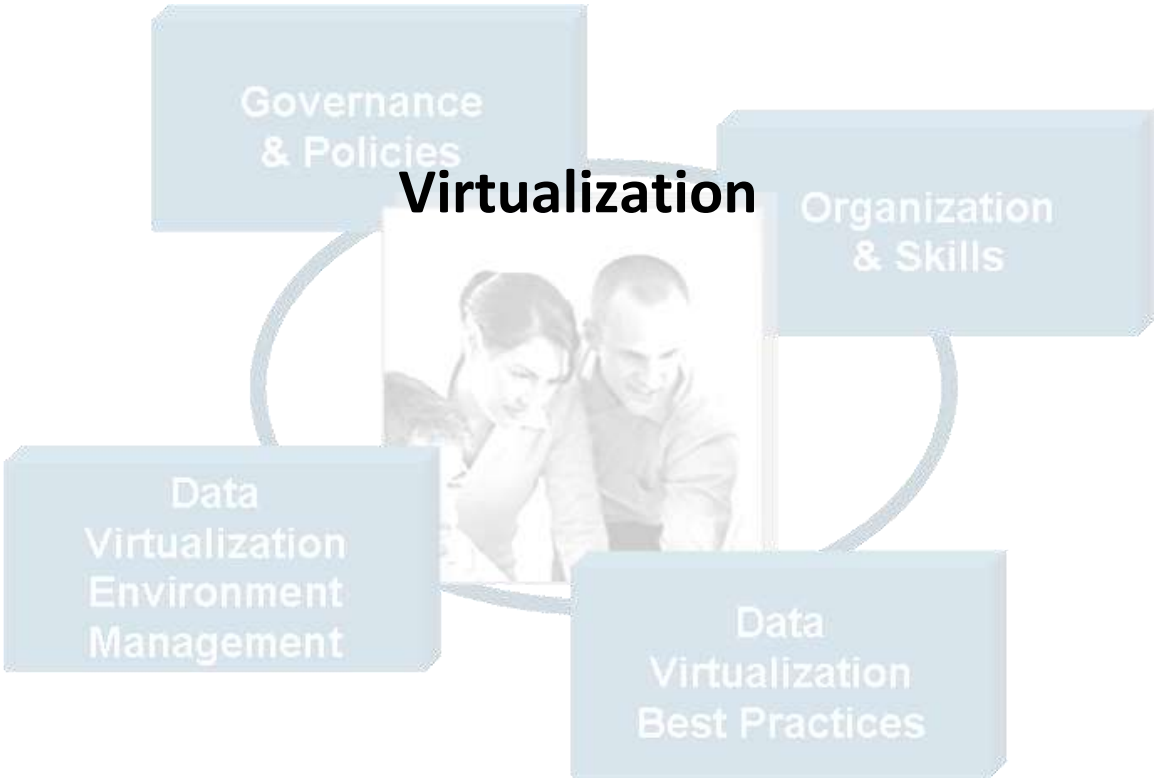
InnoVest Group

Virtualization



8200 Greensboro Drive
McLean, Virginia 22102 – USA
Phone: 703-250-0399
Fax: 703-250-0981
Email: info@theinnovestgroup.com
www.theinnovestgroup.com

Virtualization

Virtual machine environments place unique demands on network infrastructure. While virtual machines can simplify the physical server infrastructure, they can add complexity to the LAN and SAN fabrics. Most often, these systems are initially designed to support the traditional server model, where one application runs on one physical server. That's where InnoVest Team comes in.

Slash data center operations costs such as server upgrades, management, power, space, and storage with a comprehensive virtualization solution

Let InnoVest envision, propose, plan, implement and support a solution that gives you real business value. Our virtualization solutions support functions that deliver predictable application performance, security, and availability for dense virtual machine environments, as well as tools that simplify management and operation of the virtual machine environment.

InnoVest Data Center Virtualization solutions address new design requirements and support functions that deliver predictable application performance, security, segmentation, and availability for dense virtual machine environments.

Virtual Infrastructure Defined

Virtual infrastructure refers to the process of abstracting (separating) software from hardware, which enables a data center to operate with greater agility at a much lower cost. While most people think of virtual infrastructure as primarily relating to servers, it also applies to storage, backups, networks, and disaster recovery. All five of these core elements, in fact, are intertwined and codependent within a virtual infrastructure environment. Today, the increased practice of hosting virtual PCs within the data center is extending the function of virtual infrastructure to virtual clients as well.

Why Virtualize?

From our perspective, the more relevant question is, "Why wouldn't you Virtualize?" Virtual infrastructure, in fact, is an extraordinarily compelling architecture. Besides the huge cost savings resulting from slashing the number of servers that require periodic upgrading, the following other benefits are typically realized as well:

- Enables consolidation of physical servers, slashing the costs of operating a data center. This includes reducing the costs of server upgrades, management, power, space, and storage.
- Reduction in data center space and in data center equipment such as PDUs, air conditioning units, etc.
- Reduction in the number of (power-hungry) network switches
- Reduction in the number of HBAs and SAN switches
- Provides true high-availability for all servers without requiring duplicate hardware and expensive clustering software
- Integrates the test/development and production environments while significantly enhancing the test/development process
- Facilitates true disaster recovery for all servers

- Eliminates the need for maintenance windows for physical server troubleshooting or upgrades.
- Enables much faster server provisioning
- Enhances security
- Can actually improve server performance
- Provides regulatory compliance benefits
- Helps reducing CO2 emissions and, therefore, global warming.

Virtual Assessment

As with any large IT project, virtual infrastructure inevitably becomes intertwined with politics and the organizational social fabric of the company. Our assessment provides a very granular ROI analysis capable of satisfying even the most skeptical CFO of the benefits/cost ratios that virtualization achieves. From a social perspective, an assessment identifies baseline performance metrics, which prevents future performance complaints by developers or users.

Let us envision, propose, plan, implement and support a solution that gives you real business value. Our Data Center Virtualization solutions support functions that deliver predictable application performance, security, and availability for dense virtual machine environments, as well as tools that simplify management and operation of the virtual machine environment.

What to Assess?

InnoVest Team virtualization assessments evaluate your organization's existing IT infrastructure from a holistic perspective, including not just the servers, but storage, backup, network, and disaster recovery. These are the five core components of Virtual Infrastructure and they are all interdependent.

Most organizations evaluate these areas as isolated IT projects, but InnoVest Team evaluates them as interconnected components of a unified virtual infrastructure. This allows us to identify many synergies and efficiencies that provide your company with unparalleled functional and economic advantages.

Assessment Tools

InnoVest Team installs the agent-less VMware Capacity Planner™ solution on each client's hardware. VMware's non-intrusive software collects relevant server information such as CPU, disk, and memory utilization over a four-week period. It allows us to accurately record and analyze the usage, performance characteristics and patterns on your existing x86 servers through several weekly cycles.

In addition to Capacity Planner, we utilize other tools and methodologies to collect additional data for your server, storage, backup, network, and DR environments. These tools include SNMP graphing, database collection tools, and interviews with appropriate IT staff. Once data collection is complete, we analyze it for capacity planning and scenario creation.

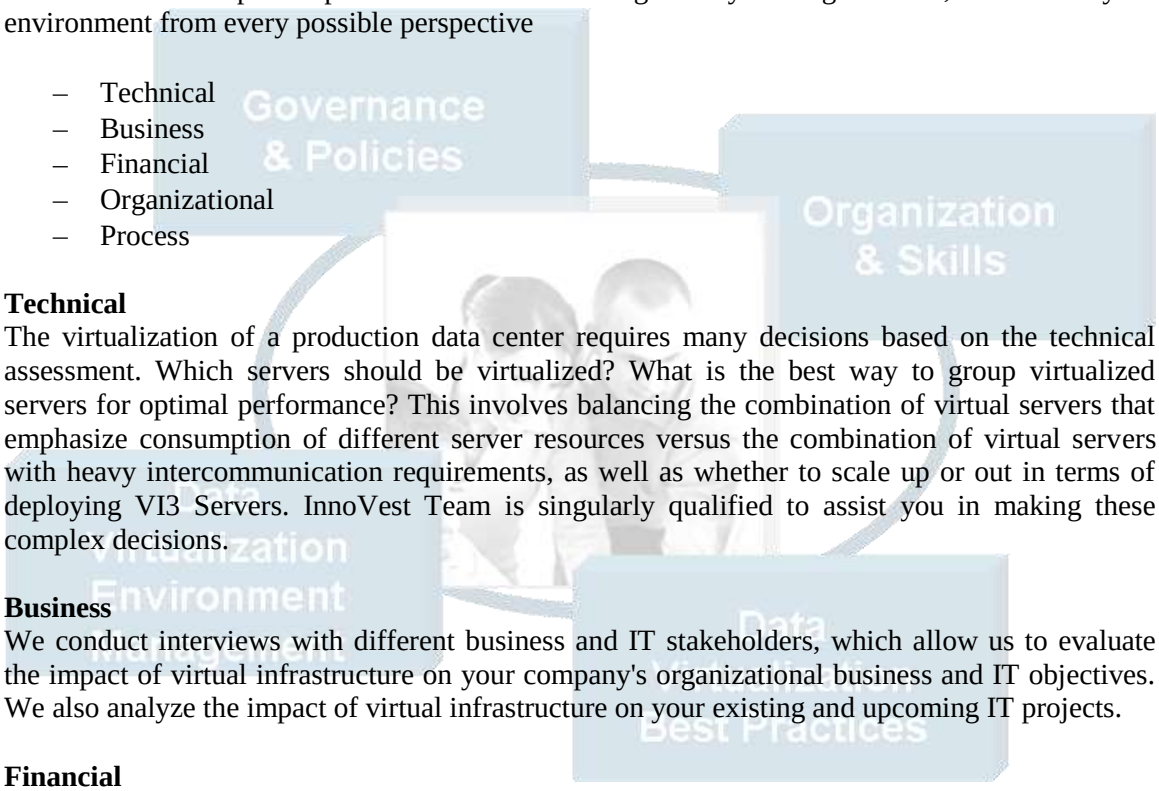
Who Should Assess?

The implementation of virtual infrastructure as an enterprise platform requires an assessment of the physical environment as part of the planning process. Assessment is really a function of planning, and planning is a prerequisite for a successful enterprise virtual infrastructure deployment.

The formality and scope of the assessment depend upon the size of the firm. An organization with 20 physical servers or less generally requires only an informal assessment, while an organization with 40 or more servers should engage in a formal assessment process. InnoVest Team can assist organizations with 20–40 servers in determining whether a formal or informal assessment is preferable.

Assessment Approach
In order to develop an optimal virtualization design for your organization, we assess your environment from every possible perspective

- Technical
- Business
- Financial
- Organizational
- Process



Technical
The virtualization of a production data center requires many decisions based on the technical assessment. Which servers should be virtualized? What is the best way to group virtualized servers for optimal performance? This involves balancing the combination of virtual servers that emphasize consumption of different server resources versus the combination of virtual servers with heavy intercommunication requirements, as well as whether to scale up or out in terms of deploying VI3 Servers. InnoVest Team is singularly qualified to assist you in making these complex decisions.

Business
We conduct interviews with different business and IT stakeholders, which allow us to evaluate the impact of virtual infrastructure on your company's organizational business and IT objectives. We also analyze the impact of virtual infrastructure on your existing and upcoming IT projects.

Financial
VMware certainly has plenty of technological "wow" factors, but today's organizations are more interested in economics. Fortunately, server virtualization offers incredible economic advantages. For the average company, server virtualization:

- Reduces hardware costs by 53%
- Reduces operations costs by 79%
- Decreases the total cost of ownership by 64%

It's not uncommon to realize a payback period of less than six months. Our virtualization assessment incorporates our background in ROI consulting, providing you with a financial analysis designed to withstand the questioning of even the most rigorous CFO or Board.

Organizational
InnoVest Team performs a brief assessment of your organizational matrix to determine the impact of introducing the Virtual Infrastructure. This assessment is conducted in an unbiased, professional manner with the intent of delivering recommendations which will ensure that your strategic business goals are met. The scope of the assessment includes:

- Determining staff capabilities for current and future virtual infrastructure deployments
- Evaluating staff head-count related to virtual infrastructure projects
- Identifying potential organizational misalignments

It's not uncommon to realize a payback period of less than six months. Our virtualization assessment incorporates our background in ROI consulting, providing you with a financial analysis designed to withstand the questioning of even the most rigorous CFO or Board.

Process Assessment
IT organizations are increasingly aware that their operational processes have a substantial impact on overall efficiency, cost, and the ability to provide consistent service to the businesses they support. IT departments that recognize themselves as "service organizations" operate with lower costs and higher customer satisfaction than those operating as "technology shops." Moving from a traditional technology 'silo' approach with individual physical servers to an integrated virtualization environment is a comprehensive change. It is important to ensure that your IT service delivery and service support processes are optimized to take advantage of and properly support the consolidated virtual infrastructure.

InnoVest Team IT Service Management (ITSM) Process Assessment provides a comprehensive review of your organization's existing IT service support and delivery processes. We focus on identifying any changes or additions that would optimize your service delivery and support for a virtualized infrastructure.

InnoVest Team utilizes the IT Infrastructure Library (ITIL) – standard framework for defining and optimizing IT support and delivery processes.

InnoVest Assessment Credentials
InnoVest Team provides virtualization assessments for VMware, VMware partners, and directly to numerous clients across the country.

Implementing Virtualization
There are two approaches to implementing virtual infrastructure - planning to succeed or failing to plan. Failing to plan doesn't necessarily mean a failure to Virtualize, but it nearly always means a much slower, haphazard, and painful path.

Virtualization is destined to have an enormous impact on IT – ranking right up there with the PC, network, and Internet. It provides an unparalleled opportunity for reducing:

- Costs
- Energy consumption
- Time to deploy new servers/applications
- Downtime

– Management time

Virtualization is also a complex architecture, incorporating not only the servers, but the storage, backup, network, and DR environments. This complexity demands significant planning and successful planning is dependent upon an accurate understanding of the existing physical environment.

Lifecycle Implementation Methodology

– **Assess -** InnoVest Team utilizes the VMware Capacity Planner and other tools to assess your physical server environment, as well as your storage, network, backup, and DR environments. This enables us to construct a very granular mapping of your existing server fabric and create a baseline for designing your optimal virtual infrastructure environment.

– **Design -** The success of any large IT project is dependent upon the design of the environment. This is particularly true of virtual infrastructure because it replaces physical architecture as the platform for operating your data center. The assessment phase allows us to design an environment tailored to the specific needs of your business. This customized design incorporates virtual servers, storage, network, backup, and disaster recovery.

– **Deploy -** We carefully manage the execution of your virtual infrastructure implementation. Our expert certified project managers provide the project plans and coordination necessary to ensure a smooth deployment. Our VCPs (VMware Certified Professionals) focus exclusively on VMware engagements, allowing them to integrate VMware environments with an expertise that is unparalleled in the industry.

– **Support -** When a VMware environment is properly designed and implemented, it doesn't require the ongoing integrator support normally associated with a software deployment. Nevertheless, InnoVest Team offers support options for our clients 24/7. We also provide you with third-party tools designed to monitor and enhance the performance of virtual machines. You can be certain that InnoVest Team will ensure that your investment is protected.

– **Evolve -** While young, the virtualization industry is evolving quickly. InnoVest remains up-to-date on the latest technological innovations and provides this information to its clients in order to further enhance their virtual environments.

Virtual Infrastructure Recovery Services

InnoVest Team Virtual Infrastructure Recovery Service utilizes the 99.999% infrastructure of Herakles Data Center, providing clients with a hardened, hosted infrastructure to ensure the maximum performance and availability.

Research performed by organizations such as Meta Group shows that most businesses suffering a disaster, such as a fire or flood, are out of business within two years. The tight coupling of Wintel-based server hardware with the operating system makes recovery challenging for the following reasons:

- Driver related consistency issues prevent easy portability of a failed server to other hardware.
- Differences between servers require that the OS and applications be restored from the original installation media.
- A competent IT person can probably only build a couple of servers concurrently, which means a disaster makes quick recovery unlikely.
- In order to somewhat contain costs, most organizations select only a small subset of mission-critical servers for recovery. But interdependencies between applications often prevent employees from being able to work effectively, if at all, on only the designated mission-critical servers.
- Most organizations utilize backup tapes to recover data at their failover sites. A disaster can mean loss of the most current data; and an unreadable or out-dated tape catalogue can delay the data restoration process.

Virtualize Disaster Recovery!
InnoVest Team Virtual Infrastructure Recovery Service® resolves these concerns, enables near real-time failover to our data center in the event of a disaster with access to near real-time data, and does it all for less money than you pay to operate a physical data center today. Because we virtualize your servers and clients, we even enable continued computer operations in the event of a prolonged pandemic disaster.

How does it Work?
We deploy the agent-less VMware CapacityPlanner tool in order to gather server metrics regarding CPU utilization, memory and I/O over a period of 30 days. From this data, we are able to accurately catalog the performance of the servers and thereby develop a strategic plan to virtualize your production data center.

If you do not already utilize a SAN, we will suggest an appropriate solution that will house all of your data and virtual machines. The money saved from consolidating servers typically easily covers the cost of the SAN. We then continuously replicate your data and virtual machines to our SANs at Herakles Data in Sacramento.

In the event of loss of access to your data center servers or SAN for any reason, you can failover to our Virtual Infrastructure Recovery Service® at Herakles. Your users will then be able to securely access their applications and data through the Internet using a standard browser at home, another office, or other authorized locations. When your data center is available again, the updated data is replicated back and the access restored.

Virtual Infrastructure Recovery Service (VIRS)?
InnoVest Virtual Infrastructure Recovery Service (VIRS) includes a comprehensive virtual infrastructure based disaster recovery plan. The VIRS Plan looks at all critical information processing area of the company, including but not limited to the following:

- LANs, WANs, and servers
- Telecommunications and data communications links
- Workstations and workspaces
- Applications, software, and data
- Data backup solutions including disk and compression

- Recovery methods

The virtual infrastructure recovery plan allows us to tailor the VIRS for your environment including factors such as quarterly testing parameters, user support, failover process and future scalability.

Why InnoVest?
InnoVest Team has extensive experience in broader based disaster recovery / business continuity including working with very large financial and other organizations. Our pioneering efforts in virtualizing disaster recovery have been recognized in the form of speaking engagements around the globe including Continuity Insights Management Conference, VMworld and ThinPower. We have written about different aspects of disaster recovery in multiple books and articles, and have helped Virtualize companies of all sizes.

InnoVest Team partners with Northern California's premier 92,000 square foot data center, Herakles Data. Herakles Data is located in seismically neutral Sacramento, California and offers a world class designed and engineered N+1 (minimum) co-location facility. With the finest in physical and electronic security, uninterruptible power, totally redundant, carrier neutral fiber networks, state of the art environmental and fire detection/suppression systems, and SAS 70 Certified; Herakles Data is a Tier 4, Class A rated (both the highest accredited levels) 99.999% mission-critical, co-lo data center with 24 x 7 staffing and client access

Cost
Costs for the Virtual Infrastructure Recovery Service® depend upon the specific environment, but are exceptionally affordable even without considering the vast savings from virtualizing the production environment. Costs for the Virtual Infrastructure Recovery Plan depend upon the size and complexity of the operation and the services desired.

Community Server Recycle for a Better Environment Program
InnoVest Team, through our industry leading focus on Virtualization, is reducing the energy and environmental demands imposed by ever expanding data systems. There are other impactful ways to enhance the Green commitment within our communities. While we are very successful at optimizing server usage and reducing the number of servers that our customers use, the question remains: what to do with the left over, still quite functional servers? Typically till now, many of these servers ended up in landfills taking decades to disintegrate while electronically contaminating the environment. We avidly believe in thinking intelligently about a better solution: reducing, reusing and recycling even servers!

To that end InnoVest Team invites you to join the "Community Server Recycle for a Better Environment" program. The goals of the program are three-fold:

- Keep old servers out of landfills and work together to improve the environment.
- Distribute refreshed servers to local non-profit organizations who can use the servers and help their clients more.
- Clearly illustrate how Virtualization directly enables companies and caring people to leverage technology for a cause...that affects us all, fighting global warming and slowing the depletion of natural resources.

All work related to this program will be volunteered by InnoVest Team and its affiliate partners and a not for profit policy will be strictly required. All old servers will be serviced to operate fully and delivered free with no strings attached to organizations or individuals who are able to put the servers to use. Eventually we envision this program to reach every community where we do business and then beyond.

For more information, please contact:

InnoVest Group
8200 Greensboro Drive
McLean, Virginia 22102 – USA
Phone: 703-250-0399
Fax: 703-250-0981
Email: info@theinnovestgroup.com
www.theinnovestgroup.com