



THE EMPOWERED DATABASE

2014 ENTERPRISE PLATFORM DECISIONS SURVEY

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EXECUTIVE SUMMARY

The increasing size and complexity of database environments today is straining IT resources at most organizations, reducing agility, and increasing the costs and challenges associated with maintaining the performance and availability of business-critical systems. To address these concerns, many IT departments are looking for ways to automate routine tasks and free up assets. The use of virtualization to help accomplish these goals is well known. Likewise, the adoption of cloud services is becoming more commonplace, especially private clouds.

In August 2014, Unisphere Research fielded a study among the members of the Independent Oracle Users Group (IOUG) to examine the current state of Oracle database sites, including the key issues, priorities and solutions being adopted by organizations. A total of 338 qualified responses were collected and analyzed. Respondents came from organizations of all sizes and across various industries. A demographic overview is available at the end of the report.

The key findings of the study include the following:

- More than two thirds of organizations indicate that the number of Oracle databases they manage is expanding. The most pressing challenges they report facing as a result of this expansion are licensing costs, additional hardware and network costs, and additional administration costs and complexity.
- Increasing performance, lowering costs and limiting downtime are the most important goals for organizations managing Oracle databases and mission-critical applications.
- Automated alerts to improve monitoring and automated database restart to improve high availability are top priorities. The majority of organizations plan to use Oracle Enterprise Manager 12c or custom scripting to achieve these goals.
- Agility is major issue. For more than 50% of organizations, it takes their IT department 30 days or more to respond to new initiatives or deploy new solutions. For a quarter of organizations, it takes 90 days or more.
- The use of virtualization within Oracle database environments is increasing. Almost two-thirds of organizations report increases over the past year. Nearly half report that more than 50% of their IT infrastructure is virtualized.
- The most common virtualization solutions are VMware vSphere, reported by 57% of organizations, followed by Oracle VM, reported by 9% of organizations, and AIX LPARs, reported by 8% of organizations.
- The most common benefits organizations report as a result of using virtualization within their Oracle database environments are reduced costs, consolidation, and standardization of their infrastructure.
- The number-one objection encountered to virtualizing mission-critical databases is increased licensing costs. However, 55% of respondents list cost reduction as the primary benefit of virtualizing their Oracle environments.
- Support is no longer an issue. Over 60% of organizations say they have never been requested to reproduce a database issue in a physical environment, and the number of respondents reporting that that the issue was related to virtualization was less than 5%.
- Nearly one-third of organizations are currently using or considering a public cloud service. Almost half are currently using or considering a private cloud. For more than 25% of organizations, usage of private-cloud services increased over the past year.
- Cloud and virtualization are being seamlessly absorbed into the jobs of most database administrators, and in some cases, reducing traditional activities while expanding their roles.

On the following pages are the detailed results and analysis of this effort.

PEAK PERFORMANCE

More than two-thirds of organizations indicate that the number of Oracle databases they manage is expanding. The most pressing challenges they report facing as a result of this expansion are licensing costs, additional hardware and network costs, and additional administration costs and complexity. Increasing performance, lowering costs and limiting downtime are the most important goals for these organizations. Automated alerts to improve monitoring and automated database restart to improve high availability are top priorities.

A majority of respondents have fairly sophisticated database operations, involving multiple sites and application areas. Survey respondents oversee complex and multiple database sites, many with large volumes of data. Thirty-seven percent of those surveyed manage greater than 100 databases, and 12% manage in excess of 500 databases. (See Figure 1.)

Data keeps getting bigger and bigger. Two-thirds of respondents have increased the number of Oracle databases within their enterprises over the past year. (See Figure 2.)

Database performance and reliability have become key concerns as organizations attempt to manage the influx of big data and balance demands for analytical access. The majority report that they are challenged with improving the performance of their databases and availability of data to their enterprises, as big data and increasing user demands take their toll. Large segments of data managers also face tight budgets and skills constraints. (See Figure 3.)

The ability to leverage databases to deliver this agility is a top priority for data managers. When asked for their top initiatives over the coming year, increased performance tops the list, followed by the drive to lower costs and achieve continuous availability. (See Figure 4.) The majority of enterprises want to improve monitoring via automated alerts and high availability via automated database restart. (See Figure 5.) The majority of customers are using custom scripting and OEM 12c to automate databases and applications. (Figure 6.)

Agility has become a challenge. In today's fast-paced economy, IT is expected to respond to new initiatives at the drop of a hat. However, only 16% say they can accomplish new initiatives within a business week. Overall, 55% report it takes 30 days or more to complete a project. For a quarter of organizations, it takes 90 days or more. (See Figure 7.)

Figure 1: Number of Oracle Databases at Respondents' Organizations

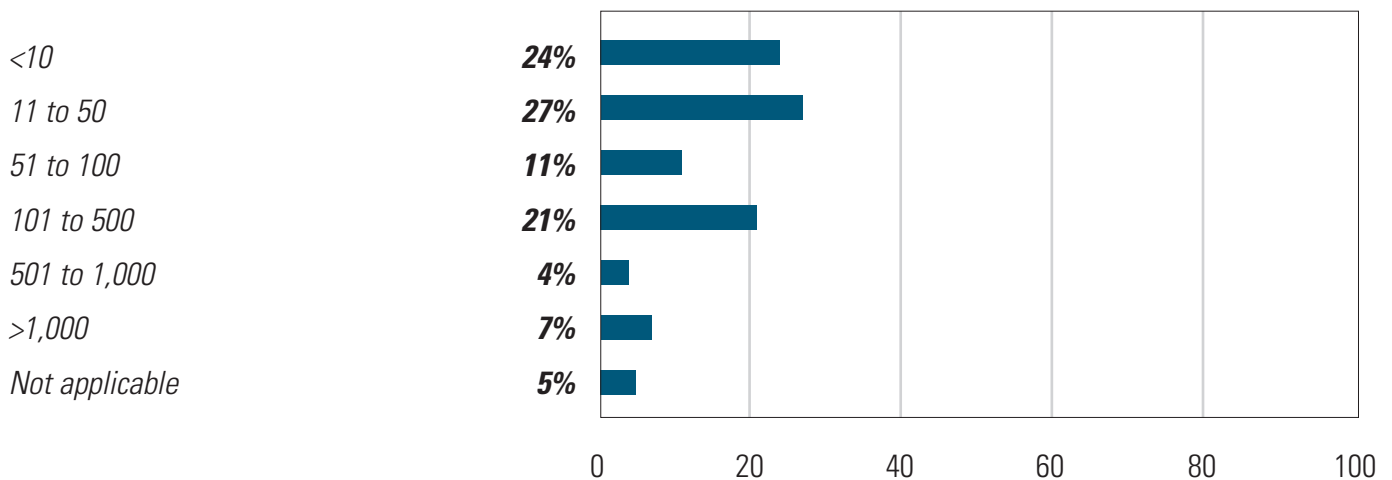


Figure 2: Change in Number of Oracle Databases Over the Past Year

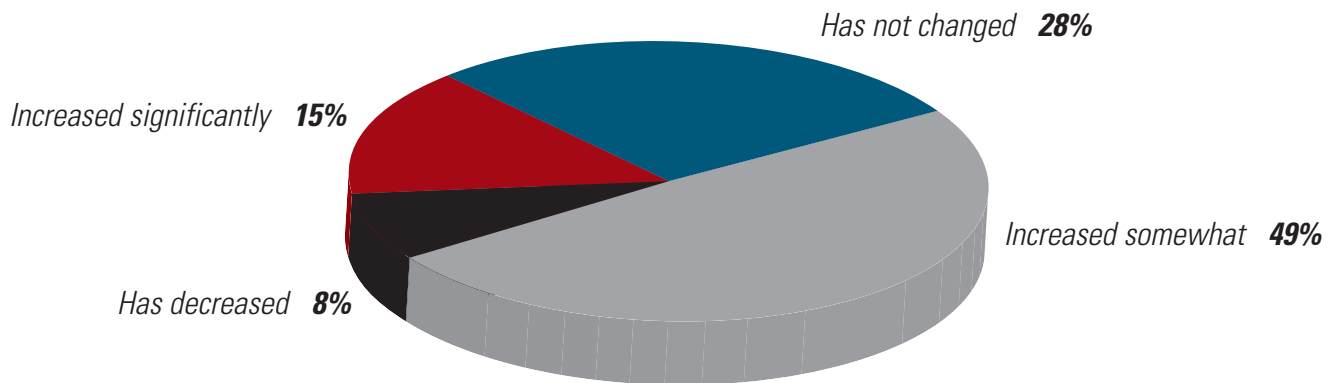


Figure 3: Challenges Faced When Seeking to Expand the Number of Oracle Databases Across or Within Enterprise

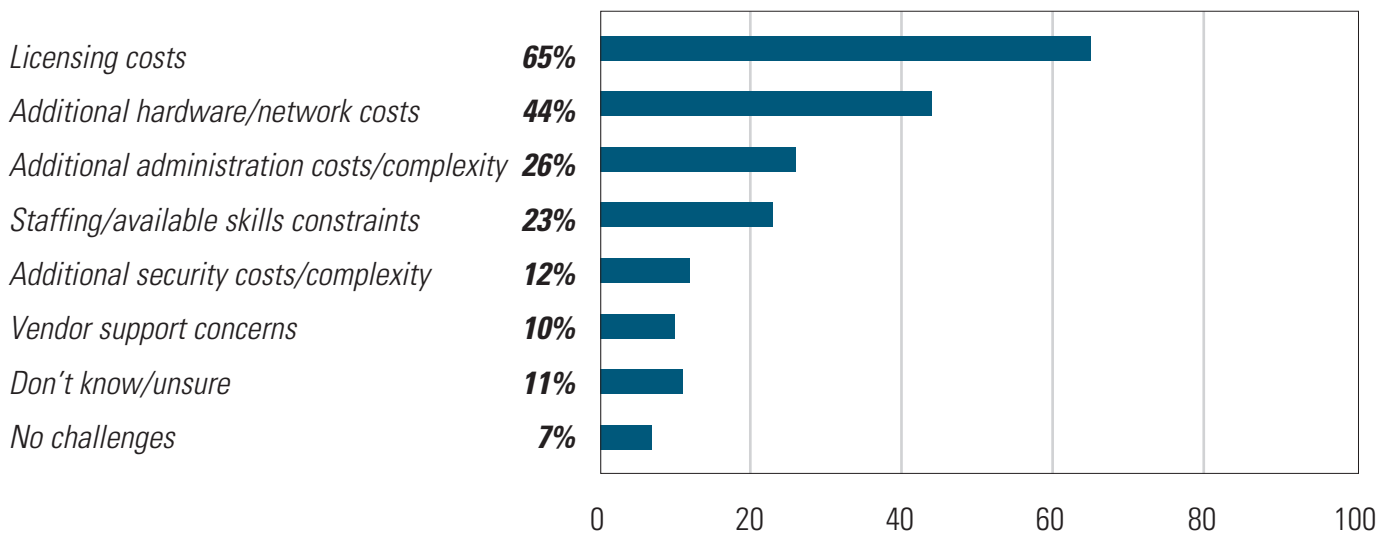


Figure 4: Three Most Important Goals for Managing Oracle Databases and Mission-Critical Applications

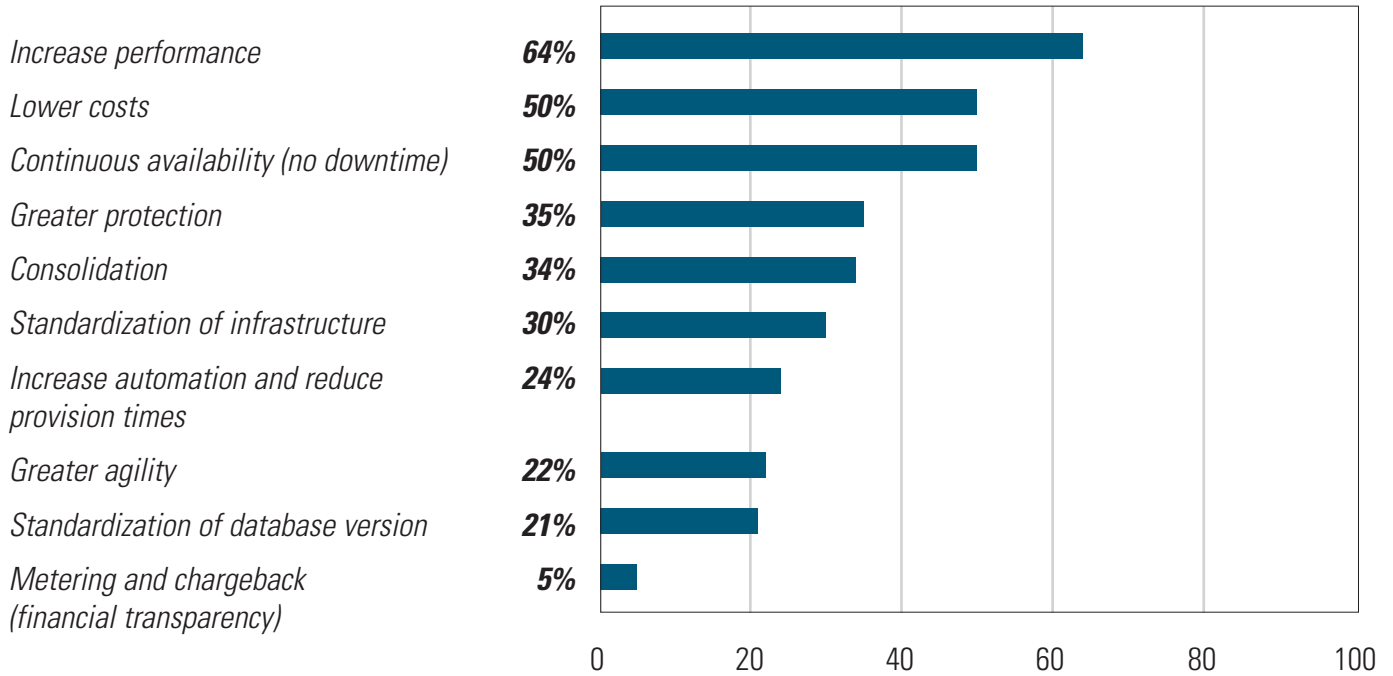


Figure 5: Importance of Automating the Following Tasks to Meeting Goals and Addressing Challenges

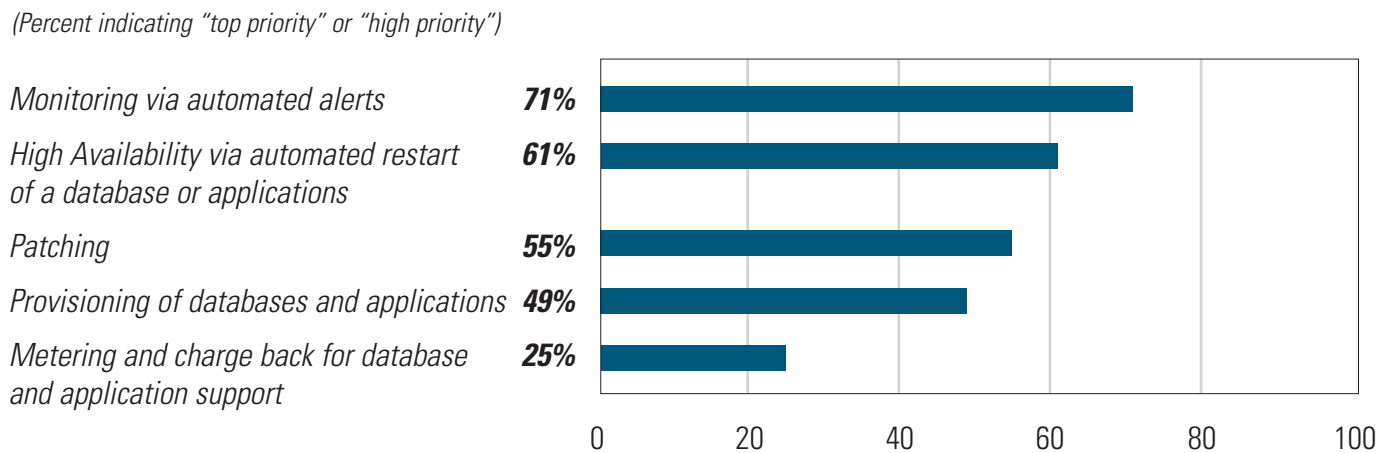


Figure 6: How Do You Plan to Automate Your Databases and Applications?

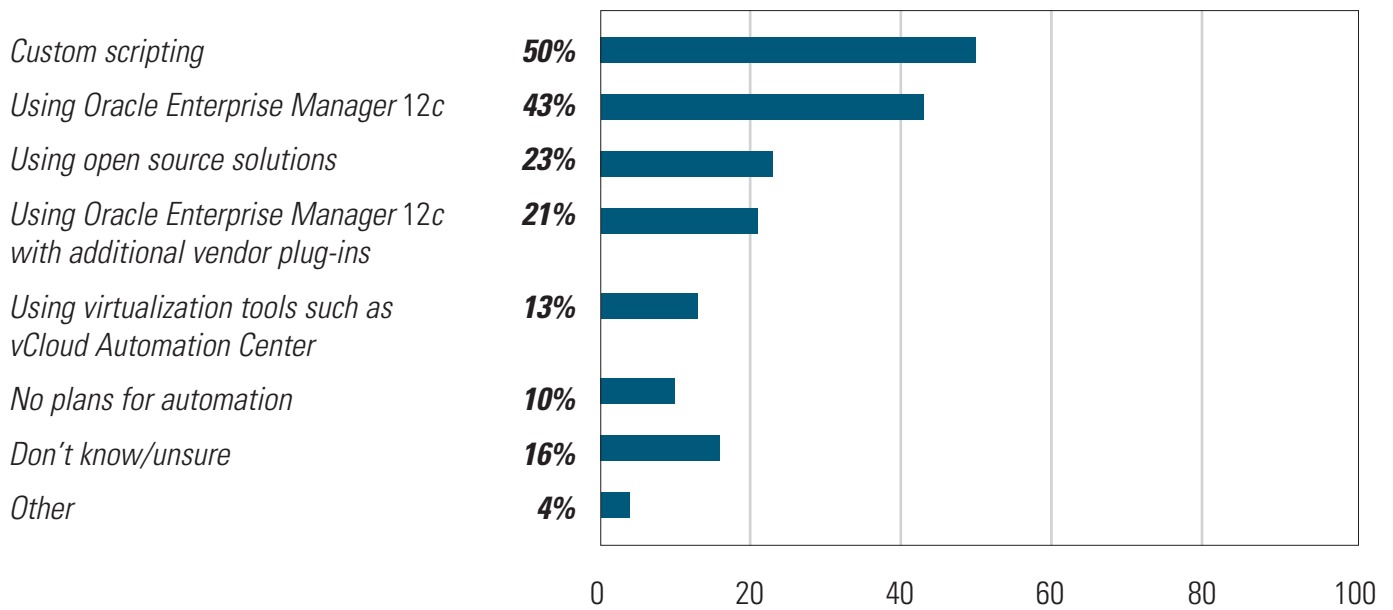
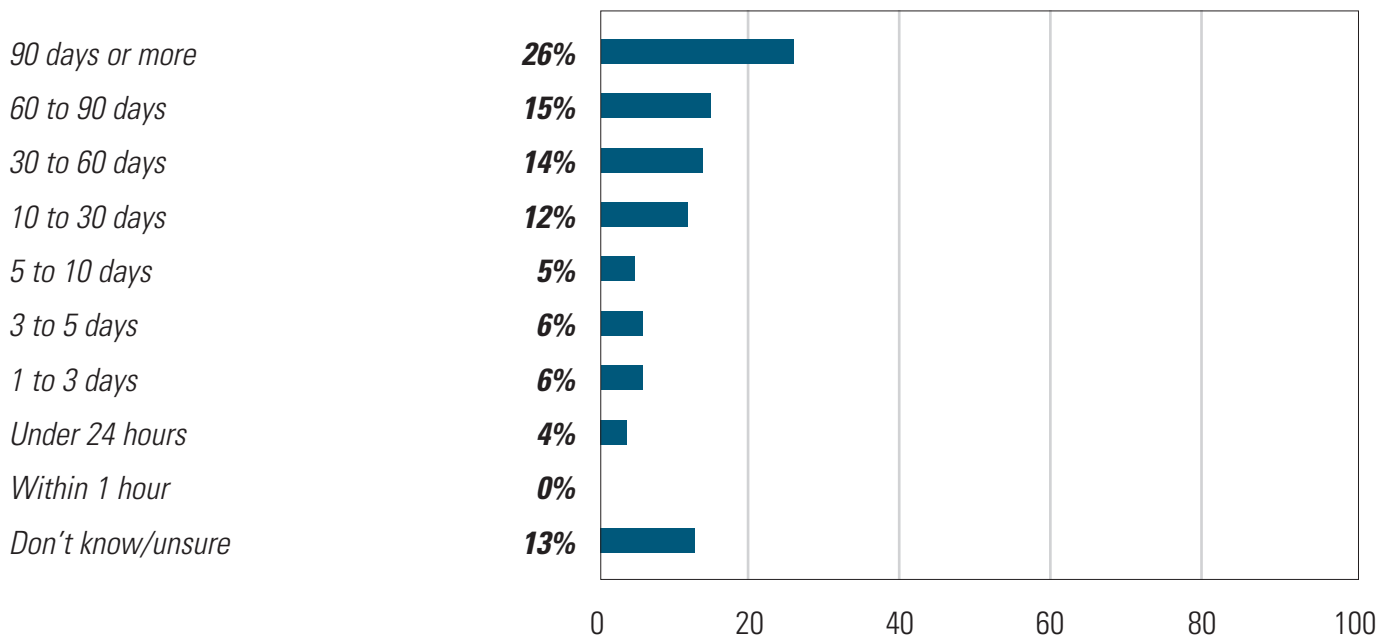


Figure 7: How Long Does It Take Your IT Department to Respond to New Initiatives or Deploy New Solutions?



VIRTUALIZATION STRATEGIES

The use of virtualization within Oracle database environments is increasing. Almost two-thirds of organizations report increases just over this past year. Nearly half report that more than 50% of their IT infrastructure is virtualized. The most common virtualization solutions are VMware vSphere, reported by 57% of organizations, followed by Oracle VM, reported by 9% of organizations, and AIX LPARs, reported by 8% of organizations.

In an era of unprecedented demand on databases, virtualization offers scalability and flexibility, enabling data from all sources to be available across the enterprise. Resources can be dynamically provisioned and allocated as needed. New initiatives can be launched anywhere in the enterprise, regardless of underlying platforms and database brands. This helps address the issues that slow down the movement of data within enterprises, in which it could potentially take days and weeks to provision IT resources to manage data.

Sixty-two percent currently employ virtualization within their IT infrastructures, and another 12% are planning such strategies. (See Figure 8.) Among enterprises employing virtualization, almost half, 47% report that a majority of their infrastructure is now virtualized (See Figure 9.)

In terms of virtualization solutions employed among this group, VMware vSphere is the leading product seen at Oracle sites, cited by a majority (57%) of executives and professionals. Also mentioned were Oracle VM, AIX LPARs, and Microsoft Hyper-V. (See Figure 10.)

While server hypervisors are seen across most enterprises, database virtualization is also seen across a majority of organizations. Two-thirds of respondents report that at least some portions of their data environments are now virtualized. One-third, 34%, say this encompasses a majority of their databases. (See Figure 11.) Two-thirds report their data virtualization has

increased over the past year—with 27% reporting this increase as “significant.” (See Figure 12.)

Just under one-third of enterprises in the survey have more “mature” virtualization sites, in that they have had virtualized databases for more than three years. (See Figure 13.)

The more databases, the more virtualization. Those respondents with high numbers of databases (>100) are more likely than small database shops to be employing virtualization. However, even among small database shops, a majority have virtualized their infrastructures. (See Figure 14.)

Mid-size organizations are the main adopters of virtualization. Organizations with 500 to 5,000 employees are most likely to be embracing virtualization. It’s worth noting that a majority of small companies (less than 500 employees) also have virtualized infrastructures. (See Figure 15.)

Virtualized companies are in a better position to turn projects around in a matter of days. Virtualization hasn’t had a noticeable impact on the delivery of long-term projects, but companies with virtualization are more likely to report turning around short-term projects faster. (See Figure 16.)

There have been few vendor-support issues with database virtualization, the survey also finds. The majority of DBAs have virtualized their mission-critical applications and never been requested by Oracle Support to reproduce databases issues in a physical environment. Support is not an issue anymore. (See Figure 17.)

Figure 8: Familiarity With Server Virtualization Approaches

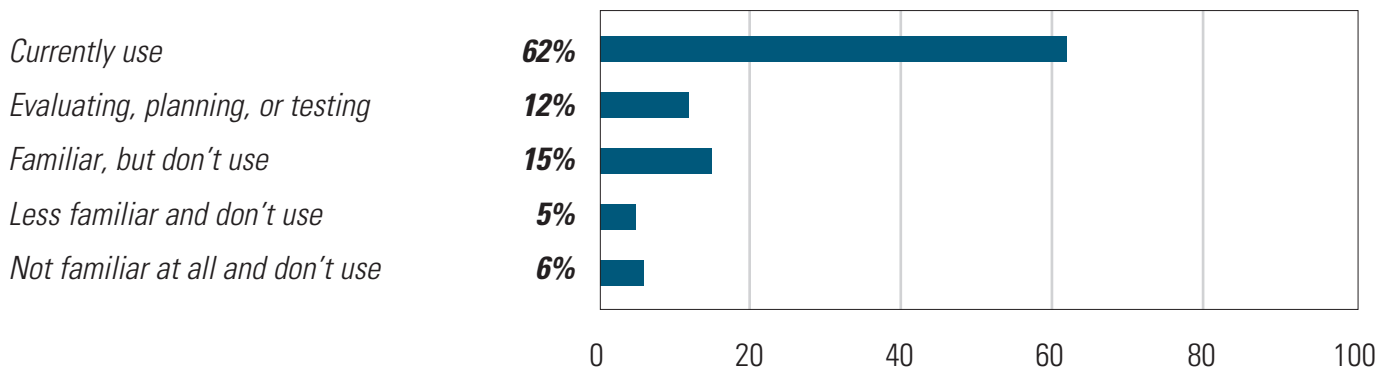


Figure 9: IT Infrastructure Currently Virtualized

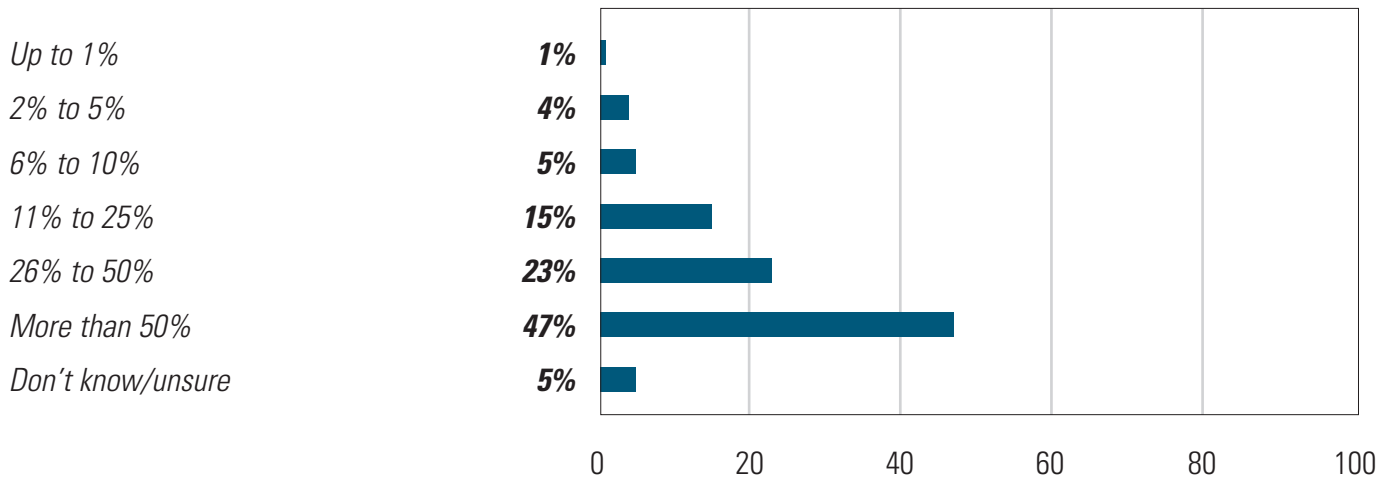


Figure 10: Primary Virtualization Solution

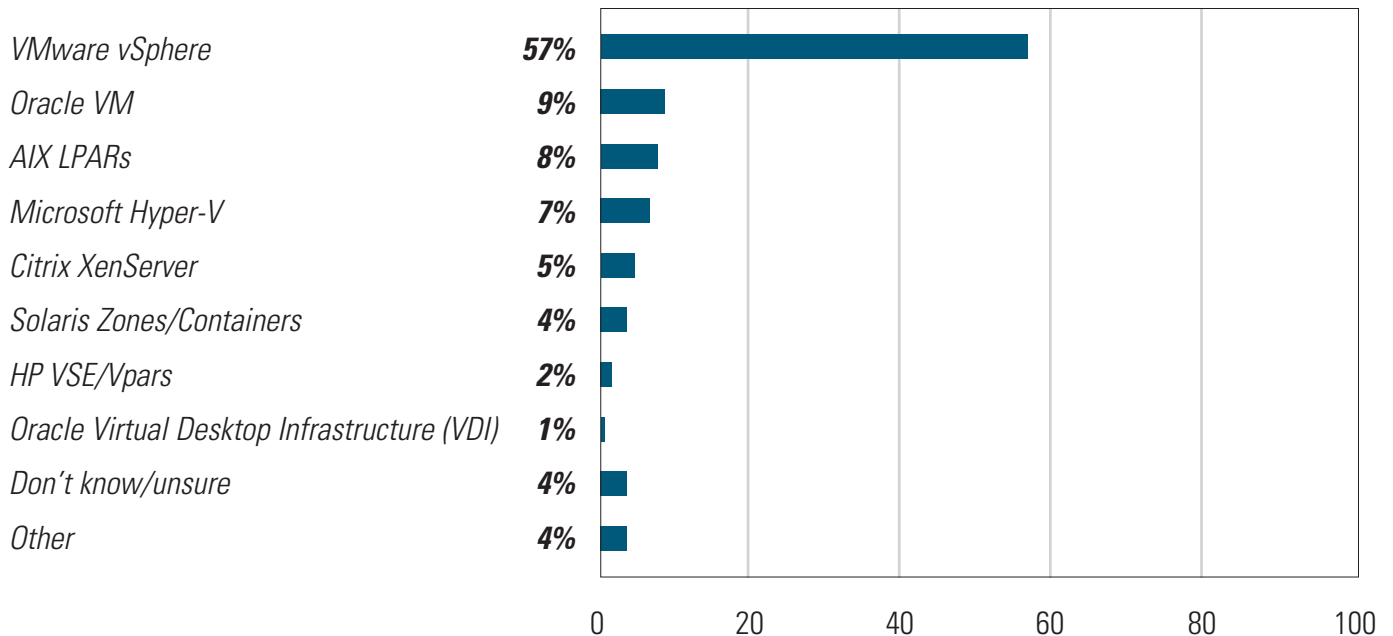


Figure 11: Mission-Critical Databases Virtualized

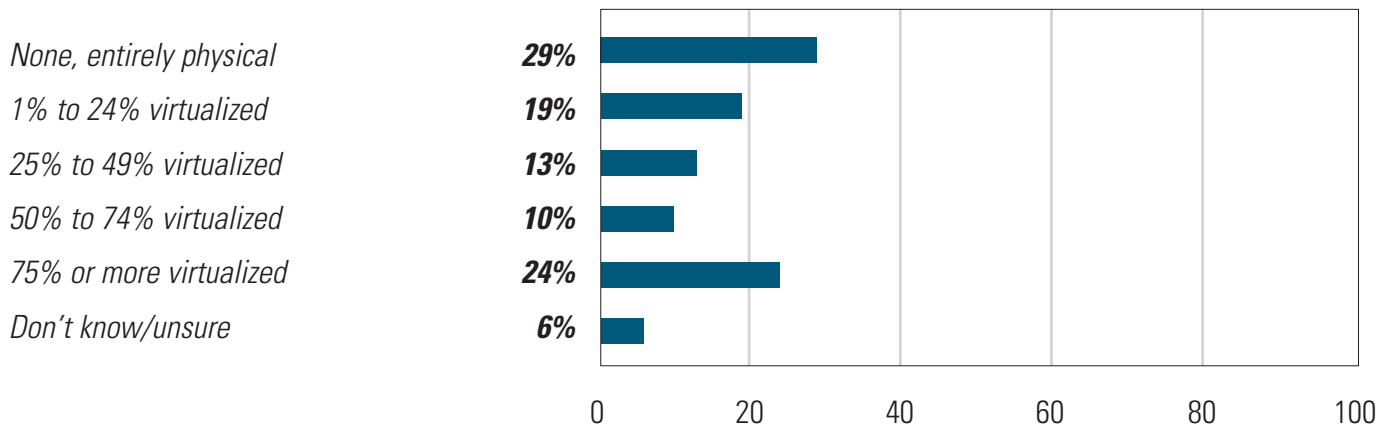


Figure 12: Database Environment Virtualization Increase Over Past Year

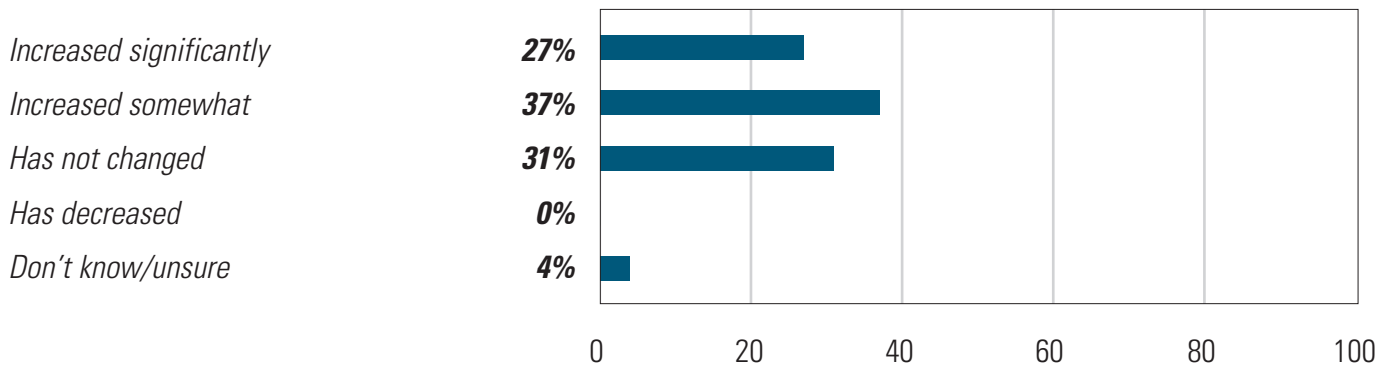


Figure 13: How Many Years Have Databases Been Virtualized?

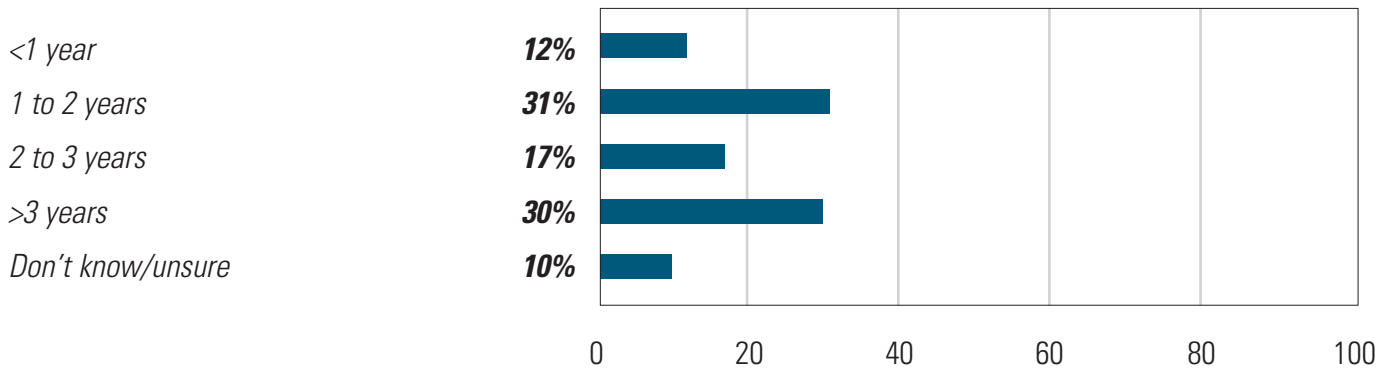


Figure 14: Number of Databases and Virtualization Adoption

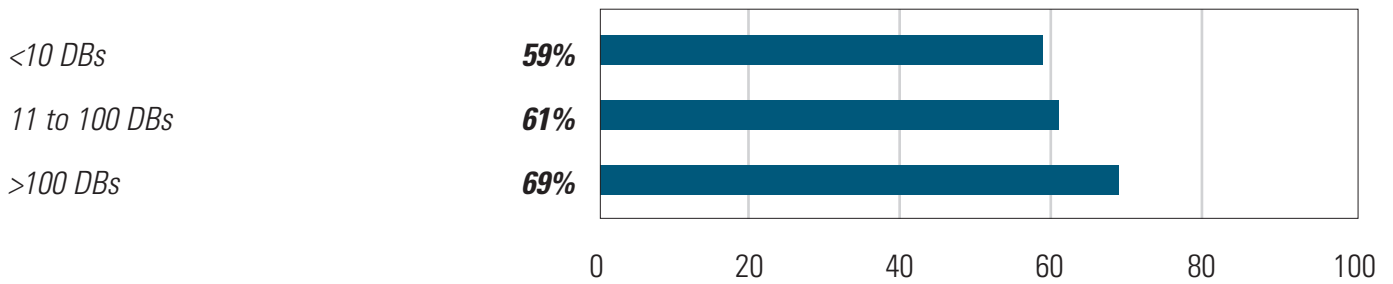


Figure 15: Organization Size and Virtualization Adoption

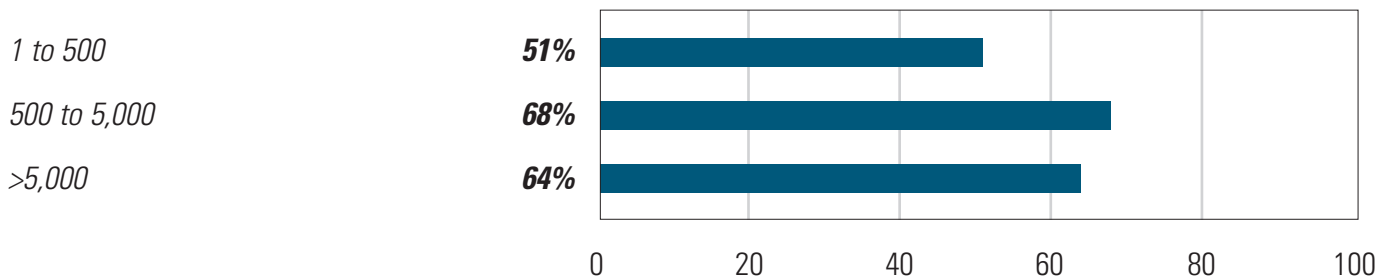
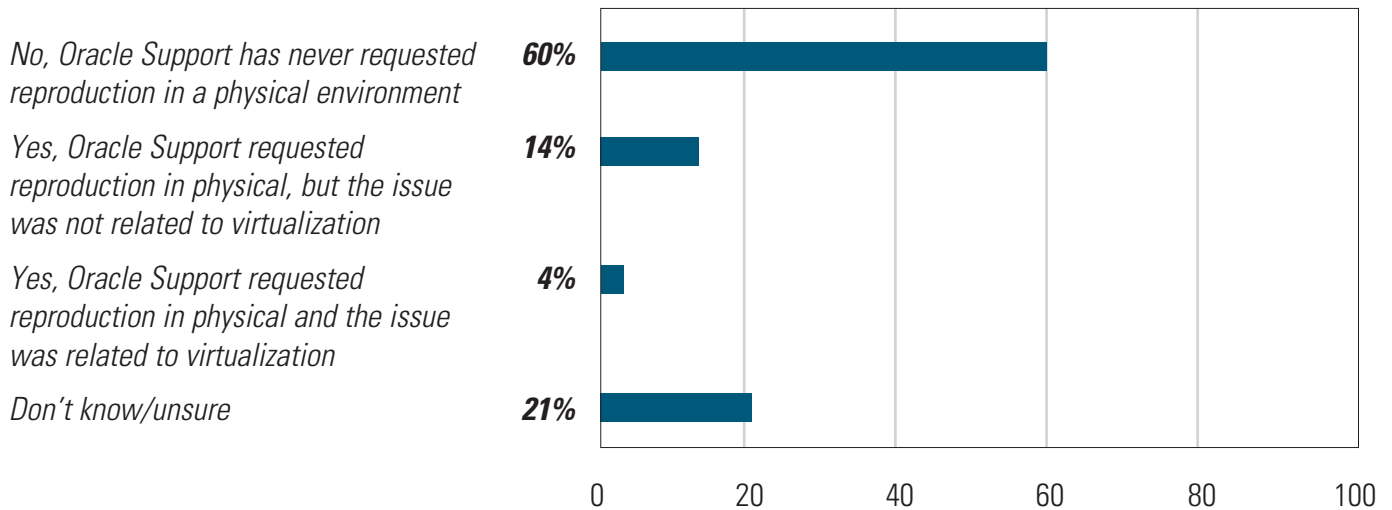


Figure 16: Project Turnaround Length and Virtualization Adoption

	<i>Virtualized</i>	<i>Not Virtualized</i>
<5 days	17%	12%
>60 days	40%	39%

Figure 17: Has Oracle Support Ever Requested an Issue Be Reproduced in a Physical Environment?



BENEFITS AND CHALLENGES

The most common benefits that organizations report as a result of using virtualization within their Oracle database environments are reduced costs, consolidation and standardization of their infrastructure. The number-one objection encountered to virtualizing mission-critical databases is increased licensing costs. However, over 60% of organizations report that they have never been requested to reproduce a database issue in a physical environment.

Cost reduction and the ability to consolidate data systems are the primary drivers to virtualization, cited by 55% and 54%, respectively. (See Figure 18.) Greater agility and the ability to effectively automate and reduce provisioning times were also areas of concern.

Enterprises with highly virtualized environments are less likely to be encountering issues with expanding their Oracle database footprints. While 68% of non-virtualized enterprises report licensing costs rising from their database expansions, this percentage drops to 58% among highly virtualized sites (defined as enterprises reporting 50% or more of their databases virtualized). Likewise, while a majority of non-virtualized enterprises are encountering additional hardware and network

costs, this drops to 37% of highly virtualized operations. (See Figure 19.)

Perceptions of difficulties associated with virtualization efforts tend to dissipate once an organization has reached a maturity point, the survey shows. A majority of enterprises with 50% or more of their databases virtualized report no objections to their proposals or efforts. (See Figure 20.) The objections pertaining to potential increased licensing costs are contradicted by reports of organizations with virtualization efforts experiencing significant aggregate cost reductions. A reasonable inference to this contradiction is that the potential increased licensing costs are more perception than reality.

Figure 18: Benefits or Advantages of Using Virtualization Within Oracle Environment

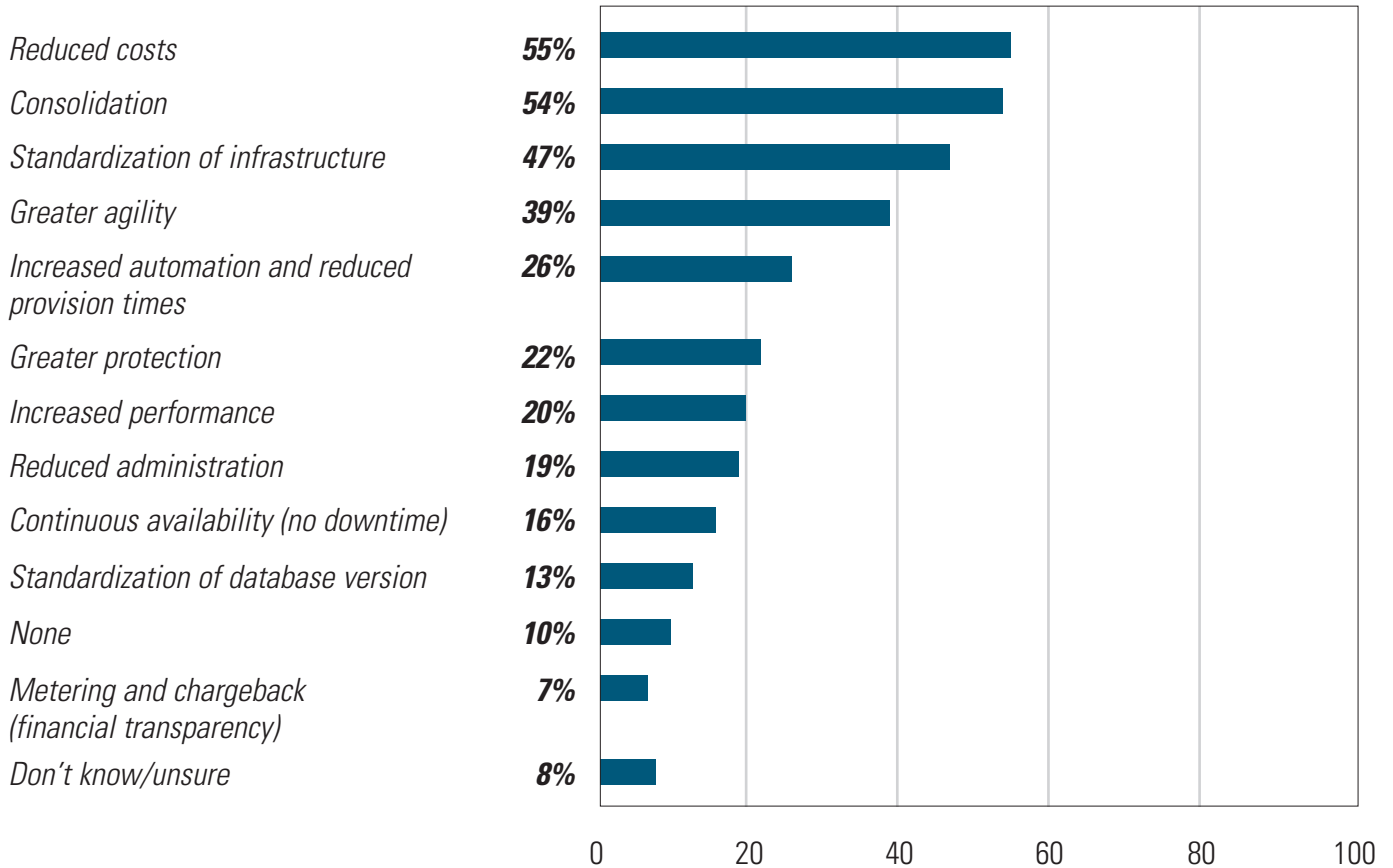


Figure 19: Challenges Faced When Seeking to Expand the Number of Oracle Databases Across or Within Enterprise

	<i>> 50% Virtualized*</i>	<i>Non-Virtualized</i>
<i>Licensing costs</i>	58%	68%
<i>Additional hardware/network costs</i>	37%	54%
<i>Additional administration costs/complexity</i>	37%	36%
<i>Staffing/available skills constraints</i>	26%	17%
<i>Additional security costs/complexity</i>	11%	21%
<i>Vendor support concerns</i>	5%	14%
<i>Don't know/unsure</i>	5%	11%
<i>No challenges</i>	11%	7%

**Respondents reporting more than 50% of databases are virtualized*

Figure 20: Objections to Virtualizing Mission-Critical Databases

	<i>> 50% Virtualized*</i>	<i>Non-Virtualized</i>
<i>None</i>	52%	15%
<i>Virtualized database and application support</i>	28%	30%
<i>Database licensing cost too high</i>	25%	28%
<i>Time to implement virtualization</i>	12%	15%
<i>Plan on using 12c multitenant features in place of virtualization</i>	10%	18%
<i>Don't know/unsure</i>	14%	36%

**Respondents reporting more than 50% of databases are virtualized*

CLOUD STRATEGIES

Nearly one-third of organizations are currently using or considering a public cloud service. Almost half are currently using or considering a private cloud. For more than 25% of organizations, usage of private-cloud services increased over the past year. Cloud and virtualization are being seamlessly absorbed into the jobs of most database administrators, and in some cases, reducing traditional activities while expanding their roles.

Thirty-two percent currently use or plan to use a public cloud service such as Amazon Web Services or VMware Enterprise-Ready Cloud Hosting. When it comes to use of cloud for Oracle databases, most initiatives are coming out of private clouds. (See Figure 21.) About one-third of respondents employ private cloud services and 11% use public cloud. Twenty-six percent say they are increasing use of private cloud services for their Oracle environments, versus 8% employing public clouds. (See Figure 22.)

Oracle customers are running in virtual private cloud versus public and using a “build-your-own” approach to Oracle infrastructure. This may be related to the fact that Oracle sites tend to be data center-centric, and thus are likely to have a stake in maintaining on-premises resources.

Thirty-seven percent of virtualized enterprises also employ private cloud, compared to 17% of non-virtualized environments. Virtualized enterprises are also three times as likely to be adopting hybrid clouds, and five times as likely to be adopting public clouds. (See Figures 23 and 24.)

Figure 21: Plans to Use Public Cloud Service

(Such as Amazon Web Services or VMware Enterprise-Ready Cloud Hosting)

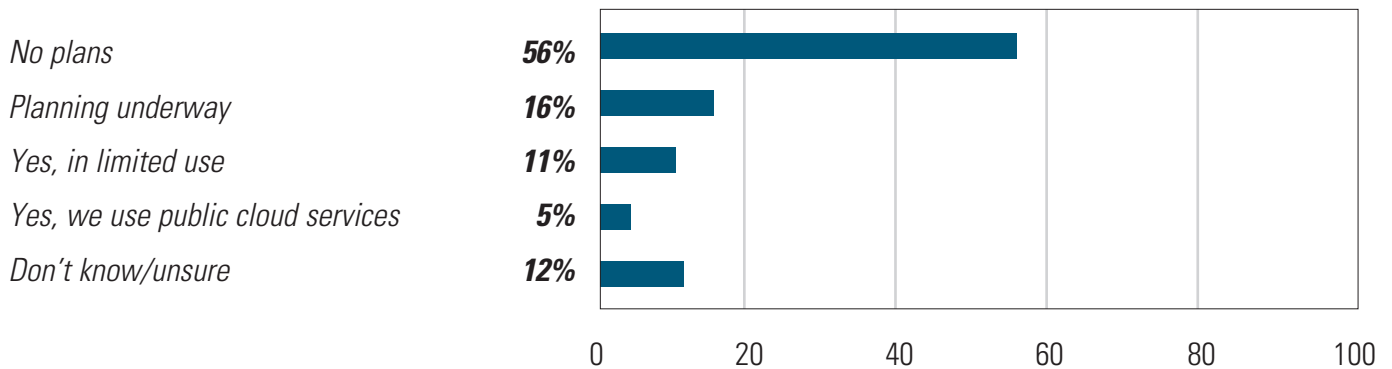


Figure 22: Cloud-Based Services Used for Oracle Database

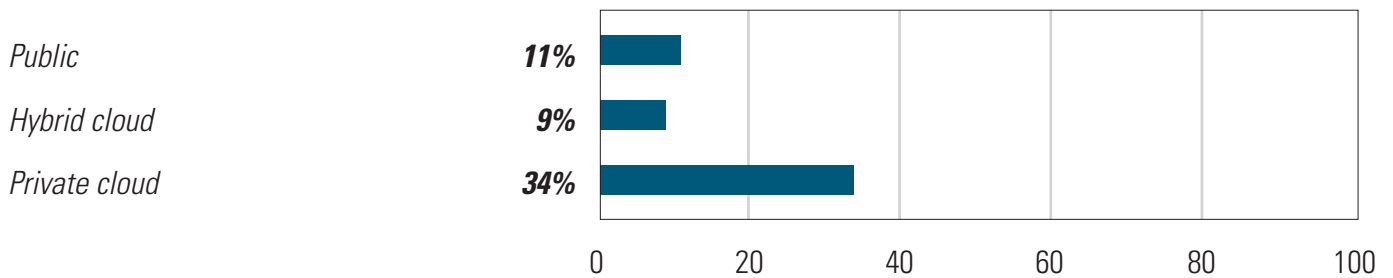


Figure 23: Increased Use of Cloud-Based Services for Oracle Database Over Past Year

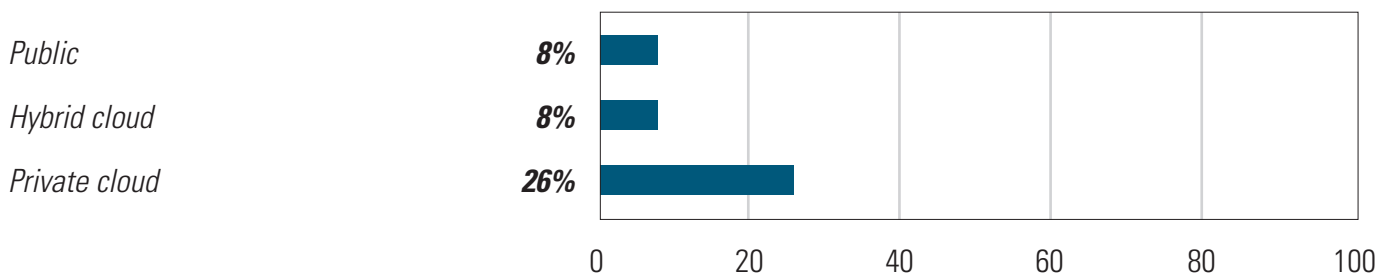


Figure 24: Cloud-Based Services Used for Oracle Database (Virtualized vs. Not Virtualized)

	<i>Virtualized</i>	<i>Not Virtualized</i>
<i>Public</i>	10%	2%
<i>Hybrid cloud</i>	11%	3%
<i>Private cloud</i>	37%	17%

CAREER IMPACTS

Cloud and virtualization are being seamlessly absorbed into DBAs' job roles. The majority of DBAs want to improve on their work in the private cloud and have found that virtualization adds value without impacting their jobs roles. Many DBAs have responded that virtualization is expanding their roles, especially as their deployment progress over a period of years.

Only 11% of respondents have observed that cloud is diminishing or curtailing the traditional roles of DBAs in their organizations. Another 18% indicate that cloud is expanding DBAs' roles, while 60% say there has been no change at all. (See Figure 25.) Likewise, only 10% believe there has been a diminishing of DBAs' roles due to virtualization. While 22% say virtualization is helping to expend their roles. (See Figure 26.)

Interestingly, the roles of DBAs are expanding at more mature virtualization and cloud sites. Among respondents whose enterprises have had database virtualization for more than three years, 31% report expansion of DBA duties—compared to 14% of those organizations just starting out. Likewise, at cloud sites, the percentage reporting increased DBA roles jumps from 7% to 27%. (See Figure 27.)

Figure 25: How is Cloud Computing Affecting the Role of the DBA?

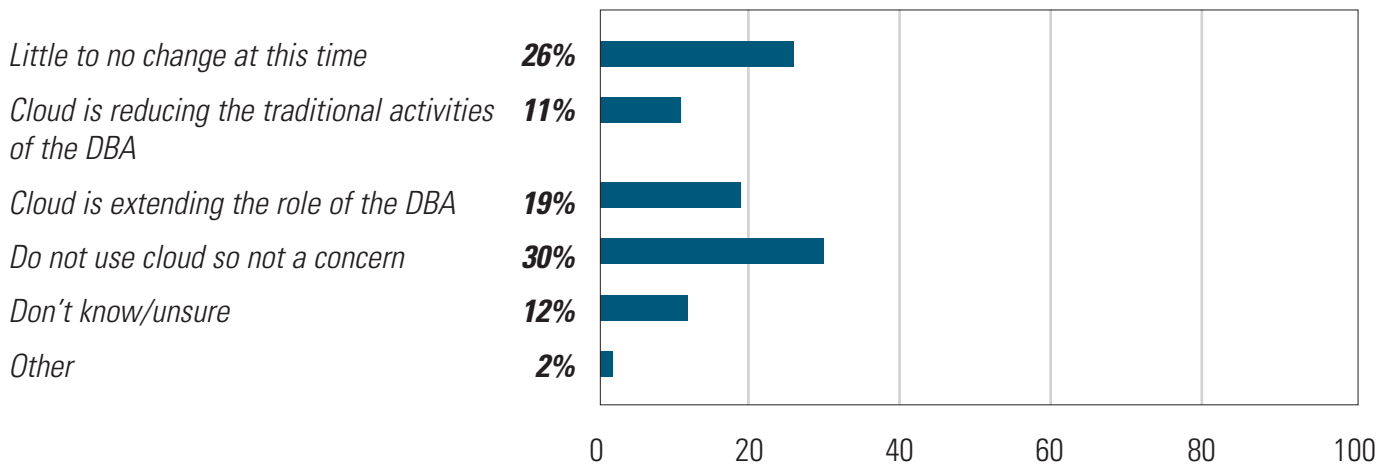


Figure 26: How is Virtualization Affecting the Role of the DBA?

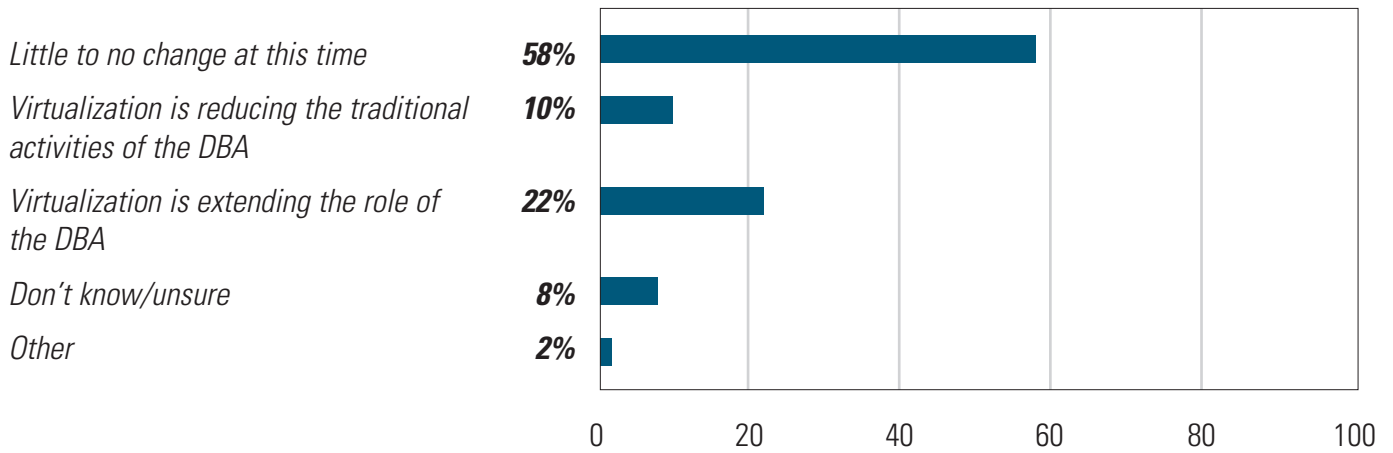


Figure 27: Virtualization and Cloud Extending DBA Roles —By Database Virtualization Maturity

	<i>Virtualization</i>	<i>Cloud</i>
<1 year	14%	9%
1 to 3 years	21%	19%
>3 years	31%	27%

CONCLUSION

Today's organizations rely on an abundance of data to compete in today's unforgiving global economy. The challenge is making this data accessible to decision makers, wherever they reside in the business. The challenge is that enterprise data environments are complex and costly, running on many platforms, supporting many applications, and handling growing volumes of data.

In this latest survey of members of the Independent Oracle Users Group (IOUG), more than two thirds of organizations indicate that the number of Oracle databases they manage is expanding. The most pressing challenges organizations are facing as a result of this expansion are licensing costs, additional hardware and network costs, and additional administration costs and complexity. IT administrators are under considerable pressure to increase performance, lower costs, and limit downtime across their mission-critical applications. Greater

agility and the ability to more effectively automate and reduce provisioning times were also areas of concern.

To address these requirements, the survey finds the use of virtualization within Oracle database environments is increasing. A great majority (57%) report that they are using VMware vSphere as the platform on which they virtualize. Almost two-thirds of organizations report increases just over this past year. Nearly half report that more than 50% of their IT infrastructure is virtualized.

Virtualization is also paving the way to private cloud adoption. Almost half of the enterprises in this survey have or are considering private clouds. In addition, cloud and virtualization are being seamlessly absorbed into the jobs of most database administrators, and in some cases, reducing traditional activities while expanding their roles.

DEMOGRAPHICS

Figure 28: Respondents' Primary Job Titles

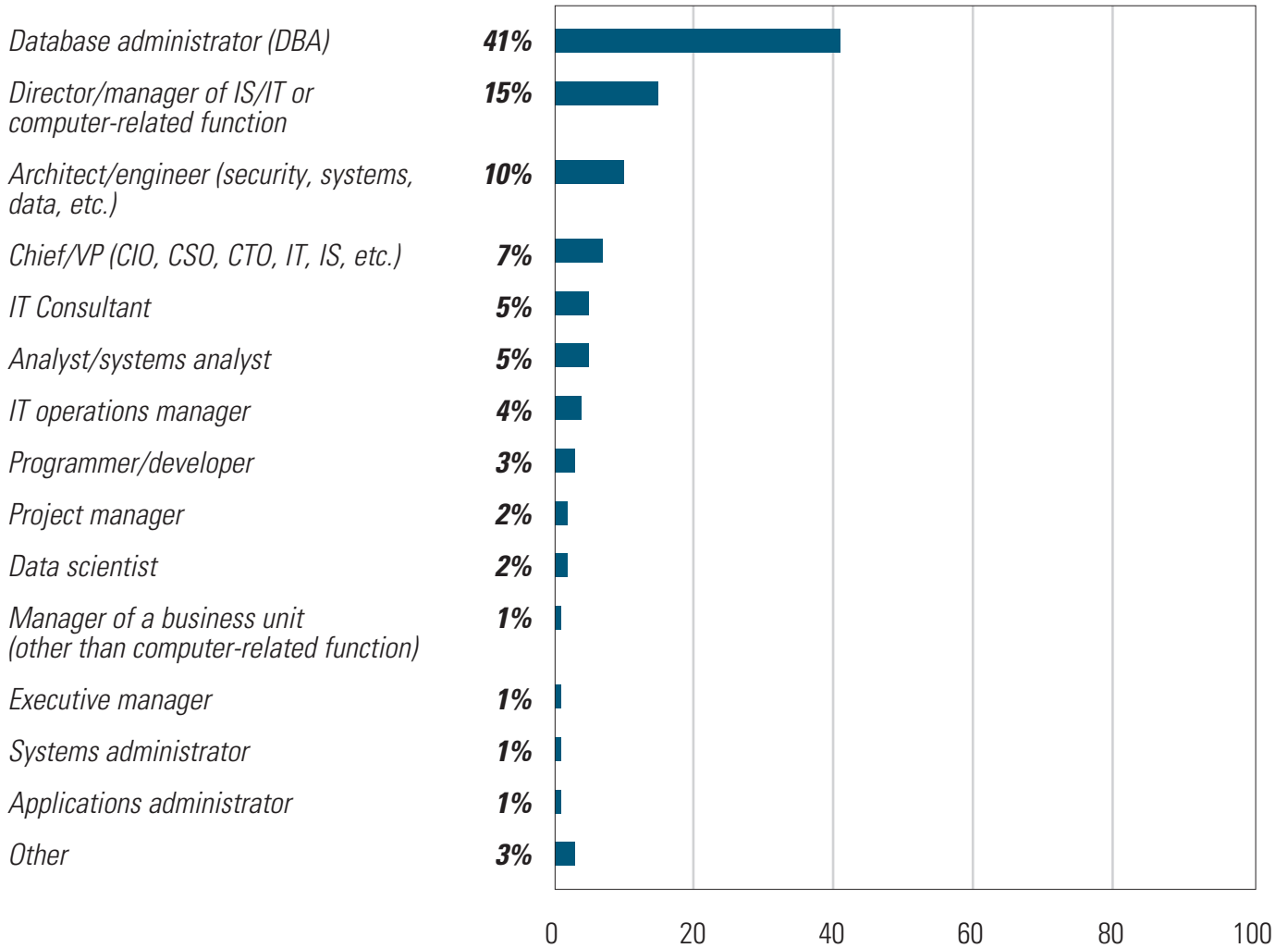


Figure 29: Respondents' Organizations—By Number of Employees

(Includes all locations, branches, and subsidiaries)

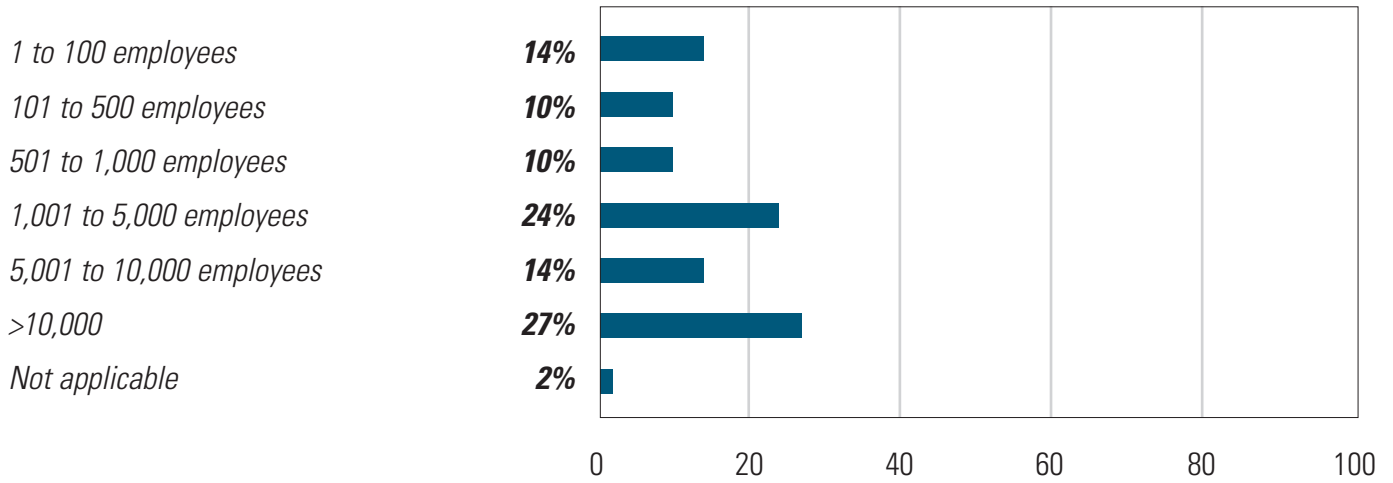


Figure 30: Respondents' Primary Industries

