SyncConnect IIoT 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 and Cloud technologies.

SyncConnect simplifies real-time and historic data acquisition at the edge from field devices such as RTU’s, Protection Relays, controllers, sensors, IEDs, Meters, PLC’s, Machines and similar devices. It supports multiple protocols and protocol conversion real time and historical data exchange with external systems securely. SyncConnect support a large number of commercial, industrial and utility automation applications protocols widely used in.

SyncConnect together with kalki.io identity management system (IAM) system provides an exhaustive role-based access control inorder to enable secure access of data. SyncConnect is designed for low memory and compute footprint with a robust and highly scalable architecture SyncConnect can be deployable on embedded computers, edge devices, on premise servers, sensors as well as various low footprint communication routers out there in the field.

**BENEFITS**

<table>
<thead>
<tr>
<th>Equipment/Device Manufactures</th>
<th>System Integrators</th>
<th>Asset Owners</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improve equipment/device reliability by pro-active maintenance</td>
<td>Reduce your integration cost with plug and communicate with any device using field proven protocol adaptors</td>
<td>Centralized monitoring of your asset securely to ensure high ROI</td>
</tr>
<tr>
<td></td>
<td>Optimise your support and maintenance cost using remote access and management</td>
<td>Minimise equipment damage and reduce replacement cost</td>
</tr>
<tr>
<td></td>
<td>Enhance your equipment to leverage IoT opportunities</td>
<td>Lower overall cost of ownership for monitoring and maintenance</td>
</tr>
</tbody>
</table>

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FEATURES

Data Collection
- Real-time and historic data acquisition
- Proven Interoperability with sensors, controllers, measurement devices and protection relays
- A large library of protocol support for standard and legacy protocols

Security
- TLS 1.2 based communication security
- Secure role-based access control using x.509 PKI standard

Data Processing
- Real-time streaming and data processing
- User configurable data processing
- Event handling, and time-based data
- ML and AI integration

Scalability
- Large deployment, monitoring and management support
- Scales with large number of devices and data
- Scales with edge device resources
- Containerized services

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

Manageability
- Remote configuration and settings
- Over the air firmware and patches updates

Data Distribution
- Amazon AWS
- Azure
- MQTT
- OPC UA

Flexibility
- Deployable on your hardware and OS
- Peer-to-peer data transfer capability
- Choose best of breed hardware suitable for your application
- Integrate with local/remote SCADA systems as well as cloud platforms

Rule Engine
- Alert Rule Table

Time series DB query Builder
- Query builder for time series data

Scripting for Realtime data processing
- Script for real-time data processing

Dashboard to display processed data
- Display processed data in a dashboard

SOFTWARE MODULES AND INTEGRATION OPTIONS

### Add-on Applications

<table>
<thead>
<tr>
<th>Machine Learning Analytics</th>
<th>Distributed Field Apps</th>
<th>Local Monitoring Apps</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pattern Matching</td>
<td>Asset Management Apps</td>
<td>Anomaly Detection</td>
</tr>
</tbody>
</table>

### Modelling Layer (Carizoplane)

- Geo Map
- Network Map
- Device Models
- Domain Model
- Comm Topology

### SyncConnect Software

#### Data Management Layer (Model Free Data)

<table>
<thead>
<tr>
<th>Real-time data</th>
<th>Commands and Settings</th>
<th>Rule Engine</th>
<th>Interface API</th>
<th>Storage/Archiving</th>
</tr>
</thead>
</table>

#### Data Exchange Layer

|----------------------------|-------------------------------|-------------------------|-------------------------------|--------------------------|

See extensive list of Kalkitech protocol support [https://www.kalkitech.com/knowledge-center/protocols/](https://www.kalkitech.com/knowledge-center/protocols/)

### PRODUCT DETAILS

#### SyncConnect Software

- **Installation Packages**
  - Linux Debian
  - Linux RPM
  - Snap package*
  - Docker Container

- **Device Management**
  - kalki.io Identity and Access Management Service

- **Configuration Utility**
  - EasyConnect Configuration utility

#### Hardware Requirement

<table>
<thead>
<tr>
<th></th>
<th>Base Configuration</th>
<th>Recommended Configuration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processor</td>
<td>x86/x86-64</td>
<td></td>
</tr>
<tr>
<td>RAM</td>
<td>128 MB (Minimum)</td>
<td>1 GB (Typical)</td>
</tr>
<tr>
<td>Storage</td>
<td>256 MB (Minimum)</td>
<td>As required</td>
</tr>
<tr>
<td>Serial Port</td>
<td>Not mandatory</td>
<td>0 to 64</td>
</tr>
<tr>
<td>Ethernet Port</td>
<td>1</td>
<td>1 to 10</td>
</tr>
</tbody>
</table>

* On request (Visit our website for latest availability dates)

See list of certified hardware here. Kalkitech works with ODMs to test SyncConnect and validate on the target hardware platform for certification. [https://www.kalkitech.com/products/syncconnect/](https://www.kalkitech.com/products/syncconnect/)
## APPLICATION AND PACKAGES

<table>
<thead>
<tr>
<th>DA/DER Pack</th>
<th>Substation Pack</th>
<th>Industrial Pack</th>
<th>Gateway Pack</th>
</tr>
</thead>
<tbody>
<tr>
<td>SyncConnect 100</td>
<td>SyncConnect 110</td>
<td>SyncConnect 120</td>
<td>SyncConnect 130</td>
</tr>
</tbody>
</table>

### 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
- Selectable Protocols

### Storage and Archival
- Influx DB
- SQLite

### M2M and IOT Platform Integration
- AWS
- Azure
- MQTT
- OPCUA

### Edge Analytics Support
- Simple Logic Engine
- IEC 61131 Logic Engine
- AWS GreenGrass

- Included
- Optional

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