



### Overview

**Country or Region:** United States

**Industry:** IT services

### Customer Profile

Located in Dallas, Texas and employing 7,400 associates, CompuCom Systems is an IT consulting company that designs, tests, and supports enterprisewide computer network systems.

### Business Situation

A CompuCom Systems client wanted to consolidate underutilized physical servers and create a data-recovery system with portable virtual and physical servers.

### Solution

CompuCom Systems replaced the conventional server computers with a portable virtual server environment based on Microsoft® Virtual Server 2005 R2 and Windows Server® 2003.

### Benefits

- Reduced overhead costs by 80 percent
- Eliminated the need to learn new software tools
- Decreased system-recovery time
- Made system maintenance easier

## IT Consulting Firm Designs Disaster-Recovery System and Reduces Costs by 80 Percent

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Charley Ballmer, Solutions Architect, CompuCom Systems

CompuCom Systems is a Microsoft® Gold Certified Partner with 20 years of experience in the design and implementation of IT infrastructures for thousands of midsize companies. In October 2005, LifeGift, a nonprofit organ-procurement organization, hired CompuCom Systems to design an IT infrastructure that the company could use to save costs by consolidating physical servers, integrate the operations of its Houston and Fort Worth offices, and provide a reliable data-recovery environment. CompuCom Systems migrated all LifeGift software applications to a virtual server environment based on Microsoft® Virtual Server 2005 R2. As a result, CompuCom Systems reduced the organization's operational overhead costs by 80 percent and the data-recovery time from 48 hours to a maximum of 27 minutes, and made the system easier to use for employees—particularly the IT staff.

“In a complex virtual server environment, you don't want to deal with software you aren't comfortable with. The ease of use Virtual Server 2005 provides for the user greatly benefited this project.”

Charley Ballmer, Solutions Architect,  
CompuCom Systems

## Situation

CompuCom Systems, headquartered in Houston, Texas, was established in 1987. It employs more than 7,400 associates who provide a comprehensive range of IT services for clients at more than 200,000 sites across North America. These services include design, support, and management of IT infrastructures; design and support of custom software applications; provisioning and management of commercial software packages; and procurement and maintenance of computing hardware.

In September 2005, the approach of Hurricane Rita threatened the Houston area three weeks after Hurricane Katrina had devastated the Gulf Coast. These two incidents convinced LifeGift, an organ procurement organization based in Houston, Texas, that its data backup and business continuity infrastructure was inadequate to deal with hurricanes and other emergencies. Its commonly used software applications ran on a single physical server with a tape backup system as the only protection against system failure and data loss. The tape backups created in the Houston office were stored at the organization's Fort Worth office, but there were no physical servers in the Fort Worth facility to restore the backups if the Houston servers were unavailable.

In early 2007, LifeGift hired CompuCom Systems to design a system that LifeGift could use to replicate the computing environment at the Houston office in its backup facility in Fort Worth. A budget created for this new system wasn't large because of LifeGift's nonprofit status. Therefore, the most important business requirements were that existing software applications and hardware servers should be reused whenever possible, and a minimum amount of retraining would be necessary for the staff to work comfortably with the new system.

## Solution

CompuCom Systems immediately saw that virtualization technologies could achieve many business objectives LifeGift had. Virtualization technology uses virtual servers—that is, servers that are implemented in software and appear to users to function identically to the physical server. With virtualization technology, more than one virtual server can run on one physical server. After CompuCom Systems demonstrated a comparison of competing virtualization technologies, LifeGift decided to base the new infrastructure on Microsoft® Virtual Server 2005 R2 and Windows Server® 2003. The extensive experience CompuCom Systems had in providing Virtual Server 2005 R2-based IT infrastructures and the interoperability of Virtual Server 2005 R2 with other Microsoft-authored enterprise software used by LifeGift, such as Microsoft Exchange Server 2003 and Microsoft SQL Server™ 2003 and SQL Server 2005 database software, aided this decision.

According to Charley Ballmer, Solutions Architect at CompuCom Systems, “LifeGift had a relatively small IT staff, so we were focused on providing a more easily managed environment. As a result, we were able to provide a solution that was much more readily available and recoverable than what they had in the past.”

The project's first week was devoted to the development and testing of basic system design. It consisted of a group of virtual servers in the Houston office that were connected through a wide area network (WAN) to another group of virtual servers in the Fort Worth facility. This design was a customized version of an IT architecture that CompuCom Systems successfully installed for another client, and it reduced the time needed to test the new system. This basic design was constructed and tested in

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CompuCom Systems labs in Dallas and installed at the LifeGift offices.

CompuCom Systems then created a detailed configuration analysis of the software applications that ran on each physical server targeted for virtualization with a detailed description of the server configuration—including the type and version of operating system that ran on the server; the version of the operating system patches; and the operating system hardware configuration with the basic input/output system version and memory capacity. CompuCom Systems consolidated the five physical servers at the Houston office into one physical server that runs Virtual Server 2005 R2 and used the software inventories and server configuration analyses to ensure that all the software operated in the same way in the virtual operating system environment as it did on the original servers.

The four physical servers that remained were moved to the Fort Worth location. They were configured as a cluster of physical servers, and each server runs Virtual Server 2005 R2. This server cluster was designed to function as a remote backup system for the Houston office. In the event of server failure, backup virtual servers could be quickly launched on the Fort Worth servers from Houston and made available for use by the employees in the Houston office. CompuCom also created a system to back up the files on the Houston servers to the backup server cluster in Fort Worth through the WAN. This effort eliminated the need to physically transfer tape backups.

After the installation was completed, CompuCom Systems verified the reliability of the new system with a rigorous series of load simulations, capacity tests, and functionality regression tests on all the virtual servers. LifeGift was involved in every stage of the testing process. Says Ballmer, “We

designated technology champions in each of LifeGift’s business units, and then structured a testing plan with them.” As regression testing was performed on the applications that were moved to the virtual environment, CompuCom worked in lockstep with the LifeGift representatives. This ensured that CompuCom met LifeGift’s expectations for performance, operability, usability, and a fifteen-minute recovery window for the new system. After CompuCom completed their regression testing, each of LifeGift’s business groups conducted its own quality assurance testing at LifeGift’s site.”

The entire process, from design to rollout, took six weeks. Because of the reliability of Virtual Server 2005 R2 and the time spent planning and testing the new system, there were no major issues during the project’s rollout phase. LifeGift was so pleased with the result it hired CompuCom Systems to maintain the new system on an ongoing basis.

## Benefits

The use of Microsoft Virtual Server 2005 R2 in the LifeGift IT installation brought several immediate and substantial benefits to its business processes. Operational costs have been greatly reduced, largely because of the reduction in the number of physical servers LifeGift has to maintain. The project’s main business objectives were met—LifeGift now has a backup IT architecture it can rely on in emergencies, and its employees have not had to adjust to a new IT environment and software tools.

## Reduced Operational Costs by 80 Percent

Before CompuCom Systems was brought into the project, LifeGift budgeted approximately U.S.\$220,000 for additional physical server storage, server hardware, software licenses, IT staff, and consulting services to achieve its disaster-recovery objectives for the new

system. The use of Virtual Server 2005 R2 to reduce the new system's overhead eliminated the need for LifeGift to spend the entire budget. Consolidation of the physical servers reduced the number of live servers in the company by two-thirds, which significantly reduced overhead and maintenance costs. When the project was completed, LifeGift had spent only \$40,000 for a system that met or exceeded its original objectives.

LifeGift has saved an average of \$200 each month in the electricity costs for the servers in the Houston office alone. Also, LifeGift saved the cost of expanding its office space in Houston to accommodate an increased number of physical servers and IT staff, and this allowed it to use this money to better support its backup servers in the Fort Worth location.

#### **Eliminated the Need to Learn New Software Tools**

The original LifeGift IT environment was largely based on Microsoft software. Its corporate e-mail system ran on Exchange Server 2003, and SQL Server 2003 and SQL Server 2005 were used throughout the company. The compatibility of Virtual Server 2005 R2 with all of these Microsoft software packages meant that LifeGift employees could continue to work with the software they were familiar with. According to Ballmer, "In a complex virtual server environment, you don't want to deal with software you aren't comfortable with. The ease of use Virtual Server 2005 R2 provides for the user greatly benefited this project."

#### **Decreased System-Recovery Time**

Dramatic improvements were seen in the system-recovery time with the new solution. Before the redesign, the time it took to restore the IT environment in Houston from tape backups was 48 hours—now it takes a maximum of 27 minutes. This is the foundation of the new system's disaster-

recovery functions and its ability to provide LifeGift with round-the-clock availability.

#### **Made System Maintenance Easier**

Virtual Server 2005 R2 extensive support of scripting was used in the new system to automate many IT maintenance processes, which made the job of servicing the virtualized system much easier than before. This saves IT administration costs and makes the system more reliable by ensuring that all routine maintenance is efficiently and effectively performed. CompuCom Systems also enjoys these benefits as an IT support provider for LifeGift. Says Ballmer, "Our client needed a data-recovery solution that was as easy to administer as pushing a button. Virtual Server R2 helped us design a scripted data-recovery solution that doesn't even require a button to be pushed."

The CompuCom Systems solution demonstrated that Microsoft Virtual Server 2005 R2 is an excellent option for smaller companies with limited budgets that want to substantially improve their IT infrastructure. With virtualization, the computing system is more reliable and less expensive. Says Ballmer, "Our client had already budgeted for a more expensive solution, but our design saved them from having to spend all of that budget, while meeting all business requirements for the solution."

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