

Benefit from Disaster Recovery. . . Without a Disaster





Startling Facts

- **87%** of businesses experience computer failure each year
- **50%** of businesses experience up to five failures each year
- The average number of days per failure is two days
- **25%** of businesses suffer bankruptcy immediately after a failure
- ***90% of businesses go bankrupt within two years of a significant failure***
 - “Financial and Functional Impact of Computer Outages on Businesses,” University of Texas



The Big Questions:

How much does downtime cost you?

What is the risk?

Is it in your budget?

Can you afford it?





Topics of Discussion

- Why is Availability Important?
- Reliability vs. Availability
- What is Managed Availability?
- Benefit from Disaster Recovery
- Summary



Why is Availability Important?

- New IT Initiatives require availability:
 - Data warehouse/data marts/business intelligence
 - Bet-your-business ERP applications
 - (SAP® R/3®, J. D. Edwards etc)
 - 24x7 e-business/e-Commerce
- Distributed organisations
- Increasing importance of data
- Need to share information with users on other systems:
 - Mainframe, UNIX, Windows NT
 - Different Databases:
 - DB2®, Oracle®, SQL Server®, Sybase®, Informix®

Why is Availability Important?

24x7 availability is not a luxury,
it is a **necessity**

- Revenue loss and legal risk of downtime
- Supply chain - if one system goes down, others are affected
- Global users, remote workers

Business units and customers increasingly have zero tolerance for downtime.

eBay stock suffers \$4 billion decline as officials try to boost firm's image

By George Anders
[THE WALL STREET JOURNAL](#)

June 15 — As eBay Inc.'s stock continued to fall, officials of the online-auction company scrambled to rebuild the concern's image in the wake of its computer crash last week. At first glance, the company's predicament keeps getting worse. Investors slashed \$4 billion from its market value Monday, betting the company has done lasting damage to its reputation with its 3.8 million users.





Managed Availability Defined

- Managed Availability is a methodology incorporating tools and skills applied across an entire computing enterprise, providing predictable, consistent access to any data or applications whenever or wherever required.

Managed Availability - Definitions

- **Disaster Recovery**
 - In event of an unplanned site loss – recovery is made possible .. Data and objects are stored offsite.
- **High Availability**
 - Applications and data are available and protected against downtime due to unplanned events during operating hours
- **Continuous Operations**
 - Applications and data are available and protected against downtime due to planned events during operating hours
- **Continuous Availability**
 - Applications and data are available and protected against downtime due to planned and unplanned events during operating hours .. often 24x7.



Signs You Need Managed Availability

- Shrinking Back-Up Windows
 - Shrinking by 66% per year (Gartner Group)
- Expanded Internet Dependence
 - e-Commerce/Web Enabled Information
- Global Computing/Mobile/Remote Workers
 - New Classes of Users/Driving 24x7 Requirements
- Integrated Applications for Efficiency
 - ERP/CRM/EAS – Exposes Entire Enterprise
- Server Consolidation
 - All Your Eggs in One Basket!



Reliability vs. Availability

- **Reliability:**
 - “Mean time between failure” measurement of a component or system
- **Availability:**
 - Data and applications *available* to users
 - Providing predictable access to data and applications
 - The management of planned and unplanned downtime

Example:

Taking a system down for backup does not impact “reliability” but it does impact “availability!”

Reliability - Some Realities

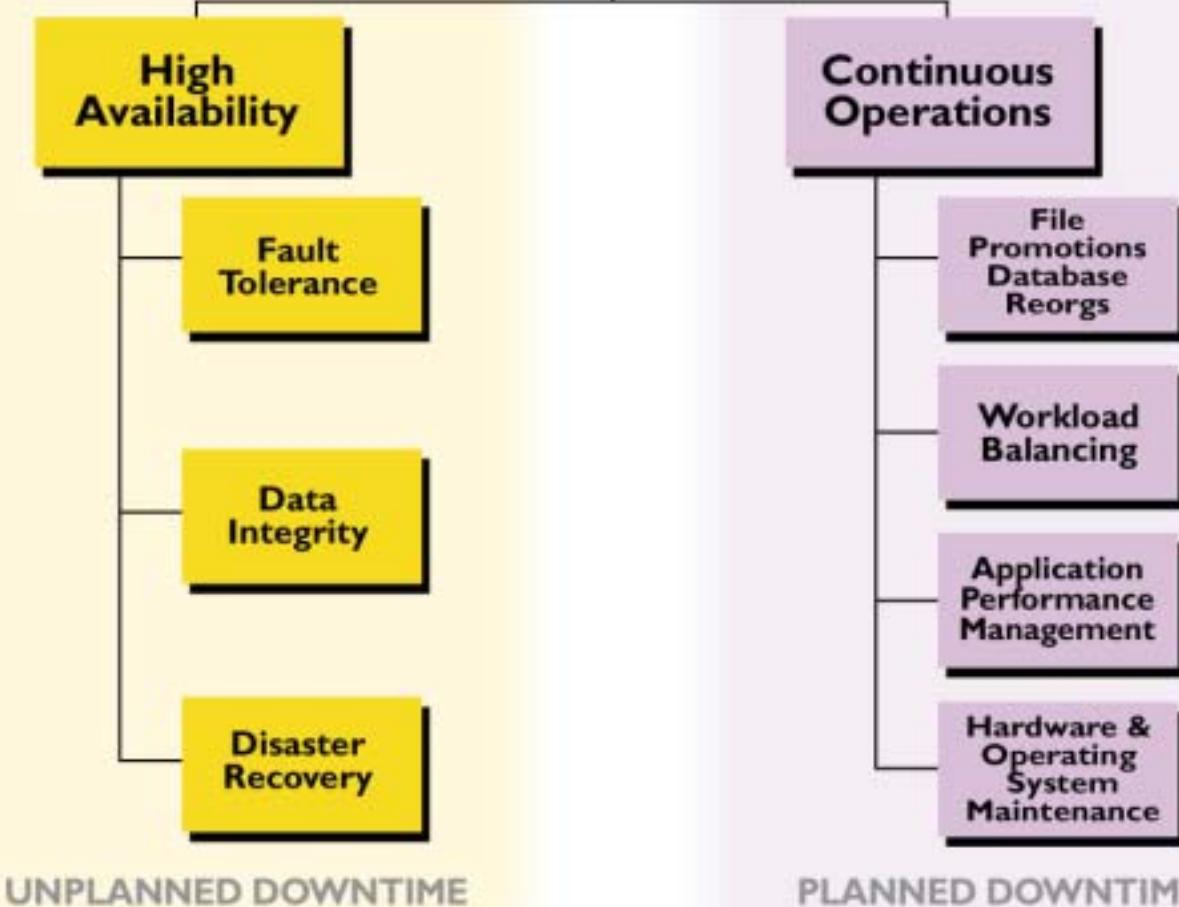
5 Component System

- CPU 99.0%
- DASD 99.0%
- Network 99.0%
- Monitor/Terminal 99.0%
- Peripheral Device 99.0%

System Reliability **95.0%**

Core Hours Impact **130 Hours Annually**
24x7 Impact **438 Hours Annually**

Managed Availability





High Availability is the Elimination of Unplanned Downtime

- **Fault Tolerance**
 - Human error
 - Machine error
- **Disaster Recovery**
 - Rapid recovery
- **Data Integrity**
 - Eliminate transaction re-entry
 - Reduce paper trail



Continuous Operations is the Elimination of Planned Downtime

- **Access to applications and data during**
 - Daily, weekly and monthly backups
 - Large batch processing jobs
 - Application upgrades
 - Database reorganisations
 - Routine hardware maintenance/upgrades

Elimination of Planned and Unplanned Downtime

Industry Trends

- Hardware failure accounts for 3% of all downtime
- Application and data availability issues make up the other 97%
 - 5% software related
 - 10% human error
 - 82% planned downtime

*On the iSeries 95%+ of all downtime is planned.
How much does downtime cost you?
What is the risk?*



*Benefit from Disaster
Recovery. . .
Without a Disaster*



Benefit From Disaster Recovery

Without a Disaster!

- Disasters are exceptionally rare.
- A Disaster Recovery solution is like an insurance policy.
- While you will rarely, if ever, face a disaster, you still need protection.



Benefit From Disaster Recovery

Without a Disaster!

- Events other than disasters disrupt availability much more frequently.
 - Hardware failures, localised power failures and so on are still rare but more frequent than disasters.
 - Maintenance may halt applications daily:
 - Database saves.
 - Database reorganisations.
 - Software upgrades.
 - Hardware upgrades.
 - General system maintenance.

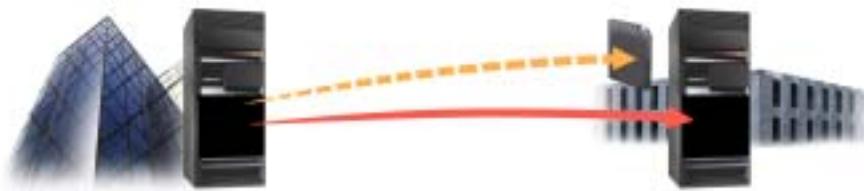
Minimal Solution: Off-Site Tape

- Backup tape sent offsite nightly.
- Advantage: low hardware and software costs.
- Disadvantages:
 - Protects data availability, not application availability.
 - Requires long recovery times.
 - Leaves “Orphan Data” unprotected.
 - Requires disruptions during saves.
 - Provides value only during a disaster.



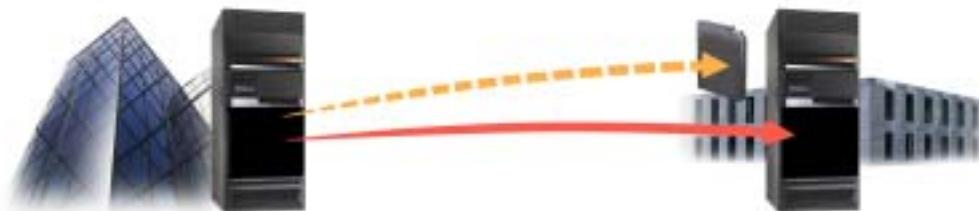
Better Solution: Data Vaulting

- Send backup tape offsite nightly.
- Continuously replicate updates, but don't apply them.
- Discard yesterday's updates when new tape arrives.
- When a disaster strikes:
 - Load the newest backup tape.
 - Apply the upda



Better Solution: Data Vaulting

- Advantages:
 - Can share facilities in third-party Disaster Recovery site.
 - Avoids “orphan data” problem.
- Disadvantages:
 - Still takes a long time to recover.
 - Only provides value in the event of a disaster.



Best Solution: Remote redundancy

(1)

- Replicate databases offsite in near real-time.
- Maintain a fully redundant copy of data and objects on a hot-standby remote system.
- Perform database saves at the remote site.
- If disaster strikes, switch users to the remote site.



Best Solution: Remote redundancy

(1)

- Advantages:
 - Near instant recovery.
 - Recover right to the point of failure.
 - Provides robust Continuous Operations and High Availability
- Disadvantage:
 - Must maintain two fully operational sites.



Best Solution: Remote redundancy (2)

- Same as remote redundancy (1) except:
 - Split each physical system into 2 logical systems using LPAR.
 - Production.
 - Backup.
 - Split the application load between two systems.
 - Use the backup partition on one system to back up the production partition on the other.



Best Solution: Remote redundancy (2)

- Advantages:
 - All of the advantages of remote redundancy (1).
 - Provides higher performance by splitting the application load between two systems.
- Caveat:
 - You must either accept less performance when one system is offline, or size both machines to handle the full load.



Benefit From Disaster Recovery

Without a Disaster!

- Eliminate virtually all downtime from:
 - Planned maintenance.
 - Hardware failures.
 - Disasters.
- Thereby:
 - Increase revenue.
 - Improve productivity.
 - Enhance customer satisfaction and service.
 - Reduce recovery costs.
 - Reduce other expenses.

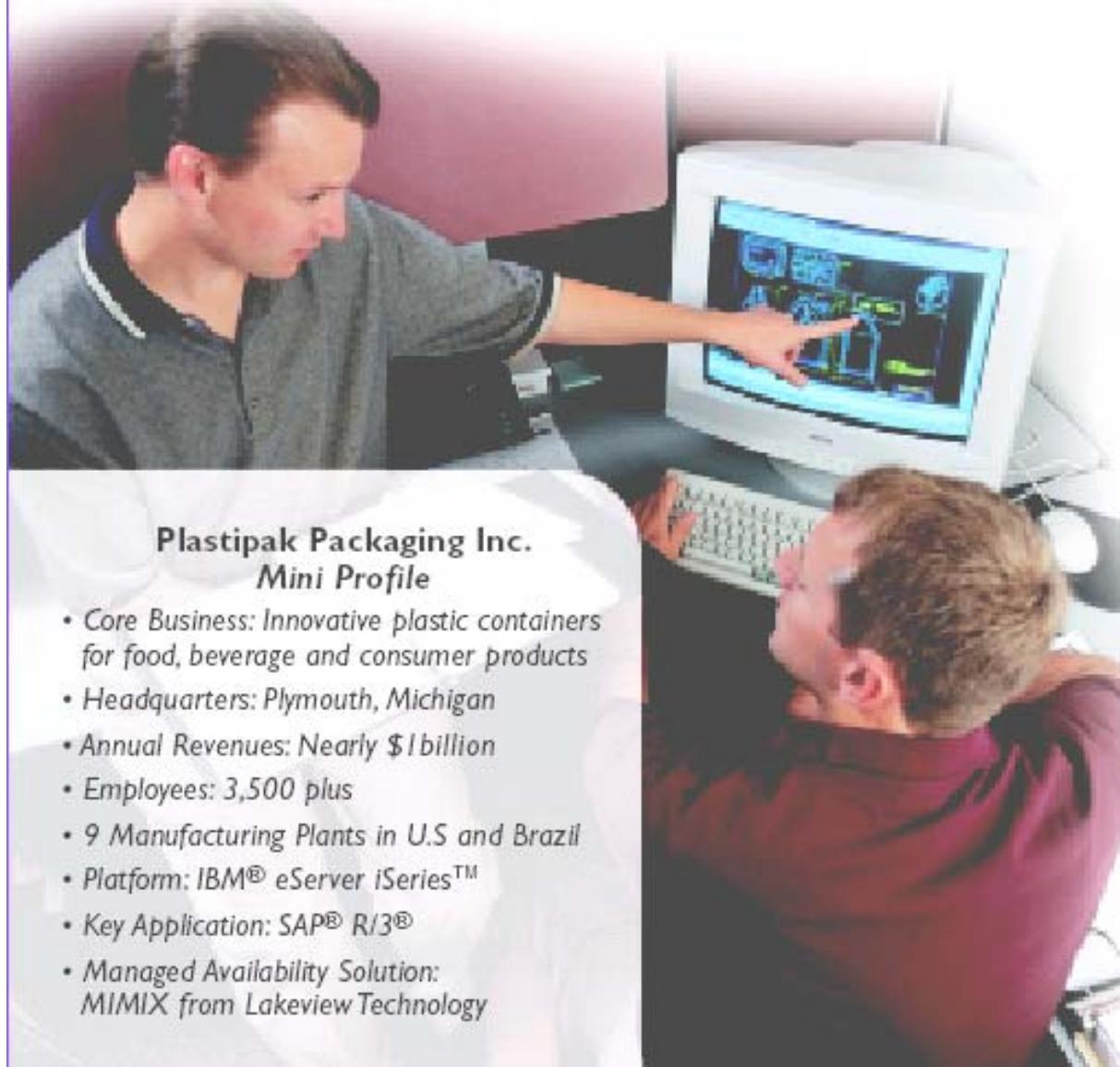


MiMiX™ Makes it Possible!

- High-performance, continuous replication over any TCP/IP network.
 - Enables data vaulting and redundant-remote solutions.
- Monitors primary system availability.
- Automatically switches users (failover) to the remote site when the primary system becomes unavailable due to a hardware failure or disaster.
- Manually switches users to the remote site during maintenance activities.



Case Study



**Plastipak Packaging Inc.
Mini Profile**

- Core Business: Innovative plastic containers for food, beverage and consumer products
- Headquarters: Plymouth, Michigan
- Annual Revenues: Nearly \$1 billion
- Employees: 3,500 plus
- 9 Manufacturing Plants in U.S and Brazil
- Platform: IBM® eServer iSeries™
- Key Application: SAP® R/3®
- Managed Availability Solution: MIMIX from Lakeview Technology

Case Study: Plastipak

- Requirements:
 - Continuous Operations.
 - High Availability.
 - = Reliable 24x7 operations.
 - MIMIX for SAP/R3 return on investment:
 - Each hour of downtime costs at least £85,000.
 - Eliminates at least two hours per month of downtime.
 - Bottom line: MIMIX for SAP reduces downtime costs by more than £170,000 per month or over £2 million per year.



Summary

- A MIMIX Disaster Recovery solution ensures:
 - Faster recovery.
 - Less lost data.
- In addition, it simultaneously provides robust High Availability and Continuous Operations.
- Thus, MIMIX provides a significant Return on your Disaster Recovery Investment, even if you *never* experience a disaster!

Conclusion

You CAN have your cake and eat it!





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REAL Solution iSeries Announcement
Table Discussion.

Stratford Room

11.25 - 11.45am

13:00 – 15.00pm





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Thank you for your time

