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CopyAssure

Operational Resilience for IBM Power: Your Blueprint for Zero Downtime

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The Recovery Challenge

With breaches becoming more costly and disruptions more frequent, businesses must rethink recovery. The real challenge isn't storing backups - it's proving they work when it matters most.

The Cost of Downtime

If your business goes offline, it's not just annoying, it's expensive. The IBM Cost of a Data Breach Report 2025 puts the average cost of a data breach at **$4.45 million** worldwide. For bigger companies, every hour of downtime can drain over **$100,000**. UK businesses feel this even more; with 45% of breaches resulting in operational disruption that affects revenue, supply chains, or customer service.

A major UK retailer, **Marks & Spencer**, experienced a 24-hour IT outage that led to **£136 million in lost revenue**, disrupted supply chain operations, and triggered regulatory scrutiny. The reputational impact and potential loss of customer trust often compound the financial consequences.

Why Traditional Backups Fall Short

Traditional backup solutions, despite their widespread use, are becoming less appropriate for the needs of modern businesses:

- **Recovery Point Objectives** (RPOs) are commonly set to daily intervals, leaving a 24-hour window of potential data loss.
- **Recovery Time Objectives** (RTOs) can extend from hours to days, depending on system complexity and manual recovery processes.
- **Manual testing** is infrequent and unreliable, resulting in uncertainty over recoverability.

Even if you're backing up, you're still vulnerable. When disaster hits, restoring operations quickly just isn't guaranteed. That means more downtime, more risk, and higher costs for the business.

The Need for Continuous Recovery Validation

The frequency and sophistication of cyberattacks are rising, with IBM reporting a **35% increase in ransomware and malicious insiders targeting critical infrastructure**. Organisations need a proactive recovery strategy that validates not just the existence of backups but their recoverability. Continuous recovery validation offers:

- **Cyber resilience**, enabling faster response to incidents and limiting operational impact.
- **Audit-readiness**, supporting compliance with standards such as **NIST** and **ISO 27001**.
- **Operational assurance**, providing measurable confidence that recovery procedures will succeed when needed.

By adopting continuous recovery validation, teams get solid proof that their recovery steps are effective.

As cyber threats intensify, recovery has become a defining business capability.

With 75% of organisations taking over 100 days to recover, leaders must rethink resilience.

Future-ready businesses need validated recovery to protect revenue, maintain trust, and keep operations moving.

IBM Power:
The Architecture That Keeps Business Running

Overview of IBM i, AIX, and Linux

IBM Power Systems are the backbone of many enterprise IT environments, supporting critical workloads across finance, retail, manufacturing, and logistics. The three primary operating systems environments **IBM i, AIX, and Linux**, are widely used due to their reliability, scalability, and integration capabilities:

- **IBM i**: Known for its robust database and application integration, IBM i supports ERP, finance, and back-office applications with high uptime.
- **AIX**: IBM's UNIX platform is optimised for mission-critical applications, offering advanced workload management and reliability.
- **Linux on Power**: Provides flexibility and open-source compatibility while maintaining enterprise-level performance and availability.

Together, these platforms host high-value business data and underpin operations that cannot tolerate prolonged downtime.

Back-Office Importance

IBM Power Systems are frequently the foundation of crucial operational procedures for UK businesses:

- **ERP and Financial Systems**: Managing accounting, payroll, and procurement workflows.
- **Inventory and Production Systems**: Supporting retail chains, warehouses, and manufacturing operations.
- **Customer Service and Logistics**: Ensuring real-time order processing and supply chain visibility.

Downtime in these systems translates directly into lost revenue, operational disruption, and reputational damage. For example, UK retailers often rely on IBM i for point-of-sale and inventory management; even short outages can result in significant financial losses.

Common Recovery Pain Points

Despite the reliability of IBM Power Systems, enterprises face challenges when it comes to recovery:

- **Legacy Backup Tools Lack Automation**: Many organisations still rely on manual backup processes that are slow and error prone.
- **No Visibility into Recovery Success**: Traditional backups are rarely tested, meaning recoverability is uncertain until a disaster occurs.
- **No Standardised Testing Across Environments**: Diverse platforms and applications make it difficult to ensure consistent recovery outcomes.

These challenges create a critical need for solutions that provide **continuous recovery validation**, automated testing, and measurable recovery outcomes. Without this, enterprises are exposed to operational risk, compliance issues, and escalating costs from downtime.

What Is CopyAssure?

CopyAssure is a continuous recovery validation service designed specifically for IBM Power Systems, including support for IBM i, AIX, Linux and IBM Power Virtual Server (Power VS). It operates across both on-premises and cloud environments, ensuring that critical business workloads are not only backed up but can be reliably recovered when required.

Traditional backups, stored on disk or tape, capture data at a single point in time and typically run overnight due to performance and scheduling constraints. Many organisations now complement these with immutable snapshots to improve recovery point objectives (RPOs) and defend against corruption or ransomware. However, without regular testing of both methods, recovery cannot be guaranteed, leaving businesses vulnerable to disruption, compliance issues, and financial loss.

Fully integrated with IBM Power Cyber Vault, CopyAssure enhances cyber resilience by ensuring clean, isolated recovery environments are always availabe.

IBM Safeguarded Copy is a feature of **IBM FlashSystem** that provides immutable snapshots designed to protect critical data from corruption or deletion. **CopyAssure** leverages this capability to enhance data reliability, integrity, and recovery assurance.

- **Frequent snapshots**: Data copies are taken at regular intervals, typically hourly, reducing the potential data loss window.
- **Automated recovery validation**: Each snapshot is tested to ensure recoverability without impacting production workloads.

This integration allows IT teams to identify issues such as data corruption, slow recovery performance, or configuration errors before they affect operations. CopyAssure turns backup from a reactive insurance policy into a proactive resilience strategy by consistently validating recovery points.

Feature	Traditional Backup	CopyAssure
Recovery Point	Daily	Hourly
Recovery Time	Hours to Days	Minutes
Validation	Manual	Automated
Confidence	Low	High

What Is CopyAssure?

Key Advantages of CopyAssure:

- **Hourly recovery points** reduce the potential loss of data.
- **Rapid recovery times** minimise operational downtime.
- **Automated validation** eliminates manual testing and uncertainty.
- **High confidence** ensures that recovery procedures will succeed when needed most.

Reduce recovery time from hours to minutes

Automation and Alerting

CopyAssure is designed to reduce manual effort while increasing recovery confidence:

- **Continuous automated testing:** Validates every snapshot to confirm recoverability.
- **Alerts for anomalies**: Flags slow recovery times, data corruption, or failed recovery attempts.
- **Dashboard monitoring**: IT teams gain visibility into recovery outcomes across all IBM Power environments.
- **API integrations (planned roadmap)**: Enables full automation, including workflow triggers for incident response.

By combining these capabilities, CopyAssure ensures **predictable RPOs and RTOs**, transforming traditional backup processes into a proactive, business-critical resilience strategy.

How CopyAssure Works

Architecture Overview

CopyAssure operates as a **continuous recovery validation service** integrated with IBM Power Systems and IBM FlashSystem storage. The solution is deployed on a **Linux VM (CopyAssure/ProCare)** and uses a minimal resource LPAR as a recovery host. This architecture enables automated testing of backup copies without affecting production workloads. Key components include:

1. **IBM FlashSystem with Safeguarded Copy**: Provides immutable snapshots at frequent intervals, typically hourly, reducing RPO.
2. **Linux VM (CopyAssure/ProCare)**: Orchestrates automated recovery tests and monitors system health.
3. **Minimal Resource LPAR**: Acts as a sandbox environment for recovery validation.
4. **GUI Dashboard**: Allows IT teams to monitor recovery status, performance metrics, and alerts in real time.

This architecture ensures efficient, low-impact testing across on-premises and hybrid cloud environments.

Recovery Tiers

CopyAssure's recovery validation is structured into three tiers, covering the full stack from system boot to application functionality:

TIER 1

TIER 2

TIER 3

System Integrity

a. Detects boot errors and checks volume mappings.

b. Measures system start-up times and basic integrity of storage volumes.

Operating System

a. Validates access to key data areas and rebuilds critical paths.

b. Identifies damaged objects or misconfigured access points.

c. Incorporates honey pots to detect latent issues or corruption.

Application

a. Validates end-to-end recovery of enterprise applications.

b. Executes customer-specific playbooks, such as creating, updating, or deleting warehouse products.

c. Confirms that ERP, payroll, and inventory systems are operational.

This tiered approach ensures that both infrastructure and business-critical applications are fully recoverable.

Use Case: From Risk to Resilience

Real-World Recovery Scenario

UK Retailer: By adjusting snapshot schedules and optimising boot procedures, recovery times were significantly reduced, ensuring faster and more predictable system availability.

Oscar Mayer: Implemented IBM Flash Systems® with HyperSwap and CopyAssure, achieving near-zero downtime and reducing recovery times to under 20 minutes. This integration strengthened compliance and operational resilience, ensuring rapid restoration of systems and minimising the risk of disruption to essential processes.

"Partnering with Celerity to implement IBM Flash Systems with HyperSwap and CopyAssure has strengthened our IT continuity, ensuring near-zero downtime, rapid recovery, seamless operations, and peace of mind for our critical systems."

OSCAR MAYER

Head of IT

Before CopyAssure	After CopyAssure
• **Infrequent Recovery Testing**: Recovery tests were conducted only twice per year, leaving long intervals without insight into system reliability.	• **Continuous Validation**: Over 24 automated validations per day ensure systems are consistently monitored.
• **Unpredictable Recovery Times**: Recovery times were undefined, making it challenging to plan for potential downtime.	• **Defined RPO and RTO**: Clear Recovery Point Objectives (RPO) and Recovery Time Objectives (RTO) metrics are established and consistently met.
• **Limited System Visibility**: Without continuous monitoring, issues often went undetected until they impacted production.	• **Proactive Issue Detection**: Potential issues are flagged before they affect operations, enabling timely intervention.

Read the full case study here

Driving Measurable Results

Operational Confidence

CopyAssure provides organisations with certainty in their recovery processes, reducing risk and ensuring business continuity:

- **Predictable Recovery Outcomes**: Recovery times and data integrity are no longer uncertain.
- **Reduced Risk of Downtime and Data Loss**: Proactive validations prevent incidents from impacting production.

Compliance and Audit Readiness

Continuous validation ensures organisations meet regulatory and industry standards with minimal manual effort:

- **Continuous Validation**: Automated recovery testing ensures systems are always ready.
- **Automated Reporting**: Aligns with NIST standards and supports audit requirements.

CyberVault Integration

CopyAssure integrates seamlessly with IBM Cloud CyberVault to provide enhanced protection:

- **Supports IBM Cloud CyberVault Architecture**: Enables resilient, secure storage.
- **Enables Logical Air-Gap Recovery**: Protects critical data from ransomware or systemic failures.

Complementing Operational Resilience: Where CopyAssure Fits

Modern enterprises adopt layered resilience strategies combining High Availability (HA), Disaster Recovery (DR), and backup solutions. While essential, these components don't always guarantee successful recovery when it matters most.

High Availability (HA)

- Keeps systems running during hardware or software failures using clustering, failover, and redundancy.
- **Gap:** HA does not protect against data corruption or bad replication.

Disaster Recovery (DR)

- Restores systems after major outages or data loss through offsite replication, backup infrastructure, and recovery plans.
- **Gap**: DR often lacks frequent testing and does not protect against data corruption or replication issues.

Backup Solutions

- Provide point-in-time copies of data stored on tape, disk, or cloud.
- **Gap**: Backups are rarely validated until a crisis occurs, leaving uncertainty about recoverability.

Where CopyAssure Adds Value

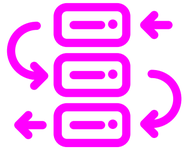
- **Continuous Recovery Validation**: Automatically tests recovery points throughout the day.
- **Known Recovery Outcomes**: Provides measurable RPO and RTO, reducing uncertainty.
- **Operational Assurance**: Confirms that recovery will work before it is needed.
- **Compliance Support**: Ensures alignment with NIST and other regulatory frameworks.
- **Complements Existing Strategies**: Works alongside HA and DR to close validation gaps and deliver end-to-end resilience.

Implementation Made Simple

CopyAssure is designed for rapid deployment and seamless integration into existing IT environments.

Phase 1: **Deployment**

- **VM Setup and Configuration**: Provision and configure virtual machines.
- **Recovery Location Provisioning**: Establish secondary sites and storage.
- **Initial Benchmarking and Validation**: Test baseline recovery performance.



Phase 2: **Managed Service**

- **Application Walkthrough and Scripting**: Map applications and implement automated recovery scripts.
- **Continuous Improvement and Service Reviews**: Optimise the service to meet evolving business requirements.

Phase 3: **Continuous Validation**

- **1–2 Weeks to Full Implementation**: Rapid deployment ensures organisations begin benefiting quickly.
- **Continuous Validation Thereafter**: Recovery points are automatically tested 24/7, providing ongoing assurance.

Debunking Recovery Myths

Objection	Response
“IBM systems are secure”	Ethical hackers have demonstrated that even highly secure systems can have vulnerabilities; CopyAssure adds proactive recovery validation.
“Too complex to implement”	Minimal setup, seamless integration, and no downtime required.
“Too manual”	Recovery testing and monitoring are fully automated, with alerts and reporting built in, reducing operational overhead.
“We already have backups”	Backups only confirm that data is stored somewhere; CopyAssure verifies that those backup copies are actually recoverable, uncorrupted, and ready for use in a real incident.

Use Cases

CopyAssure is designed to provide continuous recovery assurance across a wide range of enterprise environments. Its flexibility and automation make it particularly valuable for organisations where downtime or data loss is unacceptable.

Enterprises with Critical Backend Systems

- **Industries**: Retail, finance, manufacturing, and other sectors that rely on robust, always-on IT infrastructure.
- **Value**: Ensures business-critical applications remain recoverable and resilient, reducing operational risk.
- **Example**: *A UK retailer leveraged CopyAssure to adjust snapshot schedules and optimise system boot times, dramatically improving recovery predictability.*

Organisations with Low Tolerance for Downtime

- **Focus**: Real-time operations, regulated industries, and mission-critical processes where even brief outages have significant business or compliance implications.
- **Value**: Provides measurable RPO/RTO and 24/7 automated recovery testing, minimising disruption.
- **Example**: *Oscar Mayer reduced recovery times to under 20 minutes using CopyAssure, enabling rapid restoration of critical systems and supporting regulatory compliance.*

IBM Power Users

- **Environments**: IBM i, AIX, and Linux-based systems.
- **Value**: Seamless integration with IBM infrastructures, including CyberVault architecture, supporting logical air-gap recovery and continuous validation.
- **Example**: *CopyAssure's integration with IBM FlashSystems® and HyperSwap helped Oscar Mayer maintain operational resilience while meeting compliance requirements.*

Deployment Flexibility

- Works across **on-premises, hybrid cloud, or multi-cloud environments**, providing a consistent layer of recovery validation regardless of infrastructure.
- Enables enterprises to implement automated testing and compliance reporting without disrupting ongoing operations.

Future of Recovery Validation

Cyber Resilience Trends

The landscape of enterprise IT is evolving rapidly, with organisations shifting from reactive approaches to proactive recovery strategies. Key trends include:

- **Proactive Recovery**: Organisations are moving away from infrequent, manual testing to continuous, automated recovery validation
- **Security and Compliance Integratio**n: Recovery validation is increasingly integrated with security operations and compliance frameworks, ensuring that data protection and business continuity go hand in hand

Role of Automation and AI

Automation and artificial intelligence are transforming how enterprises approach disaster recovery and operational resilience:

- **Predictive Recovery Analytics**: Advanced algorithms identify potential risks before they affect production, enabling preemptive action
- **Intelligent Alerting and Remediatio**n: Automated notifications and remediation workflows reduce manual intervention and accelerate recovery

CopyAssure Roadmap

CopyAssure is evolving to meet the demands of tomorrow's enterprises:

- **Full Automation**: Continuous, end-to-end recovery testing without manual oversight
- **API Integrations**: Seamless connectivity with other IT management, security, and monitoring tools
- **Enhanced Reporting and Compliance Features**: Streamlined audit readiness with actionable insights aligned to industry standards

Act Now: Future-Proof Your Recovery Today

Recovery is no longer a reactive process. It is a strategic capability that protects your business, data, and reputation. CopyAssure ensures your systems are continuously validated, your compliance obligations are met, and your operational resilience is strengthened.

Start your journey towards predictable, automated recovery today because when recovery is certain, business never stops.

Scan to Secure Your Systems

Ready to see CopyAssure in action?

Scan the QR code to access demos, request a proof of value, or speak with an expert about protecting your IBM Power workloads across hybrid and multi-cloud environments.

References:

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- Public reporting on Marks & Spencer IT outage, 2025
- NIST, Cybersecurity Framework, 2024.
- Public case studies of UK retailers and enterprise outages, 2023–2024.
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About Celerity

Founded in 2002, Celerity initially made its name as a successful enterprise infrastructure provider before expanding into the cloud and managed services arena. The company has seen sustained growth, with UK and global coverage catering to customers across all industry sectors. Celerity people aren't just accredited technical experts with over 20 years' experience. They also care deeply, individually and collectively, about your success.

About IBM

IBM is an American multinational with a presence in 175 countries. Founded in 1911, it brings over 100 years of experience in innovation. It integrates technology and expertise, providing infrastructure, software and consulting services for clients as they pursue the digital transformation of the world's mission-critical businesses. It's about creators, partners and clients putting technology to work in the real world. Their mission isn't just to make business work better, but to make the world work better.

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