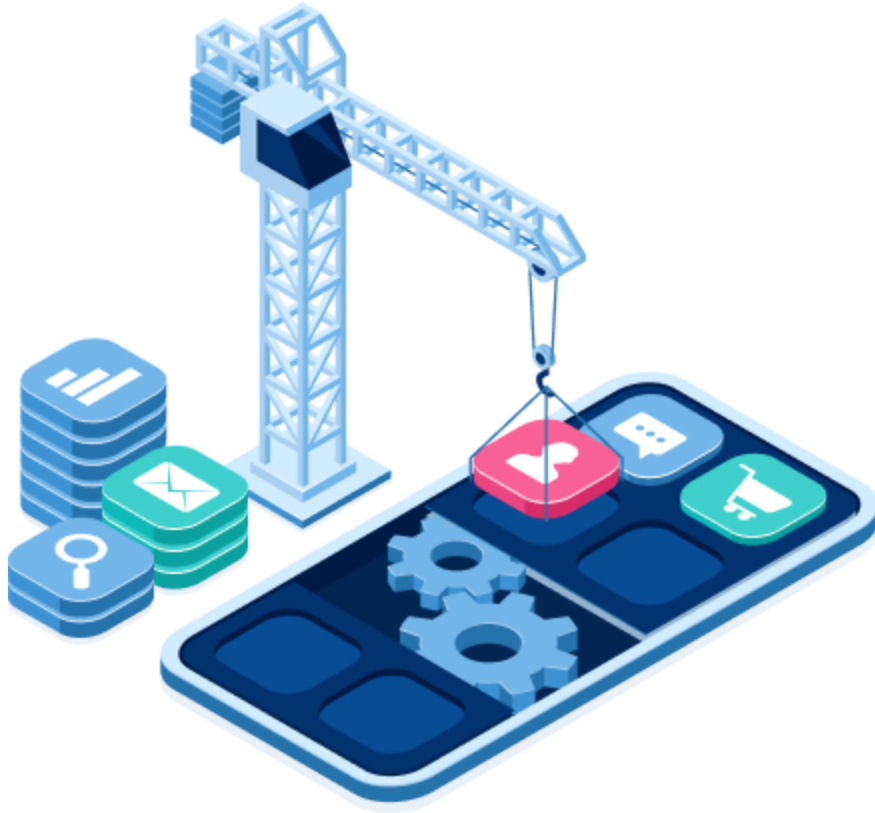




Tutorial: What is Edge Computing

Understanding the concept of Edge Computing

Let's think of a situation where you are doing a computer driven self-driving car, and a ball or obstacle rolls or bounces to the road. If the car must take a photograph of the obstacle or ball through the internet to a giant warehouse full of computer servers to compute the outcome thousands of miles away, just to process a command for the self-driving car to "Stop!", it may take too much time for the computer driven car to respond in a timely manner.

The self-driving car needs to instantly make this decision with a vehicle not a computing warehouse connected to the cloud to save time and not get in an accident. This is the reason why self-driving cars use a concept called "Edge Computing", Edge Computing creates a process and

responds right where the incident occurs instead of sending data to a cloud computing facility. Which is why it is called “Edge Computing” because it is at the “edge” of a network nearest to the person using the technology or device.



1. Core Concept: Cloud versus the Edge Computing

Cloud computing: Cloud computing processing happens mostly in centralized data centers. This type of computing can handle huge computing processes. This data travels farther and can be

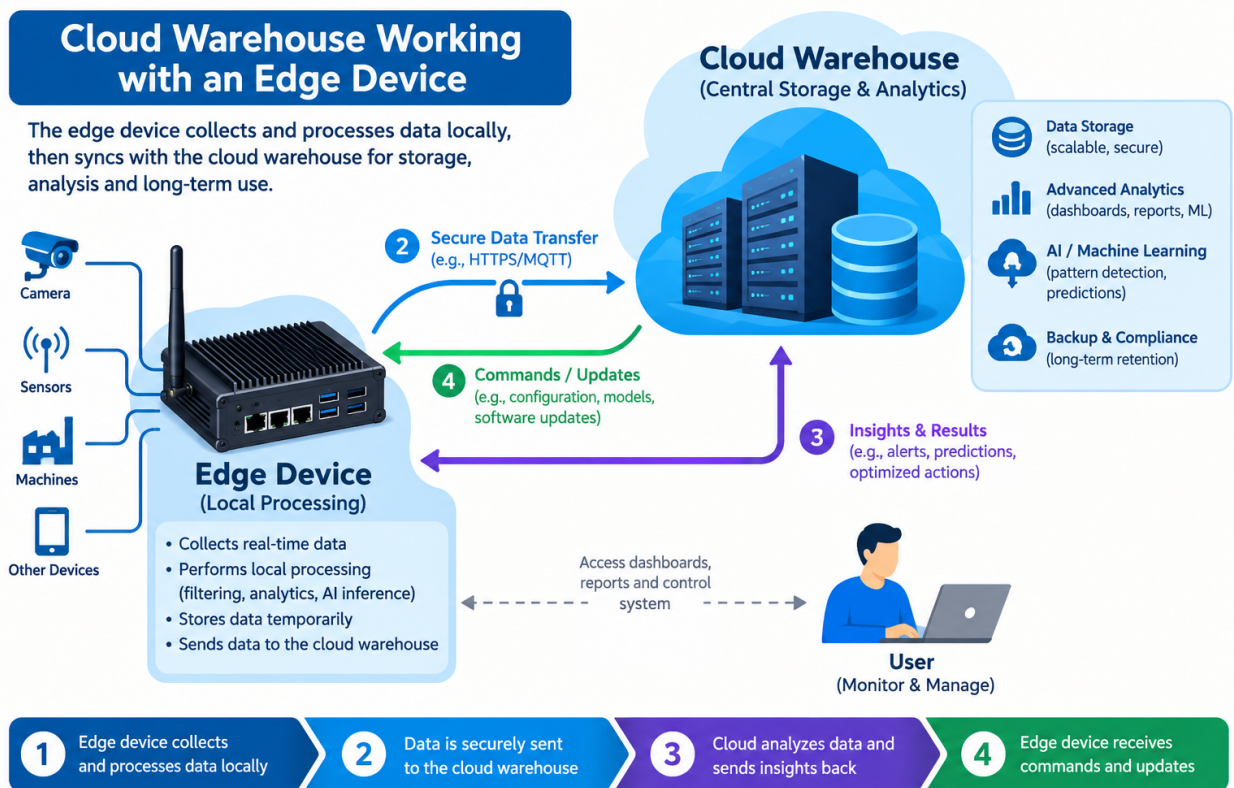
helpful for a large data storage situation or an incident where large amounts of data needs to be saved.

Edge Computing: Is a computing process that occurs to or at the data source and is useful for quick nearby processing of an event or incident, like when using a GPS in a car and an accident is nearby. **Edge computing** is meant to be used to make immediate responses or decisions to an incident and data moves a shorter distance to resolve a technological issue.

An example of Edge Computing:

A processing plant or warehouse might utilize Edge Computing technology to watch machines in real time. The edge system can detect immediate issues or emergencies in a factory setting like “machine temperature being too high or an object on the conveyor belt that is slowing a package delivery system.

The cloud system is useful because the system has the ability to send serious errors to the cloud computing warehouse for long term analysis.



2. Why did scientists invent Edge Computing?

Today's organization generates large quantities of data.

Examples of these devices that create large amounts of data include:

- Security Cameras
- Smart Phones
- Industrial Machines
- Medical Equipment
- Autonomous Vehicles
- Smart Homes
- Internet of Things (IoT) devices
- Restail Systems

- Manufacturing Equipment

Producing and transporting this vast amount of data to a centralized Cloud can create a lot of problems.

Common issues to not using Edge Computing:

Data Latency: Data May take an extended amount of time to travel to a remote server and back to the device.

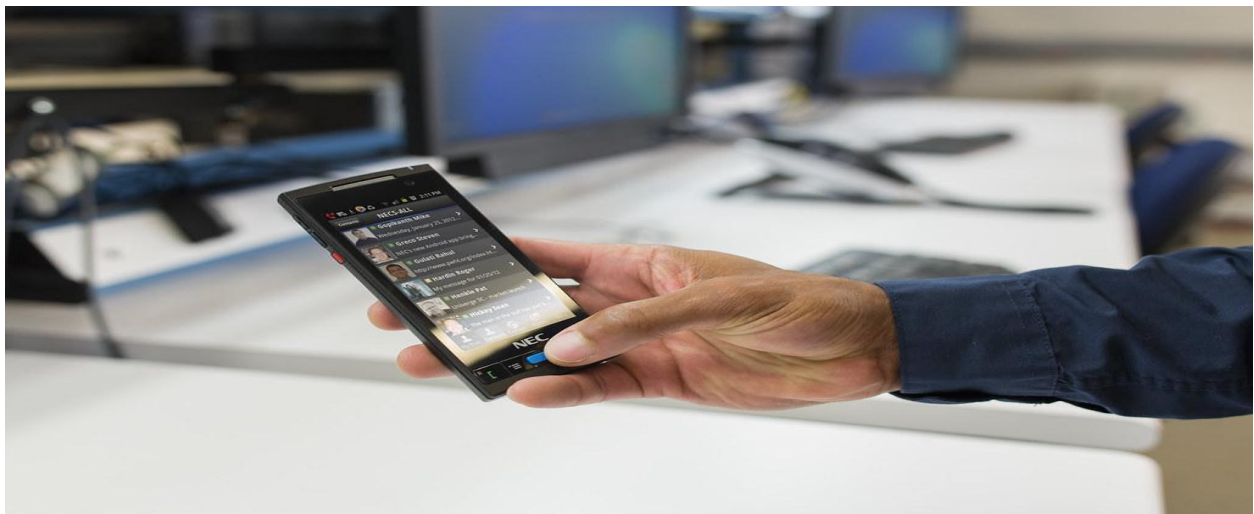
Bandwidth: Vast quantities of transported data require a lot of network capacity.

Internet Dependence: A device on the Cloud network will have issues and problems with functioning when the internet connection to the cloud is interrupted.

Privacy: The moving of sensitive and confidential data to remote Cloud systems can create privacy and data security issues.

Conclusion

Edge Computing resolves a few of the common issues by processing data closer to where it is generated.





Thank You! **QUESTIONS?**

I'm here to help! Feel free to reach out
with any questions or comments.

 **385 454 5253**

 For questions email:
admin@computerliteracytutorials.com



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