



C24 Technology Overview

March 5, 2012

C24 Manager Client Types



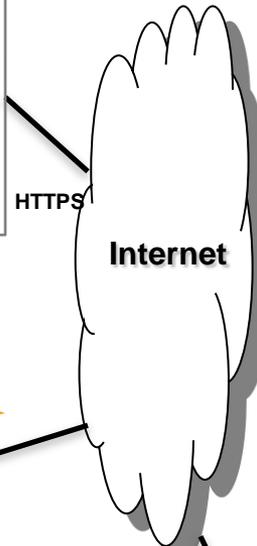
Browser



Smart Phone

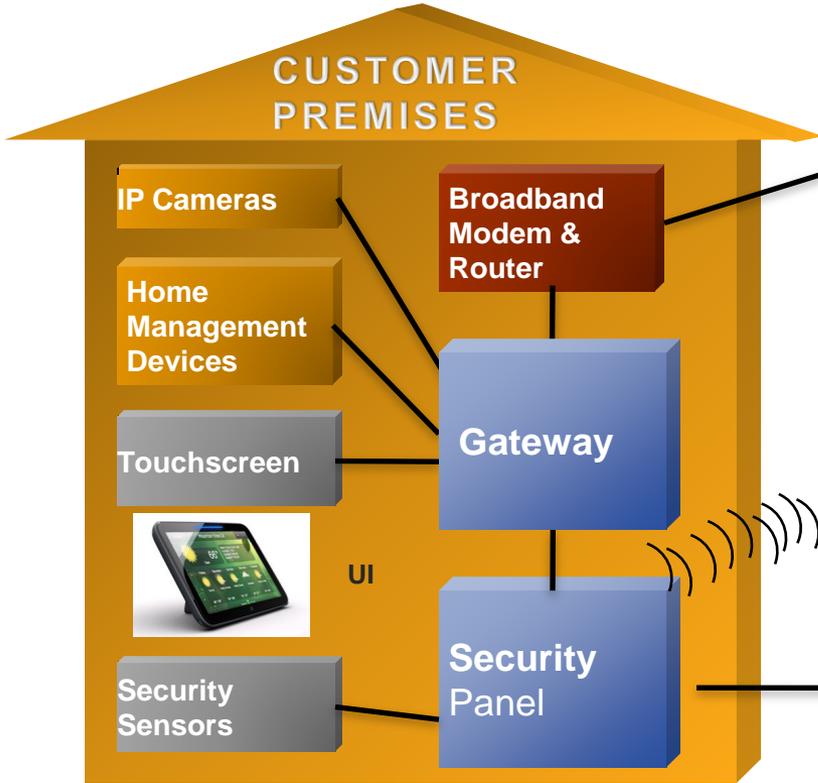


Mobile Devices



HTTPS

**C24 Manager
iConnect Servers**



Cellular Network

Contact ID or SIA

**HOME SECURITY
CENTRAL MONITORING
STATION (CMS)**

POTS/ TCP/IP





Wi-Fi

- Most common IP-based WLAN network standard
- Based on 802.11 standards (we use 802.11g type)
- 2.4 GHz (802.11g), microwave frequency
- Point-to-Point network: Gateway sends/receives to each individual device



Wi-Fi Device Types

Camera



Touch Screen



Wi-Fi Network

Point-to-Point Network



Wi-Fi Network

Consider a wired connection > 50 feet



15 feet



25 feet

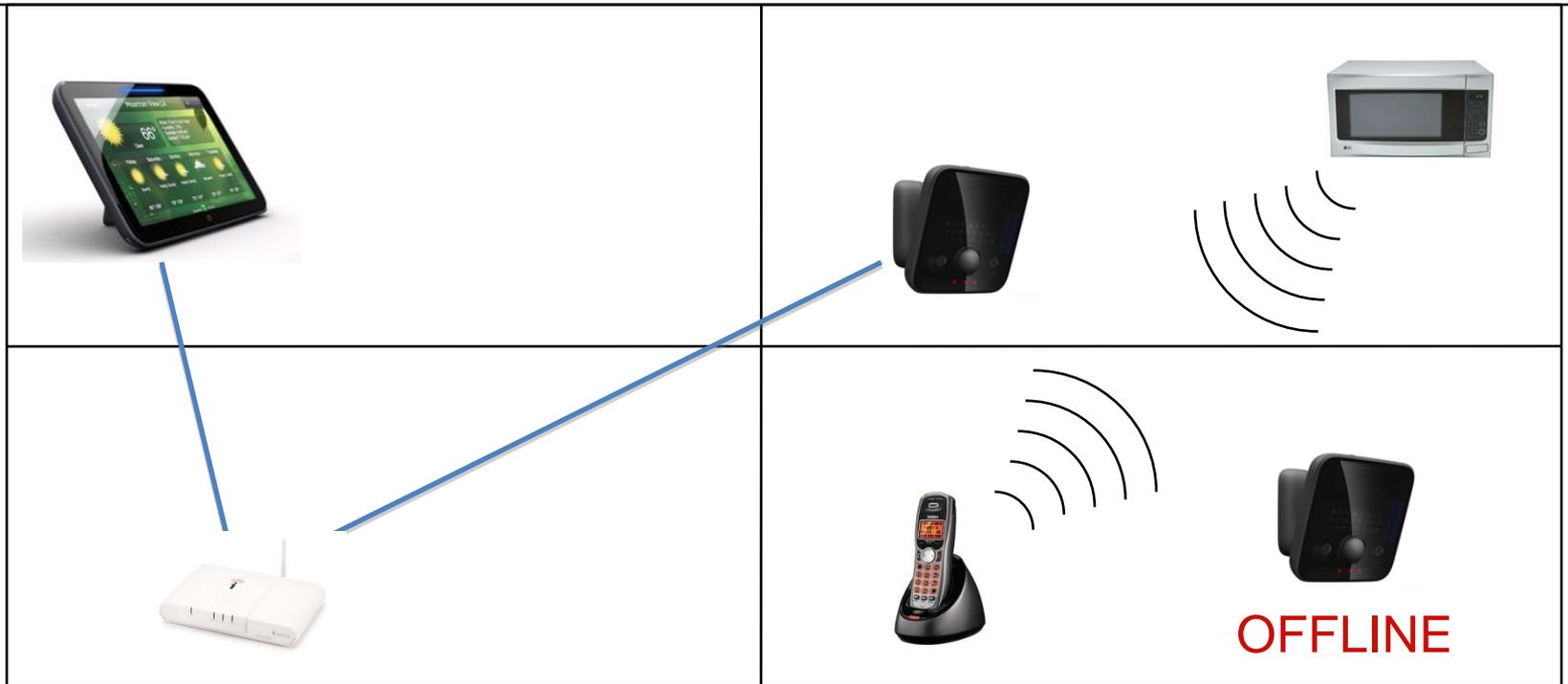


50 feet



Wi-Fi Network

Microwave ovens, cordless phones & metal between walls can shorten the reliable distance



Z-Wave

- Wireless standard for low-overhead home automation: on/off, raise/lower
- Low-cost, used by over 200 technology vendors
- Interference-tolerant, low power, 908.42 MHz
- Mesh Network: every device can send/receive commands (no more than 4 nodes)



Z-Wave Device Types

Power and Lighting



Environment



Security



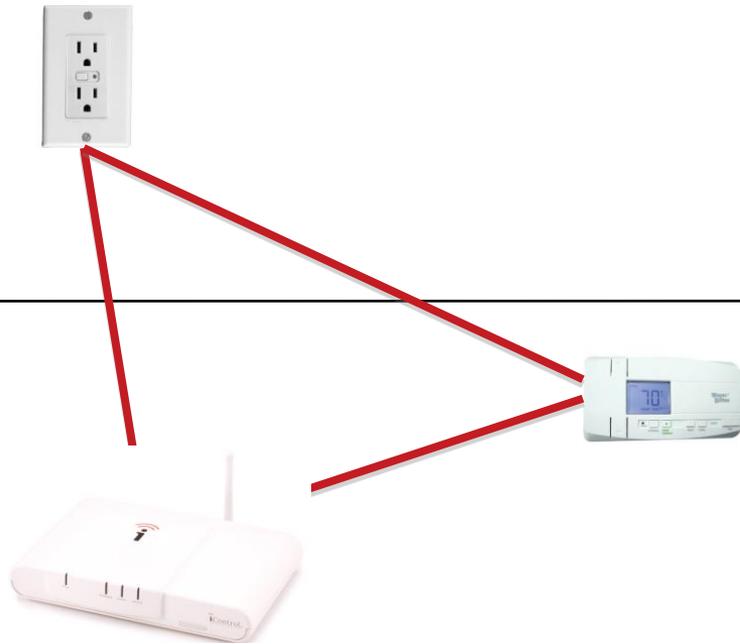
Z-Wave Mesh Network

Extends Range



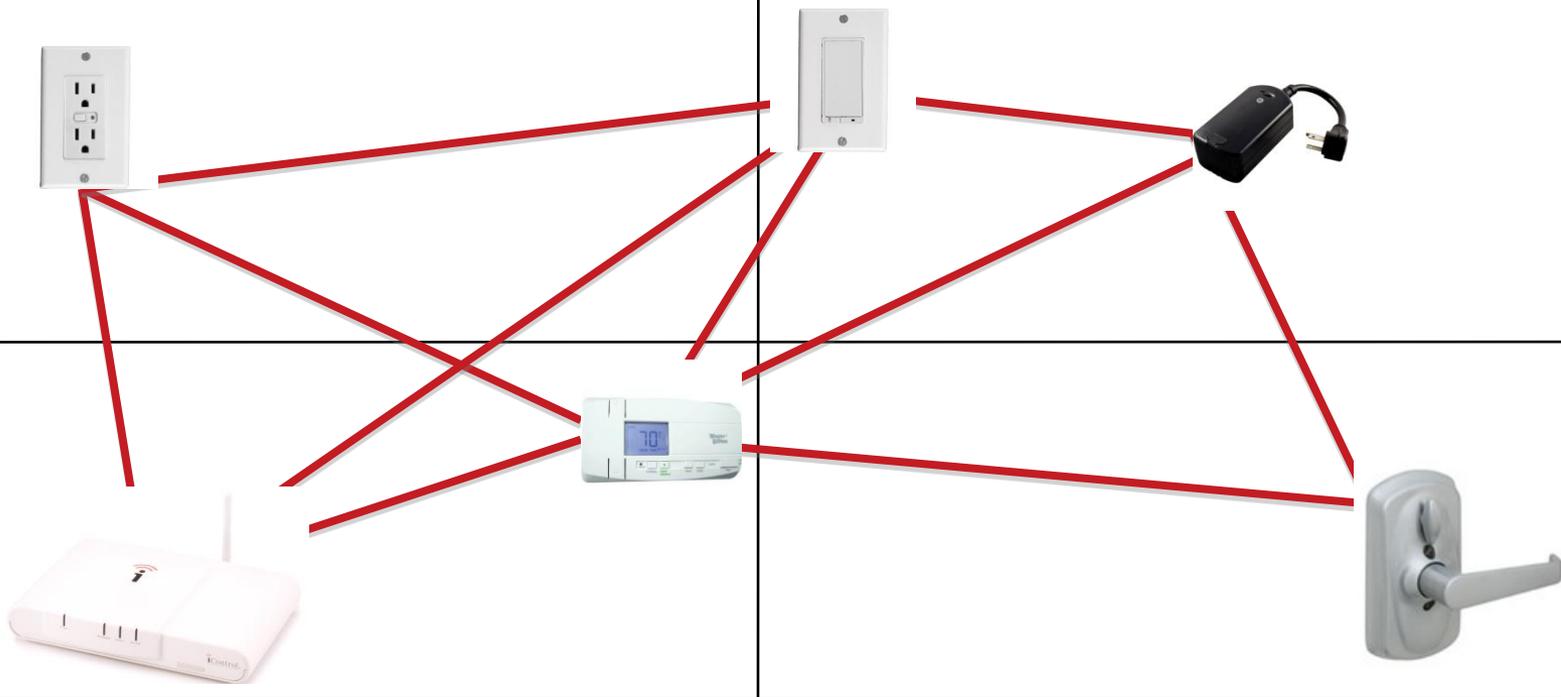
Z-Wave Mesh Network

Extends Range



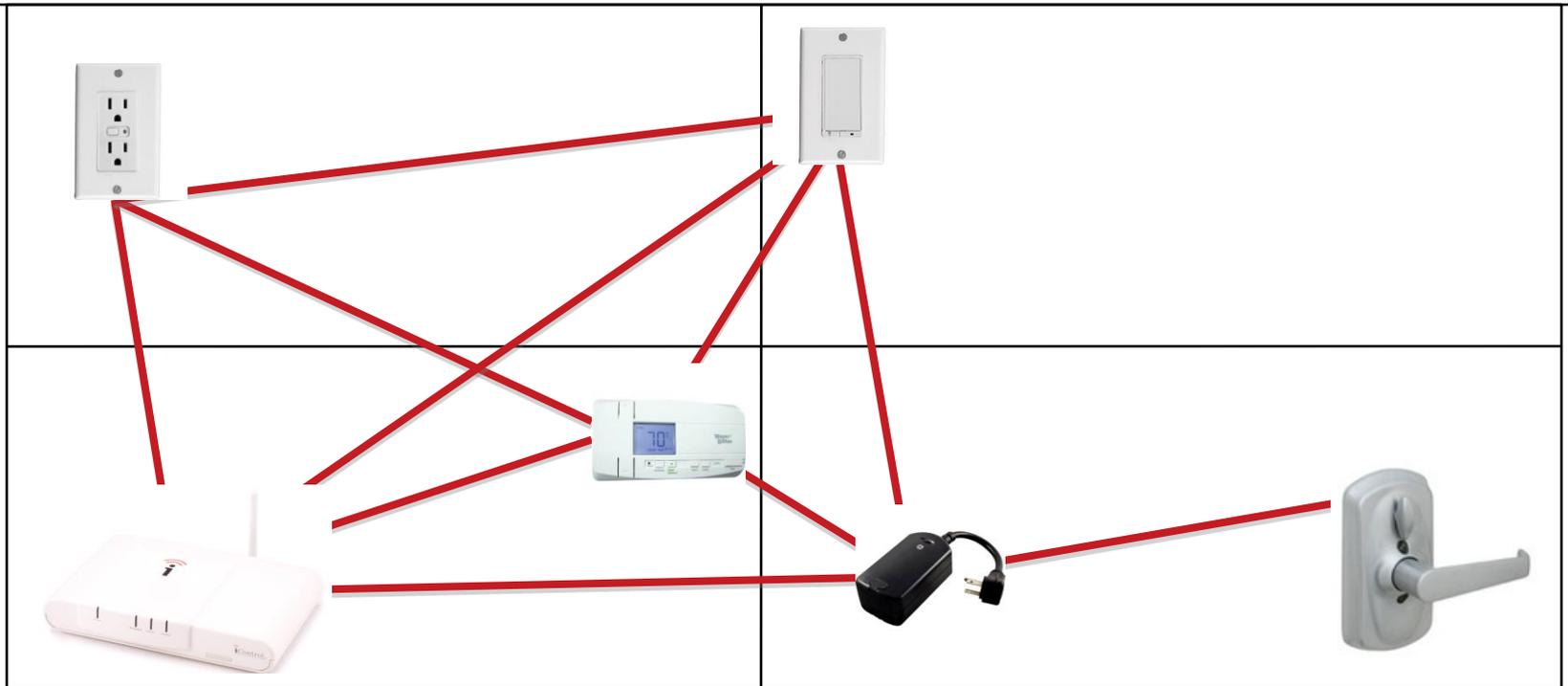
Z-Wave Mesh Network

Extends Range



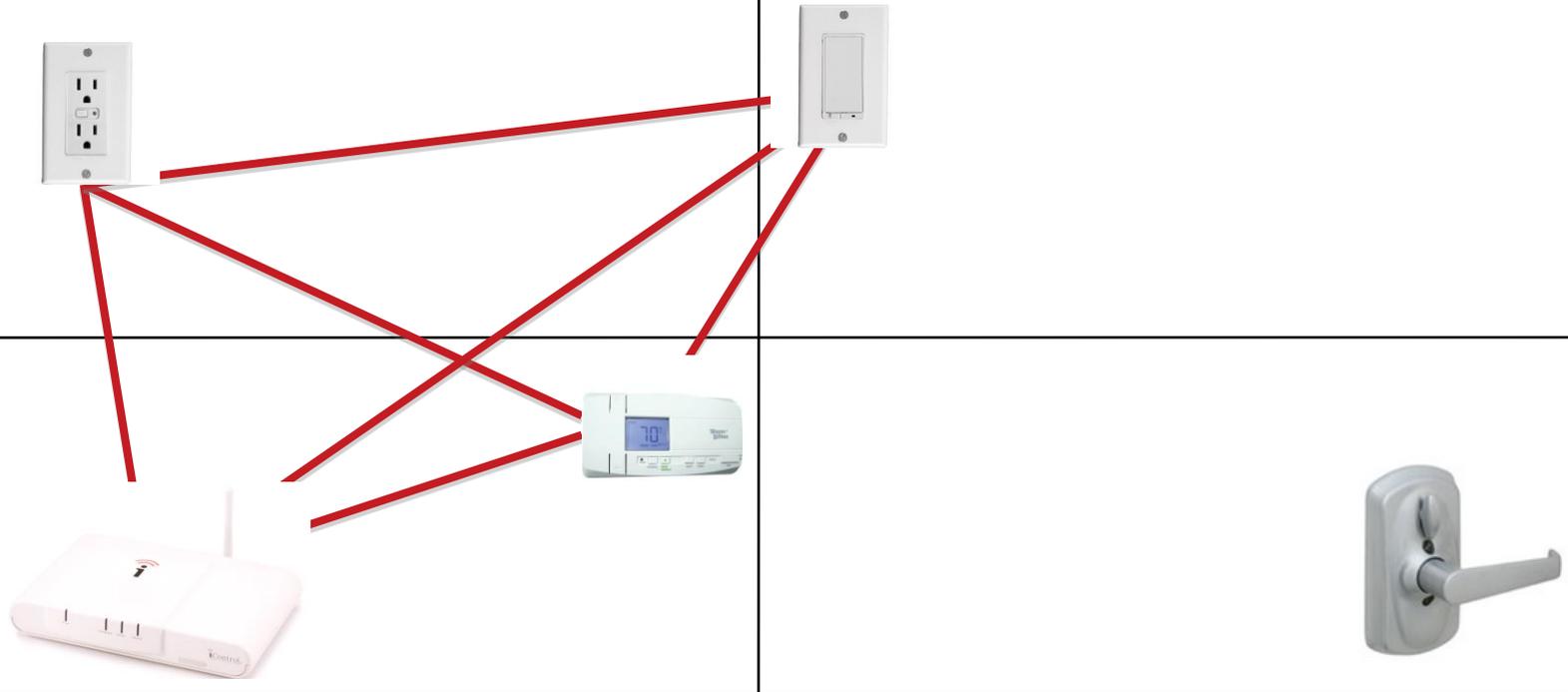
Z-Wave Mesh Network

Affected by Placement



Z-Wave Mesh Network

Affected by Placement



Z-Wave: Setup and Maintenance

- Activate Devices Near Gateway
- Follow the Manage Device Wizard and Trigger the Learn Button on a Z-Wave Device
- Install Devices and then Refresh Network
- When moving or removing a device, be sure to Refresh Network
- Note: When removing a device from system, be sure to use the 'Reset' button through the Wizard



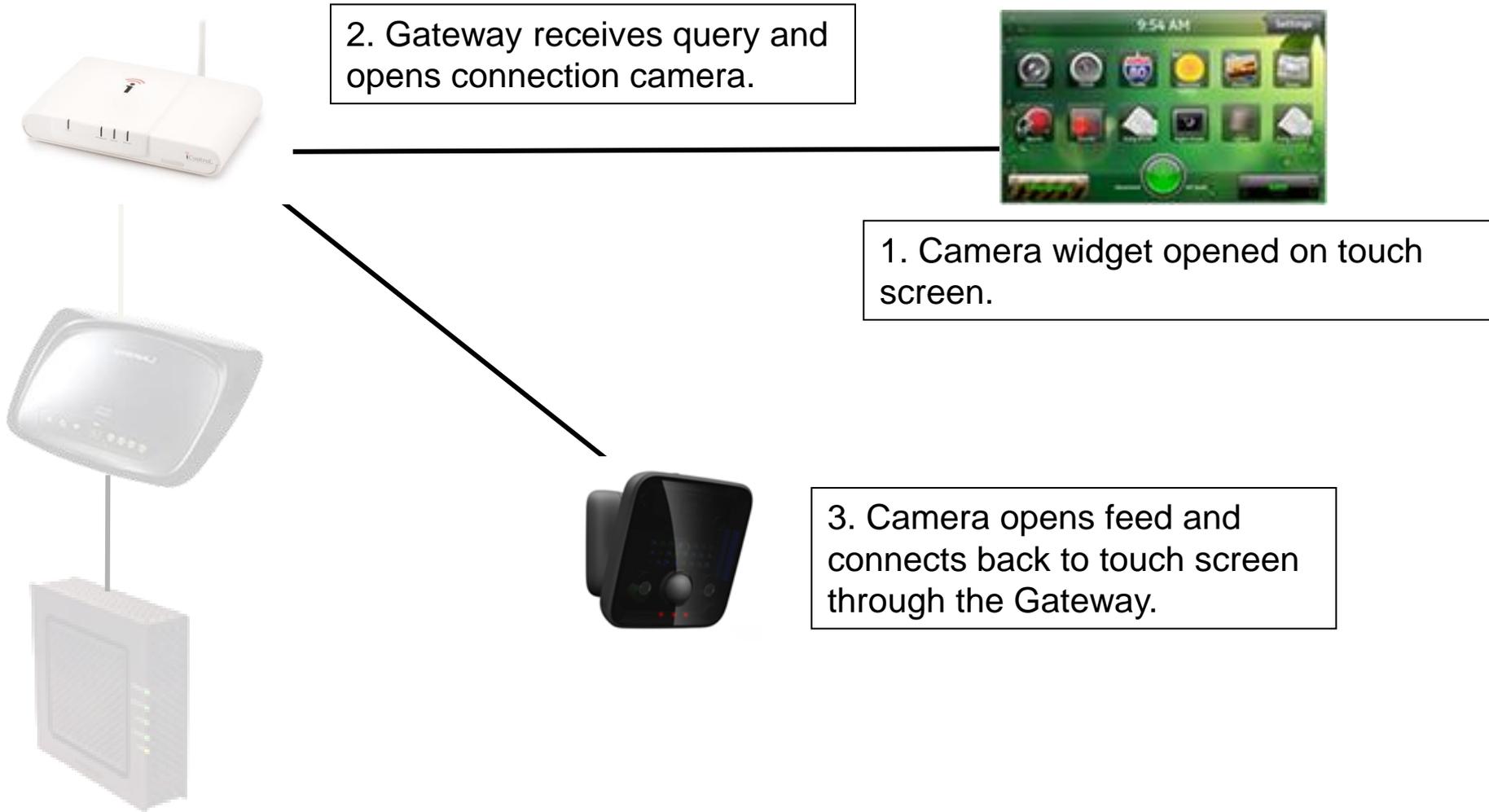
Z-Wave Network: [Refresh](#)
Learn more



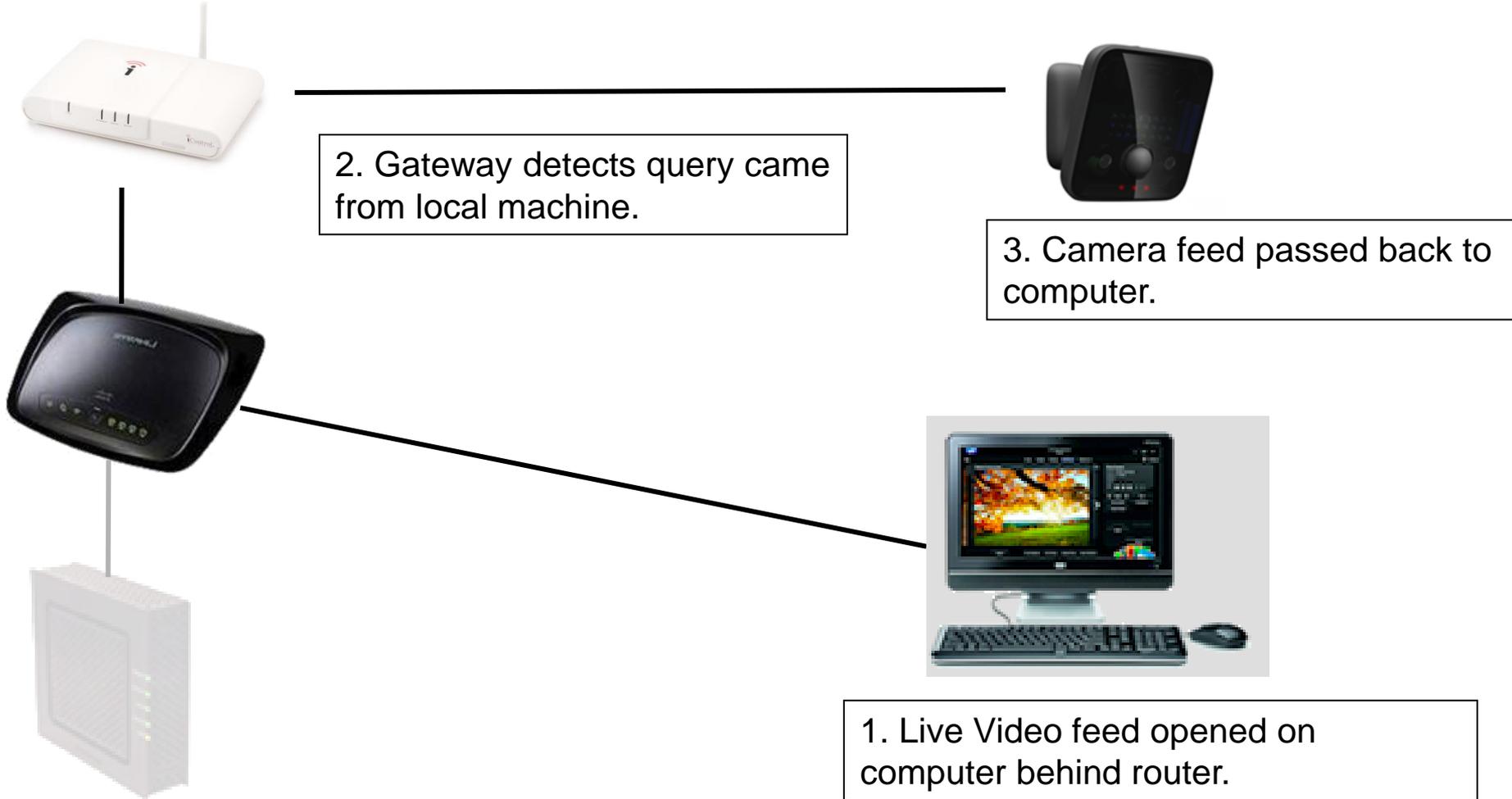


Signal Flows

Live Video: From Touch Screen



Live Video: From Local Computer



Live Video: From Remote Computer

1. Live Video opened on remote computer.



2. Query received by servers and sent over Broadband to Gateway.



3. Gateway receives query and opens feed to camera.



4. Camera send feed up through network to web portal.



Z-Wave from Touch Screen



2. Command passed from Gateway to Z-wave module.



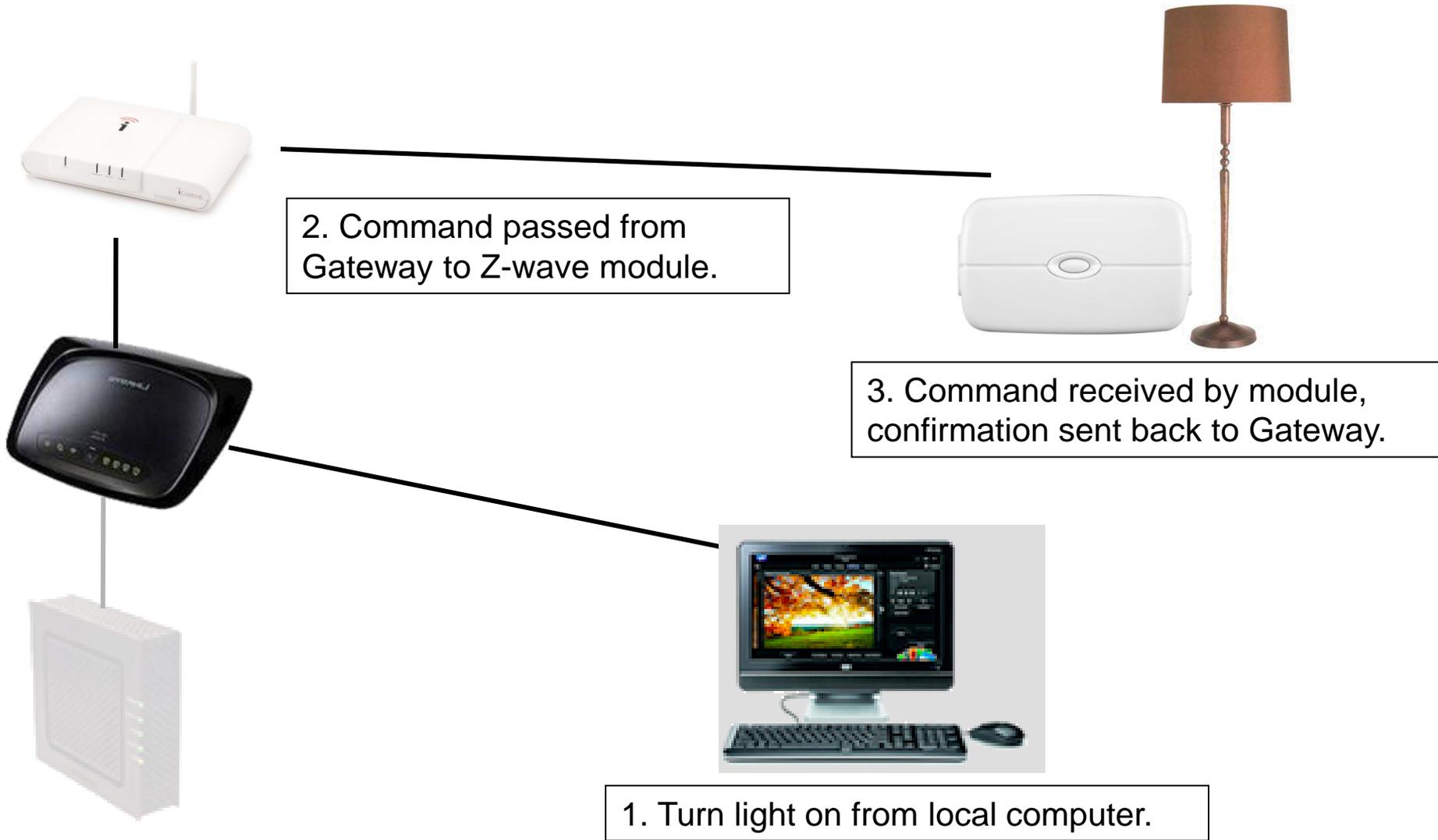
1. Z-Wave widget: light turned on. Command passed to Gateway.



3. Command received by module, confirmation sent back to Gateway.



Z-Wave from Local Computer



Z-Wave from Remote Computer

1. Turn light on from remote computer.



2. Query received by servers and sent over Broadband to Gateway.



3. Command passed from Gateway to module.



4. Command received by module, confirmation sent back to Gateway.

