, data centers overcome traditional hypervisor challenges to deployment – removing the need for data center redesign, enabling faster rollout, and providing greater reliability through physical machine failover.

Scalent Systems is the leading provider of server repurposing software to large data centers worldwide. Scalent's software enables data centers to react in real-time to changing business needs by dynamically changing what servers are running and how those servers are connected to network and storage. The result is an adaptive infrastructure, where data centers can transition between different configurations – or from bare metal to live, connected servers – in five minutes or less, without physical intervention. Using Scalent software, companies have been able to implement cost-effective solutions while reducing server counts, simplifying manageability, and increasing reliability. Many of the Fortune 1000 companies rely on Scalent to support their success, having adopted the software as an integral part of their IT operations.

To learn more about how Scalent can help you, please visit [www.scalent.com](http://www.scalent.com) or call 1-866-4-Scalent

