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The Future Of Cloud Computing

On the future of cloud computing, all IT experts agree that cloud computing will be at the forefront of all technologies to solve major business challenges. This is evident with enterprise cloud spend increasing at a 16% CAGR between 2016 and 2026, it is safe to say that businesses are no longer looking at the Cloud solely as a tool. Their focus is now more on leveraging the technology to accomplish different business goals.

As per IDC, at least half of the IT spend is on cloud-based technologies. It is predicted to reach 60% of all IT infrastructure and 60-70% of all software, services and technology spend by 2020. It is also predicted that in the same year, the cloud will also become a preferred delivery mechanism for analytics.

You can already see businesses use the technology to serve more complex and dynamic needs of the organization.

83% of enterprise workloads will be in the cloud by 2020.

The data speaks of the endless benefits of the cloud in the future. But you can already see many CIOs trying to understand and test how they can use the cloud to address their current, as well as future organization needs, better.

To understand the future of cloud computing, here are the top ten trends of cloud computing.

1. Hybrid/ Multi-Cloud Solutions

Hybrid cloud computing refers to using a combination of the private cloud as well as a third-party public cloud service. It is primarily used to allow workloads to move between private and public clouds, giving users more flexibility with their computing needs.

Here's a typical example of an analytics hybrid/ multi-cloud pattern that helps run two kinds of workloads in two different computing environments.

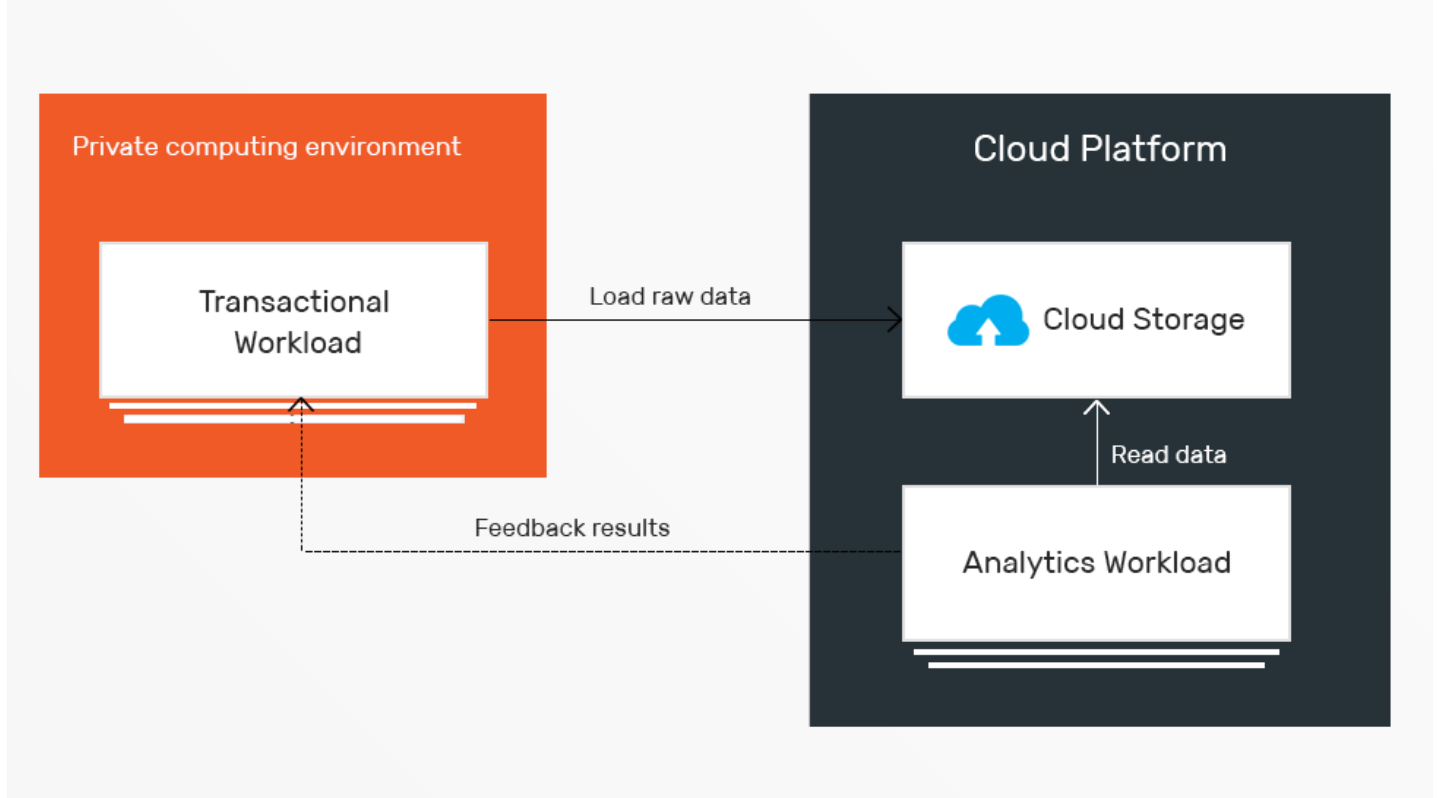


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(Architecture Pattern for hybrid/multi-cloud)

With its multiple benefits, the market size of hybrid/ multi-cloud is expected to grow to [\\$97.64 billion by 2023](#). In fact, tech giants like Microsoft and Amazon are already investing heavily in hybrid cloud computing as a product.

[Hybrid cloud computing provides](#) enhanced security features, SaaS capabilities, consistent server reliability, customizable capabilities, and top performance.

But what makes hybrid cloud computing so desirable is the flexibility it offers and its reduced cost, making it fit for even growing businesses.

2. Backup and Disaster Recovery

Cyber attacks, data outages, and system failures are a part and parcel of running a business these days. Most businesses have dealt with their servers crashing, leading to loss of critical data files. To ensure such issues don't damage the organization and its processes, backup and disaster recovery has become a trending use case of the cloud. If [Spiceworks reports](#) are to be believed, 15% of the cloud budget is allocated to Backup and Disaster Recovery, which is the highest budget allocation followed by email hosting and productivity tools.



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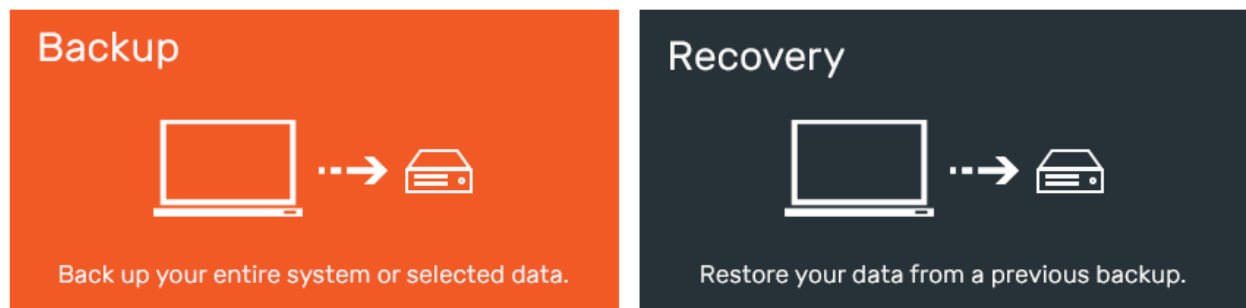
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A cloud-based backup and disaster recovery solution is like a recovery strategy. The system automatically stores and maintains copies of electronic records within an external cloud server as a security measure in case the original files are lost.

The cloud basically brings together two operations – backup and recovery. Now, this recovery solution allows for easy retrieval of lost data in case an error occurs or the server crashes.

The Basic Difference between **Backup and Disaster Recovery**



[Microsoft](#) reports that data loss and cyber threats are at an all-time high. In the event of a security breach or data loss, a CIO needs their organization to have a recovery plan that ensures no critical process impacted.

3. Serverless Architecture

A serverless architecture removes all barriers that a standard IT infrastructure would usually bring. Users don't have to purchase or rent the servers that they run their data on. Instead, a third-party will handle it all for you, allowing your organization to tackle other tasks.

The advantages of a serverless architecture are plenty- easy operational management, no system administration, reduced liability, reduced costs, and better offline experience, to name a few.

The rise of the shared economy actually brought serverless architecture to life in the cloud computing industry. Its cost-effectiveness is what makes it a trend this year.

Here's the basic difference between a traditional and serverless architecture:



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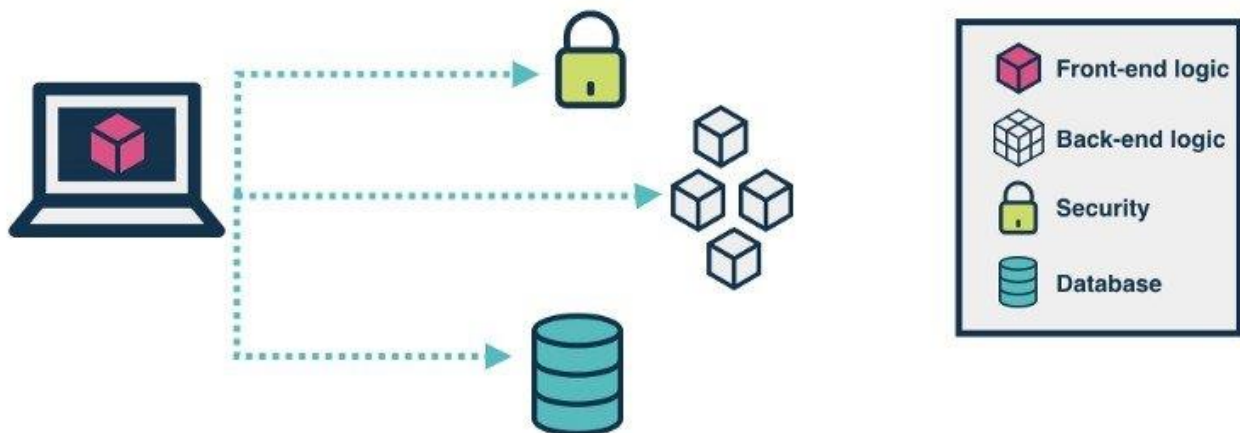
TRADITIONAL vs SERVERLESS

TRADITIONAL



SERVERLESS

(using client-side logic and third-party services)



AWS has made a major advancement in this spectra with Lamba and is favoured by 77% of IT heads than other serverless technologies.

4. AI Platform

As technology advances, one of the most common cloud computing trends to look forward to is AI. Tech giants are now looking into incorporating AI to process big data to improve their business functioning.

By using artificial intelligence, computing platforms are increasing their efficiency. It now offers organizations the ability to automate and manage their processes intelligently. The framework also allows them to easily scale and adapt to the changing needs of the business.

Simply put, AI is definitely a cloud computing trend to watch out for as it enables smoother organization workflows and increased efficiency.



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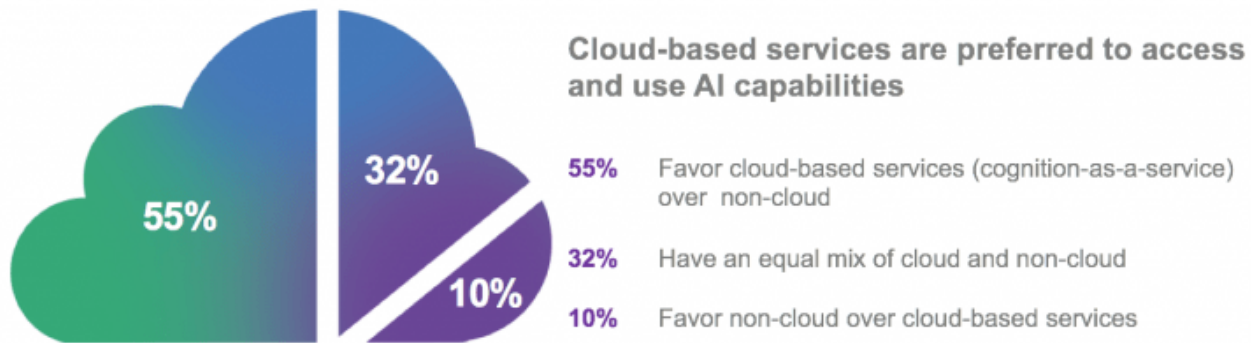
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In fact, an [IBM study](#) reveals that 65% of organizations believe AI is important for their strategy and success.



5. Cloud Security

Data theft, leakage, and deletion- security is a big challenge even for traditional IT infrastructures. But, with more companies moving to cloud platforms, it's important to ensure that cloud service providers can create an airtight security system to guarantee the safety of their client's data.

Cloud security is not just a trend in cloud computing this year, it's a necessity that is prioritized by every organization. Moreover, with the introduction of General Data Privacy and Management (GDPR) in late 2018, security concerns have increased hurdles for cloud technology security compliance.

Hence in 2019, there is a huge demand for cloud security providers that ensure data practices fully comply with GDPR and other compliance essentials.

Through 2022, at least 95% of cloud security failures will be the customer's fault

6. IoT Platform

With a hyper-connected world, one of the most popular cloud computing trends is the rise of IoT platforms. A [study by Gartner](#) suggests the number of connected things in use will be going up to 25 billion by 2021 from 14.2 billion as of 2019.



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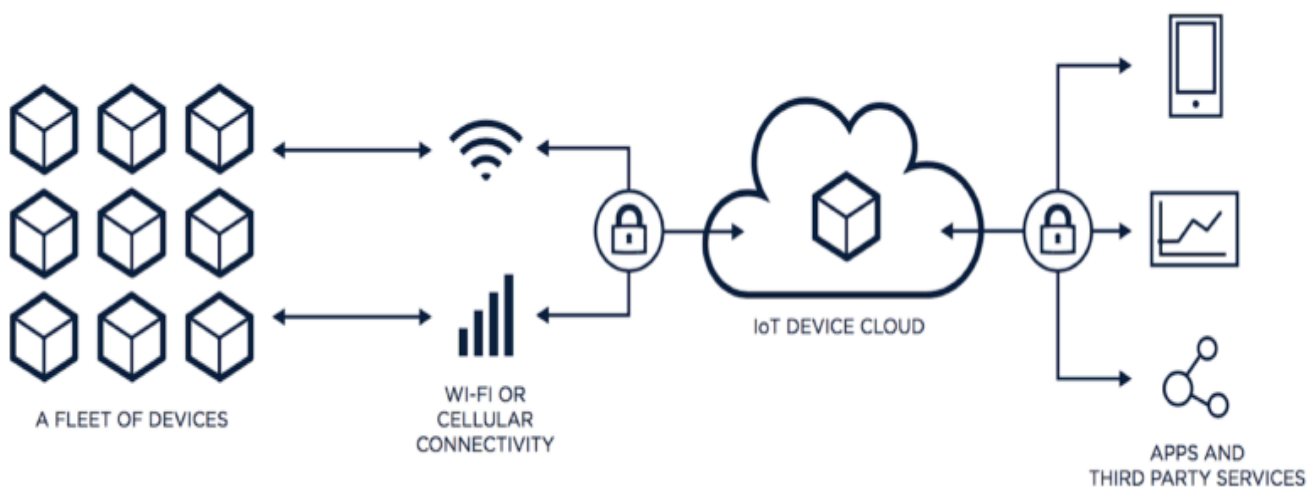
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An IoT platform is a cloud-enabling platform that works with standard devices to enable cloud-based applications and services on it. IoT functions as a mediator, collecting data from different devices with a remote device configuration and smart device management.

The technology is self-management and sends out real-time alerts to troubleshoot issues. IoT also supports different industry-grade protocols to deliver smart predictions through monitoring organization processes.

This intelligent connectivity is what makes IoT platforms a cloud computing trend.



7. Edge Computing

It is a method of optimizing cloud computing network system by performing data processing at the edge of the network, near the source of the data. It works real-time on the cloud servers to process less time-sensitive data or store data for the long term.

That means with the continued convergence of IT and telco, 2019 will bring edge computing at the forefront, creating a huge array of new opportunities for organizations to use new technologies and computing power.

With IoT devices being on a massive increase, edge computing will play a chief role in providing real-time information & data analysis and streamline the flow of traffic from IoT devices. This statement can be backed by a stats by [Gartner](#) stating, 5.6 billion IoT devices owned by enterprises and governments will utilize edge computing for data collection and processing 2020.



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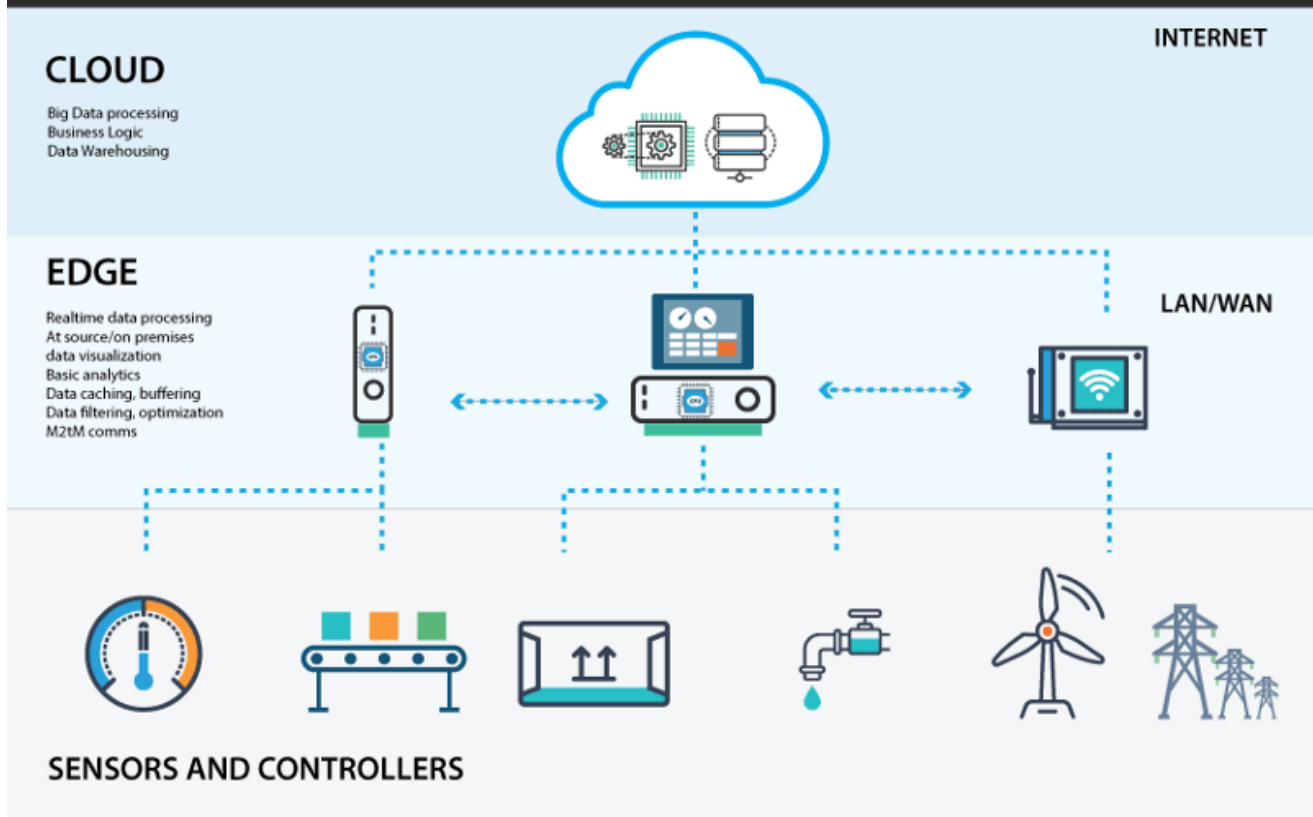
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Cloud and Edge Computing - Complementary Technologies powering IIoT



8. DevSecOps

Cloud computing services provide users with a seamless and simple experience in managing their data but there are many security risks involved. The [security risk of cloud computing](#) includes network eavesdropping, illegal invasion, denial of service attacks, side channel attacks, virtualization vulnerabilities, and abuse of cloud services.

Companies see data security as a major challenge in cloud computing, making them hesitant to use the service. That's where DevSecOps comes in. DevSecOps is the process of thinking of infrastructure security from the start. It works on automating core security tasks by embedding security controls and processes into its workflow.

According to [a report by SumoLogic](#), 45% of IT security stakeholders agree that adopting a DevSecOps methodology is one of the primary organizational changes that would help improve the security for their cloud environments. The future of cloud computing heavily relies on ensuring users have a secure system to work with and DevSecOps is one of the best ways to make the cloud unbreakable.



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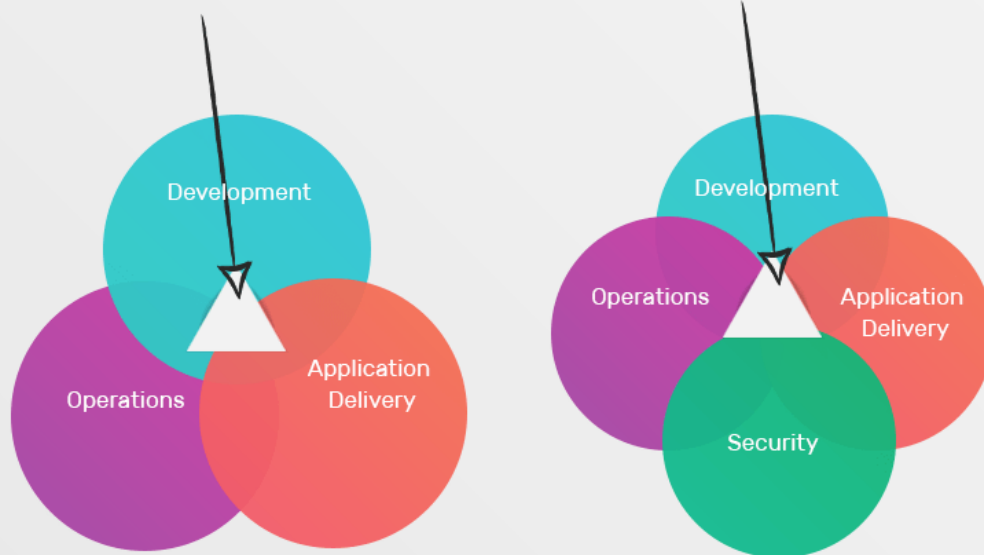
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DevOps vs DevSecOps



9. Service Mesh

Since cloud platforms are complex, it is critical to ensure that the platform has a fast and safe communication environment. With a service mesh, users have a dedicated layer for service-to-service communication, making their cloud platform highly dynamic and secure.

The service mesh is a critical component in a cloud platform. As cloud ecosystems grow and are adapted to fit the changing needs of users, a service mesh can fill the different requirements that come up from service identity to access various policies within the cloud platform.



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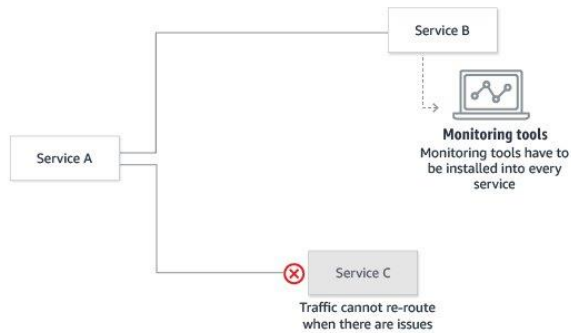
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How it works

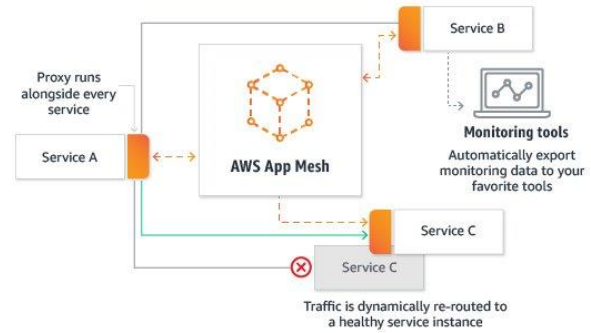
Before App Mesh

Communications and monitoring are manually configured for every service.



After App Mesh

App Mesh configures communications and monitoring for all services.



[Source](#)

The mesh establishes a network communication infrastructure which allows you to decouple and offload most of your application network functions from your service code.

10. Open Source

The cloud computing industry is moving towards a path of innovation and collaboration. With this shift in how cloud computing services are managed, many organizations are looking at adopting an Open Source cloud computing service for their business.

Open-source cloud is a service that is built with software or technology that can be customized by anyone. Simply put, an open source cloud platform allows businesses to customize the infrastructure based on their specific needs.

With a cloud computing platform that is open-source, businesses can see multiple benefits. They can quickly scale their cloud infrastructure, adding features is much simpler than with a closed-source platform, and there are fewer security concerns.

The tech industry is moving to a collaborative work environment and opting for an open-source cloud computing service seems to be the right direction for new business or ones that are scaling. This is why many experts claim that open source is actually the future of cloud computing.