

# Address the core needs of your bank with Finacle Core Banking on IBM LinuxONE

A solution that delivers flexibility and benefits of private and public cloud while addressing data security, governance and compliance

Solution Brief

June 2022



*“Banks can leverage Finacle Core Banking Solution on the RedHat OpenShift Container and IBM LinuxONE to achieve very high scalability and throughput, making optimal use of the capacity provisioned. Our experience of porting the Finacle code base onto IBM LinuxONE was quick, easy, and seamless.*

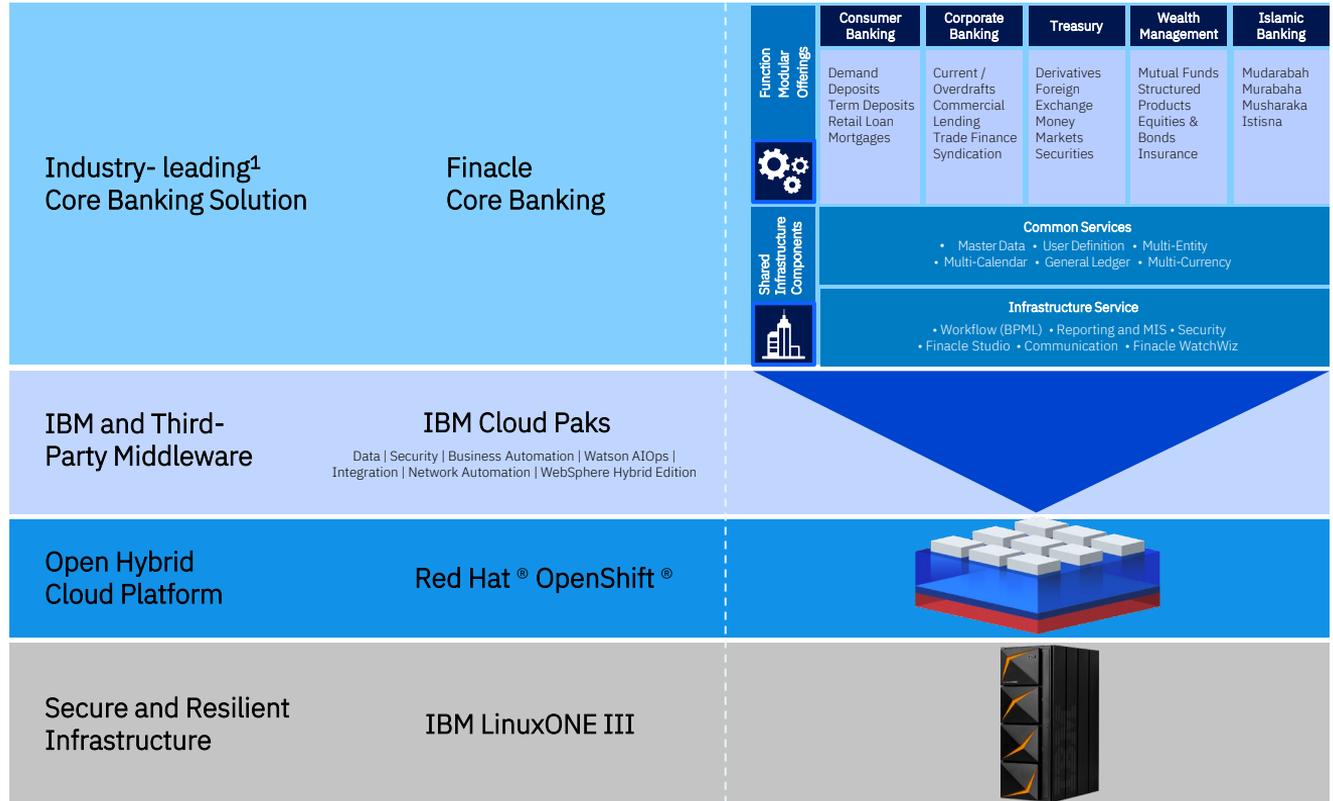
*IBM LinuxONE provides banks an open environment to leverage Finacle’s cloud-native capabilities and deploy them consistently across their private cloud environment.”*

**K R Venkatraman**  
(VP, Head – Product Architecture, Infosys Finacle)



# Scale Digital with a Digital Core on an Advanced Platform: Finacle Core Banking on IBM LinuxONE

- Finacle Core Banking is an industry leading solution. It offers a comprehensive suite of capabilities to power banks’ digital transformation. The solution is Cloud-native, componentized, and microservices-based to enable risk-mitigated progressive modernization.
- Offers extensive parameterization, product bundling and reusable business components, to help accelerate innovation.
- Real-time processing engine and embedded analytics enabling rich customer insights for better engagement backed by extensive automation.
- High IO throughput capability of IBM LinuxONE brings down the software licensing cost.
- Optional IBM Cloud Pak® integration supports high-speed messaging for quick response.



# A customer-centric, agile and regulatory-compliant banking solution

Get tools and capabilities to future-proof your bank against the flow of new breakthroughs and risks



## Industry-leading platform

Finacle Core Banking helps banks scale digital engagement with:

- Innovation-led growth: Finacle's openness and flexibility enables banks to embrace new business models, easily roll out new innovations and co-innovate with external ecosystems
- Deeper customer engagements: The solution offers insights and action through unified customer view and embedded analytics
- Emerging requirements: Offers comprehensive product factory, extensive parametrization, GUI-led extensibility and configurability capabilities to meet current and emerging requirements
- Operational excellence through extensive automation: AI and RPA-led automation along with traditional rule-based, API-driven straight through processing and BPM led process orchestration



## Cloud ready

- Finacle offers a cloud-native, cloud-agnostic platform, which can be deployed flexibly on a private, public or hybrid cloud. Finacle applications are built on a cloud-native framework based on Cloud Native Computing Foundation (CNCF) standards and follow the Twelve-factor App Methodology.
- Validated on IBM LinuxONE with Red Hat OpenShift, the solution architecture supports IBM Cloud Pak for Integration, providing a foundation on enterprise-grade middleware.
- Additionally, IBM LinuxONE has trusted multi-tenancy capabilities to host multiple workloads and is scalable to 1300+ security domains in a single system footprint.
- The platform further differentiates from other platforms by providing secure execution and tenant isolation for cloud native applications.



## Comprehensive and versatile

Finacle is the platform of choice and serves client across all segments of FIs including:

- Well-established financial institutions that seek comprehensive digitization across front-to-back enterprise systems. Key engagements: ICICI Bank, DBS, Standard Bank, Emirates NBD, Equity Bank
- Digital-only banks without a branch network that seek to integrate into their customers' digital lives. Key engagements: Discover Financial Services, Marcus by Goldman Sachs, DBS DigiBank, Nequi by Bancolombia
- Financial technology organizations (FinTech) transforming financial services through emerging technology. Key engagement: Paytm
- Non-financial companies, such as telcos and retailers, who are leveraging connectivity to help customers manage their finances. Key engagement: India Post

# Offers benefits of high performance, strong security and lower cost

Get tools and capabilities to future-proof your bank against the flow of new breakthroughs and risks



## High performance and scalable

Finacle online and batch performance is optimized on the LinuxONE platform that ensures reduced server sprawl. It also improves IT efficiency and reduces costs through:

- High-performance clock speed up to 5.2 GHz<sup>2</sup>
- Rich caches/ data memory
- Dedicated specialized processor for I/O offloading

The platform is meant to operate at 100 percent utilization.

Finacle Core Banking Solution containerized version on IBM LinuxONE systems can scale vertically or horizontally without disruptions to running applications. This helps support peak customer demands.



## Cost optimization for software licensing

Banking solutions, when delivered on IBM LinuxONE, uses significantly less number of licenses for database, RedHat OpenShift and other middleware. This is achieved by higher CPU core utilization and dedicated I/O processors leading to significant cost savings on the joint solution.

Clients can start database licensing core by core (from as little as 2 cores at a time) and scale up to a maximum of 190 cores in LinuxONE III.



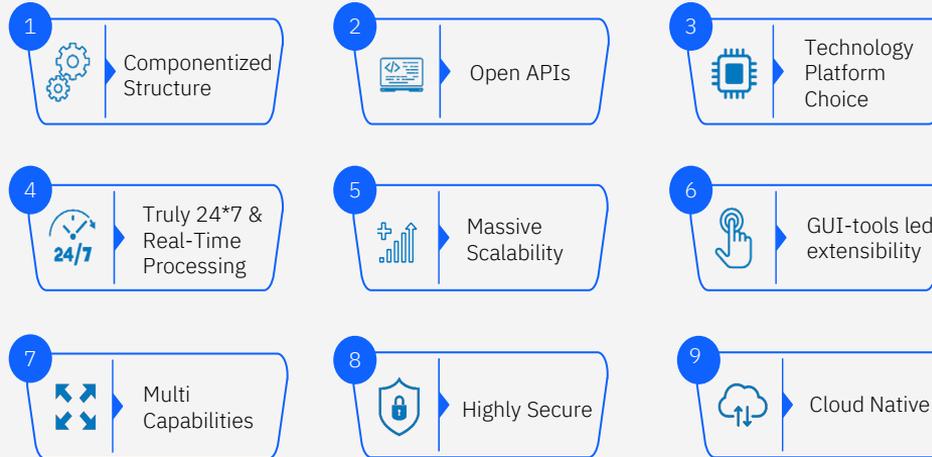
## Resilient and secure

When enabled on IBM LinuxONE, Finacle Core Banking Solution has unique enterprise server architecture with no single points of failure that allows the machine to continue even if a component fails. The IBM z mainframe and the IBM LinuxONE distributions both exhibit true fault tolerance and deliver the vaunted seven nines – 99.99999% of uptime and availability<sup>3</sup>.

LinuxONE's pervasive encryption enables banks to efficiently deploy and deliver the Finacle Core Banking Solution while ensuring that trust and compliance are never compromised.

The hardware security module of IBM LinuxONE is designed to meet the requirements for FIPS 140-2 Level 4 which has been the highest level commercially available for years<sup>4</sup>

- An industry-leading digital banking solution with proven product with experience of working with banks across 100 countries
- Single platform for many journeys: suitable for any type of bank – large incumbents, digital only banks, FinTechs and banking players from non-financial companies



Finacle - A strong foundation for a digital future

## Benefits

Banks running Finacle Core Banking Solution benefit from:

### Comprehensive Capabilities

- Retail Banking
- Corporate Banking
- Islamic banking

### Advanced Technology Platform

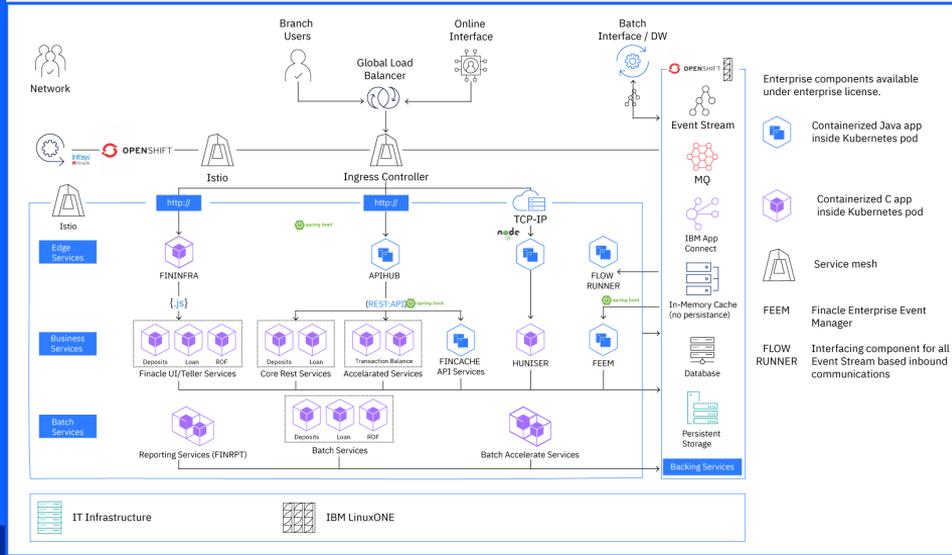
- Cloud native
- Componentized design
- Open APIs
- Robust Security

### Risk mitigated transformation

- Reference bank models
- Progressive deployment & upgrades
- Agile delivery model

# Key features

- **Finacle Core Banking** solution has a micro-services architecture that has been validated on **Red Hat OpenShift** running on **IBM LinuxONE**. The solution architecture supports IBM Cloud Pak for Integration.
- The IBM LinuxONE platform provides secure execution and tenant isolation that helps cloud - native applications run in secure environment.

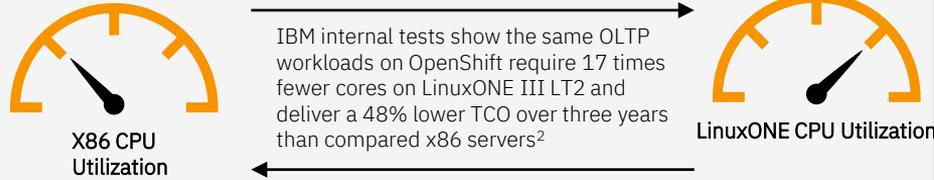


# Benefits

- Flexible cloud deployment
- Increased openness, scalability and agility driven by modular, componentized design
- Improved agility for innovation led growth through open APIs and curated partner ecosystem
- Deeper customer engagement with personalized experiences , 360 degree customer view and embedded insights via use of emerging technologies and cognitive insights
- Additionally, IBM LinuxONE provides an open yet secure platform for hybrid cloud. IBM internal tests show the same OLTP workloads on OpenShift require 17 times fewer cores on LinuxONE III LT2 and deliver a 48% lower TCO over three years than compared x86 servers<sup>2</sup>.

- Finacle batch performance is optimized on the IBM LinuxONE platform that ensures reduced server sprawl. It also improves take out costs and efficiency of IT.

- Finacle consolidation on LinuxONE with RHOCP reduces software licensing costs significantly



- High-performance clock speed up to 5.2 GHz
- Rich caches/ data memory
- On-chip compression
- Optimized for Java™
- I/O offloading
- Designed to be busy



 **6.5x**  
faster database dump (back-up) performance<sup>5</sup>

 **9.25x**  
higher database throughput as per a client study<sup>6</sup>

## Benefits

To deliver an industry leading banking solution Finacle Core Banking on IBM LinuxONE takes advantage of capabilities like:

- Efficient workload management
- High sustained average CPU utilization
- Efficient network communication
- System Assist Processors for I/O
- Rich caching infrastructure reduced number of cores to run database workload
- Greater availability (RAS) characteristics that remove the need for multiple servers<sup>2</sup>
- Capacity backup units (CBU) for disaster recovery
- Dynamically grow horizontally (add Linux guests) and vertically (add hardware resources to existing Linux guests)
- All resources shared (cores, memory, I/O)

- IBM LinuxONE provides reliable computing performance and enhanced security features. This combined with Finacle Core Banking will allow users to comply with regulatory requirements on time without disrupting existing operations and keeping up to speed with business requirements. The combination delivers predictable costs and agility to core banking projects.

- Even the most reliable systems require planned downtime for routine maintenance and security patching. Having a resilient system means you can get back up-and-running and recover quickly from planned maintenance and disruptions. IBM LinuxONE is designed to deliver 99.99999% availability and uptime, through a combination of highly reliable components such as RAIM memory and high-availability software
- IBM LinuxONE provides end-to-end pervasive encryption, that provides customers with the privacy and security of their data in transit, at rest, or in use.
- IBM LinuxONE is designed to meet the requirements for FIPS 140-2 Level 4 cryptographic security, which has been the highest level commercially available for years<sup>4</sup>. LinuxONE with IBM Hyper Protect Data Controller provides end-to-end, data-centric encryption and privacy to keep data protected no matter where it travels in enterprise
- IBM LinuxONE servers are certified at EAL 5+, the highest level of common criteria security certification for LPAR isolation on commercial servers<sup>7</sup>. This ensures confidentiality and data integrity through secure execution for cloud-native workload. This helps simplify efforts to meet regulatory compliance and challenges.



## Choose a superior platform for secure cloud. Explore the new IBM LinuxONE.

- To capitalize on opportunities in the cloud landscape, your organization must have superior IT infrastructure. It must be secure yet open, resilient and available yet flexible and aligned to your current needs yet able to scale as they change. Get cloud without compromise —with IBM LinuxONE.
- Book a consultation to explore the advantages of Finacle Core Banking on IBM LinuxONE



### Press Release:

[IBM collaborates with Infosys Finacle to Create a Banking Center of Excellence](#)



[LPNHelp@us.ibm.com](mailto:LPNHelp@us.ibm.com)

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To learn more about how IBM LinuxONE platforms combined with Finacle Core Banking can benefit your banking institution, please contact [LPNHelp@us.ibm.com](mailto:LPNHelp@us.ibm.com)

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You may also contact your IBM sales representative or IBM Business Partner

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Make use of the **IBM LinuxONE TCO Calculator** to know how much you could be saving: [click here](#)

# Learn more

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Produced in the United States of America May 2022

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1. EdgeVerve Systems Positioned a Leader by Gartner® for Finacle Core Banking Solution Finacle named a Leader for the 14th Consecutive Time in the 2022 Gartner® Magic Quadrant™ for Global Retail Core Banking. <https://www.infosys.com/newsroom/press-releases/2022/leader-finacle-core-banking-solution.html>
2. "IBM LinuxONE Delivers Performance and Cost Benefits", Moor insights and strategy Nov 2020. <https://www.ibm.com/downloads/cas/EZAK4VQN>
3. "ITIC 2021 Global Server Hardware, Server OS Reliability Report". Information Technology Intelligence Consulting Corp (ITIC) June/July 2021. <https://www.ibm.com/downloads/cas/A856LOWk>
4. IBM HSM Highlights. <https://www.ibm.com/security/cryptocards/highlights> / FIPS 140-3 supersedes FIPS 140-2 and outlines updated federal security requirements for cryptographic modules. <https://csrc.nist.gov/Projects/cryptographic-module-validation-program/modules-in-process/Modules-In-Process-List>
5. "IBM z15 & LinuxONE III Proof Points, Jan 2021": Disclaimer: DISCLAIMER: Performance results based on IBM internal tests running database dump with compression on MongoDB 4.0.6 on database of size 355 GB using pigz on x86 and gzip on z15. On x86 pigz was invoked with option -1 (compression level 1) and was using software compression. On z15 gzip was invoked with option -1 and exploited the Integrated Accelerator for z Enterprise Data Compression. The database dump file size on z15 is 20% bigger than on x86. Results may vary. z15 configuration: LPAR with 2 dedicated IFLs, 1.5 TB memory, RHEL 7.6 in SMT mode, database located on IBM DS8000 storage. x86 configuration: 2 Intel® Xeon® Gold 6140 CPU @ 2.30GHz with Hyperthreading turned on, 1.5 TB memory, RHEL 7.6 database located on IBM DS8000 storage.
6. LinuxONE has large caches. This can dramatically improve performance for cache-intensive workloads, like database reads. One client (<https://www.ibm.com/case-studies/fort-vale-systems-hardware-linuxone-scalability>), experienced a 9.25x performance improvement when they migrated their Oracle Database instances to IBM LinuxONE.
7. "Certification Report BSI-DSZ-CC-1160". A new Common Criteria certificate with the product name PR/SM for IBM z15 T02 and IBM LinuxONE III LT2 Systems, Driver Level D41C with Bundle Level H13/S21b, April 2021: <https://www.commoncriteriaportal.org/files/epfiles/1160c.pdf>