

An IoT-ready streaming manager device for classroom environments in a smart campus

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Abstract

The Internet of Things (IoT) has started to penetrate the everyday life by increasing the automation of processes as diverse as cooking or climate control. The proliferation of smart devices will take the human-machine relationship to a new level, and the classroom is not the exception. This paper presents the design and implementation of an IoT-ready classroom device for screen streaming based on an inversed VNC approach over TCP/IP on a wireless local area network. Streaming permission is granted following an authentication-authorization scheme to avoid undesired content streaming, thus allowing the operation over a public network. The device communicates to the network by publishing its status to a MQTT broker, which makes it an active “thing” in an IoT setup.

Keywords

Google, Servers, Wireless LAN, Protocols, Databases, IP networks, Security.