Oracle Database Cloud – Exadata Service

Transforming The Cloud for Mission-critical Business Operations
When it comes to business-critical applications, the promise of the cloud still eludes many enterprises. Too often, IT has to configure public cloud infrastructures manually, from storage and bandwidth to database software configurations. These complexities are compounded for applications that require a database. Often, the production and development and testing database services do not use the same instance, making it difficult to move existing workloads back and forth between cloud and on-premise environments.

Further complicating matters, database services are typically provisioned on commodity hardware. That means they are not optimized for OLTP workloads, nor are they tuned to deliver the kind of instant analytics businesses increasingly require. As a result, many organizations find that their journey to the cloud is slowed or halted because they cannot realize the productivity gains and speed to market they have hoped for from the cloud.

Oracle Database Cloud – Exadata Service changes the equation. Designed for the cloud, it is built on proven Oracle Exadata technology that currently supports thousands of mission-critical solutions across a wide range of industries, from banking and telecomm companies to healthcare, online retail, and public sector organizations, including many growing midsize companies.

Oracle Database Cloud – Exadata Service delivers the highest performing, most cost-effective and most available platform for running Oracle Database—plus all the benefits of the cloud, like instant scalability, rapid time-to-value, nocapex and low opex. For a single, monthly fee, Oracle Database Cloud – Exadata Service gives you instant access to extreme performance—without the need for configuration, sizing and testing that commodity database cloud solutions require.

And because Oracle Database Cloud – Exadata Service is 100-percent compatible with Oracle's on-premise solutions, you can move applications to the cloud instantly and transparently—with no code changes. You retain 100-percent compatibility with both your databases and applications in your Exadata environment.
by Oracle, but during customer-specified windows.

• 100-percent compatibility with all on-premises database and applications—no code changes.

• Transparent data and application migration.

Mission-Critical Security

• All databases encrypted by default with Oracle Transparent Data Encryption.

• Each virtual machine assigned only one customer—complete data isolation.

• Network isolation via private VLANs isolate your network from that of Oracle and other tenants.

• Each database server functions as a single virtual machine, isolating hardware from end users.

Management Flexibility

• Flexible management options at customer’s convenience.

• Oracle experts manage the infrastructure lifecycle, update, upgrade patch for server, storage, networking

• Retain exclusive ownership of role-based access to ensure segregation of duties.

• Full control of your OS and Database environment

• Run applications on premises, opt for Oracle Cloud Services, or choose any combination of the two—with no code changes.

Besides quickly provisioning test/dev environments, you can secure data warehousing workloads off-site. And the solution is compelling for organizations undergoing mergers and acquisitions, since it allows you to consolidate Oracle Databases to gain 4x consolidation—even as you simplify management and driving down operational costs.

The Most Demanding Workloads

With Oracle Database Cloud – Exadata Service, you get instant access to a complete, secure platform built for even the most demanding, mission-critical workloads, including Online Transaction Processing (OLTP), Data Warehousing (DW) and In-Memory Analytics, as well as consolidation of mixed workloads. You power and protect your most important databases—and gain the ideal foundation for a consolidated database cloud. And the solution’s elastic computing power supports instant pay-as-you-grow scalability, with the ability to choose ¼-, ½-, or full-rack solution via a monthly subscription.

No other provider offers all these benefits in a single cloud service.

The Limits of Commodity Solutions

Many businesses have encountered unexpected obstacles when they choose cloud services running commodity databases on generic infrastructures. Too often, such solutions require costly and time-consuming integration of piecemeal components, plus configuring, testing and more. All that time and complexity compromises the cloud’s promise of instant value and rapid elasticity.

Such challenges are compounded for organizations requiring high performance and availability. Commodity solutions tend to lack the kind of technology that supports the most demanding workloads, like storage optimized for high performance, networking components optimized for extreme throughput, and support for database or application clusters.

Instant Productivity, Extreme Performance, Lower Costs and Risk

Oracle Database Cloud – Exadata Service delivers on the true promise of the cloud—instant productivity, extreme elasticity, and lower costs and risks, with the assurance of proven infrastructure and database security and reliability. It powers fully functional Oracle Database instances hosted on an Oracle Exadata Database Machine inside the Oracle Public Cloud.

When customers provision an Oracle Database Cloud – Exadata Service instance, the
allocated environment comes pre-configured according to best practices built on Oracle’s experience implementing Oracle Exadata technology at thousands of mission-critical sites around the world. Available in dedicated ¼ rack, ½ rack or full rack configurations, it includes all the features of Oracle Exadata Database Machine, plus all the Oracle Database options.

Simply put, it is the world's highest performing, highly secured, most available cloud service for running the Oracle Databases that power your always-on enterprise-critical workloads.

Every element of Oracle Database Cloud – Exadata Service is engineered from the ground up to maximize productivity, lower risk and speed time-to-value. Database servers, storage servers and network are pre-configured, pre-tuned and pre-tested by Oracle experts, so you don’t have to. You can get access to all the elements of the infrastructure preconfigured, including a preconfigured Oracle Database to host your enterprise-grade solution. That means you can be up and running in, literally, minutes instead of the traditional hours or days.

**The Power of Oracle Cloud**

As the world's #1 database company and one of only a handful of companies delivering cloud computing at every level of the technology stack—infrastructure as a service (IaaS), platform as a service (PaaS) and software as a service (SaaS)—Oracle is uniquely positioned to deliver the most comprehensive, integrated DBaaS offerings in the industry.

By making all the features of Oracle Exadata available on the cloud, Exadata Service eliminates the costs associated with upfront acquisition, setup and configuration. The result: instant access to fully tested, highly optimized preconfigured infrastructure and database technologies. Benefits include:

- **Faster time to value.** Eliminate weeks or months of implementing an on-premises solution, from shipment and site preparation to installation and configuration. Get up and running in, literally, minutes.
- **Simplified management.** Instead of coordinating a team of diverse professionals for the day-to-day management of an on-premise solution, your systems, database and storage experts can focus on higher-value tasks.
- **Eliminate CapEx, Lower OpEx.** You no longer accrue costs related to hardware, space, power, cooling and green regulations.
- **Reduced risk.** Oracle experts with deep experience with Oracle technology manage the entire infrastructure to meet even the most demanding service-level agreements.
- **Business-critical availability.** Benefit from full data protection, consistency, transactional isolation, and redundancy with Oracle Maximum Availability Architecture, ensuring always-on operations for your business applications.
- **Enterprise-grade Security.** Strict security ensures client isolation and partitioning. The use of virtual machines isolates the hardware from your Oracle
Database implementation. By default, data is encrypted in flight and at rest. Client access is also secured and encrypted.

World's #1 Database

The strengths of Oracle Database Cloud – Exadata Service are built on three decades of Oracle’s global leadership in database technology. Now, Oracle Database 12c brings a whole new level of efficiency, performance, availability and security. Advantages over competitive offerings include:

» Rapid consolidation. Oracle Multitenant boosts utilization and simplifies management with rapid database consolidation—without changes to existing applications.

» Maximum efficiency and performance. Easy-to-use tools let you maximize database performance, drive down storage costs, and support even the most demanding workloads.

» High availability. From component failures and regional outages to planned maintenance, you maximize availability during all kinds of outages without application downtime or data loss.

» Data-in-depth security. To safeguard data at the source—the database—Oracle delivers the industry’s most advanced technology, from encryption and data-masking to defenses against abuse by privileged users.

Hybrid-Ready

Database Cloud – Exadata Service meets the demands of even the most sensitive and/or mission-critical workloads. But what if, for business or regulatory reasons, you want to bring workloads back to an on-premise solution, or share data across both public and private clouds?

Built on shared standards and technologies, Oracle’s cloud and on-premises solutions are uniquely engineered to support these kinds of hybrid environments. Oracle’s One Cloud strategy supports 100-percent compatibility between cloud and on-premises applications and databases. Plus, you can manage both on-premise and public environments with a single, familiar Oracle Enterprise Manager interface. And you can do it all with:

» No changes to architecture

» No changes to software

» No new tools to learn

» No application code changes.

Effortless IT

Database Cloud – Exadata Service is designed to remove as much management complexity as possible, enabling “effortless IT.” Oracle experts takes care of all of the following:
» Pre-installation of operating system, database and clusterware software.
» Management of all hardware, firmware, and storage server software.
» 24/7 active monitoring and management.
» All patches and upgrades—though only during customer-specified windows.

In addition, a pre-built portal enables fast, easy self-service provisioning. DBAs can quickly consolidate and run many databases on a single Oracle Exadata instance using Oracle Multitenant. Pay as you grow capacity eliminates over provisioning. Start with 40-percent enablement of CPUs and simply adding more capacity as needed. Oracle takes care of the management of the infrastructure and database services, so your IT organization can focus on delivering higher value services that contribute directly to growing the business.

Figure 1 – Database Cloud – Exadata Service can be provisioned simply in minutes

Enterprise-Grade Security

With Oracle Database Cloud – Exadata Service, your data is protected by market-leading, enterprise-grade security features, from encryption and virus scan to white list support. Just as important, Oracle Cloud keeps your data completely isolated from that of other companies, whether at rest and in motion.
All databases are encrypted by default with Oracle Transparent Data Encryption. Encryption keys are stored in your own, completely isolated in DomU (virtual machine) and managed by your team, which neither Oracle or other Oracle customer can access.

In addition, Oracle Cloud data centers offer embassy-grade physical and logical security, with controls aligned to the security framework of ISO (International Organization for Standardization) and IEC (International Electrotechnical Commission).

**Management Flexibility**

With Oracle Database Cloud – Exadata Service, you choose from a range of management options, depending on the resources and business needs of your organization. Customers own and manage each virtual machine, and Oracle takes care of the rest of the technology stack, from updates to upgrades.

Meanwhile, you retain complete ownership of your data, through exclusive ownership of role-based access to ensure segregation of duties. Unlike many commodity providers, you retain full root access to your DomU.

And you can choose to run your applications on premise, opt for Oracle Cloud Services, or any combination of the two—again, with no code changes.

**Scalability On Demand**

Oracle Exadata’s architecture features a scale-out design with industry-standard servers and intelligent storage for instant scalability. Begin with a quarter rack (72 CPU cores and up to 1.5TB memory for database processing), and scale as needed to a half rack (144 CPU cores and up to 3TB memory for database processing) or full rack (288 CPU cores and up to 6TB memory for database processing).

**Backup & Recovery**

Oracle Database Cloud – Exadata Service is engineered to provide the highest levels of availability, including completely redundant hardware. As a result, it protects your data against all kinds of risk, from simple disk, server and network failures to complex site failures and human errors. Specifically, the service includes:

- **Oracle RAC.** Protects against database server failure. Oracle Automatic Storage Management provides data mirroring to protect against disk or storage server failures.
- **Oracle RMAN.** Provides extremely fast and efficient backups to disk or tape.
- **Oracle’s Flashback technology.** Allows backing out of user errors at the database, table or even row level.
- **Oracle Data Guard.** Provides the management, monitoring, and automation
software to create and maintain one or more standby database to protect Oracle data from failures, disasters, human error and data corruptions. It also provides high availability for mission-critical applications.

Conclusion

Only Oracle Database Cloud – Exadata Service delivers on the full promise of cloud with database-as-a-service. You gain instant access to the world’s highest-performing, most cost-effective and most available platform for Oracle Database to power your business-critical applications. Unlike generic cloud solutions, you are up and running instantly, with no need to configure or test systems. You migrate on-premise workloads or applications transparently—with no code changes. You scale with unprecedented speed, without wasting resources on over-provisioning. You safeguard your data with industry-leading enterprise security. And you gain the kind of high-performance, high-availability environment to run the most demanding, mission-critical workloads—all for a fixed monthly fee.

No one but Oracle can deliver all these benefits on the world’s most powerful database-as-service cloud platform.

For more information, please visit cloud.oracle.com/database.