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Oracle Verrazzano Enterprise Container Platform

Application developers and development teams want an open, integrated platform for their container-based deployments, so that they can focus on building applications that can be run across clouds. Oracle Verrazzano Enterprise Container Platform meets this need, providing a comprehensive platform for deploying and managing container-based applications running on Kubernetes on-premises, in private clouds, Oracle Cloud Infrastructure, and other public clouds. Oracle Verrazzano Enterprise Container Platform combines licensing and support for the components below into a single subscription.

Oracle Verrazzano Enterprise Edition (EE) is based on the open source Verrazzano project and forms the core of Oracle Verrazzano Enterprise Container Platform. It combines best of breed open source technologies into an integrated system for deploying and managing traditional applications and microservices using Open Application Model (OAM) models. Oracle Verrazzano EE supports Oracle Container Engine for Kubernetes, Oracle Linux Cloud Native Environment, and other Kubernetes implementations for portability across clouds, and to support multi-cloud deployments. It offers a preconfigured observability stack for applications, using familiar Prometheus, Grafana, Elasticsearch and Kibana technologies. Istio is used for securing communications to deployments, along with Keycloak for identity and access management. The platform provides enhanced handling for most Java workloads, and fully supports polyglot workloads with the same automated ingress, Kubernetes deployment and service creation, inclusion in the service mesh, automated observability, with advanced support for WebLogic Server, Coherence and Helidon deployments.

Oracle Coherence Enterprise Edition is included for use within Oracle Verrazzano EE managed containers, to enable performance, scalability, reliability, and availability of deployed applications.

Oracle Support for Helidon, Micronaut, and Spring Boot is also included with Oracle Verrazzano Enterprise Container Platform Subscription to give developers maximum flexibility and support for developing microservices, especially for Java microservices using these popular frameworks. Java SE subscriptions are available separately to provide licenses and support for the Java SE and GraalVM EE technologies that can be used by these frameworks.

Included services

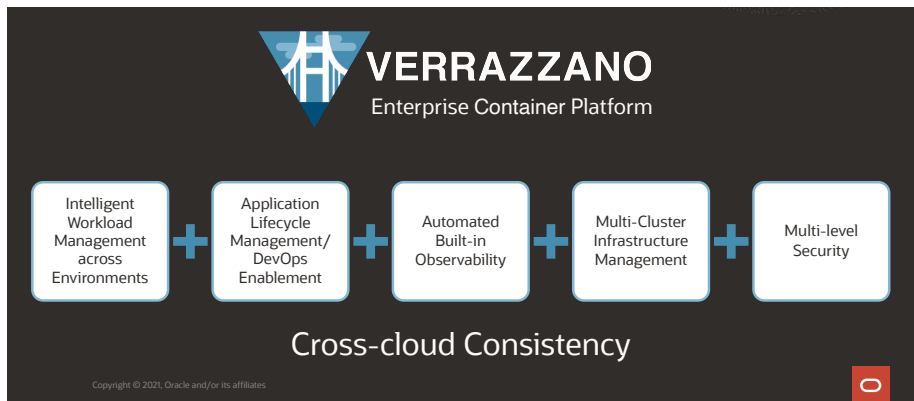Oracle Verrazzano Enterprise Container Platform Subscription Includes

- Oracle Verrazzano Enterprise Edition License and Support
- Oracle Coherence Enterprise Edition License and Support
- Oracle Support for Helidon
- Oracle Support for Micronaut
- Oracle Support for Spring Boot

Oracle Verrazzano Enterprise Edition

- Deploy and manage apps and microservices on Kubernetes
- Manage multiple application components as a single app
- Portability across clouds
- Multi-cloud deployments
- Observability stack
- Built-in service mesh
- Embedded identity provider
- Polyglot microservices support
- Advanced WebLogic Server and Coherence support

Oracle Coherence Enterprise Edition

- Distributed caching and in-memory grid processing
- Performance, scalability, reliability for applications
- Restricted to Verrazzano managed containers

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VERRAZZANO
Enterprise Container Platform

| Intelligent Workload Management across Environments | Application Lifecycle Management/ DevOps Enablement | Automated Built-in Observability | Multi-Cluster Infrastructure Management | Multi-level Security |

Cross-cloud Consistency

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Enterprise Requirements for Modernizing Applications

Many enterprises have an investment in custom applications. Many of these applications are critical to their mission and business; some of these applications are traditional WebLogic Server applications, and some are not. As the industry focus shifts to the cloud, these enterprises are looking for solutions that enable them to flexibly adopt cloud-native technologies to improve productivity and innovation, to modernize their existing applications, and to run their applications where they choose.

Oracle Verrazzano Enterprise Container Platform addresses these needs by enabling enterprises to:

- Deploy, manage, and secure container-based applications in Kubernetes.

- Unify application lifecycle management across microservices and traditional WebLogic Server applications.

- Standardize management across Kubernetes clusters on-premises, on Oracle Cloud Infrastructure, and on other public clouds.

Oracle Verrazzano Enterprise Container Platform – What Is It?

Oracle Verrazzano Enterprise Container Platform is a container deployment and management platform that embodies the core requirements and design principles of cloud-native application development. It runs on top of Kubernetes – on-premises and in the cloud – and enables you to deploy your container applications to any of the Kubernetes clusters where it is installed.

The core of Oracle Verrazzano Enterprise Container Platform is Oracle Verrazzano Enterprise Edition (EE), a curated collection of open source components that are provisioned as an opinionated stack, designed to provide the following features:

- **Intelligent workload management** across Kubernetes clusters running in the cloud or on-premises with automatic provisioning of select operators, creation of Kubernetes objects, application modeling for advanced deployment scenarios, and extended features for Oracle WebLogic Server, Oracle Coherence, and Helidon workloads. The result is reduced operational

Oracle Support for Helidon

- Java microservices framework
- Based on open standards
- Restricted to Verrazzano managed containers

Oracle Support for Micronaut

- JVM-based framework for microservice, serverless apps
- Restricted to Verrazzano managed containers

Oracle Support for Spring Boot

- Framework for standalone Java/Spring-based applications
- Restricted to Verrazzano managed containers

Related products

Oracle Verrazzano supports and integrates with Oracle Products, Services and Support offerings like the following, enabling teams to construct a complete and robust environment for complete application and infrastructure solutions:

- Oracle Cloud Infrastructure and Services
- Oracle Container Engine for Kubernetes (OKE)
- Oracle WebLogic Server and WebLogic Server Kubernetes Toolkit
- Oracle Coherence and Coherence Operator
- Oracle Support for Helidon, Micronaut, and Spring Boot Oracle Cloud Infrastructure
- Oracle Linux
- Oracle Linux Cloud Native Environment
- Oracle Java SE Subscriptions and GraalVM, as well as Java EE and Jakarta EE
- Oracle Database and Oracle Database Cloud Services (as used by applications)

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overhead, portability across clouds, and increased flexibility for managing containerized applications.

- **Automated, built-in observability** for system and application components, including metrics and log collection from all managed workloads, and pre-configured dashboards, which reduces overhead and improves application manageability and up time.

- **Application lifecycle management** with optimized cross-cluster updates with DevOps and GitOps enablement, which also reduces overhead and improves uptime.

- **Polyglot workload** enablement with built-in application handling for Java and non-Java applications. A single DevOps platform for all of your container applications reduces complexity and overhead, and promotes standardization.

- **Kubernetes infrastructure management** with deep visibility and management of underlying Kubernetes clusters, which enables faster problem detection and root cause analysis.

- **Multi-level platform security** with protection for network traffic, system components, and application components to reduce overhead and reduce risk.

- **Cross-cloud consistency.** You get a consistent platform for container applications that you can run on-premises, in Oracle Cloud Infrastructure, and in 3rd party clouds. It uses popular open source technologies such as Prometheus and Grafana, so it is easy to adopt and work into your workflows with reduced management overhead and reduced adoption costs.

Oracle Verrazzano Enterprise Container Platform is made available via an annual subscription, that includes Oracle Verrazzano EE license and support, and includes the following, restricted to use in containers that are deployed and managed by Oracle Verrazzano EE:

- **Oracle Coherence Enterprise Edition (EE)** license and support. Oracle Coherence EE provides an in-memory data grid to improve application and microservice performance, scalability, reliability, and availability. Coherence can be used as a distributed cache for applications and microservices, as a platform for performing distributed processing of data stored in the grid, and as the data store of record for container-based applications. It also provides integration with Helidon, Micronaut, Spring Boot, WebLogic Server, as well as other runtimes.

- **Oracle Support for Helidon.** Helidon is developed in open source and provides a set of Java libraries for developing microservices. The Helidon MP programming model supports standards-based MicroProfile APIs, using a development model that is familiar to Java EE and Jakarta EE developers. Helidon SE provides a small, functional style API for developers. Java SE and GraalVM licenses and support are available via a separate subscription.

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- **Oracle Support for Micronaut.** Micronaut is developed in open source and provides a modern, JVM-based, full-stack framework for building modular, easily testable microservices and serverless applications. set of Java libraries for developing microservices. The Helidon MP programming model supports MicroProfile APIs, providing a development model that is familiar to Java EE and Jakarta EE developers. Java SE and GraalVM licenses and support are available via a separate subscription.

- **Oracle Support for Spring Boot.** Spring Boot is developed in open source and provides a popular framework for creation of production-grade applications based on Spring and Java, that you can boot and run without requiring an external web server process. Java SE and GraalVM licenses and support are available via separate subscription.

Deploying Applications with Oracle Verrazzano Enterprise Container Platform

Oracle Verrazzano Enterprise Container Platform subscriptions contain licenses and support for popular runtime frameworks, so that developers can use fully supported development environments for their microservices. The core Oracle Verrazzano EE system is certified for deployment and management of microservices using these runtime frameworks, and for deployment and management of Oracle WebLogic Server and Oracle Coherence applications. It can also be used for deployment and management of polyglot container-based applications or microservices.

Open Application Model (OAM) is a community-driven specification aimed at improving developer productivity and application portability. Oracle Verrazzano EE leverages OAM so that, having built the core application business logic, developers can create container applications that are agnostic to the cloud environment they will run in. Application operators can assemble those applications and provide environment-specific traits and scopes when deploying the applications. All of this is driven by DevOps- and GitOps-friendly YAML files.

Oracle has extended the OAM specification in Oracle Verrazzano EE for Oracle WebLogic Server, Oracle Coherence, and Helidon applications. For each of these application types, Oracle Verrazzano EE determines the distinct application handling required, and deploys additional operators and other resources as needed.

When you deploy an application with Oracle Verrazzano EE, the system automatically takes the following actions:

- Distributes Kubernetes custom resources for the application to the cluster where the application will be deployed.

- Creates namespaces for the application.

- Copies secrets to the namespace.

- For Oracle WebLogic Server and Oracle Coherence applications, deploys required operators and passes custom resources to the operators.

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- For other applications, the system creates a Kubernetes deployment and a Kubernetes Service.

- Creates network policies in the Istio service mesh.

- Creates an ingress into the service mesh.

- Sets up metric and log record transfer to the Oracle Verrazzano EE observability stack.

Oracle Verrazzano EE ensures that your applications, developed with your runtime of choice, are deployed securely in standard Kubernetes containers, with out-of-the-box observability support using popular Kubernetes tools, portability across Kubernetes clouds and clusters, and full support from Oracle.

Benefits of Oracle Verrazzano Enterprise Container Platform

The benefits of using Oracle Verrazzano Enterprise Container Platform include:

Improving application developer productivity and accelerating innovation
Even across different business applications, and regardless of your use of microservices or traditional Oracle WebLogic Server application technologies, by adopting containers and container management technologies, and adopting the design principles of DevOps and cloud-native application development, you can decrease deployment times, increase application uptime, and spend more developer time on solving business problems. Oracle Verrazzano EE takes this a step further with an assembled and automated complementary technology stack that further reduces time needed to roll out and manage your applications on Day 1, Day 2, and Day 102.

Modernizing your existing applications using your choice of microservices or traditional Oracle WebLogic Server application technologies within each business application. Oracle Verrazzano EE builds on the Oracle WebLogic Kubernetes Toolkit by not only enabling you to easily move your application to containers and to Kubernetes, but also to automate the deployment of the WebLogic Kubernetes Operator, provisioning of the WebLogic domain, configuring access to the application, and collecting metrics and log records for the domain and application.

Realize Cloud Native benefits without lock-in.
Oracle Verrazzano EE provides a cloud-neutral approach to achieve the same observability and lifecycle benefits for all container applications, regardless of where they are deployed: on-premises, on Oracle Cloud Infrastructure, or on other public clouds.

Integration with Oracle Products and Support

Oracle Verrazzano Enterprise Container Platform leverages and supports a diverse set of open source technologies for developing, deploying, and managing applications. In addition, it supports and integrates with Oracle Products, Services and Support offerings including the following, enabling you to

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construct a complete and robust environment for complete application and infrastructure solutions:

- Oracle Cloud Infrastructure
- Oracle Container Engine for Kubernetes (OKE)
- Oracle Cloud Infrastructure Services
- Oracle Linux
- Oracle Linux Cloud Native Environment
- Oracle Private Cloud Appliance
- Oracle Java SE Subscriptions and GraalVM
- Oracle WebLogic Server and WebLogic Server Kubernetes Toolkit
- Oracle Coherence and Coherence Operator
- Oracle Support for Helidon, Micronaut, and Spring Boot
- Oracle Database and Oracle Database Cloud Services (as used by applications)
- MySQL and MySQL Database Service (as used by applications)
- Oracle NoSQL Database and Oracle NoSQL Database Services

For complete information on usage of Oracle Verrazzano Enterprise Container Platform and use of Oracle products and open source technologies, consult the applicable Oracle product, service, and support and/or documentation in open source.

Summary

Oracle Verrazzano Enterprise Container Platform provides a comprehensive platform for deploying and managing container-based applications running on Kubernetes in public and private clouds. Oracle Verrazzano Enterprise Container Platform will enable you to:

- Deploy, manage, and secure container-based applications in Kubernetes.
- Unify application lifecycle management across microservices and traditional WebLogic Server applications.
- Standardize management across Kubernetes clusters on-premises, on Oracle Cloud Infrastructure, and on other public clouds.

Contact Oracle today to learn how you can leverage Oracle Verrazzano Enterprise Container Platform for deploying and managing your container-based applications.

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