fABElous: An Attribute-Based Scheme for Industrial Internet of Things

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Abstract	The Internet of Things (IoT) is a technological vision in which constrained or embedded devices connect together through the Internet. This enables common objects to be empowered with communication and cooperation capabilities. Industry can take an enormous advantage of IoT, leading to the so-called Industrial IoT. In these systems, integrity, confidentiality, and access control over data are key requirements. An emerging approach to reach confidentiality and access control is Attribute-Based Encryption (ABE), which is a technique able to enforce cryptographically an access control over data. In this paper, we propose fABElous, an ABE scheme suitable for Industrial IoT applications which aims at minimizing the overhead of encryption on communication. fABElous ensures data integrity, confidentiality, and access control, while reducing the communication overhead of 35% with respect to using ABE techniques naively.
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