

# Kalki.io Neon

## Energy IoT Platform

### INTRODUCTION

Kalki.io Neon is a secure Energy IoT platform rendered as a service and deployed in a multi-tenant public infrastructure. It aggregates near real-time data from field devices. Its core services include device management, multi level user rights, application or device specific dashboards, notification services and data sharing with internal and external applications.

Kalki.io is a Software as a Service (SaaS) that provides a robust foundation with a unified interface for operations and for building applications that provide IT/OT integration, advanced analysis and actionable intelligence.

### KEY BENEFITS

#### Highly Scalable

Scale on demand to support fluctuating workloads

#### Robust Security

Encrypted connection, fine grained RBAC & user identity management

#### Ease of Access

Accessible anytime from anywhere using an Internet browser

#### Uniformity

Unified administration and modeling of devices and data

#### Availability

Rolling update of platform components and applications enables software updates without downtime

#### Reduce Cost

Reduced infrastructure, IT maintenance and operational costs

#### Reliability

Load balancing and load sharing ensure reliable operation of the system

#### Analytics

Create applications via REST data sources to access real-time and historical data

### SYSTEM ARCHITECTURE

Custom & Third Party Apps	Calculation Engine, Widgets	App Store	Data Storage Raw Data, Processed Data, M&D Data, Configuration	Data Presentation Dashboard, Widgets, Reports, Notifications	Data Access REST API, Datasource
Packaged Apps	Device Management MDAS, MDM, PLM, LF				
Core Components	RBAC, Security, Communication Adaptors, Rule Engine				
System Software	Operating System, Containers				
Infrastructure	Servers, Virtual Machines, Storage, Network				

## PLATFORM COMPONENTS

### RBAC

Role and identity based access control with two-factor authentication. Users can have multiple identities associated with different roles.

### Security

Public Key Infrastructure (PKI) for authentication of users, devices and applications.

### Communication Adaptors

Built-in standard and proprietary protocol adaptors to exchange data with assets and field access points.

### Rule Engine

User configurable rule engine to process field data and link output with actions/commands automatically or manually.

### Data Presentation

Dashboards provide live updates of field data, metrics & KPIs. Each dashboard contains a set of user configurable widgets. Notify and alert users on the update of events generated within the system and from processed field data.

### Data Storage

Stores raw data from field devices and processed data after applying application specific calculation. Maintenance and diagnostic data are also stored in addition to configuration and settings of field devices.

### App Store

Repository of third party applications certified as compatible with Kalki.io that further enhances insights into data, improving intelligence.

## PACKAGED APPLICATIONS

### Device Management

Manage security credential of field devices, manages device logs, communication logs, remote management of configuration files, license and firmware of field devices.

### Meter Data Acquisition System (MDAS)

Directly read data from energy meters connected with the platform over modem, data concentrator or a gateway.

### Meter Data Management (MDM)

Perform validation, editing and estimation of meter data collected through MDAS or external data acquisition system.

## DEVELOPER ZONE

### Kalki.io API'S

Integrate your software system with kalki.io using REST APIs or Datasource APIs

### SYNC API'S

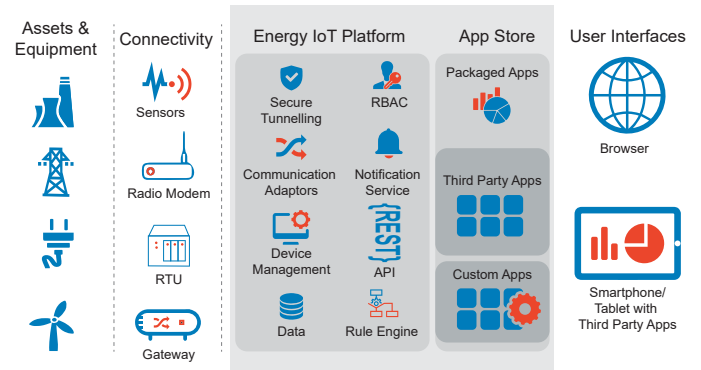
API's that enable custom apps to be developed for SYNC series of automation & communication devices

### SYNC Connect

Software deployable on certified hardware to collect and compute data at the Edge devices



## SOLUTION ARCHITECTURE



## SECURITY

**PKI based authentication**, with X.509 certificates, is used for device secure tunnels and desktop applications (two way SSL).

**OAuth2.0** is used for applications authenticating themselves against the platform, including external applications and widgets.

All systems use **TLS 1.2** level of security or higher.

## SUBSCRIPTION PLAN OPTIONS

Monthly Subscription Details	Neon Basic	Neon Advanced
<b>Plan inclusions</b>		
Number of users	1	1
Meters, sensors <sup>^</sup>	40 devices	80 devices
IED's, RTU's, Protocol converters <sup>^</sup>	4 devices	8 devices
Gateways, Head-End devices <sup>^</sup>	-	1 device
Data Retention / Storage Limit	60 days / 1 GB*	90 days / 4 GB*
REST API's for third party applications	Included	Included
<b>Applications</b>		
SYNC Device Management	Included	Included
SYNC Device Data Monitoring	Included	Included
Meter Data Acquisition System (MDAS)	3 months free trial	Included
Meter Data Management (MDM)	3 months free trial	3 months free trial

<sup>\*</sup>Limit as per number of days or GB, whichever comes first.

Approximate storage requirement per data tag per month is 1 MB assuming it is polled 1 time(s) per hour.

<sup>^</sup>Contact Kalkitech for details about supported devices.