THE ESSENTIAL GUIDE TO:

Building a Working Disaster Recovery Plan

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Regular testing of a recovery plan is an essential part of effective enterprise-level Disaster Recovery (DR). However, IT managers are frequently dealing with a number of other data center complexities. These can include ensuring effective back-up and recovery for multiple application instances across physical, virtual, and cloud platforms; handling a mixed data center environment that requires additional IT resources, or solving inefficient back-up issues due to software that uses up storage quickly because of redundant data copies.

These are just a few of the types of demands IT must deal with on a daily basis. So, scheduling and performing systematic, recurrent testing may not seem like a high priority. Yet it's important to ensure that your DR plan is up to date and that you can resolve any issues before an actual disaster occurs. In this essential guide, you'll learn:

- How testing can be the most effective way to help guarantee the successful execution of a recovery plan
- Why you need a physical record of procedures both before and after testing; best practices for documentation
- The benefits and challenges of automation
- Key considerations to ensure that your DR approach meets compliancy standards and requirements

The goals of testing

Testing enables you to see where your plan falls short and if gaps exist, in addition to ensuring that all your systems, IT teams, and recovery processes are well prepared. Your DR plan is an evolving process that requires careful refining, not simply a little used set of instructions gathering dust. It offers procedures to swiftly resume operations after a major service interruption or outage, and therefore should accurately reflect the changing dynamics of your data center. Objectives for testing can extend to a number of areas. These include:

- Familiarizing IT staff with prescribed DR procedures
- Verifying that the right personnel are in place and have the appropriate responsibilities
- Documenting both test procedures and the changing configurations of your IT environment
- Confirming the accuracy of recovery time objectives (RTOs) and recovery point objectives (RPOs)

By regularly performing a variety of tests (tabletop, walk-through, technical, etc.), you can fully exercise all DR plan strategies. In general, testing is viewed as a resource drain that adversely impacts daily operations, requires staffing overtime, and increases the overall anxiety level, especially if some aspect of a DR plan fails. However, regular compartmentalized testing of networks, servers, storage, and some application components, along with confirming documentation accuracy, can be accomplished without degrading your production site.

To stay relevant, a DR plan requires regular training at every level. And making a habit of conducting simple procedural reviews or verifying checklists doesn't require extensive pre-planning, resource consumption or time commitments. Moreover, a failed test can provide useful insights, such as undocumented configuration changes or the limitations of an external resource – a back-up data center, off-site data repository, or cloud service. While a successful test enables IT to uncover and address shortcomings, an unsuccessful test can alert IT to deficiencies and offers a good opportunity to fix problems before a real disaster occurs.

The benefits of different tests

Taking different approaches to reviewing your DR plan is simply good practice. In addition, it's important to regularly schedule these evaluations, which can include basic walk-throughs, documentation reviews, tabletop tests, or full-on technical assessments that involve actual systems.

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Planned walk-throughs should include all the key members of your DR plan. By carefully reading through procedures together, your staff can be made aware of all the steps and elements involved in restoring a system. Testing with planned walk-throughs can help avoid problems later on because they provide clarity, allowing team members to ask questions or voice their concerns. Areas that can be checked in advance include contact and vendor lists, updated as necessary.

Tabletop testing has fewer logistical requirements than technical tests and they also provide teams a chance to interact as they review recovery processes together. It enables participants to review their respective procedures and discuss how they might react in certain situations. A leader can put additional stress on the DR plan to uncover possible gaps by introducing unexpected situations to determine how personnel will respond. These can be as simple as omitting key staff members from the chain of command to mimic absences or introducing a more serious scenario, such as the failure of a remote backup location.

A technical test will include the restoration of production and application systems and other mission

critical hardware. It will also include evaluating LAN and WAN as well as failover mechanisms and the functionality of high availability systems. If a hot or warm site is contracted through a third party, the ability to perform technical tests should be provided for and performed regularly. When cutting over to the recovery site, a ready and able team should be prepared to run well-documented, straightforward transactions.

The purpose of a technical test is to evaluate the real-world application of procedures in response to a disaster. Running a full-scale technical test may only be possible on a yearly basis, and so performing the other logistical evaluations in between is critical. The primary goal is to ensure that all tests are conducted with clear objectives. While not strictly regimented, staff interactions should be formal and professional to convey the concept of a set series of procedures that must be precisely followed. Toward this end, good documentation can help ensure that team members respond correctly.

Documentation best practices

When preparing for a test and afterwards, careful documentation serves a number of goals. For example, the DR run book functions as comprehensive hard copy for recovery procedures also contains practical data, i.e., contact information for key business, IT personnel, and third party service providers, or how best to alert end users and notify customers of a DR event. Not only will your run book detail the responsibilities of each IT team, it should also contain the scripts used to execute tests as well as current configuration settings. This document then becomes an all-encompassing repository that changes as your data center evolves.

Good documentation can help minimize cost overruns related to downtime or delays. For example, with proper documentation in place, junior personnel can execute tasks that might otherwise require extended time from senior resources. In your run book, you should specify what counts as a successful test or a failed one. It should clearly outline pre-test activities, step-by-step procedures,

and post-test wrap up actions. You should also account for any possibilities where the test could go wrong as well as what you expect to achieve with the test. It's also important to consider keeping a versioning-based central document repository where all DR and Business Continuity (BC) documents can be stored and updated automatically. This repository may maintain custom scripts, DR process documents, BC Planning documents and reports.

Keeping detailed records during a test is the most effective way to assess the procedures that worked properly and those that didn't. A DR plan scribe should be assigned to record problems and their resolutions, noting the duration of each procedure. A designated timekeeper should monitor the specific start and end times of test activities. Having an established report format to capture results will help avoid dealing with a staff member's notes that might otherwise be unintelligible. Finally, performing post-mortem interviews when the experience is fresh in technicians' minds offers the best way to obtain useful data on procedural refinement.

The challenges of automation

Increasingly, IT managers are choosing to automate aspects of their DR. In general, large data centers include diverse technologies, from easily relocated virtual applications and high-speed WANs to data replication tools and cloud-enabled business continuity (BC) and DR capabilities. On the one hand, a virtual environment allows you to keep operations running and perform certain tests without actually bringing down systems. However, automating all the bits and pieces of virtualized, cloud-based DR and ensuring that they respond in tandem and efficiently still presents challenges.

One issue that regular testing helps to alleviate is in the area of configuration drift. Virtual environments are ever changing, due to the ease with which virtual workloads are deployed. With regular practice, testing can be the key to change management and to resolving issues in DR planning. With a change control process in place, any variations in the environment are reflected in the plan, which can be updated automatically.

For example, when a replication process is implemented within a predetermined, static application state, it's based on known, identifiable volumes that the tool protects. However, a volume may be moved or others added to improve performance. If the change isn't recorded, the DR plan can fall out of sync with the production environment. Testing can make sure that configuration changes are mapped into the DR process. As mentioned previously, periodic testing helps identify gaps that exist between a DR plan and

the current state of a data center. And regular rehearsal and fine-tuning a plan make it possible to recover to optimal performance levels and ensure data restoration, application re-hosting, and end user reconnection.

DR tests: Meeting compliance regulations

While organizations have increased the use of automated processes across the data center to handle information, compliance regulations have also grown. These often require protecting records in transit or wherever they reside. Some of the regulations, such as the Health Insurance Portability and Accountability Act (HIPAA) and the Sarbanes-Oxley (SOX) act require that data be both secure and accessible at all times. Maintaining and testing a DR plan is crucial to demonstrating how data will be secured and meets precise audit requirements, avoiding problems later on.

For example, SOX requirements extend to managing logs and mandate maintaining backups of business records and all relevant electronic communications for five years. In these kinds of environments, DR testing becomes that much more complicated as well as necessary. More and more large companies are

transitioning from a reliance on traditional DR management to a dependence on IT service continuity management.

With the increase in the use of hot sites, cloud-based services, and managed hosting providers, scheduling tests should be provided as part of a service package. It's also important to validate that service providers are applying the appropriate safeguards to ensure your data is meeting compliance requirements. Moreover, along with testing, such assurances will enable you to confirm that system and network recovery capabilities are up to the task.

Within IT operations, it's often necessary to show auditors that security standards and data protection requirements have been met. Certain regulations, such as the Federal Financial Examination Council (FFIEC), require systems to be operational within a matter of minutes after a disaster. In these cases, DR testing represents an important means for demonstrating that your plan will function as designed.

Conclusion

Most businesses know the value of disaster recovery, yet budgetary constraints as well as resource and time limitations keep them from consistently performing tests to ensure comprehensive recoverability. With the number of mixed environments that include traditional back up software and service-based point tools, IT administrators are routinely confronting operational gaps. Testing verifies that the information and procedures that comprise your plan are current. With increased data center complexity and more external resources to monitor, frequent and regular evaluations simply lead to greater efficiency.

One of the most valuable things to remember about testing is that it always produces useful, actionable information, regardless if it's a success or a failure. It contributes to the body of knowledge and working methods that allow for procedural refinement. Over time, infrastructure change can be accounted for, enabling recovery activities to be accomplished within the specified timeframe. ●

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