Communication protocols used in real-life Smart Industry

Semester 4 IOT

Communication protocols

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Acronyms

Acronym	Meaning
IoT	→ Internet of Things
SNMP	→ Simple Network Management Protocol

Table 1 – List of acronyms used throughout the report.

Introduction

The assignment on which this document presents a small analysis of a real-life industry based on different kind of communication and storage being present. In this subject, we will learn how IoT is being implemented in smart industries. Smart industries use a different type of communication to send data and create insight which can be used for machine learning or predicting outcomes. In the following sections provide research of a chosen company that uses a communication protocol that fulfills a client's requirements.

Company overview

Cisco Systems, Inc., also known as Cisco, is an American-based multinational digital communication technology consisting of a combination of multiple business entities operating in entirely different industries under one corporate group headquartered in San Jose, California. Cisco develops, manufactured, and sells networking hardware, software, telecommunications equipment and other high-technology services and products. Cisco specializes in specific tech markets, such as IoT, domain security, videoconferencing and energy management with leading products including Webex, OpenDNS, Jabber, DUO Security and Jasper. Cisco is one of the largest technology companies in the world ranking 74 on the Fortune 100 with over $51 billion in revenue and nearly 80,000 employees.

Communication Protocol

Cisco uses communication protocol called SNMP protocol for network management. SNMP is an IP-based application layer protocol that exchanges information between a network management solution and any SNMP-enabled devices. Cisco implements this protocol in its products in the following categories: Switches, Routers, Wireless, Network Management Interfaces and Modules, Optical Networking, Access Points, Outdoor and Industrial Access Points, etc.

Usage

Cisco products is used in Smart Industries and make the process more efficient in terms of different kinds of solutions. Some of these includes:

Industrial Networking: networking products specifically designed for industrial environments such as plants and oil rigs. These products are ruggedized and designed to withstand harsh conditions and can be used to connect and manage devices across a factory floor or other industrial setting.

Cybersecurity: cybersecurity products and services help protect industrial environments from cyber threats. This includes solutions for network security, endpoint security and threat intelligence. These products are critical for securing smart industry solutions which often rely on a complex network of connected devices.

IoT connectivity: Cisco provides a range of IoT connectivity solutions, including networking devices, sensors, and gateways. These solutions can be used to connect a wide range of industrial devices from sensor on manufacturing equipment to environmental monitoring systems.

Overall, Cisco has a wide range of offerings for clients looking to implement smart industry solutions. Cisco can help organizations connect, secure, and optimize their operations using smart industry technologies.

Storing data

The data is being stored in a data center which is a physical facility that organizations use to house their critical applications and data. A data center's design is based on a network of computing and storage resources that enable the delivery of shared applications and data. The key component of a data center design includes routers, switches, firewalls, storage systems, servers, and application-delivery controllers.

Conclusion

To conclude the analysis, Cisco is a widely known company and they are already making progress in improving smart industry 4.0. SNMP is required to support devices creating accessible ways to monitor the network. SNMP protocol should be secure enough since they also create cybersecurity products and services to help protect their own data's. In addition to cyber threats, the data is also being protected by physical security systems deployed within the data center.

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