

Fact Sheet:Acuvate Edge Platform

INTRODUCTION

The Acuvate Edge Platform is an important service when there is a need for high data throughput and/or very low latency, making it most relevant in scenarios where there is a need for (near) real-time business operations. In this case, consider 5G as the network solution.

CAPABILITIES

Acuvate Edge Platform comes with the below capabilities:

- **Acuvate Edge Platform is offered in two hardware flavors:**
 - Dell and Edge. Overall, our Acuvate Edge Platform is open source and therefore hardware independent.
- **EdgeX Foundry must be platform-agnostic with regard to:**
 - Hardware (x86, ARM, GPU)
 - Operating system (Linux, Windows, MacOS, etc.)
 - Distribution (allowing for the distribution of functionality through microservices at the edge, on a gateway, in the fog, and on cloud, etc.)
 - Deployment/orchestration (Docker, Snaps, Kubernetes, or custom solutions)
 - Protocols
- **EdgeX Foundry must be extremely flexible:**
 - Any part of the platform may be upgraded, replaced, or augmented by other microservices software components.
 - Services should be able to scale up and down based on device capability and use case.
- **EdgeX Foundry must provide for store and forward capability to:**
 - Support disconnected or remote edge systems.
 - Handle intermittent connectivity.
- **EdgeX Foundry must support and facilitate "intelligence" moving closer to the edge in order to address:**
 - Actuation latency concerns
 - Bandwidth and storage concerns
 - Operating remotely concerns
- **EdgeX Foundry must be secure and easily managed.**

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USE CASES

- **Quality Control**
In cases where Quality Control needs to remove faulty components in real time from the production line: Connected using 5G, AI-Machine Vision (MV) runs on the Edge Platform. When necessary, it sends a signal to the relevant engine on the production line to remove the faulty component
- **Energy Offshore Production platform**
On an Oil & Gas Production platform, a private 5G network and Edge Platform enable the automation of many activities using our Digital Framework.
- **Power line inspection**
A 5G drone equipped with a 5G camera collects images which are sent in real time to an Edge Platform. There, AI-Machine Vision looks for broken spots and, upon detection, immediately sends new instructions to the drone
- **Refinery Operator Rounds**
Robots, equipped with cameras and sniffers for walking or driving operator rounds, collect information about leakages, spillages, and emissions. This data is sent to AI-MV on the edge if real-time action is needed.

BUILDING BLOCKS

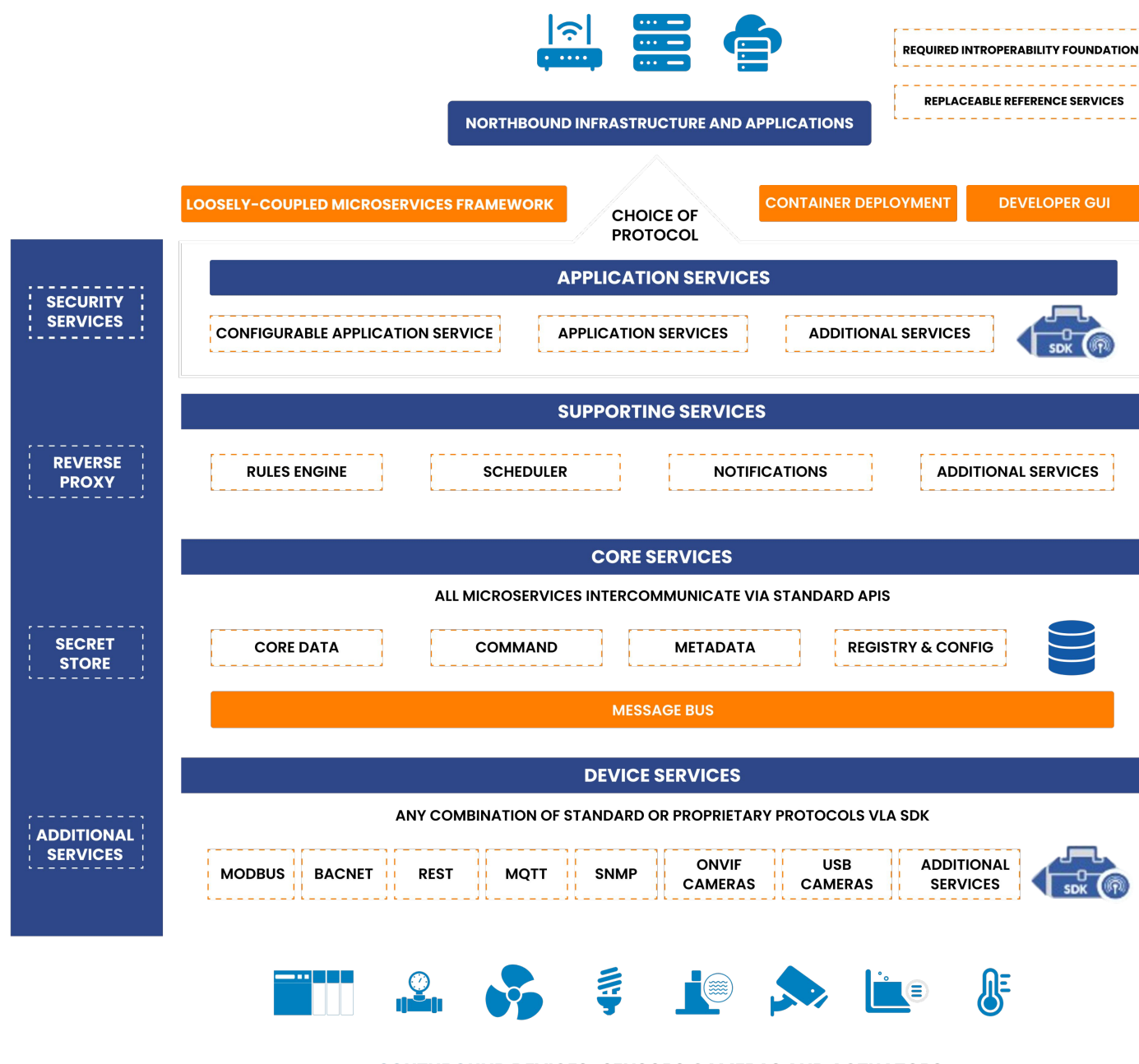
The key components are:

- **Redhat Linux:**
An open-source Linux Operating System flavour.
- **EdgeX Foundry:**
An open-source platform flavour that includes four categories of services:
 - **Device Services**
These are edge connectors interacting with sensors/ devices or IoT objects, such as machines, robots, drones, HVAC equipment, cameras, etc. Leverage available connectors to control devices and to transfer data to and from EdgeX. You can also use the Device Service SDK to create your own EdgeX Device Service.
Examples include Modbus, BACnet, REST, MQTT, SNMP, RFID, ONVIF Cameras, USB Cameras, Virtual Simulator, and many more from the commercial ecosystem
 - **Core Services**
This encompasses most of the knowledge about what devices are connected, what data is flowing through, and how the EdgeX's open edge software platform is configured in a given deployment. It includes:
 - **Core Data**
 - A persistence repository for edge data readings collected from devices on the south side.
 - **Command**
 - An internal message bus used for fast and optimal communication between the EdgeX services.
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 - **Metadata**
 - A repository of metadata used by other services to understand the devices and how to communicate with them.
 - **Registry and configuration**
 - Provides information and configuration properties for associated services within the system.
 - **Support Services**
Includes key services that support the wider operations of the platform in a business context, such as edge rules, scheduling, notifications, and analytics:
 - **Rule Engines:**
 - eKuiper, the EdgeX Foundry reference rules engine that allows users to realize fast data processing on the edge and write rules in SQL format.
 - **Scheduler:**
 - An internal EdgeX "clock" that can execute operations on any EdgeX service at a configured interval or schedule.
 - **Notifications:**
 - Provides a central facility for EdgeX services to send out notifications to another system or operator.
 - **Application Services**
The means to extract, process/transform, and send sensed edge data from EdgeX Foundry to an endpoint or application:
 - **Configurable Application Service:**
 - A standard pre-built service that the user can easily configure.
 - **Application Services:**
 - Other standard pre-built services include a record & replay service, and an inventory service to work alongside the RFID device service.
 - **Application Functions SDK:**
 - Allows building of custom service functions as needed using the provided SDK.

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SUPPORT

- **Contact our Advisors** for online access to information on how to exploit these services to solve your business problem(s) advisors@acuvate.com, and you will be contacted within 24 hours
- **Integration:**
Integrating our solutions with company components, such as data sources and reporting tooling already in place.
- **Operational support:**
Once installed, we offer Operational Support & Management services including all elements you expect such as: Alert management, Preventive Management, Housekeeping, Performance Management, Evergreening, etc., and SLA based.



LICENSING

Contact Acuvate Sales for your Acuvate Edge Platform licensing proposal.