



Roadmap to Availability

POWERED BY:  LAKEVIEW TECHNOLOGY



Agenda

- Business and Availability in 2005
- Our Availability Challenges in 2005
- Building Your Availability Roadmap
- Managing Availability...some insight

Business and Availability in 2005

- More pressures to keep systems, applications and information accessible to the business
- Less tolerance for downtime – planned or unplanned
- New technologies to keep information available
 - Backup – do backups faster, reduce downtime
 - Storage – keep multiple images of information
 - Server – replication and recovery like XSM
 - Application / DB resiliency
- You will need a roadmap that will allow you meet and sustain compliance with business requirements

Which Availability Technology is Best?

- That depends...
- First, what are availability and accessibility requirements of the business today? What about tomorrow?
- First, who or what drives the requirements?
- First, are you currently compliant with the business availability requirements?
- First, how will compliance with the requirements be measure?
 - Exactly what does “available” mean to you business?

The business requirements will dictate which availability technology or technologies is appropriate for the business.

Top 3 Availability Issues in IT for 2005

1 Shrinking backup windows

2 More stringent SLAs

3 Doing more with less



... the real-time business changes the IT game

Shrinking Backup Windows

- Tape backup is an absolute
 - *Offsite storage of tape is not going away in the near future*
- There isn't time to do it without negatively impacting the business
- There's no time to take the system offline to meet the needs of current data backups
- New business strategies and regulations are going to increase the volume of data
- The backup windows will continue to shrink.

More Stringent SLAs

- Pressure to meet customer needs: emergence of both internal and external SLAs
- Pressure to play with the bigger players in the supply chain to grow the business
 - Just in Time Supply Chains
- Pressure to guarantee SLAs in order to get in the game with bigger suppliers
- New SLAs leave little room for any downtime
- More Stringent Government and Industry Requirements

SLAs in the Real World

- Managing order routing and connections to the national exchanges for national brokerage firms
- Providing hosting services for major auditors, running applications that ensure compliance with the SEC



Kingland Meets More Stringent SLAs

- System and Information availability is such a key issue in the securities industry that Kingland Systems offers its customers a Service Level Agreement (SLA)
- The SLAs put teeth into Kingland's relationships, because a single SLA shortfall can cost Kingland more than \$160,000.



Doing More with Less

- Profitability is key
- IT is pressured to contribute more to the business
- IT is also pressured to reduce costs
- Where's the ROI?
 - Compliance with SLAs
 - Increase Availability and Accessibility of critical information



What is the Availability Roadmap

- Help define and manage availability requirements
- Help you build “practical” availability solutions that are focused on specific availability needs of the business
- Focused on business needs first - then technology.
- Driven by requirements – SLAs

Why the Availability Roadmap?

- Manage SLA compliance.
- Manage availability expectations with customers, vendors and business units.
- Target the most critical information.
- Better manage costs and maximize ROI from your availability strategy.
- Develop techniques to measure effectiveness over time.

“How do know the business is truly protected?”

Characteristics of Effective Availability

- The most effective availability solutions account for both planned and unplanned downtime.
- Integrated throughout applications, data, servers, networks, storage and security.
- Must be focused on business function availability – not technology.
- It is a balance of software, hardware, expertise and best practices.
- Adopted as discipline or practice.

Building Your Availability Roadmap

- Create the Availability Team
 - IT and Business Units
 - Users if possible
- Define Critical Business Functions
 - Associate Critical Business Functions with Applications and Data
 - Associate Applications and Data with Infrastructure Components (servers, network, storage and security)
 - Focus on the top 3 business functions
 - ERP/CRM, E-mail, MRP, Finance,

Building Your Availability Roadmap

- Perform Business Impact Analysis
 - For each individual critical business function
 - Define current availability capabilities (recovery and planned downtime)
 - Define cost of downtime (tangible and intangible costs)

- Document Requirements – Service Level Agreements
 - Government and Industry Regulations
 - Recovery Point Objective (RPO), Recovery Time Objective (RTO) and Network Recovery Objective (NRO)

Building Your Availability Roadmap

Where are you now?

- Are you SLA compliant?
 - Is this an internal or an external SLA?
 - Does your current strategy meet SLA requirements?
 - Are there penalties for non-compliance?
- How do you measure compliance?
 - Do you test or practice your recovery?
 - How often?
- Specifically, where are you non-compliant?
 - My backups cause too much downtime
 - I can't backup as frequently as I should
 - Can't recover the application or data fast enough
 - Required maintenance impacts the business now I can't stay current
 - If I lose a infrastructure, servers or a site the business will be down

Building Your Availability Roadmap

- Define methods to measure SLA compliance
 - Auditing
 - Practice and drills

- Define technology options that get you to being compliant
 - Evaluate technology based on its ability to meet RPO, RTO and NRO requirements.
 - Define how you measure compliance and effectiveness.

- Design and Implement the solution or strategy
 - Note: Biggest challenge is adopting new practices vs. technology learning curves.

Building Your Availability Roadmap

- Audit Solution for Compliance
 - What will you audit?
 - Are you meeting RTO, RPO and NRO requirements?
 - Is the current strategy effective? Are there newer, better ways?
 - Are there new business requirements?
 - Are there new regulations?

- Practice and Drill
 - Only way to know it works
 - Critical to maintaining compliance

Business Impact Analysis Essentials

- Developed in conjunction with business units, vendors and users
- Must be business function specific
- Key Questions:
 - What SLA's or regulations exist today? What's coming down the line?
 - How long does it take to recover the business function today? What is the recovery timeline for minor and major disasters?
 - What is the business experience with disasters?
 - Can the business function without access to data or applications?
 - Are there alternative methods to performing the function?
 - What is the desired customer experience during a disaster?

Business Impact Analysis Essentials

- Planned Downtime Questions:
 - How much downtime is required on a monthly basis for maintenance?
 - Can the business function be supported by alternative business procedures?
 - What is the desired customer experience during downtime?
- Business Units define cost of downtime
- Document requirements as SLA's
- Translate the SLA's into RPO, RTO and NRO

Are SLA's Worth the Effort?

- SLA define the requirements
- SLA define the metrics (RPO, RTO and NRO)
- Involves the entire business in defining availability requirements
- Most important, it is in writing!!

Not having SLA's for managing availability is like building house without a blueprint.

Practical Availability Solutions

- Backup Downtime / Quality
 - Perform backups without impacting accessibility to data
 - Improve the quality of backups – know you are getting all of the data on tape
 - Simplify the recovery of information
- Disaster Recovery
 - Recovery from Server, Infrastructure and Site failures
 - Get information back on-line faster and more predictably.
- High Availability
 - Ensure uninterrupted access for your users and customers
 - Provide the assurance that business can continue no matter what

The Buzz on the Street about Backups

- “Protecting data from disaster and loss (is) a prime concern for smaller businesses. Data backup methods, options (are) well worth the investment.”
 - Source: Information Technology Solution Providers Alliance, www.itspa.net
- “By 2005, backup and replication will merge to form a single recovery market (0.8 probability).”
 - Source: Gartner Group “**Predicts 2004: Recovery Replaces Backup and Replication**” 18 Nov 2003
- “The third major sea change is the relatively rapid acceptance of the concept of disk-to-disk backup”
 - Source: Storage Magazine, Oct 2004



ITS PA

Gartner.



Backup Solutions

Option 1: Invest in new hardware to do production backups faster

- Tape backup hardware capacity and speed is improving but it is not keeping up with exponential data growth.
- Newer hardware allows tape backup systems to be more flexible and upgradeable.
- Do you know how fast your data is growing? Do you know how fast it will grow in the future?

Backup Solutions

Option 2: Offload backups to another environment

- Replicate critical information to a second server or partition (e.g. LPAR or VM partition)
- Perform backups from second partition (even on a single system)
- Each backup is a complete image is the application which make recovery less cumbersome (less tapes).
- Backups performed more predictably and frequently.
- Still need to perform system level backups on the production server.

Disaster Recovery Strategies

Option 1: Cold server rebuild using backups

- Most common strategy today
- Time consuming recovery process that does not meet most recovery objectives
- Recovery process needs to be tested.

Disaster Recovery Strategies

Option 2: Recover from a replicate environment

- Replication Methods: Server-to-server, Cluster-to-Cluster, Cluster-to-Server or Storage-to-Storage
- Backup environment can be local or remote
- Key: Recovery must be based on known recovery points
 - Recovering from an unknown point will yield unpredictable recovery times and points.
- Consider consolidating multiple servers into one server to eliminate backup and provide recovery.

High Availability Strategies

Option: Real-time replication of information with automated recovery

- Replicate data at server or storage level
- Planned and unplanned downtime protection
- Users switched to backup server when production server is offline.
- Automated recovery

The Realities of Disasters

- Assume anything can happen
 - Human error is always the greatest risk
- Phases: Disruption, Resumption and Recovery
 - The clock starts ticking at the point of the failure
 - Detecting a failure is not always obvious
 - Recovery is returning to the original state
- Communication is essential
 - Do users know what to do?
 - Manage Expectations
- Best Practice is to have “Known Points of Recovery” for business functions

Why Do Availability Strategies Fail?

- Business function availability requirements never defined or documented
 - No metrics
 - No SLAs
- Not integrated into the “business”
 - Availability is a business problem
 - Too much focus on technology
- Availability solution does not “keep up” with business requirements
- Most commonly, solution not tested or audited

Summing it Up...

- It's a business problem so....
 - Involve the business
 - Communicate with the business
- Focus on business function and customer experience – not technology
- There is no magic solution!! All availability strategies will include a variety of technology
- Step 1: Know your requirements and develop SLAs

Roadmap to Availability