Auction-Based Resource Access Protocols in IoT Service Systems

Internet of Things (IoT) enables many physical devices to connect to Internet, including wearable devices, home appliances, ambient devices, etc. IoT application developers have created new services and applications to control actuators to make our lives easier. Since many applications may co-exist in a given environment, some of them may want to use a device at the same time, causing resource access conflicts. How to resolve resource conflicts is critical in IoT systems. We propose an auction-based mechanism to coordinate applications and resolve their resource access conflicts. The mechanism is being designed in the WuKong IoT middleware. We also conduct simulations to show that our method is efficient and can achieve good performances.

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