meridian IT
UNITED KINGDOM

IBM
Platinum Partner

IBM Storage for Manufacturing

Building a reliable data foundation for Industry 4.0

Supply chain issues and surging energy and materials prices have created a tough environment for manufacturing companies. Digital transformation can help cut operating costs and protect the bottom line, but the resulting explosion in data can be a headache for IT. Meridian can help you put the right infrastructure in place with IBM Storage.

www.meridianit.co.uk

Industry 4.0 and the data explosion

It's rarely been a more difficult time to be a manufacturer. Confidence in globalised supply chains has been shaken by the pandemic and Russia's invasion of Ukraine, and materials and energy costs are sky high. At the same time, labour shortages have made it difficult and expensive to fill open positions, especially for entry-level jobs.

Since companies can't influence these macroeconomic factors, the only option is to control the controllables, which means a renewed focus on operational efficiency. Industry 4.0 technologies such as Internet of Things (IoT) devices, artificial intelligence (AI), and digital twins offer the potential to transform the efficiency of production lines through smarter planning, operations and maintenance. But these technologies also create new challenges for IT, due to the enormous volumes of data they generate and consume.

That means manufacturers need the right storage infrastructure—one that can not only store, secure and protect huge volumes of high-velocity data, but also deliver it to the business at speed and scale. In this eBook, we explore why IBM Storage is the right choice for the manufacturing sector in every area: from IoT and AI adoption to data protection, cyber resilience and cloud transformation.

IBM Storage for data and AI

The vision of Industry 4.0 is to transform manufacturing through digitalisation. Processes that today depend entirely on human expertise can be augmented and enhanced by technology. For example, IoT sensors can monitor the condition of production line machinery continuously, instead of relying on periodic manual asset inspections. And AI can turn the data from those sensors into accurate predictions about which components might need recalibration, repair or replacement.

Together, these technologies can create a "digital twin" of your production line that you can use to simulate operations, experiment with process improvements, and predict breakdowns before they happen. Having the right storage architecture is a prerequisite to realising this vision. IoT devices generate vast quantities of data that needs to be ingested into your infrastructure at high velocity. Feeding this data into machine learning models and AI applications also requires high I/O performance to make accurate predictions in real time.

Meridian IT can help you build an effective scale-out storage architecture for AI and IoT use cases, leveraging the latest IBM Storage solutions to deliver extreme performance and rock-solid reliability.

71%

Of organisations have hit the limits of their on-premises infrastructure for AI [i]

90%

Of organisations have struggled with AI infrastructure limitations in the cloud [11]

65%

Of IT practitioners prefer scale-out solutions such as IBM Storage Scale for AI workloads [iii]

IBM Storage solutions

IBM Storage Scale provides a software-defined file and object store that connects data silos throughout the organisation into an open ecosystem, creating a policy-based global information supply chain that makes data available at lower cost for AI and other data-intensive applications.

IBM Storage Scale System is a hardware appliance that makes it simple to deploy IBM Storage Scale on thousands of nodes and achieve I/O performance in the range of terabytes per second.

IBM Storage Ceph is the IBM distribution of the open source Ceph platform, which provides massively scalable object, block and file storage in a single system. Designed to consolidate data and operationalise AI, IBM Storage Ceph is engineered to be self-healing and self-managing, making it simple to build a data lakehouse for next-generation AI workloads.

IBM Storage for data resiliency

Industry 4.0 is the future—but the IT challenges manufacturers face in the present are just as important. Unexpected outages caused by unreliable infrastructure can bring production to a halt, with every hour of downtime costing the average business an estimated £213k ($260k). Even giants of the industry are not immune to these issues: in the last two months alone, Toyota and Volkswagen have both been forced to shut down production lines due to IT issues.

Cybercrime is also a massive threat to production, especially when ransomware attacks can corrupt crucial data and take entire systems offline. A ransomware attack on KP Snacks in 2022 meant the company couldn't process orders for several weeks—a loss of production that many manufacturing businesses would struggle to survive. [iv]

The financial impact of successful cyberattacks can be significant: the 2022 Cost of a Data Breach report from IBM calculates the average cost of a data breach at £3.66 million ($4.45 million), and 83% of the organisations surveyed had suffered multiple breaches. [v]

Meridian IT can help you implement next-generation IBM Storage solutions that detect, intercept and prevent cyberattacks and predict hardware problems before they can damage your business.

45%

Of unplanned downtime is caused by hardware failures [vi]

£213k

Average cost of one hour of unplanned downtime [vii]

£3.66m

Average cost per data breach [viii]

IBM Storage Defender

IBM Storage Defender is a software suite that provides visibility for end-to-end data resilience across all your workloads. It enables early detection of internal and external threats by analysing anomalies in backups and snapshots, as well as other relevant threat indicators. When a problem is detected, such as data corruption resulting from a ransomware attack, it immediately alerts storage administrators and enables quick restoration of data from the latest clean snapshot.

Storage Virtualise Automated data movement, high-availability configurations, synchronous and asynchronous copy services, isolated and immutable copies, encryption, storage tiering, and data reduction technologies.

Storage Sentinel Early detection of malicious activity within your data using full content analysis and machine learning. Reduce false positives and negatives through continuous ML and AI training on your data set by analysing for anomalies at the storage level.

Storage Archive Data Protection on physical tape and giving a graphical interface to manage data stored on tape using a linear file system. Allows devices to access tape files like any network storage location, simplifying access and management, whilst freeing capacity for more frequently used data.

Data Management Service Powerful dashboard for operation and management using SaaS, simplifying your day-to-day management and giving insights into your storage systems in a single dashboard.

Storage Protect Suite Backup and recovery of physical, virtual, cloud and container environments. Simplifying your backup infrastructure by giving the ability to backup your entire environment with a single system.

IBM Storage for hybrid cloud

Many manufacturers have built their businesses on core ERP/MRP applications that have been running reliably on premises for years, if not decades. Yet most companies are now also adopting cloud platforms, and the complexity of managing both on-premises and cloud infrastructure is a major drain on IT time and resources.

IBM Storage is designed to support a hybrid cloud strategy, where you can start by deploying cloud-native technologies on-premises and gradually shift your legacy infrastructure into a more modern, containerised architecture—which you can then extend seamlessly into public cloud environments.

Meridian IT can help you make a controlled, low-risk transition to a hybrid cloud architecture, harnessing state-of-the-art IBM software-defined storage solutions to prevent complexity from spiralling out of control.

60%

Of infrastructure and operations leaders will implement a hybrid cloud architecture by 2025 [x]

29%

Of decision-makers say mixing on-premises and cloud storage is a leading cause of IT complexity [xi]

75%

Of decision-makers want to simplify their IT operations [xii]

IBM Storage solutions

IBM Storage Fusion is a software-defined storage solution designed as a data orchestration layer for Red Hat OpenShift. It delivers a simple, consistent and scalable experience for containerised applications, powered by Kubernetes.

IBM Storage Fusion HCI System is a purpose-built, all-in-one hyperconverged infrastructure system for OpenShift applications that facilitates faster deployments with integrated compute, storage, networking and services.

The Meridian Power Cloud provides both compute capacity and high-performance IBM Storage as a service to help Meridian clients modernise applications running on the IBM Power platform and move them into the cloud for greater cost-efficiency and ease of management.

Why Meridian?

As one of the very few IBM Business Partners in the UK to achieve Platinum status for both IBM Power and IBM Storage technologies, Meridian IT has one of the largest, best trained and most experienced teams of IBM Storage experts in the country.

We work with a wide range of UK and international manufacturers to help them build the scalable, high-performance, cost-effective and compliant storage architectures they need to protect their data, resist cyberattacks, deliver cloud transformation, and adopt next-generation IoT and AI technologies.

Next steps

Reach out to us today at info@meridianit.co.uk to discuss how we can help your firm achieve its goals.

[i] https://www.ibm.com/account/reg/us-en/signup?formid=urx-49721

[ii] https://www.ibm.com/account/reg/us-en/signup?formid=urx-49721

[iii] https://www.ibm.com/account/reg/us-en/signup?formid=urx-49721

[iv] https://www.computerweekly.com/feature/Toyota-car-plant-outage-shows-database-capacity-planning-is-vital and https://www.reuters.com/business/autos-transportation/volkswagen-major-it-issues-resolved-overnight-2023-09-28/

[v] https://www.ibm.com/reports/data-breach

[vi] https://www.servicemax.com/docs/servicemaxlplibraries/white-papers/unplanned-downtime-whitepaper.pdf

[vii] https://www.servicemax.com/docs/servicemaxlplibraries/white-papers/unplanned-downtime-whitepaper.pdf

[viii] https://www.ibm.com/reports/data-breach

[ix] https://newsroom.ibm.com/2022-10-04-IBM-Redefines-Hybrid-Cloud-Application-and-Data-Storage-Adding-Red-Hat-Storage-to-IBM-Offerings

[x] https://www.ibm.com/downloads/cas/XJXABYE2

[xi] https://www.ibm.com/downloads/cas/XJXABYE2

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