

IBM's z14—Continuous Intelligence Meets Machine Learning Everywhere

Study IBM's Z mainframe long enough and the sheer scale of the platform is what tends to stand out. I don't just mean the physical size of the mainframe box which, given its imposing U.S. Navy Nimitz Class dimensions, tends to make even the most robust 42U systems look somewhat puny. It's more a matter of what might be called "virtual scale" combining the Z's massive physical memory and storage capacities with its equally impressive transactional capabilities.

In more than one way, a Z mainframe resembles Doctor Who's Tardis in being "bigger on the inside than it is on the outside." That isn't a mere trick of the eye so much as it is a reflection of IBM's proven ability to fundamentally reinvent

and reinvigorate the mainframe system and customer experience. Just as it has since the first mainframe solutions were launched over half a century ago, those same qualities imbue the newest z14 Z offerings announced this week.

But while the new z14 is very much a 21st century machine, more important is the fact that it offers customers the same core value as the prior generation Z mainframes that power thousands of global enterprises, acting as a trusted, secure, continuously intelligent repository of a business' information heart and soul. That's a critical point on its own that gains even more weight when you consider the critical role the z14 will play in supporting analytics initiatives and machine learning processes.

Supporting and securing global business data

That IBM Z is and remains the platform for global enterprises occurred for three specific reasons. First is the Z mainframe's singularly cost-effective pervasiveness. According to IBM, Z mainframes handle over two thirds (68%) of the world's production workloads but account for just 6% of total IT costs.



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Second is the Z mainframe's robust, reliable and secure transactional capabilities, which make it the system of choice for customers, including 44 of the top 50 global banks, all ten of the top 10 largest insurers, 18 of the biggest 25 retailers and 90% of the world's airlines.

In that capacity, IBM Z solutions support over 30B business transactions per day, 87% of all credit card charges (totaling some \$8T per year), \$5B per day in ATM visits (totaling 29B ATM transactions annually) and 4B airline passenger bookings every year.

Finally, its continuing success and unequalled longevity have resulted in the IBM Z mainframe becoming the platform supporting an estimated 80% of all current and historical global enterprise data. These are impressive numbers, but since that information resides behind enterprise firewalls on private infrastructures, it also offers opportunities for dramatic new insights and underscores the value the Z platform provides IBM's advanced analytics and machine learning initiatives.

The journey from standalone analytics to machine learning everywhere

Why is that the case? Strategically, many or even most analytics efforts compare and contrast current events with relevant historical data as a means to detect longer term trends and pinpoint anomalous occurrences or behavior.

For example, a financial institution might leverage analytics to determine whether customers seeking loans are risk-worthy. Similarly, in healthcare scenarios advanced analytics can be used to monitor the condition of patient groups or specific individuals, and alert caregivers to cases where guidance or intervention might be wise.

Insurance providers could use similar tools to vet and monitor policy holders to gain insight into anomalies and head off potential fraud. Analytics also offers benefits in numerous IT scenarios, from monitoring and managing the performance of specific systems to analyzing entire infrastructures to enhance operational performance.



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But practical issues often delay or subvert analytics efforts. For instance, the vast majority of standalone big data appliances and systems require the data being analyzed to be loaded into the system. That can be a time-consuming and costly task, especially when it involves third party analytics services. But those processes can also potentially expose a client's data to theft and other security threats.

How does the Z mainframe address these points? By serving as both a trusted repository of an organization's information assets and its core computing platform. That is, rather than moving data to a chosen analytics engine, IBM has instead imbued the z14 with innovative advanced analytics and machine learning capabilities that can be leveraged across both information assets at rest in the system and live transactional data as it arrives.

IBM has also taken notable steps to ensure that the z14's machine learning analytics are accessible to interested individuals and groups across the business. For example, the company's Machine Learning for z/OS can perform federated analytics across a variety of structured and non-structured data from both Z and non-Z sources. Along with supporting all the steps in the full machine-learning lifecycle, IBM's solution can also be managed by anyone, anywhere with a single dashboard. That single-dashboard feature also figures into IBM's efforts to open machine learning and analytics and results to new stakeholders. Those include security and compliance officers, database administrators, enterprise architects and systems administrators who can use these processes to gain new insights and speed decision-making in numerous business processes and use cases.



IBM has imbued z14 with advanced analytics and machine learning.

In essence, as a result of its "machine learning everywhere" initiative, IBM is democratizing the access to and analysis of critical business information, thus helping to ensure that customers get the full benefit of their z14 investments.

Final analysis

A number of the new IBM z14 mainframe's key improvements over previous generation z13 systems will impact machine learning and advanced analytics performance. Those include its tripling of memory resources (to 32TB), 3X faster I/O and accelerated transaction processing, and a halving of application response time. In fact, you could argue that these 4 points qualify as the well-defined technical muscle beneath the skin of the company's Z platform go-to-market strategy.



The market's most powerful, reliable and secure transactional system.

But the broader point behind IBM's z14 efforts is to transform the way organizations think about information. While it's common enough for businesses to closely consider their data assets and investments, often that regard is all too passive. Increasingly popular advanced analytics and big data technologies have helped open up the possibilities that reside in business information, but the cost and complexity of standalone solutions can create stumbling blocks for many interested parties. Reducing or eliminating those barriers has long been a key goal for IBM, as can be seen in many of the company's strategic solutions and initiatives. The launch of the new z14 demonstrates how IBM is tangibly taking that visionary effort to its largest core enterprise customers via the market's most powerful, reliable and secure transactional system.

At its heart, "machine learning everywhere" translates into intelligence access for everyone. Is it any wonder that, three years after its 50th anniversary, IBM's Z mainframe continues to be golden?

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