



BIG DATA NEEDS A
**SUPERHERO
SOLUTION**

Tape Storage in the AI Era



SECTION 1

**THE TOOL EVERY SUPERHERO NEEDS:
TAPE STORAGE**

3

SECTION 2

THE BATTLE AGAINST CYBER VILLAINS

IT Pros Who Use Tape Can Save the Day

6

SECTION 3

THE HERO'S ARSENAL

How Tape Wins on Cost, Sustainability, and Strategy

8

SECTION 4

THE AI DATA AVALANCHE

How Tape Becomes Your Ultimate Sidekick

11

CONCLUSION

THE FINAL POWER MOVE

Be the Data Hero Your Organization Needs

15





SECTION 01

THE TOOL EVERY SUPERHERO NEEDS: TAPE STORAGE

Every IT hero has an origin story, and so does every great technology. When you hear the word “tape,” you might think of cassette tapes, film reels, and a bygone era of analog nostalgia. But in the world of data storage, tape is not a relic of the past—it’s a timeless powerhouse, evolving to meet modern challenges and proving that some heroes never fade.



Tape storage **30 YEARS**

Did you know? Tape backups can last for [30 years](#), compared to disk storage, which has a lifespan of 3-5 years.



Disk storage **3-5 YEARS**

The Origin of a Superpower

The story of tape in data storage began in the 1950s, when the first tape drives were used in mainframe computers. Back then, they could hold less than a single megabyte of data—a modest beginning for a technology that would go on to achieve heroic feats. Fast forward to today, and modern tape drives have the potential to store up to [580 terabytes](#)—that's 580,000,000 megabytes in the not-to-distant future. From humble beginnings to unmatched storage capacity, tape has undergone an evolution that few technologies can claim.

The Secret Weapon: Tape

As an evergreen solution in the storage community, tape has remained an essential tool, not through sheer longevity, but through its ability to adapt and grow stronger. The core abilities that made it invaluable decades ago—affordability, data compression, and unmatched data integrity—are still part of its DNA. However, like any reliable secret weapon, it has gained new abilities to meet the demands of the modern world:

Archival Scalability: Tape now offers unparalleled storage expansion, making it the go-to choice for long-term data retention.

Cybersecurity and Data Protection: In a world where cyber threats lurk in the shadows, tape remains a fortress against ransomware and data corruption, providing an offline storage solution that keeps mission-critical data safe.

Sustainability: As AI and data centers consume more energy than ever, tape emerges as the eco-friendly champion, consuming far less power than traditional hard drives.

Interoperability and Ease of Use: Once perceived as cumbersome, tape has evolved to integrate seamlessly with block, file, and object storage, making it an effortless addition to any IT strategy.

The Enduring Legacy of Tape

A true superpower stands the test of time, and tape is no exception. Despite being around for over 75 years, it continues to outpace the hard drive storage market in terms of density and scalability. Its resilience, adaptability, and unmatched capabilities make it a cornerstone of modern storage solutions.

Tape is not just a tool—it's the superpower of the IT superhero, quietly ensuring that businesses, governments, and institutions can store, protect, and access data whenever needed. As we dive deeper into this eBook, we'll explore how tape can make you the superhero of your organization, empowering you to tackle the ever-growing challenges of data management with confidence and strength.



DID YOU KNOW?

THE CERN HADRON COLLIDER,
WHICH IS HARD AT WORK REVEALING
THE SECRETS OF QUANTUM PHYSICS,
USES TAPE STORAGE TO DO ITS
ESSENTIAL WORK.



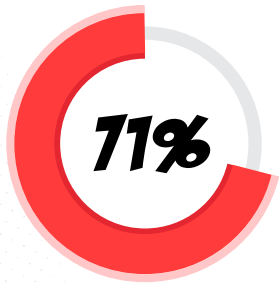


SECTION 02

THE BATTLE AGAINST CYBER VILLAINS

IT Pros Who Use Tape Can Save the Day

Every superhero has a nemesis, and in the digital world, cybercriminals are the ultimate villains. Over the years, the threats facing organizations have grown exponentially, evolving from simple hacks to sophisticated, AI-driven attacks. From phishing and malware to social engineering and ransomware, cyber threats come from all directions—growing smarter, faster, and more dangerous by the day.



Did you know? In 2024, ransomware made up 59% of all cyberattacks, and one in four organizations failed to recover their data post-attack.



Even in the worst-case scenario—when cloud backups are compromised, and systems are locked by ransomware—**tape is the failsafe that ensures recovery.**

The Rise of AI-Powered Cybercrime

Cyberattacks have leveled up, much like a villain who's gained new abilities. With AI in the picture, cybercriminals now have access to automated, adaptive attack methods that can bypass traditional security measures. The result? More organizations are falling victim to ransomware, data breaches, and operational disruptions.

The Ultimate Defense: Air-Gapping Data

There's only one true defense against cyberattacks, and it's hidden in plain sight—air-gapped data. By keeping backups physically separated from the network, organizations can render cyber threats powerless. Even the most advanced AI-driven attacks can't reach what isn't connected.

Sometimes, the simplest solutions are the most powerful, and air-gapped tape storage proves this philosophy true time and again. When all else fails, tape remains the unbreakable last line of defense.

The Need for Speed: Balancing Security and Accessibility

Modern backup solutions must achieve a tricky balance: they need to be **untouchable** yet **quickly accessible** when disaster strikes. The catch? To be fast, backups must be connected—but that very connectivity makes them vulnerable.

When facing a cyberattack, organizations must answer three critical questions:

1. **How can data be protected outright?**
2. **If protection fails, what data can still be recovered?**
3. **How quickly can operations resume?**

Some organizations turn to immutable, software-defined storage for fast recovery, but this comes with a price. On the other hand, tape remains the ultimate safety net—always there, always secure, and always ready to restore lost data.

The Secret Weapon That Never Fails

Even in the worst-case scenario—when cloud backups are compromised, and systems are locked by ransomware—tape is the failsafe that ensures recovery. Data backup isn't just about cyberattacks; it also plays a crucial role in recovering from natural disasters or other major disruptions.

Tape backups cut cybercriminals off at the knees. Why pay a ransom when you already have a secure, untouched copy of your data? With tape on your side, you're not just defending against cyber threats—you're outsmarting them, ensuring your organization can rise from the ashes stronger than before.

As we continue this journey, we'll explore even more ways that tape makes IT professionals the true superheroes of their organizations.





SECTION 03

THE HERO'S ARSENAL

How Tape Wins on Cost, Sustainability, and Strategy

A superhero's strength isn't just about power—it's about endurance. Tape has not only survived decades of technological change, but it has adapted to modern challenges, standing firm against the forces of rising costs, unsustainable energy consumption, and increasing data demands.



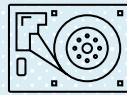
Did you know? 90% of all data generated in history was created in the past two years—and all of that data, along with all data that's going to be generated in the near future, needs a home.

The Sustainability Factor: A Green Superhero

While tape's reliability is legendary, its impact on sustainability is just as impressive. Data storage is responsible for a significant portion of the carbon footprint within data centers, and hard drives are the worst offenders. In contrast, tape storage consumes just 3% of the energy required by a hard drive, making it the eco-friendly choice in an era where energy efficiency is critical.

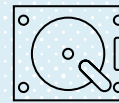
The Cost-Saving Superpower

Every organization looking to grow must keep an eye on costs. With the exponential growth of data, companies need storage that scales effectively without draining their budgets. Tape stands out as the cost-effective champion:



Storing 1 terabyte of data on tape costs approximately

\$2.27 per year



The same terabyte on hard drives?

\$13.84 per year



In the cloud?

\$82.81 per year

When it comes to long-term storage, tape is the ultimate financial superpower, providing security and scalability at a fraction of the cost.

A Winning Strategy: Ease of Use

Today's tape systems are as sleek and easy to use as state-of-the-art superhero gadgets. Modern tape libraries are automated, intuitive, and supported by advanced management software, eliminating the hassle of manual intervention. Tape systems make it easy to view and transfer data, because they transform data cartridges into self-referencing volumes. This means it can be read without backup software by any host device, just like an external drive or USB flash device. These innovations ensure that tape's power is as accessible as a superhero's toolbelt—ready to swoop in and save the day whenever it's called upon. It's a hero's choice—simple, strong, and smart.

The IT Hero's Final Victory

The benefits of tape extend beyond just sustainability and cost savings. The right technology isn't just about technical advantages—it's about delivering value to the entire organization. Expanding your technological horizons isn't only about looking forward; it's about understanding what has worked in the past and why.

By bringing these benefits to your organization, you don't just save money and energy—you cement your status as the IT superhero. Protecting data integrity is protecting business integrity, and the rewards will continue to add up for years to come.



DID YOU KNOW?

THE LARGEST AND MOST MODERN
STORAGE COMPANIES IN THE WORLD
UTILIZE TAPE TO **REDUCE EXPENSE,
DECREASE ENERGY CONSUMPTION,
AND IMPROVE THE DURABILITY OF
ARCHIVE DATA.**



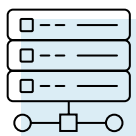


SECTION 04

THE AI DATA AVALANCHE

How Tape Becomes Your Ultimate Sidekick

Every superhero faces a world that's constantly changing, and in the Age of AI, data has become the ultimate power source. But with great power comes great responsibility—and a massive storage dilemma. Organizations everywhere are collecting more data than ever before, hoarding as much of it as possible, all in the name of AI-driven innovation. But where does all this data go? And how can it be stored safely, cost-effectively, and sustainably?



570 GIGABYTES

Did you know? ChatGPT was initially trained on [570 gigabytes](#) of text data, which is roughly 300 billion words. Midjourney, the most popular AI image model, was trained on billions of images, which contain much more data than text alone.

The AI Data Gold Rush

AI thrives on data—lots of it. To gain a competitive edge, organizations train proprietary AI models on vast datasets, feeding them as much information as possible. However, once that data has been used for training, it often becomes less active, sitting in storage as an archive for future reference. Even so, the need to retain it remains crucial. What if regulations change? What if that data becomes relevant for future AI models? Enter tape storage—the ultimate vault for “just in case” data.

The Role of Tape in AI Storage

In a world where high-quality data is a goldmine, organizations must ensure that their best datasets remain accessible, yet cost-effective. Tape emerges as the true superhero in this scenario, offering:



Low-Cost Archival Storage

AI datasets are massive, and keeping them on high-performance storage solutions can be prohibitively expensive. Tape provides a budget-friendly alternative, allowing organizations to store vast amounts of data without breaking the bank.



Longevity and Reliability

AI may evolve, but data remains valuable. Tape’s long lifespan ensures that critical datasets stay preserved for decades.

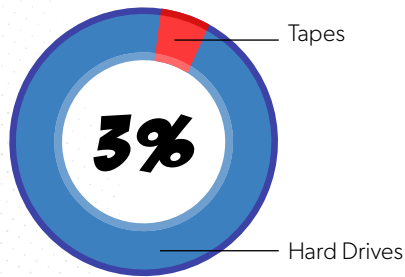


Scalability

The more AI advances, the more data will be generated. Tape offers virtually limitless storage potential, making it the perfect solution for ever-growing archives.



Power Consumption of Tape vs. Hard Drives



Tape uses just **3%** of the energy required by traditional hard drives.

The Sustainability Crisis – And Tape’s Heroic Solution

AI might be revolutionizing industries, but it comes at a steep environmental cost. Training AI models requires staggering amounts of energy, and conventional storage solutions—particularly hard drives—only add to the burden. Hard drives continuously consume power, even when data is at rest, contributing significantly to data centers’ carbon footprints.

Tape, on the other hand, is the hero the environment needs. Unlike hard drives, tape consumes power only when actively reading or writing data. Because of this, organizations could save on energy consumption, CO2 emissions, and disposal costs in their production storage environments by replacing spinning HDDs with tape media for their less active data. For organizations striving to balance innovation with sustainability, tape storage is the ultimate green solution.

Future-Proofing Data for What Comes Next

Technology never stands still. AI is here today, but what about tomorrow? While no one can predict the future, one thing is certain: data will always be valuable. Whether the next big breakthrough is quantum computing, next-gen AI, or something beyond our imagination, organizations must prepare by ensuring their data remains intact and accessible.

Tape doesn’t just provide storage—it provides **security for the future**. By safeguarding AI datasets today, tape ensures that businesses are ready for whatever technological evolution comes next. As an IT superhero, your mission is clear: protect your organization’s data, ensure cost-effective scalability, and embrace sustainability. In an era of AI-driven data hoarding, only one storage solution rises above the rest, offering unbeatable longevity, security, and efficiency—tape.



Protect your organization’s data



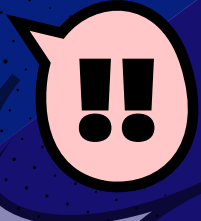
Ensure cost effective scalability



Embrace Sustainability

By championing tape, you’re not just managing data. You’re future-proofing your organization, saving costs, and standing as the unsung hero of the AI revolution. In the battle for smarter, safer, and more sustainable data storage, tape is your superpower—and with it, you’ll always be ready for whatever comes next.





ACCORDING TO IDC RESEARCH,
FEWER THAN **ONE IN FIVE AI**
PROOF-OF-CONCEPT PROJECTS
RESULTED IN AN APPLICATION
THAT WENT INTO PRODUCTION
— BUT THE REMAINING FOUR STILL
USED LARGE AMOUNTS OF DATA.



DID YOU KNOW?

CONCLUSION

THE FINAL POWER MOVE

Be the Data Hero Your Organization Needs

In a world where data is king, the most innovative organizations are those who embrace solutions that truly stand the test of time. By advocating for tape, you're not just following a trend—you're choosing a solution that works, and works brilliantly.

Tape isn't just reliable; it's the secret weapon of the data storage world. Efficient, secure, and sustainable, it's the hero your organization needs to conquer today's challenges and tomorrow's uncertainties.

Step into your role as the IT superhero, and let tape be the cape that helps you soar. With tape, you're not just keeping data safe—you're securing the future, one backup at a time.



