

Where are IT and the cloud today?

IT teams will continue to manage applications in cloud and on-premises environments for the foreseeable future. Those applications will be both cloud-native and traditional applications. Load balancers, also referred to as application delivery controllers (ADCs), are seen as key to maintaining the best and most-secure application experience, with a gradual shift from hardware to cloud and software load balancing.

"Application experience, which focuses on outcomes, will resonate with customers that want to provide value to the business through the application of technology, and opens the door to talk about more than just load balancing – AX is about the entirety of the experience, including performance, reliability, consistency and security capabilities."

Mike Fratto, Senior Analyst, Applied Infrastructure and Dev Ops, 451 Research

1 Applications will be managed in the cloud and on-premises.

Migration to the cloud is not all or nothing. While we see lots of noise around cloud migration, there are many organizations who will not be moving applications to the cloud.*

US and UK organizations: 50% of their apps will exist in the cloud.

19%
Already there

2 Organizations will manage cloud-native applications and traditional applications in the cloud.

About a third of applications will not be modified or replaced before being migrated to the cloud.*

20%
Within 12 months

16%
Within 24 months

14%
Within 36 months

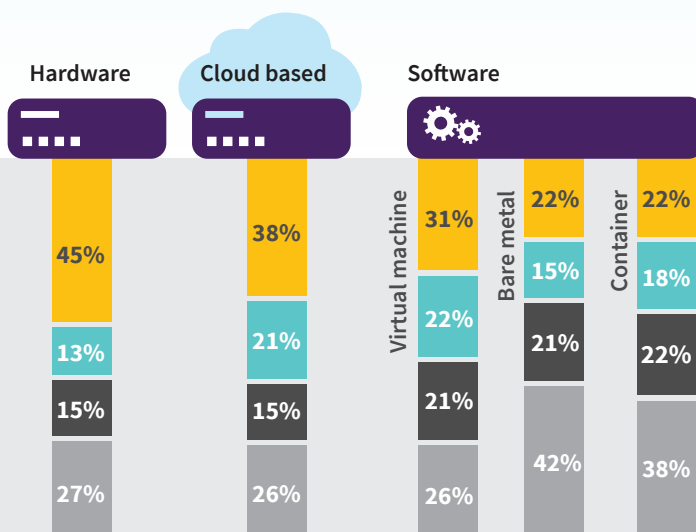
22%
More than 36 months

9%
Never

3 Hardware load balancers still reign but only software load balancers can grow in the cloud.

Hardware load balancers are still furthest along in the deployment process when compared to other form factors.*

■ Fully deployed
 ■ Testing
 ■ Researching
 ■ No plans



4 Organizations view load balancers as fundamental to maintaining the best application experience.

Forrester spoke to organizations across five countries and asked how many applications on average need to be managed by a given load balancer. Eight of 10 organizations need to manage between **50 to 400 applications** on a given load balancer.**

5 Load balancers are seen as the ideal location for application security services.

Organizations revealed that **load balancing and single sign on/client authentication** are the most common application services being deployed. WAF, SSL VPN and DNS are also very commonly deployed.*

Key concerns and challenges

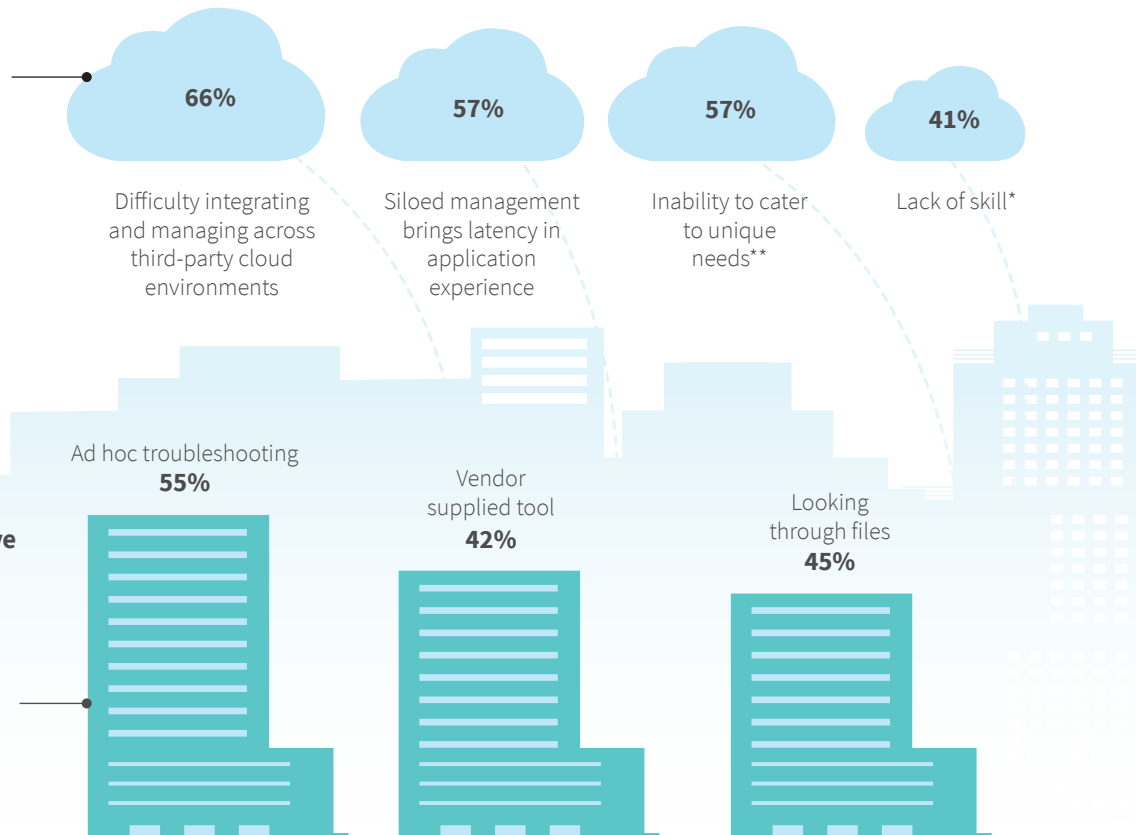
The agility and uptime of per-application load balancers/ADCs has not yet been utilized, and routine tasks take longer than expected. Insufficient notification and assistance with application issues is affecting businesses. In environments that are more established, it is getting more difficult to add new applications. New or separate infrastructure might be deployed to safeguard the existing application set so that they do not impact each other, thus increasing the time to deployment. Some commercial load balancers are often seen to be unnecessarily complicated to configure. This requires extra time to learn how to configure, troubleshoot and test new deployments. While cloud providers offer native load balancing, the same configuration cannot be replicated across clouds or back at home, adding to the time required to deploy applications in different locations.

“ADC functionality has evolved to meet the challenges of the multi-cloud world. ADC features now can be flexibly delivered where and when they are needed. Application delivery resources are right-sized for the workload and can be dynamically adjusted to meet changing demands (e.g. seasonal variations). Per-application or per-workload ADC deployment means that each environment can be scripted, automated and secured in a customized manner for optimal operational efficiency.”

Lee Doyle, Doyle Research

6 The majority of enterprises are facing application experience challenges in multicloud.

Respondents had hoped that **Multicloud architecture** eliminates the enterprises’ dependency on any single cloud provider. However, significant application experience challenges are being encountered when using two or more public clouds, as well as private cloud infrastructure.



7 One-half of organizations receive insufficient notification and assistance with mission-critical application issues.

How are US and UK organizations troubleshooting their load balancing/ADC problems?*

Close to one-third of organizations surveyed experience **mission critical application downtime** between one hour to a day.*

How much time do organizations have between the alert that an app is down and resolving the issues before downtime occurs? For **24%** of organizations the time between alert and resolution can be a day or two and **25%** of organizations find out after an application is already down.*

8 Most organizations have yet to benefit from the agility and uptime of per-application load balancers



Most tasks performed on a load balancer are taking days or weeks.*



Organizations’ using cloud-native load balancers are most concerned about security and compliance.*



Deployment time, centralized management, automation, scalability, support for mode 1 and 2 applications are just some of the load balancing attributes where the largest majority of respondents said they were neutral regarding their current vendor’s performance.*

What do IT teams need in the future?

The migration of applications to multicloud can enable better application experience, control and flexibility. This had led to agility, scalability, and automation being the top requirements for the load balancer, with pay-per-use load balancing of applications being preferred for cloud.

“Enterprise Management Associates (EMA) research has found that enterprises are increasingly deploying hybrid cloud and multi-cloud architectures to support digital initiatives and IT transformation. 35 percent of network managers say public cloud initiatives are a major driver of their decision-making today, and another 35 percent say private cloud initiatives are a major driver. In addition, the average enterprise claims that 45 percent of its network traffic is attributable to public cloud applications.”

Shamus McGillicuddy, Research Director, EMA

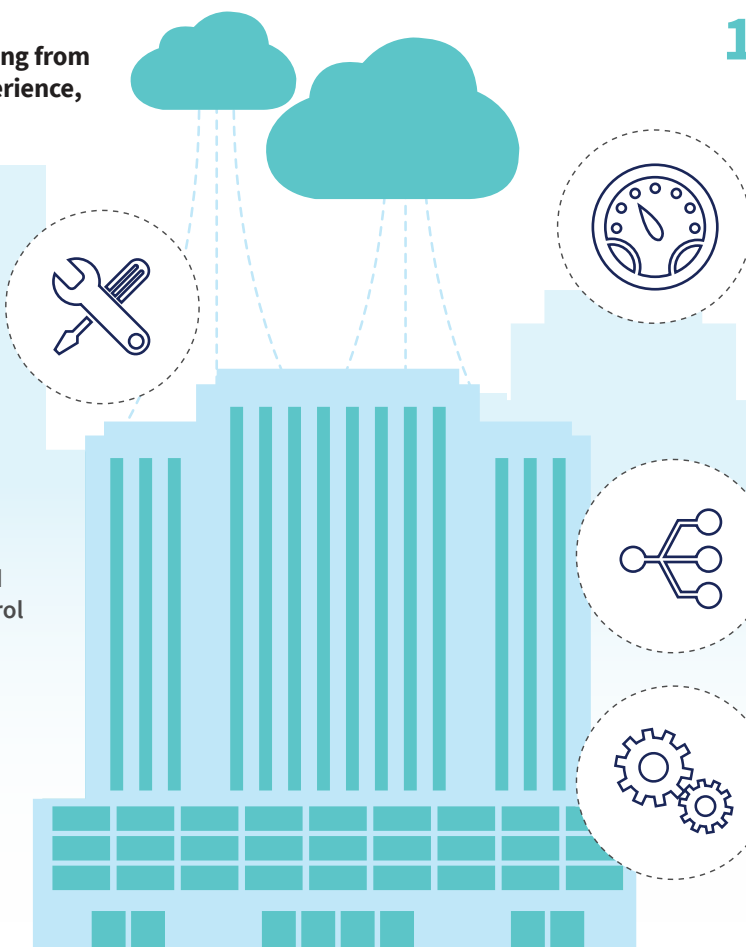
9 Enterprises moving to multicloud are benefiting from better application experience, control and flexibility.

67%

of respondents say that **multicloud is bringing better capabilities** in their load balancing and application experience.**

60%

indicated that **multicloud is delivering better control and flexibility** of their application experience.**



10 Evaluation criteria for choosing load balancing vendors have changed.

91%

of enterprises say **speed and agility in load balancing and deployment of applications** is important or critical. Speed and agility is also seen as important/critical for better customer experience.**

90%

say that being able to **increase/add-on workloads** easily and quickly is important or critical.**

60%

say that **increased automation** is important or critical in load balancing across servers.**

“As cloud computing becomes the preferred infrastructure choice for an exploding number of ‘cloud-first’ enterprises, many such companies are realizing that one cloud simply won’t do.”

Jason Bloomberg,
President and Principal
Analyst, Intellyx



11 Pay-per-use is preferred for load balancing applications in cloud.

Enterprises were asked about the cost models they prefer from their load balancing vendor.

40%

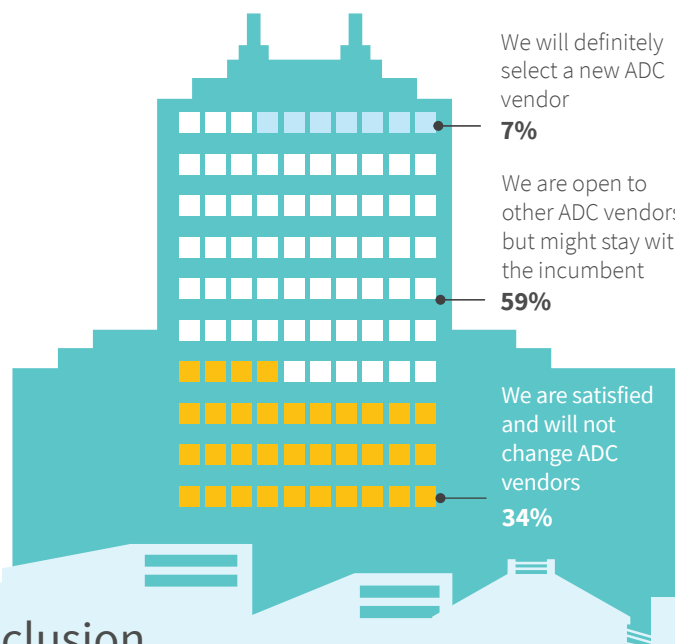
of enterprises (the largest group) say that they would prefer **pay-per-use load balancing** as a consumption model.**

Customer Satisfaction

Organizations indicate that they are not completely stuck with their incumbent load balancing provider and would consider trying a different load balancer vendor (50%), especially amongst those who identified as cloud native and larger enterprises, where 25% would switch entirely.

“The challenge for IT is to efficiently manage this diversity of applications across each unique cloud environment, while continuing to provide application development and DevOps team with the necessary autonomy to keep the business growing.”

Lee Doyle, Doyle Research

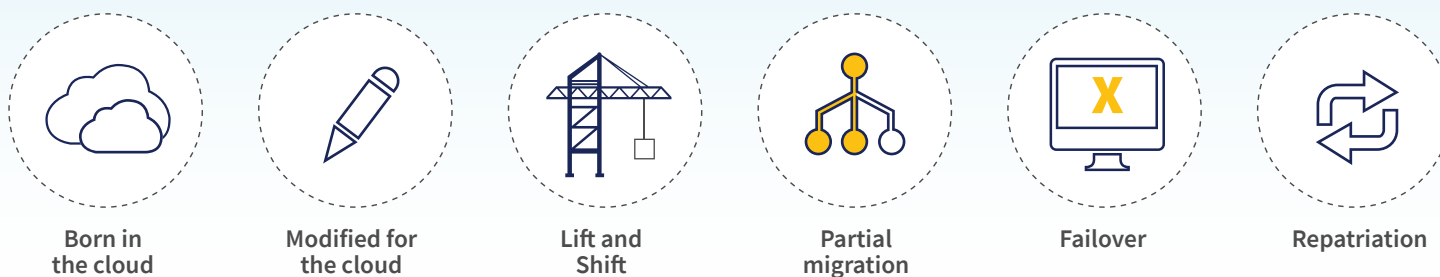


12 Satisfaction levels with load balancing vendors indicate change is required for digital transformation.

Organizations were asked about their plans to **migrate from mode 1 to mode 2 applications** and would they consider alternative load balancers? Well over half of organizations surveyed are open to moving away from their current load balancer and selecting a new vendor.**

Conclusion

Despite a trend towards adopting a cloud-first strategy, traditional and cloud-native applications will continue to be managed in cloud and on-premises environments for the next few years. The shift from hardware to cloud and software load balancers is gradual, and load balancers remain instrumental to maintaining an optimal and secure application experience for both cloud-native and traditional applications.



Organizations are facing a range of challenges to maintaining application experience. Agility and scalability benefits of per-application load balancers have yet to be fully realized, and many commercial load balancers are seen as unnecessarily complicated to configure, further increasing the time and resource required to up-skill, troubleshoot and test those systems. The use of native public cloud load balancers means configurations cannot be easily replicated across clouds or to on-prem data centers, also adding time and complexity. IT teams now prioritize agility, scalability and automation when load balancing applications, which opens the door for rapid adoption of pay-per-use load balancers.

IT teams today are managing two separate styles of work: one focused on predictability; the other on exploration. Sometimes referred to as “mode 1,” these applications are used for more predictable and well-understood areas. “Mode 2” applications are exploratory, and attempt to address new deployment challenges and dynamic throughput requirements. Managing both mode 1 and mode 2 applications is essential to driving digital transformation, but organizations are unconvinced that their current load balancing provider offers this path. A multi-form, multicloud load balancer that is strong across mode 1 and mode 2 use cases is key to unlocking this.

REFERENCES AND SPECIAL THANKS

*ZK Research, Application Delivery Controller Study [slides], 2019
 **Forrester Consulting, a commissioned study conducted by Forrester Consulting on behalf of Kemp, May 2019, 150 respondents across Australia, India, Indonesia, Singapore, Hong Kong
 451 Research, Doyle Research, Intellyx, and Enterprise Management Associates (EMA)