

Data protection in a data-driven, hybrid world

Data-driven management is essential for ensuring competitiveness in the future. At the same time, however, digitization is leading to new vulnerabilities that are targeted by cyberattacks.

When developing digital transformation strategies, data protection should therefore be taken into account from the very beginning and planned holistically.

During the pandemic, digital transformation in organizations has accelerated in all areas, including work styles, shopping, healthcare, and education with digital becoming a default mode of living and working. Digital technology played a major role in responding to this crisis – online shopping at home has grown, boosting the annual global e-commerce market by 27.6%.

For business leaders, resilience and data-driven management are top priorities in the post-pandemic world.

According to Fujitsu's 2021 Global Survey¹, business leaders see resilience – the ability to respond to change – as the top priority in the post-pandemic world. At the same time, for 83% of respondents, data-driven management is essential to stay competitive in the future.

End-to-end connection of data as well as the protection of data are crucial here. Fujitsu provides comprehensive support along this journey. We enable new business models by connecting various services with trusted data and turning this data into value.

¹ Source: Fujitsu - Global Digital Transformation Survey Report 2021, <https://www.fujitsu.com/global/vision/insights/digital-transformation-survey-2021/>

The value of data is skyrocketing in the data-driven world

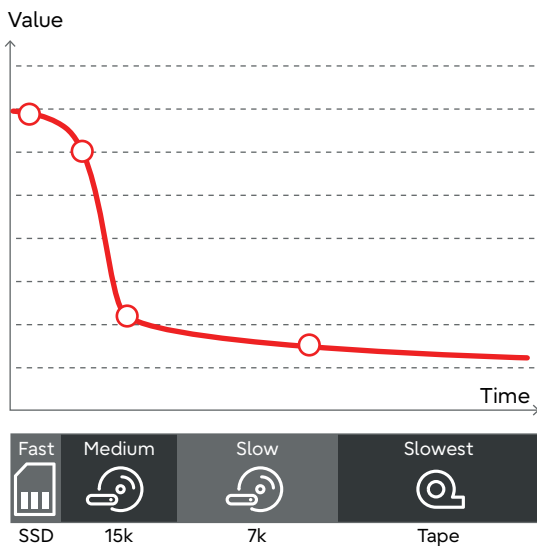
In the past, current data and “old” data were of equal value. However, in the digital world, there is no longer any kind of expiration date for data. Quite often the value of data is now increasing over time. Existing storage and archiving environments are now being evaluated in terms of their purpose and function as part of a rethinking process.

In a traditional physical business, data has the highest value when it is created and frequently accessed by production applications. High performance is often required at this stage. In today’s digital enterprise, there is a constant iterative process of data creation, processing, analysis and sharing/selling. Data created by an IoT sensor or social media app may have little value at the time of creation. The value increases exponentially when data is used to develop applications, is further analyzed for targeted outcomes and sold to consumers or other vendors.

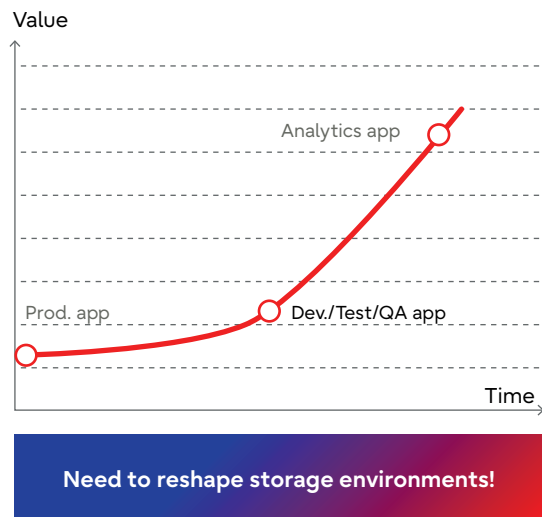
Today data value does not always fit into an exponential “decay-with-time” model, and data value is now more dynamically based on various applications using data throughout its entire life cycle. Access needs to be consistently fast for use by application development, analytics, publishing, etc. The data itself must satisfy enterprise needs by being inherently protected, always resilient and fully compliant.

Evolution of data – old is gold!

Offline business: storage tiers over time



Digital business: data value over time



Digital enterprises are more responsive

In our survey, we separated “digital” companies, who are operating online, from more “traditional” companies, who run much of their business “offline.” Among digital companies, 79% saw their revenues increase during the pandemic, while more traditional companies often saw their revenue decrease (53% of companies). In addition, our survey found that the pandemic accelerated the pace of digital transformation for 82% of “traditional” companies, who run much of their business “offline”. As a result, a large number of traditional companies saw improvements in customer experience, business agility, efficiency, and competitiveness.



79%

of digital businesses increased revenue during the pandemic.

To adopt these strengths, companies must pursue a holistic transformation strategy that integrates infrastructures from edge to core to cloud - because only this guarantees that digital transformation will generate added value for the business enterprise.

Data protection is essential for businesses in a data-driven, hybrid world

In the digital world, it is more true than ever: data are precious and require special care. In our experience and based on many customer discussions, however, the topics of data protection, ransomware, disaster recovery and cyberattacks are given less attention than necessary ... often only damage makes smart. It's better to take effective steps to prevent them by incorporating data protection into all data and storage strategies from the very beginning. This pays off in terms of both your revenue and the protection of your corporate brand.

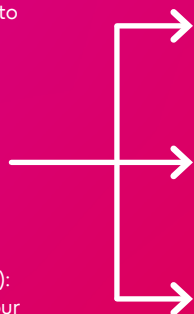
Protecting your data for your business success requires a strategic approach. Basically, you should ask yourself the following questions: What happens to your business right now, in case of an IT outage, data loss or corruption or a cyberattack? Do you have a coordinated way of preserving and archiving data for future usage? You should always match the SLAs you define for your respective data against these questions.

Define your SLAs

RPO (Recovery Point Objective):
how much data are you willing to lose?



RTO (Recovery Time Objective):
how long should it take until your business is up and running again?



Build business resilience step by step



Identify what kind of data you have and classify it according to your business needs



Optimize the cost levels



Archive what is appropriate and delete the rest

Digital business continuity



The goal of many enterprises in a digital business environment is to ensure constant data availability – 24 hours per day, seven days per week. Having this 24/7 availability is the prerequisite that enables enterprises to offer their customers “always-on business.” Those businesses wanting to successfully mitigate availability risks, and reliably ensuring that RTOs and RPOs are in place for a particular application, must combine various concepts and solutions. This begins with the online storage systems – this should be the starting point for an effective data protection strategy.

When it comes to online storage systems, mirroring and asynchronous replication are effective measures that can restore data availability within just a few seconds or minutes if an outage occurs. Fujitsu online storage solutions have all of the functions required for uninterrupted operation that will protect business-critical data. Data can be managed locally, centrally and remotely to support very flexible disaster recovery concepts.

While high-availability disaster-resilient online storage systems serve as the basis for “always-on business,” they are not substitutes for backups. It is also important to remember that for example viruses or unintentional deletions that go unnoticed will also be replicated. And high-availability alone is not much help if data is corrupted or a ransomware attack encrypts your data.

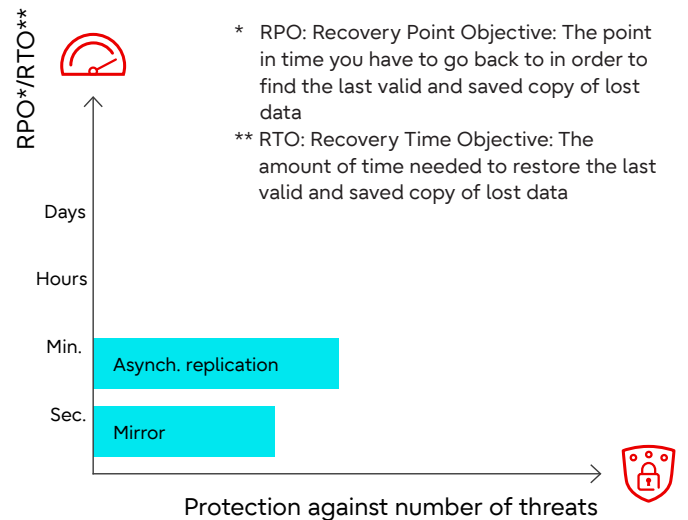
The next level: snapshots

Snapshot technology has become an effective “multi-talent” over the years. A number of trigger points can be set for a specified time frame and – if a rollback becomes necessary – the system can be quickly shifted back to a status existing earlier in the time frame. Snapshots are ideal for restoring data that has been corrupted or inadvertently deleted.

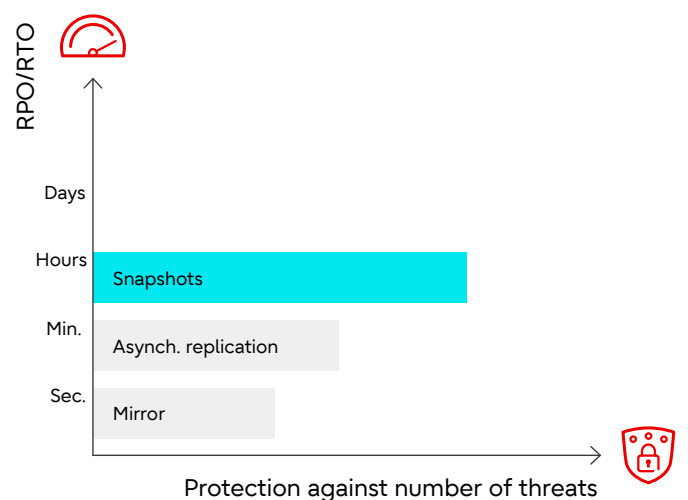
Today it should be a generally accepted fact that snapshots are integrated deep in virtual environments and offer all the functions needed to recover individual files, directories, virtual machines, databases and applications. In virtual environments the technology should offer a few more functions, e.g., for backup up several hundred or thousand VMs, the automatic detection of unprotected VMs and the option of booting from backup storage. It is also helpful if a real test environment can be set up quickly with real data. This will allow for the testing real production data – without having an impact on the productive system.

Snapshots are an important element in backup strategies because they offer fast and easy access to data, not to mention that they support immediate recovery when used in conjunction with backup applications. Of course, snapshots cannot be seen as complete replacements for backups, mainly because they typically reside on the same storage systems as the primary data copy. If something happens to the storage system, it not only effects the primary data, but also the snapshot copy stored on this system. Or keep in mind that snapshots only cover a short period of time, not several days or weeks like a traditional backup.

Data protection begins with online storage systems



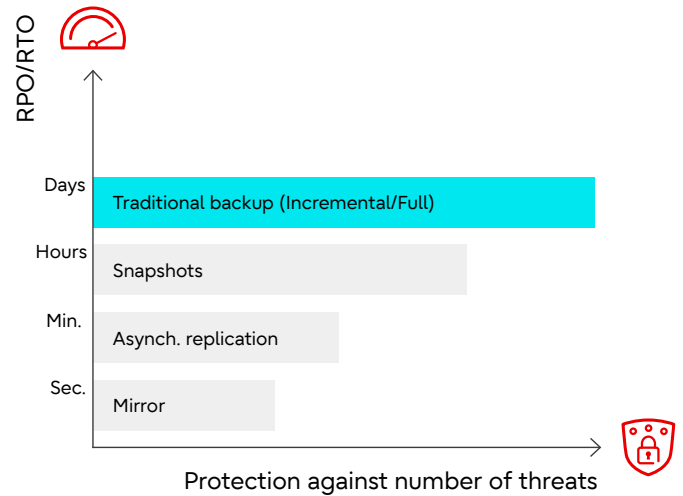
Travel back in time with snapshots



Real backups protect business operations

There are really no alternatives to proven backup technology in the digital business world. It supports "time travel" back to older data copies if newer data should ever be corrupted or deleted. What's more, backup enables the storage of data copies on various media and across long distances at geographically separated sites. This provides a physical and logical separation of backup data from the primary storage. Mirroring, replication and snapshots typically do not provide this separation. Consider for a moment that a software bug is causing data corruption in a database. This data corruption is immediately mirrored or replicated to all data copies and renders these high-availability targets useless. If you also consider that this data corruption is not detected for several days, snapshot technologies will usually not be able to cover this time period. On the other hand, the traditional backup approach alone is not suited for the dynamic rate of change found in today's daily operations, nor would it be very cost-effective. Thus the only feasible approach is a mix of functions that allows for the achievement of aggressive RPO-RTO targets and also ensures that high-performance backups are possible.

The role of the real backup



Traditional backups are also quite effective when it comes to warding off the growing number of cyber attacks and similar threats. Ransomware, for example, is becoming quite popular among cyber criminals. This type of malware encrypts user data, rendering it inaccessible. Malware of this sort is typically used for digital extortion: If an enterprise agrees to pay ransom money, hackers promise to restore access to valuable data and systems. Of course, who can really trust hackers to keep such promises? Furthermore, some versions of ransomware use algorithms to encrypt the hostage data, access drives or cloud services – and quite often it is impossible to break these encryption codes. The serious consequences of such attacks were evident in news media reports about recent breaches. In addition to monetary losses, businesses also suffer enormous damage to their image and – depending on the type of industry – some victimized enterprises are also held liable for damages to third parties such as customers or patients.

Prevention is the best way to safeguard data and systems from these kinds of attacks. And backups are the most important measure to take where ransomware is concerned. The following backup concept is highly recommended: Conduct backups on a regular basis. Test backup procedures from time to time to make sure that disaster recovery is possible in the event of an outage. And – most importantly – make sure all backups are stored in an area that is separated from the IT network to provide a so called airgap with no connection between data and network! Enterprises that follow this kind of backup plan will have a strong foundation for safeguarding their business operations.

Discover more about Fujitsu's data-driven ransomware strategy. [Download the latest PDF.](#)

Data protection strategy for a data-driven, hybrid world

It's not about backup – it's about safeguarding data integrity and ensuring the availability of data for your business in a timely manner.



In a digital world it's also about supporting your business by supporting your information repositories against downtime or any cybercrime.

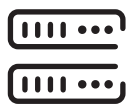
Digital business efficiency



Business enterprises have always looked upon backups as being complex, time-consuming and expensive. But today many different data protection appliances are on the market that make life much easier with their economical backup and archiving processes.

These appliances drastically reduce IT administrator workloads and deliver high performance with functions like replication, deduplication, mirroring, data copies and tape migration. At the same time they reduce the loads on backup servers and networks because they take care of all data handling tasks directly in the storage environment.

And the integration of software and applications closes the online storage gap. This means that snapshots can be easily moved to the backup target. The combination of incremental backup cycles and synthetic complete backups also enable optimal usage of backup windows and the network, which also helps reduce loads on the servers targeted for backup.

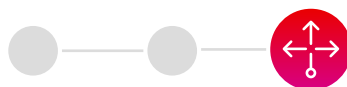


Data protection appliances can make life much easier and backup processes more economical.

High-performance integrated data protection appliances – available as out-of-the-box solutions – are also ideal for complementing hyper-convergent infrastructures. These reliable appliances are quickly and easily integrated in productive environments and deliver high-quality results.

In addition to implementing a multi-tier backup with innovative hardware technology, you need software suites for intelligent data management and protection. Leveraging leading data protection software, you can seamlessly move, copy, and synchronize data between edge, core, and cloud, including full data lifecycle management. A high level of automation ensures rapid and accurate data processing to increase operational efficiency and workload mobility and to gain real-time business insights.

Digital business growth



In the digital world the amount of stored data is skyrocketing as never before. Experts are constantly revising their prognosis about the expected growth rate, but that is really of secondary importance because data volumes will vary from industry to industry. One fact is undisputed: IT administrators will have to deal with exploding amounts of data – both old and new data. To envision what this will be like, try to answer the following questions: How often do you delete data? Does your business already understand that the importance and value of data is changing, and that older data is increasing in value? This could be the result of legal or corporate compliance guidelines, or perhaps it is due to Big Data and the future of analytics.

Examining these questions and the consequences of unbridled data growth is important if we want to profit from efficient and cost-effective data handling. Answers to these questions will give us an idea of what future-proof second-tier and archive storage environments will need to look like in order to supplement productive storage (online storage for clients, file storage, database servers, application servers, etc.). In the data-driven business world, the balance and interaction between productive storage, second-tier storage and archive storage determines just how fast, flexible and cost-effective the hybrid IT infrastructure can respond to the demands of the business.

Second-tier and archive storage can play a decisive role in this equation:

- Reliable storage of old and inactive data that cannot be deleted.
- Reduced storage costs resulting from space-saving online storage and migration of data to an affordable, lower-cost storage tier, plus smaller backup windows and faster recovery.
- Efficient file management based on cross-platform index and search functions, plus storage in compliance with corporate and legal regulations, not to mention economical long-term archiving.

To learn more about the importance of data archiving read the **[analyst report from Freeform Dynamics](#)**.



In the digital business, the **balance and interaction between productive and second-tier storage** are crucial to success.

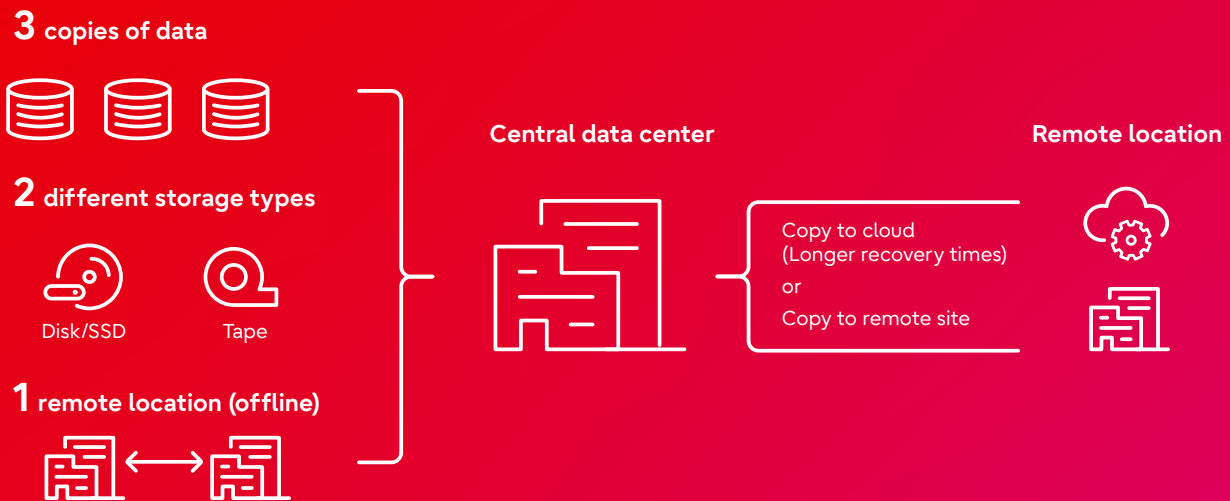
Data protection in the data-driven, hybrid world

When it comes to digital business, IT departments are under great pressure to prevent outages or downtime. To ensure “always-on business” they often resort to using the typical rule of thumb known as 3-2-1. This rule suggests that you should always make three copies of your data, store them on at least two different storage technologies and keep one copy at an external site and offline. However, there is no one-size-fits-all storage approach. Data-driven enterprises have different requirements when it comes to data availability, resilience, and compliance regulations.

Fujitsu provides a one-stop-shop for all data scenarios and storage needs, offering versatile storage solutions that cater for varying data classes and application needs, delivered from a single point of contact.

Fujitsu's data protection solutions make it easy to keep backup and archiving speed, capacity and cost in balance. They offer lower total cost of ownership as opposed to traditional multiple component solutions, and they enable rigorous consolidation of backup infrastructures.

The 3-2-1 approach is mandatory recommended for a data-driven, hybrid world



Fujitsu – your partner for comprehensive data protection

Digitalization opens up completely new opportunities for businesses. However, it also paves the way for data vulnerabilities that criminals want to exploit, for example through ransomware attacks. The challenge is to mitigate these threats and ensure long-term business continuity and data availability.

Combining Fujitsu storage systems with leading partner technologies from Veritas, Commvault and Veeam, we form an extensive ecosystem to safeguard data integrity and to guarantee always-on data availability – a key factor determining business success. We have the expertise to ensure that the right data service levels are delivered with the right protection at the right cost. With over 50 years of experience providing storage solutions including disaster recovery, data backup and data archiving, we master any challenge arising from digital transformation and data growth.

Work with us to ensure your business can thrive with maximum resilience.



Want to know more?

Find out more about how Fujitsu data protection can make your business resilient, flexible and efficient in the hybrid world.

[Download our latest portfolio brochure now](#)

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D-80807 Munich

www.fujitsu.com

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