LUMINEX™
MODERN MAINFRAME DATA SOLUTIONS

# Scalability Without Compromise: Managing Explosive Data Growth in Mainframe Environment

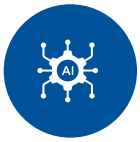
# Introduction

90% of the world's data was created in the last two years, per a recent report. Furthermore, the worldwide data volume is expected to reach 147 zettabytes in 2024, a 22.5% increase from the year before. The exponential development of data over the last few years is evident from these numbers.

Digital transformation has been the primary driver of this surge, with companies in a variety of industries quickly digitizing their processes and producing enormous amounts of data. Let's examine the factors that lead to this data boom before moving on to discuss how this data is being handled and the various solutions.


### IoT devices

Constantly generating real-time data streams, adding enormous amounts of data to systems.




### AI systems

Processing large datasets for predictive analytics, automation, and decision-making.

### Advanced analytics

Leveraging vast data pools to drive insights and improve operational efficiency.

Although new technologies offer never-before-seen capabilities, they also cause exponential data expansion, which poses a number of difficulties for businesses that depend on conventional mainframe infrastructure.

# Challenges of Data Growth

While there’s no denying that data is definitely what’s driving the world forward, it is also important that we acknowledge the challenges that come with this data growth. The rapid accumulation of data is no longer just a technical issue; it’s a business challenge that affects overall operational efficiency, cost management, and regulatory compliance. Let's go over some of these challenges.

## 1. IoT devices

With rapid data growth comes the massive challenge of limited storage capacity. Although mainframes were built to manage heavy workloads, contemporary data volumes are starting to surpass the capacity of conventional systems.

- **Expanding storage is expensive**

  Expanding storage infrastructure involves high capital expenditure

- **Data Center Overload**

  As physical data centers reach their limits, companies are compelled to either make new facility investments or come up with other strategies to deal with the growing volume of data.

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## 2. Maxed Out Performance

When the quantity of data increases, the ability to process and access that data becomes a big issue. Traditional mainframe solutions tend to struggle keeping up with this data growth and hence start performing slowly. This leads to:

- **Longer Retrieval Times**

  Access rates can be slowed down by large data volumes, making it challenging for organizations to obtain vital information instantly.

- **Processing Time Delay**

  Business agility takes a hit due to the slow processing time. This affects mission critical processes along with the disaster recovery process.

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## 3. Data Management Complexity

The complexity of managing, safeguarding, and ensuring compliance increases with the amount of data a business process. Large data volume comes with extra obligations for disaster recovery, backup, and regulatory compliance.

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## 4. Cost Considerations

Growing data means the need for growing data storage infrastructure. This usually indicates the need for an expansion in physical set-ups. This makes it extremely expensive for organizations especially without the budget for this expansive growth.

## Need for a Scalable Solution

With these challenges highlighted it's quite clear that the need for a scalable solution is more important now than ever as the traditional solutions don't meet the requirements anymore. Scalability is a critical feature for enterprises to meet the growing demand.

Organizations need a solution which meets these demands without the disruption and costs associated with large-scale infrastructure changes. Businesses can modify storage, processing, and backup capacities as needed rather than constantly investing in forklift upgrades or completely redesigning entire systems. This adaptability ensures that vital applications continue to function effectively while preserving operational continuity and minimizing downtime.

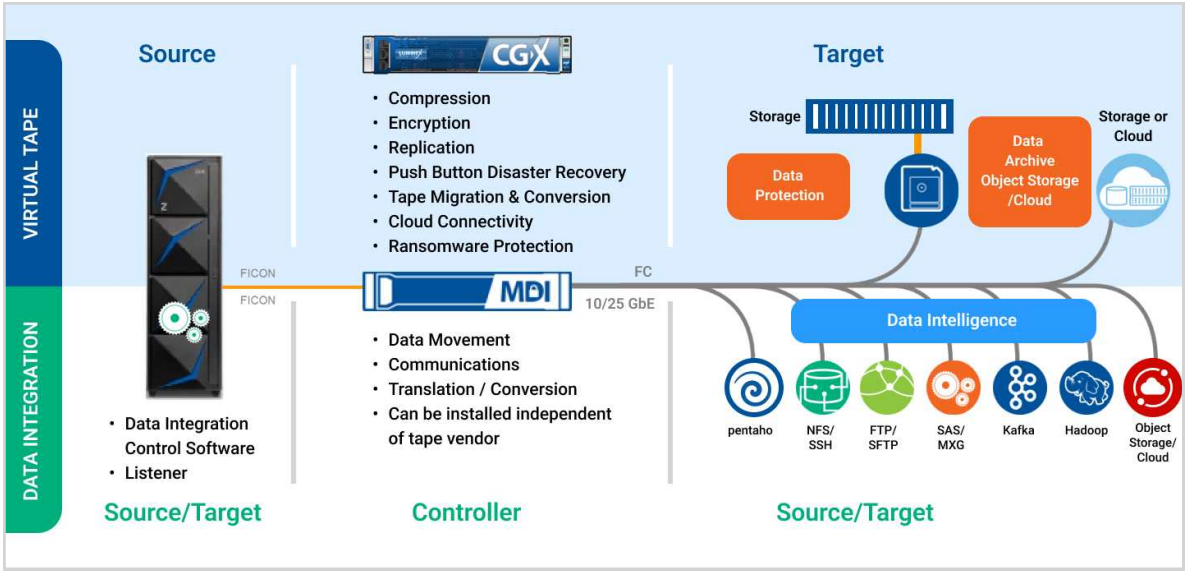
## Luminex's Revolutionary Mainframe Technology

### CGX Technology

We have built Luminex's Virtual Tape to be a robust solution that offers feature-rich functionality, extreme flexibility, and easy implementation.

At the core of Luminex's technology is Channel Gateway, or CGX — a 2U appliance that can be stacked and scaled to fit any environment, with quantum-resistant data encryption for enhanced security. CGX appliances can also be clustered for performance and attached to any scale of storage capacity from 10 TB to well over 40+ petabytes. This comes with several features which take it a notch above traditional solutions.

- **Controller-based Replication:** Choose from various replication options—one-to-one, one-to-many, cascading, cloud, or hybrid methods.
- **VOLSER-level replication monitoring:** This pinpoints precisely which tapes are valid, and which may have been "in-flight" at the time of a DR event.
- **Synchronous Tape Matrix technology:** This provides a resilient mainframe tape infrastructure that instantly and automatically adjusts to the most devastating failure scenarios without interruption.




# Mainframe Data Integration Solution

Luminex's Mainframe Data Integration solution allows for fast, flexible data movement between the mainframe, open platforms, and the cloud. It lets organizations share data bi-directionally, with built in EBCDIC to ASCII conversions. It also allows enterprises to harness the power of FICON channels to reduce MSU costs significantly — moving data up to 22 times faster than traditional TCP/IP methods.

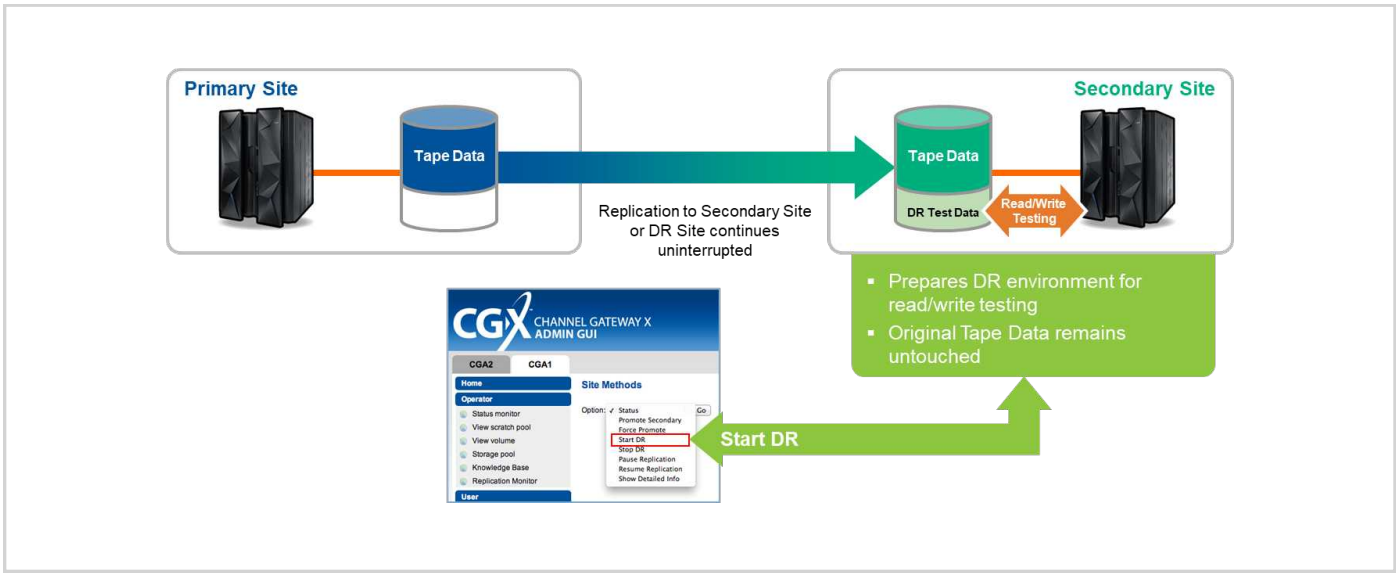
Luminex's Mainframe Data Integration allows for fast and efficient large data transfers, reducing your MSUs by 95-99% compared to a traditional file transfer.

# Easy Disaster Recovery Testing

Luminex has a revolutionary Push Button DR testing technology which helps overcome multiple data backup challenges.

Luminex Replication simplifies the process of preparing your DR environment for testing or recovery with its Push Button DR feature.

This is a non-disruptive DR test method which tests your disaster recovery at the push of a button. Just one click!




## Enhancing IBM Z Platform

At Luminex we also believe in working with the best in the business. As a trusted IBM Z platform partner Luminex helps advance helps advance your investment in the ecosystem promote further growth on the Z platform.

## Unparalleled Support

No solution is good enough if it's not backed by top-tier support. Knowing the challenges that come with the expansion of data, Luminex believes in ensuring that customers get the support they need to continually grow.

Luminex allows customers to bypass lower levels of support and connect directly with a Luminex associate. Our services ensure your transitions are made easy, with proven data migration between any virtual tape platforms. Apart from this, all migrations done with Luminex preserve an exact copy of the original tapes including number, label, and TMC metadata.

## Conclusion

To summarize, the rapid increase in global data volumes presents significant challenges for businesses, especially those using traditional mainframe infrastructures. Factors like IoT, AI, and advanced analytics have led to unprecedented data growth, outstripping the capacity of conventional systems. As a result, organizations face hurdles such as limited storage capacity, slower performance, and higher costs for data management.

Addressing these challenges requires flexible, scalable and cost-efficient solutions that can adapt to growing data needs without the expense and disruption of overhauling existing infrastructure. Luminex's technology, including Channel Gateway (CGX) and its Push Button Disaster Recovery feature, offers a comprehensive solution to these issues. With capabilities like enhanced data integration, secure replication, and efficient support, Luminex enables businesses to maintain operational efficiency and agility amidst the challenges of data expansion. This approach ensures that companies can keep pace with modern demands, safeguarding their data and optimizing performance.