

Edge Computing: The coming cloud computing revolution

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Abstract

The purpose of this article is to introduce Edge Computing as a functional and non-functional extension to IoT (Internet of Things) and the Cloud Computing service model. Edge Computing is a powerful extension to Cloud and IoT-based Big Data Analytics projects.

Over the past decade, there has been a shift from On-premise Computing to Cloud Computing, allowing systems to be more sophisticated and accessible and increase security and collaboration. Today, at the end of the new decade, we are seeing a shift from Cloud Computing to Edge Computing.

Edge computing is an important component of IoT solutions. In most cases, edge computing can be considered on IoT to match frontend technology in mobile and web paradigms. Thus, end-to-end computing enables a range of independent computing capabilities for individual nodes in an IoT network while also being integrated with a central IoT hub.

Edge computing will change your business, and you may not know it yet. As businesses move toward deeper learning efforts and connect relevant products to the Internet of Things, edge computing can help reduce delays and increase productivity.

What is Edge Computing?

'Edge' means having computer infrastructure near a data source. A distributed framework where data is processed next to a potential data source. This infrastructure requires the efficient use of resources that cannot be continuously connected to a network such as laptops, smartphones, tablets and sensors. Edge Computing incorporates a variety of technologies including wireless sensor networks, ad-hoc processing, and collaborative processing and processing, also classified as local cloud/computer fog, mobile end computer, data distribution and retrieval, autonomous networking services, wireless network services, what we see, and more.

Edge Computing refers to a computer calculation that takes place in the 'Outside Edge' of the Internet, in contrast to Cloud Computing, where computing takes place in a central location. Edge Computing usually works near a data source, for example on a board or near a connected camera.

Cloud Computing is expected to go through a phase-level distribution phase. Edge Computing comes with the concept of bringing computers, storage , and communication to people closer to the consumer.

A move to edge computing

With IOT backend platform racing integrated with a handful of vendors, edge computing will be a new focus area for IoT startups. Edge computing has the potential to be the next major computer-aided computer that empowers all industries such as robots, industrial enterprises, or automotive vehicles. Meanwhile, the innovation of edge computing has been reduced to many platforms such as Arduino, RasperryPI, or Omega2. Building on the foundation provided by the technology, we can expect edge computing to become one of the most important battlefields for IoT over the next decade.

When integrated with Edge Computing in the IoT system, the Cloud Computing service model can add a better business value to Big Data and Analytics-based solutions for IoT.

The great advantage of the build is that Edge Computing can make cloud system filtering focus on usable data. Edge Computing can make the difficult lifting of cloud systems.

Therefore, IoT solution developers and developers need to understand Cloud Computing service models that use Edge Computing design architecture and lead solutions that process these key technologies in an integrated way.

Edge computing landscape

In my view, there are several segments of the technology market that are likely to produce the appropriate computer platforms to be competitive ones.

1 - Cloud Computing Platform marketers: Companies like Amazon and Microsoft are at the forefront of using computing as an extension of their cloud platform capabilities. AWS Greengrass is a good example of edge computing technology that naturally replenishes existing cloud computing resources (AWS Lambda).

2 - Automotive Car Platforms: As self-driving car companies continue to receive assistance, we should see some of their cutting edge computer technology being distributed as open source resources.

3 - IoT vendor platforms: Edge computing is an important component of industrial IoT solutions. IoT platforms like ThingWorx, C3IOT or GE Predix already offer computer-edge computer

capabilities. Those efforts are likely to turn into full-fledged computer-based platforms focused on industrial business.

4 - IoT Manufacturer Manufacturers: Manufacturers of devices that focus on industrial IoT devices in other sectors that can produce the appropriate components of a computer platform. For many things in the industry, we can see various vendors working together and building consortium organizations to drive innovation and build computing platforms.

5 - Telcos: Telecommunications companies have more experience than any other industry using sophisticated computer solutions. As a result, we can see exciting platforms emerging from forward-thinking telcos resulting in some of the best practices learned over the years.

Keywords

- Edge
- Edge Computing
- Cloud Computing
- IOT

References

- <https://medium.com/velotio-perspectives/a-beginners-guide-to-edge-computing-6cfea853aa11>
- <https://towardsdatascience.com/you-need-to-move-from-cloud-computing-to-edge-computing-now-e8759eb9690f>
- <https://medium.com/technology-hits/power-of-the-edge-computing-b1e7fd8b2e91>
- <https://medium.com/@ODSC/why-your-business-needs-edge-computing-81f20e84eccc>
- <https://jrodthoughts.medium.com/is-edge-computing-the-next-major-computing-revolution-part-ii-e60c70e550c5>