

# The Relationship Between the Internet of Things and Big Data

## What is the Internet of Things?

The Internet of Things, or IoT, is the term given to the network of billions of devices that use sensors, software, and other technologies to collect and share data over the internet.

IoT devices can be as small as the smartwatch on your wrist collecting data on your health. They can also be much larger and more complex, such as a factory full of sensors and technologies that monitors the safety and efficiency of everyday operations.

## IoT Data Collection

IoT devices collect data in real time or near-real time that can inform a number of decisions, whether those decisions occur autonomously (like IoT-based traffic light control) or manually (like airport management rerouting foot traffic from a congested area).

IoT sensors can gather multiple types of data, such as:

- Status data — basic information like off/on and available/ unavailable or other exact data like the temperature.
- Location data — tracking the movement of people or objects above, on, or below the earth's surface.
- Automation data — used to control the actions of automated operations or systems, like an autonomous bus route.

Once the sensors collect the data, they send it to a central location using a data protocol.

## Generating IoT Big Data

Once the data reaches a central location, it's available to analyze, interpret, and act on. Unfortunately, this isn't as easy as it sounds.

Because IoT sensors gather either real-time or near-real-time data, the amount of information they generate is massive. In fact, the International Data Corporation (IDC) projects that by 2025, there will be 41.6 billion IoT devices in use generating 79.4 zettabytes of data.

This results in IoT "Big Data," or so much data that it's difficult to deal with using traditional data processing and management tools. When the data set is so large and complicated that it's difficult to draw conclusions and make improvements from it, then it has lost its purpose.

To get the most out of IoT data, you need to use data storage management and analytics tools built to support Big Data.

## Big Data Storage and Analytics

The best Big Data platforms can not only store vast amounts of IoT Big Data, but also support quick searching, indexing, and real-time analysis of your data, right when you need answers.

Modern high-throughput platforms input data quickly and scale to keep pace with your organization's requirements. They also quickly search and index your data so that you spend less time on queries and data analysis.

When selecting a data management platform, you should consider one that is cloud-optimized, where you perform analytics on the cloud but control access and permissions to your data on-premises. This puts even more speed behind your IoT data analytics and shortens the time to make more informed decisions – the kind you expect to make after investing in an IoT infrastructure.