**Technical Recovery Exercises: Sailing to Success**

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**Agenda**

- Why Do We Conduct Exercises?  
- When Do We Conduct Exercises?  
- Different Types of Exercises  
- Exercise Practices  
- What’s Involved?  
- Recovery Exercise Phases  
- Exercise Results  
- Re-testing & Postponements  
- Your Role in the Exercise…  
- Wrap-up
**FACT:**

“A plan is NOT a plan until it’s TESTED.”

Otherwise…it’s just paper!

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**Why Do We Conduct Exercises?**

Regular exercising of recovery plans is essential to ensure that:

- Documented Recovery Plans are confirmed as complete, workable and valid
- Recovery gaps and vulnerabilities are identified and addressed
- Audit, Contractual and Regulatory obligations are met
- Operating systems, application software and data can be restored and used to resume processing at the Recovery site
- Recovery site hardware configurations are available and operational (as per contractual agreements)
- End-to-end network connectivity / firewall access is validated between End Users (Clients) and the Recovery site
- Technical Resources can gain training on their roles and Recovery procedures for the critical systems in a simulated disaster situation
- Clients can become more familiar with the nature of Recovery Plan implementation for their critical systems and be assured these systems can be recovered within agreed Recovery Time Objectives (RTOs) and Recovery Point Objectives (RPOs)
**Why Do We Conduct Exercises?**

Technical Recovery Exercises are the *absolute proof* to Management, Auditors, Clients and Stakeholders that Recovery Plans are capable of recovering critical IT infrastructure within agreed timeframes and required points-in-time and in doing so, bring value to the organization.

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**When Do We Conduct Exercises?**

**Frequency of Recovery Exercises is dependent on several factors:**

- Criticality of the supported systems / applications to the organization’s business
- Client Preference / Availability
- Frequency of major hardware / software changes to critical IT infrastructure
- Audit / Contractual / Regulatory Requirements
- Turnover of Technical Resources
- Recovery Facility Availability (weekdays, weekends)
- Technical Resource Availability
- Associated Exercise Costs (e.g. overtime, travel, accommodations)
- Typical Timeframes: annual, semi-annual, quarterly
- Should ultimately be dictated by the *business requirements*
Different Types of Exercises

- **Proof of Concept / Functional**
  - A small-scale technical exercise, usually without Client involvement or interfaces, to validate newly documented / redesigned Recovery Plans in a controlled environment and identify problems prior to conducting a full-scale Recovery Exercise

- **Structured Walk-through (Table-top)**
  - A scenario-based, cost-effective, step-by-step review of a Recovery Plan with the team participants, to validate Recovery procedures and other supporting processes

- **Technical Recovery (End-to-End)**
  - A full-scale exercise that validates one or more Recovery Plans and their associated interfaces

Exercise Practices

The GOOD...

- Frequent exercises; as dictated by the business requirements
- Clearly defined exercise scope, scenario and assumptions
- Exercise objectives that are achievable and measurable
- Effective communication throughout all exercise phases (preparation, execution and follow-up)
- Ensuring that day-to-day business operations / production infrastructure are not disrupted

Expected Results:

- Overall Recovery success (based on preparation)
- Robust Recovery Plans
- Accurate timelines for Recovery activities
- Identification of Recovery gaps and issues for remediation
Exercise Practices (continued)

The BAD...
- Sporadic / infrequent exercises (or none at all!)
- Poorly defined scope, scenario and assumptions
- Unrealistic or vague exercise objectives
- “Rigging for success” – special backups, cheat sheets, Technical Resources SPOFs, reliance on production site data, infrastructure, documentation
- Biting off more than you can chew (large scope)

Expected Results:
- “Paper” Recovery Plans (outdated, obsolete – generally useless)
- Inexperienced Recovery / Technical Resources
- Lack of Client / Management confidence in Recovery Plan capabilities and value
- Violation of Audit / Contractual / Regulatory compliance

Exercise Practices (continued)

…and the UGLY:

A false sense of security in your Recovery capabilities, which may not stand up in an actual disaster.
What's Involved?

Factors to consider: MULTIPLES!!!
- Multiple IT Platforms
- Multiple Technical Teams
- Multiple Recovery Strategies (tape, disk replication, etc)
- Multiple Locations / Time Zones
- Varying Business / Corporate Cultures
- Networking Considerations
- End User (Client) Participation
- Extended Exercise Timeframes (days)
- Vendor Participation
- Travel Requirements

Typical Testing Methodology
Recovery Exercise Phases

Where do you start?

- Executive Buy-in / Sponsorship
- Preparation
- Execution
- Follow-up

Quote...

“I cannot imagine any condition which would cause a ship to founder. I cannot conceive of any vital disaster happening to this vessel. Modern ship building has gone beyond that.”

- Captain Edward J. Smith, RMS Titanic
Executive Buy-in / Sponsorship

You should already have it by now!

If you don’t have it:
- Exercises will not be a priority on anybody’s agenda
- Managers will not support exercise efforts
- Costs / expenditures will not be approved

Reality Check…

Executive Buy-in / Sponsorship for your Recovery Program is absolutely essential. Management must be made to understand the importance of protecting critical infrastructure and the consequences of not doing so.

Recovery Planning and Exercises must be recognized as a fundamental requirement of doing business. Integrating this requirement into Management performance objectives is an effective means of securing buy-in and sponsorship.

Preparation Logistics

Factors to consider:
- Start early! Consider your exercise scope and act accordingly
- Is there anything else going on that will interfere with your exercise scope / date?
- Determine your exercise strategy
- If third party vendors are involved, notify them and coordinate as necessary
- Acquire necessary Technical Resources to support Recovery efforts
- Stage a kick-off meeting with all exercise participants to present and discuss the Recovery scope, scenario, assumptions and objectives
- If the exercise is a Client service, stage a kick-off meeting with the appropriate Client participants
- Review previous exercise results and problem logs
- Coordinate review of Recovery Plans with each Recovery Team as required, to ensure all documentation and Recovery environments are up to date
Preparation Logistics (continued)

More factors to consider:

- Prepare an Information Package (Plan) document for distribution to all participants – including all relevant information toward the exercise (scope, scenario, assumptions, objectives, schedule, contact information, communication guidelines, etc).
- Build an Exercise Schedule that addresses all recovery activities / interdependencies and review it with the participants as often as necessary.
- Coordinate regular (e.g. weekly) status meetings with all participants, logging / tracking all relevant issues, setting deadlines / deliverables as required.
- Finalize hard copies of all Recovery Plans and supporting documentation that will be used in the exercise.
- If the exercise is being conducted at a remote facility, ensure all exercise participants have pre-arranged access and if necessary, arrange for travel and overnight accommodations.

Preparation – The People Factor

Things you’re gonna be dealing with…

- No matter how many times you answer a question – it’ll be asked again.
- With few exceptions, people will do only what they absolutely have to.
- If you don’t specifically ask, it won’t be specifically answered.
- Computers can work around the clock, people can’t.
- People don’t like to read, especially information packages.
- Last minute changes – infrastructure, people – it will happen.
- Expect the unexpected…
Execution Logistics

It’s Showtime…

- Be there before your Teams arrive. Make sure all authorized documentation is available and ensure that the Recovery site is set up as per requirements.
- No cheating! Ensure that no unauthorized documentation, media, backups or remote infrastructure are used during the Recovery exercise.
- Start on time with a brief kick-off session (no more than 5-10 minutes), reviewing the ground rules for exercise activities (communication, task completion, benchmarking times, problem reporting, etc).
- An army travels on it’s stomach; feed the teams to minimize offsite trips and to maintain energy and morale.
- Designate specific roles across the Recovery Team (as warranted); communication / status reporting, schedule management, problem logging / trouble-shooting, etc.

Communication / Reporting

- Manage the communication process between the Recovery team and the Technical Resources via status monitoring of identified milestones and issues (for each system / application); this can be done in several ways as appropriate (face-to-face, e-mails / text, status calls, open conference bridge).
- Implement status reporting to the Client (if applicable) and any other key Stakeholders (recorded message line, e-mails, scheduled conference bridge calls) as per agreed timeframes.
- Keep participants informed of the exercise status regardless of whether they are active or not.
- Notify participants as required if any significant change or delay has occurred in their respective Recovery process.
- The Recovery Team is the communication HUB of the exercise.
Execution Logistics (continued)

Schedule Management
- Tracking ongoing milestones and activities to completion
- Notifying Recovery Teams when tasks should be started
- Performing schedule adjustments as a result of issues, delays, previously unidentified tasks or early completions
- Interfacing with the Communication role to provide redirection on activities to the Recovery Teams, Stakeholders and Client (as applicable)

Schedule Reality...
- The Recovery Timeline is not cut in stone; while every effort will be made to approximate times for completion beforehand, there will be some variation
- The more information that is captured, the more accurate and refined the Recovery Timeline will become

Execution Logistics (continued)

Problem Logging / Trouble-shooting
- Ensure that all exercise participants are aware of the Problem Logging process
- If a problem is minor and immediately correctable (i.e. a procedural error in a Recovery Plan), the technical staff should note it for update after the exercise
- If a problem is causing a significant delay to the Recovery process (i.e. data problem, hardware / software issues, etc) a Problem Log should be created by the involved Technical Resources and immediately reported to the Recovery Team for evaluation of impact and corrective action

Problem Logging / Trouble-shooting Reality...
- People sometimes have a reluctance to report problems
- Problems are not necessarily a BAD thing; the discovery of problems in a controlled environment is infinitely preferable to discovering them in a disaster
Follow-up

The recovery exercise is over…but the work is only beginning!

- Post-exercise sessions with Technical Resources, Vendors, Client participants
- Correlation / assignment of Problem Logs
- Correlation of post-exercise Recovery Plan Updates
- Post-exercise Report

QUOTE...

"Those who cannot remember the past are condemned to repeat it."

- George Santayana,
  Philosopher
Post-Exercise Sessions

Factors to consider:

- Session date(s) should be determined and scheduled with participants prior to the exercise as part of the preparation process.
- Should be held within a week of exercise completion (whenever possible).
- Resources who actively participated in the exercise should attend; if not they should designate an alternate.
- A typical post-exercise session agenda would include some/all of the following:
  - Overall status of the exercise
  - Client perception/feedback (as applicable)
  - What went well
  - What didn’t go well
  - Feedback on lessons learned for improvement/recommendations
  - Review/assignment of Problem Logs as a result of the session (with due dates)
  - Assignment of due dates for new/outstanding post-exercise Recovery Plan updates.

Problem Logs

More factors to consider:

- Longest-running activity in your post-exercise process.
- Typically categorized as open/closed, minor/major impact – all EQUALLY important.
- Problem Logs must contain the following for effective tracking, management and resolution:
  - Accurate date/time of occurrence
  - Who reported the problem
  - Assigned ownership/resources
  - Nature of the problem (hardware, software, network, etc)
  - Problem specifics (symptoms, processing results, error messages)
  - Solution details (if closed)
  - Date and time of solution implementation (if closed)
  - Current status (OPEN, CLOSED, PENDING)
  - Scheduled date for completion (if open)
- All Problems Logs must be managed through to resolution by the Recovery Team.
Post-exercise Recovery Plan Updates

Even MORE Factors to consider:
- Typically a result of identified discrepancies (during the exercise) or from Problem Logs
- Minor plan updates are generally noted during the exercise. They are then completed by Technical Resources after the exercise and submitted to the Recovery Team
- Major plan updates (often as a result of a Problem Log) typically require more time after the exercise for resolution
- Problem Logs must be assigned to appropriate Technical Resources with due dates for completion
- Sign-off is required toward each Recovery Plan that was executed during the exercise by the Technical Resources
- Updated Recovery Plans need to be redistributed as required

Post-exercise Report

A Record of the Recovery Exercise which typically includes the following:
- Executive Summary
- Disaster Scenario, Scope, Assumptions and Objectives
- Exercise Results
- Lessons Learned
- Recommendations
- Post-Exercise Activities
- Other reference information
  - Participants
  - Problem Logs
  - Exercise Timeline
- Should be distributed to key stakeholders within agreed timeframe for completion
QUOTE...

"Houston, we've had a problem."

- James A. Lovell,
  Commander, Apollo 13

Exercise Results

It’s OKAY to encounter problems or even FAILURE!

- The purpose of Recovery Exercises is to identify gaps and exposures that will hinder or prohibit successful recovery of critical IT infrastructure
- A newly developed Recovery Plan has strong potential to contain discrepancies which will need to be addressed, either during or after the exercise
- Even Recovery Plans that have been successfully executed in previous exercises or disaster situations may encounter unforeseen problems due to changes in facilities or infrastructure
- If a Recovery Exercise goes well, terrific!
  (but ask yourself - did you set the bar high enough?)
- Learn from the problems that are encountered and address them as necessary, otherwise they will continue to hinder your recovery capabilities
Re-testing & Postponements

Do-overs are okay...

- Highly dependant on scope and objectives. If one or more primary objectives are not reached, re-testing may be required (with Client agreement)
- Secondary objectives may not justify the time, effort and expense of re-testing
- Re-testing criteria should be clearly defined prior to the original exercise
- Easier to re-test when using your own recovery facilities (as opposed to a vendor site)

Time isn’t always on your side...

- If a contingency date has not been previously agreed upon, re-testing may have to wait until the next scheduled exercise
- Vendor facilities may not allow for re-testing as they are often heavily utilized
- Technical / Client Resources may not be available
- Cost considerations (travel, accommodations, etc)
- Sign-off / exemption from Clients should be obtained if there is a required postponement to satisfy Audit / Contractual / Regulatory requirements
Your Role in the Exercise…

Leadership / Communication  Coordination  Diplomacy

Sensitivity  Achievement  Humour

Your Role in the Exercise… (continued)

You’re the glue that holds everything together!

- Lead by example from the start; keep a firm hand on all preparations, statuses and deliverables. Delegate activities as appropriate. Diligence is your watchword throughout all phases of the exercise.
- The Recovery Team / Coordinator wears a lot of hats; you’re the project manager, facilitator, problem solver and mediator at any given time.
- Communication is key; make sure it flows both ways. Keep everyone informed as to the status of all preparation, execution and follow-up activities.
- You’re often at the mercy of Technical Resources; ask questions to ensure they are telling you what you need to know, and that things are being done as necessary during all phases of the exercise.
- Keep people focused before, during and after the exercise — avoid the “scatter” effect (loss of resources after the exercise is completed).
- Stay calm! If you don’t keep your head about you, neither will anyone else.
- Be sensitive and patient toward people’s needs.
- Humour relieves stress. Keep smiling…
Wrap-up

- Technical exercises demonstrate the value of your recovery program to the organization
- Scope and frequency of exercises should ultimately be dictated by the *business requirements*
- Adherence to best practices will ensure effective testing and mitigation of problems
- Exercise complexity will make for challenges – allocate sufficient time and resources as necessary
- Each phase of the exercise is the critical foundation for the next, and the overall success
- The Recovery Team is ultimately responsible for managing the exercise phases through to completion, and ensuring that the recovery program is improved as a result of the exercise results.

Questions?
In Closing…

“Fate favours the prepared.”

- Louis Pasteur, Scientist