Cloud **Essentials**

Migrate Any Application to Oracle Cloud

Open standards, unrivaled security, and comprehensive migration services motivate organizations to embrace cloud-based information systems.

ORACLE

"We recently purchased Oracle Compute Cloud, Oracle Storage Cloud, Oracle Database Cloud Service, and Oracle Database Backup Service to replace our legacy ERP system. With a minimal IT staff and Oracle Cloud, we are transforming the way we do business—running our entire manufacturing operation with Oracle Cloud behind it."

— Paul Davidson, Cofounder, Lift Software

For most organizations, the promise of trouble-free, cloud-based information systems remains an elusive goal. Although cloud technology is pervasive, today's installations primarily consist of new applications in private clouds managed by in-house IT staff. The vast majority of enterprise applications and infrastructure still remains on premises.

But that's changing fast.

Oracle allows you to migrate any workload to the cloud, setting the stage for a new era of cloud-based data, applications, and infrastructure. Find out how your organization can transition to a secure, scalable, high-performance public cloud—quickly, easily, and with no interruption to your business operations.

Oracle Cloud: Proven for All Applications and Workloads

Application Development and Testing

- Move selected application development activities to the cloud
- Choose the languages, tools, and open source technologies you need
- Gain versatile infrastructure options—not just Oracle Database and Oracle Applications, but third-party middleware and apps as well

Production Deployments

- Move your entire environment to the cloud—IaaS, PaaS, and SaaS
- Run Oracle Database, Oracle Applications, and Oracle middleware
- Include non-Oracle databases, applications, and middleware
- Launch new apps in days rather than weeks
- Enjoy unified management with complete visibility and control

Why Should Your Organization Migrate to Oracle Cloud?

Cloud computing has entered the mainstream—and it's here to stay. According to 451 Research, 41 percent of all enterprise computing workloads are already running in some type of public or private cloud, and 60 percent of all computing workloads are expected to be in a public or private cloud by the middle of 2018.[1]

However, IT leaders often hesitate to move critical applications into the hands of cloud service providers—partly because they don't see a clear migration path for entrenched legacy assets, but also because they aren't sure whether public cloud services are ready for enterprise needs. They are right to be skeptical: Most public cloud offerings are characterized by insufficient deployment choices, limited compatibility between on-premises and cloud systems, and a lack of enterprise-level management capabilities.

A Realistic Approach to Cloud Computing

Oracle has a realistic view of cloud computing that encourages a *hybrid* cloud infrastructure, with prepackaged applications and tools for rapid provisioning, migration, centralized management, and integration. In the remainder of this brief, you'll learn how these tools can simplify *your* journey to the cloud.

The Cloud That Stands Apart

Oracle Cloud represents the industry's most **complete** offering. It spans the infrastructure, platform, and application layers, with integrated consumption models and centralized management.

This highly versatile cloud platform offers **choice** of deployment—private, public, and hybrid cloud options, with similar technology in each category and easy interchangeability among them. It supports many different applications, languages, operating systems, and data types. It's ideal for both Oracle applications and third-party applications. And all apps run identically, whether deployed on premises or in the cloud.

[1] 451 Research, September 2016, 451research.com/blog/764-enterprise-it-executives-expect-60-of-workloads-will-run-in-the-cloud-by-2018.

Built around multiple levels of defense, Oracle Cloud is incredibly **secure**. Oracle's extensive cloud security includes physical data center access controls, encryption of data, and a multilayered, "defense in depth" security strategy that encompasses all layers of the technology stack.

Oracle Cloud is based on open **standards**, which ensures optimum flexibility as your business' needs change over time. You can use existing skill sets and talent across all environments and technology stacks—and run both Oracle and non-Oracle workloads in the cloud.

You don't have to compromise **performance** for your application workload in the cloud—it is built into the Oracle Cloud infrastructure at all levels. With Oracle Bare Metal Cloud Services, your application workload enjoys the predicable performance it needs with dedicated resources to avoid "noisy neighbors." For mission-critical workloads, you can deploy Oracle Database Exadata Cloud at Customer to ensure the extreme performance your business workload requires.

Oracle Cloud helps you easily migrate to the cloud while **reducing the costs** of IT modernization. You can preserve existing investments with familiar tools, and you don't have to rewrite code to migrate your software assets. Elastic capacity through "cloud bursting" gives you the capacity you need without having to oversubscribe. The biggest savings come from eliminating capital expenses by lifting and shifting entire workloads to the cloud and retiring data center assets.

Support for Any Workload or Application

While public cloud services were initially popular for development and testing (DevTest), Oracle Cloud is ready for production applications as well. Oracle's cloud-based management tools enable you to manage your on-premises and public cloud assets from a single console, using the familiar processes and skill sets that you have today.

Some organizations begin by moving their DevTest operations to the cloud. Others use the cloud to expand their analytics horizons, or to establish a cloud archive to backup their data. After that, they gradually move key applications to the cloud to extend on-premises infrastructure with new cloud platforms.

Solutions for Every Use Case

Operations in the Cloud

DevTest Environments

Running Big Data Analytics

Archiving in the Cloud

Moving Apps to the Cloud

Infrastructure Refresh

Application Consolidation

Moving Data Center to the Cloud

Of course, Oracle Cloud supports much more than just Oracle applications and infrastructure. For existing customers currently running Oracle software (such as Oracle E-Business Suite; Oracle's JD Edwards, PeopleSoft, and Siebel applications; as well as Oracle Database and Oracle WebLogic Server) on premises, these applications can simply be repackaged for a seamless deployment experience in the cloud.

The truth is, you can migrate *any* workload to Oracle Cloud—and most customers do. The majority of application workloads that are deployed on Oracle Cloud consist of Microsoft Windows, IBM WebSphere, Tomcat, and JBoss, along with third-party databases such as SQL Server, DB2, Mongo DB, Cassandra, Postgres, and Sybase.

Typical Savings Achieved by Oracle Cloud Customers

- As much as 50 percent CapEx savings on database licenses
- As much as 28 percent savings by eliminating duplicate administrative resources
- As much as 74 percent reduction in operational overhead in their data centers

Tools for a Safe and Productive Journey—with Unwavering Business Continuity

Oracle has consolidation tools to estimate the resources you will need to ensure adequate performance and enforce existing service level agreements (SLAs), as well as performance management tools to proactively identify and fix problems before they impact your production systems.

Oracle also offers cloning tools to seamlessly copy applications and data to the cloud. With what we call "lift and shift" migrations, you can move existing systems to the cloud intact—quickly and easily.

- Deploy on-premises backup or standby databases in the cloud for disaster recovery. Oracle Cloud is purpose-built to support highly available, enterprise-scale, business-critical workloads.
- Oracle Maximum Availability Architecture enables high availability capabilities including backup service, Oracle Real Application Clusters (RAC), and disaster recovery.

For customers with mission-critical workloads that cannot tolerate business disruption, Oracle offers a zero-downtime migration option called Oracle GoldenGate Cloud Service that enables you to move applications and databases to the cloud without impacting production operations. Oracle GoldenGate Cloud Service features a real-time data replication service so you can move data in bulk, and even transform dissimilar data types to one consistent format to simplify operations.

Oracle also offers tools for lifting and shifting VMware and KVM workloads to the cloud without any changes. As a final reassurance of business continuity, you can run your on-premises and cloud apps in parallel until you are certain the migration has been completed successfully.

Data Warehouse in the Cloud

Oracle Cloud is ideal for data warehouse workloads. Database administrators (DBAs) have instant access to preintegrated infrastructure such as servers, network, storage, and database platforms. This makes it easy to migrate existing on-premises data warehouses to the cloud—or create a new one altogether.

You can migrate mixed workloads—such as online transaction processing (OLTP) and analytics—of any size, from small applications to enterprise information systems. Oracle Cloud supports structured and unstructured data such as NoSQL and Hadoop. Your DBAs will enjoy cloud-based tools for monitoring, analytics, and management. They can also take advantage of a wide range of platform services for business intelligence, as well as use Oracle's cloud-based integration services to accommodate third-party analytics.

For high-performance data warehouses, consider Oracle Database Exadata Cloud Service, which includes preconfigured hardware and software to eliminate costly data warehouse builds—and offers extreme performance for instant analytics.

A Successful Migration to the Cloud

LARGER THANLIFE | ESCALATE INNOVATE CONNECT

The Organization

Larger Than Life (LTL) is a midsize, large-format printing company located in Erlanger, Kentucky, that produces large banners, billboards, vehicle wraps, bus and taxi advertisements, and more. The company manages 10 presses that run 20 hours per day, six days per week, and produces up to 500,000 square feet of product daily.

"Oracle enabled us to build a tightly integrated cloud ERP system and online ordering portal that links to our manufacturing floor via mobile devices—helping us to innovate now and into the future"

— Matt Raaker, Director of Operations, Larger Than Life

The Challenge

Larger Than Life operates in a fragmented industry, heavily populated by small shops that run high-tech equipment with low-tech, manual workflow processes. The company had very few options when it came to workflow automation tools. LTL's homegrown ERP system was unable to automate manufacturing processes or integrate online ordering functions into those processes. Customer service representatives had to manually enter orders, and printer operators relied on paper orders that crossed the manufacturing floor via runners, adding time and increasing the risk of user errors.

The Strategy

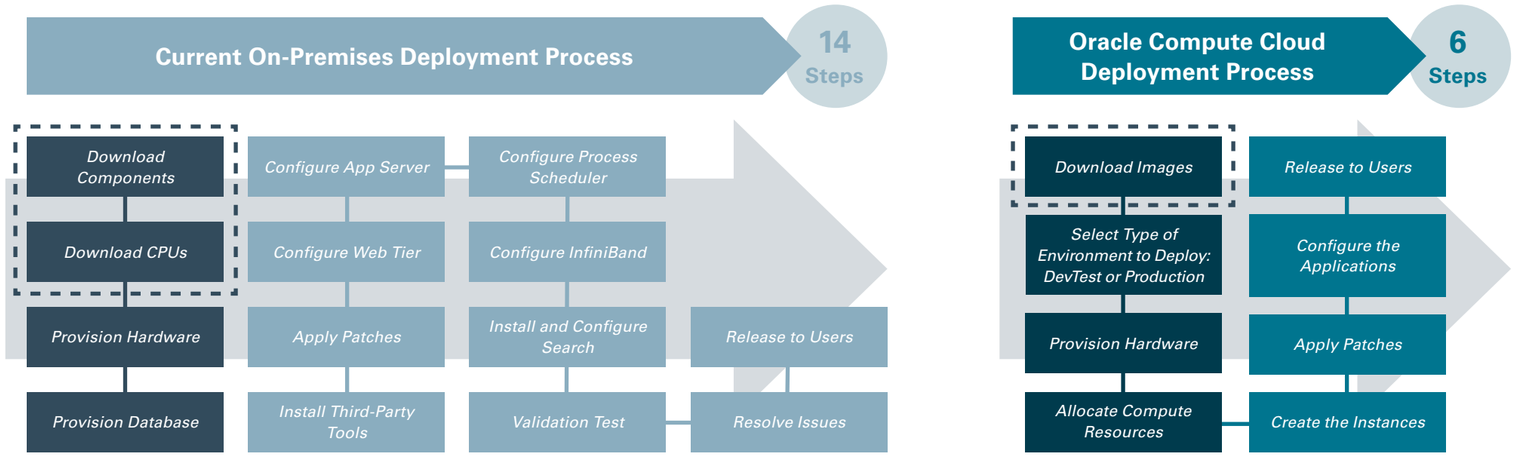
LTL used Oracle Database Cloud Service and Oracle Compute Cloud Service to build a tightly integrated, cloud-based ERP system and online ordering portal that links to its manufacturing floor via mobile devices. The new system automatically calculates production specifications such as banner dimensions and materials, eliminating the time-consuming and error-prone manual methods that employees used in the past. Cloud automation also extends to the factory floor, where work orders are automatically disseminated based on machine availability and order specifications.

The Success

With the new system in place, Larger Than Life saw immediate operational gains. "We used to generate instructions in a folder that would travel from machine to machine throughout the production process," says Matt Raaker, Larger Than Life's director of operations. "Now, we've been able to completely automate that workflow. As the work comes in, you see it on the screen for the correct station—from printing presses, cutting machines, and laminators to packing and shipping." Oracle's data management cloud services have enabled innovation in other business areas as well. The group launched Lift Software, an entirely new business designed to build and market cloud-based software for this niche industry, enabling LTL to focus on digital innovation rather than on managing a data center.

Easier Deployments—From Now On

The average on-premises, multitier application deployment requires 14 steps, from downloading components and configuring servers to provisioning hardware, configuring each tier of the infrastructure, and resolving issues. Oracle Cloud deployments involve only six steps, as shown in the diagram below.



Oracle's automated deployment process improves productivity and reduces the risk of human error.

If you are interested in rapid provisioning, you can select prepackaged applications directly from Oracle Cloud Marketplace. These turnkey apps give you reconfigured functionality, along with proven tools for deployment and single-console management.

With Comprehensive Management of Cloud Resources

Other cloud vendors offer management tools that only support their specific cloud infrastructure, forcing you to invest in multiple management solutions for whatever additional hardware and software you add to the cloud. Oracle Management Cloud, by contrast, gives you a complete view into all applications and systems across both Oracle and third-party environments, minimizing costs and reducing complexity. Only Oracle offers heterogeneous, cloud-native management solutions that spring from a unified platform. With Oracle, you get complete visibility into your entire environment from one console.

You can accelerate your migration with help from Oracle Consulting Services. Oracle's cloud experts will help you determine what to migrate and where to start, perhaps selecting a pilot project as a test case. They will also explain how to clone your application environments, both for DevTest and production resources, and demonstrate how to optimally maintain cloud assets. (You can also use your own management team, if you prefer, and simply call on Oracle Cloud experts as needed).

The Most Complete Cloud Services—at the Lowest Cost

Some companies sign on with a commodity cloud vendor, and then realize that they need advanced platform capabilities that the vendor can't offer. Only Oracle supports hybrid cloud deployments that give you freedom to move workloads from your data center to the public cloud and back again, with mature migration tools to simplify the move. That means you don't have to throw away decades of on-premises investments, or perform expensive application rewrites to move your IT assets to the cloud.

If you want to establish your own infrastructure platform in Oracle Cloud, you can subscribe to Oracle Bare Metal server and storage infrastructure, then install the exact operating systems, middleware, databases, and applications that you need. Dedicated servers deliver predictable performance and extensive control so you can optimize your applications. In addition, you can take advantage of industry-leading technologies such as Oracle Database, Oracle RAC, and the wide range of Oracle IaaS and Oracle PaaS cloud services.

Oracle Brings the Cloud to You

Some customers can't move their data and applications to the public cloud because of data privacy concerns, industry regulations, or unique security constraints. Fortunately, they can still take advantage of the scalability, affordability, and ease of public cloud technology by using Oracle Cloud technology in their own data center. Based on a flexible subscription model, Oracle Cloud at Customer is ideal when data must remain on premises for regulatory, privacy, legal, or performance reasons. This is another service that only Oracle offers.

In other words, if you can't move to the public cloud, Oracle will move the cloud to *you* by deploying and operating an instance of Oracle Cloud Machine or Oracle Database Exadata Cloud at Customer behind your firewall. You will enjoy the same robust cloud platform services, the same automatic software updates, and the same subscription-based pricing model as all Oracle Cloud customers do. Rather than purchasing hardware and software, you can simply subscribe to it, and let Oracle handle every aspect of installation, configuration, patching, lifecycle management, upgrading, and monitoring. You get a "mini" Oracle Cloud—all fully managed—behind your firewall.

Problems with Third-Party Clouds

- Insufficient deployment choices
- Cumbersome migration requirements
- Limited compatibility between on-premises and cloud environments
- Fragmented management tools
- Inconsistent performance
- Gaps in security, visibility, and control
- Lack of availability and redundancy for critical workloads

The Superiority of Oracle Cloud

- Unified management tools for monitoring applications and infrastructure
- Superior utilities for capacity planning, compliance, scheduling, and log analytics
- Compute services that are 11.5 times faster than commodity servers, yet cost about 20 percent less
- Storage capacity at about one-seventh the cost of commodity cloud alternatives

Conclusion: Beyond Migration

Only 15 percent of corporate IT workloads are running in the public cloud today[2]—but that's changing fast. Many of these workloads already reside in Oracle Cloud and the remainder are on their way to joining them. The reason is simple: Oracle is in the best position of any cloud provider to move customers forward on this important journey.

Why Migrate to Oracle Cloud

Innovation

Accelerate business transformation

Cost

Improve resource utilization

Value

Add business value without infrastructure headaches

Peace of Mind

Lower risk with single-vendor accountability

Agility

Gain agility for rapidly changing environments

2 Barclays, "Cloud Survey: Adoption to Increase Steadily, Costs Aren't the Only Driver," October 5, 2016.

You can start your journey to Oracle Cloud from any point: new clouds, legacy environments, and hybrid implementations. Oracle's complete and integrated approach makes it easy to get started and even easier to expand. You can start by lifting and shifting application workloads to Oracle IaaS, such as Oracle Bare Metal Cloud Services. Or you can migrate workloads to Oracle PaaS on Oracle Cloud infrastructure. Either way, you will have the flexibility to migrate any type of workload, use any type of development methodology, and upload many different types of data—including big data and large analytic workloads.

It's time to gain the advantages of connecting all applications and business practices—both from Oracle and other vendors. Once your assets are in the cloud, Oracle experts can help you run, manage, and maintain those assets for as long as you wish.

With Oracle, there is no workload left behind—and no compromise.

Enabling the Journey to Cloud

- From any starting point
- New cloud, private cloud, and hybrid cloud
- All workloads, developers, data, apps, and business practices

Oracle Cloud Platform

- ☑ Complete: Best-of-breed and integrated solutions in every cloud category—data, software, platform, and infrastructure
- ☑ Open: Standard-based platform that supports all workloads, apps, languages, open source, and data types
- ☑ Secure: Automatic, always-on protection that extends throughout the entire cloud stack, all the way down to the silicon layer
- ☑ Choice: Flexible deployment options—public, private, Oracle Cloud at Customer, and hybrid cloud
- ☑ Intelligent: Artificial intelligence and machine learning in every cloud category—data, software, platform, and infrastructure

Cloud **Essentials**

Thousands of customers, including some of the world's most recognizable brands, have embarked on the journey to transform their business processes with Oracle's robust cloud platform.

Contact your Oracle account manager to start *your* journey to the cloud, or visit the Oracle Cloud migration page to learn more.

Try Oracle Cloud today. Go to cloud.oracle.com/tryit.

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