BLOG POST

How Oracle Verrazzano Simplifies Application Management Across Container Clusters

How Oracle Verrazzano Completes Application Management as a Hybrid Cloud-Native Offering

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Oracle has committed to lowering the cost of operations for enterprises, with a strong commitment to standards, an integrated stack, and DNA that aims to reduce the total cost of ownership (TCO) of software solutions. Oracle delivers on the same value proposition with its hybrid cloud-native offering: Built on top of Oracle Linux and Oracle Cloud Native Environment, the newly released Oracle Verrazzano Enterprise Container Platform makes operating next-generation applications easy.

CxOs struggle with a dynamically evolving cloud technology stack and operations landscape, which increases complexity literally by the hour and requires them to operate workloads across public clouds and on-premises. Constellation refers to this challenge as the “cloud chasm,” the desire to operate in the cloud on the one side and the reality of operating in too many clouds and its related complexity.

Integrated solutions, delivered as a complete suite such as Oracle Verrazzano, can be a key solution for reducing complexity; lowering TCO; freeing up developer and IT capacity; and, most importantly, operating next-generation applications that are critical for the enterprise and enable Enterprise Acceleration.¹
WHAT ARE THE KEY TRENDS?

Applications have been the lifeblood of the digital economy and are very much what enables an enterprise to disrupt its competitors and/or remain relevant in its industry. Regardless of the reason an enterprise creates next-gen apps, the operation, monitoring, and management of those apps are complex. Unlike with applications in the precloud era, neither developers nor IT teams can catch up with the complexity created by the hybrid-cloud operating platform: The innovation speed as well as the competitor dynamics are simply too high. The following six trends are drivers for a next-generation compute platform such as Oracle Verrazzano (see Figure 1).

1. **Growing heterogeneous computing demands.** CxOs are confronted with rapidly changing computing demands. Beyond the challenge of satisfying the business need for big data, the computing requirements CxOs must meet range from support for machine learning to speech recognition for internal and external digital assistant/chatbot solutions, all the way to the edge of the enterprise. New computing platforms have entered the data center—for instance, with the advent of large GPU racks to run machine learning. An unprecedented platform diversity manifests itself at the edge of the enterprise to support the Internet of Things (IoT). And the pace of change is not slowing down, as shown by new demands for additional workforce support, such as augmented/mixed/virtual reality, and new user experience support, such as holographic displays.

2. **The effort to maximize data center utilization.** As workloads move from enterprise data centers to public cloud vendors, CxOs struggle to reach the level of utilization they intended when originally planning and investing in their data centers. One part of the challenge is the business practice of letting individual enterprise divisions choose their own automation tools, resulting in a lower degree of predictability for available workloads in on-premises data centers. An additional hurdle for CxOs is that physical infrastructure requests are moving more slowly and have a much-longer-lasting financial impact. Data center utilization can quickly change from full capacity to two-thirds utilization.
3. **The need for a single control plane.** The era of CxOs’ simply accepting that new products bring a new control plane is history. CxOs operating next-generation applications must run them as efficiently as possible, via a single control plane. This not only allows for more efficiency in managing infrastructure but also is the best way to effectively manage a heterogeneous landscape. Ramping down and ramping up resources as demand requires cannot happen with a zoo of instrumentation. At the same time, it is essential to automate resource scaling so that humans can focus on delivering value instead of spending time and energy on operational tasks.

4. **Rising complexity of IT operations.** The cloud has not fulfilled its promise to simplify IT for most organizations, because they are operating on a fluid automation plane that includes the public cloud (often multicloud) and on-premises computing resources. Business priorities, timing, and write-down cycles all determine the specific time when a workload may be moved to the public cloud or whether it should remain on-premises. Changes in executive management often result in a shifting workload mix (for instance, due to software-as-a-service [SaaS] portfolio changes) that affects the overall computing mix. A greater diversity in workloads and new next-gen application use cases create more heterogeneity and increase the complexity of IT operations.

5. **Onslaught of compliance pressure.** Enterprises are confronted with a rise in compliance requirements that, due to the operation of larger software portfolios, affect more of the computing and storage infrastructure than ever. Data privacy and data residency regulations often require enterprises to move workloads to different physical locations and sometimes from the cloud back to on-premises environments. Enterprises had not even recovered from addressing the European Union’s General Data Protection Regulation (GDPR) requirements when the California Consumer Privacy Act took effect, and they see more data residency rules coming their way. The rate of regulation will only increase, making CxOs desire a more fluid way to move workloads.

6. **Increasing degrees of cloud skepticism.** Although many next-generation application use cases are best (and sometimes only) operated in the cloud, there is still a degree of skepticism about computing in the public cloud. It ranges from rational challenges (such as whether infrastructure-as-a-service
[IaaS] vendor data instances are available inside a necessary jurisdiction) to reasonable challenges (hardware write-downs and connections to existing on-premises computing resources, such as mainframes) to less rational concerns (for instance, regarding data security). Nonetheless, it means that CIOs need to implement and operate their critical workloads in local data centers for at least the next decade.

**WHAT IS ORACLE VERRAZZANO?**

To address the challenges caused by the rising complexity of IT operations, Oracle has created Oracle Verrazzano, which leverages Oracle Cloud Native Environment and is powered by Oracle Linux. The combination of these three offerings creates a hybrid cloud-native solution (see Figure 2).

- **Oracle Linux provides the foundation.** Oracle Linux, which has been shipping for more than a decade and has millions of installations, provides the operating system layer that runs the overall Oracle cloud-native offering. Adherence to industry standards, robustness, and resilience characterize Oracle Linux.

- **Oracle Cloud Native Environment powers the platform.** On top of Oracle Linux, Oracle Cloud Native Environment powers the core platform capabilities. Essentially, Oracle Cloud Native Environment
consists of container runtime, storage, and networking capabilities managed in a Kubernetes platform, which allows for cluster lifecycle management and enables unified management of the overall offering.

• **Oracle Verrazzano manages applications.** On top of both Oracle Linux and Oracle Cloud Native Environment, Oracle Verrazzano provides the application management of container workloads: It allows for management of apps across clusters, thanks to its multicluster management powered by application lifecycle management (ALM), with integrated security and prewired observability. Additionally, Oracle Verrazzano provides support for popular frameworks such as Oracle Coherence, GraalVM, and polyglot frameworks such as Ruby and Node.js.

Diving into more detail on Oracle Verrazzano makes its next-generation computing value clear. Thanks to the capabilities of Oracle Cloud Native Environment, Oracle Verrazzano runs not only on Oracle Linux but also on Oracle Cloud Infrastructure (OCI) as well as on Amazon Web Services (AWS) and Microsoft Azure. This allows workload portability across the on-premises environment and the public cloud of choice for an enterprise enabled by Identicality.²

**Figure 2. The Oracle Verrazzano Marketecture**
WHY DOES IT MATTER?

Figure 3 illustrates the following value drivers for Oracle Verrazzano:

- **High flexibility.** Enterprises want to have deployment freedom for their next-generation applications to avoid single-vendor lock-in. Oracle Verrazzano provides that portability—across the edge, on-premises, and in the cloud.

- **Hybrid made real.** There is a lot of hype, confusion, and disinformation surrounding the term *hybrid cloud*. When a vendor, in this case Oracle, supports the deployment of workloads across the edge, on-premises, and in the cloud, this makes hybrid cloud real, effectively delivering a next-generation computing platform for the enterprises using it.

- **Higher developer productivity.** Enterprises are chronically short of developers, so the focus must be on platforms that enable them to reuse code that is already built, tested, and deployed. The portability is determined by the Identicality of the platforms supported, and that is where Oracle Verrazzano excels.

- **Lower TCO.** When enterprises can reduce manual labor and oversight, they save on highly paid resources and typically reorient those resources to higher-level and higher-value tasks. Oracle Verrazzano delivers on that, enabling enterprises to lower the cost of their automation.

- **Data sovereignty addressed with true hybrid cloud.** Data is governed by a lot of statutory and regulatory mandates and processes, which are a headache for CxOs needing to ensure compliance for their respective enterprises. Being able to support local and on-premises instances of enterprise applications to stay compliant with data residency and privacy needs is a key capability delivered by Oracle Verrazzano.
• Being standards-based. A concern of CxOs is that a vendor may not be able to support platforms in the long run and/or that they may get locked into proprietary platforms. Being standards-based is a key driver for making these concerns disappear, and Oracle Verrazzano is built completely on standards.

**ADVICE FOR CXOS**

Constellation has the following recommendations for CxOs regarding the new Oracle Verrazzano offering:

1. **Understand current and future workloads of your enterprise.** CxOs need to look at the existing workloads of their enterprise and determine where to deploy them going forward. Because Oracle Verrazzano supports the full range of public cloud, edge, and on-premises options, there is no right or wrong answer about where a workload must run. Equally important is to plan for the home of future workloads. Likewise, Oracle Verrazzano makes this decision of little consequence, because CxO can deploy workloads across the full spectrum.
2. **Cash in on the flexibility premium without being locked in.** All too often, CxOs need to make platform decisions and find their enterprise being locked into vendor platforms that excel only in a subset of relevant workload deployment options for their enterprise. Even worse is if the enterprise needs a different platform mix going forward. Oracle Verrazzano does not come with these limitations and, as such, enables customers to collect a premium while being flexible.

3. **Boost developer velocity.** Support for edge, public cloud, and on-premises deployments enables CxOs to get more code into production from their development resources. With developer capacity and talent at a premium, this is a key benefit of Oracle Verrazzano.

4. **Get ready for the cloud.** Being able to run workloads on-premises today that are simultaneously cloud-ready is a key step for future-proofing applications as well as workloads.

5. **Conduct a cost/benefit analysis as an Oracle prospect.** Enterprises have limited options when it comes to choosing next-generation computing platform offerings from a single vendor. Oracle’s DNA is rooted in the enterprise and supports workload capability across the relevant enterprise platforms, making Oracle an attractive partner for enterprises.

6. **Consider this offering for next-generation applications.** Enterprises need to build next-generation applications that reflect the new best practices in the era of Infinite Computing. These applications must run in the cloud, but there are many reasons that enterprises may want to start with them on-premises. Being able to cloud-proof them from the get-go is very attractive for CxOs.

7. **Practice commercial prudence.** As always, CxOs need to practice commercial prudence when it comes to platform decisions. One-time costs, ongoing costs, capex versus opex, and lock-in effects are the key areas to consider before making platform decisions. Container platform decisions are
no exception to the need for commercial prudence in all phases of purchase, adoption, and the usage cycle.

**MY POV**

Enterprises need to constantly rethink their IT strategies, because they face an uncertain future and need to practice Enterprise Acceleration. Platform choice is critical for the success of enterprises: Their ability to run software as a differentiator is determined by the quality of the platforms they choose. More importantly, the velocity enabled by a platform determines the velocity at which an enterprise can operate. CxOs therefore need to make sure that the platform they select for their enterprise’s next-generation applications has the necessary inherent speed capabilities. And nothing achieves higher platform speed than workload capability—ideally while maintaining full freedom of deployment on relevant enterprise platforms.

Oracle Verrazzano does exactly that, providing the critical workload capability via Identicality of the platform across the edge, public cloud, and on-premises environment. This provides freedom of deployment and fosters higher developer velocity, all leading to Enterprise Acceleration via software.
RELATED RESEARCH


Finally, check the Constellation Research website at www.constellationr.com for more Offering Overviews for the vendors covered in “Market Overview—Next-Gen Computing: The Enterprise Computing Model for the 2020s.”


**ORACLE-RELATED RESEARCH**


ENDNOTES


3 Mueller uses the term *Infinite Computing* to describe how computing resources have become nearly infinite for enterprise purposes, effectively eliminating the need to size hardware resources. For more details, see: Holger Mueller, “The Era of Infinite Computing Triggers Next-Generation Applications,” Constellation Research, June 1, 2018. https://www.constellationr.com/research/era-infinite-computing-triggers-next-generation-applications
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Holger Mueller is a vice president and principal analyst at Constellation Research. He provides guidance for the fundamental enablers of the cloud, IaaS, and PaaS, with forays up the tech stack into big data, analytics, and SaaS. Mueller provides strategy and counsel to key clients, including chief information officers, chief technology officers, chief product officers, investment analysts, venture capitalists, sell-side firms, and technology buyers.

Prior to joining Constellation Research, Mueller was VP of products for NorthgateArinso, a KKR company. He led the transformation of products to the cloud and laid the foundation for new business-process-as-a-service (BPaaS) capabilities. Previously he was the chief application architect with SAP and was also VP of products for FICO. Before that he worked for Oracle in various management functions—on both the application development (CRM, Fusion) and business development sides. Mueller started his career with Kiefer & Veittinger, which he helped grow from a startup to Europe’s largest CRM vendor from 1995 onward. Mueller has a Diplom-Kaufmann degree from the University of Mannheim, with a focus on information science, marketing, international management, and chemical technology. A native European, Mueller speaks six languages.
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