

THE ESSENTIAL CLOUD TECHNOLOGIES FOR SUCCESS

5 Cloud Technologies to Consider in 2024 and Beyond

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INTRODUCTION



As the demand for agile and scalable infrastructure has increased and there's been a dramatic shift to remote and hybrid work solutions, cloud adoption has evolved from a technology strategy to a business strategy. Cloud adoption is now not only pervasive, but the default.

According to Gartner, by 2025, [more than 85% of organizations](#) will embrace a cloud-first principle and require cloud-native architectures and technologies to fully execute their strategies. Moreover, [close to 1/3 of tech budgets](#) are allocated to cloud computing today, with 66% of tech buyers anticipating their cloud computing spending to continue to increase over the next year.

IT leaders are at a pivotal juncture. They must adopt cloud solutions to remain competitive and agile, but controlling cloud costs and maintaining security must also be key considerations. Here's a look at what cloud technologies and trends are essential for IT leaders to keep pace within the next year—and what needs to be considered to achieve the greatest success:

1 HYBRID AND MULTI-CLOUD ADOPTION

Hybrid and multi-cloud solutions are seeing rapid growth. According to recent [Foundry research](#), multicloud is now the dominant architecture within organizations.

Companies are shifting to a hybrid or multicloud approach largely because they can create customized solutions that enable them to be more cost-effective and optimize performance. For instance, with a multicloud approach, companies can deploy different SaaS applications across different cloud providers or gain greater choice and flexibility in adopting Platform as a Service (PaaS), Infrastructure as a Service (IaaS), or Backend as a Service (BaaS) offerings from various cloud providers. This flexibility means companies can develop a cloud strategy that's best suited to their unique requirements.

Another benefit of multicloud adoption is it can provide another layer of security by spreading the data across multiple environments. Likewise, having data spread across cloud providers can also improve reliability and availability of business systems and applications as a multicloud strategy reduces the risk of downtime by distributing data and applications across different cloud platforms.



While hybrid and multicloud adoption benefits are significant, organizations must take a thoughtful approach to the transition. Proper integration and management ensure seamless operations across different cloud environments. Additionally, organizations should prioritize cloud providers with compatible architectures to maximize the benefits of a hybrid or multicloud approach.

3 CONTAINERIZATION

The versatility of container technologies, such as Kubernetes and Docker, to transport data, applications, workloads, and microservices between different architectures—such as cloud, on-premises, and at the edge—has made containerization an especially appealing cloud strategy.

Containers allow for rapid deployment and scaling across on-premises and cloud environments and make it easy to build, package, and deploy applications. Containerization can also help reduce costs by improving resource utilization and scalability, while the isolation provided by containers between applications can improve security and reduce the risk of conflicts.

However, there are also some considerations when adopting containerization. Managing containerized environments can be complex, especially when dealing with large-scale deployments. There can also be a learning curve, which may require additional training or hiring.

4 SERVERLESS COMPUTING

Serverless computing has emerged as a transformative force in cloud technology. Its numerous advantages, when compared to server-centric infrastructure, have helped the technology achieve rapid and widespread adoption. Over **70% of AWS customers, 60% of Google Cloud, and 49% of Azure customers** now use one or more serverless solutions.

Another key reason serverless computing is surpassing service-centric infrastructure is the benefits it delivers to service development teams as well as its broader business impact. Serverless computing reduces operational costs as the cloud provider takes on the responsibility of managing and scaling the underlying infrastructure.

It also improves application quality and performance as developers can focus more on code logic and functionality than infrastructure. This dynamic provides unparalleled flexibility to scale resources up or down in response to demand, allowing for optimal resource utilization. Finally, serverless architecture facilitates faster application deployment and the rollout of new features, which enable businesses to stay agile and responsive to evolving market demands.

From a business perspective, serverless computing translates into enhanced security for both company and customer data. Additionally, it boosts employee productivity, as developers can allocate more time to innovation and less on administrative tasks. Perhaps most crucially, serverless computing accelerates time-to-market, enabling businesses to stay agile and responsive to evolving market demands.

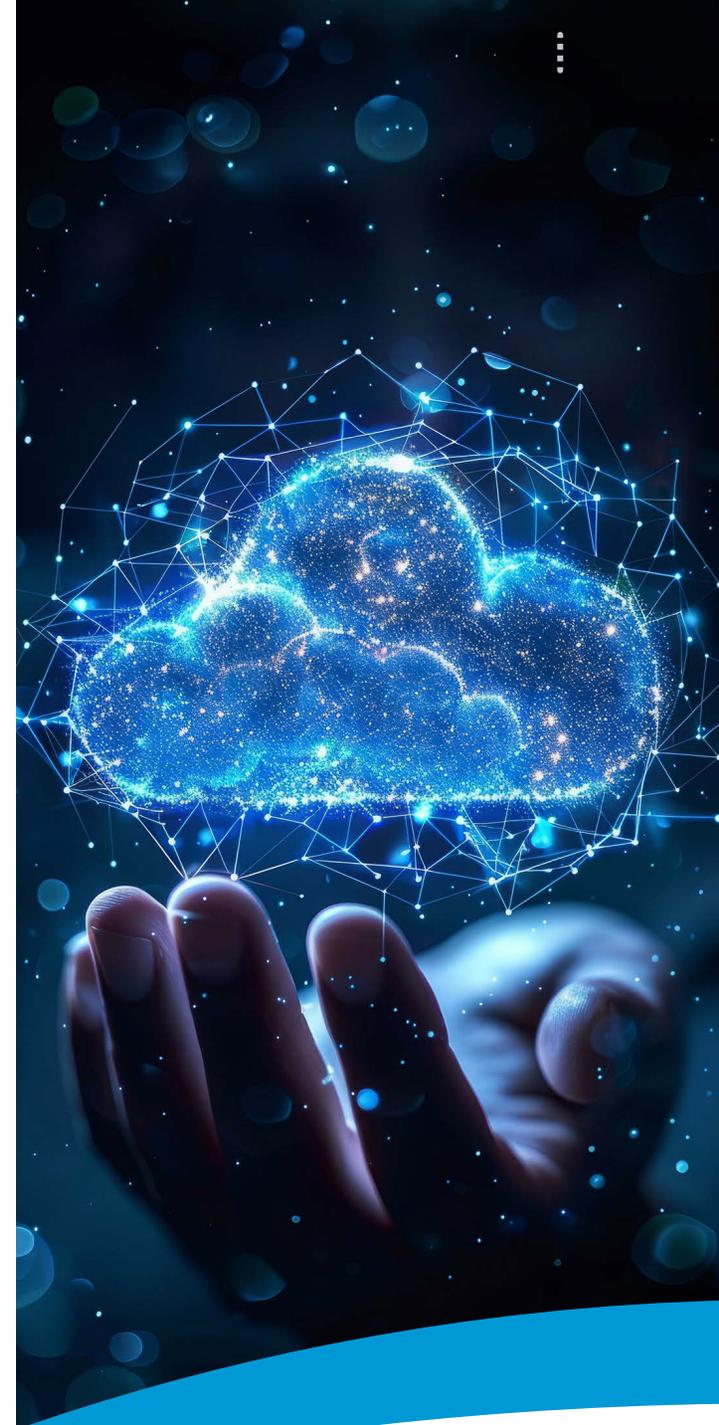
4 SERVERLESS COMPUTING

Benefits of Serverless Computing

According to a recent [IBM study](#), users of serverless computing say they realized the following benefits:

- 36% reduced costs related to managing or running servers, databases, and application logic
- 34% improved application quality/performance
- 33% greater flexibility to scale resources up or down automatically
- 30% faster application deployment/rollout of new features
- 29% Improved employee productivity
- 28% faster time to market/response to changes in the marketplace
- 27% easier operational management

While the benefits of serverless computing are evident, organizations need to properly architect applications for a serverless environment and understand cost implications. Organizations should also carefully assess the specific needs of their applications to determine the optimal use cases for serverless computing.



5 ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

Artificial intelligence (AI) and machine learning (ML) for cloud technologies are experiencing growing adoption, and according to [Foundry](#), AI/ML is the cloud capability organizations are most likely to adopt in the coming year.

Advancements in both cloud computing and AI/ML are making the technologies more accessible, flexible, and cost-effective. Organizations can choose different cloud services to support their ML training projects or leverage pre-trained models for their applications. AI/ML can offer improved operational efficiency, enhanced customer experiences, better decision-making, and increased scalability for cloud technologies.

According to Deloitte, midsize and small companies increasingly use AI and ML for digital transformation, leveraging cloud-based business applications. Additionally, cloud and as-a-service models make AI more affordable and available, enabling midsize companies to optimize their IT spending.

Important Considerations

While AI and ML for cloud technologies offer numerous opportunities for organizations to drive innovation and gain a competitive advantage, there is anticipated to be increased AI regulation that will require companies to focus on AI ethics, transparency, and privacy.

TAKING YOUR CLOUD STRATEGY TO THE NEXT LEVEL

As the cloud continues its march toward dominance, it's opening new doors of opportunity for innovation as well as cost optimization. Technologies like edge computing and AI/ML are unlocking new realms of real-time responsiveness while hybrid and multi-cloud adoption, containerization, and serverless computing are helping to reduce overhead and optimize costs. As these trends mature, organizations must approach adoption with a clear understanding of each technology's unique requirements, security considerations, and a strategic long-term vision.

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