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Oracle Roving Edge Device

The Oracle Roving Edge Device (RED) is a portable hardware platform providing cloud-integrated services that enable OCI cloud compute and storage at the edge of networks and in disconnected locations.

Develop at the Core, Deploy at the Edge

Oracle Cloud Infrastructure (OCI) the fastest growing cloud in the world, offers the best core-to-edge portfolio across the public cloud, multi-cloud, Cloud@Customer and the edge. The Oracle Roving Edge Device (RED) delivers core OCI IaaS capabilities and platform services with unparalleled processing power, seamless connectivity, and ironclad security at the edge of networks and in disconnected locations.

The Roving Edge Device is ideal for customers who desire to run mission critical, time-sensitive applications at the edge with low latency processing closer to the point of data generation and ingestion. With Oracle's ecosystem of IaaS services being deployed right at the edge, customers can benefit from remote management and operations while ensuring performance, reliability and security.

The Roving Edge Device runs the same compute, storage and network services as in Oracle Public Cloud, delivering the simplicity, agility and elasticity of a cloud-based deployment. With this service running at the edge customers retain control of data and physical security. The exact same APIs and tools available in Oracle Public Cloud are also available on Roving Edge for a truly consistent application development framework.

DEPLOY AI/ML WORKLOADS AT THE EDGE

The 2nd generation Roving Edge Device (RED) introduces a GPU Optimized configuration featuring three NVIDIA L4 GPUs alongside the 4th Gen Intel® Xeon® 8480+ with 56 cores and 512GB DDR5 memory. This capability allows users to run AI/ML workloads right at the source of data generation for faster data processing, anomaly and threat detection, analytics as well as facial recognition among a variety of workloads.

ROVING EDGE DEVICE HARDWARE

The 2nd generation RED offers three specialized configurations:

- **Standard Configuration**: Powered by 4th Gen Intel® Xeon® 8480+ with 56 cores. Perfect for versatile, general-purpose workloads, offering robust processing power and memory.

- **GPU Optimized Configuration**: Featuring three NVIDIA L4 GPUs alongside the 4th Gen Intel® Xeon® 8480+ with 56 cores and 512GB DDR5 memory. Ideal for AI/ML, video processing, and high-performance computing

Key Benefits

- Low-latency intensive data processing capability, removing data upload bottlenecks, and ensuring data sovereignty

- Ability to run time-sensitive custom apps in locations typically lacking consistent network connectivity

- All-environment optimized device – ruggedized, portable, and scalable

- Unified customer experience across OCI and Oracle Roving Edge Infrastructure makes adoption, control, and management effortless

- Cost-effective edge solution that extends OCI functionality for Oracle Cloud and other applications and ensure regulatory compliance

Related services

The following services are complementary to Roving Edge Device:

- Oracle Cloud Infrastructure
- Compute Cloud@Customer
- Private Cloud Appliance

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- **Storage Optimized Configuration**: With eight 15.38TB NVMe SSDs and the same powerful 4th Gen Intel® Xeon® 8480+ with 56 cores. Designed for extensive data storage and management, providing unmatched capacity and speed.

All three configurations of the RED are available in **Standard** and **Ruggedized** form factors.

ROVING EDGE DEVICE SOFTWARE

Oracle Roving Edge Infrastructure software stack utilizes the same infrastructure APIs, CLI and SDK as public Oracle Cloud Infrastructure which enables full compatibility with OCI, providing customers with OCI compute at the edge. Oracle Roving Edge Infrastructure provides core IaaS and platform services that enable customers' Oracle Cloud workloads to be executed on Roving Edge Ultras and Roving Edge RED nodes.

This positions customers to develop, test, and validate their workloads and applications in the Oracle Cloud environment, and then transfer them to the edge nodes at provisioning via the Oracle Cloud Console. Utilizing the infrastructure-as-code feature available with Compute Cloud@Customer, Customers can use existing licenses to build and move images with Oracle Database or Analytics to the edge nodes for field processing.

Once deployed, customers can synchronize object storage between the edge nodes and cloud when a network connection is available.

Table 1 – Roving Edge Device: Infrastructure Features

	INFRASTRUCTURE	OCI INTEROPERABILITY
OCI Services and Features	**Compute** **VM Shapes** - VM instances with 1-48 OCPUs and up to 384 GB of memory **Storage** **Block** - "Balanced" and (optional) "Performance" pools - On-demand and policy-based backups **Object** - OCI object store **Network** - VCNs, Subnets, Route Tables, …	**User & Administrative Access** - OCI API, CLI and SDK - OCI-identical user interface - Terraform **Portability** Seamless movement to and from OCI - Infrastructure configuration - VM images - Terraform scripts - Infrastructure-as-code (Software defined compute, storage and networking) **Governance** - OCI-identical user management - Policy based access

Available OCI Resources	**Compute**
	
	- Compute Total: 56 OCPUs
	  - Usable: 48 OCPUs
	- Memory Total: 512 GB
	  - Usable: 384 GB
	
	Storage
	
	- 61 TB – 123 TB Combined Balanced Block, File, and Object storage	

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Table 2 – Roving Edge Device: Technical Specifications and System Hardware

ITEM	COMPUTE OPTIMIZED	GPU OPTIMIZED	STORAGE OPTIMIZED
Number of Available OCPUs	48		
CPU	Intel 8480+ Sapphire Rapids, 56C, 350W		
GPU	n/a	3 NVIDIA L4 Tensor Core GPU	n/a
RAM	64GB DDR5 DIMM (512GB)		
Memory Available for Guest VMs	384 GB		
Storage	4 x 13.6 TB SSDs providing: 54.4 TB RAW storage Usable*: Block Volume Storage (replication): 24.8TB Object Storage (erasure coding): 37.2TB		8 x 13.6 SSDs providing: 108.8 TB RAW storage Usable*: Block Volume Storage (replication): 33.07TB Object Storage (erasure coding): 74.4TB
Networking	3x Quad port Intel Corporation Ethernet Controller X710 for 10GBASE-T	1x Quad port Intel Corporation Ethernet Controller X710 for 10GBASE-T	
Ethernet Cables	CAT6 for 1000 BASE-TX operation and CAT6A for 10GBASE-T operation		
Security	TPM, Trenchboot SecureBoot, physical tamper evidence, chassis intrusion detection		
Compliance and Certifications	**FIPS 140-3 Level 2, MIL-STD-810H, MIL-STD-461G**		

*Usable storage (shared) is a device storage pool that's allocated between block volumes and object storage. The total storage available can vary depending on the ratio of storage types used.

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Table 3 – Roving Edge Device: Environmental Specifications

METRIC			COMPUTE OPTIMIZED	GPU OPTIMIZED	STORAGE OPTIMIZED
Dimensions	System		18.6" L x 17.1" W x 3.47" H		
			With Packaging: 24.31" L X 29.81" W X 12.13" H		
	Rugged Case		24.31" L X 29.81" W X 12.13" H		
Weight	System		30 lbs (13.6 Kg) without rugged case		
	Rugged Case		82.7 lbs (37.5 Kg) with rugged case combined weight		
Maximum power usage Watts			1100		
Input Voltage			100 - 240VAC		
Connector Type			C14		
Noise			62.8dB - 71dB (average 66.6dB)		
Operating Temperature			0℃ to +50℃		
Typical power usage Watts (at 70%)			770		
Cooling at maximum usage BTU/Hr			3755		
Cooling at typical usage BTU/Hr			2629		
Airflow at usage CFM			**Maximum- 173.86 (Typical: 121.70)**		

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