Site iQ*

System Architecture & Security Overview

*Site iQ is the brand name for the Sapient platform in New Zealand

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Plug security features

Single-Socket Smart Plug

The following security features collectively work to safeguard the plug and its data from potential threats and unauthorised access, ensuring a high level of security and data protection.

- All communication facilitated by the plug is conducted through secure HTTPS protocol, ensuring end-to-end encryption.
- The plug can only be accessed remotely using Kasa's secured cloud service and associated secured APIs through Sapient's platform.
- The plug utilises 802.11 2.4GHz WIFI. Network security is relative to the encryption used on the WIFI network (WEP, WPA2-TKIP, WPA2-AES).
- The plug does not send access keys, tokens, passwords, encryption keys, or any customer or sensor data to Sapient servers other than measured current values.

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System architecture

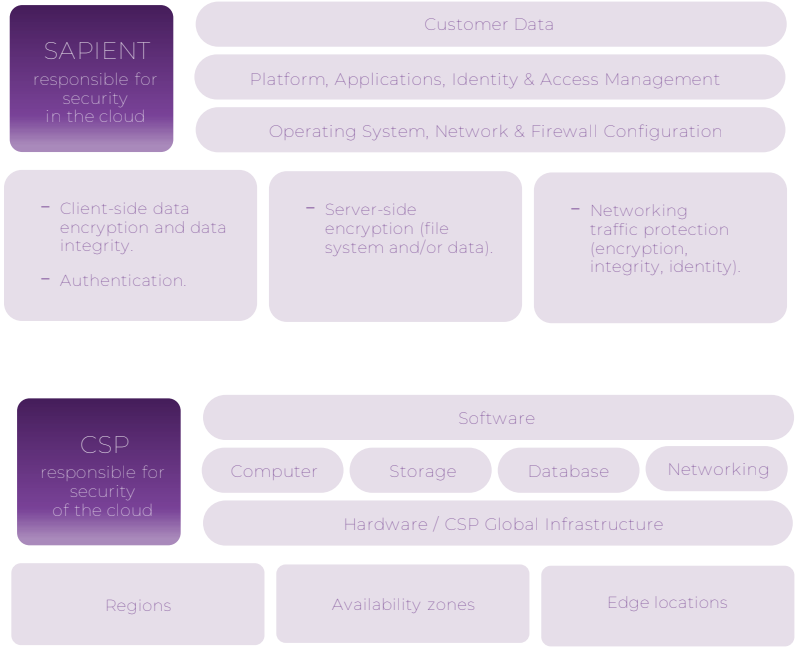
Scalable cloud architecture

Industries infrastructure is hosted in Cloud Service Provider (CSP) environments such as Amazon Web Services (AWS), Microsoft Azure and Google Cloud Platform (GCP).

Security first approach

This infrastructure provides secure deployment of services, secure storage of data with end user privacy safeguards, secure communications between services, secure and private communication with customers over the internet, and safe operation by administrators.

The security of the infrastructure is designed in progressive layers starting from the physical security of data centers, continuing to the security of the hardware and software that underlie the infrastructure, and finally the technical constraints and process in place to support operational security.



Example of AWS shared responsibility model for well-architected solutions.
https://aws.amazon.com/compliance/shared-responsibility-model/

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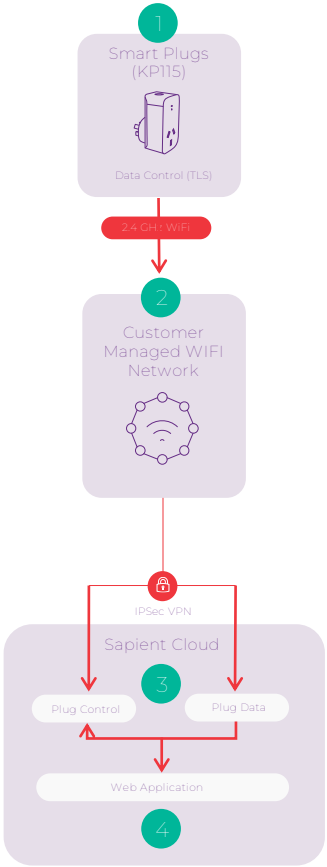

Solution architecture

Data flows

1 Smart plugs deployed in your building monitor electrical information and send encrypted data to the Sapient Cloud. These plugs connect to the customer supplied unique SSID via 2.4 GHz WIFI and send data using TLS over port 443.

2 The Customer Managed WIFI Network provides internet connectivity for the smart plugs.

- The smart plugs are pre-configured to connect to the customer-provided dedicated WIFI SSID (with dedicated VLAN wherever available).
- The plugs communicate with the Sapient Cloud via the customer's outbound internet connection

3 Sapient's solution is a multi-tenant, cloud-based SaaS application hosted in Cloud Service Provider (CSP) environments such as Microsoft Azure and Amazon Web Services (AWS).

Device data is stored for both real-time and historical reporting purposes siloed, encrypted, and stored intrinsically anonymized according to NIST best practices.

4 Site iQ users securely access our web application with a browser.

- The connection uses HTTPS over TLS on port 443.
- Users can authenticate with Site iQ's sign-in system or use SAML single sign-on and utilise Role-Based Access Control (RBAC) to manage their roles and permissions to directly authorise who can access or change your data and account settings.

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Data security

Data in transit

- Sapient devices are not aware of their location and do not store, transmit or receive sensitive information. The data they transmit looks like this:
- {Voltage | Current | Duration of Measurement | Power | Consumed Energy | Total Consumed Energy | Timestamp of measurement }
- And the data they receive looks like this:

  {Time to Turn On | Time to Turn Off | Dates to Execute these Times to Turn On/Off | Unique Plug ID | Current Time (using NTP)}
- Firmware updates that are simply encrypted, binary firmware files that do not contain network information, Personal Identifiable Information (PID), or any other sensitive information.

Data in storage

All data is stored in the Sapient Cloud.

Sensor data:

- is siloed, and encrypted using AES-256, and stored intrinsically anonymized; and,
- consists of only voltage, current, timestamp, duration of measurement and unique plug ID.

Account level data:

- No Personal Identifiable Information (PID).
- Consists of building address, floor names, and room names, as defined by Portal Users

System user MetaData

- Email log-in.
- First and last name.
- No information is collected on facility occupants.

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Operational controls

TYPE 1 CERTIFIED

Sapient's systems are AICPA SOC 2, Type 1 Certified

Sapient's systems and processes have undergone rigorous assessment by an independent third party, following the standards set by the American Institute of Certified Public Accountants (AICPA).

This assessment focuses on the design and implementation of its controls across AICPA's five Trust Services Criteria, ensuring they deliver the highest standards of security, availability, processing integrity, confidentiality, and privacy.

Sapient's SOC 2 Audit Report is available on request.

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Technical specifications

Data points

METERED

Current

- RMS current (mA)
- RMS voltage (mV)
- Instantaneous power (mW)
- Consumed energy (Wh)

Measured Interval

- 60000mS

CLOUD

General

- Load profile
- Equipment performance
- Equipment health
- Consumptions anomalies
- Device alerts
- Detailed energy
- Analytics
- Real energy
- Real power
- Apparent energy
- Apparent power

Longitudinal Data Logging

- Long-term energy trends

Sapient API

- Download a CSV file of your data or connect to our API at any time.
- Precision: 1mA
- Data access via API: Unlimited

Historical Data Available

- 1, 5 & 15-minute interval data
- Hourly & daily interval data

Aggregations by

- Socket
- Device
- Equipment
- Space (floor, room, workstation, etc)
- Building
- Portfolio

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General specifications

GENERAL	Operating Humidity
Power Rating	– 5%~90%RH, Non-condensing
– 220-240V, ~50/60Hz, 10A	Dimensions
Wireless Technologies	– 43.5 x 42 x 76.5 mm
– 2.4GHz WIFI – IEEE 802.11 b/g/n	WORKING STATUS
Plug Features	Input
– Individually controlled & metered socket(s).	– 220 – 240V, ~ 50/60Hz
Certifications	Output
– RoHS, RCM, SAA	– 10A maximum load
Material	NETWORK
– UL 94-Vo Flame Retardant PC	Protocol
Buttons	– IEEE 802.1 1b/g/n
– Power / reset	Wireless Type
– Manual on/off	– 2.4GHz Wi-Fi Only
Operating Temperature	
– 0 ℃~ 40 ℃(32 ℉ ~ 104 ℉)	

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