

IOT & IIOT APPLICATION ENABLEMENT PLATFORM

Simplifying IoT / IIoT Ecosystems

OVERVIEW

The growing number of IoT/IIoT devices introduces complex challenges of discovery and data collection for monitoring, managing and analytics purposes. Extensive types and versions of communication methods including a large set of APIs and protocols create fragmentation that inhibits organizations, integrators and IoT/IIoT service providers from achieving optimum systemic performance and effective maintenance of their IoT/IIoT operation. These issues create a huge scale problem that is dramatically increasing as these dynamic environments become larger and more fragmented over time. What is needed is a unified platform that is as dynamic as the environment, discovering new IoT, IIoT and IT devices and classifying these in real-time and collecting performance data through any proprietary or standard protocols over any communication method.



DISCOVERY & CONNECTIVITY

Centerity has the most advanced discovery methodologies for IoT/IIoT environments by offering end-to-end coverage of any standard or non-standard communication layer and any standard or non-standard protocols. Once discovered and connected, Centerity's novel translation engine is capable of automatically classifying

devices and binding data translation rules to these devices providing for fast integration of devices into systemic processes.

Communication Methods (sample): WiFi, Bluetooth, Z-Wave, 6LowPAN and Zigbee

Protocol & API Methods (sample): Thread, HTTP, HTTPS, TCP, MQTT, UCP, CoAP, BLE GATT, WebSockets, AllJoyn, IoTivity, REST.

DEVICE ABSTRACTION

Device abstraction allows different connected devices to be unified into a single abstracted service model. This unique abstraction layer approach manages the low level device communication details without direct operator involvement. This abstraction capability is achieved using Centerity's API Translator creating a device, protocol and API agnostic environment. This translator builds an abstraction layer that allows communication with connected edges to be managed in a unified, user-defined service language.

DISTRIBUTED CONNECTIVITY

Centerity enables the creation of an IoT/IIoT network that is composed of many local networks. Connected devices across different local networks can interact with each other in an event-driven fashion, as if these devices were located side-by-side. Expanding this private network is as simple as running a Centerity IoT/IIoT Agent on a machine in the newly added local network.

Connectivity with Centerity can operate in 3 different modes. IoT/IIoT Agent can connect directly with specific devices and with a device behind a dedicated hub via the hub. Centerity can create cloud-to-cloud communications by connecting with independent IoT/IIoT service systems creating a single, centralized system.

BUSINESS LOGIC & RULES

Centerity's unified framework makes the interconnectivity between devices and device management simple and straight forward. By hiding the low level device details and creating a unified service data model, end-to-end systemic business process views can be achieved. Centerity provides a collection of business logic and management tools that give enterprises and OEMs the ability to define business rules between devices and display these graphically on an integrated and customized Executive Dashboard.

DYNAMIC INTEGRATION

As new devices are introduced or existing ones replaced, sometimes new communication protocols and integrations are required. Centerity was built with a dynamic approach in mind, allowing for the seamless and dynamic integration of these new devices requiring no specialized services or maintenance. This ability to accommodate dynamic changes in the environment facilitates a manageable system life cycle that is both flexible and scalable.



EVENT-DRIVEN ECOSYSTEM

Some devices lack the capability of efficiently notifying its management system of a triggered event. Centerity's IoT/IIoT Agents can monitor each device according to configurable templates to update the management system in an efficient, event-driven way.

RESOURCE MANAGER

Centerity's Resource Manager allows the user to manage and setup the entire ecosystem of devices. Local networks can be scanned and the list of detected devices and services can be viewed, monitored and managed according to system requirements.



SCENARIO BUILDER

Centerity's Scenario Builder provides an easy way to define event-driven interaction between devices. Via our purpose-build GUI, scenarios can be created, monitored and managed seamlessly to create specific IoT/IIoT applications.

KEY IOT/IIOT FEATURES:

- Wide Connectivity Support (IP & non-IP)
- Broad Device Support (Standard or Non-Standard)
- Communication, Protocol & API Agnostic
- Cloud, Fog, Hosted, On Prem or Hybrid
- Abstracted Data & Service Model
- Secure Device Intercommunication
- Automatic Device Discovery & Classification

KEY PLATFORM FEATURES:

- Single, Unified Software Platform
- Business Service Management (BSM) -Nested
- Multi-Tenanted Architecture
- Federated Scalability
- Auto Discovery & Dependency Mapping
- Customizable & Configurable Platform
- Enhanced Restful API Capabilities
- Automated Process Orchestration
- Robust Visualization & Data Analytics
- Agentless & Agent-based Capture

