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OVERVIEW OF EXISTING SOLUTIONS FOR CONTROLLING AND MONITORING SMART HOME DEVICES

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The purpose of the work is to analyze the control and monitoring systems of the Internet of Things (IoT), which plays a key role in the functioning and efficiency of various devices and applications in a smart home.

A smart house is a system of sensors and equipment combined into a single system that supports the management and configuration of a device that is convenient for a person to use in their everyday life, for example, it can be a smartphone, laptop, etc. With the help of a smart home system, the control of one's own premises and the understanding of climate indicators are strengthened, the level of comfort and safety of life is increased. These systems allow users to monitor the health of devices, manage them in real time and collect valuable data for further analysis.

There are many solutions on the market today, ranging from open platforms to proprietary solutions from large technology companies. The work reviewed several popular systems: AWS IoT Core, Microsoft Azure IoT Hub, Google Cloud IoT Core, IBM Watson IoT Platform, ThingSpeak, OpenHAB.

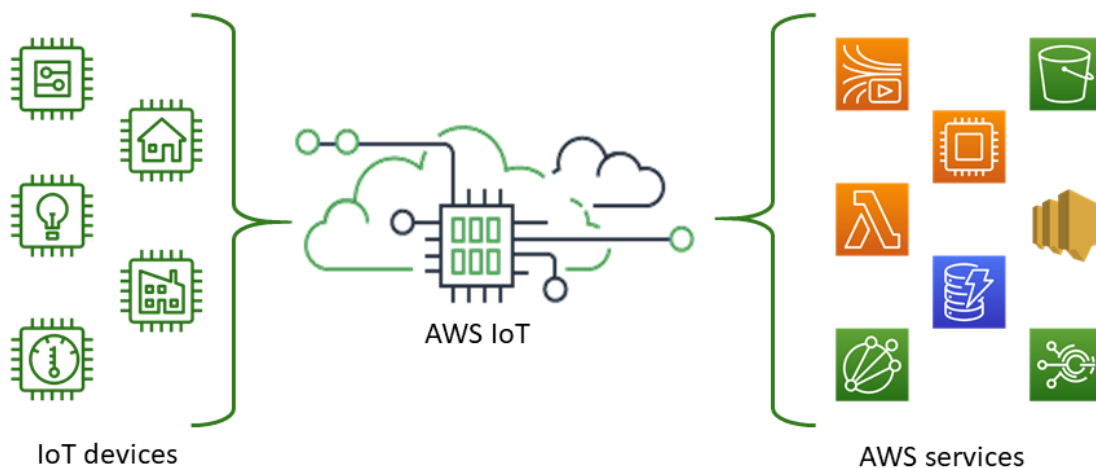


Figure 1 - Core AWS IoT

Cloud platforms from Amazon AWS IoT Core (Fig. 1) and IBM Watson IoT Platform allow you to easily connect IoT devices to cloud services, provide a safe and reliable connection between devices and cloud applications, exchange

data in real time, provide an opportunity developers can easily scale their applications. In addition, the IBM Watson IoT Platform has powerful analytics tools and integration with IBM Watson to deliver AI and machine learning capabilities.

Microsoft's Azure IoT Hub is a cloud-based service that helps collect, store, and analyze data from multiple devices. Azure IoT Hub supports a wide range of connection protocols and provides tools to integrate with other Azure services, such as Azure Functions, Machine Learning, and Azure Stream Analytics.

To integrate IoT devices with Google Cloud services, the full-featured Google Cloud IoT platform is often used, which uses standard MQTT and HTTP protocols for management. The platform integrates with other Google services for data analysis, such as BigQuery, Cloud Dataflow and Cloud Machine Learning Engine, providing powerful analytical capabilities.

ThingSpeak, an open IoT analytics platform, is popular among researchers for real-time data flow aggregation, visualization, and analysis. The platform gained popularity due to its ease of integration with many popular IoT platforms such as Arduino and Raspberry Pi.

OpenHAB is an open source home automation software that allows you to integrate and control various IoT devices at home. It supports a large number of devices and technologies and offers the flexibility to create customized home automation solutions.

Conclusion. A review of existing systems has shown that platforms and solutions provide a wide range of functionality for monitoring and managing IoT devices, from basic cloud connections to sophisticated analytical tools using artificial intelligence. Choosing the right platform depends on the specific needs of the project, scalability and security requirements.

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