New IBM Linux-only Mainframe Delivers Breakthrough Security for Next-Gen Applications

LOS ANGELES, Sept. 12, 2017 /[PRNewswire](#)/ -- (OPEN SOURCE SUMMIT NORTH AMERICA) – IBM (NYSE: [IBM](#)) today unveiled the IBM LinuxONE Emperor II, the next generation of its family of Linux-only enterprise systems, which delivers new capabilities aimed at helping organizations achieve very high levels of security and data privacy assurance while rapidly addressing unpredictable data and transaction growth.

A key feature of the new LinuxONE Emperor II, IBM Secure Service Container is an exclusive LinuxONE technology that represents a significant leap forward in data privacy and security capabilities. Last year, more than four billion data records were lost or stolen, a 556 percent increase over 2015 [1]. Of the more than nine billion records breached during the past five years, only four percent were encrypted – or securely scrambled -- leaving most of that data exposed and vulnerable to attackers [2].

With IBM Secure Service Container, for the first time, data can be protected against internal threats at the system level from users with elevated credentials or hackers who obtain a user's credentials, as well as external threats. Software developers benefit by not having to create proprietary dependencies in their code to take advantage of these advanced security capabilities. An application only needs to be put into a Docker container to be ready for Secure Service Container deployment, and the application can be managed using the Docker and Kubernetes tools that are included to make Secure Service Container environments easy to consume.

Developers and clients can learn more and apply to participate in the beta at: http://ibm.biz/sscbeta. Developers can access new technologies, open source code and documentation on containers, mainframe development and more with IBM Developer Journeys: https://developer.ibm.com/code/journey/.

Helping clients transform their business and the world

Since its introduction in 2015, LinuxONE technology has become a part of the IBM cloud and is the foundation of IBM's premier blockchain offering; has helped transform the diamond industry with Everledger; and is helping eliminate plastic from the world's oceans with [The Plastic Bank](#). Working with IBM and service provider/systems integrator [Cognition Foundry](#), The Plastic Bank is revealing the value of plastic waste, interrupting its flow to the ocean and providing it to corporations for use in new products.

"As a service provider, LinuxONE allows us to set up a complete IT infrastructure capable of supporting

millions of users in the blink of an eye for clients like The Plastic Bank," said Ron Argent, CEO of Cognition Foundry. "LinuxONE also delivers exceptional security that we pass on to our clients. With separate user environments running on the server, there is greatly reduced risk of anyone hacking into sensitive data – unlike commodity offerings where you could be sharing storage space with malware."

"It was vital for us to have a comprehensive solution ready from the get-go, one that didn't just meet our current requirements but one we would still be using 20 years from now. We cannot afford to grow a little, then stop and rebuild our tech environment to keep pace with an ever-growing number of users," said Shaun Frankson, Co-Founder and Chief Strategist, The Plastic Bank. "Crucially, LinuxONE provides the capacity for us to scale to meet demand and minimize slowdowns or loss of momentum."

The most advanced enterprise Linux platform for data

"LinuxONE is a highly engineered platform with unique security, data privacy and regulatory compliance capabilities that doesn't require any changes to developer or open source code, combined with a design optimized for data serving and transaction processing at extreme scale," said Ross Mauri, General Manager, IBM LinuxONE. "With today's announcement, we are increasing our focus and investment on delivering innovations that provide differentiated value to our clients."

The new LinuxONE Emperor II is the world's most advanced enterprise Linux platform, featuring the industry's fastest microprocessor and a unique I/O architecture with up to 640 cores dedicated to I/O processing. The vertical scale, shared-everything system design allows LinuxONE Emperor II to:

- Scale-up a single MongoDB instance to **17 TB** in a single system and get 2.4x more throughput and 2.3x lower latency on LinuxONE Emperor II leveraging the additional memory available compared to LinuxONE Emperor – providing applications faster, more secure access to data while enabling greater scale at reduced complexity [3].
- Provide up to **2.6x** better Java performance than x86 alternatives, and integrated hardware for pause-less garbage collection, enabling mission-critical Java workloads -- which require consistent high-throughput and low-latency processing -- to minimize unpredictable transaction delays due to garbage collection [4].
- Provide a Docker-certified infrastructure for Docker EE with integrated management and scale tested up to **two million** Docker containers – allowing developers to compose high-performance applications and embrace a micro-services architecture without latency or scale constraints.

"Given how important data is to any business, MongoDB is designed to run anywhere to help organizations handle the scale and variety of today's data," said Dev Ittycheria, President and CEO, MongoDB. "We're pleased to support MongoDB Enterprise Server on LinuxONE for enterprises that want to run business critical applications on a highly performant, available and secure platform."

"As organizations scale up into operating massive container-based infrastructures, reliable, highly secure systems are still the key underpinning for enterprises everywhere," said Loris Degioanni, CEO and Founder of [Sysdig](#). "What is even more powerful is that IBM is building a robust ecosystem around the LinuxONE Emperor II system. Through the IBM-Sysdig collaboration, IBM customers can get container monitoring and troubleshooting out of the box. These enterprises can be assured that as they move their new containerized application infrastructure into production, it is scalable, highly secure and easy to monitor."

"The LinuxOne platform provides one of the most scalable computing environments available. The combination of the CPU frequency, number of cores, and the speed of I/O devices of LinuxOne are unparalleled and make a perfect match to the scale-up nature of ScyllaDB," said Dor Laor, CEO and Co-Founder, [ScyllaDB](#). "We found the performance twice as good as a matching x86 machine. Together with the security features and the open environment, it is a no-brainer decision for customers."

Learn more about [IBM LinuxONE](#).

[1.] Source: [IBM X-Force Threat Intelligence Index](#).

[2.] Source: Gemalto's Breach Level Index, http://breachlevelindex.com/

[3.] Performance result based on IBM internal tests comparing MongoDB performance in native LPAR on LinuxONE Emperor II using additional memory versus LinuxONE Emperor driven by YCSB 0.11.0 (write-heavy, read-only). Results may vary. LinuxONE Emperor II configuration: LPAR with 12 dedicated cores and 20 TB memory running on SLES 12 SP2 (SMT mode) a MongoDB Enterprise Release 3.4.1 instance (no sharding, no replication) with a 17 GB database. The database was located on an 18 TB LUN on an IBM FlashSystem 900. LinuxONE Emperor configuration: LPAR with 12 dedicated cores and 10 TB memory running on SLES 12 SP2 (SMT mode) a MongoDB Enterprise Release 3.4.1 instance (no sharding, no replication) with a 17 GB database. The database was located on an 18 TB LUN on an IBM FlashSystem 900.

[4.] Customers running WebSphere Liberty on z14 Linux on z using clear key encryption AES_128_GCM cipher can get up to 2.6X improvement in throughput per core with IBM Java 8 SR5 compared to x86. Performance results based on IBM internal tests running DayTrader 3 with WebSphere Liberty 8.5.5.9 using SSL clear key and TLS_ECDHE_ECDSA_WITH_AES_128_GCM_SHA256 cipher. Liberty DayTrader 3 measurements were performed on a standalone dedicated LPAR on IBM z14 running SLES 12 SP1 with 4 IFLs configured with SMT for a total of 8 hardware threads. Liberty used IBM 64-bit SDK for z/OS, Java Technology Edition, Version 8 Service Refresh 5 (Java 8 SR5).

IBM, the IBM logo, ibm.com and LinuxONE are trademarks of International Business Machines

Corporation, registered in many jurisdictions worldwide. Other product and service names might be trademarks of IBM or other companies. For a current list of IBM trademarks, please see http://www.ibm.com/legal/copytrade.shtml

All other company, product or service names may be trademarks or registered trademarks of others. Statements concerning IBM's future development plans and schedules are made for planning purposes only, and are subject to change or withdrawal without notice. Reseller prices may vary.

Contact information:

Lori Bosio

IBM Media Relations

bosiol@us.ibm.com

914-765-2367

Tim Dallman

IBM Media Relations

tdallman@us.ibm.com

507-287-0223

View original content: http://www.prnewswire.com/news-releases/new-ibm-linux-only-mainframe-delivers-breakthrough-security-for-next-gen-applications-300517548.html

SOURCE IBM