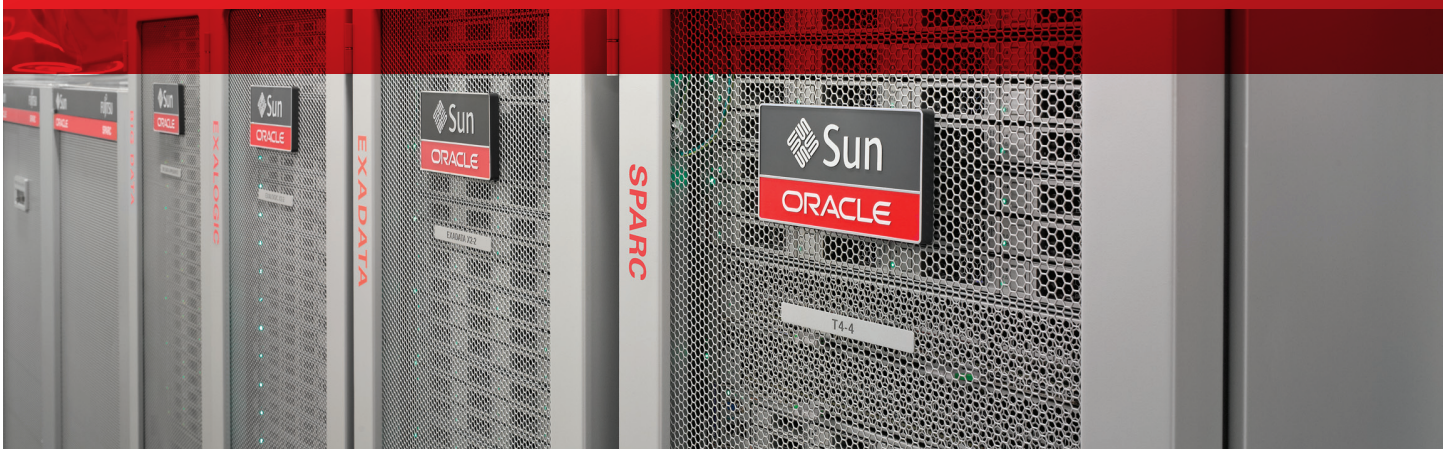
Hardware and Software
Engineered to Work Together



Oracle Engineered Systems

Engineered for Extreme Performance

ORACLE

Not just higher performance,
but *extreme* performance—from
every Oracle engineered system.



Radical processing speeds, significantly faster deployments, instant visuals for in-depth analysis, and big data that's finally manageable. Oracle's engineered systems bring extreme performance to every layer of the technology stack and every aspect of your business.

Extreme performance—doing something faster, better, or more efficiently than it has ever been done before. It's the hallmark of Oracle's engineered systems and the ultimate embodiment of Oracle's drive to simplify IT.

For Oracle customers, extreme performance is not only about speedier query results or significantly higher throughput. It's not only about how you can go from box to clustered database in a few hours or how your users can deploy an application with just a few clicks. For Oracle customers, extreme performance is about taking advantage of new opportunities, discovering new areas of efficiency, and enabling innovation to deliver the kind of results and business performance that—until now—simply weren't possible.

With an inclusive "in-a-box" strategy, Oracle's engineered systems combine best-of-breed hardware and software components with game-changing technical innovations. Designed, engineered, and tested to work best together, Oracle's engineered systems can power the cloud or streamline data center operations to make traditional deployments even more efficient. The components of Oracle's engineered systems are preassembled for targeted functionality and then—as a complete system—optimized for extreme performance.

By taking the guesswork out of these high-availability, purpose-built solutions, Oracle delivers a sophisticated simplicity that's completely integrated throughout every layer of the technology stack—a simplicity that translates into less risk and lower costs for your business.

Less risk, lower costs, extreme performance. Only from Oracle.

FACT: The integrated systems trend is on the rise. According to Gartner, "By 2015, 35 percent of total server shipped value will be as integrated systems."

Gartner Data Center Conference presentation, "Will Fabric Computing Change the Concept of the Traditional Server?" December 2011.



ENGINEERED FOR EXTREME PERFORMANCE

Extreme performance means everything you're doing now gets kicked up a notch or two—or more. Oracle describes its engineered systems with words such as *faster*, *better*, *lower*, and *fewer*. Put them together and you start to understand the benefits of extreme performance.

- Faster processing
- Lower costs
- Less risk
- Faster deployments
- Higher throughput
- More storage capacity
- Smaller footprints
- More transactions
- Better analytics
- Faster data loading
- Faster query results
- Better data compression
- Higher availability
- Less downtime
- More choices
- More opportunities

Engineered to Solve Problems

The extreme performance designed into every Oracle engineered system helps reduce risk and lower costs in your business. Oracle's engineered systems deploy faster, integrate seamlessly with existing IT environments, and provide the kind of customer experience that helps your users do what they need to do faster, better, and more efficiently.

Reduced Risk and Lower Costs

With Oracle's engineered systems, reduced risk is—literally—part of the package. There's no guesswork, and no crossing your fingers and hoping everything works with your existing infrastructure.

Using Oracle's best-of-breed components as building blocks, Oracle's engineered systems provide everything you need (hardware, software, firmware, cables, and so on) for a complete, in-a-box solution in which software and hardware—at every layer of the technology stack—have been architected, integrated, tested, and optimized to work together before they ever reach Oracle customers. Oracle standardizes components in its engineered systems to reduce your risk and make tasks—such as software and hardware upgrades—automatic and predictable.

Like all Oracle products, Oracle's engineered systems are built on open standards and are ideal for environments that include third-party and legacy systems. Not surprisingly, Oracle's engineered systems also give you a faster return on your IT investment.

IT Is Different Now

Consolidating resources—whether in the data center or for the cloud—is a way to simplify your IT environment and pave the way for innovation. Whether it's consolidating database workloads on Oracle Exadata Database Machine or business applications on Oracle Exalogic Elastic Cloud, consolidating workloads from several machines onto a single, engineered system that works faster and is less expensive just makes good sense.

Oracle customers also benefit from the smaller footprint that goes along with a less complicated IT environment. The smaller footprint uses less power, requires fewer IT administrators, and needs less floor space. And when you compare price/performance numbers with multivendor solutions—solutions that you have to buy, build, integrate, and test on your own—it's clear you get better business results and lower costs across the board with Oracle engineered systems.

Highest Availability

The blazing-fast performance of Oracle's engineered systems is due in part to the extreme parallelism designed into every solution. In addition to delivering amazing performance, extreme parallelism provides a redundancy that can dramatically reduce both planned and unplanned downtime.

Oracle's engineered systems are fully fault tolerant with no single point of failure. This means that your users and your customers can enjoy the kind of high availability that makes a real difference.

"Having a single vendor provide a machine that is already tuned—already prepared for the best usage of the database and application servers—has some very important advantages for us in terms of reducing the time for implementing any new project. Basically we put the machines in place, and in less than 24 hours, we had everything up and running."

Marius Ursuti, IT Director, Banca Transilvania

Paving the Way for Innovation

If producing a set of reports used to take an entire day and now takes less than an hour, how will you use the extra time?

Extreme performance makes a real difference—for customers, for employees, and for the bottom line—and it may cause you to rethink business as usual.

- Technical services groups resolve customer problems on the spot instead of after hours of research (for them) and hours of frustration (for customers).
- Subscribers access real-time information that's updated instantly.
- Managers make better business decisions because they're using current information from across the enterprise.
- IT administrators manage the entire IT stack from a single console with end-to-end, vertically integrated monitoring.

Engineered for Cloud Computing

Successful cloud deployments depend on providing high availability and performance to as many subscribers as possible, for as long as they need it. Oracle's engineered systems provide excellent foundations for all types of cloud deployments.

- Oracle Exalogic Elastic Cloud runs multiple applications in virtualized, isolated environments, letting you consolidate hundreds of applications onto a single system. Deploying applications is quick because the process is automated.
- Seamless integration between Sun ZFS Storage Appliances and industry virtualization products (including Oracle VM and VMware) provides a powerful solution for deploying storage in a cloud computing infrastructure.

Engineered Systems Working Together

Nowhere is the Oracle promise of "hardware and software engineered to work together" more apparent than when Oracle's engineered systems are at work.

- Oracle Big Data Appliance uses InfiniBand to connect with Oracle Exadata for high-speed transfers of massive amounts of data. Once data is in a format for mass consumption, Oracle Exalytics provides "speed-of-thought" data access and interactive visualization.
- Oracle SuperCluster brings together the database optimization of Oracle Exadata storage servers, the accelerated processing of Oracle Exalogic, and the extreme storage performance of Sun ZFS Storage Appliance in one easily managed rack.
- Sun ZFS Storage Appliance is preintegrated into Oracle SuperCluster and Oracle Exalogic to simplify deployments.

Oracle's engineered systems connect seamlessly and scale easily to provide the right combinations for your growing business.

THE BEST CHOICE FOR ORACLE APPLICATIONS

Oracle is 100 percent committed to industry open standards and supports software and hardware from multiple vendors. However, it's no secret—and certainly no coincidence—that Oracle's engineered systems are the best choice for running Oracle Applications.

It makes sense: because Oracle controls the development of all its hardware and software throughout the technology stack, Oracle can ensure that all its products—from applications to disk—are integrated, tested, optimized, and certified to work together. The result is simplified IT operations, lower costs, reduced risk, and more opportunity for innovation in your business.

For example, an Oracle Retail customer had approximately 1,000 concurrent users. On their old system, the customer experienced constant outages, database locking issues, stability issues, data integrity issues, and a general lack of availability. However, when this customer moved their Oracle Retail application to Oracle Exalogic, the problems were eliminated.

Extreme performance. Hardware and software engineered to work together. There's just no question about the advantage you get when you run Oracle Applications on Oracle's engineered systems.

NEW: **Oracle Network Applications Platform** is Oracle's first industry-specific engineered system. Designed to meet the extreme network workload requirements for the development of mission-critical communications services and applications, Oracle Network Applications Platform helps network equipment providers and communications service providers reduce costs, decrease time to market, and accelerate innovation.



MAKING PERFORMANCE EXTREME

In Oracle's engineered systems, extreme performance is everything. And the key to making performance extreme? Simple: just load data fast, process it fast, and put it back fast.

There's not just one product, one process, or even one technology that's solely responsible for the extreme performance in Oracle engineered systems. It's "all of the above," engineered to work together in ways never done before. Having a superfast processor is excellent, but don't stop there. Take every opportunity to enhance performance anywhere you can.

And don't settle for one or two processors working on a query. Use extreme parallelism to put lots of computers on it and do it faster. Then design a way to offload query processing to the storage layer so you actually have less data to move.

When you're moving less data and you're moving it faster than ever before, then you're getting extreme performance.

Extreme Performance from Oracle's Engineered Systems	
Oracle Exadata Database Machine The only database machine that provides extreme performance for both data warehousing and OLTP (online transaction processing) applications, and an ideal platform for consolidating database workloads in private clouds as well as in the data center	• Procter & Gamble completed specific point-of-sale data queries up to 30 times faster, reducing IT costs with 15 times the data compression • Orbitz realized a 4 times improvement in performance with its mission-critical hotel search engine and delivered 30 percent more data • Improving system performance helped Robi Axiata increase productivity, which translated into savings of more than US$1.3 million over 3 years
Oracle Exalogic Elastic Cloud Blazing-fast performance for enterprise applications (especially Java and Oracle applications) and middleware to help you do business faster, whether in the data center or in the cloud	• PHH Corporation improved business agility and lowered overall IT costs • SquareTwo Financial improved scalability to meet exponential company growth • Haier now has an order management system (OMS) that performs 7 times faster than their previous solution—at half the cost
Oracle SuperCluster Designed to deliver extreme efficiency and extreme savings by providing high performance, availability, scalability, and security across Oracle and third-party applications; ideal for consolidating diverse environments	• Outsourcing Inc. purchased Oracle SuperCluster for in-house infrastructure and migration and is predicting a total cost of ownership savings of US$2 million over five years • Oracle customers can consolidate dozens of older SPARC servers and other UNIX applications onto a single Oracle SuperCluster with minimal migration efforts
Oracle Database Appliance An excellent in-a-box solution for midrange database workloads; midsize businesses or individual departments in the enterprise can deploy the world's #1 database in record time	• Interactive One reduced its server footprint by 80 percent • MBC Radio cut implementation costs by 40 percent • CallSource ran nine of its most complex processes on Oracle Database Appliance in a fraction of the time it took on other platforms
Oracle Exalytics In-Memory Machine The first engineered system for in-memory analysis, including a software and hardware platform that provides the fastest business intelligence (BI) solution for modeling, forecasting, and planning applications, along with optimized, advanced data visualization for actionable insight into large data sets	• End-of-month reports that take hours (not weeks) have changed how analysts for San Diego Unified School District support their schools • The speed of Oracle Exalytics lets Nykredit, one of Denmark's leading financial services groups, see reports 35 to 70 times faster • Extreme performance in Oracle Exalytics lets Savvis Communications analyze large data sets that just weren't accessible to them before
Oracle Big Data Appliance Optimized hardware combined with the most comprehensive software stack, delivering complete, easy-to-deploy solutions for acquiring, organizing, and loading big data into Oracle Database	• Oracle Big Data Appliance comes in a full-rack configuration with 18 Sun servers for a total storage capacity of 648 TB • Addressing the full spectrum of enterprise big data requirements, Oracle Big Data Appliance evolves your current enterprise data architecture to incorporate big data and deliver business value
Sun ZFS Storage Appliance Robust, efficient, and fast data storage for customers using network-attached storage (NAS) for enterprise applications, virtualization, cloud deployments, storage consolidation, and data protection	• The only storage system with high-performance results in the top storage benchmarks for database I/O, streaming I/O, and file sharing • Winner of *Storage* magazine's 2012 Quality Awards for the Best Enterprise NAS and the Best Midrange NAS • The only NAS system with Oracle Hybrid Columnar Compression technology for Oracle Database, enabling 10 to 50 times data reduction for data warehouses and in-database archiving

"With Oracle Exadata Database Machine, the bulk of the reports that were taking up to five minutes now take just seconds. The speed, response, and performance improvement are just astounding."

Douglas Miller, Director of Global Database Development and Operations, R.L. Polk & Co.

The Fastest Database Machine for Data Warehousing and OLTP

Oracle Exadata Database Machine

The number of success stories for Oracle Exadata Database Machine grows daily. The specifics vary, but eventually the stories reach the same conclusion: high expectations for extreme performance are met—and often exceeded—when customers put Oracle Exadata to work in their enterprise.

And when it comes to results, these customers don't hold back.

- **Turkcell** saw reports with run times that were 10 times faster, eliminating long wait times for BI.
- **Finansbank A.S.** reduced the size of its data warehouse from 18 TB to 9.5 TB.
- **The Commonwealth Bank of Australia** consolidated more than 250 to 350 databases.
- **Yamazaki Baking Co., Ltd.** generated 3 years of sales results in just 5 minutes.
- **LinkShare** realized database query speeds that were 8 times faster.
- **Garmin** decreased duplication time for its largest database from 8 days to 10 *hours.*

It's a Workhorse

As a complete package of servers, storage, networking, and software, Oracle Exadata makes short work of intensive tasks—from OLTP to data warehousing. Oracle Exadata is scalable, secure, and redundant, and, because it handles mixed workloads, it's the ideal platform for consolidating databases.

Extreme Storage Servers

A fast CPU is a good place to start, but when you're talking extreme performance, you need more. Oracle Exadata storage servers combine smart storage software and industry-standard hardware to deliver the industry's highest database storage performance. To overcome the limitations of conventional storage, Oracle Exadata storage servers use a massively parallel architecture that dramatically increases data bandwidth between the database server and storage.

And when you combine Oracle Exadata storage servers with other innovative technologies from Oracle—including Oracle Exadata Smart Scan, Oracle Exadata Smart Flash Cache, and Oracle Hybrid Columnar Compression—you begin to realize what extreme performance can mean for your business.

Lower Costs and Raise Expectations

If you're using fewer servers to do more, you save on operational costs (floor space, power, and cooling). If you can use a single server for mixed workloads, you need fewer servers. If the deployment, maintenance, and management of your engineered system has been consolidated and simplified so that everything is managed from a single console, you can deploy systems faster and save time.

When you consider the new opportunities that come with a faster time to market and a quicker response to customer demands, you can appreciate the benefits that Oracle Exadata brings to your organization.

The world's fastest database machine. Only from Oracle.



"Since deploying our hotel search engine on the Oracle Exadata platform, we have been able to simplify our architecture, and we are able to service more results to our customers—ultimately providing them a better experience."

Winthrop Short,
VP of Technology, Orbitz Worldwide

"Oracle Exalogic Elastic Cloud was a perfect fit for consolidating a lot of these different applications onto one manageable platform. Without tuning the environment, without tuning the application, we've already seen Exalogic deliver at least 10 times performance boosts and in some operations 20 times faster performance."

Vince Casarez, Senior Vice President of Technology, Keste



HOW LONG DOES FAST TAKE?

In the time it takes you to read about Oracle Exalogic's automated deployment process, your users could have deployed the business applications they need to use today.

Oracle Exalogic lets users select the application they want from a list of available Oracle, custom, and third-party applications. A few clicks later, they're ready to go to work.

With Oracle Exalogic as the foundation for running your mission-critical applications, you get fully integrated servers, storage, and networking that can save you months of integrating, testing, and benchmarking. Oracle Exalogic also gives you the ability to manage the entire system—from applications to servers to storage—from a single console.

Faster deployment. Just one more way that Oracle Exalogic helps your business run faster.

The Best Choice for Business Applications and Your Business

Oracle Exalogic Elastic Cloud

Business applications should help your users do business better. Whether you are responding to customers faster, consolidating reports sooner, or getting the right product to market before the competition, you need extreme performance.

Extreme Performance Waits for No One

Ask your users. They'll tell you they need business applications that help them take advantage of market opportunities and make better decisions faster. They want the latest applications at their fingertips, and they want them available 24/7.

And they don't want to wait—for new applications to be deployed or for old ones to be upgraded. They especially don't want to wait for fixes to IT issues that are affecting their work and your bottom line.

With Oracle Exalogic Elastic Cloud, the wait is over. Now your users can

- Close business up to 10 times faster with back-office applications tuned for blazing-fast performance
- Improve the buying experience for your customers by cutting application response time
- Respond rapidly to market needs by provisioning applications up to 6 times faster

Designed, Optimized, and Certified for Extreme Performance

Oracle Exalogic supports a broad range of application workloads, enabling extreme performance for Java, Oracle, and hundreds of third-party and legacy applications. All have been tuned, benchmarked, and certified to run at speeds that impress.

Oracle products are built on industry open standards to lower costs and protect your IT investment. That's standard. Oracle Exalogic also has a unique communication fabric that ties all its components together to provide extreme reliability, scalability, and performance. That's optimized.

No longer do you have to sacrifice performance to get the benefits of consolidation. Mission-critical virtualization technologies are already built in to Oracle Exalogic, so even the most-demanding production workloads run at near-native speeds.

Lower Risk and Protect IT Investments

Whether in the data center, in the cloud, or on the road, Oracle Exalogic helps you cut costs, reduce complexity, and protect your IT investment with

- Automated application deployment processes that lower your risk and get your users up and running with the click of a few buttons
- True application isolation that protects sensitive data at both the software and hardware levels
- Comprehensive management of your entire solution—from applications to disk—from a single console

The logical choice for running business applications. Only from Oracle.

FACT: With Oracle SuperCluster, current SPARC/Oracle Solaris customers have a migration path that's backed by Oracle's unique guarantee of binary compatibility. Your applications can run on Oracle Solaris 11, Oracle Solaris 10, or on a mix of the two. Any third-party, custom, or Oracle applications running on a SPARC/Oracle Solaris–based system today are ready to run on Oracle SuperCluster engineered system.

Extreme Efficiency, Extreme Savings

Oracle SuperCluster

Oracle SuperCluster helps businesses meet the demands of today's diverse data centers by providing the ideal platform for consolidating third-party, custom, and Oracle applications.

Designed for extreme efficiency and cost savings, Oracle SuperCluster delivers one solution to handle all types of enterprise workloads. It offers an unmatched combination of the highest levels of performance, availability, and operating efficiency, including

- Faster database performance with bundled Oracle Exadata storage servers
- Faster Java application performance with optional Oracle Exalogic Elastic Cloud software
- High-availability configuration options with remote disaster recovery

Consolidating Diverse Environments

By using Oracle SuperCluster to consolidate environments in your data center, you can greatly reduce the risk, cost, and complexity of your IT systems. Oracle SuperCluster includes Oracle's flexible, low-overhead virtualization and powerful system management tools, which enable you to rapidly deploy high- performance applications, consolidate complex enterprise workloads, and replace aging servers. With Oracle SuperCluster you can

- Consolidate diverse workloads—including database, middleware, and Web applications—on a single server
- Efficiently consolidate different tiers of an enterprise application and securely consolidate multiple applications without sacrificing performance
- Increase server utilization and reduce the number of servers you need to manage and maintain

Whether your goal is improving system utilization, reducing energy consumption, conserving data center floor space, or creating a cloud computing infrastructure, Oracle SuperCluster offers a fast, tested, and certified platform.

Extreme Performance in a Single Rack

Oracle SuperCluster combines hardware and software that's preintegrated at the highest levels and then optimized and tuned as a complete system. The best-of-breed components and leading-edge technology that give Oracle SuperCluster extreme performance include

- Oracle's powerful SPARC T-Series processors with advanced computing power
- Oracle Solaris 11 with its unique forward and backward compatibility for optimal scalability and reliability
- Oracle Exadata storage servers for faster Oracle Database performance
- Oracle Exalogic Elastic Cloud software for faster Java middleware performance
- Oracle's Sun ZFS Storage Appliance for versatile, high-performance storage

Extreme efficiency, extreme savings. Only from Oracle.



EXTREME FLEXIBILITY FOR YOUR BUSINESS

Like all of Oracle's engineered systems, Oracle SuperCluster offers the flexibility you want at every level.

- **Business still growing?** Start with an Oracle SuperCluster half rack, expand to a full rack later on, and even connect up to eight Oracle SuperClusters using high-speed InfiniBand.
- **Need more storage?** Use your existing fibre channel storage, or connect to addi-tional Oracle Exadata Storage Expansion Racks or Oracle's Sun ZFS Storage Appliances.
- **Existing applications?** Don't worry about migration. Oracle SuperCluster is compatible with all previous SPARC/Oracle Solaris systems and runs existing SPARC/Oracle Solaris applications.

FACT: Research by ORC International determined that a database administrator performing DBMS deployment, maintenance, and support tasks would save 835 hours in the first year of system implementation using Oracle Database Appliance rather than Microsoft SQL Server, and 669 hours in each subsequent year of the system's life.

"Time Savings and Ease of Deployment Comparison Study, Oracle Database Appliance vs. Microsoft SQL Server," January 2012, ORC International



APPLIANCE MANAGER DOES THE WORK FOR YOU

The Appliance Manager feature in Oracle Database Appliance lets you automatically deploy Oracle Database along with Oracle's powerful database clustering software, Oracle Real Application Clusters (Oracle RAC).

Oracle RAC has been used almost exclusively by larger organizations with IT specialists who are trained in database cluster implementations. However, in Oracle Database Appliance, the Appliance Manager feature provisions Oracle RAC for you automatically.

Other DBA tasks are also automated. For example, with just the touch of a button, Appliance Manager takes care of patching firmware and software for the entire appliance.

Simple and Affordable for Departments and Midsize Companies

Oracle Database Appliance

The benefits of Oracle's engineered systems aren't limited to large enterprises. With Oracle Database Appliance, midsize businesses and department-level organizations can dramatically reduce the time, risk, and costs usually associated with building a high-availability database or solution in a box.

Using the world's #1 database, Oracle Database Appliance delivers a complete package (software, server, storage, and networking) that's engineered for easy deployment, so you can get to work in a few hours instead of a few days. And it offers high availability, making it ideal for a range of OLTP, data warehousing, and application workloads.

Oracle Database Appliance also features a Virtualized Platform option, which is built on Oracle VM and provides organizations with a complete solution-in-a-box system. With the addition of virtualization support, customers can quickly deploy a complete, highly available solution to remote branch office locations where IT footprint and skills may be a challenge.

Oracle Database Appliance was designed specifically for mission-critical business applications in midsize organizations and individual departments in larger enterprises. And thanks to its support of virtualized workloads, value-added resellers and independent software vendors are also using Oracle Database Appliance to build applications without the hassle of configuring and testing each database.

Organizations around the globe are taking advantage of this Oracle engineered system that makes deploying the world's #1 database easy—at a cost that makes it practical.

Capacity on Demand Licensing

When what you need is a high-availability database that's easy to use, fast to deploy, and cost-efficient to buy, Oracle Database Appliance offers a solution that lets you buy what you need now, and then scale seamlessly as your business grows.

The "capacity on demand" software licensing model offered by Oracle lets *you* decide how much product you need. You license—and pay for—from 2 to 32 cores. If your needs change later, you simply license and "turn on" as many of the additional cores as you need. There's no hardware to buy, and no need to shut down the system for an upgrade.

Simply Amazing

You can deploy Oracle Database Appliance in a single operation because Oracle has completely automated the setup for you—including all configurations for the clustered database. Simply plug in the appliance and answer a few questions via the installation wizard. (Allow an hour if you know the answers—two if you have to look them up.) When you finish the questions, click the button. It really is that simple.

Managing Oracle Database Appliance is also easy because Oracle engineers have automated time-consuming DBA tasks with Appliance Manager. And to help you resolve problems, Oracle Database Appliance has built-in diagnostics that can automatically call Oracle Support and relay the information needed for a fast resolution.

Simple, reliable, affordable database solutions. Only from Oracle.

"Thanks to mobile BI running on Oracle Exalytics, we are updated with the absolute latest insights and can quickly take action to capitalize on new opportunities. Our users, from store managers to procurement managers, now have instant analysis to monitor our product across all channels and be able to respond in real time to shifts in demand—regardless if they are in front of their PC or on the road with their mobile device."

Torsten Balslev, CIO, Nilson Group

Analyzing Data at the Speed of Thought

Oracle Exalytics In-Memory Machine

It's all there. Best-in-class enterprise BI platform, in-memory analytics software, and industry-changing hardware—all engineered to work together to provide extremely fast solutions for BI, modeling, forecasting, and planning.

Put it to work right out of the box. You'll be amazed at how much faster your existing analytics processes can run. But be prepared—once you experience the advanced analytics and speed-of-thought analysis in Oracle Exalytics In-Memory Machine, your business may never be the same again.

Business Analytics in the Extreme

Your best analysts are working smarter (and faster) because your IT group has deployed the extreme performance of Oracle Exalytics. Sales and marketing have identified new customers and new revenue opportunities, operational costs are down, and you've reduced your overall risk with this preconfigured, pretested, *preoptimized* engineered system from Oracle. With Oracle Exalytics In-Memory Machine, extreme performance means

- **Advanced data visualization.** New analytical tools, such as trellis reports, help users explore and analyze even large amounts of data to identify outliers and patterns, and then provide actionable insight for the enterprise.
- **Speed-of-thought analysis.** Oracle Exalytics starts working even before you click Go. It suggests connections and enables interactive, real-time analysis that helps users visualize and explore patterns and trends.
- **Mobile BI.** Any content available in Oracle Business Intelligence Enterprise Edition is available to mobile users without change, letting users perform analytics anywhere, anytime.

Taking Away the Limits

Oracle Exalytics is the only enterprise BI platform to deliver in-memory analytics with software and hardware optimized to work together. It puts no limits on the number of users or on the number of applications you can run. Applications can use data from any sources—including other connected databases, data warehouses, online analytical processing (OLAP), and third-party datasources—so your analysis is not limited to data currently stored in memory. You get more information from your data and you get it faster—allowing you to respond more effectively.

For example, many organizations close their books at the end of each quarter so they can process the multitude of reports that show the current state of their business. But what if you didn't have to wait until the end of the quarter to get those reports? What if you could virtually close your books at the end of each month? Or in the middle of the week? With the extreme performance of Oracle Exalytics, these scenarios are not just possible but routine. The proactive response that extreme performance enables could be just the competitive edge your business is looking for.

Advanced analytics with speed-of-thought visualization. Only from Oracle.

THE RICHEST EXPERIENCE FOR BUSINESS INTELLIGENCE

Oracle Exalytics includes Oracle Business Intelligence Foundation Suite, the industry-leading, enterprise BI solution for reporting, ad hoc query and analysis, OLAP, dashboards, and scorecards.

Oracle Business Intelligence Foundation Suite has the industry's best-in-class server technology for relational and multidimensional analysis. It delivers rich end-user experiences that include visualization, collaboration, alerts and notifications, search, and mobile access.

In Oracle Business Intelligence Foundation Suite, all enterprise datasources, metrics, calculations, definitions, and hierarchies are managed in a common enterprise information model that provides accurate, consistent insight no matter where the information is used—or by whom. Users can access and interact with information in a variety of ways, including Web-based interactive dashboards, collaboration work spaces, search bars, enterprise resource planning (ERP) applications, and mobile devices.

With built-in, hardware-specific optimizations—including mobile support for iPad and iPhone, which can scale to support many thousands of concurrent users with interactive responsiveness— Oracle Business Intelligence Foundation Suite takes advantage of the extreme performance in Oracle Exalytics to deliver better query responsiveness and greater user scalability.

FACT: According to International Data Corporation, the market for big data technology and services will grow from US$3.2 billion in 2010 to US$16.9 billion in 2015.

"Worldwide Big Data Technology and Services 2012–2015 Forecast," IDC Market Analysis, Document #233485, March 2012.



WHAT MAKES BIG DATA BIG?

It's in all the technology headlines, but what is *big data* and why does it offer such headaches—and such opportunities—for business?

Four parameters are used to define big data (the four *V*'s): high *volume*, a *variety* of sources, high *velocity*, and low-density *value* (in other words, lots of noise).

Big data typically refers to

- **Social data** including customer feedback streams, microblogging sites such as Twitter, and social media platforms such as Facebook
- **Machine-generated or *sensor* data** including call detail records (CDRs), Weblogs, smart meters, manufacturing sensors, equipment logs, and trading systems data

Taming Big Data

Oracle Big Data Appliance

You've invested in collecting big data because you know it holds valuable information about your customers, your competition, and about market and industry trends. By combining insights gleaned from big data with the traditional transactional data already available in your business, you can capitalize on previously hidden relationships and get a real competitive advantage. The challenge lies in finding an efficient and timely way to acquire, organize, and manage big data and make it available throughout the enterprise.

The Solution to Big Data

For Oracle Big Data Appliance, extreme performance means rapidly provisioning a system that's scalable, highly available, and able to transform massive amounts of data into meaningful information. The right big data platform manages both structured and unstructured data, provides deep analytical capabilities, and lets you deliver actionable information directly to your users.

Oracle Big Data Appliance is a key component in Oracle's big data platform. It's designed and optimized to acquire and organize all types of big data and load it quickly into Oracle Database. The data is then ready to be processed and analyzed along with your traditional enterprise data.

The Big Picture for Big Data

Oracle Big Data Appliance is part of a total platform that includes Oracle Exadata, Oracle Exalytics, and Oracle Big Data Connectors (software for easily integrating data in Hadoop or Oracle NoSQL Database with Oracle Database). Oracle Big Data Appliance comes with all the software you need to work with big data, including

- Cloudera's Distribution Including Apache Hadoop (CDH)
- Apache Hadoop for acquiring and organizing data
- Cloudera Manager for clusterwide administration and monitoring of CDH
- Oracle NoSQL Database for fast, low-latency access to massive amounts of data, and for supporting data retrieval and data updates
- Open source distribution of the R statistical environment for deep analysis of big data

Build It Yourself or Use It Now?

Oracle Big Data Appliance has everything to manage your big data. You immediately reduce your risk and your operating costs because there's no need for you to

- Choose and configure hardware
- Figure out the correct open source components and versions
- Integrate, tune, and optimize the system

When you compare building a big data system from scratch to using Oracle's prepackaged, preassembled, and preintegrated engineered system, it doesn't take long to realize how cost-effective it can be to have a complete system with optimized hardware and a comprehensive, preconfigured software stack.

Big data that's available for your enterprise. Only from Oracle.

FACT: The typical compression rate using Oracle Hybrid Columnar Compression with Oracle Database on Sun ZFS Storage Appliances is 10 times (at the lowest settings). Even with the knowledge that compression rates vary, a 10 times savings with Sun ZFS Storage Appliances provides a higher level of compression (3 to 5 times higher) than you can get on any other NAS device. Bottom line: if you're not using Sun ZFS Storage Appliances as your NAS storage device, you're spending more and getting less.

Extreme Storage and the Highest Performance

Sun ZFS Storage Appliance

It's the hardware and software, engineered to work together, that enable integration throughout the Oracle technology stack.

And it's that integration, along with groundbreaking technology, that lets Oracle's Sun ZFS Storage Appliances offer extreme storage capabilities to customers using network-attached storage (NAS) for their enterprise applications, cloud computing, virtualization, storage consolidation, and data protection solutions.

Industry-Changing Compression

It just makes sense. Compress data more efficiently, and you need less hardware to store the data and less time to access it.

Compress data using Oracle Hybrid Columnar Compression and then store the results on Sun ZFS Storage Appliances, and you get extreme storage capabilities that are cost-efficient, space-efficient, and significantly faster.

Oracle Hybrid Columnar Compression uses a unique approach to data compression. By organizing data in columns to get extremely high compression levels for data warehouses and in-database archives, it reduces the storage footprint by 10 to 50 times—3 to 5 times better than the closest competition. Sun ZFS Storage Appliances are the only NAS solutions to offer this game-changing compression technology.

With their extreme performance, Sun ZFS Storage Appliances are ideal storage partners for other Oracle engineered systems. If you already have Oracle Exadata, Oracle Exalogic, or Oracle SuperCluster deployed in your organization, you can easily connect to a Sun ZFS Storage Appliance to back up large amounts of data quickly. You can then make this data available to others in your organization—such as the testing and development groups.

Best Performance

Sun ZFS Storage Appliances use a scalable, high-throughput design that includes optimizations to networks (such as InfiniBand), and software optimizations to increase performance. In fact, Sun ZFS Storage Appliance is the only storage system to achieve leading performance results in the industry-standard benchmarks for file serving, database and OLTP I/O, and high-bandwidth streaming I/O workloads.

In the SPECsfs2008 benchmark, for example, Storage Performance Council (SPC) found that Sun ZFS Storage Appliance is faster and less expensive for general-purpose file sharing. The Oracle engineered system had 1.41 times the performance of a four-node NetApp FAS 6240 cluster, at less than 35 percent of the cost—a price/performance advantage that's four times better.[1]

With less hardware, award-winning performance, and a smaller footprint, Sun ZFS Storage Appliances are perfect for consolidating NAS-based storage in the data center. And, like all Oracle engineered systems, they include everything you need for fast, simple deployment.

Integrated, efficient, extreme storage. Only from Oracle.

MANAGING YOUR STORAGE WITH DTRACE ANALYTICS

Sun ZFS Storage Appliances use DTrace Analytics to provide comprehensive information about any area of your storage system. You can use DTrace Analytics to drill down on a specific area of interest to get a visual status that can alert you to potential problem areas.

With DTrace Analytics, your IT group has all the tools to

- Identify and diagnose system performance problems
- Perform capacity planning
- Address live storage and networking issues

DTrace Analytics provides the industry's only comprehensive and intuitive analytics environment. The real-time analysis and monitoring capabilities of this storage management tool use built-in instrumentation to provide in-depth analysis of key storage subsystems and help administrators quickly identify the source of performance bottlenecks.

OPTIMIZE YOUR DATA CENTER

How do Sun ZFS Storage Appliances help you optimize your data center? Look at the top five optimizations.

- Maximize Oracle Database efficiency
- Deliver maximum performance for primary storage
- Integrate with Oracle VM 3.0
- Introduce optimizations that simplify test and development environments to reduce your overall footprint
- Introduce optimizations that reduce management costs

[1] *Results as of April 23, 2012. Sun ZFS 7420 appliance 267,928 SPEC SFS2008_nfs Ops/sec, 1.31 msec ORT, NetApp FAS6240 190,675 SPEC SFS2008_nfs Ops/Sec, 1.17 msec ORT, NetApp Data ONTAP 8.1 Cluster-Mode (4-node FAS6240) 260,388 SPEC SFS2008_nfs Ops/Sec, 1.53 msec ORT. http://www.spec.org/sfs2008/results/sfs2008nfs.html.*
Configuration Bill of Materials list price for Oracle result of US$423,644, https://shop.oracle.com/pls/ostore/f?p=dstore:product:16316256613292::NO:RP,6:P6_LPI:4244451731493419226583 85. Configuration Bill of Materials list price for NetApp FAS6240 result of US$1,224,350. http://www.netapp.com/us/how-to-buy/nystate.aspx (view state government contract pricing). For more detailed comparisons see http://www.oracle.com/us/solutions/performance-scalability/zfs-7420-specsfs2008-1599392.html.

"The [Oracle] Platinum Services offering has been a great addition to Oracle Premier Support. Our experience has exceeded my expectations. It took barely over a week to get both systems configured and get all the monitoring in place—for production and in our secondary facility. One week later, we patched one of our Oracle Exadata systems at a time that worked for us—a Saturday night—and everything went flawlessly."

Vincent Biddlecombe, CTO, Transplace



HIGH-AVAILABILITY SUPPORT—NO ADDITIONAL COST

The cost of downtime is up—way up. IDC estimates that the cost of downtime has increased 50 percent over the last decade.[1]

Oracle Platinum Services is a special entitlement available to Oracle Premier Support customers running certified configurations on Oracle's engineered systems. Oracle Platinum Services offers customers access to valuable support services under their existing support agreement—at no extra cost.

In addition to receiving the complete support essentials with Oracle Premier Support, qualifying Oracle Platinum Services customers also receive

- 24/7 Oracle remote fault monitoring
- Industry-leading response and restore times
  - 5-minute fault notification
  - 15-minute restoration or escalation to development
  - 30-minute joint debugging with development
- Patch deployment

Get the Oracle Advantage

Because Oracle architects, implements, and maintains the entire technology stack, Oracle customers benefit from the reduced complexity that goes along with having a single-vendor solution and the most-integrated support services in the industry.

Oracle offers comprehensive lifecycle services that help you take full advantage of the extreme performance of Oracle engineered systems.

- **Oracle Premier Support.** Complete support essentials with 24/7 coverage and proactive resources to help resolve issues before they become problems.
- **Oracle Platinum Services.** Enhanced support services with remote fault monitoring, industry-leading response and restore times, and patching services, exclusively available at no extra charge to qualifying Oracle Premier Support customers.
- **Oracle Expert Services.** Total lifecycle services from architecture design to migration and implementation.

Oracle support services experts are focused on delivering rapid time to value and reduced risk. And when it comes to keeping your Oracle engineered systems running at peak performance, Oracle is uniquely qualified to provide the most complete, integrated, and proactive support experience available.

Only from Oracle

Oracle designs complete engineered systems that are integrated to reduce the complexity of IT infrastructures and engineered—from applications to disk—to work together and deliver extreme performance. Oracle owns, innovates, and optimizes every layer of the technology stack, so you can simplify your data center operations, drive down costs, accelerate business innovation, and achieve unmatched enterprise performance levels.

There are many hardware and software vendors in today's market, but only Oracle provides complete, integrated engineered systems that offer lower costs, less risk, and more support than from any other vendor.

Extreme performance. Only from Oracle engineered systems.

Get the Oracle Advantage for Engineered Systems	
Optimized for extreme performance	Oracle's engineered systems are optimized to achieve enterprise performance levels that are unmatched in the industry. Components at all levels of the technology stack are fine-tuned to deliver extreme performance in ways no other vendor can duplicate.
In-a-box simplicity	Oracle's engineered systems help reduce your time to productivity because everything you need for your solution is included . You don't have to spend weeks (or months) procuring all the pieces and making sure they work together—it's already done for you.
Single-vendor support	With multivendor systems, there's always the question of which vendor to call when something goes wrong—or when you want help to make things run better. With Oracle's engineered systems, you make one call to one vendor for industry-leading response times for service, support, and problem resolution. No complex vendor hand-offs or time-consuming finger-pointing—just one vendor supporting the entire stack, from applications to disk.

[1] *"Maximizing System Performance to Manage the Cost of IT Operations," International Data Corporation white paper sponsored by Oracle, April 2012.*

FACT: Since 2002, Oracle has won more awards for customer support than any other technology company.



CONTACT US

To learn more about Oracle's engineered systems, visit **oracle.com/us/products/engineered-systems** or call **+1.800.ORACLE1** to speak to an Oracle representative.

OUTSIDE NORTH AMERICA

Visit **oracle.com/us/corporate/contact/index.html** to find the phone number for your local Oracle office.



Oracle Corporation

WORLDWIDE HEADQUARTERS
500 Oracle Parkway
Redwood Shores
CA 94065
U.S.A.

WORLDWIDE INQUIRIES
Phone:
+1.650.506.7000
+1.800.ORACLE1

Fax:
+1.650.506.7200

oracle.com

Oracle is committed to developing practices and products that help protect the environment

Copyright © 2013, Oracle and/or its affiliates. All rights reserved. This document is provided for information purposes only, and the contents hereof are subject to change without notice. This document is not warranted to be error-free, nor subject to any other warranties or conditions, whether expressed orally or implied in law, including implied warranties and conditions of merchantability or fitness for a particular purpose. We specifically disclaim any liability with respect to this document, and no contractual obligations are formed either directly or indirectly by this document. This document may not be reproduced or transmitted in any form or by any means, electronic or mechanical, for any purpose, without our prior written permission.

Oracle and Java are registered trademarks of Oracle and/or its affiliates. Other names may be trademarks of their respective owners.

Intel and Intel Xeon are trademarks or registered trademarks of Intel Corporation. All SPARC trademarks are used under license and are trademarks or registered trademarks of SPARC International, Inc. AMD, Opteron, the AMD logo, and the AMD Opteron logo are trademarks or registered trademarks of Advanced Micro Devices. UNIX is a registered trademark of The Open Group.

100213795 | C19057