

DAILY ASSESSMENT FORMAT

Date:	04 AUG 2020	Name:	PAVITHRAN S
Course:	industrial iot on google cloud platform	USN:	4AL17EC068
Topic:	industrial iot on google cloud platform	Semester & Section:	6TH B
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FORENOON SESSION DETAILS

Image of session

The screenshot shows the Coursera interface for the course 'Industrial IoT on Google Cloud Platform'. The main video player displays Catherine Gamboa, a technical course developer at Google, with the subtitle 'I'm Catherine Gamboa, and I'm a technical course developer at Google.' The video title is 'Welcome to IIoT on GCP'. The course is 'Industrial IoT on Google Cloud Platform'. The page includes a sidebar with course navigation and a 'Notes' panel on the right.

The screenshot shows the Coursera interface for the course 'Industrial IoT on Google Cloud Platform'. The main video player displays two people, a woman and a man, sitting at a table in a basketball court. The video title is 'IIoT on GCP Overview'. The course is 'Industrial IoT on Google Cloud Platform'. The page includes a sidebar with course navigation and a 'Notes' panel on the right.

Report – Report can be typed or hand written for up to two pages.

Google Cloud Platform (GCP), offered by Google, is a suite of cloud computing services that runs on the same infrastructure that Google uses internally for its end-user products, such as Google Search, Gmail and YouTube.^[1] Alongside a set of management tools, it provides a series of modular cloud services including computing, data storage, data analytics and machine learning.^[2] Registration requires a credit card or bank account details.^[3]

Google Cloud Platform provides infrastructure as a service, platform as a service, and serverless computing environments.

In April 2008, Google announced App Engine, a platform for developing and hosting web applications in Google-managed data centers, which was the first cloud computing service from the company. The service became generally available in November 2011. Since the announcement of the App Engine, Google added multiple cloud services to the platform.

Google Cloud Platform is a part ^[4] of Google Cloud, which includes the Google Cloud Platform public cloud infrastructure, as well as G Suite, enterprise versions of Android and Chrome OS, and application programming interfaces (APIs) for machine learning and enterprise mapping services.

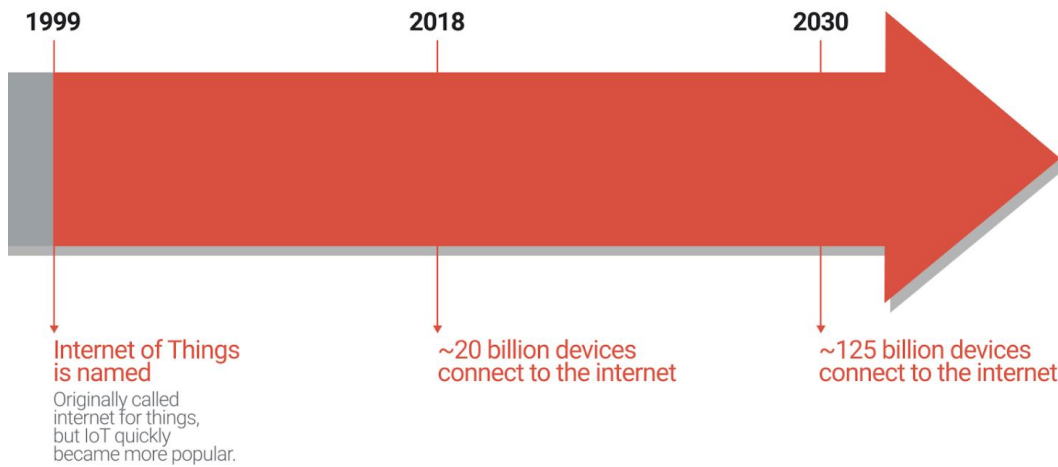
IoT

- Cloud IoT Core - Secure device connection and management service for Internet of Things.
- Edge TPU - Purpose-built ASIC designed to run inference at the edge. As of September 2018, this product is in private beta.
- Cloud IoT Edge - Brings AI to the edge computing layer.

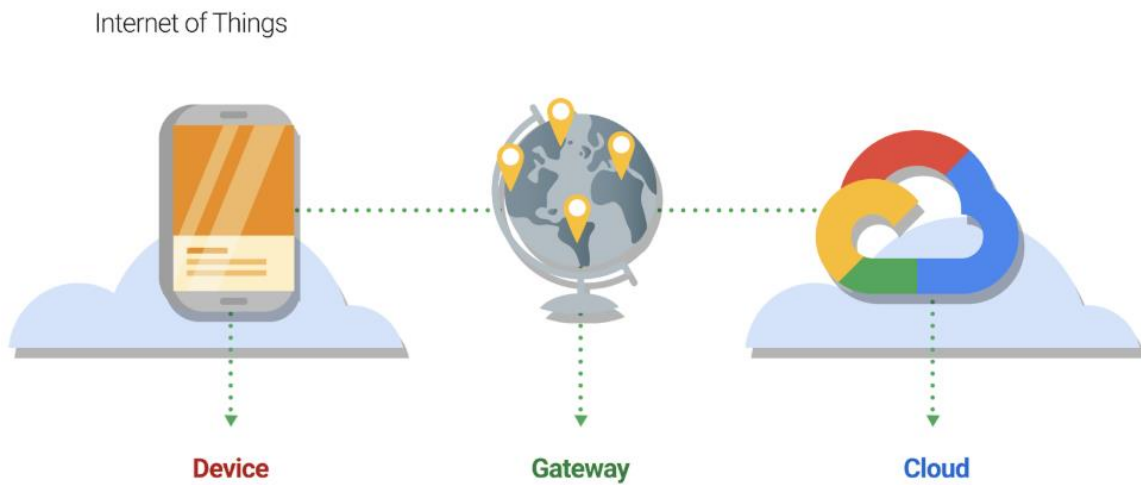
The amount of attention IoT is getting is growing exponentially. In fact, the term "Internet of Things" wasn't created until 1999. Since then, the field of IoT has grown tremendously. In 2018, the number of installed IoT devices was estimated to be about 1.2 billion; by 2030, the number is expected to reach 125 billion.

According to [IHS Market](#), the market sectors driving this growth are:

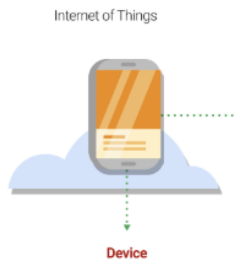
- Smart cities - a city that uses technology to improve efficiency, sustainability, and quality of life for people living and working in the city.
- Industrial IoT - uses machine learning and big data to generate value from sensor data.
- Connected health - using consumer technologies to connect patients and healthcare providers outside of the hospital.
- Smart homes - using smart devices to control the environment in a home.



IoT Devices are Connected to the Cloud



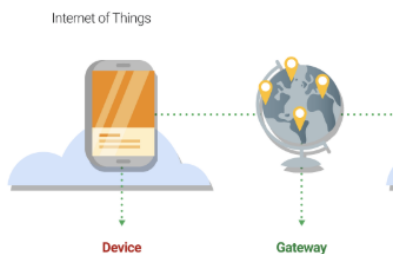
The general structure of an IoT network includes devices to interact with the environment; a gateway to gather the data and communicate with the cloud; and the cloud to store, process, and analyze the data.



Devices

Devices interact with the environment by gathering data or performing an action upon the environment. They can be connected versions of common objects you might already know, or new and purpose-built devices. They can be devices that you own personally and carry with you (for example, a phone or fitness tracker) or keep in your home (Google Home).

Devices can also be embedded in factory equipment or as part of the infrastructure of the city where you live. Each of them is able to convert valuable information from the physical world into digital data that provides increased visibility into how your users interact with your products, services, or applications.



Gateway

A gateway ensures that devices are securely connected to the cloud. A gateway can be a cell phone, a personal assistant, or a microprocessor platform. It controls messaging between the device and the cloud, and in some cases, does real-time analytics or machine learning, which is called edge computing.

A gateway device might be used even when the participating devices are capable of communicating without one. In this scenario, the gateway adds value because it provides processing of the data across multiple devices before it is sent to the cloud. In that case, the direct inputs would be other devices, not individual sensors

Internet of Things



Cloud

The cloud handles computation and data storage, real-time and batch analytics, and machine learning and visualization. In an IoT network, devices are often added, removed, or modified. The cloud connected to the device must be capable of scaling quickly to meet these demands. Communication protocols and data pipelines must be able to handle rapidly changing message traffic and storage needs. You need an efficient, scalable, affordable way to both manage those devices and handle all that information and make it work for you.