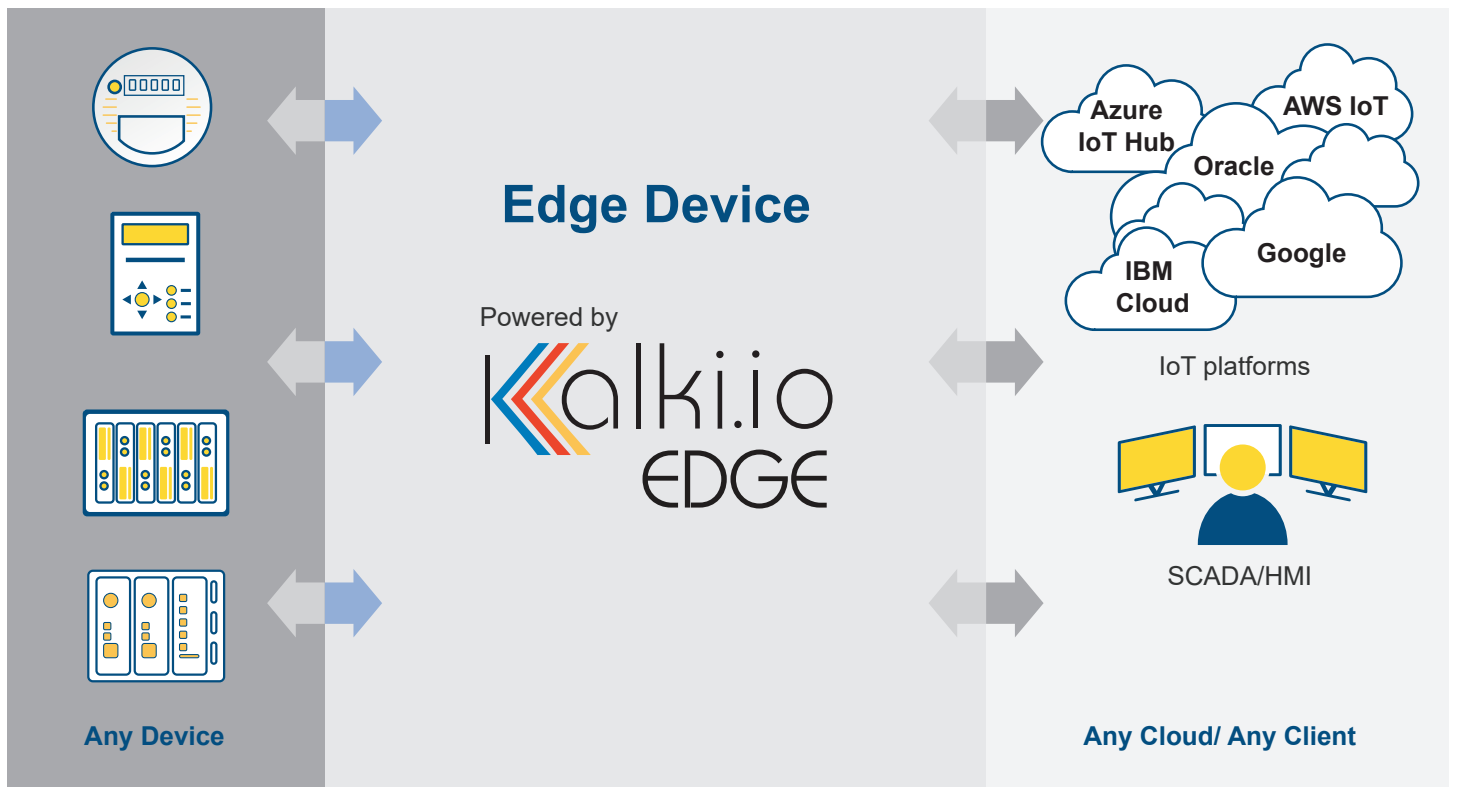# Kalki.io

Edge Software

KALKI.IO Edge earlier known as SyncConnect simplifies data acquisition at the edge from field devices such as Sensors, Controllers, PLC, Metes, RTUs, Machines, IEDs and other similar devices regardless of the protocols it support. Kalki.io Edge is a software gateway supporting multiple protocol conversion and exchange of real-time and historical data with external system on a secure environment. Software support a large number of commercial, industrial and utility automation applications protocols widely used.

KALKI.IO Edge together with identity management system (IAM) system in Kalki.io cloud provides an exhaustive role-based access control inorder to enable secure access of field devices -data, software, configuration & settings. Kalki.io Edge with a robust and highly scalable architecture is designed to run on high end server grade hardware to resource constrained devices with low memory foot print. It allows to deploy on embedded computers, edge devices, on premise servers, sensors as well as various low footprint communication routers out there in the field.

KALKI.IO Edge software enables residential, commercial, industrial and utility system integrators and OEM's to engineer solutions that improve efficiency, improve asset life and reduce maintenance cost based on Cloud and IIoT technologies.

HIGH LEVEL ARCHITECTURE

FEATURES

Data Collection

- Supports large number of field proven protocol adapters
- Intolerable with sensors, controllers, meters and other devices in field using of protocol libraries
- Proven connectors for connecting legacy SCADA systems /Historians etc.

Security

- TLS 1.2 based communication security
- Secure role-based access control using x.509 PKI standard
- Communication protocol specific security support

Data Processing

- Real time streaming of data
- User configurable data processing
- Plugs in with your Edge data processing software
- Can easily Integrate with third party ML & AI Engines

Scalability

- Scales with large number of devices and data
- Scales with edge device hardware capability
- Containerized services

Data Storage

- Store data periodically or on event basis
- Time series data storage for optimal performance
- Database management options

Manageability

- Remote device management and maintenance service
- REST API support to configure Edge device from your software or third party cloud
- Remote configuration and settings
- Over the air firmware and patches updates

Cloud Connectivity

- Amazon AWS
- Microsoft Azure
- IBM cloud
- MQTT
- OPC UA

Flexibility

- Deployable on your hardware and OS
- Choose best of bread hardware suitable for your application
- Integrate with multiple systems using single deployment instance

BENEFITS

System Integrators

Reduce your integration cost with plug and communicate with any device using field proven protocol adaptors

Seamless sharing of data with multiple systems/ IoT platforms

Device Manufactures

Improve equipment/device reliability by pro-active maintenance

Optimize your support and maintenance cost using remote access and management

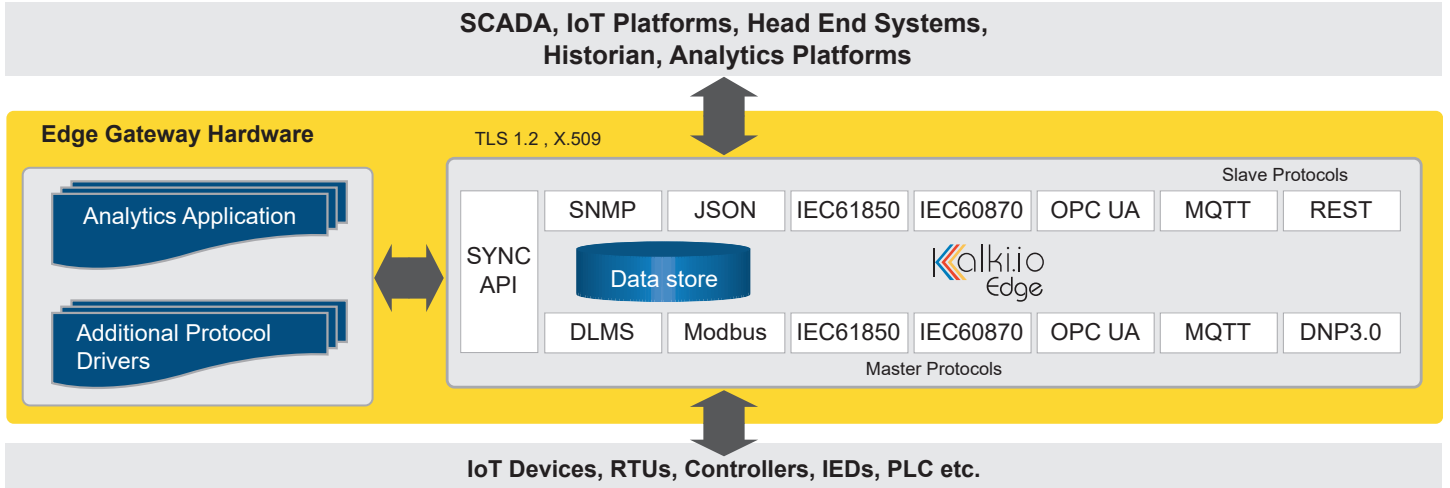Enhance your equipment to leverage IoT opportunities

Asset Owners

Centralized monitoring of your asset securely to ensure high ROI

Minimize equipment damage and reduce replacement cost

Lower overall cost of ownership for monitoring and maintenance

SOFTWARE COMPONENT

SCADA, IoT Platforms, Head End Systems,
Historian, Analytics Platforms

Edge Gateway Hardware

TLS 1.2 , X.509

Analytics Application
Additional Protocol Drivers

SYNC API	SNMP	JSON	IEC61850	IEC60870	OPC UA	MQTT	REST
	Data store		Kalki.io Edge				Slave Protocols
	DLMS	Modbus	IEC61850	IEC60870	OPC UA	MQTT	DNP3.0
			Master Protocols				

IoT Devices, RTUs, Controllers, IEDs, PLC etc.

PROTOCOL SUPPORTED

Utilities	Industry 4.0	Smart City	IoT Platform Connectivity	DER/ Renewables
IEC 61850	Modbus	Modbus	OPC UA	IEC 61850
DNP3 / IEEE1815	ANSI	ANSI	MQTT	DNP3 / IEEE1815
IEC60870-5-101/104	Mbus	Mbus	Amazon AWS	IEC 60870-5-101/1-4
IEC60870-5-103	BACnet	BACnet	Microsoft Azure	IEEE C37.118
IEEE C37.118	Ethernet IP*	DLMS	Kalki.io	DLMS-COSEM
DLMS-COSEM	Lon Talk*	OPC UA/ XML		IEEE2030.5
ICCP /IEC 60870-6	ControlNet*	OCPP		MQTT
IEC 61400-25	OPC UA/ XML	MQTT		
IEEE2030.5				
+ many more				

* On request (Visit our website for latest availability dates)
See extensive list of Kalkitech protocol support https://kalkitech.com/support/sales-support/protocols/

VALIDATED EDGE HARDWARE

KALKITECH SYNC

WELOTEC

ADVANTECH

IEI

RAD

AXIOMTEK

ADLINK

LOGIC

RASPBERRY PI

Packages

Deb

RPM

Docker

aws marketplace

Get it from Microsoft Azure Marketplace

(intel) IoT Solutions Alliance

See list of certified hardware here.
https://kalkitech.com/ready-platform/

APPLICATION PACKAGES

DER Gateway
KIOE 2300
- Solar Plant
- Wind Farm
- EV Charging
- Distribution Automation
- Battery Monitoring

Utility Gateway
KIOE 200/2000/3000
- Network Monitoring
- Substation Automation
- Grid Metering
- Hydro Plant Monitoring
- Fossil Plant Monitoring

Industry4.0 Gateway
KIOE 2400
- Manufacturing
- Building Automation
- Process
- Transport
- Mining

Protocol Gateway
KIOE 2500
- Smart Grid
- Generic Asset Monitoring
- Remote Device Management
- Smart Cities

	DER Gateway KIOE2300	Utility Gateway KIOE200/2000/3000	Industrial Gateway KIOE2400	Protocol Gateway KIOE2500
Protocol Support				
DNP3/IEC104/IEC101/Modbus/DLMS/SunSpec / IEEE 2030.5 / OCPP	✔			
IEC 61850 / DNP3 / IEC 104 / IEC 101 / IEC 103* / Modbus / DLMS		✔		
Modbus / Ethernet IP / BACNet IP / DNP3 / DLMS			✔	
Select as required				✔
Storage and Archival				
Influx DB	○		○	
SQLLite	✔	✔	✔	✔
M2M and IOT Platform Integration				
AWS	✔	✔	✔	✔
Azure	✔	✔	✔	✔
MQTT	✔	✔	✔	✔
OPCUA	○	○	○	○
Edge Analytics Support				
Simple Logic Engine	✔	✔	✔	✔
IEC 61131 Logic Engine	○	○	○	○

✔ Included   ○ Optional