STATE OF THE MAINFRAME IN 2026



Each year, BMC asks members of the mainframe community to share their thoughts on the platform—the technologies and processes used to keep the platform thriving, what has changed over the past year, and where they see it headed in the near future. Results of the 2026 BMC Mainframe Survey show that the mainframe remains an integral part of the modern digital economy, with artificial intelligence (AI) poised to lead the platform into a new era of innovation.

A changing approach to AI integration

The survey shows that confidence in the platform remains near record highs, with 94 percent of respondents seeing it as a long-term platform or one that attracts new workloads, and 69 percent report growth of general-purpose capacity. In short, the mainframe continues to grow, spurred by modern processes like DevOps and AIOps and by technological advances like AI.

Just like the technology itself, the application of AI on the mainframe is maturing and advancing at breakneck speed. The 2026 survey shows that organizations are adapting their adoption of the technology, moving from enthusiastic experimentation to a more deliberate, business outcome-focused approach. It has become clear that the next era of mainframe innovation will be driven by organizations that approach AI strategically while those that hesitate risk being left behind.

From the use of generative AI (GenAI) to assist developers, the deployment of AI-powered monitors to aid in performance tuning and problem detection, and the increasing use of agentic AI to manage the platform, organizations are willing to employ the technology across the mainframe environment. But trust in the technology is evolving. The survey shows that mainframe professionals prefer AI that recommends actions over AI that acts autonomously, implementing systems where AI advises first, with humans retaining control over execution.

As adoption of AI on the mainframe increases and new use cases are developed, the most successful organizations will be those that combine domain expertise, operational context, and governance to help people make better decisions rather than simply automating them.

Security remains a top priority

For the seventh consecutive year, compliance/security ranks as the top priority of survey respondents. The increase in AI-based applications and services, of course, adds a new wrinkle to platform security. As more of these tools and AI agents access mainframe data, there is sure to be an increase in the volume of security certificates issued. With CA/Browser Forum requirements reducing the lifecycle of TLS certificates from 398 days in 2025 to just 47 days by March 2029, management of new certificates, renewal, and monitoring activity for most organizations will become too complex and unwieldy for most organizations to handle manually.

The 2026 survey shows, however, that the majority of respondents are either managing certificates manually or using automated solutions developed in-house. Preparing for this influx of new certificates and accompanying regulation changes should be a priority over the coming year.

Data security and recovery a growing concern

The priority seeing the most significant change (a 4 percent increase) over the 2025 survey was data recovery. Respondents cited increasing the number of recovery points, recovery times, and backup/recovery automation as the top data recovery challenges faced by their organizations.

Data safety is also a concern in relation to AI implementation. The 2026 survey shows that organizations prioritize safe and effective AI connection to their mainframe data, data integration issues cited as the third-highest concern when implementing AI solutions.

As the platform continues to grow, data volumes will follow suit. And with more AI-based solutions accessing that data, mainframe organizations should and will continue to prioritize certificate management, data storage, security, and recovery.

A platform poised for the future

As the 2026 BMC Mainframe Survey makes clear, the mainframe is not simply maintaining its relevance, it is evolving to meet the demands of an AI-driven digital economy. Organizations are embracing new technologies while remaining focused on the fundamentals of security, resilience, and operational excellence. The challenge ahead is not whether the mainframe can support the next generation of innovation, but how effectively organizations can balance growth, governance, and trust as they modernize. Those that invest in intelligent automation, strengthen their security and recovery strategies, and empower experts with AI-driven insights will be best positioned to unlock the full potential of the platform in the years ahead.

For more insights from the *2026 BMC Mainframe Survey*, read our full report, "How AI is driving the next era of mainframe transformation."