Cloud Solutions for IBM LinuxONE

Agile IT services delivered with unparalleled system uptime and data security

Highlights

- Cloud is a methodology for delivering computing services that allows users to self-service provision environments with the agility their businesses need
- Business-critical applications require a cloud solution that has uncompromised system uptime, airtight data security/privacy, and powerful vertical scalability architecture
- The LinuxONE platform provides unparalleled enterprise qualities of service
- LinuxONE combines exceptional speed and capability to support business agility and time to value for cloud solutions
- The vertical scale architecture makes LinuxONE the most efficient and cost-effective cloud platform for database workloads

As market pressures collapse the cycle of innovation into ever more compressed timeframes, businesses cannot afford to wait for computer infrastructure at traditional speeds. And speed isn't the only constraint. The complexity and scale of the computing problems businesses are attempting to solve are growing at an exponential rate. Driven by a ground-up rethinking by many businesses regarding the role of computing in the experience of their customers, business computing is transforming from being a back office support function to being at the forefront. Today a customer's interaction with, and experience of, a company is often largely (and sometimes completely) defined by interactions with that company's software and services. This is putting unprecedented demands on today's compute infrastructure—not just the need to scale with demand but also the agility required to keep up with the mandate for change presented by the needs of the business.

The Trusted and Secure Cloud for Business-Critical Applications

This need for business agility is driving companies to cloud solutions because they provide the accelerated time to value that today's business environment demands. Cloud is a methodology for delivering computing services that allows users to self-service provision environments with the agility their businesses need. But not all cloud workloads are created equal and speed isn't the only requirement to consider. Systems running mission-critical applications are the backbone of an enterprise. When they go down, there is major impact to a business. They often deal with sensitive or confidential information and are usually stateful workloads that store vital information for running a business. Because of these

factors, these workloads require a cloud solution that has uncompromised system uptime, airtight data security/privacy, and a powerful vertical scale architecture. And for these workloads, IBM LinuxONE presents the most securable, reliable, and scalable on premise cloud solution. LinuxONE can provide the same agility and time to value as other cloud services, along with unparalleled enterprise qualities of service.

The Most Powerful Cloud Database Infrastructure

Because LinuxONE utilizes dedicated high performance I/O processors, this cloud platform has unmatched performance and scalability for high-I/O workloads. When combined with its unique vertical scale architecture, which is a perfect fit for stateful workloads, LinuxONE is the most efficient and cost-effective cloud platform for database workloads. By combining the power of the LinuxONE architecture and the agility of standards-based cloud technologies, IBM has created the most powerful cloud database infrastructure offering in the market.

Standards-Based Cloud Management Solutions that Deliver Unmatched Qualities of Service

Establishing cloud environments on LinuxONE begins with virtualization technology. Customers have a choice of deploying z/VM®, the world's first commercially available hypervisor to provide virtualization technology, or a newly launched industry-standard Kernel-based Virtual Machine (KVM). Both hypervisors offer the ability to bring new virtual servers online in a matter of minutes (or less) to accommodate growth in users, though each technology has a different audience in mind.

With z/VM, clients can support more virtual servers than any other server in a single footprint. It provides industry leading capabilities to scale efficiently both horizontally and vertically. With a forty-plus year history of delivering a robust virtualization computing platform, z/VM offers a base for customers who want to exploit IBM virtualization technology on one of the industry's best-of-breed server environments, LinuxONE. IBM Wave for z/VM helps dramatically simplify administration and management of z/VM and virtual Linux servers. IBM Wave integrates seamlessly with z/VM and enterprise Linux environments to help administrators view, organize and manage resources in an optimized, and standardized manner.

The KVM offering is an ideal choice for clients who want open virtualization while taking advantage of the robustness, scalability, and security of the LinuxONE platform. KVM delivers a Linux-familiar administrator experience that can enable simplified virtualization management and operation. The standard interfaces that it provides allow for easy integration into an existing infrastructure.

To provide cloud management capability, both z/VM and KVM are OpenStack-enabled, the industry standard for ubiquitous cloud computing platforms. Applications that use the OpenStack application programming interfaces (APIs) are supported on both hypervisors. IBM offers IBM Cloud Manager with OpenStack, an Infrastructure-as-a-Service software product, to help establish a cloud infrastructure and simplify management of a virtualized environment including VMware vSphere (ESXi), Microsoft Hyper-V and Linux KVM on x86 (RHEL) and PowerKVM. Other industry OpenStack-based cloud management solutions can also run on LinuxONE, including but not limited to VMware's vRealize Automation product.

After establishing a cloud infrastructure, provisioning of workloads and applications with manual and semi-automated methods can be time consuming and costly. To address this, IBM has delivered patterns that are specific for the LinuxONE

platform. A pattern is a reusable piece of automation in combination with an operating system image that defines either a single product installation or a multiple integrated product installation that deploys a solution. With a library of patterns specific to LinuxONE, customers can automatically provision and de-provision software and virtual machines to help reduce complexity, time, and error rates. This approach reduces IT staff workload, allowing the use of the IT staff for other high-priority activities.

Hybrid Cloud Capabilities

Just as important, LinuxONE infrastructure fits elegantly into cross platform, hybrid cloud strategies. Standards-based OpenStack tooling gives businesses the ability to control a cloud infrastructure that spans the LinuxONE platform, on premise distributed infrastructure, and off premise cloud infrastructure using a consistent set of tools and technologies. LinuxONE connects in a secure, low-latency manner to SoftLayer and other on- or off-premise cloud environments. This consistency across platforms drives down operational costs and reduces the complexity that businesses need to absorb when pursuing hybrid cloud strategies, giving them the ability to efficiently pursue best-fit workload strategies.

IBM Bluemix is an open-standards, cloud platform for building, running, and managing applications. It offers developers choice of tools, APIs, and services. LinuxONE users have the ability to publish APIs of services hosted on LinuxONE to Bluemix, just as they would on any other Linux server. LinuxONE users can also access services hosted in Bluemix.

DevOps Solutions for Rapid Application Delivery and Quicker Time to Value

In order for an IT organization to meet the fast-paced demands of the new application economy, it requires the ability to rapidly and continuously plan, develop, deploy, test, maintain, and improve applications along with their supporting backend services. This requires organizations to adopt a DevOps approach, tightly integrating all aspects of development and operations for rapid application delivery and quicker time to value.

IBM DevOps Solutions provide complete management and automation of the software development cycle, from requirements capture, through application development and testing, then onwards to delivery and monitoring of the executing applications. Tools and processes are integrated for a complete and trusted end-to-end enterprise environment that is built on the qualities of LinuxONE Systems. The Collaborative Management Lifecycle (CLM) solution offers a complete multiplatform DevOps solution from idea capture to solution delivery. UrbanCode™ Deploy orchestrates and automates the deployment of applications, middleware configurations, and database changes into development, test, and production environments.

To simplify the process of identifying what hardware, software, and services can be used to achieve business agility with enterprise Qualities of Service, talk to your IBM server sales representative about recommended solution sets to accelerate success for businesses looking to invest in enterprise cloud solutions.

Why IBM?

Business-critical workloads require uncompromised transaction quality, unparalleled system uptime, airtight data security/privacy, and unmatched vertical scale. IBM LinuxONE Systems meet these demands and more, providing leading qualities of service with the agility businesses need.

The world's most innovative companies are using LinuxONE as their strategic cloud platform, reshaping both the fabric of their businesses and their client's lives.

For more information

To learn more about the Cloud Solutions for LinuxONE, please contact your IBM representative or IBM Business Partner, or visit the following website: **ibm.com**/linuxone

IBM Systems Lab Services will help connect LinuxONE clients to the appropriate service offerings and associated IBM service teams for their overall LinuxONE services needs. Contact us at stgls@us.ibm.com.

For specific training needs including training paths, certification, details on our technical training events, and access to our Global Training Partners, visit **ibm.com**/training

Additionally, IBM Global Financing can help you acquire the IT solutions that your business needs in the most cost-effective and strategic way possible. For credit-qualified clients we can customize an IT financing solution to suit your business requirements, enable effective cash management, and improve your total cost of ownership. IBM Global Financing is your smartest choice to fund critical IT investments and propel your business forward. For more information, visit: **ibm.com**/financing

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