

OFFERING OVERVIEW

Oracle Exadata X9M and Oracle Exadata Cloud@Customer X9M Enable Rapid Enterprise Acceleration

Oracle Has Done It Again: The Power of the “Chip-to-Click” Stack in Its Latest Incarnation—Oracle Exadata X9M—in the Cloud and On-Premises



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EXECUTIVE SUMMARY

This report provides an overview of how the next-generation Oracle Exadata X9M and Oracle Exadata Cloud@Customer X9M enable rapid Enterprise Acceleration.¹ It discusses how both offerings have been improved since their previous X8M version and looks at the key differentiators of both offerings overall and what is new with X9M.

Oracle Exadata X9M and Oracle Exadata Cloud@Customer X9M are yet another manifestation of Oracle’s vision for the “chip-to-click” integrated technology stack (i.e., from the CPU silicon, across all ISO/OSI layers, and all the way to the end user mouse click). With the availability of Oracle Exadata X9M and Oracle Exadata Cloud@Customer X9M in September 2021, Oracle has proven how the approach delivers leading performance and cost savings, making X9M simply the best platform for Oracle Database to run on.

Because Oracle uses the same technology stack and machines in both its cloud and on-premises implementations, it has the highest degree of Identity² across these offerings to be found among all vendors that are part of Constellation Research’s Market Overview on next-generation computing platforms.³ The others are Amazon Web Services’ Outposts⁴ on-premises portfolio, Google Anthos,⁵ IBM Satellite,⁶ and Microsoft Azure Stack.⁷

Business Themes



Data to Decisions



Technology Optimization



New C-Suite



Future of Work

ABOUT ORACLE EXADATA DATABASE MACHINE X9M AND ORACLE EXADATA CLOUD@CUSTOMER X9M

Overview

Oracle has a unique vision among vendors in the technology field of next-generation computing platforms, creating the largest “chip-to-click” integrated hardware and software offering—one that ranges from the silicon (the “chip”) to the user (the “click”) in software-as-a-service (SaaS) offerings. The Exadata X9M and Exadata Cloud@Customer X9M offerings are integral parts of Oracle’s integrated stack.

For a long time, Oracle has stressed that the technology in its cloud infrastructure is much the same as the technology in its on-premises stack with the Oracle Cloud@Customer portfolio. The functional scope is 100% identical, with the same set of more than 50 capabilities available in Oracle Dedicated Region Cloud@Customer. Overall, compared to its competitors, Oracle has the largest functional scope available on-premises, including its SaaS, platform-as-a-service (PaaS),⁸ and infrastructure-as-a-service (IaaS) capabilities running on Oracle Exadata and Oracle Cloud Infrastructure (OCI). Oracle Cloud@Customer is the closest customers can get to having the Oracle chip-to-click cloud stack running in their own data centers.

Oracle Exadata X9M and Oracle Exadata Cloud@Customer X9M bring the following key innovations to the Exadata portfolio:

- **Improved performance.** Oracle Exadata X9M delivers 27.6 million read input/output operations per second (IOPS)—72% more at 42% lower cost per IOPS for online transactional processing (OLTP) workloads than its predecessor, X8M. For analytical workloads, Oracle Exadata X9M delivers 1TB-per-second throughput while competitive offerings are in the single-digit GB/s range—87% higher and 47% lower scan costs than predecessor X8M. Oracle Exadata Cloud@Customer X9M increases IOPS by 87% and throughput by 80% over X8M, with “only” 24% more vCPUs (giving the system a total of 992 vCPUs).

- **Enhanced software for better performance.** Oracle Exadata X9M features improvements on the software side with a new version of Exadata Smart Scan for parallel queries, faster decryption algorithms, enhanced database alerting, enhanced algorithms (e.g., for Oracle ML, Graph, Spatial algorithms, and Oracle Blockchain Table), and on the Oracle Exadata Cloud@Customer side includes improved security and administration tools, higher availability, and support for autonomous operations.
- **Improved IT strategy support.** Oracle Exadata X9M and Oracle Exadata Cloud@Customer X9M enable CIOs to pursue highly desirable IT strategies, from better performance of OLTP and data warehouse workloads (online analytical processing, or *OLAP*) to database consolidation and the achievement of higher workload portability between cloud and on-premises deployment.

MARKET SEGMENT

Market Definition

Oracle Exadata X9M and Oracle Exadata Cloud@Customer X9M compete in the next-generation computing platforms market as a co-engineered hardware, software, and services offering. A next-generation computing platform is defined as a computing paradigm that runs the same infrastructure (with some limitations) for an enterprise on-premises and in the public cloud. When it comes to Oracle, that infrastructure is, to a large degree, Oracle Exadata.

There has been a lot of confusion regarding the term *cloud*, with vendors accusing each other of “cloud washing”—that is, trying to rebrand an old product by adding the word *cloud* to its name. In reality, cloud definitions vary from vendor to vendor and even from enterprise to enterprise. Ironically, the vendors that do the most cloud washing are the ones that lack a public cloud of their own, such as Dell EMC, NetApp, HPE, and other old-school vendors.

For the purpose of this report, Constellation defines *cloud* as the elastic provisioning of computing, storage, and networking—with consumption-based pricing. The elasticity manifests itself in the form of dynamic ramping up and ramping down of resource availability, driven by workload demand, even on a per-second basis. The mechanics for this kind of computing have been established and have matured with public cloud IaaS vendors.⁹

CxOs who must manage on-premises workloads also find that value proposition—the elasticity of computing resources with consumption-based pricing—attractive. IaaS vendors have realized this and added offerings that make parts of their IaaS infrastructure available on-premises. Effectively, the public cloud enables the era of Infinite Computing.¹⁰

This report discusses six trends shaping the next-generation compute market.

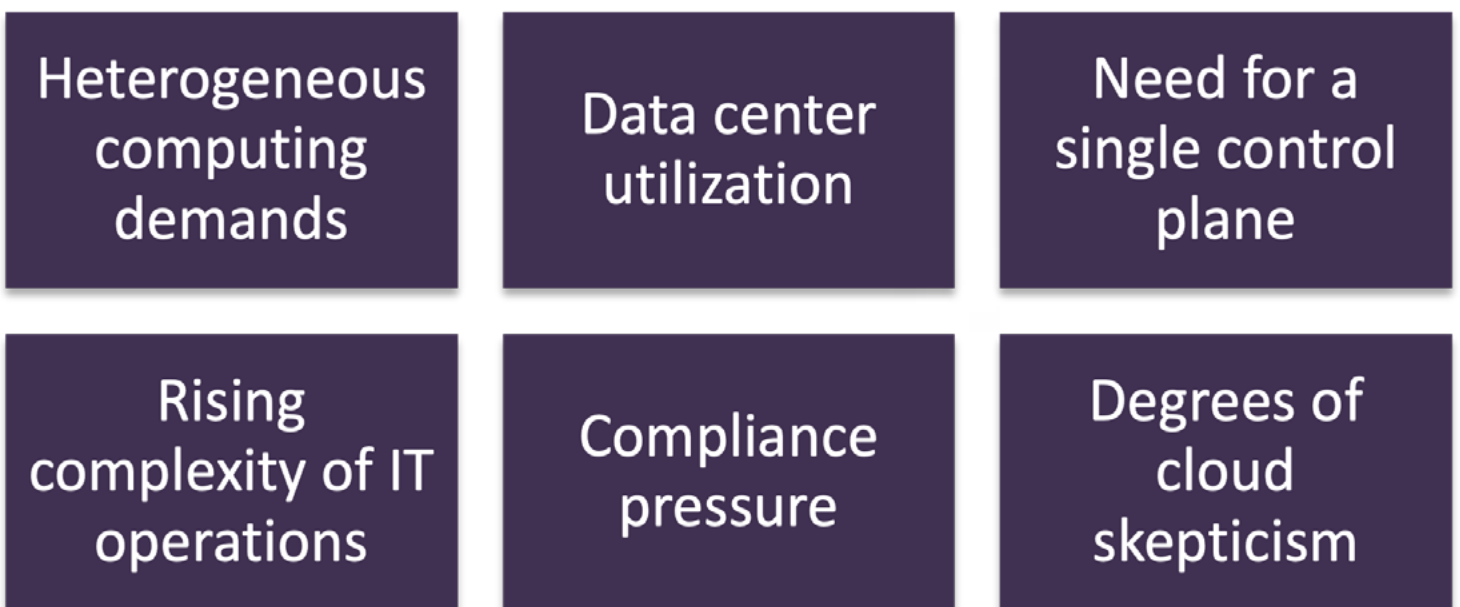
Market Trends

The following six market trends characterize the management of computing infrastructure (see Figure 1):

Heterogeneous Computing Demands

CxOs are confronted with rapidly changing computing demands. Beyond the challenge of satisfying the business need for big data, the computing requirements that CIOs must meet range from support for machine learning to speech recognition for internal and external digital assistant/chatbot solutions,

Figure 1. Six Market Trends Defining a Next-Gen Computing Platform



Source: Constellation Research

all the way to the edge of the enterprise. New computing platforms have entered the data center—for instance, with the advent of large GPU racks to run machine learning. An unprecedented platform diversity manifests itself at the edge of the enterprise to support the Internet of Things (IoT). And the pace of change is not slowing down, as shown by new demands for additional workforce support (e.g., augmented/mixed/virtual reality) and new user experience support (e.g., holographic displays).

Data Center Utilization

As workloads move from enterprise data centers to public cloud vendors, CIOs struggle to reach the level of utilization they intended when originally planning and investing in their data centers. One part of the challenge is the business practice of letting individual company divisions choose their own automation tools, resulting in a lower degree of predictability for available workloads in on-premises data centers. An additional hurdle for CIOs is that physical infrastructure requests are moving more slowly and have a much longer-lasting financial impact. Data center utilization can quickly change from full capacity to two-thirds utilization. Dropping a single server-refresh cycle will create that scenario, which CxOs experience as they move workloads to the public cloud.

The Need for a Single Control Plane

The era of CxOs simply accepting that new products bring a new control plane is history. CxOs operating next-generation applications¹¹ must run them as efficiently as possible, via a single control plane. This not only allows for more efficiency in managing infrastructure but also is the best way to effectively manage a heterogeneous landscape. Ramping down and ramping up resources as demand requires cannot be done from a zoo of instrumentation. At the same time, it is essential to automate resource scaling so that humans can focus on delivering value instead of spending time and energy on operational tasks.

Rising Complexity of IT Operations

The cloud has not fulfilled its promise to simplify IT for most organizations because they are operating on a fluid automation plane that includes the public cloud (often multiclouds) and on-premises computing resources. Business priorities, timing, and write-down cycles all determine the specific time

that a workload may be moved to the public cloud or whether it should remain on-premises. Changes in executive management often result in a shifting workload mix (for instance, due to SaaS portfolio changes) that affects the overall computing mix. A greater diversity in workloads and new next-gen application use cases create more heterogeneity and increase the complexity of IT operations.

Compliance Pressure

Enterprises are confronted with a rise in compliance requirements that, due to the operation of larger software portfolios, affect more of the computing and storage infrastructure than ever before. Data privacy and data residency regulations often require enterprises to move workloads to different physical locations, and sometimes from the cloud back to on-premises. Enterprises had not even recovered from addressing the European Union's General Data Protection Regulation (GDPR) requirements when the California Consumer Privacy Act took effect, and they see more data residency rules coming their way. The rate of regulation will only increase, making CxOs desire a more fluid way to move workloads.

Degrees of Cloud Skepticism

Although many next-generation application use cases are best (and sometimes only) optimally operated in the cloud, there is still a degree of skepticism over computing in the public cloud. It ranges from rational challenges (such as whether IaaS vendor data instances are available inside of a necessary jurisdiction) to reasonable challenges (hardware write-downs and connections to existing on-premises computing resources, such as mainframes) to less-rational concerns (for instance, regarding data security). Nonetheless, it means that CIOs need to implement and operate their critical workloads in local data centers for at least the next decade.

KEY CAPABILITIES

This section describes the most important capabilities of the Oracle Exadata X9M and Oracle Exadata Cloud@Customer X9M offerings.

The Exadata Vision

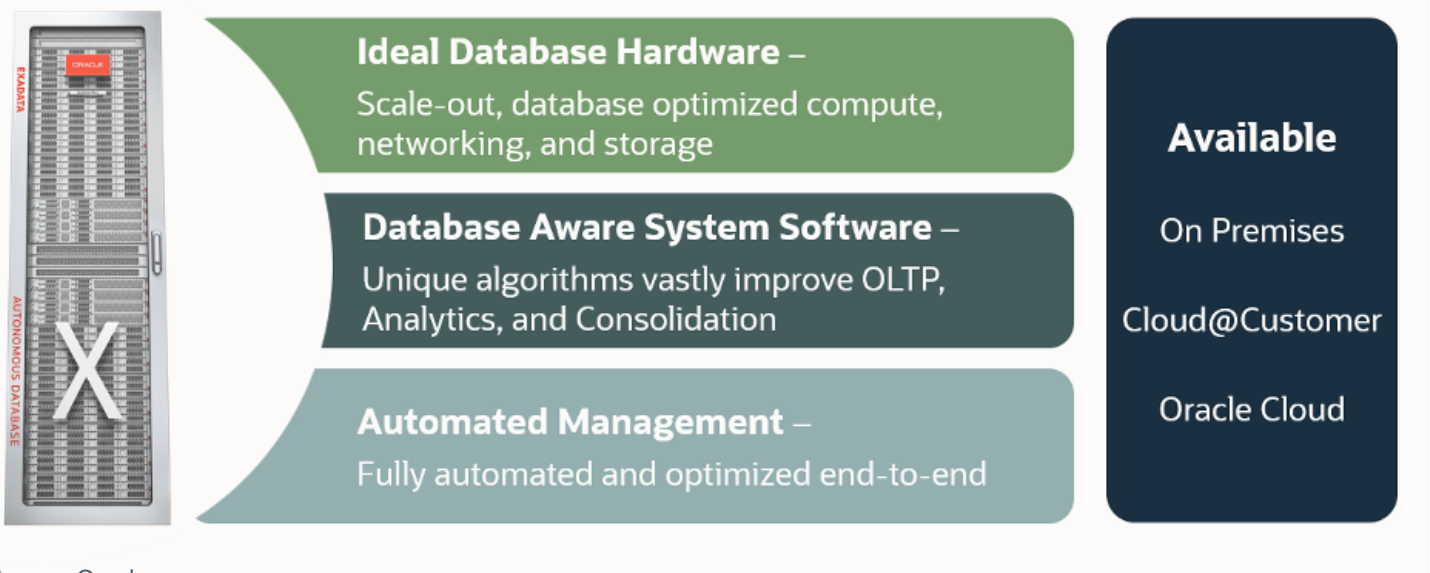
Oracle started to ship Oracle Exadata in 2008 and has upgraded the platform for Oracle Database over the years, with additional innovations featured in every release. Originally a partnership between Oracle and Hewlett-Packard, Oracle Exadata evolved to combine hardware assets from the subsequent Sun Microsystems acquisition as well as substantial additional R&D. Oracle created a hardware and software combination engineered at the source-code level with Oracle Database, which has received a very strong reception in the market: Several customers now are running more than 100 Exadata systems in production environments, and some are running north of 300 systems.

The Exadata vision is defined by the following three pillars (see Figure 2), designed to achieve extreme performance and availability at the lowest cost, and makes Exadata available on-premises, managed by Oracle on-premises and in the public cloud with OCI, and in partnership with Microsoft Azure:

Figure 2. Oracle Exadata Vision

Exadata Vision

Extreme Performance and Availability, Lowest Cost, Available Everywhere



Source: Oracle

- 1. Ideal database hardware.** As the market leader for relational database systems (RDBMSs), Oracle has set out to build the ideal hardware platform for its database products. Oracle's detailed knowledge of its products' software architecture has led to a unique hardware platform that optimizes for performance, total cost of ownership (TCO), return on investment (ROI), and internal rate of return (IRR). Exadata systems are designed to be the ideal hardware for scale-out, with compute, networking, and storage optimized for the operation of Oracle databases.
- 2. Database-aware system software.** In the past, the different natures of different database and information management processes required hardware to be optimized in different ways. With Exadata, Oracle has created a common hardware platform that can morph its configuration for different database workloads, enabling the optimal configuration for every workload. The "magic sauce" for that lives in the Oracle Exadata system software, which enables optimal configuration and performance for diverse workloads and use cases such as OLTP, OLAP, and database consolidation.
- 3. Autonomous management.** The vision of Oracle's chairman and chief technology officer, Larry Ellison, of the autonomous technology stack has been fully infused and enabled with Oracle Exadata. The ability to run technology stacks automatically and to allow them to self-optimize is a crucial capability for enterprises, regardless of whether deployment of their workloads is in the cloud or on-premises.

Today, Oracle Exadata is used predominantly within global enterprises that demand high performance, availability, and security while operating under challenging conditions from an operational uptime perspective.

- 87% of the Fortune Global 100 run Exadata.
- 44% of the Fortune Global 100 have adopted Exadata Cloud.
- Customers achieve as much as a 256% five-year ROI with payback in six months after first operating Oracle Exadata Cloud@Customer.

Exadata Enables Identity Across All Deployment Options

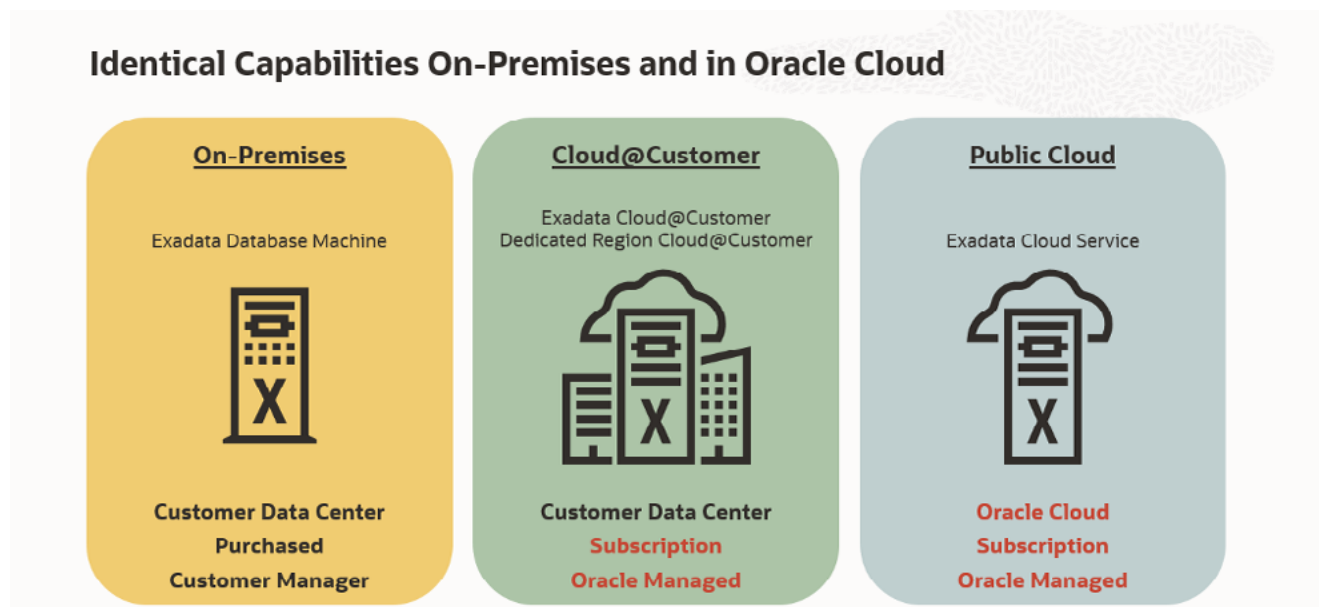
Oracle has always considered choice as a key requirement for its customers. The Exadata offering embodies that value, possibly more than any other Oracle offering, giving Oracle customers identical capabilities regardless of how they want to deploy Exadata.

In practical terms, the maximum Identity that Oracle Exadata delivers gives CxOs the peace of mind that they can move and deploy workloads where their enterprises need them deployed: in the public cloud, on-premises, or in a dedicated region for their enterprise, managed by Oracle. The Identity of Oracle Exadata is unmatched in the industry, with all other next-generation computing platform providers offering a lesser degree of Identity—typically with a fairly substantial gap between the cloud-based and the on-premises capabilities.

Oracle Exadata X9M can be deployed in the following three ways (see Figure 3):

1. **On-premises.** The option to deploy Exadata Database Machine X9M on-premises is important for many enterprises: Legislative and data-residency requirements may force them to operate

Figure 3. Oracle Exadata Deployment Options



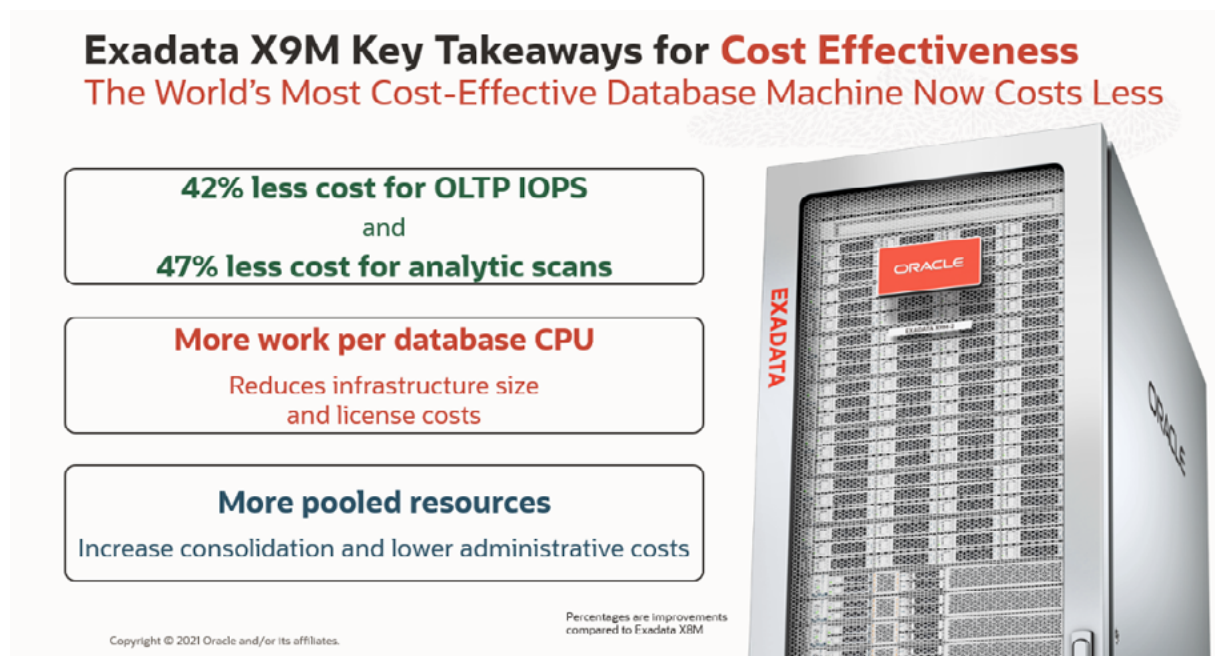
Source: Oracle

on-premises, for example, or their network performance demands require an on-premises deployment. These Exadata instances are purchased by the customer, deployed in the customer's data center, and managed and operated by the customer.

- 2. Public cloud.** The public cloud is the long-term home of all IT workloads, and some enterprises can adopt the public cloud as a deployment option for Exadata sooner than others. The attraction of the cloud consists of the architectural and commercial elasticity of the offerings: Enterprises pay only for the computing resources they consume. Exadata systems that run in the public cloud are run in OCI, and are subscription-based and Oracle-managed. Oracle offers two database services running on Exadata in the public cloud: an automated Oracle Database service (Exadata Cloud Service) and Autonomous Database.
- 3. Oracle Cloud@Customer.** Some enterprises would like Oracle to manage their Exadata deployments but require their data to reside inside their data center, such as Deutsche Bank. Oracle satisfies this option with Oracle Exadata Cloud@Customer. This gives enterprises the on-premises compliance that they require, without the need to learn how to operate and then maintain the Oracle Exadata systems. These Exadata systems are licensed via subscription and the infrastructure is Oracle-managed. Similar to Exadata in Public Cloud, Exadata Cloud@Customer supports both an Oracle Database service and Oracle Autonomous Database, a fully managed service that automates the operational aspects of running the database. Oracle can also deploy a Dedicated Region Cloud@Customer for customers that want to maintain data sovereignty but access a full range of cloud services. Dedicated Region Cloud@Customer can be custom-configured to include any mix of Oracle Cloud's SaaS, IaaS, and PaaS services—including the same Oracle Database and Autonomous Database services available in Public Cloud and on Exadata Cloud@Customer.

The inherent technical elasticity of the Exadata platform (configure what you need) as well as its commercial elasticity (pay for what you use) gives enterprises the flexibility that they need in a more challenging, post-pandemic business environment.¹²

Figure 4. Exadata Leads With Cost-Effectiveness



Source: Oracle

The Best Platform for Any Oracle Database Workload Got Even Better

A closer look at the hardware specifications for Oracle Exadata X9M reveals how Oracle has managed to make Exadata faster and cheaper to operate for enterprises (see Figure 4):

Effectively, Oracle Exadata X9M delivers for the following use cases:

- **Exadata X9M means dramatically higher OLTP performance, resulting in 27.6 million read IOPS and new options for massive database consolidation.** The Exadata compute nodes are now 32-core Intel Ice Lake CPUs, which enable 33% more cores for faster OLTP processing. PCIe 4.0 dual-port active-active 100Gb RDMA over Converged Ethernet (RoCE) networking ensures Exadata components are connected at the highest speeds. With up to 2TB of memory per database, Oracle has extended memory by 33%, enabling enterprises to run more virtual machine (VM) clusters on each node and to cache more OLTP data. Each rack can have as many as 1,216 database cores, 38TB of memory, 3.8PB of raw disk, 920TB of NVMe Flash, and 27TB of Intel Optane persistent memory (PMem). As a result, a single Oracle Exadata X9M rack scales to 27.6 million read IOPS (that's a material gain of 72% over

Exadata X8M) and <19 µS latency, with more racks scaling performance upward. At the same time, cost per IOPS is 42% lower, making Oracle Exadata X9M an ideal database-consolidation platform.

- **Exadata X9M delivers dramatically higher analytical performance and efficiency enhancements, accelerating analytical scans to 1TB/s and allowing a higher density of database consolidation.** The 32-core Intel Ice Lake CPU has 33% more cores, speeding parallelism for complex analytical workloads and handling 64% more memory bandwidth. However, the biggest improvements for analytics come in the Exadata storage servers where PCI 4.0 flash cache and more memory bandwidth networking allow Exadata X9M to deliver better scan performance and enhance automatic columnarization via vector processing of data stored in the flash cache. The results are an unheard-of 1TB/s throughput—orders of magnitude faster than competitive offerings—which scales as racks are added, and 80% higher Smart Flash Cache and RoCE throughput. For analytical workloads, these capabilities combine to deliver up to 87% higher throughput for new data-intensive use cases, while delivering 47% lower scan costs.
- **Exadata X9M delivers consolidation and cost enhancements that increase scalability and make database consolidation more efficient.** Oracle Exadata X9M uses 18TB disks (up from the 14TB disks in X8M); has 33% more cores (as previously mentioned) and up to 33% more memory; and now uses all-flash storage. The results are 28% more storage capacity and more pooled resources, all of which enhance consolidation ratios, which scale as racks are added.

Oracle Exadata X9M ships at the same price as the previous X8M generation. Effectively, Oracle passes the advances of Moore’s Law to Exadata customers that are receiving a remarkably more powerful platform with no price increase.

Exadata Cloud@Customer Receives a Twin-Turbo Boost With X9M

Because Oracle Exadata Cloud@Customer is based on Oracle Exadata X9M, the offering sees substantial enhancements as well. Specifically, Oracle Exadata Cloud@Customer X9M includes the following improvements (see Figure 5):

Figure 5. Key Oracle Exadata Cloud@Customer X9M Enhancements

Introducing Exadata Cloud@Customer X9M

The World's fastest on-premises Cloud database system is now even faster

Same Exadata X9M OLTP, Analytics and Cost improvements

- More and faster cores in database and storage servers
 - 32-core Ice Lake in database servers, 24-core in storage
- Faster networking and flash with PCIe 4.0
- 28% more storage capacity
- Same <19 μ S latency with PMEM and RoCE

Elastic storage expansion

Extensive software enhancements

No Change in Price

22.4M IOPS
(87% more)

540 GB/sec Throughput
(80% more)

992 vCPUs
(24% more)

Source: Oracle

- **Latest Intel Ice Lake CPUs.** The Oracle Exadata Cloud@Customer X9M database server runs with 32-core Intel Ice Lake CPUs; the storage servers run with 24-core Intel Ice Lake CPUs.
- **More storage.** Oracle Exadata Cloud@Customer X9M has 28% more storage capacity, as much as 1.5TB of DRAM per database server, and the same <19 μ S latency of X8M operating on PMem and utilizing RoCE.
- **Higher performance.** The result of the improved specs for Oracle Exadata Cloud@Customer X9M is 87% more IOPS (now 22.4 million), 80% higher throughput (now at 540 GB/s), and 24% more vCPUs (total of 992) than the prior X8M version. These are major performance upgrades across the board for the Cloud@Customer version of Exadata, which will translate to improved business operations and experiences for customers.

Remarkably, as with Exadata X9M, Oracle Exadata Cloud@Customer X9M ships at the same price as Oracle Exadata Cloud@Customer X8M. Effectively, once again, Oracle passes the advances of Moore's Law to Exadata customers who, for the same price, are receiving a remarkably more powerful platform.

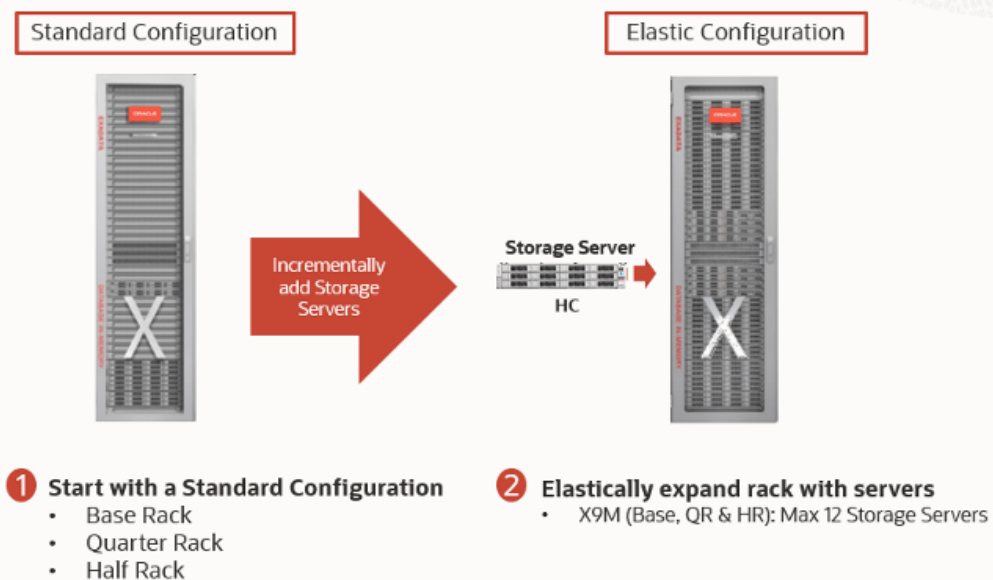
Elastic Storage Expansion Goes to the Next Level

Because Oracle Exadata Cloud@Customer X9M runs on-premises, customers are in charge of sizing their environment. This is especially critical for storage, with analytical workloads being the big unknown. To operate successfully, enterprises need a flexible way to expand storage as the demand arises.

Oracle Exadata Cloud@Customer X9M addresses this demand with the ability to grow storage configurations to as many as 12 total storage servers. This gives CIOs the ability to reduce the cost for data-intensive configurations that do not require a lot of compute by up to 45% when compared to X8M configurations or to expand the storage capacity of their Oracle Exadata Cloud@Customer X9M systems as their enterprise needs it (see Figure 6).

Figure 6. How Exadata Cloud@Customer Gen 2 Enables Elastic Storage Expansion

Gen 2 Exadata Cloud@Customer Elastic Storage Expansion



Source: Oracle

Managing Operator Access Control

Another key challenge for enterprises that operate in heavily regulated industries is the effective management of when cloud operators can access resources within the customer data center and what they can do while they are there. CxOs are in a difficult situation here, because on the one hand they want to leverage the expertise of their cloud and database provider to manage their systems, but on the other hand they need to satisfy the regulatory and security requirements for banking, utilities, and military organizations.

Oracle's solution for providing operator access control delivers three key control areas that differentiate it from other offerings currently available:

- 1. Preventive controls.** In this control area, for example, login shell scripts are allowed only when the customer authorizes them. Oracle operator control is restricted by customer-authorized access control profiles. In addition, only named users are allowed access, with Oracle having no direct access to services accounts.
- 2. Detective controls.** An OCI audit can unleash a number of detective controls—for example, full Oracle operator command logging, optional keystroke logging, and the ability to ensure that all Oracle staff accessing the system are individually identifiable.
- 3. Responsive controls.** Should the need arise, actions are end-to-end proofed—for example, terminating TCP connections, processes, and child processes.

ANALYSIS AND OBSERVATIONS

For CxOs making decisions regarding their next-generation computing platform, Oracle offers many very well differentiated capabilities. With the highest Identity of cloud and on-premises products available, Oracle makes it easy to transfer workloads from on-premises environments to the cloud and vice versa.

Strengths

Oracle Exadata possesses the following strengths compared to other offerings in this market space (see Table 1):

- **Highest Identity of cloud and on-premises functionality.** Oracle Exadata as a common platform across on-premises and the public cloud delivers flexibility in times of uncertainty—from legislative, top management, and best-practices perspectives. The main aspect of flexibility for computing platforms is the ability to transfer workloads between the cloud and on-premises environments. Enterprises are attracted to Oracle Exadata by the Identity of the solution.
- **Integrated chip-to-click stack.** Oracle is pursuing Larry Ellison’s vision of becoming the IBM of the 21st century, offering a fully integrated technology stack that is designed, engineered, and operated together, from the silicon all the way to the mouse click of an end user employing a SaaS application. No other vendor is currently pursuing such a complete vision of a technology stack. This is likely one of the largest software and hardware engineering efforts of our time and, as such, offers substantial simplification, TCO benefits, and efficiency savings.
- **One platform for all database needs.** In contrast to using a specialized database for each workload, Oracle Exadata X9M allows customers to run all Oracle Database workloads on a single platform, with the deployment flexibility that enterprises need. It can scale to the highest and most mission-critical OLTP demands as well as to meet the most challenging OLAP requirements. It is de facto the best platform for running Oracle Database, making it also the ideal platform for database consolidation.
- **The best platform for Oracle Database gets even better.** With Oracle Exadata X9M, Oracle has shown that it can further improve the Exadata platform, resulting in massive benefits for its customers. Better performance at the same price as Oracle Exadata X8M shows that Oracle is delivering value to its customers.

Weaknesses

Oracle Exadata possesses the following weaknesses compared to other offerings in this market space:

- **Need to improve its perception as a services company.** For the longest time, Oracle has been a perpetual-license market leader in the database field. With enterprises moving to a subscription economy, they expect technology providers to become service providers that manage and operate these subscriptions. Although Oracle has delivered on the service value proposition, its perception in the market still lags in this category compared to some of its competitors.
- **Perception of OCI needs to catch up with reality.** Oracle has a history of changing the architecture and value proposition of its public cloud offerings. With OCI Gen 2, Oracle has gotten the offering in the right place, and customers are taking note of the progress but still have not fully realized and bought into the OCI value proposition. Oracle needs to increase awareness and education with an OCI evangelist push. As noted above, this is improving compared to just one year ago.
- **CxOs' perception of Oracle.** At best, CxOs see Oracle as a challenging vendor. Too many stories of unfavorable and harsh business tactics are out there—some true, some in the realm of myth. Oracle must make itself easier to do business with and manage the transition from being a respected to a liked technology partner for CxOs. Oracle's recent hires of AWS marketing chief Ariel Kelman as its new CMO and former Infor CMO Ashley Hart as its senior vice president of Database and OCI Marketing are smart moves that already are driving positive changes to the company's perception in the market.
- **Integrated stacks do not harmonize with heterogeneous systems landscapes.** Enterprises have built up considerable technical debt over time, following a do-it-yourself philosophy that has resulted in operating a vast number of isolated databases, systems, and platforms. In some situations, enterprises need to keep operating these platforms for the foreseeable future and cannot move to Oracle Exadata. But any Oracle Database that runs on x86 and Linux is running in degraded mode and can move to Oracle Exadata to obtain net incremental capabilities such as hybrid columnar compression (HCC) and Smart Scan—so there are no technical limitations to prevent them from doing so.

Table 1. Oracle Exadata X9M and Oracle Exadata Cloud@Customer X9M Strengths and Weaknesses

| STRENGTHS | WEAKNESSES |
|--|---|
| <ul style="list-style-type: none">• Highest Identity of cloud and on-premises functionality• Integrated chip-to-click stack• One database for all needs• The best platform for Oracle Database gets even better | <ul style="list-style-type: none">• Oracle needs to improve its perception as a services company• Perception of OCI needs to catch up with reality• Some CxOs continue to have an unfavorable perception of Oracle• Integrated stacks do not harmonize with heterogeneous systems landscapes |

Source: Constellation Research

RECOMMENDATIONS

The following are recommendations for CxOs looking to improve their computing architecture:

- **Enable Enterprise Acceleration.** Enterprises need to move faster than ever before, and IT/computing infrastructures cannot continue to be the shackles on agility that they have been in the past. Therefore, CxOs should look for next-generation computing platforms, such as Oracle Exadata X9M, that allow them to transfer workloads from on-premises to the cloud and vice versa. This is a key strategy for helping the technical side of an enterprise to contribute to overall business objectives and the necessity of Enterprise Acceleration.¹³
- **Select vendors that have the greatest Identity.** Identity is the key to workload portability. The higher the Identity between an on-premises architecture and a cloud architecture, the better the chances to seamlessly move workloads. This argument is intuitively clear to CxOs leading the transformation, and the platforms with high Identity are, therefore, clearly preferred. It is even better when vendors state that they design for Identity and want to keep it high—as high as technically feasible. Oracle excels at Identity between Oracle Exadata on-premises, Oracle Exadata in Public Cloud, and the Oracle Exadata Cloud@Customer/Dedicated Region deployment options.

- **Pick your next-generation computing platform carefully.** There are substantial value-proposition differences between the five vendors Constellation has analyzed in the underlying Constellation Market Overview. Differences in hardware provisioning, ownership in managing the offering, and functionalities make these five vendors very different partners for enterprises that want to manage their next-generation applications on the right next-generation computing platform. Oracle Exadata delivers the highest Oracle Database performance at the lowest price compared to alternative on-premises and cloud database providers, and brings its very best services from the cloud to customer data centers.
- **Evaluate Oracle Exadata as an existing Oracle Database customer.** Because most Oracle customers run Oracle Database in one way or another, it is important that they familiarize themselves with the newest members of the Oracle Exadata product family, Oracle Exadata X9M and Oracle Exadata Cloud@Customer X9M. Being able to lower TCO; reduce licensing, support, and maintenance costs; fit sizing to match the load of the machine instead of peaks; consolidate databases; run petabyte-scale data warehouses; burst to the cloud for peaks; and transfer loads between Oracle Cloud and on-premises is a substantial benefit driver that CxOs simply cannot ignore. Experienced Oracle customers know that the best deals are usually available in the fourth quarter.
- **Consider Oracle Exadata offerings as a prospect.** Database and tech-stack migrations are challenging, so non-Oracle customers will look at Oracle Exadata from some distance. The benefits of Oracle Exadata X9M are substantial, however, and CxOs need to talk with their respective cloud and technology stack vendors about what they can do in this regard. Should the projected gap of those vendors' future roadmaps compared to Oracle become too large, and the potential cost savings with Oracle Exadata X9M are substantial enough, it is time to pay attention—and consider a potential migration.
- **Take a stance on commercial prudence.** Regardless of vendor, enterprises need to make sure that they obtain the value they seek. For Oracle Exadata X9M, CxOs must pay attention to ensure that licenses and services (for instance, costs to burst to the cloud) are still providing their enterprise with an attractive TCO. As with all services-related offerings, prices will fluctuate, need to be contractually agreed upon as long as desired, and must be constantly monitored to avoid negative commercial surprises.

RELATED RESEARCH

For the Market Overview, see: Holger Mueller, "Next-Gen Computing: The Enterprise Computing Model for the 2020s," Constellation Research, September 14, 2018. <https://www.constellationr.com/research/next-gen-computing-enterprise-computing-model-2020s>

For the Offering Overview of Oracle Cloud@Customer, see: Holger Mueller, "Oracle Cloud at Customer Enables Next-Gen Computing," Constellation Research, October 2018. <https://www.constellationr.com/research/oracle-cloud-customer-enables-next-gen-computing>

For the Offering Overview of Microsoft Azure Stack, see: Holger Mueller, "Microsoft Azure Stack Emerges as Key Next-Gen Computing Option," Constellation Research, February 4, 2019. <https://www.constellationr.com/research/microsoft-azure-stack-emerges-key-next-gen-computing-option>

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