

ORACLE

Cloud Native for High Performance Computing

Quickly build, run, and rearchitect dynamic applications using AI on a reliable, scalable cloud



Cloud native rises to the challenge

Cloud native applications are built to thrive in the cloud. They're scalable, resilient, and agile, thanks to building blocks such as containers and microservices, and they're architected to manage the dynamic nature of cloud infrastructure. Development cycles can be fast, and cloud native apps are designed to use resources efficiently. No wonder they're gaining in popularity. In fact, the global cloud native platforms market, estimated at US\$5.85 billion in 2024, is predicted to expand with a compound annual growth rate of 26.77% through 2034, according to Precedence Research.

That adds up to a US\$62.72 billion market within 10 years.

Cloud native systems are ideal for on-premises, hybrid, and multicloud deployments. Developers using these systems can become more productive and enjoy reduced complexity by leveraging artificial intelligence and machine learning (ML).

Opportunities in cloud native today include

- Integrated AI/ML capabilities to enhance automation and analytics
- Serverless architectures to help simplify multicloud deployments, cut costs, and boost portability
- Kubernetes orchestration to help developers remove management complexity as a barrier to scale



Efficient application development for high performance computing

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Containers are ideal for AI/ML workloads

Package, deploy, run, and scale containerized applications more efficiently—at up to [3.4X better cost performance versus AWS, Azure, and Google Cloud](#).

Speed application enhancements with continuous integration/continuous deployment (CI/CD) pipelines, serverless functions, and Kubernetes managed services. Boost performance and utilization while lowering costs.

OCI Kubernetes Engine (OKE)

Oracle Cloud Infrastructure (OCI) has been recognized for Kubernetes and serverless price-performance leadership: CIO magazine calls Oracle a “leader in cloud native technologies,” with proven expertise in Kubernetes and serverless solutions. Oracle also provides full-stack disaster recovery for containers that can get applications back online faster than ever.

Oracle proudly contributes to open source projects that facilitate Kubernetes deployments, including Helm, Kubeflow, and many more.

Container instances provide serverless compute services that developers can spin up to run containers easily and quickly—without needing to allocate the infrastructure first.

OCI Container Registry can securely store, manage, and share container images with a familiar Docker command-line interface, API interface, and built-in security scanning and image signing.

Containers and AI

OKE can help you orchestrate and automate, but it's also optimized for AI. This is key because model training requires lots of computational power, typically in batches, while model inferencing generally runs more frequently yet less intensely than training. OKE can recognize changes in demand and dynamically allocate more or fewer resources to efficiently meet the need while helping manage cost.

OKE offers centralized management with built-in security and resiliency, letting you schedule and prioritize jobs across a resource pool and deliver high performance for mission-critical workloads.

Explore how our customers drive innovation with Oracle's cloud native services, including OCI Kubernetes Engine.

[Learn more about customer successes](#)



Work how you want—OCI is flexible

Use technology commonly utilized by developers and DevOps engineers

Organizations have options with Oracle.

OCI offers support for popular DevOps tools, including GitHub, GitLab, Jenkins, Ansible, Rancher, Spinnaker, and the Elasticsearch, FluentD, and Kibana (EFK) stack, allowing for easy integration into workflows.

OCI provides integrated development environment plugins for Visual Studio, Eclipse, and other environments, simplifying the development process with familiar tools, while support for platforms such as VMware Tanzu Platform, Azure, and Pulumi extend OCI's compatibility across different cloud environments.

In addition, developers and DevOps engineers can deploy how they want to: bare metal, virtual machines, containers with or without OKE's control plane, or a mix. Flexibility is key, and we deliver.



Power where you need it

Oracle is the only hyperscaler capable of delivering more than 100 cloud services to any environment, anywhere, so you can run workloads in the locations of your choice.



Options include multicloud, EU sovereign, US government, UK government, and Australian government.



There's also a government/defense isolated region option for air-gap requirements.



Dedicated regions let you host OCI where you need it—in your data center or elsewhere—with just a few racks.



Oracle Alloy is a white label option that lets partners deliver customized solutions built on OCI to their customers.

The OCI across all these environments—in architecture, services, experience, and value—is the same. And Oracle Roving Edge Infrastructure puts the cloud at the edge of networks, where data is often generated, as with Internet of Things applications.

GPUs for every workload

OCI has GPU options for workloads ranging from small-to large-scale AI.

- For the smallest workloads, select from both bare metal and VM instances with NVIDIA A10 GPUs.
- For midlevel scale-out workloads, [Oracle offers NVIDIA A100 VMs and NVIDIA L40S bare metal.](#)
- Run the largest workloads on NVIDIA A100, H100, and H200 bare metal GPUs.

Additional forthcoming bare metal options, including NVIDIA DGX B200 and Grace Blackwell, can be ordered today.

To harness all that GPU and CPU compute power, most customers turn to Kubernetes to orchestrate their AI resources. As an open standard, Kubernetes is extremely flexible, with extensive automation, and portable across environments, whether cloud to cloud or on-premises to cloud in any direction.



Inworld “We use OCI Kubernetes Engine (OKE) to orchestrate our GPU workloads, allowing us to sleep well at night. Now we think about business problems, not infrastructure problems.”

Igor Poletaev
Chief Science Officer, Inworld

[Learn more](#)



Getting started with Oracle



AI Solutions Hub

The AI Solutions Hub is where you'll find a curated list of ready-made solutions; several use OKE.

We've distilled each solution into a brief description and quick video, along with step-by-step instructions, sample code on GitHub, service documentation, and, in some cases, longer-duration hands-on lab-type videos.

We created the AI Solutions Hub to help you quickly explore AI in your projects and remove barriers to implementing them. And if you don't already have an OCI account, simply sign up for a trial account to get a US\$300 credit to use for 30 days to determine if the capabilities in these solutions are right for you.

[🔗 Learn more](#)



OCI AI Blueprints

The OCI AI Blueprints platform aims to deliver a no-code deployment workflow for the most popular GenAI workloads by making hardware, OCI Compute, and software stack recommendations customized for you. Get up and running with AI workloads in just a few clicks by using these premade stack deployments.

[🔗 Learn more](#)

Begin building with powerful tools and resources from Oracle Cloud Infrastructure

Start your project in the cloud with OCI. OCI delivers extensive cloud native, artificial intelligence, and high performance computing capabilities to help speed development and improve operational efficiency.

With a range of tools and resources for organizations and developers of all sizes, OCI provides support at every stage.

Visit our cloud native page to get started with Oracle's cloud native services by clicking the button below. Learn how to advance your AI initiatives with resources from our AI Solutions Hub, including AI blueprints, instructional videos, and sample code designed to accelerate your development.

Sign up for Oracle Cloud Free Tier and try OCI for free to start using Oracle application development services. Begin development with OCI Generative AI, OCI AI Agent Platform, and Oracle Code Assist.

Get started

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