TOP 10 MAINFRAME DATA TRENDS OF 2024

As we welcome the new year, the BMC AMI Data product management team has compiled a list of the top 10 data trends for 2024. In this blog, we'll explore some of the most prominent ones that are expected to shape the industry in the coming year. From application performance optimization to database usage visibility, we'll examine the critical areas organizations need to focus on to stay competitive and drive business success. So, let's get started!

1. Application performance becomes the real measure of data management. Instead of relying on traditional data management practices based on scheduled reorganizations, companies will focus on optimizing data specifically for application performance. This will integrate SQL performance tools like BMC AMI SQL Performance for Db2®, as well as database performance and optimization tools such as BMC AMI Database Performance for Db2®. Organizations will also utilize performance optimization tools like BMC AMI DevOps for Application Checkpoint Analysis Jenkins Plugin, which can help improve the performance of IBM® IMS™ and IBM® Db2® applications by identifying programs that use too many or too few IMS checkpoints and/or Db2 commits, thus reducing resource waste or locking problems. By prioritizing application performance, organizations can improve it and ensure that the data is optimized based on application usage.

2. Business resilience will become the driving factor for recovery. As organizations face increasingly strict service level agreements (SLAs), a reliable, efficient, and scalable data recovery process will become even more critical. The realities of faster-changing applications, the growing complexity of threats like cyberattacks and ransomware, and increasing regulations and government oversight are also driving the need for increased resilience. Complex databases exacerbate these problems, so organizations need a well-planned and tested strategy to restore

their data quickly and efficiently in case of any internal error or external threats.

In the coming year, we expect more organizations to adopt advanced data backup and recovery solutions like BMC AMI Recovery for Db2® and BMC AMI Backup and Recovery for IMS™ to both estimate and simulate recovery scenarios and meet SLAs. These solutions will enable organizations to create backups quickly, without downtime; recover from a point-in-time copy; or recover into a new table space seamlessly with online data migration. With these strategies and solutions, organizations can address the needs of data recovery while mitigating risks such as data loss and downtime, ensuring that their operations run smoothly and efficiently.

3. SQL optimization will shift left and become a proactive priority for enhanced application performance. In the upcoming year, organizations will look for improved application performance and increased cost savings by proactively detecting and tuning bad SQL queries before they reach production. By integrating SQL performance tools into the continuous integration/continuous delivery (CI/CD) pipeline (for example, BMC AMI SQL Performance for Db2®), organizations can enable developers to test queries while incorporating built-in standards, best practices, and database administrator (DBA)-defined rules to ensure better quality. DBAs can also proactively identify and tune poor-performing SQL once in production to ensure reliability, maximize performance, and reduce operational costs.

4. Management visibility into database operations will become more vital. Database usage statistics enable organizations to measure and improve their quality, velocity, and efficiency related to mainframe operations. With management-level visibility dashboards, managers and DBAs can now quickly answer questions, identify areas for efficiency improvements, and gain insight into database and product usage activity. Organizations will leverage this information to identify trends, power users, and potential problems.

Integrating this information with tools such as BMC AMI Database Administration for Db2®, BMC AMI Utilities for Db2®, and BMC AMI Recovery for Db2®, combined with BMC AMI zAdviseran analytical tool that collects statistics and visualizes them, will provide even greater insights into what users are doing, which jobs are running, and the objects being processed. In short, organizations can leverage these types of solutions to better understand their system and optimize its performance in the year ahead.

5. The streamlining and automating of database changes in a CI/CD pipeline will gain momentum. As more organizations realize that development teams should be involved in change management, they will look to combine different parts of the organization into a single app-performance culture. Solutions such as BMC AMI DevOps for Db2® can help organizations set standards and rules for their environment and then enable change management capabilities for the application team—under the DBA's strict supervision. This shift-left approach will speed up their agile processes and transform their culture into an end-to-end unified group, resulting in a streamlined, inclusive, and supervised database change management process.

6. More organizations will utilize autonomic data management. Organizations will begin to apply artificial intelligence (AI) to the historically manual process that was previously used to determine the reorganization of objects. By using AI to analyze the past performance of an object and its impact on application performance, including relevant trends in performance over time, organizations can build a model that will help them decide what needs to be reorganized and when.

This way, they can fine-tune the criteria for reorganization based on the things that truly affect application performance and adjust the timing of the reorganization to minimize CPU usage and optimize cost savings. Ultimately, the goal is to achieve autonomic data management, with reorganizations done automatically in the background before application performance is affected. This will ensure that data is continually optimized for applications.

7. There will be a surge in the use of generative AI and its impact on data management. The growing adoption of generative AI will significantly increase the demand for a broad range of varied data types without impacting data integrity, quality, or governance. Adopting generative AI within data management will exponentially increase the volume and complexity of stored data, both structured and unstructured. Automated data management processes and tools will be needed to handle this surge efficiently, securely, and reliably. Further, these processes and tools must accommodate and scale without increasing operational costs or negatively impacting the application performance that relies on this data.

8. Generative AI will increase the need for data accessibility and mobility. In a push to make data more accessible in dynamic data environments, organizations will seek more efficient ways to transition data from on-premises storage solutions to off-premises and cloud-based alternatives with tools such as BMC AMI Cloud. This evolution is crucial, not only reducing data storage costs, but also transforming once-isolated, mission-critical data and providing a new capability to discover, move, transform , and manage data within a private or public cloud.

9. DevOps transformations will increase demand for automated data control. Changing customer demand and the need for agility are driving the need for developers to access and even manage their data sources seamlessly with self-service yet supervised capabilities. This shift-left prerogative in DevOps applies not just to applications, but also to database management. To meet the rapid pace of innovation and support an agile development environment that extends from applications to databases, automated data control and management will become crucial prerequisites in the ever-evolving DevOps landscape.

10. Growing regulatory and privacy demands will place an increased emphasis on data security. Escalating concerns regarding regulatory compliance are intensifying the urgency for data security before it is used by AI-driven applications. Maintaining data safety while still enabling access to it is a pivotal challenge, as are identifying security gaps, taking precautionary measures to prevent potential ransomware threats, and conducting internal threat assessments. Solutions such as BMC AMI Recovery for Db2® and BMC AMI Backup and Recovery for IMS™ are ideal for addressing these situations.

Overall, new technologies like generative AI, the maturation of DevOps practices, and increasing regulatory requirements bring exciting opportunities to optimize mainframe data management and create more resilient systems that meet and exceed customer needs while keeping data secure.