Capgemini

Oracle Cloud Infrastructure - HPC

HPC services in UK Government Cloud or on-premise

G-Cloud 14

November 2024

Table of Contents

1   Service Overview

Capgemini has been an effective partner of public sector clients for many years and understands the key priorities of the sector such as: Consistency and stability of service provision to the public, total cost of ownership (TCO) reduction, reliability and security improvement and time to market improvement to name a few. Combining Capgemini's experience of the sector, its comprehensive expertise in workplace technologies and ability to deliver in large, complex enterprises provides the public sector Buyer with the opportunity to work with a partner who demonstrably comprehends a sector that forms a core part of the foundation for the nation.

Capgemini provide consultancy, design, build and run services for OCI HPC, including support for accreditation of HPC solutions, for example for MoD accredited workloads.

Capgemini can take overall ownership of managing the end-to-end implementation project, encompassing all the activities of all involved parties such as Oracle and HPC software providers of scheduling and analysis software.

2   Business Need

There are many reasons the Buyer may consider using Oracle Cloud Infrastructure for High Performance Computing, including:

- Reduction of Oracle Support and Maintenance costs in the wider estate via support rewards.

- Ability to burst into cloud or operate in the cloud as the norm

- Requirement to host workloads at OFFICIAL SENSITIVE or higher using Security Cleared UK Nationals

- Regulatory and data sovereignty constraints which preclude or impede adoption of UK Government Cloud

- Industry leading HPC technology including a range of CPUs and GPUs with RoCE v2 networking

- Application and datacenter modernisation

- Per second billing

- Reduction of TCO and pivot from CapEx to OpEx

- Modernisation of operating model, adoption of autonomous intelligent services

Capgemini's Oracle Cloud Infrastructure (OCI) High Performance Compute (HPC) service allows Buyers to leverage cloud HPC in a model which fits the business and operating requirement. Under the Oracle Support Rewards program, workloads operated in OCI will generally qualify for rebates against any existing Support and Maintenance invoice from Oracle for the Buyer's existing Oracle technology estate, regardless of the actual workload being operated. Allied to class leading pricing for HPC, this can drive a very commercially attractive solution.

3   Our Approach

Through the leverage of modern Infrastructure-as-Code and Configuration-as-Code solutions, Capgemini provides HPC service consumers with visibility and insight into the HPC platforms operation and their job performance and resource consumption, as well as optimising the usage of HPC capacity to minimise infrastructure charges incurred by the Buyer, empowering users to make informed decisions on HPC consumption. Our HPC solutions include the capability to continuously schedule & monitor HPC jobs using industry standard tools like SLURM/Altair, monitor and manage the underlying platform and its infrastructure, to identify and pre-emptively address alerts and events, before they become service impacting. Our service offers utilising known existing skills and applying to OCI (often referred to as lift and shift or cloud bursting), our offer also includes augmentation of workloads utilising more cloud native tools like Kubernetes or high performance

parallel file systems. Our service teams can identify service improvement opportunities related to both Capgemini and the wider ecosystem, ensuring we bring our evolving best practice to the HPC service. Our approach is to enable the continuous evolution of the HPC service in line with the needs of the Buyer and in collaboration with your HPC users.

There are three ways to consume OCI HPC and Capgemini supports all.

Oracle UK Government Region, an internet-connected, multi-tenant dual region cloud for UK Government, or enterprises with sponsorship from a department of UK Government. Meets Cyber Essentials Plus and is operated under English Law by Security Cleared (SC) UK Nationals. Suitable for hosting workloads up to OFFICIAL SENSITIVE

Oracle Dedicated Region Cloud@Customer is an internet-connected, single-tenant or customer controlled multi-tenant environment with highly secure software delivery, which offers all the IaaS, PaaS and SaaS services of public cloud, but in a private location such as a customer or Arc data centre. Suitable for all aspects of modern application development, transformation, delivery and innovation, with data guaranteed never to leave the hosting location.

Oracle National Security Region is similar to Dedicated Region Cloud@Customer but has no internet connectivity and operates completely disconnected. This deployment is suitable for SECRET workloads operated by resources cleared by the customer.

3.1 Service Description

OCI HPC differentiates itself from other HPC platforms through technology capability and operation model. Some such differentiators are depicted below.
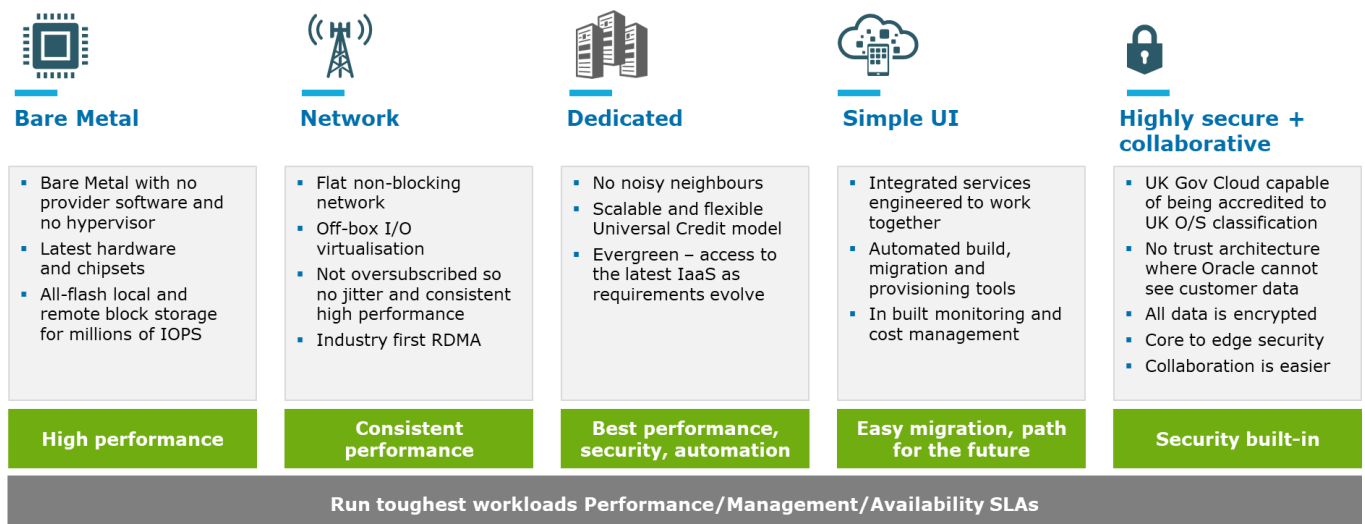
Bare Metal	Network	Dedicated	Simple UI	Highly secure + collaborative
• Bare Metal with no provider software and no hypervisor • Latest hardware and chipsets • All-flash local and remote block storage for millions of IOPS	• Flat non-blocking network • Off-box I/O virtualisation • Not oversubscribed so no jitter and consistent high performance • Industry first RDMA	• No noisy neighbours • Scalable and flexible Universal Credit model • Evergreen – access to the latest IaaS as requirements evolve	• Integrated services engineered to work together • Automated build, migration and provisioning tools • In built monitoring and cost management	• UK Gov Cloud capable of being accredited to UK O/S classification • No trust architecture where Oracle cannot see customer data • All data is encrypted • Core to edge security • Collaboration is easier
High performance	**Consistent performance**	**Best performance, security, automation**	**Easy migration, path for the future**	**Security built-in**

Run toughest workloads Performance/Management/Availability SLAs

Figure 1 - OCI HPC differentiators

For Government Buyers, Oracle's UK Government Cloud offers dual region HPC with an SC operating model

- Two distinct, geographically separated regions make the UK Realm
- The two regions are interconnected via a highly resilient, private high-speed backbone.
- Dedicated to UK Government & Defence this Realm is accessible Only UK Government and associated entities, as listed by Crown Commercial Services (CCS)
- All Oracle privileged access (both physical and logical) are restricted to UK Citizens, residents, and present in the UK with SC Clearance

■ Government Cloud Region
■ Commercial Cloud Region

Region # 2   Region # 1
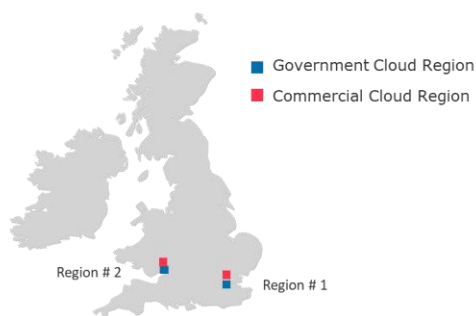
The realm supports the following UK, EMEA and UK Government specific compliance standards

GDPR · NHS Digital · National Cyber Security Centre · CYBER ESSENTIALS PLUS

Region Availability	Available	Available
GA Date	Dec 3, 2019	Jul 31, 2020
Realm	OC4	OC4
Region Code	LTN	BRS
Region Identifier	uk-gov-london-1	uk-gov-cardiff-1
Canonical Name	UK Gov South (London)	UK Gov West (Newport)

Capgemini can assist with requirements analysis, design, delivery, assurance and operation of HPC Platforms. A conceptual view of an HPC technology solution is depicted below, showing the key infrastructure components and how the workloads and codes are layered on top.
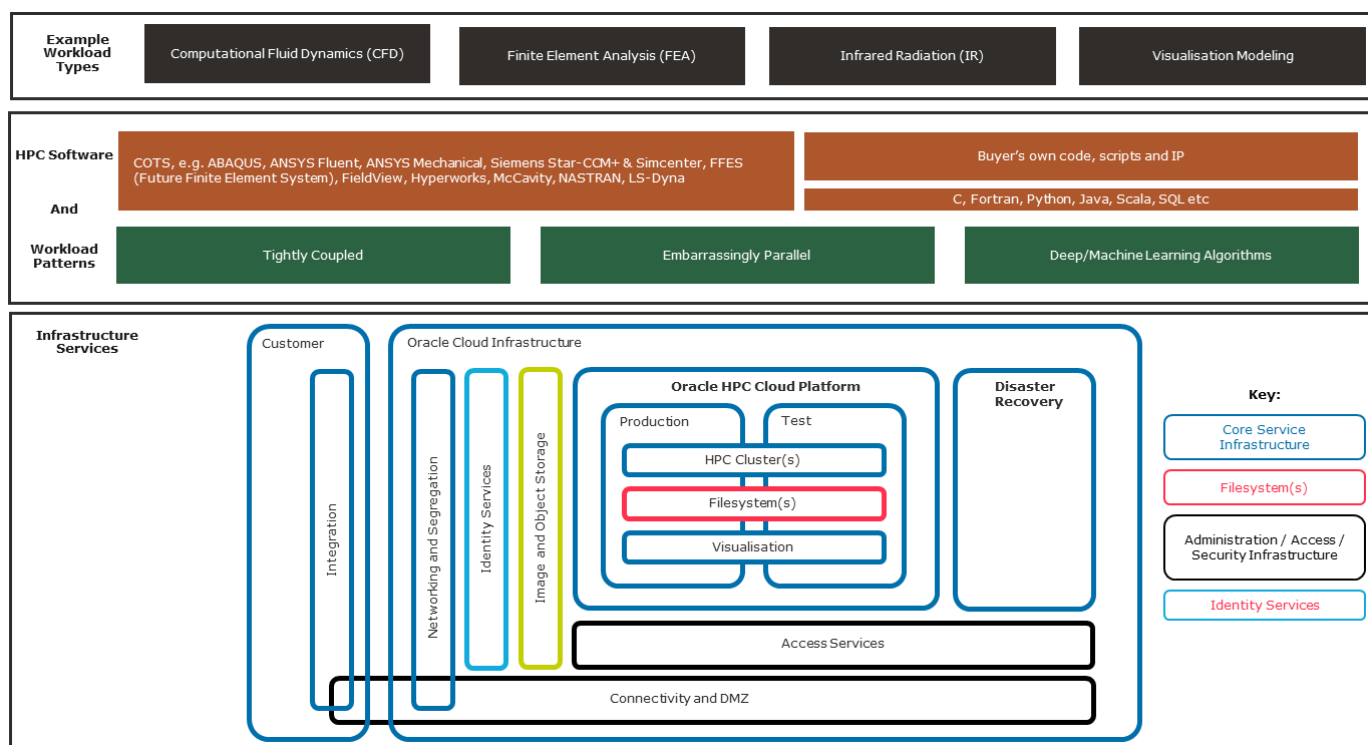

Figure 2 - Logical HPC architecture

This diagram is for illustration only and does not represent any obligation or responsibility of Capgemini.

Capgemini can assist the buyer in all aspects of OCI deployment, from initial decisions on the hosting model and solution scope, through initial sizing and requirements, placement and complementary services, procurement and liaising with network and data centre providers for hosting and networking. We offer detailed design, implementation, migration and modernisation services as well as ongoing management of the solutions. We

recommend the buyer contacts Capgemini for a detailed overview discussion to ascertain the correct type of solution required that meets the business need and desired outcomes.

3.2 Prerequisite

Before contracting or placing an order, Capgemini would carry out initial consultations with the Buyer to establish the required outcomes. We would work with the Buyer to clearly define the requirements and work with Oracle presales architects to validate solution aspects which may be influenced by product roadmap.

3.3 Impact Assessment and Evaluation

This may include such things as the evaluation of existing datacenter services and availability, including rack, power, cooling and physical security services where solutions are to be deployed outside the UK Government Cloud Region, either in a customer or third party site. We can work with the customer to support the evolution of a business case and to establish the most effective sizing of environments and deployment models.

4   Buyer Responsibilities

Please refer to the Supplier Terms listed with this service on the Platform. These may contain additional Buyer obligations/costs the Buyer is subject to that are not identified anywhere else in the Supplier's Application or on the Platform.

The Buyer responsibilities as part of this service are as follows:

- Provide all reasonably requested resources, stakeholders, information and materials in a timely manner
- Access to appropriate process experts and subject matter experts to work with Capgemini to agree the design of the solution
- Provide access to existing systems or the data from the existing systems to support migration
- Ensure the Buyers project team is empowered to make necessary decisions in a timely manner
- Review and sign-off all deliverables in a timely manner based on agreed acceptance criteria
- Provide initial volumetrics of target payload
- Provide growth expectations of the workloads in scope where appropriate
- Provide access to SMEs and Architect resources from the Buyer to work with Capgemini in the design and implementation of OCI

If these responsibilities do not match your expectations, then please contact us in order that we can explore options to vary our approach.

5   Service Management

Capgemini Service Management provides a set of specialised organisational capabilities for providing value to clients in the form of services. It includes a full lifecycle approach to service management from service take-on, through strategy to operation and continual improvement. It can be offered either as a standalone service or in conjunction with other sourcing arrangements.

6   Protection of Data

This service is based on a security classification of 'Official', however should you have a requirement for a different security classification that you would like us to consider, please contact us to discuss. Additional requirements this may be subject to additional Charges in accordance with the SFIA Rate Card.

7   On-boarding and Off-boarding

Capgemini's service offer is based on 90 Working Days for completion of on-boarding activities and the production of an exit plan. Capgemini can provide additional consultancy to facilitate on-boarding and off-boarding should a Buyer have specific requirements they may wish Capgemini to consider. This additional consultancy (including any additional exit plans required) and any exit assistance, such as assisting with the handover of Capgemini provision of the Services back to the Buyer or another supplier the Buyer may appoint, shall (unless otherwise agreed) be performed, and fees paid, applying the applicable Fee Rates as set out in the "Service management" column of Capgemini SFIA rates table.

8   Skills and Knowledge Transfer

Capgemini recognises that skills and knowledge transfer is a critical element in the provision of G-Cloud services to public sector clients. Where possible and applicable, this forms part of the delivery plan for the service agreed at the start of the engagement. Our consultants and engineers are experienced in providing skills and knowledge transfer for major private and public sector clients.

Where appropriate, we may use a standard approach, tailored to topic, skills-gap and individual, to ensure consistency and effectiveness. The approach, Capgemini's Assess-Plan-Implement framework, has been used repeatedly by our teams to structure the work involved in transferring skills and creating new teams capable of driving and sustaining change long after the end of the formal programme. The framework can be applied throughout a project to understand knowledge transfer objectives, plan training delivery methods and materials, and deliver and evaluate success.

9   Vendor Accreditations/Awards

Capgemini has been an Oracle Partner since 1997, and has held the highest partnership statuses for many years. We participate in the Sell, Service, and License & Hardware tracks of the Oracle Partner Network Program. Capgemini's global Oracle SaaS, PaaS and IaaS teams comprise of over 11,500 Oracle professionals and enable Capgemini to service clients across geographies and Oracle solution sets. Capgemini's UK SaaS, PaaS and IaaS teams have been developing and delivering Oracle solutions for over 20 years with deep experience in Public Sector. Capgemini UK Oracle experts collaborate with our colleagues across the world to develop and share best practice in the relentless pursuit of excellence for our customers. Our approach has been recognised globally in the last few years with numerous awards and analyst recognition, including:

- 2023: Oracle EMEA Business Impact Partner of the year for Cloud Technology
- 2022: Real IT Award for Cloud ERP
- 2020: OCI Partner of the Year Award
- 2019: UKOUG Industry Partner of the Year Award – Bronze
- 2019: UKOUG Middleware Partner of the Year Award – Bronze

- 2019: Oracle PaaS Forum; Best PaaS Contribution

Capgemini holds four published OPN Expertise in Western Europe region demonstrating our expertise in delivering Oracle Cloud Infrastructure solutions -

- Oracle Cloud Platform Integration
- Oracle Cloud Platform Business Analytics
- Oracle Cloud Platform Application Development
- Oracle Cloud Platform Security

For the 12th year in a row, Capgemini has been recognized as one of the World's Most Ethical Companies® by the Ethisphere® Institute. This is an acknowledgment of our ethical culture that makes us an employer of choice and responsible player in the eyes of our clients, shareholders, and the wider community.

IDC has positioned Capgemini as a "Leader" in their IDC MarketScape: Worldwide Supply Chain Oracle Ecosystem Services 2023 Vendor Assessment

Everest Group has positioned Capgemini as a "Major Contender" in its report Oracle Cloud Applications Services PEAK Matrix® Assessment 2023, and "Leader and Star Performer" in its report Application Automation Services PEAK Matrix® Assessment 2023

Capgemini is a Leader in Avasant's Oracle Cloud ERP Services 2023–2024 RadarView™.

ISG has positioned Capgemini as "Leaders" in all the regions and categories in its report Next-Gen ADM Services - 2023

10 Sub-contractors

Capgemini UK may use the following subcontractors to deliver this service:

- Capgemini Technology Services India Limited.

11 Business Continuity and Disaster Recovery

No disaster recovery plan is provided as part of these Services.

12 Pricing

This service is priced in accordance with the SFIA Rate Card attached. Capgemini can also provide offshore resources at reduced rates where appropriate. Projects can be priced either on a Time & Materials or Fixed Price basis.

13 Ordering and Invoicing

Please refer to the Supplier Terms for this service.

We would be pleased to arrange a call or meeting to discuss your requirements of our service in more detail.

14 Termination Terms

Please refer to the Supplier Terms for this service.

15 Further Information

For more information about this or any of our G-Cloud services, please contact our Public Sector Team.

Phone: 0370 904 4858

Email: publicsector.opps.uk@capgemini.com including the following information:

1. The name of this service.
2. The name of your organisation.
3. Your name and contact details.
4. A brief description of your business situation.
5. Your preferred timescales for starting the work.

About Capgemini

Capgemini is a global business and technology transformation partner, helping organizations to accelerate their dual transition to a digital and sustainable world, while creating tangible impact for enterprises and society. It is a responsible and diverse group of 340,000 team members in more than 50 countries. With its strong over 55-year heritage, Capgemini is trusted by its clients to unlock the value of technology to address the entire breadth of their business needs. It delivers end-to-end services and solutions leveraging strengths from strategy and design to engineering, all fueled by its market leading capabilities in AI, cloud and data, combined with its deep industry expertise and partner ecosystem. The Group reported 2023 global revenues of €22.5 billion.

Get the Future You Want | www.capgemini.com