

Oracle 5G network functions on Oracle Cloud Infrastructure

Run, build, and optimize key workloads with Oracle Cloud for Telco

July, 2024, Version [\[1.0\]](#)

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Public

Purpose statement

This document provides an overview of current activities and capabilities Oracle offers to Communication Service Providers (CSPs), including telco specific IT solutions, Telco Cloud, and deployment of Oracle Communications 5G Network Functions on Oracle Cloud Infrastructure.

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Overview

Oracle Communications has developed a comprehensive portfolio of public, dedicated, and edge infrastructure for the telecommunications industry. To meet the demand for open standards and the evolving reality of hybrid multicloud that's been years in the making Oracle is accelerating this with the Oracle on Oracle offering of Oracle Communications 5G Standalone core (SA) Network Functions certified on Oracle Cloud Infrastructure (OCI). With interoperability in Oracle's DNA, and a long history of hybrid, multivendor environments, this also enables OCI customers to build their own best of breed 5G network, utilizing Oracle Communications 5G core cloud native network functions.

The market opportunity

The communications service provider market is reaching an inflection point in which many of the legacy IT, and network application workloads will be deployed as containers over the next several years, which makes any hyperscale cloud provider a potential provider to help accelerate transformation.

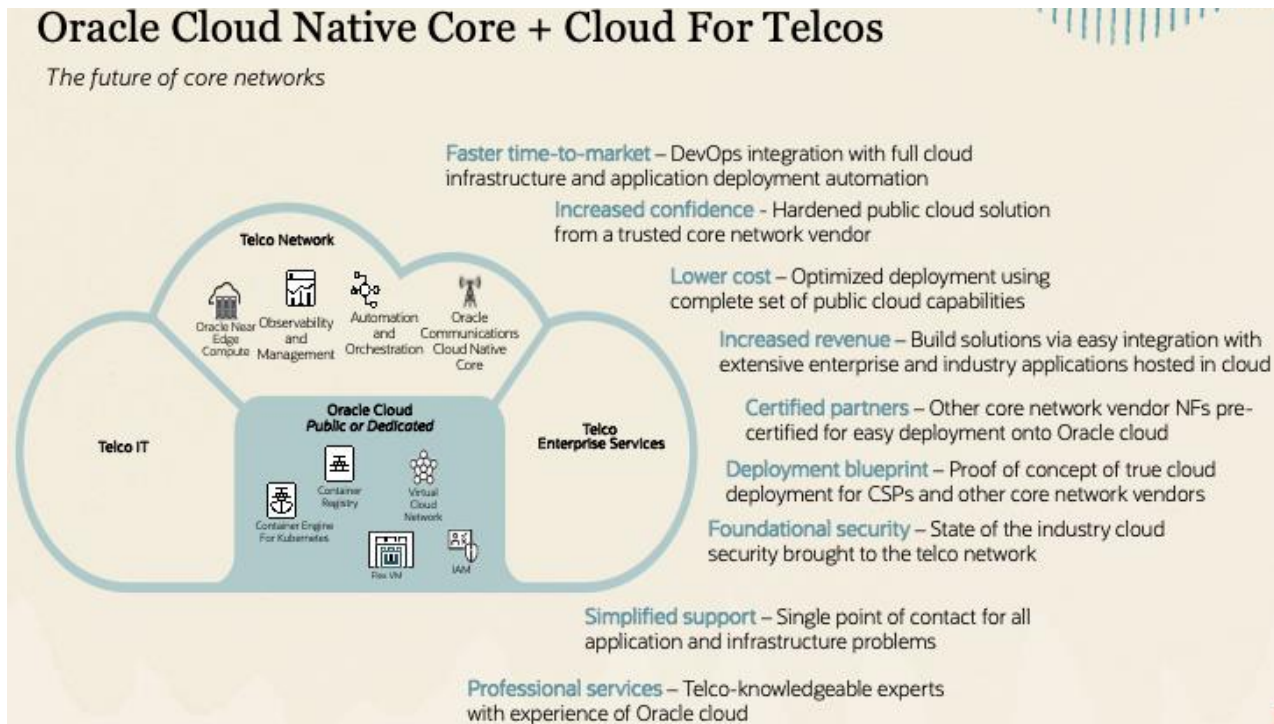
A recent [Omdia](#) study of senior operations, IT, and CTO decision makers among the telecom market identified that service providers are optimistic about using cloud technologies to build both the network core and edge infrastructure. While private cloud is still preferred for hosting network functions, the data from the study identified that [more than 55%](#) of network functions will run on Kubernetes-based Cloud-as-a-Service (CaaS) platforms, and the proportion in a centralized public cloud will grow to 30% (from 21% in 2023) by 2028.

Service providers identified public cloud providers are better at providing DevOps processes, access to platform services, and scalability of cloud resources. More than half of respondents (57%) prefer a centralized public cloud for deliver DevOps (CI/CD) pipelines. Respondents were also in agreement around the OpEx and CapEx savings provided by cloud infrastructure relative to the cost of traditional appliances – although many felt private cloud could deliver similar savings benefits.

Oracle's best-in-class 5G cloud native core

Oracle's cloud native 5G core encompasses signalling and routing, automation, analytics, services exposure, and policy and charging. With an objective of driving differentiation in the 5G ecosystem, Oracle Communications prides itself on offering programmable, automated, and analytics-driven 5G core offerings. Oracle 5G core network functions are built on Open Source principles - from the ground up, they are architected to be cloud native which allows operators to experiment with business models, deliver new services, and ultimately derive more value from their network.

Interoperability is intrinsic to Oracle, and we have a long history of enabling multivendor hybrid communication environments. Our network functions have been globally deployed in many telco networks and cloud native environments with the flexibility of being deployed on BareMetal or any cloud. This flexibility of deployment enables service providers to operate with increased innovation.



Oracle Cloud for Telcos

Oracle Cloud for Telcos is a comprehensive set of cloud solutions built on Oracle Cloud Infrastructure (OCI), a cloud platform available around the world with 46 cloud regions and six more planned across 23 countries. The OCI platform runs Oracle Fusion Cloud Applications, Oracle Communications core network, OSS/BSS solutions, and more than 60 other industry application suites, as well as third party and custom applications and workloads. It enables service providers to build new applications or modernize existing workloads with more than a hundred cloud services, including data management, developer services, and Artificial Intelligence. Oracle Cloud for Telcos enables any service provider to become more agile, by reducing CapEx and OpEx, and establishing a more flexible foundation on which to innovate.

Deployment models

Service provider customers will have multiple options for deployment. While the most likely deployment of 5G core on Oracle Cloud for Telcos deployment will involve multiple cloud regions using true public cloud regions, there are a myriad of options to suit the preferences of each provider. Whether a split of on-premises and public cloud is the best path forward or a hybrid private and public cloud, Oracle’s interoperability and options make every variation within the art of the possible.

Oracle also provides other unique options for those with hesitations around moving data to the public cloud including distributed cloud offerings such as Dedicated Region Cloud@Customer (DRCC). DRCC is identical to the public cloud with the same services, functionalities, performance, and pricing. This offering is a private cloud that goes behind a customer’s firewall, enabling the service provider to move to an OpEx model (away from CapEx) and modernize towards the cloud without compromise.

Other options include Sovereign Cloud, a public cloud which addresses any data residency or sovereignty concerns, and Government Cloud, a restricted access cloud that meets specific compliance regulations. For other private cloud options Oracle offers Oracle Alloy, which entails customers owning and operating their own hardware down to overseeing the actual hardware, and Isolated Region, which is designed to work in the customer’s data center with the economics of the public cloud.

Redefining the scope of telco cloud enablement

While historically communication service providers (CSPs) have left it to the broader ecosystem to determine use cases that align to their offerings (i.e. the consumer smartphone demonstrating a need for higher bandwidth), most CSPs operating 5G networks are seeking out new ways to monetize leveraging cloud native solutions and API exposure.

Oracle's telco cloud strategy seeks to resolve this disconnect and to support service providers as they transform internally and as they target real world opportunities to solve application needs.

Oracle is redefining the scope of telco cloud enablement with three key tenets: **OCI's carrier-grade cloud**, combined with the communications **network and IT applications**, including but not limited to 5G core, OSS/BSS, and CRM, as well as Oracle's depth and heritage in **industry cloud solutions** such as manufacturing, public safety, retail, and more. As service providers curate a technology stack with new use cases, Oracle Network Functions on OCI can build a flexible foundation, increase agility in the network, and reduce CapEx and OpEx.

Why Oracle on Oracle?

When a service provider partners with Oracle, they are not just getting a 5G network function, they are getting all the value of greater Oracle and the infinite number of opportunities that we can unlock together. Beyond the larger value of Oracle, are three key factors:

- **Time to market:** Due to thorough pre-testing and pre-validation service providers can anticipate being up and running rapidly – not in months but in weeks or less.
- **Trust:** There is an established trust in an Oracle on Oracle offering, along with improvement of automation and management with one vendor.
- **Support:** With Oracle network functions on OCI service providers can deploy, manage, and configure all on Oracle. With one route to Oracle support, customers can discuss any challenges with network functions or the cloud.

Why Oracle Cloud?

Oracle Cloud Infrastructure offers a number of distinct, technical differentiations. Off-box virtualization is included for all compute, giving customers maximum performance and keeping OCI entirely separate from other resources maximizing isolation, performance and security. The network itself is designed to 'flat' – eliminating hops between devices within the same data center and optimizing the network to get guaranteed bandwidth between resources with 90% lower costs to access data, and 80% lower costs to serve data.

Designed with sustainability in mind, OCI includes highly efficient use of processors and space. This, combined with efficient cloud software means deployment of an entire cloud region is possible in only 12 racks. Customers dictate the size of the compute resources, determining the amount of cores, memory, and storage performance needed and paying for exactly that – minimizing waste.

Designed for demanding telco workloads

Oracle Cloud for Telcos provides not only the carrier-grade cloud, but support for critical business operations via market leading SaaS, and better customer experiences reducing churn through Dx4C. Service providers also benefit from signalling and security solutions, and data management including autonomous database and Exadata, and open source managed data services. Pre-built AI and ML services provide business and network intelligence, while OSS/BSS supports the orchestration and provisioning of customer orders while rapidly monetizing new business models.

Oracle Cloud for Telcos was designed to suit the needs of CSPs today, but also set them up with a foundation on which to build. Service providers are challenged to continue transforming to suit the world's connectivity needs. With the support of Oracle Cloud for Telcos CSPs can build a future proof blueprint for 5G while protecting and evolving multigenerational networks.

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