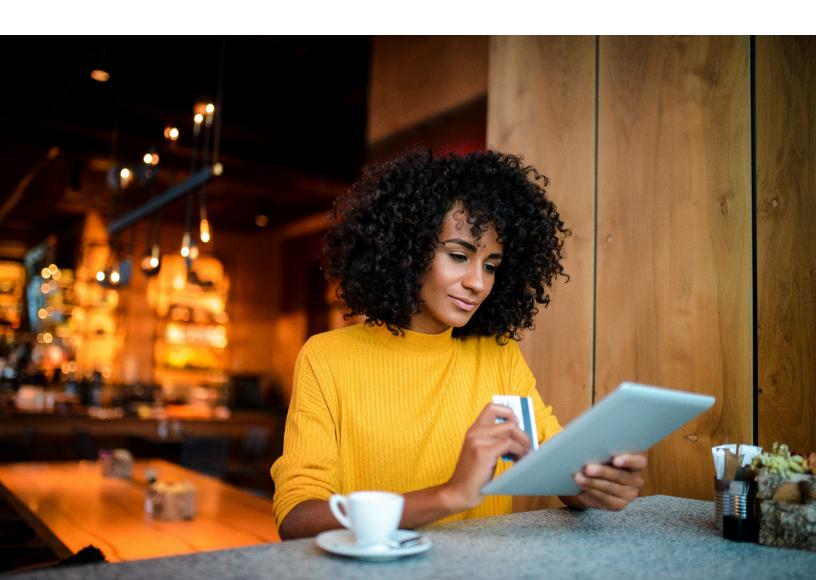


Gain loyal customers with digital engagement banking

Delight customers with seamless personalized banking experience with Backbase on IBM Z and IBM LinuxONE servers



Highlights

- Take advantage of the state-of-the-art digital banking platform from Backbase that unifies data and functionality from traditional core systems and new fintech players into a seamless digital customer experience
- Delight customers. Provide them with a seamless and highly personalized experience across multiple touchpoints
- Empower employees. Enable them to quickly resolve customer issues and get them back on track within seconds
- Implement an innovation platform for banking digitization and modernization with the synergistic powerful combination of Backbase and the IBM Z® and IBM LinuxONE enterprise servers that scale
- Gain processing efficiencies with the new IBM z15™ solutions, designed to deliver 99.9999% availability¹
- Deploy digital banking and AI solutions with the greatest confidence for data protection and end-customer privacy available for commercial severs, running Linux® or IBM z/OS® operating systems²
- Extend IBM Z capabilities by having direct access to systems of record with API-based Backbase digital engagement layer

Challenges of siloed business solutions

Siloed applications, organizations and product lines have become bottlenecks to engagement banking.

Historically, banks have organized themselves in different lines of business for specific departments and product lines. Over time, these different departments developed or purchased their own technology landscapes to meet the needs of their own individual departments.

The results are often multiple code bases, disjointed business applications and technologies for varying departmental functions with crippling operational inefficiencies, including:

- **1. Inconsistent and fragmented customer experiences** across different touchpoints that hinder companies from attracting customers and retaining them.
- 2. Unproductive teams caused by employees getting bogged down with duplicate work across business lines, products, and channels, and increased errors in managing disjointed processes which also take time away from their more important core duties.
- 3. Monolithic architectures which can require significant overhead and lead time to deliver even the smallest increment of value in addition to hampering creativity and innovative ideas.
- 4. Lack of real-time visibility with disjointed applications and multiple overlapping databases that can obstruct easy access to a wholistic view of business performance in a timely fashion. The banking institutions' ability to be agile and prompt may be diminished and so would their ability to remain competitive.

Evolving end-customer demands



43% of clients

expect to be able to set up their bank accounts instantly³



31% of higher earners

would switch banks for a better online experience³

Engagement banking defined

Your customers expect more than the classic, nine-to-five branch consulting. They expect simple, real-time services that offer an exceptional 24x7 engagement with their bank and the freedom to choose how to contact and stay in touch. In short, they demand engagement banking.

Excelling in engagement banking involves a multi-faceted approach with customer experience and an omnichannel platform at the heart of innovation.

End-to-end seamless customer experience.

Implementing engagement banking means allowing customers the freedom of choice to access their finances anywhere, at any time, through any channel, be it the physical branch, a mobile app, an ATM, a call center or online. Truly omnichannel. It also means that the same superior quality of customer service is delivered across all channels, both online and offline.

Real-time data synchronization. A true engagement banking platform also allows real-time data synchronization between different channels. For instance, customers can start onboarding process online but complete it in-person at a bank, without the need to provide the same data repeatedly.

Efficient middle and back-office operations. Omnichannel and digital engagement banking addresses many of the needs for more efficient middle and back-office operations—risk and credit management, personnel, compliance, settlements, accounting and more. Engagement banking means they are all working in tandem by supplementing each other and using the same data-driven processes.

"It's all about streamlining customer interactions with a single platform—aggregating information from backend systems, core systems, cloud and fintech providers."

-Jouk Pleiter, CEO and Founder, Backbase

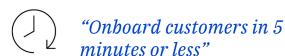
Learn more →

Turn silos to omnichannel using Backbase

The state-of-the-art digital engagement platform by Backbase enables financial institutions to create a digital hub, an orchestration and aggregation layer where all the ingredients of a modern digital banking platform come together.

Put customers first. Backbase helps banks modernize and orchestrate all end-customer touchpoints, transforming multiple siloed banking channels and traditional applications into a consistent brand experience that's user-friendly, personalized and is available. It unifies data and functionality from traditional core systems and new fintech players into a seamless digital customer experience.

Reuse existing core banking systems. With Backbase, there's no need to replace or rebuild the core systems from scratch. Backbase allows financial institutions to repurpose existing core systems by incorporating their content, data and functionalities into a new digital customer experience layer that's optimized for easy integration with existing business applications. The solution is designed to deliver a unified and seamless customer experience across any device.



- Backbase

Jumpstart the digital transformation. Backbase has developed out-of-the-box digital banking solutions optimized for retail banking, small and medium enterprise banking, corporate banking and wealth management scenarios. These solutions can enable institutions to kickstart their digital journey to dramatically decrease their time to market.

Disperse to all channels through a central platform. Rather than creating digital business functions for each channel, financial institutions can do everything once and disperse to all channels through a central platform — the Backbase engagement orchestration layer. In this way, they can orchestrate customer interactions across multiple touchpoints, generating massive time and cost savings, and improving customer experiences.

Integrate with fintech ecosystem. The hub also integrates the offerings from other niche solution providers within the financial technology ecosystem or with third-party APIs from other banks and industries. As a result, banks and other financial institutions can truly drive seamless digital journeys.

"The Backbase digital engagement layer empowers multiple personas—the end-customer, CSR, advisor and employee— across different devices."

-Jouk Pleiter, CEO and Founder, Backbase

<u>Learn more</u> →

The Backbase digital engagement platform, underpinned by the IBM Z and LinuxONE enterprise servers, provides core services to connect and empower all parts of a financial institution. It extends IBM Z capabilities by having direct access to systems of record with the API-based Backbase digital engagement layer. See Figure 1 for the Backbase architecture overview.

Backbase engagement platform architecture with IBM Z or LinuxONE

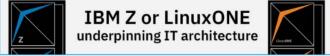


Figure 1: The Backbase engagement banking digital platform on IBM Z and LinuxONE enterprise servers – architecture overview.

Backbase on IBM Z and IBM LinuxONE servers stand out in a crowd

Since financial institutions are entrusted with customer finances, any disruption of services can be costly. If they fail to meet expectations on any front, customer backlash can impact their brand reputation and regulatory penalties can be swift and damaging.

It's clear, not only do financial institutions need the awardwinning digital engagement solution from Backbase but also a high-performing enterprise server to underpin their IT architecture and hybrid-cloud strategy.

Backbase on IBM Z and LinuxONE servers is the ideal integrated choice as it combines a robust digital engagement banking solution with the reliability and high performance of the IBM Z platform.

- High reliability, security and resiliency. The IBM Z and LinuxONE servers are the only commercial servers with EAL5 security certification², and enable continuous availability for at least 99.999%.⁴
- Consolidate hundreds of servers. Consolidate hundreds, and possibly more than a thousand x86 cores, onto a single IBM LinuxONE platform, and reduce costs by up to 40% in three years, versus compared x86 servers.⁵ A research study made by International Data Corporation (IDC) stated that LinuxONE supports up to 8,000 Linux servers in a single footprint.⁶
- Non-degrading performance and scaling capabilities. Even at 100% utilization, these servers feature non-degrading performance and scaling capabilities.⁶ These translate to reduced extra cost that many architects assume to be necessary to factor in due to degrading performance above 50% utilization.⁶

IBM Z has been in the top spot for 12 straight years



- -#1 server ranking
- #1 server application availability
- #1 in every reliability category
- #1 in lowest total cost of ownership (TCO)
- #1 in rate of return on investment (ROI)

Figure 2: Results from "ITIC 2020 Global Server Hardware, Server OS Reliability Report," April 2020.4

Step up your security game



Providing customers seamless and anytime access to their financial data, delights them, but the first instance that their personal data is compromised, a mass exodus to a competitor is almost sure to follow.

Keeping financial data secure is the cornerstone of building customer trust and loyalty.

With Backbase on IBM Z and LinuxONE servers, financial institutions and their customers can have the confidence that their data is well-protected since these enterprise servers deliver:

- Crypto-certified at the highest FIPS 140-2 level 4 security certification in the market²
- Built-in security with a layered approach to help deliver end-to end protection
- Designed to encrypt 100% of data without application changes
- Pervasive encryption which eliminates the need for Backbase clients to choose which data to encrypt – an effort that can be costly and resource intensive
- Encryption at the network level helps protect data from potential attacks while in flight

With IBM Hyper Protect Services, additional security is added to allow users to:

- Have complete authority over their sensitive data
- Own encryption keys that only they can control
- Prohibit access, not even by cloud administrators

These security features and capabilities of IBM Z and LinuxONE servers make them the ideal IT architectural foundation to underpin Backbase digital engagement platform. Backbase clients can effectively protect their customers' data and privacy and can more readily meet the needs of evolving industry regulations.

Protecting customer data is paramount



USD 3.86 million

is the average total cost of a data breach in 20208



27 billion

records were exposed by data breaches in the first half of 2020⁹



USD 9.3 million

is the estimated loss to the banking and finance industry per hour of server downtime⁷

Hybrid cloud powers next-generation business

Backbase is built on a state-of-the-art microservices architecture and with API-based banking capabilities. It runs native on Linux with Red Hat® OpenShift® with a full stack of automated operations to manage hybrid and multicloud deployments.

The Red Hat OpenShift platform delivers containerized application deployment, automation and management that speeds up time-to-market and empowers high-velocity development teams to focus on building the next innovative and valuable applications faster.

With Linux on IBM Z and LinuxONE servers as the IT infrastructure of choice for hybrid cloud, complemented by the Red Hat OpenShift container platform, Backbase clients gain the best of both worlds. They can utilize modern development and deployment ecosystems with hybrid cloud while still using their existing technology investment, with no compromise.

About Backbase and IBM

IBM and Backbase have formed an alliance to jointly bring to market industry-leading solutions for digital banking transformation.

Headquartered in Amsterdam, Backbase is a fast-growing digital banking platform provider with operations worldwide. More than 130 financial institutions, from large institutions to credit unions have standardized on the Backbase platform to streamline their digital banking offerings. The company has earned many industry accolades and recognition for its digital engagement platform, including:



Backbase was named a leader in the Forrester Wave report¹⁰

Celent recognizes
Backbase as a leader in
digital banking platforms¹¹

Backbase's mission to deliver digital-first solutions that exceed customer expectations has come to fruition. The company is recognized as a leader by many in the industry and is a preferred choice in the digital channel category around the globe.

For more than a century, IBM has been creating innovations that matter. In 2019, for the 27th year running, IBM led the industry in the number of U.S. patents granted across key technology areas with 9,262 U.S patents, the most patents ever given to a company in a single year. This brings the total number of IBM's U.S. patents to over 140,000.¹²

Moreover, IBM Z servers continue to power the world's leading industries and build smarter businesses. Organizations have recognized the capabilities of the IBM Z servers as the foundation of their critical workloads, running in hybrid multicloud environments.

85% of top 100 banks

use IBM Z enterprise server for their mission-critical workloads¹³

67% of top 100 Fortune companies

52% of IBM Z enterprises

have Linux co-located with the z/OS operating system¹⁵

Thanks to the technological innovation and esteemed market leadership of both Backbase and IBM, financial institutions can now confidently rely on the alliance of these industry leaders to deliver solutions that charter their successful journey to digital banking.

Together, IBM and Backbase can accelerate the digital journey of financial institutions to delight end-customers and even exceed their expectations.

For more information

To learn more about how IBM LinuxONE and Backbase can benefit your banking institution, please contact LPNHelp@us.ibm.com. You can also contact your IBM sales representative or IBM Business Partner.

To learn about IBM LinuxONE, visit ibm.com/linuxone.
To learn more about Backbase, visit www.backbase.com.

Additionally, IBM Global Financing provides numerous payment options to help you acquire the technology you need to grow your business. We provide full lifecycle management of IT products and services, from acquisition to disposition. For more information, visit ibm.com/financing.



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- 1. Internal data based on measurements and projections was used in calculating the expected value. The z15 servers must be configured in a parallel sysplex using z/OS 2.3 or above; GDPS management of data and middleware recovery across Metro distance systems and storage, including GDPS Metro Multi-site Workload and GDPS Continuous Availability; and DS888X with IBM HyperSwap. Necessary resiliency technology must be enabled, such as System Managed CF Structure Duplexing, Sysplex failure management and Capacity Provisioning Manager. Other configurations may provide different availability characteristics
- FIPS 140-2 Level 4 is the highest level of FIPS 140-2 certification, and the IBM Crypto Express in LinuxONE is certified as FIPS 140-2 Level compliant. www.ibm.com/security/cryptocards/highlights?mhsrc=ibmsearch_a&mhq=%22fips%2014 0-2%20Level%204%22
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- Comparison in an IBM laboratory. The x86 landscape consisted of 5 x86 systems, each with 44 cores/768 GB, Oracle virtual machine (VM) and Oracle Linux,Oracle 12c, 320 total cores, USD 546 million (3-year TCO) and USD 663/TPS. The IBM LinuxONE landscape consisted of IBM LinuxONE III LT1 (LM1/M)1 with 33 cores/3392 GB), IBM z/VM® and Red Hat® Enterprise Linux (RHEL), Oracle 12c, 33 total cores, USD 3.08 million (3-year TCS) and USD 374/TPS.
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