model 9

THE MAINFRAME MODERNIZATION JOURNEY

When, why, and how to get started

WHEN, WHY, AND HOW TO GET STARTED

While the cloud has been taking much of the business world by storm, for organizations tethered to the mainframe, the cloud can still seem very far away. That's primarily because layers of proprietary technology and practices have created a wall that is hard to breach. Even the data in mainframe environments is effectively siloed from other reservoirs of information: it cannot be readily combined with other data to create data lakes nor can it be subjected to powerful and adaptable cloud-based analytics.

> *By 2025, 35% of data center mainframe storage capacity for backup and archive will be deployed on the cloud to reduce costs and improve agility, which is an increase from less than 5% in 2020*
>
> *Gartner, Cloud Storage Management Is Transforming Mainframe Data, September 2020

However, the inertia that supports this status quo may be fading. A recent report from leading analyst firm, Gartner, predicts, "by 2025, 35% of data center mainframe storage capacity for backup and archive will be deployed on the cloud to reduce costs and improve agility, which is an increase from less than 5% in 2020."*

In fact, new technology from Model9, now makes it possible to breach those walls that keep mainframes separate and unconnected. This means organizations can safely broaden access to the key corporate information they hold, beginning a process of mainframe modernization that can take them where they want to go. This process of change can best be thought of as a journey, one that can easily start and proceed at a pace that is the right one for each organization.

Here's how:

Mainframe Infrastructure Modernization — No need for tape storage
Cloud Data Management for Mainframe replacing tapes and VTLs

Mainframe Data Integration with Cloud Applications
Transformed data integrates with BI, analytics , ML

Mainframe-to-Cloud Migration
Migrate mainframe workloads to cloud environments
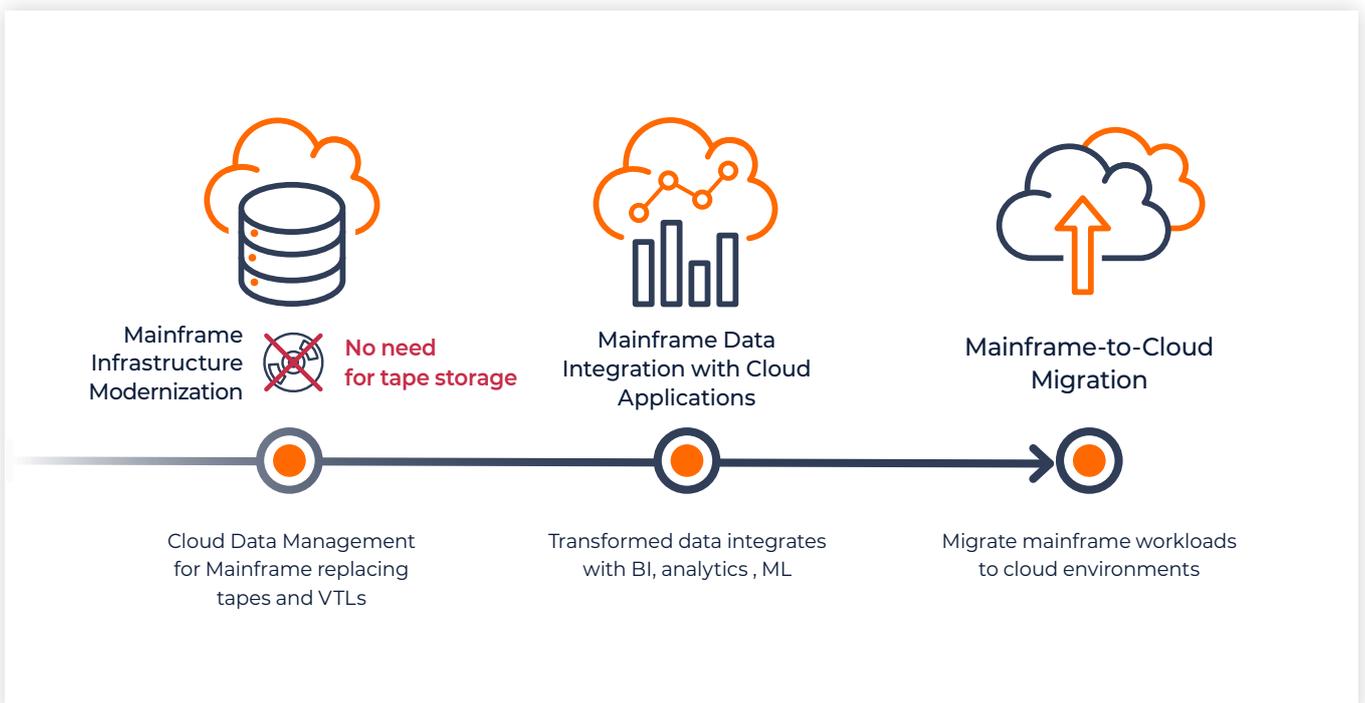
1. MAINFRAME INFRASTRUCTURE MODERNIZATION

As illustrated in the below image, the first step on the journey is Mainframe Infrastructure Modernization, and that means finally ending dependence on tapes and VTL; eliminating expensive, proprietary hardware and software. These time-tested assets have been reliable work horses for decades but their commitment to sequential read-write cycles and their enormous processing drain on the mainframe itself plus the direct costs of acquisition, maintenance and management, argue for a new approach. This step, breaking from the stranglehold of tape and dealing directly with data, provides immediate dividends, even if you plan to go no farther. It also opens the door to the next step on the journey.

Legacy data management:

Proprietary data types → Billable MIPS → FICON → Proprietary tape storage ← No access ← Cloud applications BI, AI

Cloud data management:

Proprietary data types → Non-billable MIPS → TCP/IP → Object storage on-prem or cloud → No need for tape storage
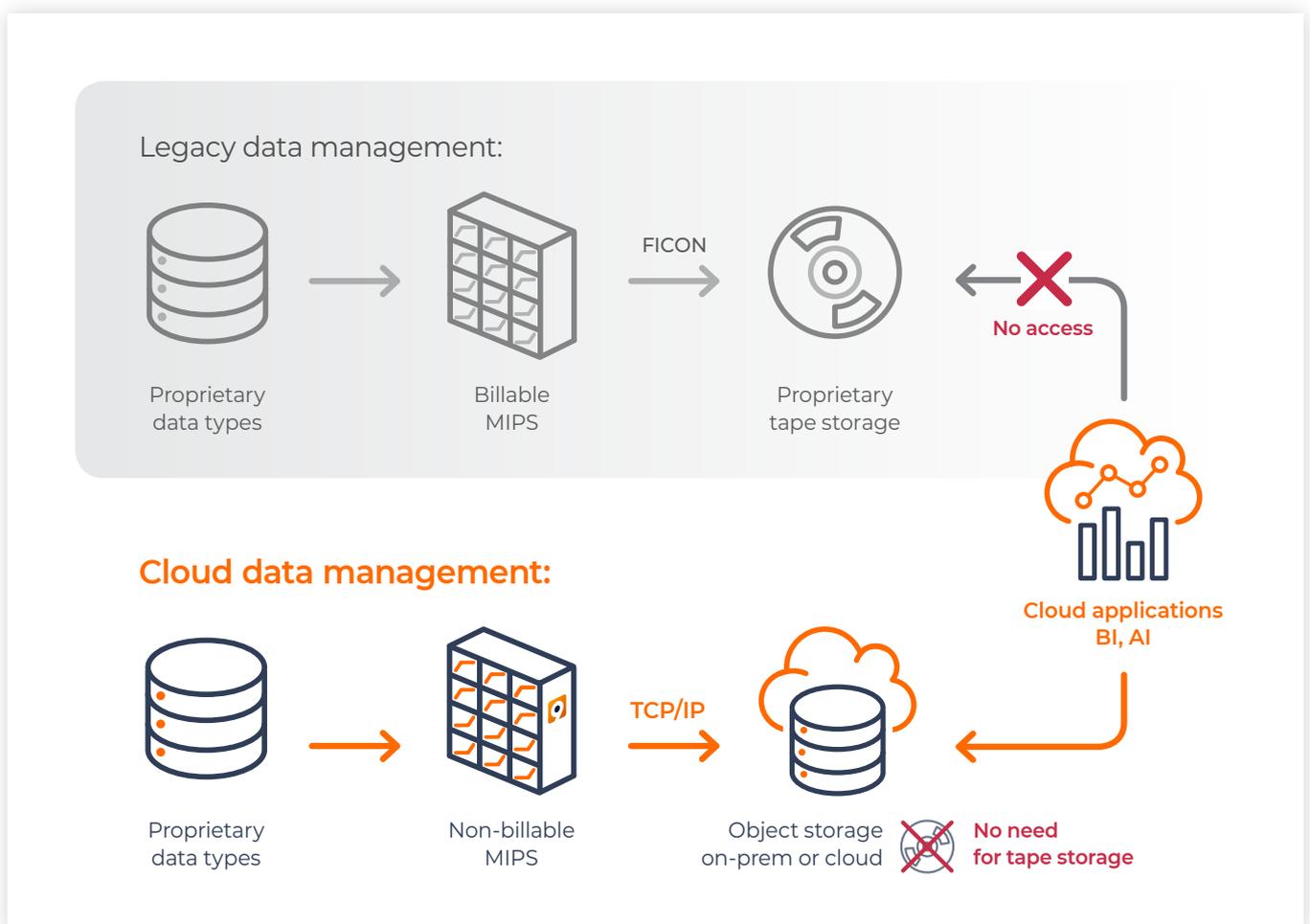
Without Mainframe Infrastructure Modernization the limits of legacy data management completely impede the flow of mainframe data to the cloud. This means modern analytics and new sources of data cannot be readily combined with mainframe data, limiting the value of both.

2. MAINFRAME DATA INTEGRATION WITH CLOUD APPLICATIONS

The second step, Mainframe Data Integration with Cloud Applications, recognizes that mainframe data that is no longer locked in a silo can be leveraged and monetized for new business purposes, right in the cloud. Being able to use this data that may already have been delivered to the cloud as backup, means extra benefits for the same expenditure of money and effort. This step should take advantage of a new approach: "Extract-Load-Transform" (ELT) technology instead of complex, old, slow, compute-intensive ETL approaches to move secondary data storage, archive, and even backup data to the cloud, then transforming it to universal formats.

> ELT makes data movement faster, more reliable and more cost-effective. Once in the cloud, data can be transformed and integrated with analytics tools.

ELT is far more cost-effective and yields data that is much easier to access and share. Liberated from the mainframe, this data can be a crucial addition to a data lake or can be exposed to the latest agile analytical tools – potentially delivering real competitive advantage to the enterprise at modest cost. And, all this without adversely impacting traditional mainframe operations, since ELT can move data in either direction as needed. Model9 can transform any type of mainframe data, including VSAM, sequential and partitioned data sets, to standard formats such as JSON and CSV and can handle Cobol transformations and the transformation of DB2 tables.

| Proprietary data types | Non-billable MIPS | TCP/IP | Cloud Storage | Cloud applications BI, Analytics |
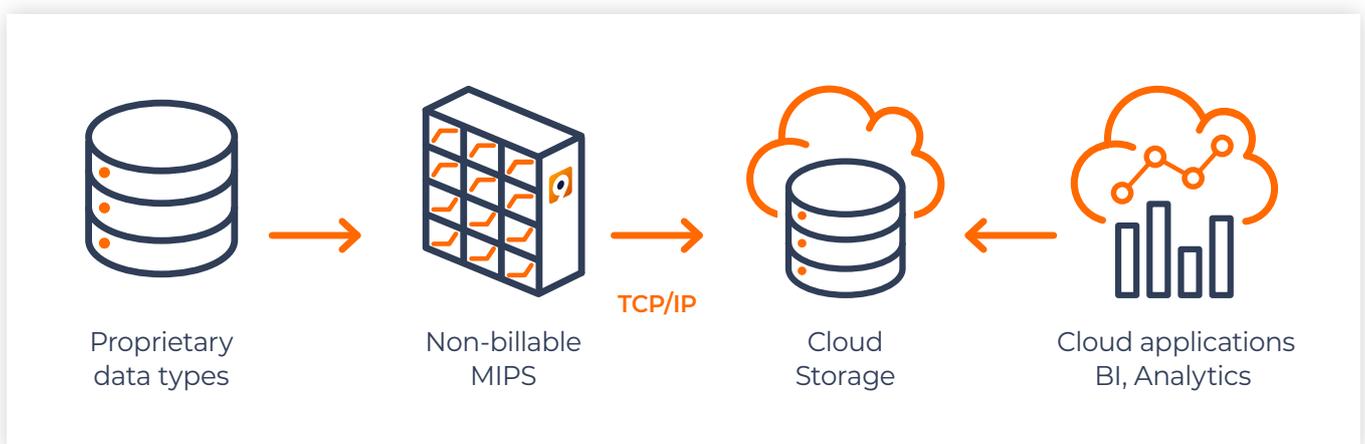
3. MAINFRAME TO CLOUD MIGRATION

The third step, actual Mainframe to Cloud Migration, is not for all organizations. But it is potentially the most transformational step in the journey. It takes advantage of all that mainframe data living in the cloud. If the data is there, and you can already do so many things with it, why not begin to replicate or match traditional mainframe functions with cloud-based functionality? As the most substantial step, it is also the most complex, especially when organizations determine to rewrite their existing applications for the cloud. But ELT and the liberation of data from mainframe silos can lay the groundwork and provide a solid basis for finding a workable path to move beyond mainframe.

Having the ability to readily move data to the cloud can support application modernization efforts, because without data, applications are useless. It can also simply allow new, cloud-based applications to make use of this vital data source.
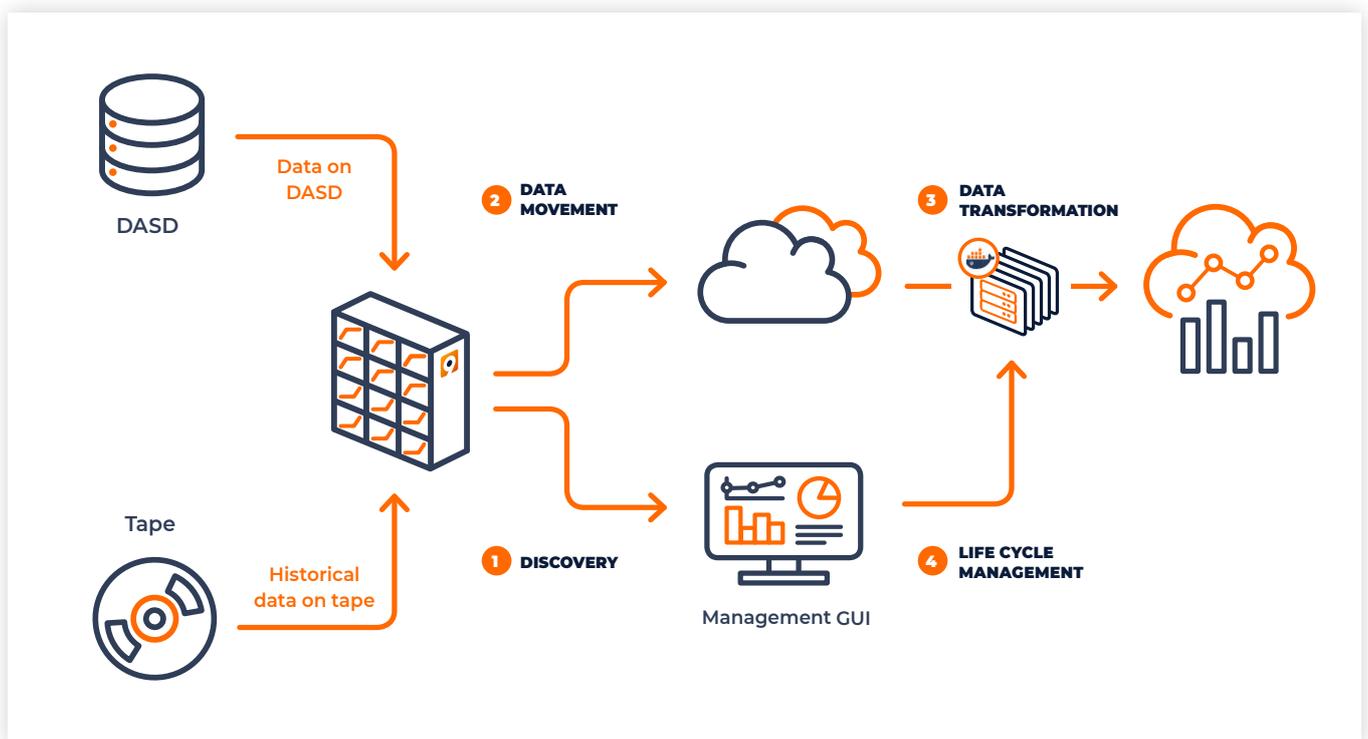
The low cost data transformation available in the cloud opens doors to moving and using data in ways not previously possible.

Finally, as more of your data is moved, the concept of data gravity can help to engage more functions through the cloud by encouraging further cloud-oriented activity.

AN INDICATOR THAT MODERNIZATION IS NEEDED

What are some of the indicators that you should be giving more attention to modernization – and maybe embarking on that modernization journey? They may not be obvious.

One of the most familiar (and often painful) indicators is the need to upgrade, expand, or replace the tape storage systems that provide backup and archiving for critical corporate information.

For many organizations, the ongoing expansion in tape and virtual tape storage is a seemingly unavoidable aspect of periodic updates and expansion. No one has yet figured out how to stem the growing tide of data and, if anything, most organizations seem to be creating more data and seeking to make use of it more frequently and more creatively.

So, in this and other decision points, be sure to consider the advantages of starting on your modernization journey and consider whether simply following the traditional and regularly repeated pattern of vendor-driven updates is still the right choice. Cloud is no longer controversial or experimental. It has in fact proven to be scalable and cost effective. What has been lacking is a ready means for getting mainframe data moved there.

UNIQUE TECHNOLOGY BROADENS MODERNIZATION OPTIONS

Then, when you are ready, consider Model9, a company founded by mainframe experts and cloud gurus that has built unique, patented technology to connect the mainframe directly over TCP/IP to cloud storage. Model9 allows you to supplement or completely eliminate the need for virtual tape libraries and physical tapes and consolidates the functionality of multiple backup and tape management products into a single solution. That step can dramatically reduce costs and provides added capabilities such as write once protected copies, or a complete replacement of existing backup and tape management software.

Most importantly, it allows organizations to rapidly seize opportunities by leveraging cloud analytics and other cutting-edge applications.

Model9 offers both data movement, cloud data management for mainframe, and an "Extract-Load-Transform" (ELT) process. Model9 can support any public or private cloud, including AWS, Azure, and Google, and also offers a joint data management solution for mainframe with Cohesity and Hitachi Vantara.

Does it really work? Ask our clients. America First Credit Union, one of the top ten US credit unions eliminated expensive, proprietary VTS hardware and mainframe-specific data silos making it possible to store and manage both mainframe and distributed data in a single platform.

> "I highly encourage anyone at the Virtual Tape Systems (VTS) upgrade crossroads to take a serious look at Model9's cloud data management solution."
>
> – Kent Swenson,
> Manager Enterprise Systems, America First Credit Union

A leading transportation company in the US used to struggle to move 25 tables to the cloud per night. Now, they can move thousands. They also report uploading 1.5 billion database rows to AWS Snowflake in as little as one hour!

SUPPORTED HYBRID MULTI-CLOUD PLATFORMS

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At Model9, we are on a mission to accelerate digital transformation and adoption of cloud technologies and economics in large enterprises by modernizing mainframe data management and business intelligence.

To learn more, visit our website or follow us:

- contact@model9.io
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