

With the widespread availability of connected smart devices, Internet of Things (IoT) is becoming the worlds largest computing platform. These large-scale, heterogeneous and resource-constrained devices bring many significant new challenges to the design of efficient and reliable IoT systems. Security is one of the most crucial ones that need to be effectively addressed for the wide adoption of IoT systems. In this paper, we first present an in-depth analysis of security challenges in IoT. Then, we propose EdgeSec, the design of a novel security service which is deployed at the Edge layer to enhance the security of IoT systems. EdgeSec consists of seven major componets that work together to systematically handle specific security challenges in IoT systems. Finally, the effectiveness of EdgeSec is demonstrated in the context of a typical IoT.