

## Better Business Continuity with VMware Virtual Infrastructure



### Business Continuity Challenges

Implementing plans to ensure business continuity for key IT services is a requirement for organizations today. Downtime of important applications is a costly proposition and extended downtime can even be fatal—industry research finds that a significant number of companies that experience extended interruption to IT services soon go out of business.

While most organizations recognize the importance of business continuity, their ability to provide high availability and disaster recovery for key applications is often constrained by the following challenges:

- **High costs:** Business continuity solutions become exponentially more expensive as availability requirements increase. Many solutions require significant investment in additional hardware, software and services. Disaster recovery plans in particular often require duplicating data center infrastructure. These requirements drive up the cost of business continuity and result in a proliferation of underutilized servers.
- **High complexity:** Most traditional business continuity solutions add significant complexity to data center environments. Acquiring and managing additional servers, implementing and maintaining specialized business continuity software and developing specialized processes for business continuity all contribute to this complexity.
- **Failure to meet recovery time and availability goals:** Due to the cost and complexity of business continuity solutions, organizations are often forced to compromise on solutions that are unlikely to meet goals for availability and recovery time objectives.
- **Insufficient reliability:** Testing complex business continuity solutions is challenging because this testing often requires significant equipment and personnel resources. The complexity of these specialized solutions also makes them difficult to maintain and makes it harder to ensure that sufficient staff are trained and available when needed.

These challenges have limited the ability of organizations to implement effective business continuity plans. As a result, key IT services lack the protection they need, putting organizations at significant risk. VMware provides cost-effective, simpler, more reliable solutions for increasing availability and improving disaster recovery so that organizations can implement dramatically better and broader business continuity plans.

### Key Benefits

- **Reduce downtime** due to both planned and unplanned outages.
- **Lower cost** of business continuity plans.
- **Simplify infrastructure and processes** for business continuity.
- **Increase protection** by extending business continuity plans to more applications cost-effectively.

### Key Building Blocks

- **Virtual infrastructure platform** products such as ESX Server to provide virtualization for x86 servers.
- **Virtual infrastructure management** with VMware VirtualCenter to provide centralized management of large virtual infrastructure deployments.
- **Software tools** that may include VMware P2V Assistant and third-party backup, recovery, and replication software.
- **Professional services** such as VMware's Disaster Recovery and Backup engagement to learn backup and recovery techniques for virtualized environments.

### Higher Availability with VMware Virtual Infrastructure

VMware's virtual infrastructure software helps organizations to increase availability by reducing both planned and unplanned downtime.

Most data center downtime is typically planned. Organizations using VMware software can slash planned downtime by eliminating most scheduled downtime for hardware maintenance. VMware's groundbreaking VMotion technology allows IT administrators to move running virtual machines (software containers that hold a complete operating system and applications) from one physical server to another without downtime. This capability makes it possible to conduct zero-downtime hardware maintenance by simply using VMotion to move running applications to other physical servers as needed.

VMware software also helps organizations to reduce unplanned downtime by providing new capabilities and by making existing solu-

*"As well as having a significant cost benefit, basing our disaster recovery infrastructure on VMware software has enabled us to get servers up and running in just eight minutes, compared to eight hours with our previous configuration."*

Steve Fountain, IT Director, Markel International

tions simpler and more cost-effective. For example, redundant servers can be easily created by provisioning virtual machines to underutilized servers without requiring the purchase of additional hardware. Support for redundant network and storage interface cards is built into VMware® ESX Server, making this redundancy significantly less costly because redundant network and storage interface cards can be shared by multiple virtual machines on a server. Administrators can use VMotion to reduce unplanned downtime by proactively moving running applications away from servers that cross utilization thresholds or generate critical alarms.

VMware software also makes it possible to implement third-party clustering solutions less expensively. Virtualization makes it possible to consolidate cluster nodes from different applications onto fewer servers, providing significant savings in hardware costs. It also provides the flexibility to cluster physical servers with virtual machines or virtual machines with virtual machines.

## Better Disaster Recovery with Virtual Infrastructure

Traditional disaster recovery solutions are costly, complex and frequently do not meet recovery objectives. They are costly because they require significant investments in hardware and in specialized software. Recovery frequently requires complex, time-consuming multi-step processes. Meeting recovery time objectives is difficult because of the complexity and cost of advanced solutions.

VMware virtual infrastructure provides a solution that makes it possible to implement disaster recovery plans at a significantly lower cost. Traditional disaster recovery plans require that recovery target hardware must exactly duplicate production hardware, effectively doubling hardware requirements for protected applications. In contrast, VMware virtual machines are hardware-independent and thus any physical server can serve as a recovery target for any virtual machine. As a result organizations can significantly reduce the cost of hardware for disaster recovery by repurposing underutilized existing servers for recovery targets and disaster recovery testing.

VMware virtual infrastructure also simplifies and accelerates recovery, helping IT organizations meet their time-to-recovery targets. Complex

multi-step procedures using specialized software for bare-metal recovery and operating system recovery can be simplified to single-step file recovery because virtual machines are completely encapsulated in a small number of files and can be restored to any hardware. This encapsulation property also makes it possible to use third-party replication software to replicate entire virtual machines to a recovery site, reducing recovery time to just a few hours.

Finally, virtual infrastructure enables a more reliable disaster recovery plan. Because it simplifies disaster recovery processes, the ability to meet time-to-recovery targets is improved, testing of disaster recovery plans is simpler, and training personnel in disaster recovery procedures is easier. The hardware-independence of virtual machines also eliminates complications that can arise due to hardware differences between primary and recovery site hardware.

VMware virtual infrastructure enables a better disaster recovery plan whether or not organizations have virtualized their production servers. Physical servers can be recovered to virtual machine recovery targets in a "physical-to-virtual" recovery scenario, providing the benefits of simpler and hardware-independent recovery. Even greater simplicity, reliability, and cost savings can be realized in a "virtual-to-virtual" recovery scenario where virtual machines in production are recovered to virtualized recovery target servers.

## Benefits of Business Continuity Solutions with Virtual Infrastructure

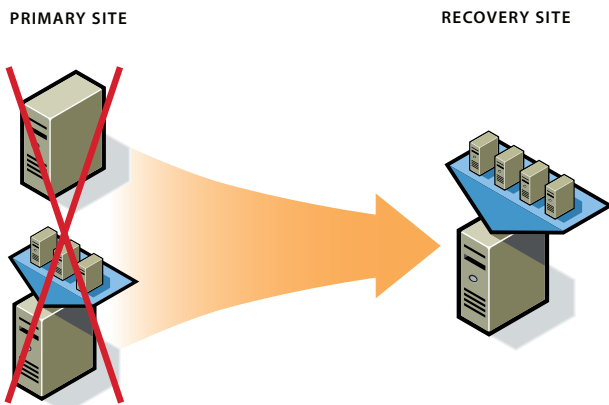
Customers who have used VMware virtual infrastructure to improve their business continuity plans have realized benefits including the following:

- **Reduced downtime:** Customers can eliminate much of their planned downtime with a virtual infrastructure solution. They can also prevent and reduce unplanned downtime, including dramatic reductions in time to recovery for disaster scenarios.
- **Lower costs:** Virtual infrastructure makes it possible for companies to implement better business continuity at a lower cost by slashing the need for additional hardware and specialized software.
- **Simplified processes:** Virtual infrastructure removes the complexity of maintaining duplicate physical systems for disaster recovery. It also eliminates and streamlines much of the recovery process.
- **Broader protection:** Because virtual infrastructure reduces the cost of business continuity solutions, companies can cost-effectively increase availability and ensure more rapid disaster recovery for more of their important applications.

## Summary

VMware virtual infrastructure is a proven solution used by over 80 percent of the Fortune 100. Customers of all sizes and industries use VMware software to improve their business continuity plans.

To learn more about how VMware can help you build better business continuity solutions visit the VMware Web site at <http://www.vmware.com> or call 1-877-4VMWARE.



*Virtual infrastructure enables recovery of physical and virtual machines to virtual machines on any hardware*