

Halio® Integration with Building Management Systems (BMS)

Buildings that have implemented building management/automation systems (BMS/BAS) 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 the systems into a local network, including BACnet, LONWorks, MODBus, or KNX. A modern BMS/BAS with Internet connectivity can extend beyond the local network via a web services API.

Halio uses current web service APIs to integrate with BMS/BAS. When Halio windows are connected to your BMS/BAS via the Halio API, they can be controlled as if they were on your local network. When Halio is integrated with a BMS/BAS, facility managers gain a powerful new tool to optimize building performance. Integrated Halio windows can automatically participate in BMS/BAS commands/requests. Halio windows can be optimized to minimize or maximize heat gain to reduce HVAC costs while still maximizing the use of natural light, energy efficiency, and enhanced occupant comfort.

INTEGRATION OVERVIEW

- Integration plans are customer-specific and require coordination with Halio representatives
- An integration partner with expert knowledge of the customer's specific BMS and who is certified to integrate with Halio will perform the integration
- API is available as a REST web service encrypted over TLS for a standardized and secure connection
- KNX or BACnet systems require a compatible gateway to access REST APIs over the Internet

KEY FEATURES

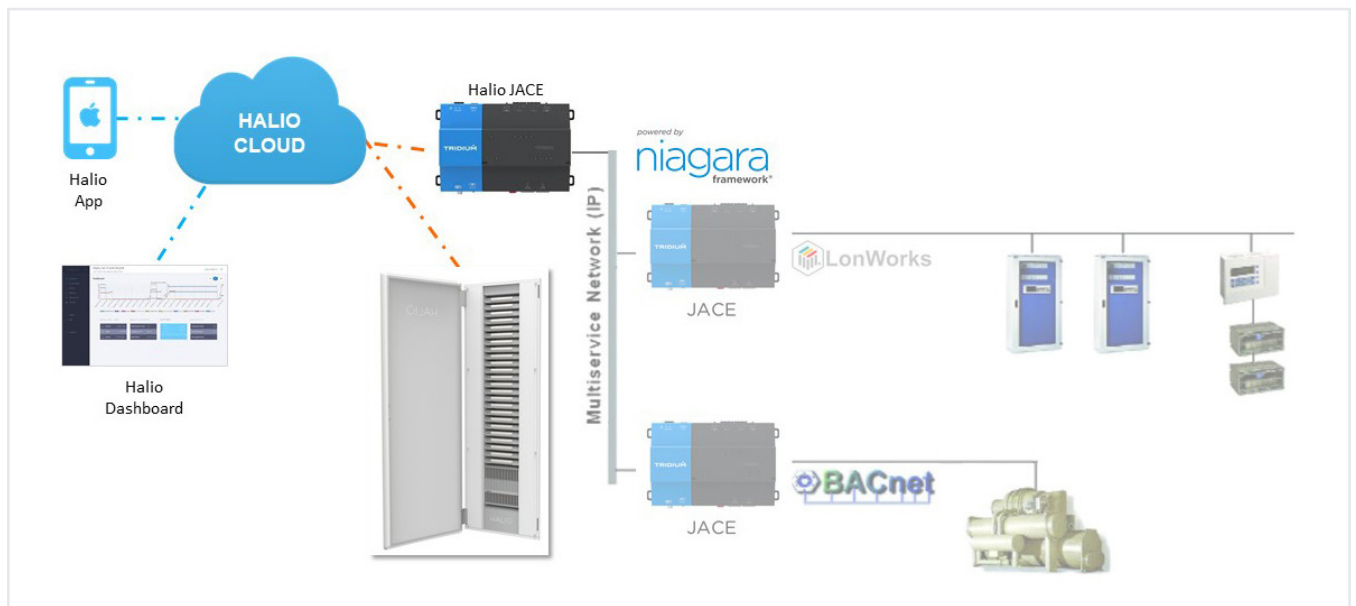
- Use your BMS/BAS to control Halio as you would a window shading or lighting system
- Control tint level of individual windows, groups of windows, or all windows
- Execute scenes to tint a group of windows to preset tint values
- Get window status and event data to include in reports or dashboards
- Clears all Halio windows when the BMS senses an emergency
- Automate Halio mode selection; sync Halio to programmed building functions for maximum energy savings
- Integrate Halio into heating and cooling routines to reduce HVAC costs
- Integrate Halio into lighting control systems to reduce lighting energy costs
- Halio web service API provides powerful integration options
- API access for approved web-enabled platforms to control Halio

HALIO INTEGRATION EXAMPLES

Halio can be integrated into a complex “mixed network” BMS/BAS, such as Tridium Niagara, or into an independent control bus network, such as BACnet, LONWorks, MODBus, or KNX. The following are three common integration examples.

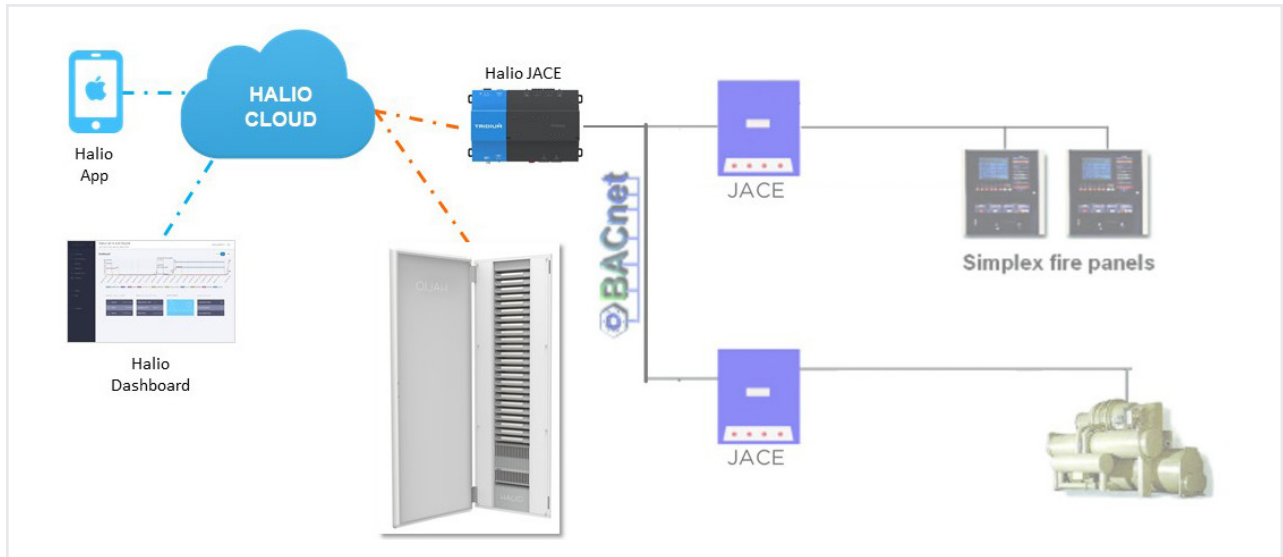
MIXED NETWORK SERVICES - TRIDIUM NIAGARA EXAMPLE

Niagara is a complete building management/automation solution. It can be used to integrate legacy building control systems, modern BMS/BAS, and the Internet of Things (IoT) into one building under a single management solution. Because of Niagara’s open framework and robust integration, it is a great option for integrating complex building systems. Below is how Halio can be integrated with a BMS/BAS using Tridium Niagara.

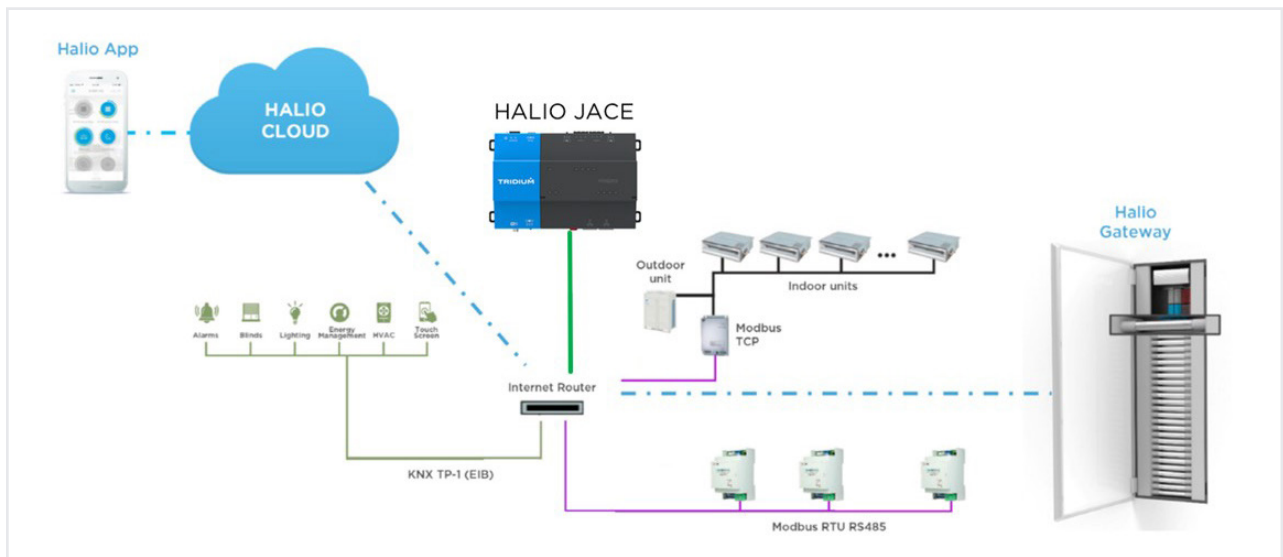


INDEPENDENT CONTROL BUS NETWORKS - BACNET AND KNX EXAMPLES

Halio does not support local connections on BACnet, LONWorks, MODBus, or KNX. All communication must go through the Halio web service API. BACnet, LONWorks, MODBus, and KNX have solutions for this integration model using a gateway with Internet connection that is compatible with REST web services. Using a gateway will allow for translation of BMS commands into Halio web service calls. This will allow the BMS to send commands to or retrieve data from Halio. See the below BACnet example.



See the below KNX example.



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HBMSv1-20190916

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