A Design of IoT Device Configuration Translator for Intent-Based IoT-Cloud Services

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Abstract—The rapid growth of IoT (Internet of Things) makes life better, but it can be a burden for IoT users to manage heterogeneous IoT devices in a timely and appropriate manner. In this paper, we propose an IoT device configuration translator for IoT-cloud services that enables IoT users who do not have expertise in IoT environments to efficiently configure their IoT devices. The user's high-level configuration based on natural language is delivered to the translator in IoT-cloud platform using NETCONF (Network Configuration Protocol). The translator, which is designed with three components using automata theory and database mapping information, translates the high-level configuration into a low-level configuration applicable to the IoT devices. This allows IoT users to configure their IoT devices without considering which protocols and platforms they work on.

Keyword—IoT, IoT-cloud, NETCONF, Translator, YANG

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