OraCloudNow – Die Cloud Rechenzentren in Deutschland
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Safe Harbor Statement

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Just another Cloud Vendor?
Built For Enterprise

Consistently Fast

Predictable, fast performance for Enterprise Workloads

Most Versatile

The only cloud designed for all workloads, from Enterprise IT to cloud-native

Optimized for Oracle

Runs Oracle Applications and all Databases best. Only cloud to support Oracle RAC and Exadata

Predictable Savings

Simple & flexible pricing for all services

Comprehensive Control

Central visibility and governance, flexible provisioning
OCI Region / Availability Domain (AD) Topology

- Regions serve different geographies and legal domains
- Availability Domains provide a high availability/disaster foundation in a Region
- An AD is a separate datacenter more than 5 KM away from other AD

Region 1
- Availability Domain 1
- Availability Domain 2
- Availability Domain 3

Region 2
- Availability Domain 1
- Availability Domain 2
- Availability Domain 3

Region 3
- Availability Domain 1
- Availability Domain 2
- Availability Domain 3

London, UK * Frankfurt, EU

Phoenix, US West

Ashburn, US East

* TBA
Oracle Cloud Infrastructure Overview
High performance compute, storage, database, edge on the same flexible virtual network
Accelerated Hardware

✓ Announcing new **GPU Instances**:
  ✓ 2x Tesla P100 GPUs based on NVIDIA Pascal Generation
  ✓ Skylake Processors with 28 cores
  ✓ Pre-configured images for seamless deployment experience

✓ Pre-Announcing **Volta GPUs** with 8 GPUs!
  ✓ With NVLINK
  ✓ Both bare metal & virtual machines

<table>
<thead>
<tr>
<th>WORKLOAD</th>
<th>Deep Learning Training</th>
<th>Deep Learning Inference</th>
<th>Oil and Gas (RTM)</th>
<th>Life Science (VASP)</th>
<th>Physics (QUDA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU</td>
<td>1X</td>
<td>1X</td>
<td>1X</td>
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<tr>
<td>2xP100</td>
<td>10X</td>
<td>15X</td>
<td>4X</td>
<td>7X</td>
<td>20X</td>
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</tbody>
</table>
Storage: Holistically Support All Workloads

Analytics/Transactional/Rendering Cloud Native: Container support

VM Dense IO
6.4-25.6 TB NVMe
1.8 million IOPS

Enterprise Apps: Network file, block
New Apps: Cloning, object

Enterprise Apps: Network file, block
New Apps: Cloning, object

Block Storage
50 GB-16 TB volumes
512 TB per host
iSCSI, Replication, Snapshots,
Backup, Encryption
25K IOPS, 320GB/s per volume

Spark/Hadoop: HDFS support
Storage/Backup/Archive: S3/Swift API

Bare metal Dense IO
51 TB NVMe
5+ million IOPS

Object Storage
Limitless capacity
REST, HDFS, Replication,
Encryption
10TB max object size
GB/s of bandwidth

Console or API-driven; same 25Gbps network for all core services;
Delivering 4.5 Million IOPS per Compute Instance

• Bare metal compute Dense I/O instance
  • 36 cores
  • 512 GB RAM
  • 28.8 TB NVMe
  • Up to 512 TB block storage

• Performance
  • 4.5 million IOPS (4KiB read)
  • 1 million IOPS (4KiB write)

• Compared to other CV
  • 40% faster read
  • 340% faster write
Customers Building Performance Intensive Apps in Oracle Cloud

"The Oracle Cloud provides superior performance in terms of price, predictability, and throughput."

Sam Mahalingam, CTO, Altair

Accelerated rendering process 10X faster than on-premises

Provides Oracle as an HPC platform to computation fluid dynamics software customers

Speeded trajectory analysis and design
HPC – Computational Fluid Dynamics (CFD)

Airflow / aerodynamics – aerospace, automotive….

- 30 bare metal compute instances
- 36 cores each, totaling 1,080 cores
- 256 GB of RAM each totaling 7,680 GB of RAM
- SSD-based block storage + Local SSD for high super high speed caching
The Edge Can Be 50% of Cloud Performance

Constant Disruptions Demand a New Kind of Performance Management...
Trusted by Over 3,500 Customers, Including Some of the Most Preeminent Digital Brands
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Sustainable ingredient company moved E-Business Suite and other Oracle applications to the cloud

**Challenges**
- Reduce data center and hardware costs
- Unable to replace E-Business Suite, Hyperion with SaaS
- Requires high performance, low latency

**Solutions**
- Migrated EBS, BI and data integration apps to Oracle Cloud Infrastructure
- Leveraging Oracle Database with Data Guard & RAC
- Achieving high performance with Bare Metal with NVMe
- Secure VCN and FastConnect dedicated connectivity

**Results**
- Doubled performance on workloads like reporting
- Achieved predictable, fast connectivity
- Consolidated 19 database systems down to three
- Shut down data center
Oracle EBS on Oracle Cloud Infrastructure

**ORACLE CLOUD DATA CENTER REGION**

- **AVAILABILITY DOMAIN-1**
  - 6 VMs with 28 OCPUs
  - EBS Application Tiers
  - Five Database Cloud Systems
  - Block Storage

- **AVAILABILITY DOMAIN-2**
  - 7 VMs with 20 OCPUs
  - EBS, Vertex Application Tiers
  - Three Database Cloud Systems
  - Block Storage

- **AVAILABILITY DOMAIN-3**
  - 18 VMs & 2 bare metal servers with 113 OCPUs
  - EBS, Informatica, HYP, etc.
  - Five Database Cloud Systems
  - Block Storage

**Darling Ingredients Data Center**

- 10Gbps FastConnect

**Virtual Cloud Network**

- Object Storage
- IAM
- Auditing
Database: Highest Database Performance and Reliability

Enterprise Applications & Dev/Test
- **NEW**
  - **Oracle Database on Virtual Machines**
    - 1-16 OCPUs
    - 256 GB - 40 TB usable remote storage
    - BYOL or License Included

Enterprise Applications
- **ENHANCED**
  - **Oracle Database on Bare Metal Servers**
    - 2-36 OCPUs
    - 4-20 TB usable NVMe
    - Standard, Enterprise, High Performance, Extreme Performance Editions

Enterprise Applications: Local HA with seconds of SLA
- **NEW**
  - **Oracle RAC**
    - Bare Metal or Virtual Machines
    - 4-72 OCPUs
    - VM: Up to 40 TB usable remote shared storage
    - BM: 8-20 TB usable SSD
    - BYOL or License Included Extreme Performance Edition

Enterprise Applications: Local HA with massive capacity and seconds of SLA
- **12c**
  - **Oracle Exadata**
    - 22-336 OCPUs
    - 68-275 TB usable SSD
    - BYOL or License Included
    - Extreme Performance Edition

**DB STORAGE CAPACITY**

**AVAILABILITY**

Higher
• Bare metal compute
  Dense I/O instance
  • 36 cores
  • 512 GB RAM
  • 28.8 TB NVMe / ASM high

• Performance
  • 19,3 GB/Sekunde
  • 686.000 IOPS (8KiB read)
  • Latency 0

• Guaranteed no noisy neighbour 😊

Oracle Database 12c EE Extreme Perf Release 12.1.0.2.0 - 64bit Production
With the Partitioning, Automatic Storage Management, OLAP, Advanced Analytics
and Real Application Testing options

SQL> set serveroutput on
SQL> declare
  2    l_latency integer;
  3    l_iops  integer;
  4    l_mbps  integer;
  5    begin
  6    dbms_resource_manager.calibrate_io (
  7    9, /* # of disks */
  8    10, /* max latency */
  9    l_iops, /* I/O Ops/sec */
 10    l_mbps, /* MBytes/sec */
 11    l_latency /* actual latency */
 12    );
 13
 14    dbms_output.put_line (’I/O Ops/sec = ’ || l_iops);
 15    dbms_output.put_line (’Actual Latency = ’ || l_latency);
 16    dbms_output.put_line (’MB/sec = ’ || l_mbps);
 17    end;
 18
I/O Ops/sec = 686713
Actual Latency = 0
MB/sec = 19327

PL/SQL procedure successfully completed
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OCI - Cloud Infrastructure for all Applications

**Bare Metal - Minutes**
- **Critical Applications**
- **Exclusive** – Non shared HW

**Virtualised - Minutes**
- **Non critical Apps in VMs**
- **Shared Server HW**

**Container – Seconds**
- **Cloud Native Apps**
- **Shared Server HW**
VMware / KVM on Oracle Cloud Infrastructure
Fast, cost efficient, no migration or re-networking needed, multi-cloud

Move VMware VMs ‘as-is’ with Ravello – same VMs, networking, storage

Physical hosts move to Bare Metal Service

Oracle Cloud Infrastructure
Cloud Native on Oracle Cloud Infrastructure

IaaS / CaaS
- Terraform
- kubernetes
- MESOS

Fn - Open source Functions Platform
- fn

Pivotal & CloudFoundry
- CloudFoundry
Built For Enterprise

**Consistently Fast**
Predictable, fast performance for serious workloads

**Most Versatile**
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**Predictable Savings**
Simple & flexible pricing for all services

**Comprehensive Control**
Central visibility and governance, flexible provisioning
Enterprise cost topics / pitfalls

- Disaster traffic between ADs / – hidden traffic costs ?
- IO models, how many, mapping needed ? Consulting ? Hidden costs for high IO ?
- Traffic in/out towards cloud ? Separate, safe „connection“ – Extra traffic costs ?
- Pitfall overprovisioned CPU cores (vCPU) and network ? Any licence cost will go up !!

Separate 1/10G connection, traffic €?

Inter AD traffic €?

I/O €?
Enterprise ready - simple and fair pricing

• Desaster traffic between ADs – @ OCI free

• IO models, @ OCI just one (max. performance) model, no IO costs

• Traffic in/out towards cloud? Separate, save „connection“
  @ OCI all traffic in 1/10G „connection“ included

• Pitfall overprovisioned CPU cores (vCPU) and network?
  @ OCI no overprovision on CPU cores and network

separate 1/10G connection, traffic €?
Introducing | **Universal Credits and BYOL**

**Universal Credits**
- Most flexible buying and consumption model for Cloud
- Single set of credits for all current and future PaaS/IaaS services
- Simplifies customer buying experience

**BYOL to PaaS**
- Customers can leverage their on-premises licenses on Oracle PaaS
- Enables license mobility: On-premises, Oracle Public Cloud, & Cloud at Customer
- Significantly lower TCO for running Oracle on Oracle cloud
Universal Credits | Benefits
Simpler buying experience, Greater flexibility, Easier expansion process

• One simple contract: Universal access to all current and future IaaS & PaaS services
• Simplifies customer buying experience; try and use any IaaS or PaaS service
• Enables the flexibility to upgrade, expand or move services across datacenters
• Monthly or annual dollar term for lower price

Universal Credits Span Oracle Public Cloud and Cloud at Customer
BYOL to PaaS | Benefits

• Customers can leverage their on-prem Oracle investments in the Oracle Cloud
• License mobility from on-prem to Public Cloud, including Cloud at Customer
  – Includes Oracle Database, Exadata, Middleware, Analytics and others
• BYOL PaaS up to 94% reduction of PaaS list price
• Further reduce management & operational costs from on-prem with PaaS automation
• Significantly lower TCO for running Oracle on Oracle cloud vs. competitor clouds
**BYOL | License Mobility from On-Premise to Cloud**

**On Premises**
- Licensed Software
- Customer Data Center
- Customer Managed

**Oracle Public Cloud**
- BYOL to PaaS
- Cloud Service
- Oracle Cloud Data Center
- Oracle Managed

**Cloud at Customer**
- BYOL to PaaS
- Cloud Service
- Customer Data Center
- Oracle Managed
Cloud Infrastructure

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Governance – Audit und IAM in der OCI

Oracle Cloud Infrastructure Governance Offerings

Oracle Cloud Infrastructure provides both Oracle Audit and Identity and Access Management services at no additional cost to enable simple resource governance and access.

Oracle Cloud Infrastructure Audit

Oracle Audit provides comprehensive visibility into your Oracle Cloud Infrastructure services. Access all public API activities in your tenancy over the past 90 days at no additional cost.

Oracle Cloud Infrastructure Identity and Access Management

Oracle Identity and Access Management (IAM) service lets you control who has access to your cloud resources, what type of access they have, and to which specific resources. Manage complex organizations and rules with logical groups of users and resources, and simple to define policies.
Ausprobieren !
Free Trial – 30 Tage - Testen Sie Oracles Enterprise Cloud !

Experience Oracle Cloud with
$300 in free credit

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Sign up in three easy steps

Create a free Oracle Account
Verify your contact information
Start building with Oracle Cloud

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