Yanzi Site | Yanzi Cloud | IBM Cloud

Sensor — IoT Network — Gateway — Data Model — Cirrus — Open API | Broker — Database — Analytics — Presentation

Yanzi Cirrus IoT Solution

Next Generation IoT Solution for Smart Buildings

Yanzi Networks delivers an end-to-end, horizontal, and all-IP software Internet of Things platform. We offer sensors, gateways, and Cirrus, a cloud platform solution packaged into a Software as a Service solution (SaaS) for Smart Building applications. The horizontal and all-IP approach provides a solution that is fast, robust, and transformative.

Best Technology

All IP technology, all the way to the sensor, ensures powerful scaling to thousands of sensors and excellent cost efficiency. Yanzi Networks focus on open standards and leverage the widely deployed protocols such as 4G/LTE, Ethernet, Wi-Fi, and the low power "brother" to Wi-Fi, IEEE 802.15.4, which enables battery operated sensors to last for 10+ years.

Easiest to install

Automatic security provisioning provides best-in-class installation provided by the patent pending zero-touch configuration. Sensor installation do not need trained installers but can leverage the employees on site. The optimized power management deliver very long battery life which secure a minimum of maintenance required once installed.

Enterprise security

Yanzi Networks combines ease of installation and maintenance with enterprise security. It is a highly secure solution with all links in Cloud and to Gateway being authenticated with client and server certificates and all communication is made using SSL encryption. All local communication, between the sensors and the Gateway, is encrypted for both wired and wireless solutions. Each sensor has an individual key and can be revoked remotely.

Cirrus Software as a Service

The Yanzi Cirrus Software as a Service provides Device and Gateway management at a new level. The Cirrus data model allow access to any data originating from any location with a uniform interface without the need to understand the sensor details. A secure Gateway-to-Cloud connector to multiple redundant link servers provides reliable remote access to Gateway.
The Cirrus open API is a JSON over web socket API where all operations are authenticated. The API supports both hot and cold data paths.

Sensors

All sensor products are multi-sensor solutions with duplex communication and over-the-air upgradable from the Cirrus Cloud. Low power wireless sensors support mesh technology for increased reliability and coverage of the IoT network. Each sensor communicates wirelessly every 1 to 10 minutes with the Gateway. Sensors may connect directly to the Gateway or, in larger installations, via Access Points allowing the sensor network to be extended to very large buildings. Sensor examples below.

Yanzi Motion
- Measures motion (PIR), acceleration, and temp
- Wireless with up to 10 years of battery operation

Yanzi Air
- Measures CO_2, temperature, and humidity
- Wireless with wall adapter

Yanzi Climate
- Measures temperature and humidity
- Wireless with up to 10 years of battery operation

Yanzi Decibel
- Measures noise level in office environments
- Built-in temperature sensor
- Wireless with wall adapter

Yanzi Light
- Measures ambient light levels and temperature
- Wireless with up to 10 years of battery operation

Yanzi Distance
- Measures distance for recycle bins, storage, etc.
- Wireless with battery

Yanzi Plug, EU
- Measures electric energy
- Controls appliances with internal 16A relay
- Wireless communication with mesh capability

Yanzi Footfall Cam
- People counter camera with local processing for high accuracy and to avoid large data volumes
- Ethernet/PoE

Yanzi LED
- 7W, light bulb for E27 sockets
- Wireless communication with mesh capability

Gateways and Access Points

Yanzi IoT Edge Gateways enables the communication between the Smart Building and the cloud and ensures autonomous operations even if Internet connection is down - including substantial local storage of video and sensor data. The gateways delivers an all-IP connectivity including mobile broadband, Ethernet, WiFi, and IEEE 802.15.4.

Yanzi Gateways combined with Yanzi Access Points can support installations scaling to thousands of IP-based sensors and enables a very fast installation and roll-out of a secure all-IP sensor network in facilities, securely providing real-time data to cloud platforms and business intelligence. Gateway examples below.

Yanzi Edge Gateway
- Cost effective solution for 100+ sensors
- Full connectivity with Ethernet, WiFi, IEEE 802.15.4 IoT mesh network, and optional Mobile Broadband
- Internal UPS backup

Yanzi Edge Gateway Plus
- High performance solution for 500+ sensors
- Full connectivity with Ethernet, WiFi, IEEE 802.15.4 IoT mesh network, and optional Mobile Broadband
- Internal UPS backup

Yanzi Edge Gateway Rack
- 19" Intel® Xeon™ solution for very large buildings with thousands of sensors
- High speed Ethernet connectivity to IoT Access Points

Yanzi IoT Access Point
- Easily extends IoT network using existing Ethernet infrastructure
- Supported by all Yanzi Edge Gateways
- Optional PoE for easy deployment

Cirrus Specifications

Cirrus Open Cloud API
- Cirrus technologies are based on JSON objects over web socket over authenticated and encrypted SSL
- Protocol adapters available for standard message brokers such as **MQTT** and **IBM IoT Foundation**
- Support both hot and cold data paths

Device and Gateway management
- Firmware and software management of all system components
- Remote upgrade mechanism allow automatic upgrade of Gateways and sensors without human interaction through-out the lifetime of individual locations
- Introduction of new services by upgrading software through-out the lifetime of the harwdare components
- Virtual devices maintain state even when physical device is unavailable
- Virtual devices implements error handling and notifications to end users

For more information on the Yanzi Cirrus IoT Solution, please visit
www.yanzinetworks.com