IBM Cloud Business Unit
Thought Leadership White Paper

Improve Agility and Flexibility of Oracle Applications with IBM Cloud

Managed solutions reduce system complexities and costs

IBM

Contents

Migrating Production Workloads: Is the Potential Worth the Risk?

Thirty-five percent of business leaders want cloud computing to spur "radical business innovation."[1] That's the finding of a recent IBM Institute for Business Value study. But thus far, use of clouds has been more practical than profound. Many businesses regularly use public clouds for application development and testing and for data backup and storage. In doing so, organizations find that cloud computing can help solve everyday data center challenges: sprawl; arduous processes to procure, build and maintain server environments; operational inefficiencies; and, of course, rising costs.

IBM believes that increased innovation will come once organizations migrate mission-critical production workloads to managed clouds: clouds administered by outside technology companies that provide consistent availability; enterprise-class security; full management of the cloud infrastructure and workloads; scalable access to applications, resources and services; and an array of other cloud management functions.

Workloads such as Oracle applications, along with additional enterprise resource planning (ERP), customer relationship management (CRM), human resource management (HRM) and supply chain management (SCM) programs, can bring more value to the business once migrated to these types of clouds. In helping companies save money and staff resources, managed clouds can free up funds and talent to focus on new products and services that will bring increased business value to the organization.

Still, many CIOs, CTOs and line-of-business leaders hesitate to migrate production workloads to the cloud. Why? Business and IT leaders worry about a third-party partner's ability to provide the enterprise-class security needed, both for the cloud and for the virtual private networks used to access the cloud. They are concerned that the availability options offered by many vendors are insufficient for production workloads. They perceive difficulty in requesting and modifying cloud services. They perceive a lack of vendor support. They worry about the provider's ability to scale operations globally.

While these concerns are valid, the right managed cloud can effectively support production workloads while simultaneously helping companies seize the new business opportunities that cloud computing enables. This paper will examine the benefits of migrating and running production workloads in a managed third-party cloud, discuss what to look for in a managed cloud provider and list ways in which organizations can begin plotting a cloud strategy for production workloads. IBM's offerings in this arena—IBM Cloud Managed Services and IBM Cloud Managed Services for Oracle Applications—are also discussed.

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Solving Ongoing Challenges, Seizing New Opportunities

Migrating production workloads to a third-party managed cloud, and running them there, can help organizations conquer ongoing workload challenges and seize new opportunities. Maintaining workload application environments in-house can be arduous. The proliferation of Oracle and other systems has resulted in complexity that often causes management difficulties, quality of service issues, slower-than-optimal deployment capabilities and increased total cost of ownership. Many organizations also struggle with finding and retaining professionals with the specialized IT skills — for example Oracle Demantra expertise and Oracle i-flex skills — needed to design, maintain and update these environments. Finally, IT divisions often cannot focus on new activities and implementations that would bring increased value to their businesses because of the resources required simply to maintain the existing production workloads.

Use of a third-party managed cloud can alleviate these issues. More important, these clouds can also help organizations seize new opportunities by leveraging cloud capabilities for competitive advantage. A cloud's ability to provide on demand provisioning and de-provisioning can help improve organizational agility, flexibility and service. Clouds can have particular value for organizations that need to facilitate mergers, acquisitions or divestitures, allowing new corporate infrastructures to be up and running in a matter of days to more easily meet deadlines. By leveraging cloud computing and cloud services, organizations can combine or modify infrastructures to suit changing business needs, a much easier process than building an entirely new infrastructure.

Cloud computing for mobile applications can also help companies more tightly link themselves to consumers and clients. A customer in a consumer electronics store, for example, may use a cloud-enabled smartphone application to check in with the retailer upon arrival, obtain coupons tailored to his or her shopping patterns, or receive other pertinent information. The application may provide the consumer with access to cloud-stored receipts, making exchanges easier. Or the consumer may be able to use the program to check for in-store product availability. These cloud enabled applications can also help organizations study social media to track brand sentiment. Analytics and internal data-sharing applications can be deployed to mine information for business insight and to share findings, leading to improved decision making.

What to Look-For In a Third-Party Cloud Managed Services Provider?

Not all third-party clouds are appropriate for production workloads. IT and business leaders are right to worry about challenges—from security to computing capabilities to global scaling. To choose an enterprise cloud that can fulfill security, scalability and flexibility requirements, organizations should consider the technology provider's:

- Automation and standardization capabilities
- Configuration options
- Security levels
- Client control features
- Management features
- Ability to fulfill the client organization's business needs

An appropriate environment for production workloads offers the right mix of automation, standardization and client control. The third-party managed cloud should enable automated management for quick provisioning of the cloud, while providing the client organization with self-service capabilities and rapid services deployment capabilities. The technology provider should offer flexible configuration options and a management platform through which the client organization can configure the cloud to meets its specific business needs. Hardware providing sufficient computing power for production workloads should be used.

Since security is so important, the managed cloud service must also provide enterprise-class security and isolation protocols. In a shared multi-tenant deployment model—or one in which a business's cloud is hosted in a third-party service provider's data center, on a platform that is shared by other organizations—this can be accomplished by deploying the same design principles as those used in private cloud implementations, with appropriate isolation among the organizations sharing the cloud. Dedicated servers that are physically isolated can be used for specific workloads. Important applications such as Oracle can be housed on a private, dedicated application-level cloud within the shared platform. Visibility into threats to the client account are paramount and the technology provider should employ skilled professionals to monitor client clouds for security threats. Secured virtual private networks can be deployed to further improve security.

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While many cloud providers manage the hypervisor, leaving additional service management tasks to the client organizations themselves, the right third-party vendors for production workloads offer managed cloud services: providing a robust portfolio that spans from the virtual machine to the application level. Ideally, these services should be based on proven processes for advanced production workloads and they should facilitate faster service delivery.

Finally, the third-party cloud provider should be attuned to the client organization's business needs. The provider should therefore offer choices in cloud deployment models, including private or shared multi-tenant. A hybrid cloud option—one in which the cloud infrastructures utilizes the capabilities of both public and private cloud infrastructures, merged with traditional IT—should also be available. The provider should offer a choice of availability options, service level agreements and pricing. Cloud environments should be capable of being deployed quickly to hasten the organization's time to value. The provider should have a proven, objective track record in building and managing demanding IT environments. It should also offer guaranteed, business-centric service agreement options, covering service times, production workload response times and availability. Support should be available 24 hours a day, 365 days a year.

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IBM Cloud Services

With IBM Cloud Managed Services for Oracle Applications deployed on the IBM Cloud Managed Services infrastructure, IBM offers managed cloud services that meet or exceed the benchmarks discussed above. Let's take a closer look at each.

IBM Cloud Managed Services is a standardized, ITIL-compliant, infrastructure as a service capable of being scaled across multiple cloud data centers on five continents. This fully-managed solution is available in dedicated, hybrid or multi-tenant deployments powered by IBM Power Systems and IBM System x servers. It has been designed to support enterprise production workloads, along with applications in the development and test stages. The IBM Cloud Managed Services management platform enables virtualization and standardization of workloads and the most commonly repeated operating procedures.

Service management and automation capabilities also provide organizations with more rapid provisioning of resources. In fact, management above the hypervisor level is a key feature of IBM Cloud Managed Services. IBM has defined a full stack of managed services that span from the hypervisor to the application layer. In automating above the hypervisor level, IBM delivers capabilities in hours that would normally take weeks.

Web-based administrative functions help organizations achieve a higher level of control. IBM Cloud Managed Services allows organizations to control their cloud workloads and applications through a web-based management portal. Authorized users can log on at any time from any place to monitor, provision and otherwise control their clouds. New virtual machines become available shortly after the completion of these requests.

In addition, IBM Cloud Managed Services for Oracle Applications offers enterprise-level availability and security levels, tailored to meet a variety of budgets. Service options offered for availability levels range from 99.5% to 99.9%, and come with associated infrastructure services. These reliability levels are accomplished through around-the-clock monitoring and management of the cloud infrastructure. Security measures include multiple security and isolation features, along with enhanced physical security, intrusion protection systems and vulnerability scanning. These security measures make IBM Cloud Managed Services appropriate for development and testing of applications in industries such as finance which had previously only been able to develop and test on private clouds.

An IBM alliance with AT&T further helps allay the security concerns many organizations have about migrating their production workloads to the cloud. IBM's relationship with AT&T provides IBM Cloud users the option to connect to their clouds via AT&T's NetBond virtual private network for added security and speed. IBM Cloud Managed Services, with the optional AT&T virtual private network, is designed to provide a pre-integrated, cloud-within-the-network service that is built specifically for business use—delivering the scalability and speed benefits of a shared cloud with the enterprise-grade security, performance and control attributes of a private cloud. This option helps reduce the many security and complexity barriers that prevent the adoption of cloud for mission-critical workloads.

Finally, IBM offers business-centric service level agreements that provide organizations a choice of availability levels and the infrastructure services to be performed, to meet specific business and usage requirements. If these service level agreements are ever not met, IBM makes financial remuneration to the client organization.

IBM Cloud Managed Services for Oracle Applications

Oracle applications are critical to many businesses, but, since they require a complex infrastructure and strong Oracle operational skills, they place a heavy burden on IT systems, staffs and budgets. Until now, this burden could only be adequately addressed via on-premises solutions or private clouds. Now IBM offers IBM Cloud Managed Services for Oracle Applications, making it possible to migrate and run these applications on the IBM cloud. This cost-effective offering can help reduce complexity and total cost of ownership of Oracle environments while improving service levels and speed of service delivery. (See Figure 1.)

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IBM Cloud Managed Services for Oracle Applications supports a plethora of Oracle offerings. These include Oracle database, Fusion Middleware and applications, eBusiness Suite family, Fusion, Hyperion, Demantra, JDEdwards, PeopleSoft, ATG, Siebel, Banking Industry solutions and Oracle Retail. Built on IBM's managed cloud infrastructure, IBM Cloud Managed Services for Oracle Applications delivers Oracle environments,

Your needs

Reduced total cost of ownership: Shift costs from capital expenses to operating expenses and free IT resources

Fast deployment: Includes account creation, image selection and provisioning, firewall configurations and integration of relevant software

Capabilities: Continuous innovation and transformation in both process and technology; level of technical and customer knowledge; global consistency in support; use of open standards

Access to skills: Labor with deep experience in managing and maintaining Oracle applications

Security and availability: Physical, network and data security plus business-centricl1service- level agreements

Global reach: Data centers running around the world with access to in-country support

Value-add services: Consulting, migration and managed services

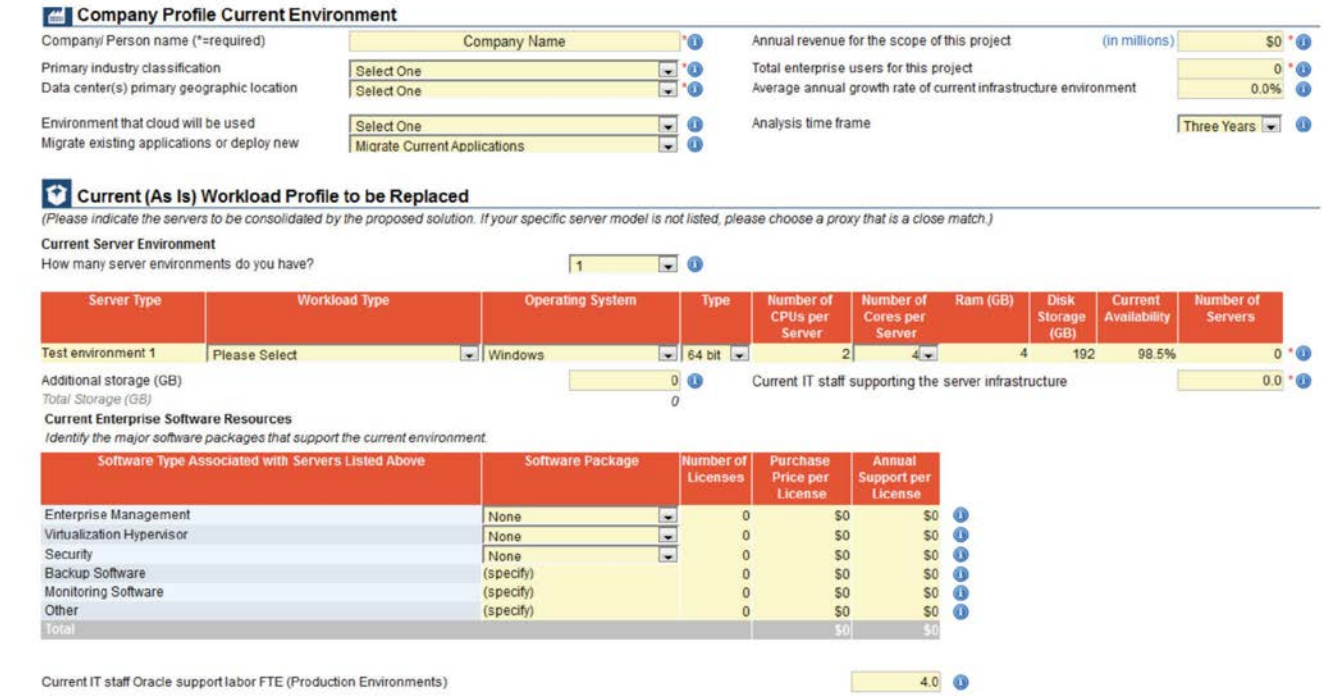
IBM Assurance: IBM's standard low risk Oracle application migrations in reasonable time, are factory-based and repeatable

Figure 1. IBM Cloud Managed Services for Oracle Applications can benefit organizations in several ways, as this chart illustrates. It can help reduce TCO of Oracle applications, improve deployment speed, and improve availability and security. Organizations can also take advantage of IBM's innovation, skills, capabilities and global reach.

through an enterprise-class, security- rich managed cloud infrastructure with fast provisioning and flexibility. Improved service quality results from automation and standardization of Oracle tasks, including provisioning, cloning, and refreshing. Standardized, well- defined processes are used to transition Oracle environments to the IBM cloud.

As part of IBM Cloud Managed Services for Oracle Applications, IBM creates Oracle environment architectures and provides end-to-end management—including software patching of Oracle applications and the underlying operating system, and database and middleware support.

As part of IBM Cloud Managed Services for Oracle Applications, IBM creates Oracle environment architectures and provides end-to-end management—including software patching of Oracle applications and the underlying operating system, and database and middleware support. Also available are monitoring of Oracle servers, systems and instances; configuration management; performance analysis and tuning; storage area network monitoring and administration; and server capacity management. Two service classes—development and full service—are available. Service level agreements cover issues such as service time, response times for production systems, availability of Oracle environments and availability of non- production infrastructures.



Company Profile Current Environment

Company/ Person name (*=required)	Company Name	Annual revenue for the scope of this project (in millions)	$0
Primary industry classification	Select One	Total enterprise users for this project	0
Data center(s) primary geographic location	Select One	Average annual growth rate of current infrastructure environment	0.0%
Environment that cloud will be used	Select One	Analysis time frame	Three Years
Migrate existing applications or deploy new	Migrate Current Applications		

Current (As Is) Workload Profile to be Replaced

(Please indicate the servers to be consolidated by the proposed solution. If your specific server model is not listed, please choose a proxy that is a close match.)

Current Server Environment

How many server environments do you have? 1

Server Type	Workload Type	Operating System	Type	Number of CPUs per Server	Number of Cores per Server	Ram (GB)	Disk Storage (GB)	Current Availability	Number of Servers
Test environment 1	Please Select	Windows	64 bit	2	4	4	192	98.5%	0

Additional storage (GB) 0

Total Storage (GB) *0*

Current IT staff supporting the server infrastructure 0.0

Current Enterprise Software Resources

Identify the major software packages that support the current environment.

Software Type Associated with Servers Listed Above	Software Package	Number of Licenses	Purchase Price per License	Annual Support per License
Enterprise Management	None	0	$0	$0
Virtualization Hypervisor	None	0	$0	$0
Security	None	0	$0	$0
Backup Software	(specify)	0	$0	$0
Monitoring Software	(specify)	0	$0	$0
Other	(specify)	0	$0	$0
Total			$0	$0

Current IT staff Oracle support labor FTE (Production Environments) 4.0

Figure 2: The IBM total cost of ownership/return on investment analysis tool helps businesses determine how they may benefit from IBM Cloud Managed Services for Oracle Applications solutions. Organizations answer a series of questions related to their existing infrastructure/applications configurations and manpower costs.

Organizations contracting IBM Cloud Managed Services for Oracle Applications further benefit from a cross-IBM partnership among IBM Global Business Services, IBM Application Management Services and IBM Global Technology Services. Together, these IBM divisions help organizations with all stages of the Oracle applications lifecycle. IBM's full spectrum of Oracle services includes everything from strategy, business process transformation and application migration and integration to application support, database management and infrastructure and network management.

Finally, IBM Cloud Managed Services for Oracle Applications is backed by IBM's longstanding partnership with Oracle. IBM and Oracle have been working together for more than 27 years, and IBM is currently a Diamond-level Oracle partner. Through this partnership, IBM and Oracle jointly serve more than 150,000 organizations around the globe. These engagements are implemented by more than 10,000 professionals skilled in both IBM and Oracle solutions.

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How to get started?

Moving workloads to the cloud can be a challenging process. To begin developing a migration strategy, consider:

- Does my organization want to create born-on-the-cloud applications in support of business processes? Or does it just want to optimize and efficiently run existing production workloads in a cost-effective and scalable environment?
- What service levels does my organization need? What type of management support?
- What deployment model does my organization want?
- Does my organization want flexible or fixed pricing?
- Which of our applications are already standardized, virtualized or automated?
- Which applications are independent, not requiring heavy communications with other systems?
- Which applications do not have demanding regulatory or workload isolation requirements?

Answering these questions is a way to start developing a cloud deployment or migration strategy. IBM recommends starting with standardized, independent workloads that experience fluctuating demands for which IBM Cloud Managed Services for Oracle's agility, flexibility and cost points are well-suited. Examples are video streaming applications, enterprise resource planning applications, customer relationship management applications, web site applications and applications that are subject to seasonal or business fluctuations. IBM Cloud Managed Services is also appropriate for managed development and test activities.

ORACLE Diamond Partner

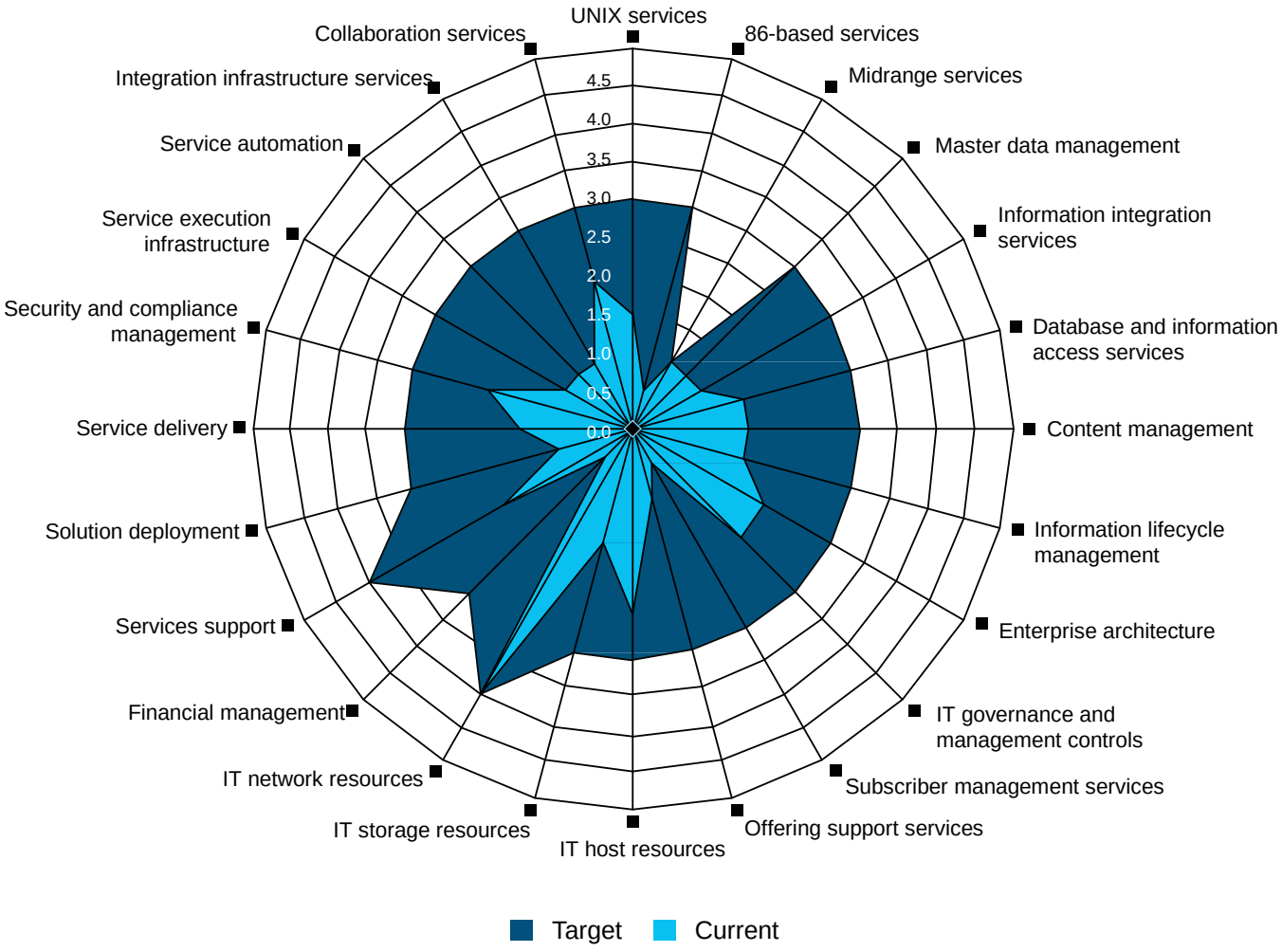

Figure 3: Using data visualization of gap analysis results, IBM can help clients quickly identify focus area for improvement. In this hypothetical illustration, current capabilities are represented by the light blue areas at the center. The dark blue area is defined by the target level of capability and represents the gaps that must be closed to reach the desired end state.

If an organization needs assistance making these types of determinations, quickly and for free, the IBM total cost of ownership/return on investment analysis tool can help. This tool helps businesses determine how they may benefit from IBM Cloud Managed Services for Oracle Applications solutions. Organizations answer a series of questions related to their existing infrastructure/applications configurations and manpower costs. It is hosted on a web portal and can be accessed with the help of an IBM representative. (See Figure 2.)

The tool then generates a report based on the organization's answers. This report covers areas such as the organization's server and storage environments, internet bandwidth, network resources, enterprise software resources and workload profiles. The report examines the savings in capital expenditures and recurring costs that can be achieved by implementing Cloud Managed Services for Oracle Applications solutions, along with total cost of ownership comparisons and return on investment projections.

Need specialized help?

For organizations that need specialized expertise in determining which applications and workloads to deploy or migrate, IBM offers the IBM Workload Transformation Analysis for Cloud. Through this analysis, IBM strategy and practice consultants examine an organization's workload and application environment. Using robust analytics developed by IBM research, these consultants help organizations understand their mix of simple applications, moderately complex applications, and workloads and complex applications. This, in turn, helps organizations to determine what targets can be moved to what kinds of platforms. This service also prioritizes workload migration to the cloud, delivers a quantitative operational cost analysis for that migration and provides a gap analysis summarizing the preparation needed to transform the existing environment to a cloud delivery model. (See Figure 3.)

Migrating complex workload applications to the cloud is a challenging process. Partnering with IBM, organizations receive the benefit of significant migration and management expertise gleaned from the implementation of cloud infrastructures worldwide. In IBM Cloud Managed Services and IBM Cloud Managed Services for Oracle Applications, we combine this expertise with service level choices, security options, business-centric service level agreements, easy provisioning, around the clock support and global scalability to provide significant value to your organization.

For more information

IBM Cloud Managed Services and IBM Cloud Managed Services for Oracle Applications, visit: **ibm.com**/cloud/ibmcms4oracle

For IBM insights and perspectives on the issues that matter most to IT and business executives, visit:
www.ibm.com/csuitestudy

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Produced in the United States of America
November 2015

[1] *The power of cloud: Driving business model innovation*, IBM Institute for Business Value.

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WUW12346-USEN-04