signify interact

Network requirements

Signify Interact for Intelligent Buildings

Version v2.7

3 November 2026

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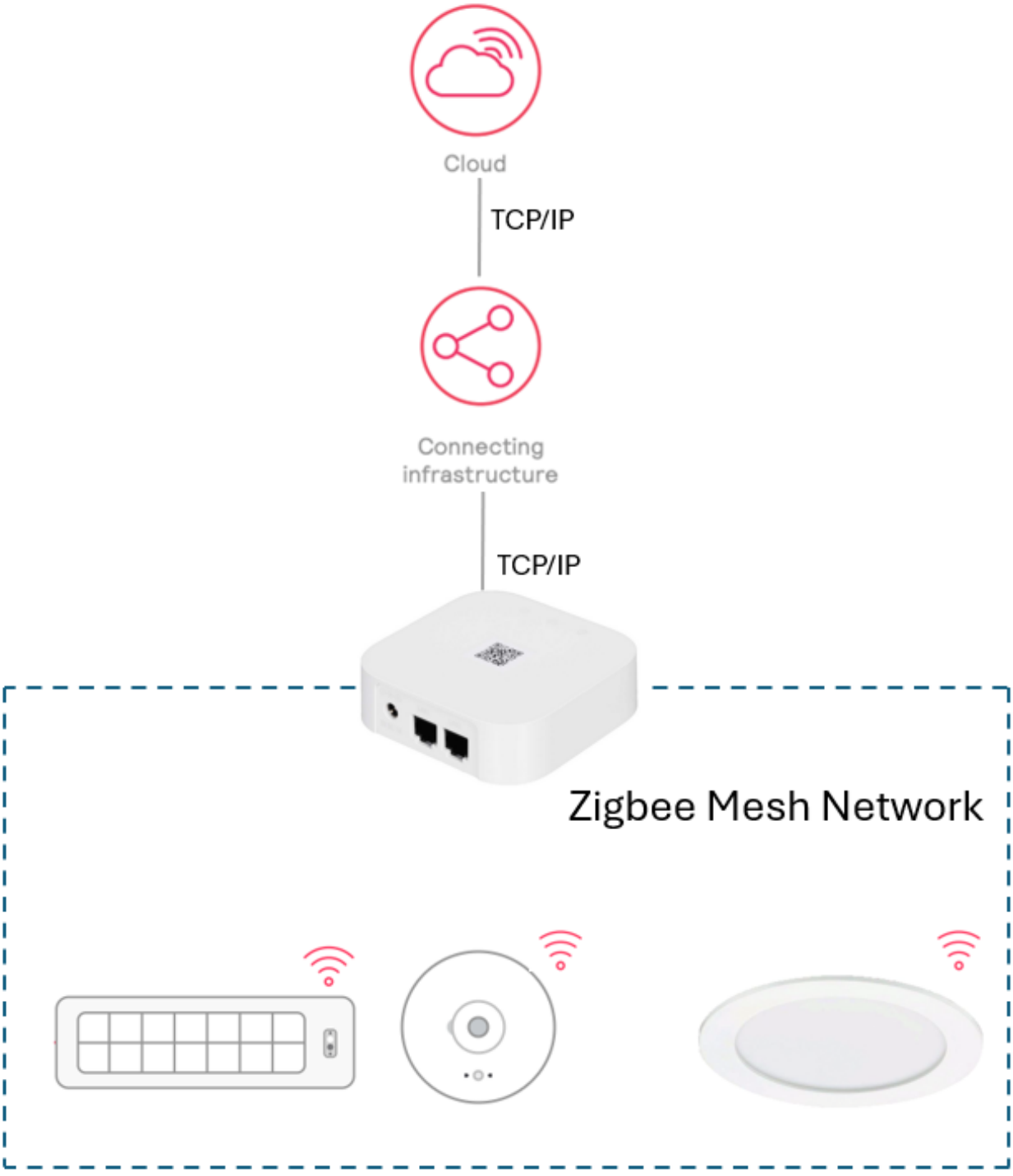
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Here are the network requirements if the system is equipped with a gateway. Note that there are no network requirements, if there is no gateway.

Refer to this LTE Technical Note to connect via 4G LTE.

1. Summary of requirements to connect the system

- One ethernet port per gateway with access to the internet.



If the network is managed, then make sure the following requirements are met:

- IPv4 via DHCP server available
- Port TCP 443 opened on the router

- Port UDP 123 opened on the router. This port is used for time synchronizing, using the Network Time Protocol (NTP).

If you are using a firewall, make sure to whitelist the following URLs:

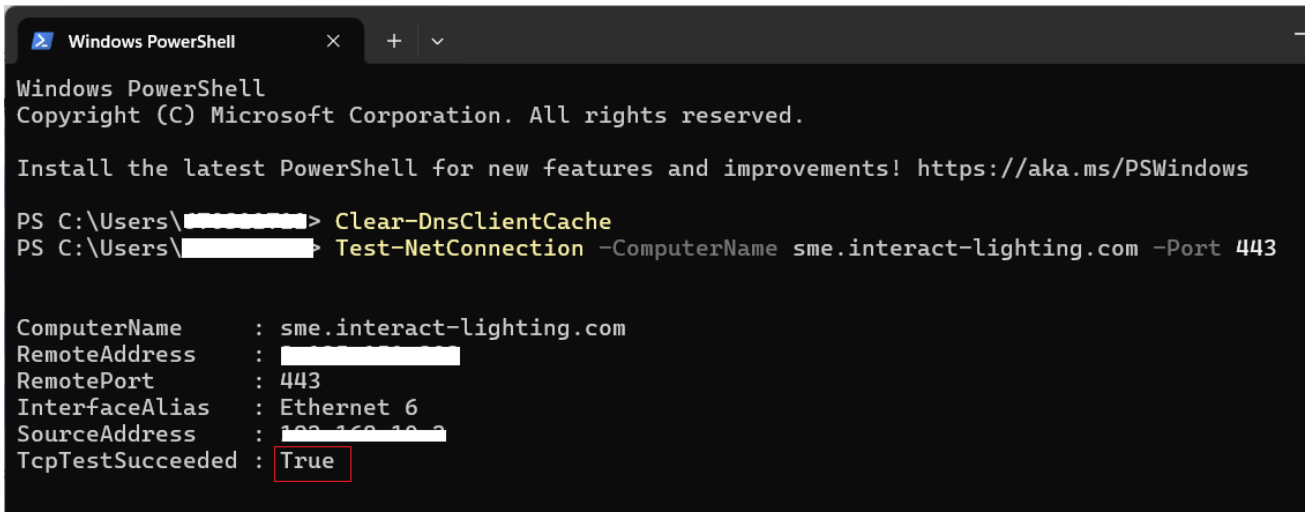
- sme.interact-lighting.com for port 443
- mq.sme.interact-lighting.com for port 443
- web.mqtt.pro.interact-lighting.com for port 443
- eu.api.iotplatform.signify.com for port 443

Region specific:

- China only: api.iotplatform.signify.com.cn
- Rest of the world: eu.api.iotplatform.signify.com

Follow the steps below to check whether the URLs are whitelisted:

1. Open Microsoft Windows PowerShell
2. Clear DNS Cache by pasting the following command:
    - Clear -DnsClientCache
3. Perform connectivity test by pasting the following commands, one at a time. Copy & Paste the command in the PowerShell window and press Enter:
4. Test-NetConnection -Computername sme.interact-lighting.com -Port 443
5. Test-NetConnection -ComputerName mq.sme.interact-lighting.com -Port 443
6. Test-NetConnection -ComputerName web.mqtt.pro.interact-lighting.com -Port 443
7. Test-NetConnection -ComputerName eu.api.iotplatform.signify.com -Port 443
8. If the whitelisting is successful, then the result will be displayed as True





Note

Perform these tasks only from PowerShell. Do not use Command Prompt.

2. BACnet network integration with Signify Interact for Intelligent Buildings

The only possible way to integrate Signify Interact for Intelligent Buildings with BACnet network is by using a third-party BACnet device.

Important

Requirement of BACnet network integration is verified on a case-by-case basis.

2.1. BACnet network requirements and considerations

Before integrating with a BACnet system, ensure the following requirements and considerations.

- BACnet endpoints running on wireless gateways are only available to on-premise BACnet controllers and vice-versa.
- BACnet traffic must be contained to a local network as the BACnet is an insecure protocol. BACnet traffic must not be routed through the internet.
- Due to the insecure characteristics of the BACnet protocol, internet traffic or access to the internet on the BACnet VLAN is not recommended.
- The BACnet VLAN must not be used to access the lighting network or the other way around.

2.2. Customer's network responsibility

The following items must be shared with the customer:

Note

The requirements are only applicable if the customer is delivering the network.

- Lighting VLAN must comply with the Signify Interact for Intelligent Buildings network and security requirements.
- The correct network access controls (ACLs) must be in place to allow only authorized devices in the BMS and lighting VLAN.
- BACnet controllers must be configured to communicate only by using the BACnet protocol in a lighting VLAN.
- Network must be configured to block any non-BACnet communication from the BMS to the lighting VLAN and vice-versa.
- Changes in the lighting VLAN require Signify approval.

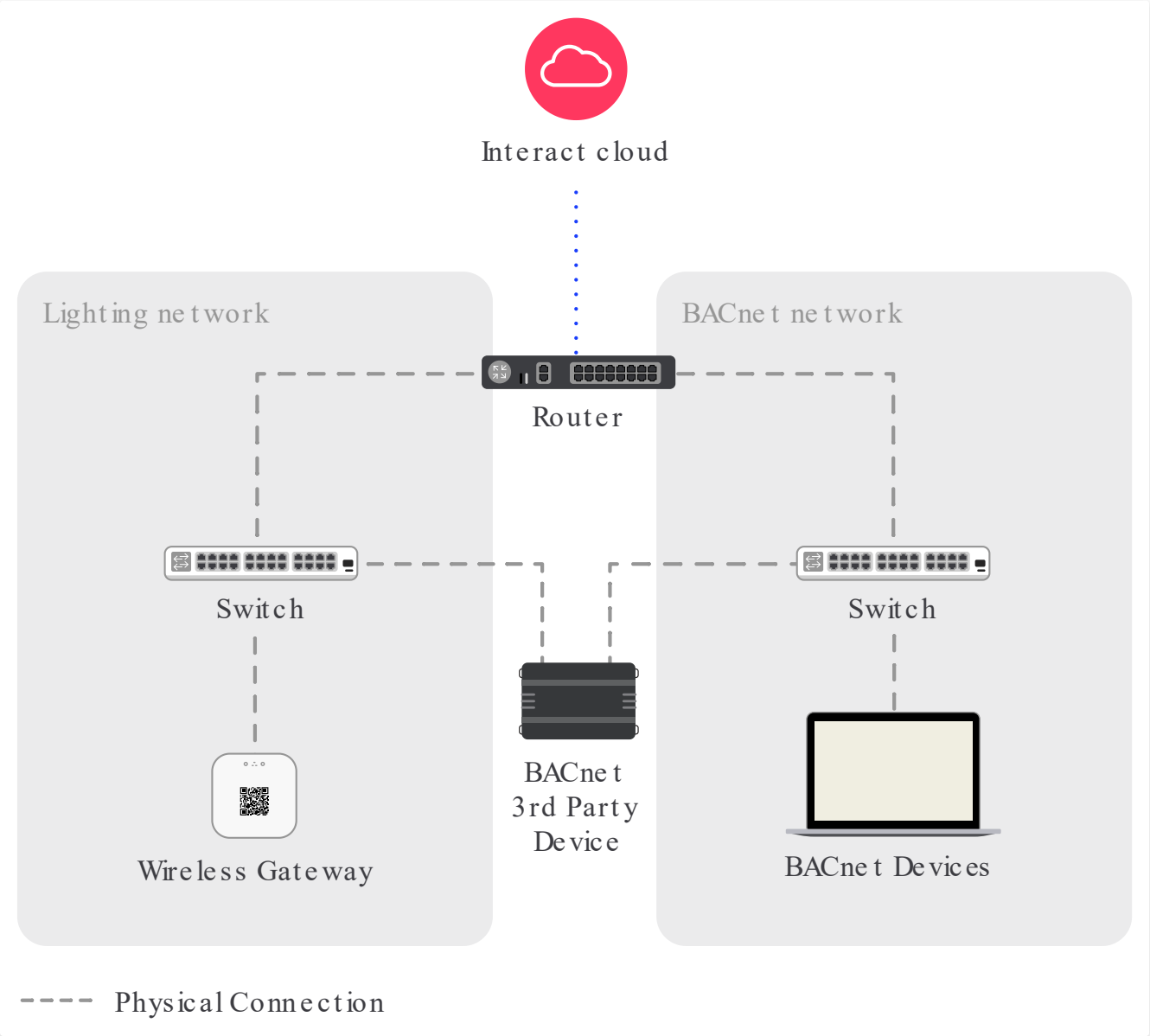
2.3. Integration using a third-party BACnet device

This architecture uses the Wireless Gateway which exposes the BACnet points as described in the Developer portal.

The third-party BACnet system can be hosted on a different network but in order to support this architecture, the BACnet system requires a device such as:

- BACnet router
- BBMD
- JACE with two ethernet ports

One device is connected to the lighting network and the other device to the BACnet network.



Important

Signify DOES NOT provide or configure BACnet device. Integration must be done by a third party. For integration, no additional network changes are needed in lighting, in case Signify provides router or switches.

2.3.1. Network requirements

Note

Customer-delivered networks must meet the network requirements specified in the Network requirements section.

Signify-delivered networks use a configuration file for a Signify validated network router.

The files are available in the Downloads page.

It allows a third-party device to communicate with Wireless Gateways running the BACnet stack.

2.3.2. ACLs

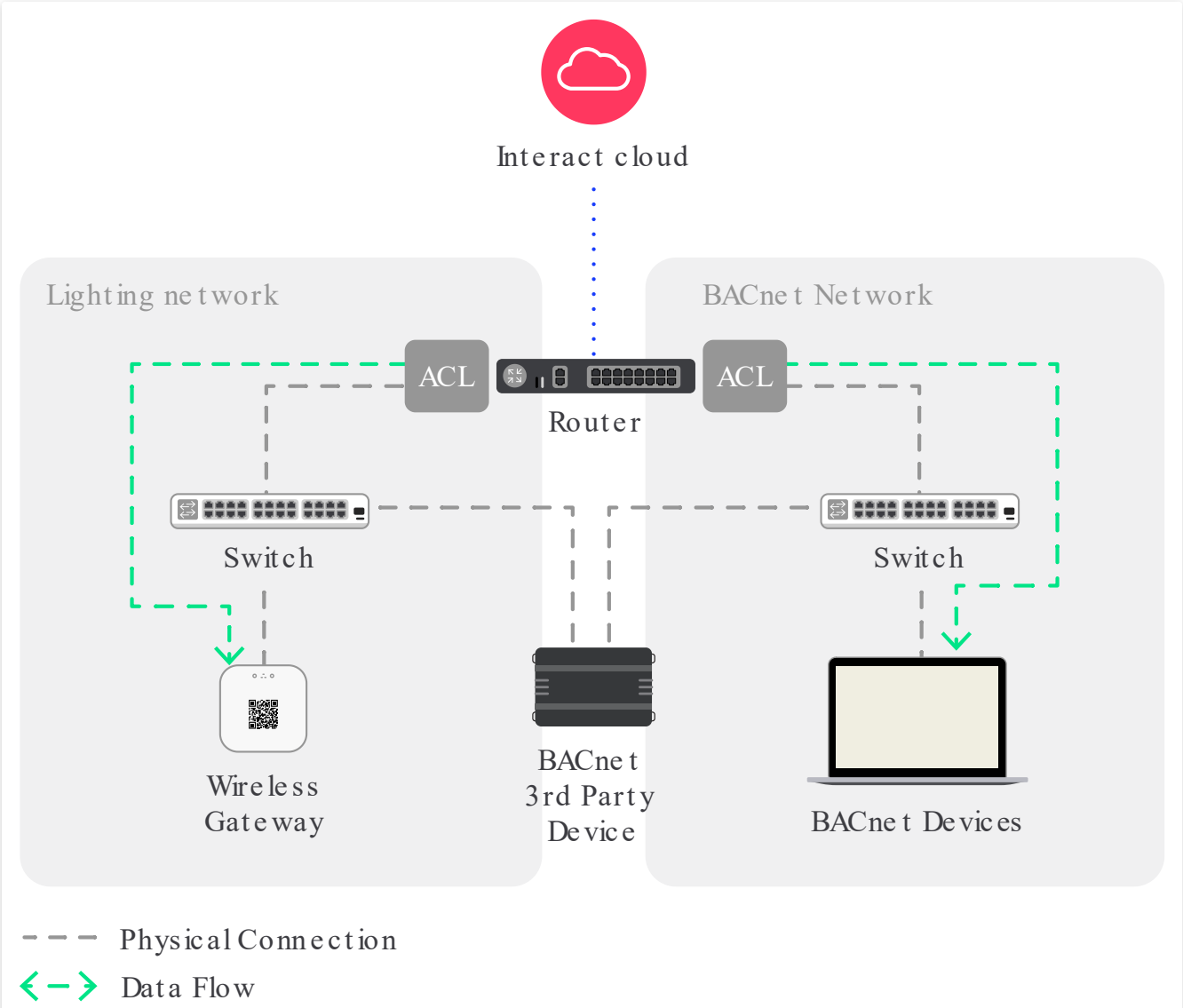
ALCs or access control lists can be used to limit the access from third-party networks to lighting network using the BACnet port `47808`.

Important

The ACLs must be applied in the customer's and lighting networks.

The following ACLs are required.

- ACLs must be applied between lighting and BACnet VLANs, and must be filtered based on:
  - source IP address
  - destination IP address
  - source port
  - destination port
- Traffic from the BACnet VLAN must be filtered, allowing only the BACnet gateway to reach the IP address from the Wireless Gateway and standard BACnet port. The traffic initiator is the BACnet gateway.
- Traffic from the Wireless Gateway must be able to reach the BACnet gateway.
- All other traffic between the lighting and BACnet VLANs must be dropped.



2.4. Integration via BACnet router

A BACnet gateway controller is configured as BACnet router which connects the lighting VLAN or Signify-delivered network to the BMS VLAN. This allows BACnet broadcast frames to be forwarded from BMS to lighting VLAN and vice-versa.

This solution allows BACnet discovery messages to be transited between the two networks which allow the BACnet gateway to discover the Wireless Gateway.

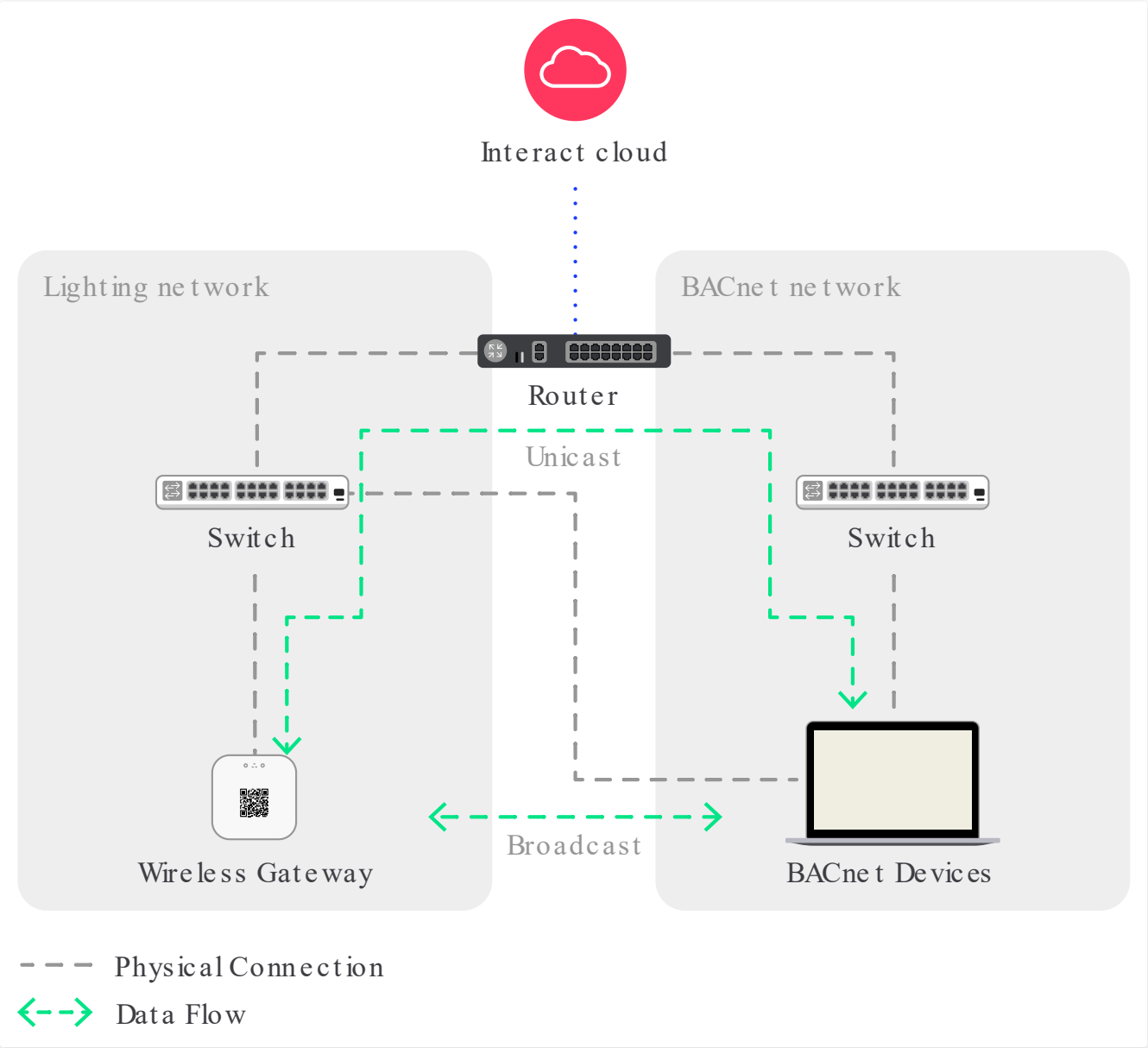
After device discovery, all remaining traffic is BACnet unicast, and the customer's or Signify provided router directs this message between the two VLANs.

Important

Signify DOES NOT provide or configure BACnet device. Integration must be done by a third party. For integration, no additional network changes are needed in lighting, in case Signify provides router or switches.

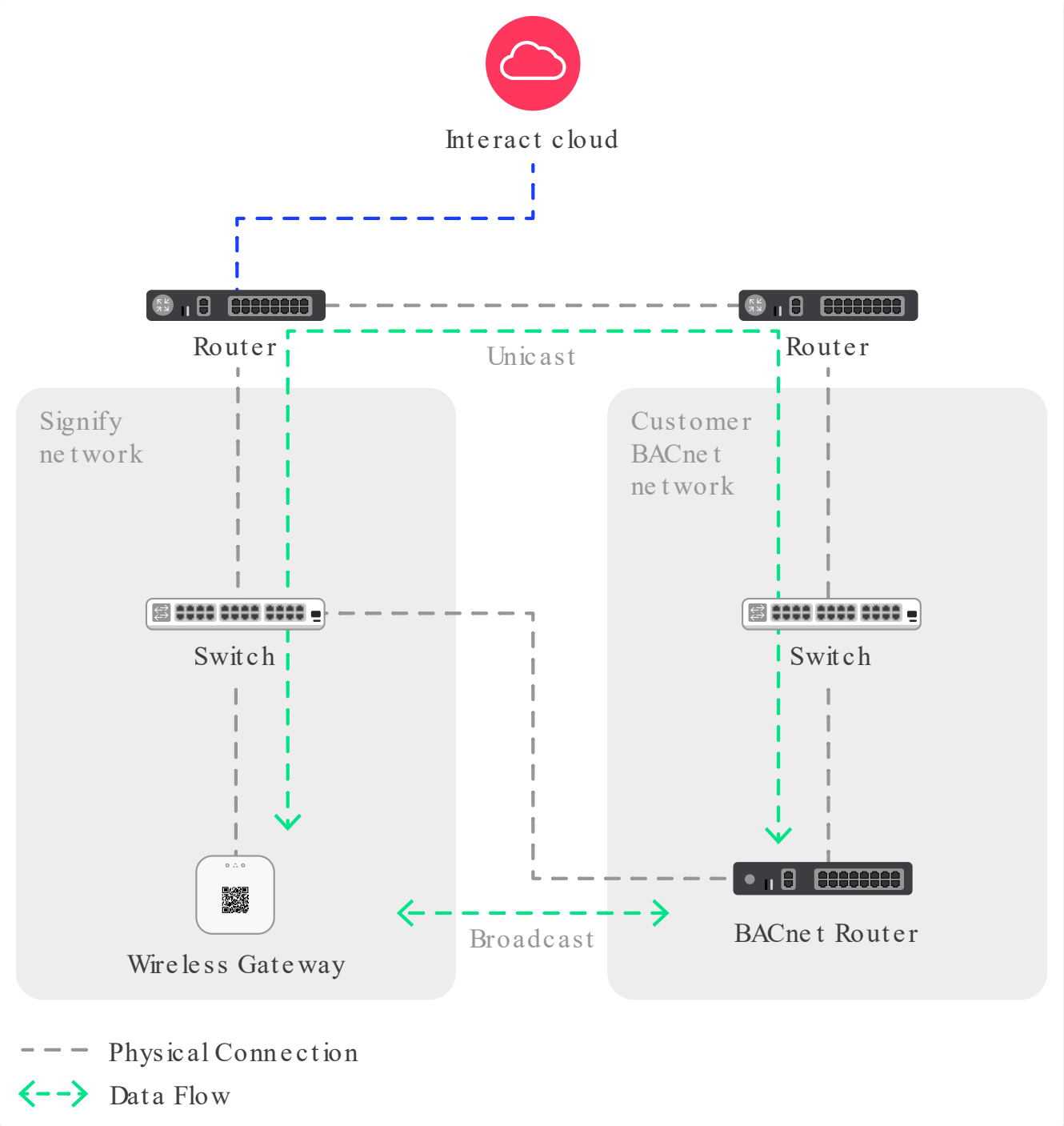
2.4.1. Customer-delivered network

As in Signify Interact for Intelligent Buildings projects, customer delivers the network, and the set of network requirements and customer responsibilities are same for BACnet integration.



2.4.2. Signify-delivered network

Signify provide all the lighting networks using a set of validated network devices. The customer provided BACnet router connects one interface to a dedicated and reserved network interface in Signify's provided lighting network, allowing the broadcast of BACnet messages.



2.5. Integration via BBMD

A BBMD device is configured in the network that is connecting the lighting VLAN and BMS VLAN, allowing the BACnet broadcast frames to be forwarded from BMS to lighting VLAN and vice versa.

This solution allows BACnet discovery messages to transit between the two network segments which allow the BACnet gateway to discover the Wireless Gateway.

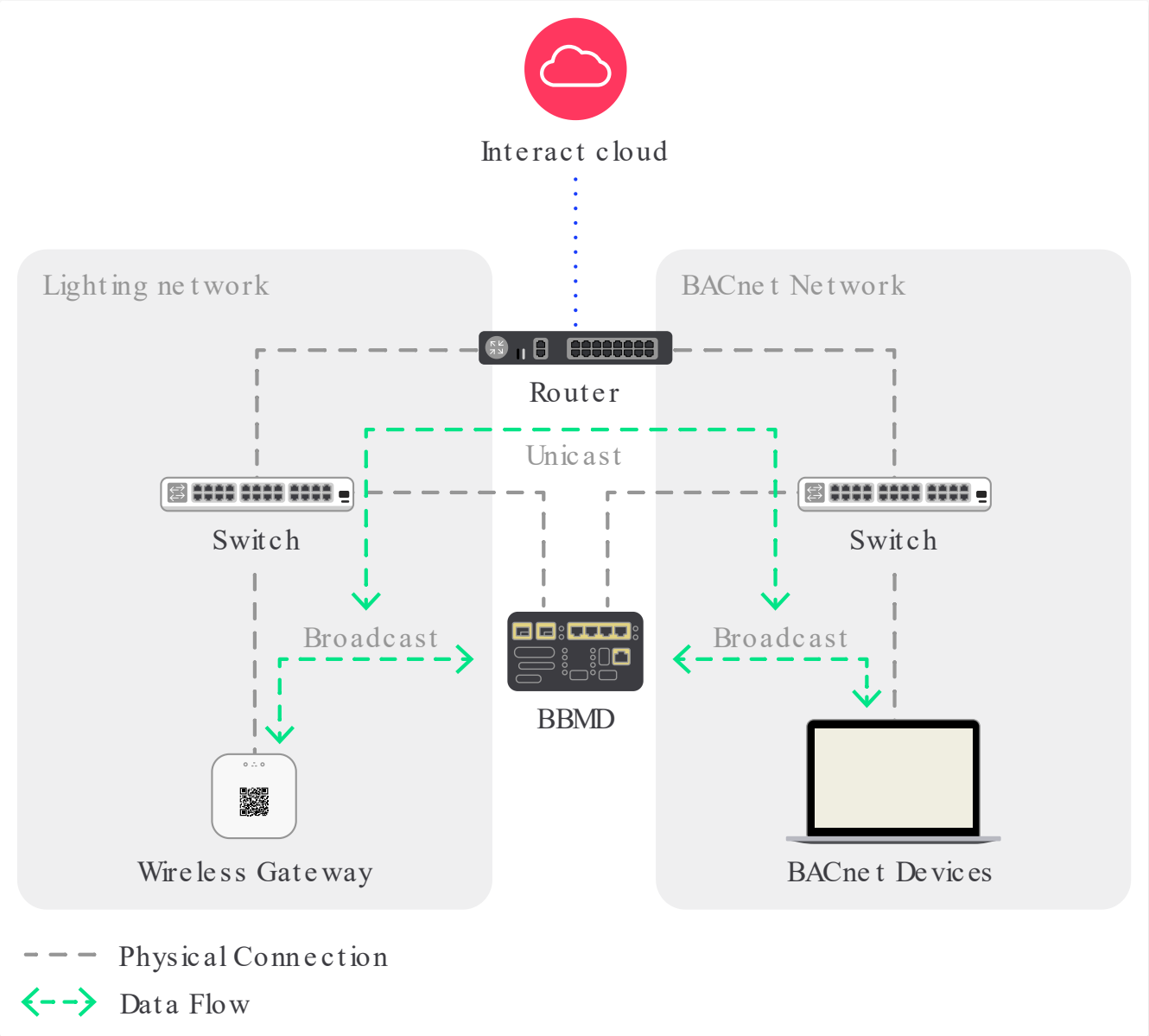
After device discovery, all remaining traffic is unicast, and the customer's router directs this message between the two VLANs.

Important

Signify DOES NOT provide or configure BACnet device. Integration must be done by a third party. For integration, no additional network changes are needed in lighting, in case Signify provides router or switches.

2.5.1. Customer-delivered network

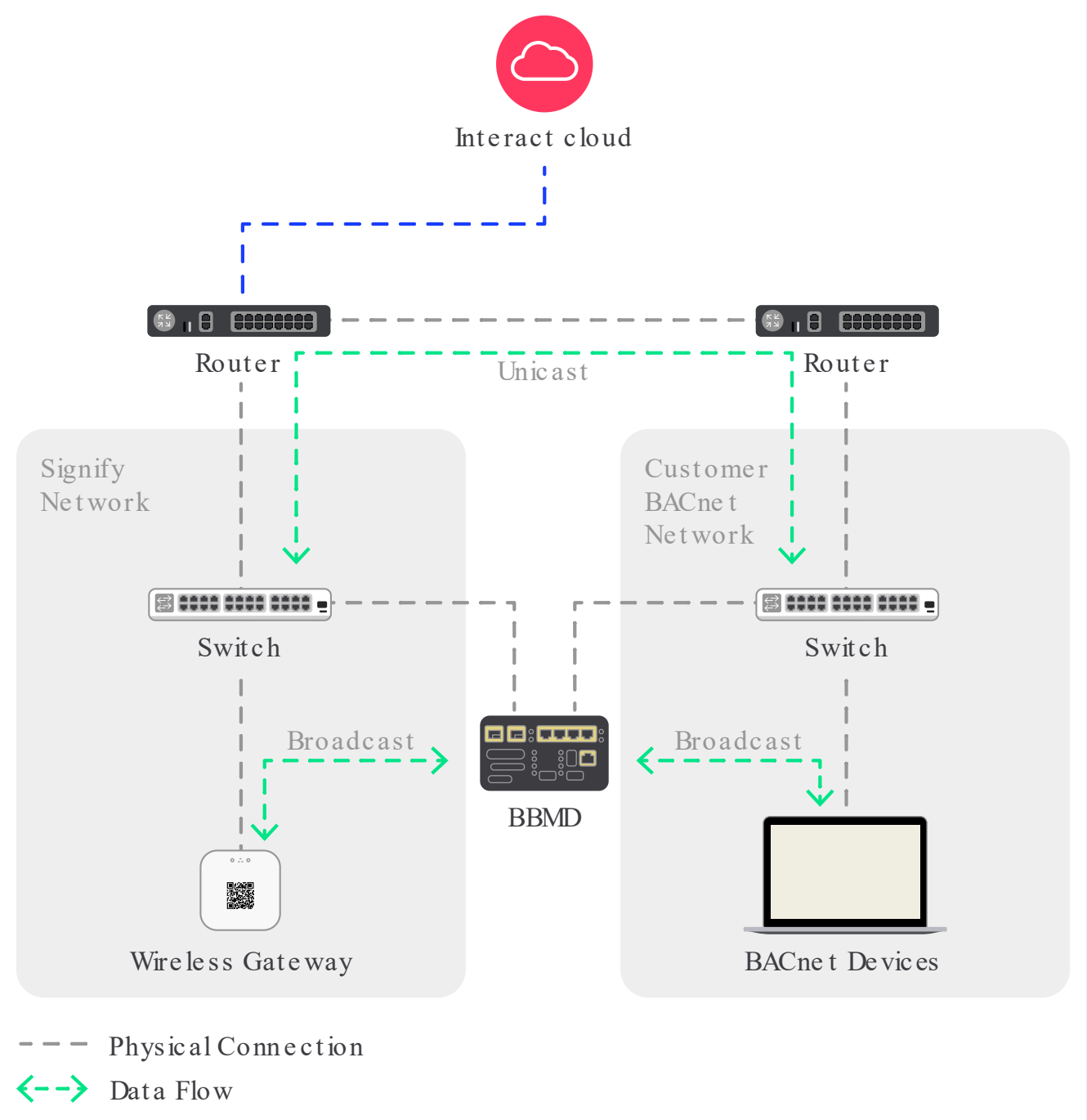
As in Signify Interact for Intelligent Buildings projects, customer delivers the network, and the set of network requirements and customer responsibilities are same for BACnet integration.



2.5.2. Signify-delivered network

Signify provide all the lighting networks using a set of validated network devices. The customer provided BACnet router connects one interface to a dedicated and reserved network interface in Signify's provided

lighting network, allowing the broadcast of BACnet messages.



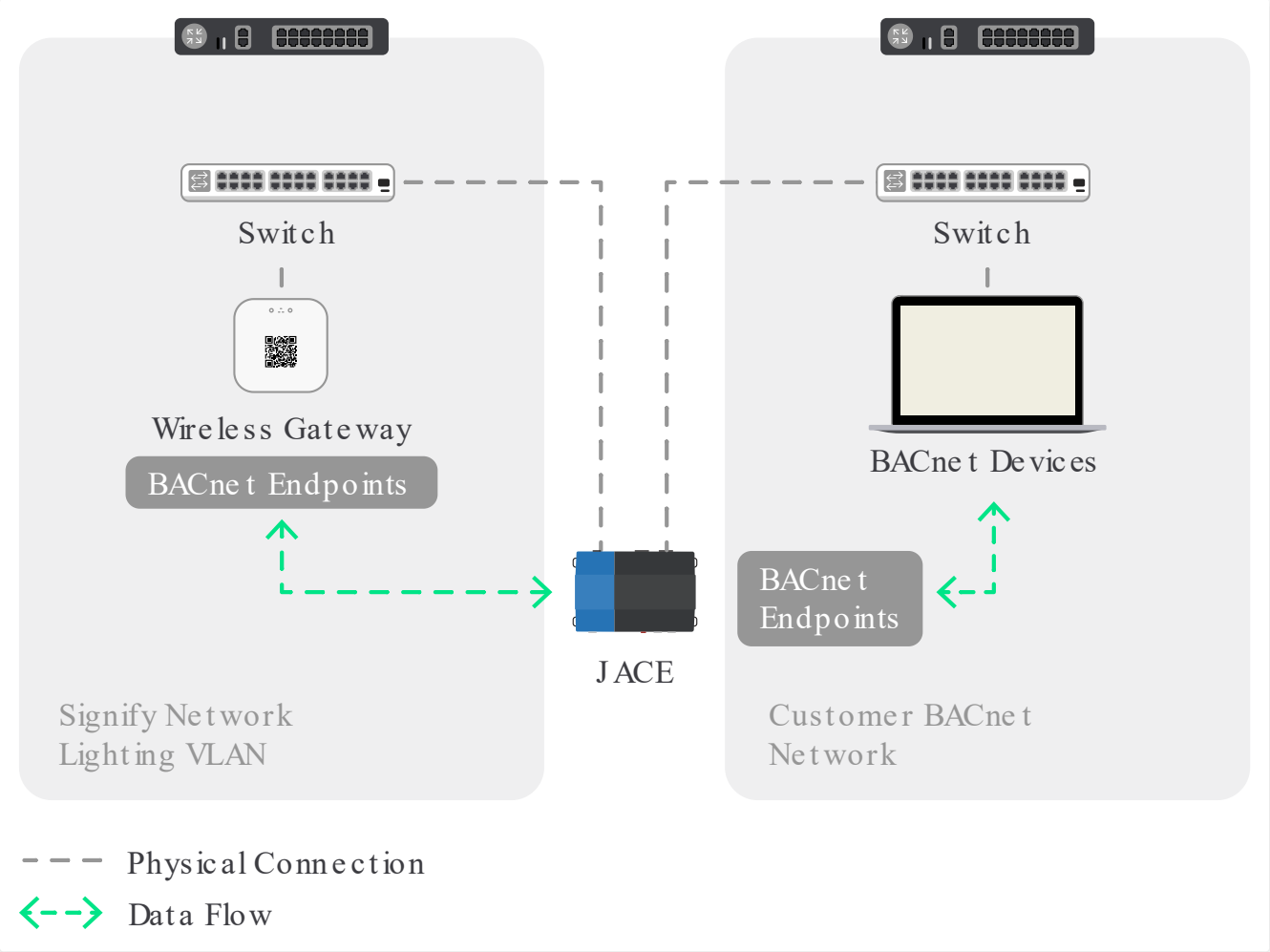
Note

One BBMD device might be required per network (Lighting network + BMS network). This can be either a physical or logical device, depending on the manufacturer and model used.

2.5.3. Remark for JACE usage

It is possible to use a JACE box to allow different types of integrations. A JACE box allows the device to be configured as a BBMD device or to map Wireless Gateway BACnet endpoints from the lighting network or

VLAN to the BMS network or VLAN.



Note

For JACE box usage, it is important to consider the licensing cost and specialized knowledge for the configuration. The configuration in-detail is not covered.

3. Coexistence of Zigbee and Wi-Fi networks

Signify Interact for Intelligent Buildings uses the 2.4 GHz band, which is also used by Wi-Fi, Bluetooth and other wireless protocols.

This section describes why systems do not interfere with one another when specific rules are followed.

The rules are described in IEEE 802 set of protocols. In this specific case, the 802.11 describes Wi-Fi and 802.15.4 describes low-power personal networks such as Zigbee, the protocol used by Signify Interact for Intelligent Buildings.

Both networks need to implement the following rules in order to co-exist.

3.1. Packets

None of the protocols transmit data continuously, instead, each protocol transmit packets when sufficient bandwidth is available. Since Zigbee packets are very short, the chances of collision with Wi-Fi packets are low.

3.2. Channels

Warning

Before commissioning the wireless gateways, prepare a plan to prevent interference between the Zigbee network and the corporate Wi-Fi network. This includes scanning the existing Wi-Fi access points and coordinating with the customer's IT department to identify the channels in use and determine whether the channel selection is static or dynamic.

Wi-Fi channels overlap with one another. It is a common practice to select non-overlapping channels to achieve good coverage with several Wi-Fi access points. Interference between overlapping channels results in lower transmission speeds or complete communication failure. Channels 1, 6, and 11 are most commonly used in customer's Wi-Fi network installations.

The wireless gateway uses Zigbee to communicate on channels 11, 15, 20, and 25. The channels must be selected during the commissioning process.

Important

- Recommend to use only channels 15, 20, and 25, as channel 11 might be used by the corporate Wi-Fi access points.
- Channel 11 is supported and can be used only if the corporate Wi-Fi network is not heavily using it such as heavy file transfer activities.

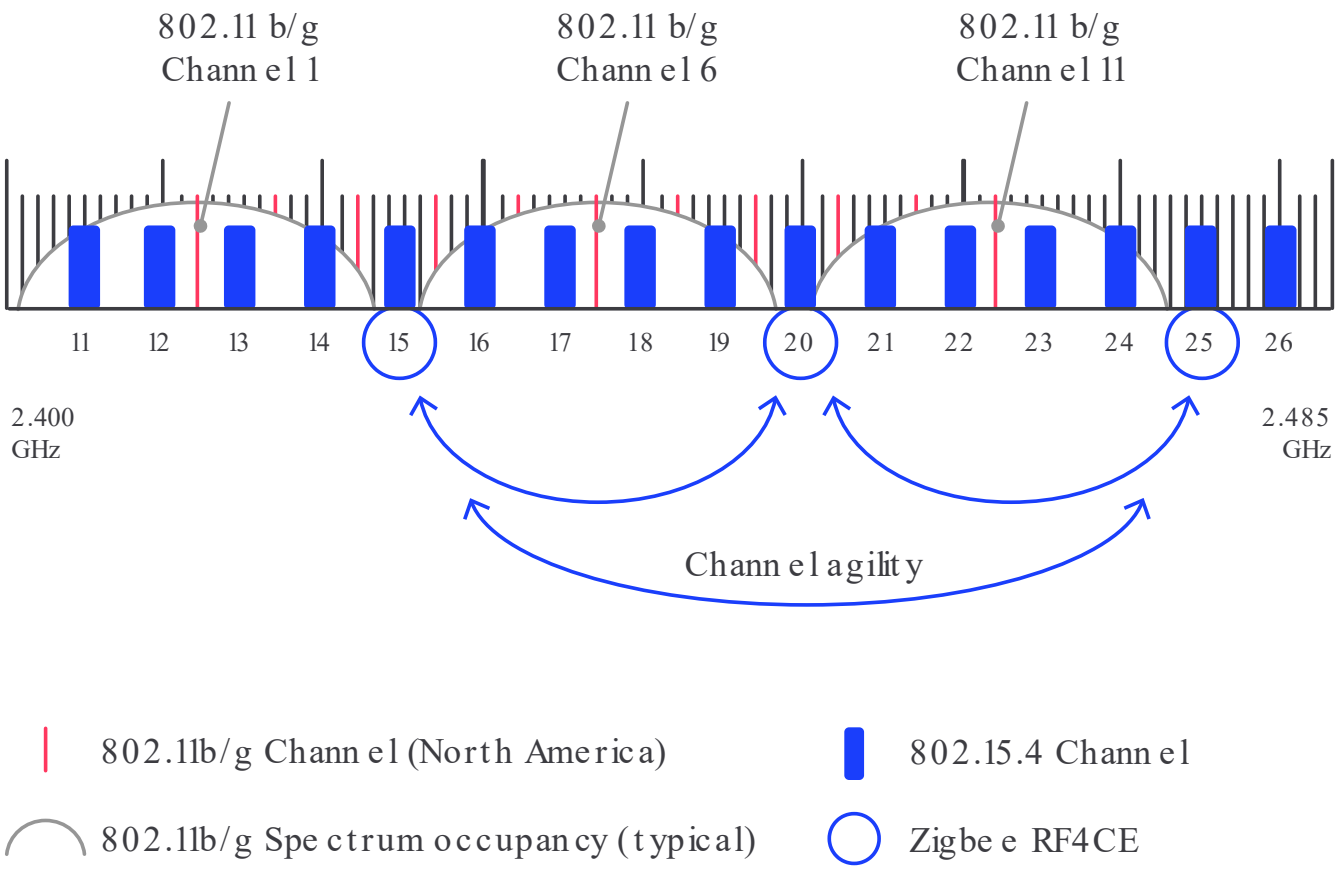
Warning

If the existing Wi-Fi network uses all channels then the Zigbee network will be interrupted.

Note

Maintain a minimum distance of 3 metres (10 feet) between the gateway and any high-traffic 2.4 GHz Wi-Fi access point.

In the following example, the corporate Wi-Fi access points use channels 1, 6, and 11 set at a bandwidth of 20 MHz. The Zigbee channels used in Signify Interact for Intelligent Buildings are 15, 20, and 25 which fit in between the gaps of the channels used by the corporate Wi-Fi access points. In addition, Zigbee has low transmitting power (1 mW) compared to Wi-Fi (80 mW), and therefore Zigbee does not interfere with Wi-Fi in most cases.



Warning

It is customer's responsibility to ensure that the frequencies used by ZigBee network are not interfered by any Wi-Fi or Bluetooth network.

The frequencies used by ZigBee network are:

- Channel 11 → 2405 MHz

Channel 15 → 2425 MHz

- Channel 20 → 2450 MHz
- Channel 25 → 2475 MHz

For more information, see www.IEEE.org and www.zigbee.org.

Learn more about Interact
www.interact-lighting.com

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