



Supplementary materials for

Musab KAMAL, Imran RASHID, Waseem IQBAL, Muhammad Haroon SIDDIQUI, Sohaib KHAN, Ijaz AHMAD, 2023. Privacy and security federated reference architecture for Internet of Things. *Front Inform Technol Electron Eng*, 24(4):481-508. <https://doi.org/10.1631/FITEE.2200368>

Figs. S1–S14

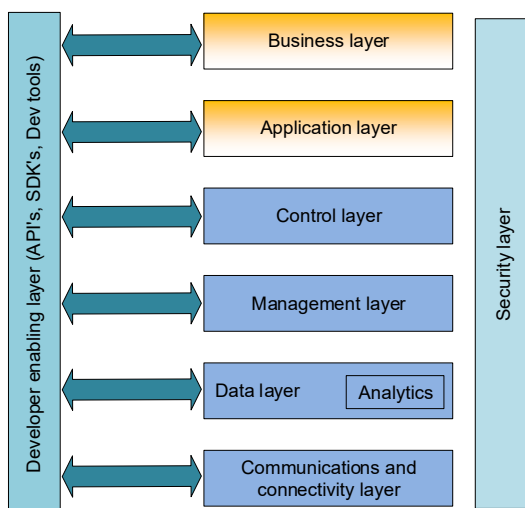


Fig. S1 Intel IoT reference architecture (API, application programming interface; Dev, developer; SDK, software development kit)

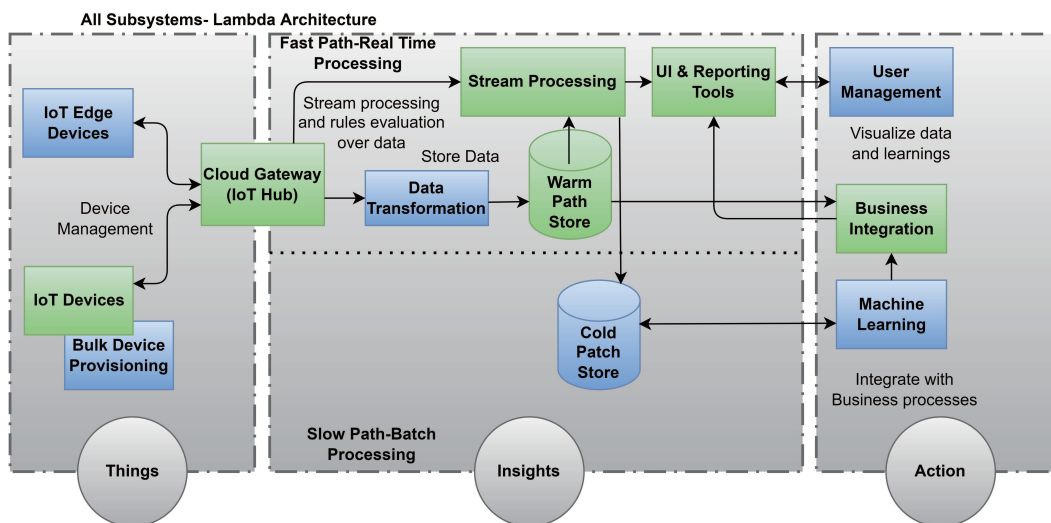


Fig. S2 Microsoft Azure IoT reference architecture (UI, user interface)

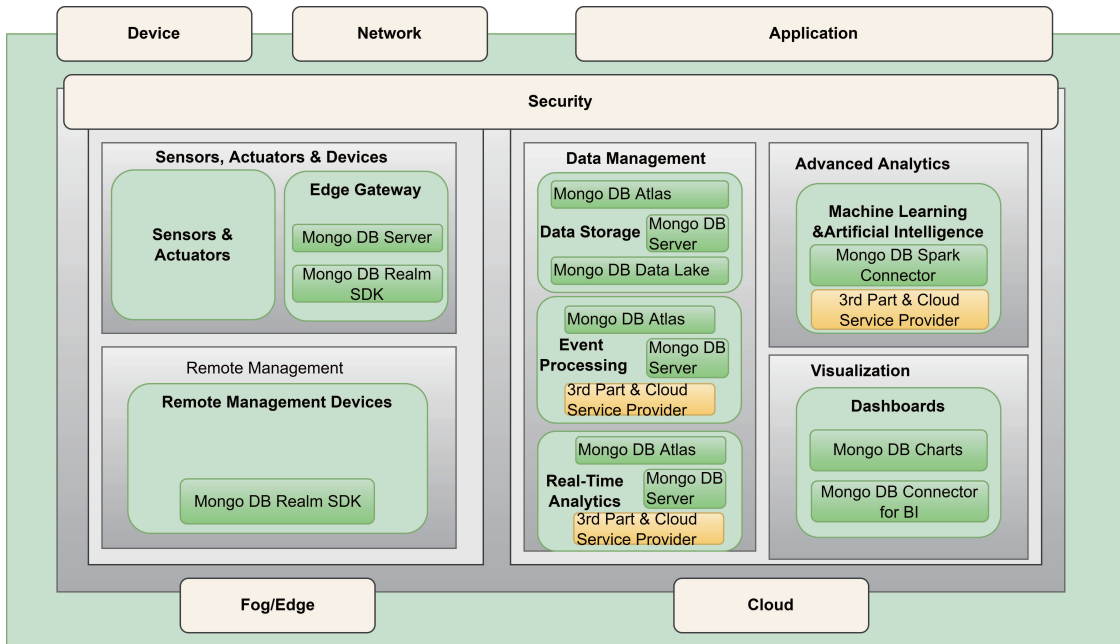


Fig. S3 MongoDB IoT reference architecture (DB, database; SDK, software development kit)

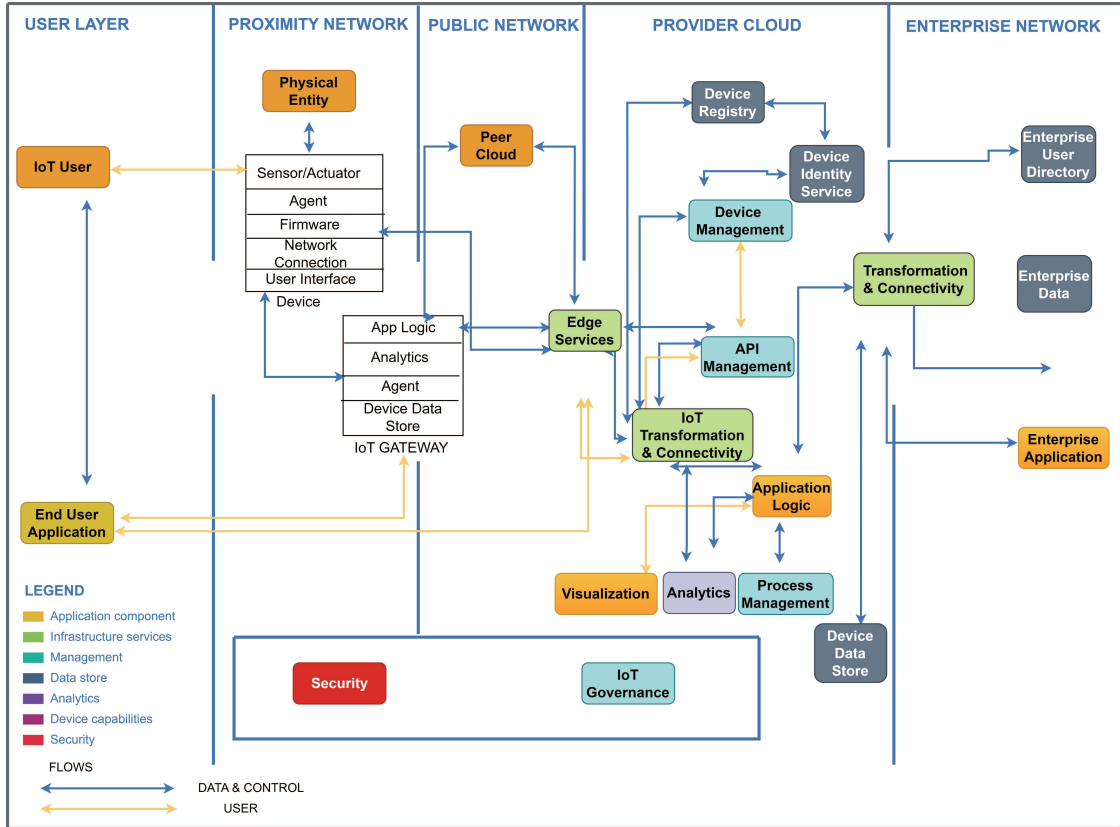


Fig. S4 IBM IoT reference architecture (API, application programming interface)

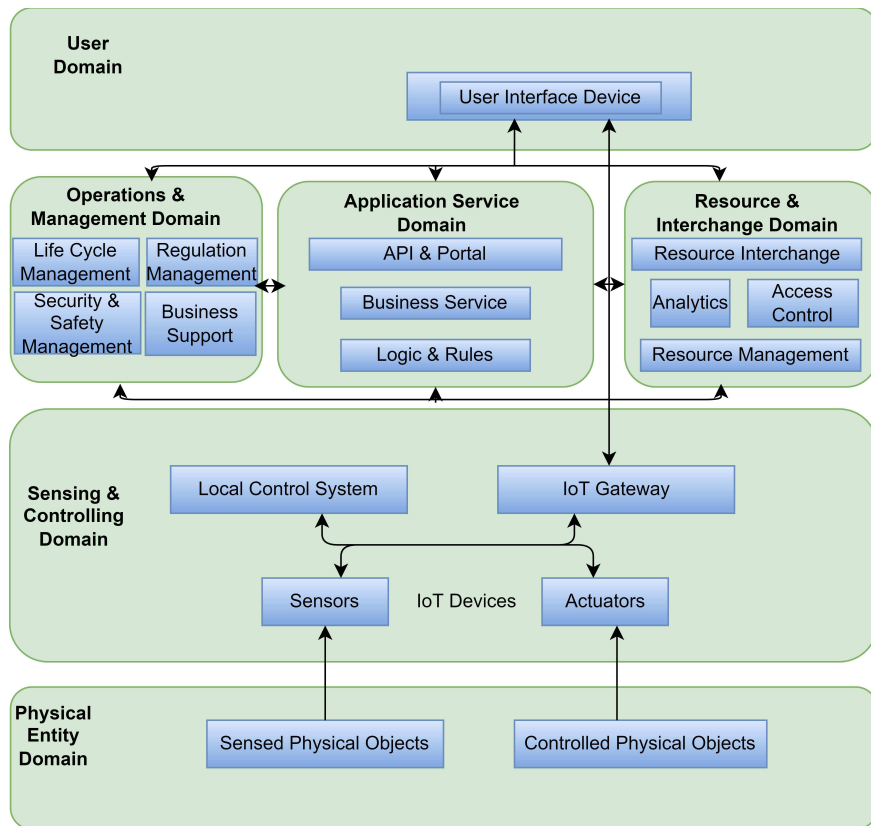


Fig. S5 SerIoT reference architecture (API, application programming interface; SerIoT, secure and safe IoT)

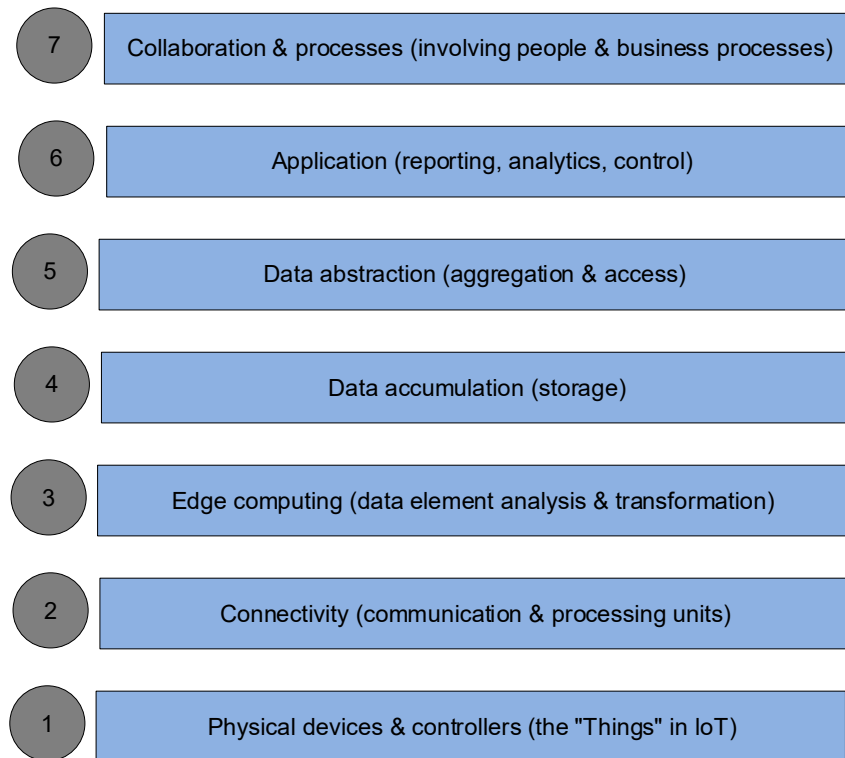


Fig. S6 Cisco IoT reference architecture

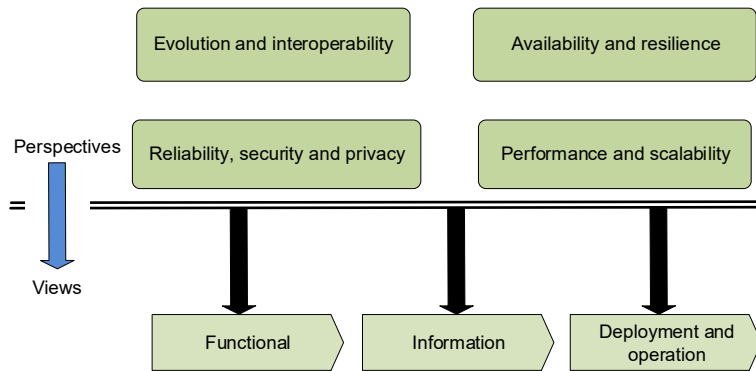


Fig. S7 IoT ARM view (ARM, architectural reference model)

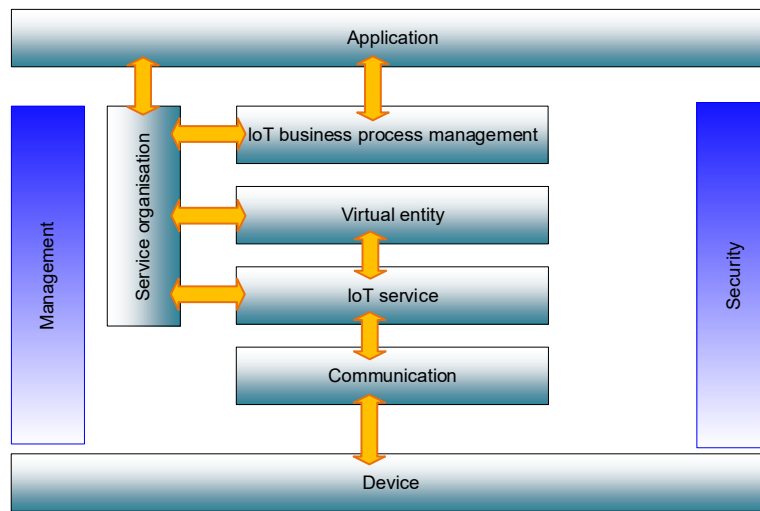


Fig. S8 IoT ARM functional view (ARM, architectural reference model)

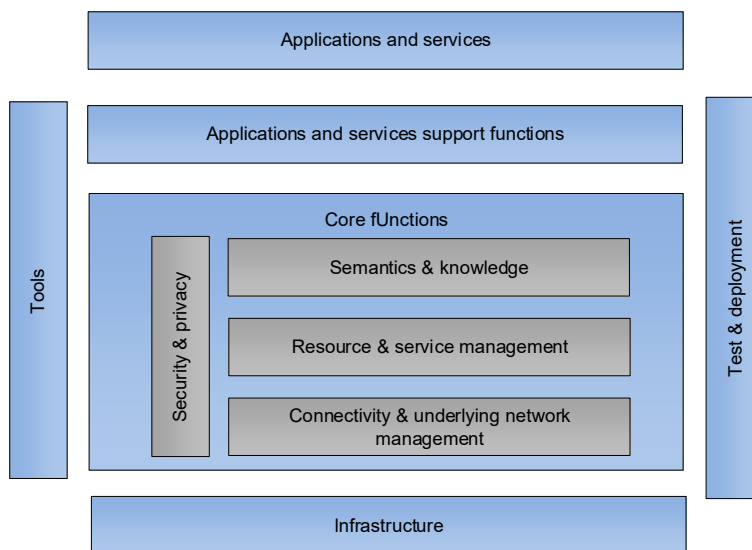


Fig. S9 KSG IoT reference architecture

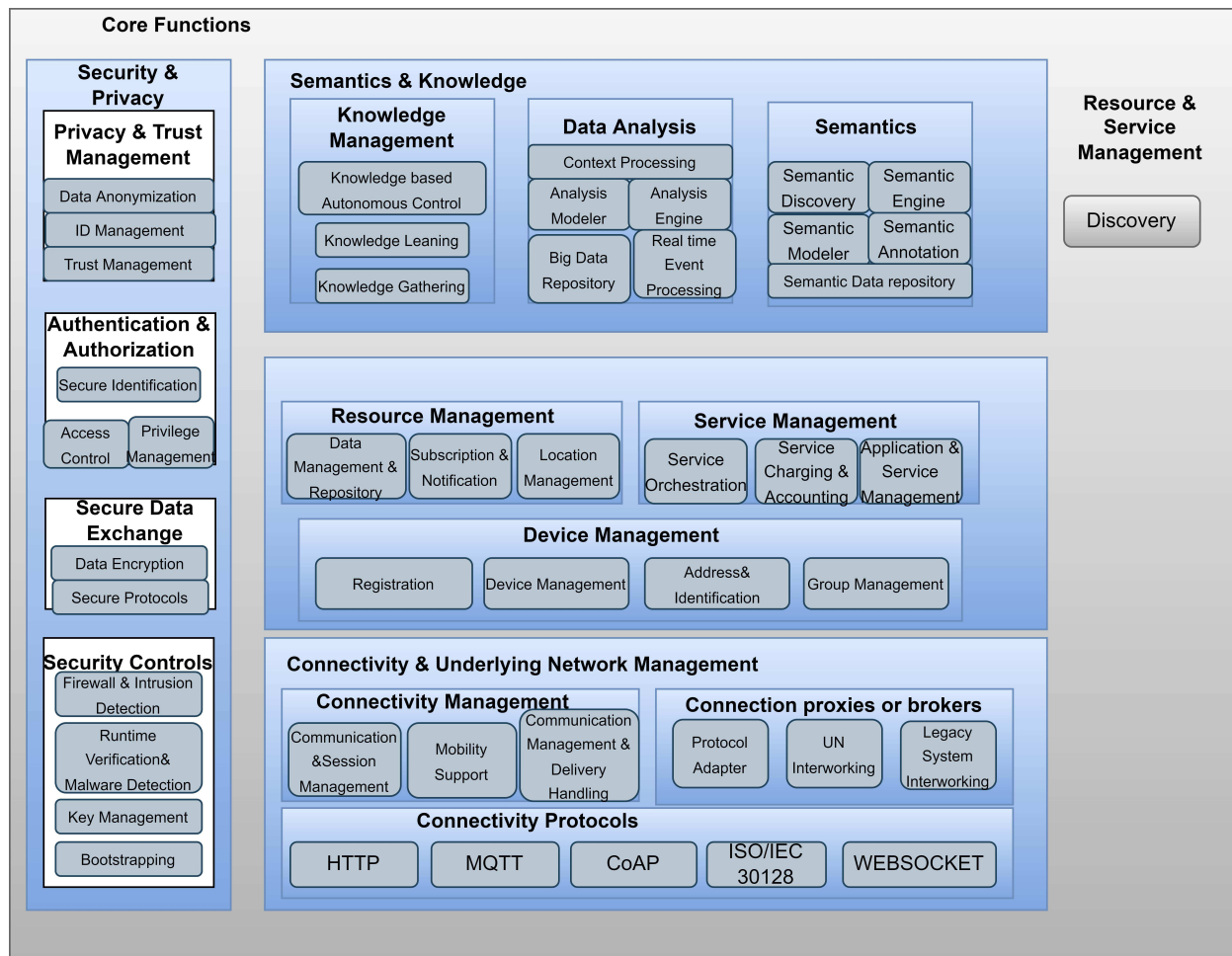


Fig. S10 KSG detailed core functions (CoAP, constrained application protocol; HTTP, hypertext transfer protocol; IEC, International Electrotechnical Commission; ISO, International Organization for Standards; KSG, Korean Study Group; MQTT, message queuing telemetry transport)

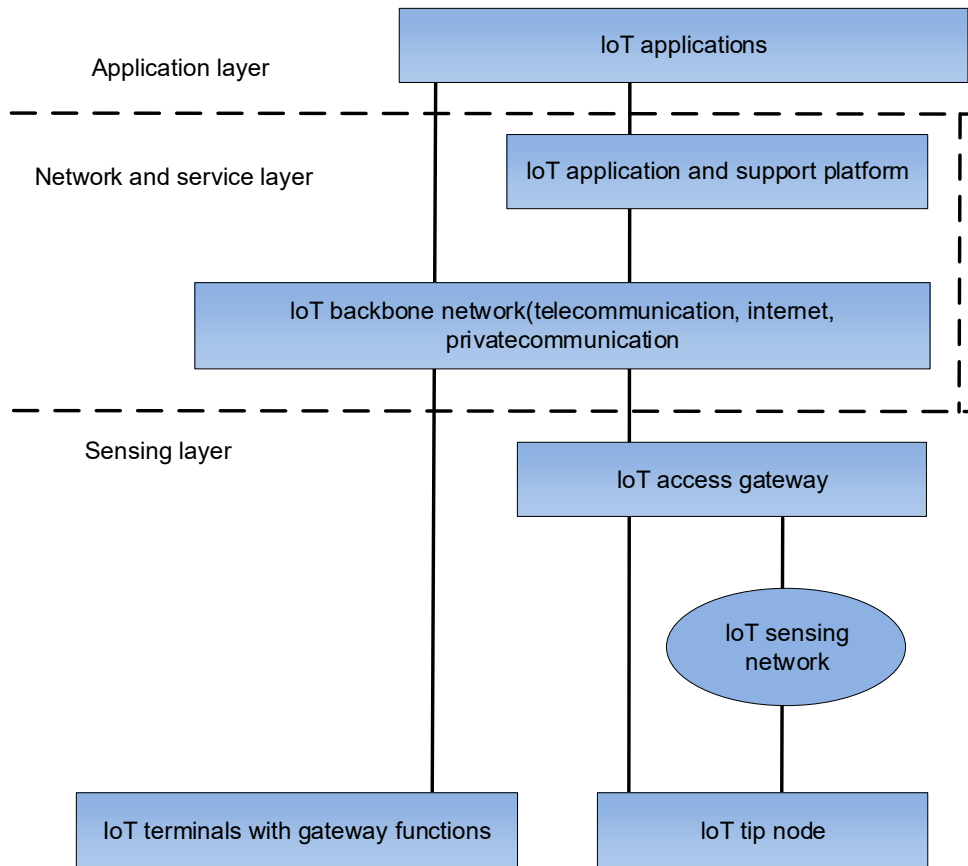


Fig. S11 CCSA IoT reference architecture (CCSA, China Communications Standards Association)

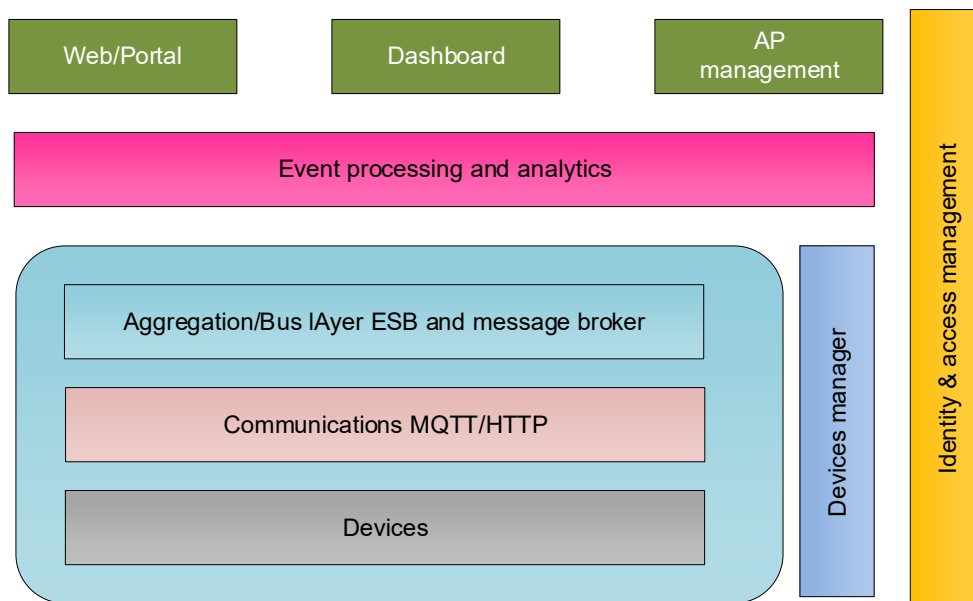


Fig. S12 WSO2 IoT reference architecture (API, application programming interface; ESB, enterprise service bus; HTTP, hypertext transfer protocol; MQTT, message queuing telemetry transport; WSO2, web services oxygenated)

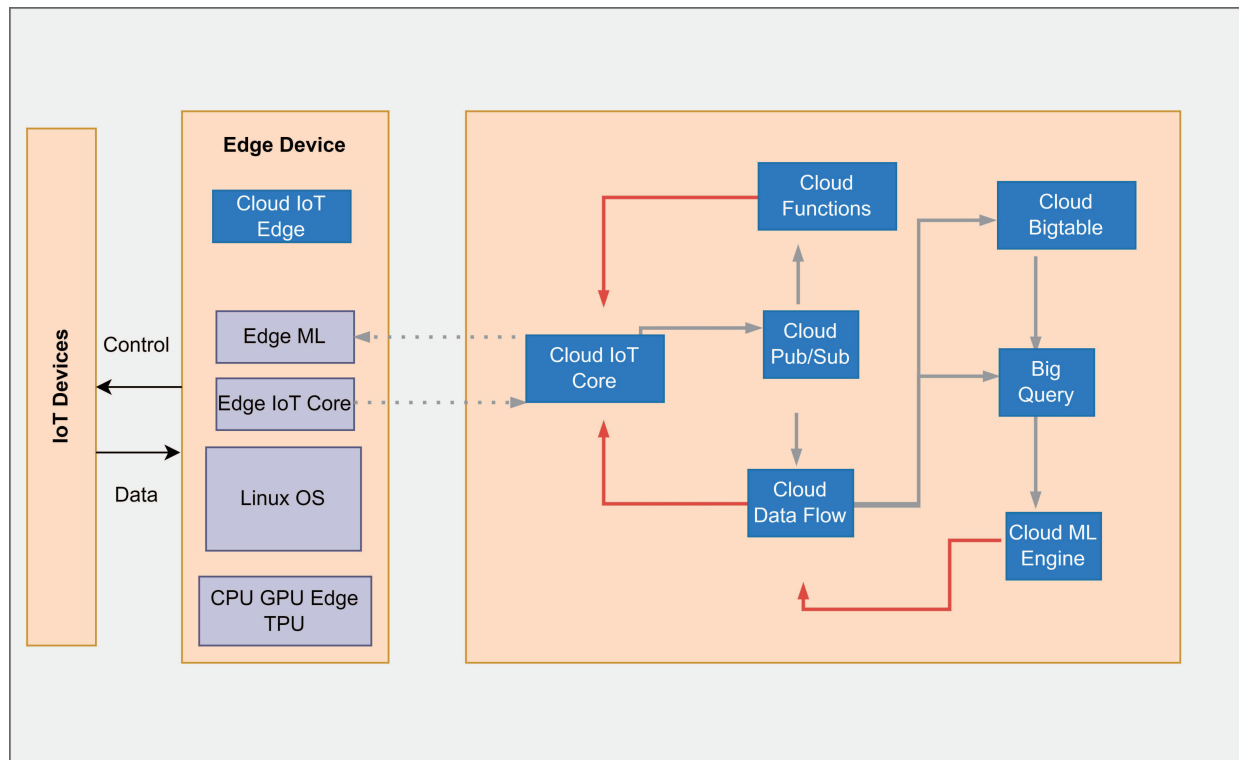


Fig. S13 Google IoT reference architecture (CPU, central processing unit; GPU, graphics processing unit; ML, machine learning; OS, operating system; Pub/Sub, publish/subscribe messaging; TPU, tensor processing unit)

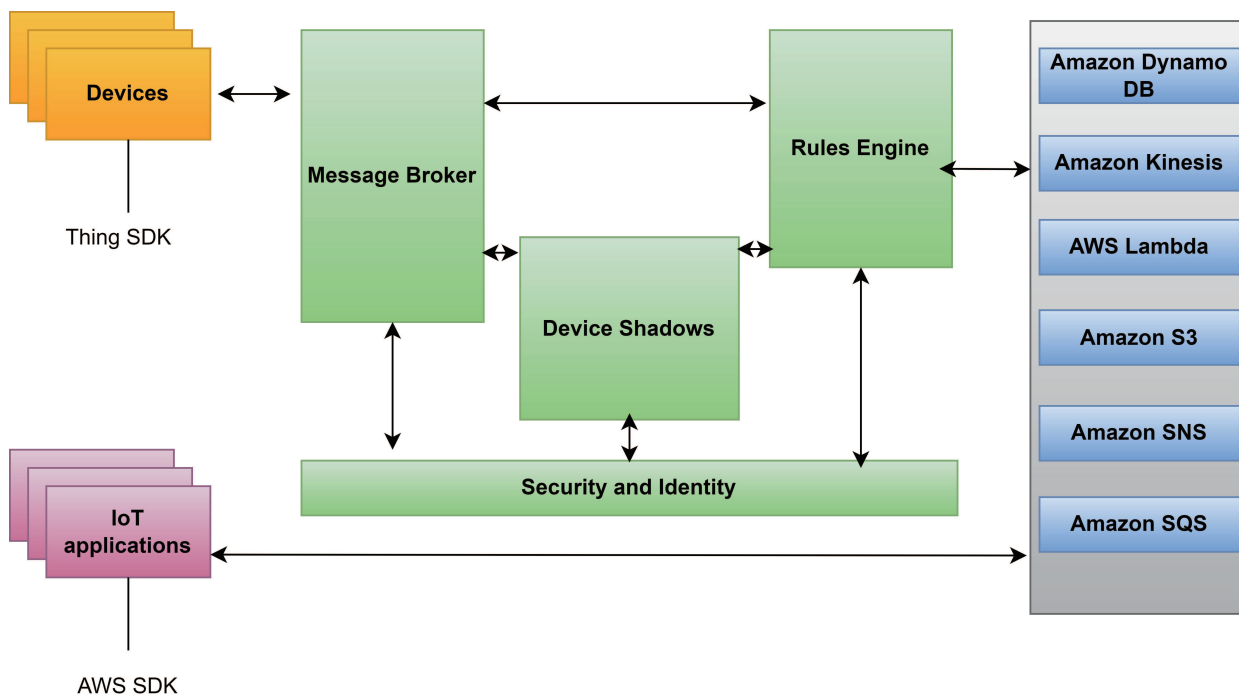


Fig. S14 AWS IoT reference architecture (Amazon S3, Amazon simple storage service; Amazon SNS, Amazon simple notification service; Amazon SQS, Amazon simple queue service; AWS, Amazon web services; DB, database; SDK, software development kit)