Works with Halio®
Program Overview

Halio understands that delivering an unmatched user experience requires intelligent interaction with other smart building systems and devices. Halio's flexible cloud-based architecture was designed with partner integrations in mind. The Works with Halio program provides multiple options for secure integrations between Halio and today's leading Building Management/Automation Systems (BMS/BAS), smart home platforms, room controllers, or even individual Internet of Things (IoT) devices.

The Works with Halio program provides three options for integrations:

1. Niagara Framework®-based BMS/BAS Integration - This option provides a Halio software driver which allows Halio features to be exposed to BMS/BAS controllers running Niagara Framework.

2. Halio BMS/BAS Gateway Integration - This option includes a Halio gateway running Niagara Framework with Halio driver software; this solution bridges communication from Halio to the proprietary BMS/BAS system.

3. **Halio Cloud API Integrations** - This option provides direct interactions with the Halio Cloud; this is useful for Halio cloud-to-3rd party device cloud or Halio cloud-to 3rd party device applications.

These integrations leverage the power of the Halio Cloud for system monitoring and control functions. However, each offers trade-offs in terms of ease of deployment, customization, development effort and field support.

HIGHLIGHTS

- Halio was designed to work together with other smart building systems and devices

- The Works with Halio program provides partners with multiple options for integration

- Halio system software can be integrated on leading BMS/BAS controllers and gateways

- The Works with Halio API enables highly secure and flexible interaction with the Halio Cloud

- Works with Halio partner systems can adjust tint levels, execute scenes, and much more

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SMARTER TOGETHER

There are endless possibilities for enhancing comfort, convenience, and energy savings when Halio works with other smart devices and systems in commercial buildings and even homes. For example, Works with Halio integrations could:

- Adjust Halio tint levels to reduce HVAC energy costs whenever the BMS/BAS determines a building is unoccupied.
- Enable the BMS/BAS to automatically clear all windows in the event of an emergency.
- BMS/BAS system can check status of the Halio windows and inform BMS/BAS if system overrides have occurred.
- Under control of the BMS/BAS or Home Automation (HA) system, switch Halio system modes (Glare Automation, ECO mode, Manual.)
- Enable a BMS/BAS or smart home lighting system to also adjust Halio tint levels, fine tuning lighting levels, and even colors for any activity.
- Allow a 3rd party keypad to trigger a meeting scene that adjusts lighting, powers-on media, and tints Halio conference room glass for better focus and privacy.
- Enable a smart home system to schedule a wakeup scene that gently clears Halio windows for natural light, adjusts heating, and starts music.

The Works with Halio program enables partner integrations to securely interact with a variety of Halio system functions, such as:
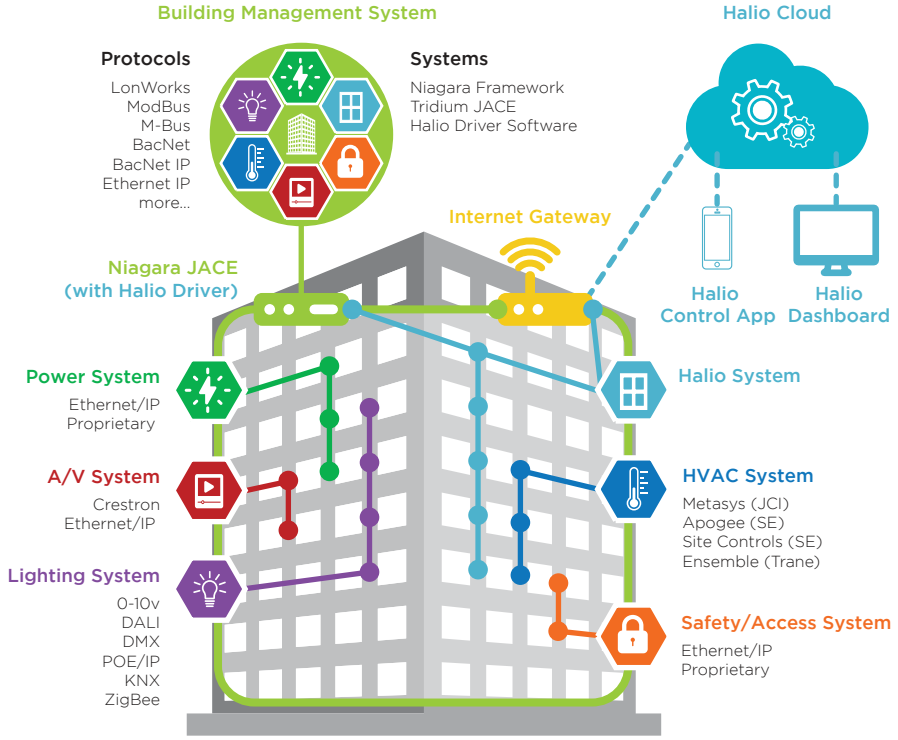
- Tint or clear a specific window
- Get window tint level status
- Tint or clear a group of windows
- Get group status
- Activate a predefined tint scene
- Get scene status

- Activate a preconfigured operating mode
- View Halio system status
- View Halio activity history
- Verify current operating mode
- Upcoming system events
- Set or override occupant control lockout

ENABLING A NEW GENERATION OF SMART BUILDINGS

Halio smart-tinting glass represents a leap in the future of smart buildings, playing a major role in wellness, lighting, comfort, and energy savings. Most modern buildings utilize a building management system/building automation system (BMS/BAS) to allow building managers to integrate and control hundreds or thousands of components from a single management system. These systems use various networking protocols to integrate sub-systems into a local network, including BACnet, LONWorks, MODBus, or KNX. When Halio is integrated with a BMS/BAS system, facility managers gain a powerful new tool to optimize building performance. The Works with Halio program offers three options for integration to match the varying needs of today's commercial buildings as well as smart home applications.
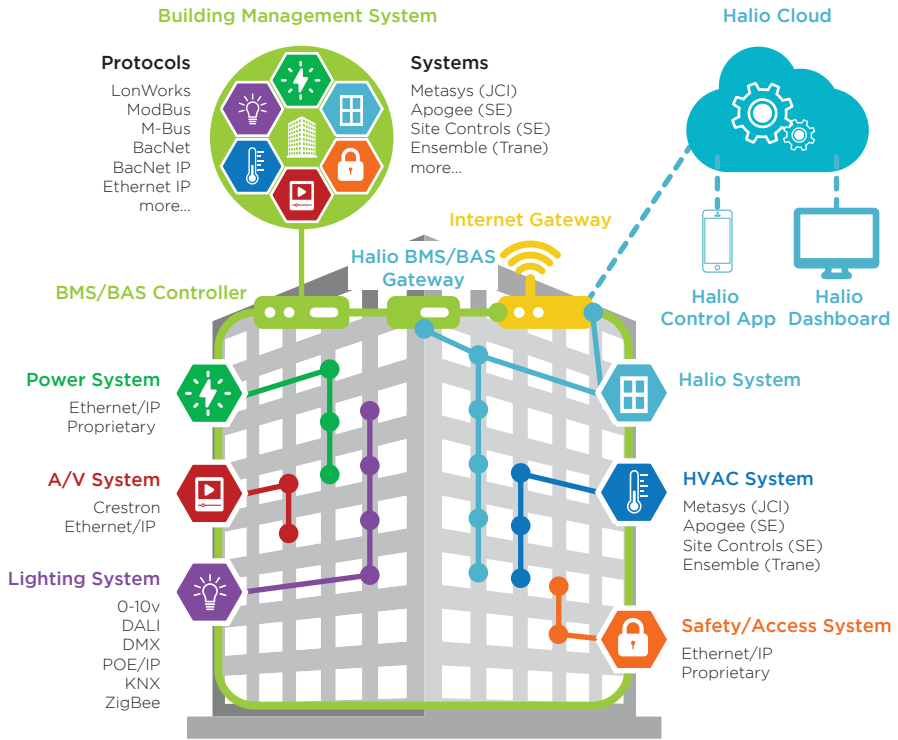
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Niagara Framework-Based BMS Integration

Niagara is a complete building management/automation platform used by many BMS/BAS solution providers. It can be used to integrate legacy building control systems, modern BMS/BAS, and IoT devices into a unified management solution. Because of Niagara's open framework and robust integration platform, it is a great option for integrating complex building systems. Halio has developed Niagara driver software to enable easy integration on the Niagara BMS/BAS platform. This driver runs natively on a Niagara Framework JACE controller. Niagara automatically discovers the structure of Halio devices, data objects and points. Additional information on this integration option is found on the Works with Halio – Niagara Framework-Based BMS/BAS Integration data sheet.

Building Management System

Protocols
LonWorks
ModBus
M-Bus
BacNet
BacNet IP
Ethernet IP
more...

Systems
Niagara Framework
Tridium JACE
Halio Driver Software

Halio Cloud

Internet Gateway

**Niagara JACE
(with Halio Driver)**

**Halio
Control App**

**Halio
Dashboard**

Power System
Ethernet/IP
Proprietary

Halio System

A/V System
Crestron
Ethernet/IP

HVAC System
Metasys (JCI)
Apogee (SE)
Site Controls (SE)
Ensemble (Trane)

Lighting System
0-10v
DALI
DMX
POE/IP
KNX
ZigBee

Safety/Access System
Ethernet/IP
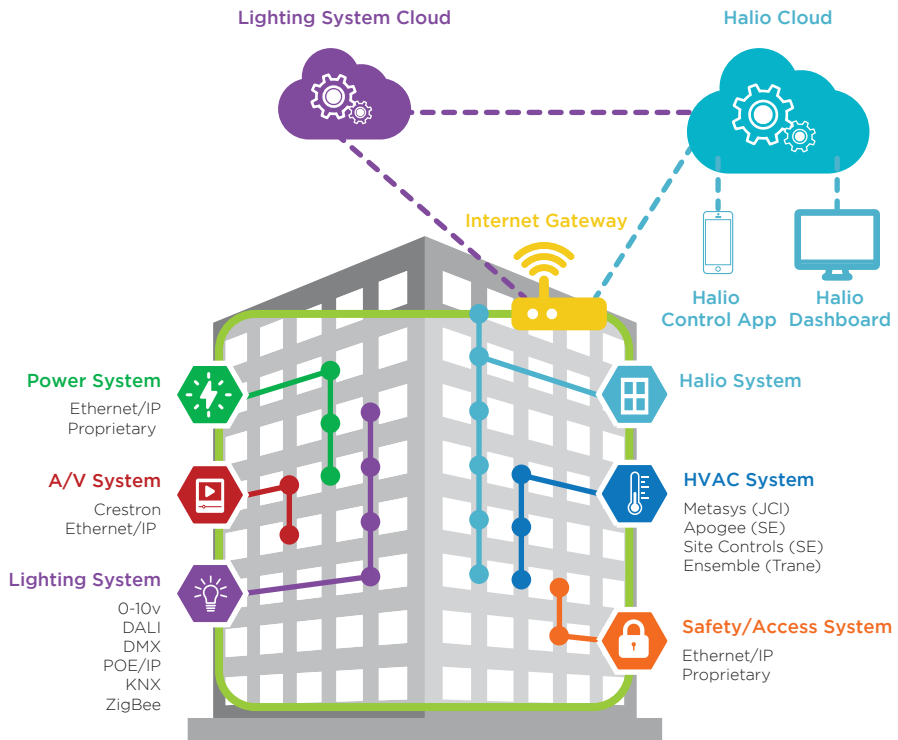Proprietary

Niagara Framework-Based Integration

Halio BMS/BAS Gateway Integration

Halio can also be integrated with a variety of proprietary BMS/BAS systems and sub-systems running protocols such as BACnet, LONWorks, MODBus, or KNX. Halio again leverages the power of the Niagara platform to bridge from Halio to the wide array of proprietary building system protocols. For this integration, a Halio BMS driver runs on a dedicated Halio JACE controller running Niagara Framework with connections to the relevant proprietary building systems. For additional information on this integration path, see the Works with Halio Program – Proprietary BMS Integration data sheet.
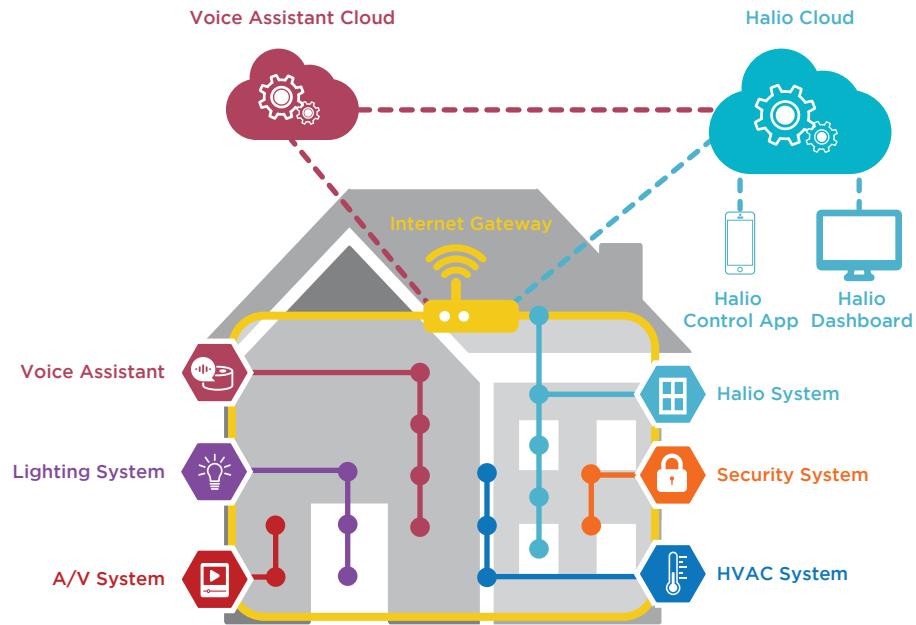

Halio BMS/BAS Gateway Integration

Halio Cloud API Integration

Halio's cloud-based architecture was designed with security and flexibility in mind. A Works with Halio API integration enables Halio partners to develop highly tailored applications that interact directly with the Halio Cloud. This option is preferred when a BMS/BAS system integration is not an option. Integration can be cloud based software system such as Alexa or Google Home. Integration can also be through 3rd party IOT gateway like Crestron, KNX systems. While this path entails more involved development collaboration, it provides a high degree of flexibility and customization, enabling smart home systems, or even individual IoT devices to create powerful new experiences with the Halio system. For additional information on this integration option, see the Works with Halio Program – Halio Cloud API data sheet.

Halio Cloud API Integration:
Cloud-to-Cloud with Lighting System

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Halio Cloud API Integration:
Cloud-to-Cloud with Smart Home System

GETTING THE MOST FROM WORKS WITH HALIO

Halio understands that every building and system integration is unique. Many building projects can simply leverage existing BMS/BAS integrations for seamless system interaction with minimal implementation and support effort. Other projects may require interaction with new systems, protocols or devices. Halio Advanced Design Services can assist customers in evaluating integration requirements to determine the optimal path for any project. Halio also provides a developer program that enables qualified partners to jointly create integrations for compelling new user experiences. Contact your Halio representative for additional details.

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