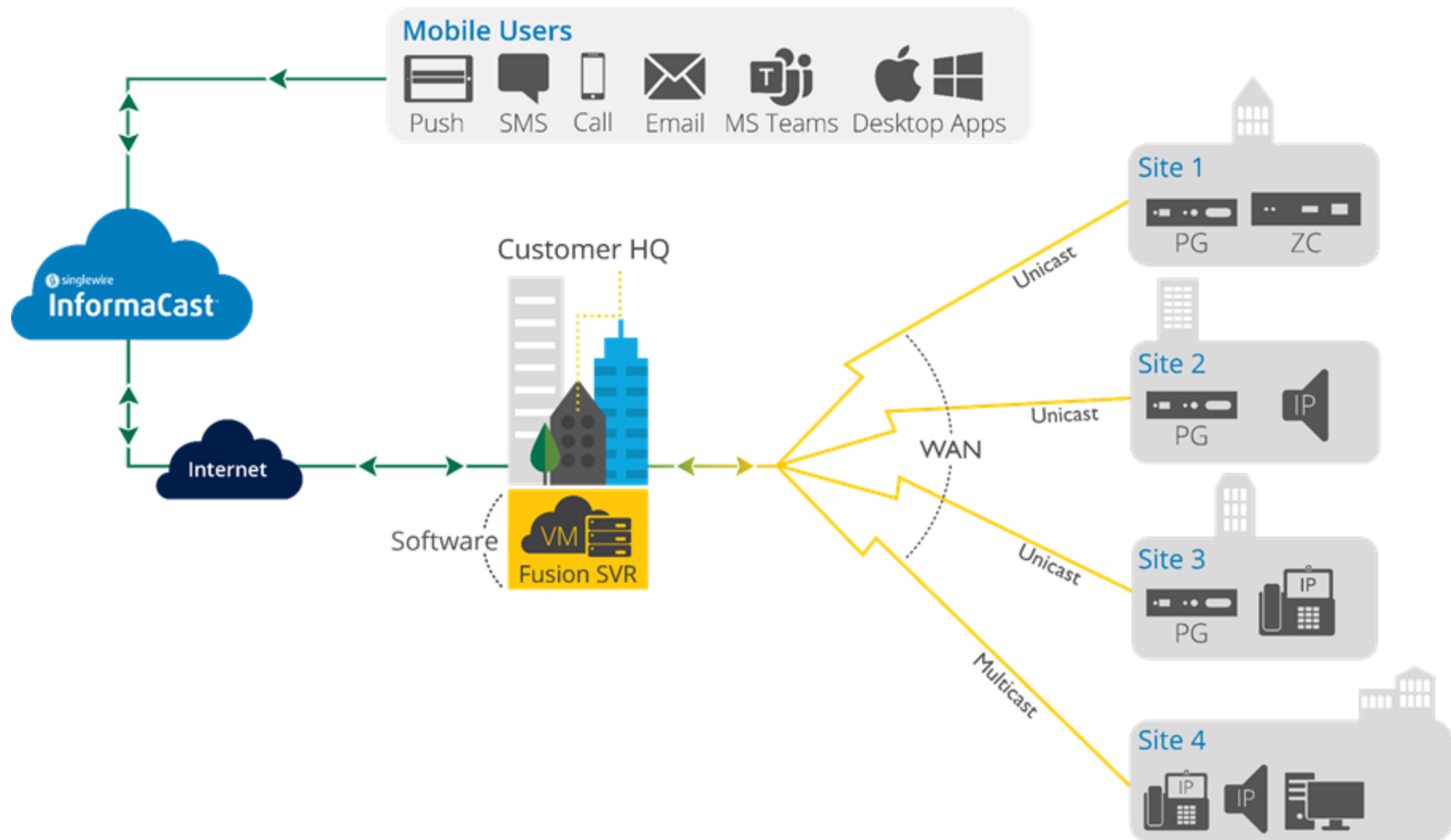


InformaCast Technical Information

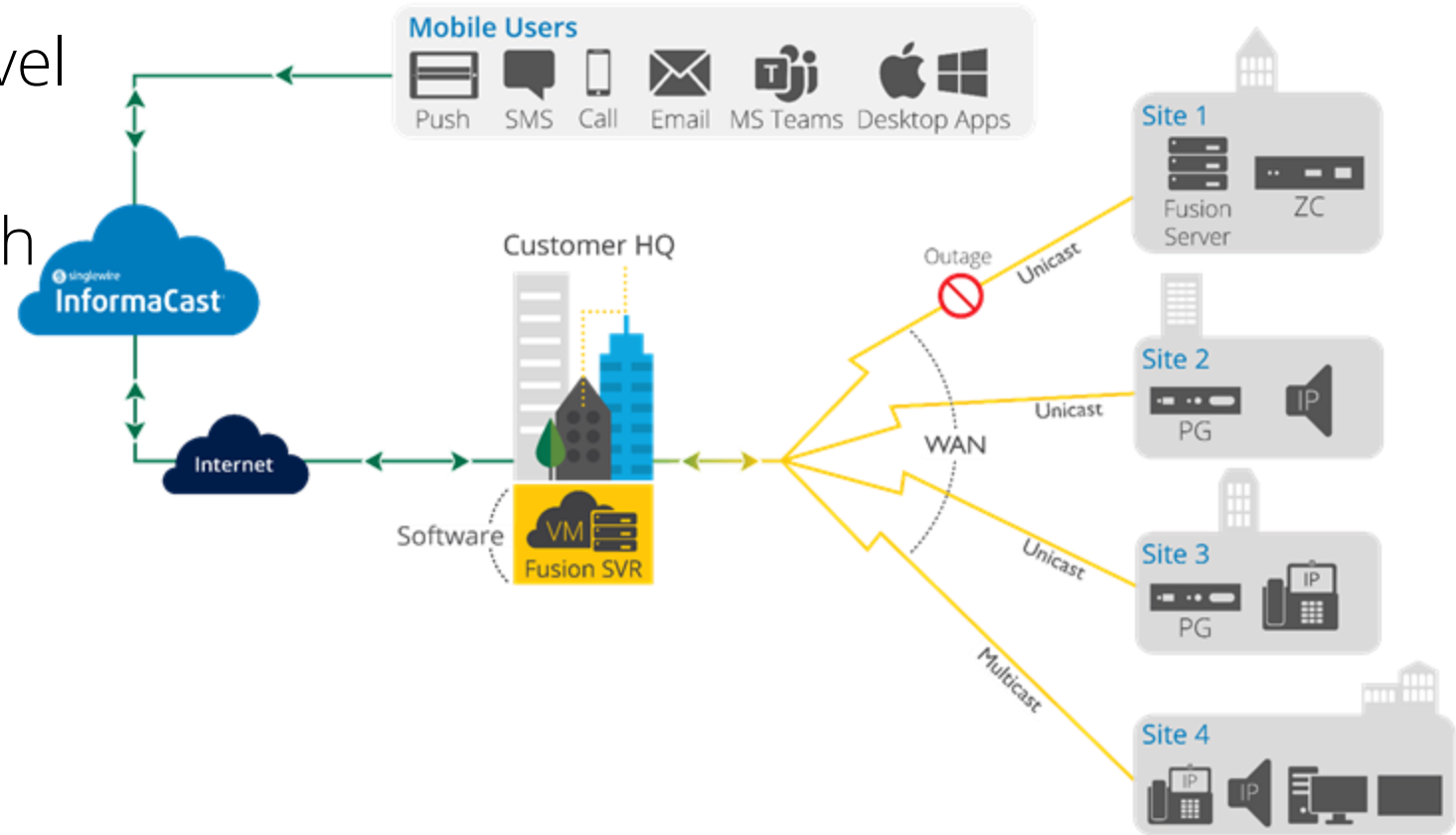


InformaCast Fusion Architecture



Singlewire Nomenclature: “High Availability”

- Server-Level vs. Site-Level vs. Tenant-Level
- InformaCast Fusion High Availability Includes:
 - Failover
 - Distributed Activation
 - SRSN



Fusion Failover

- Server-level resiliency
(similar to InformaCast Advanced)
- Allows for one-to-one server resiliency
- Uses both cloud & on-premises availability checks to determine when the backup should become active

Data Center 1

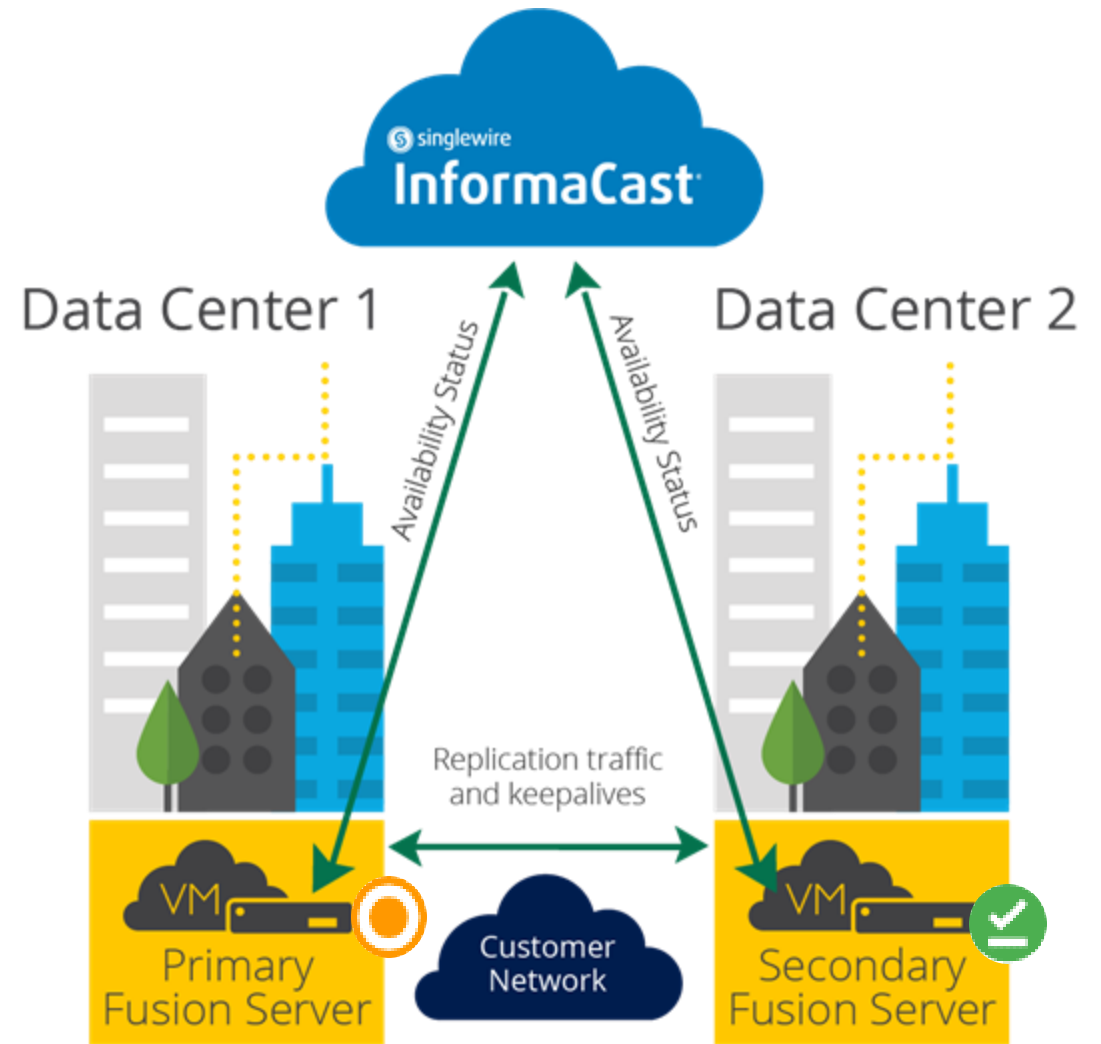


Data Center 2



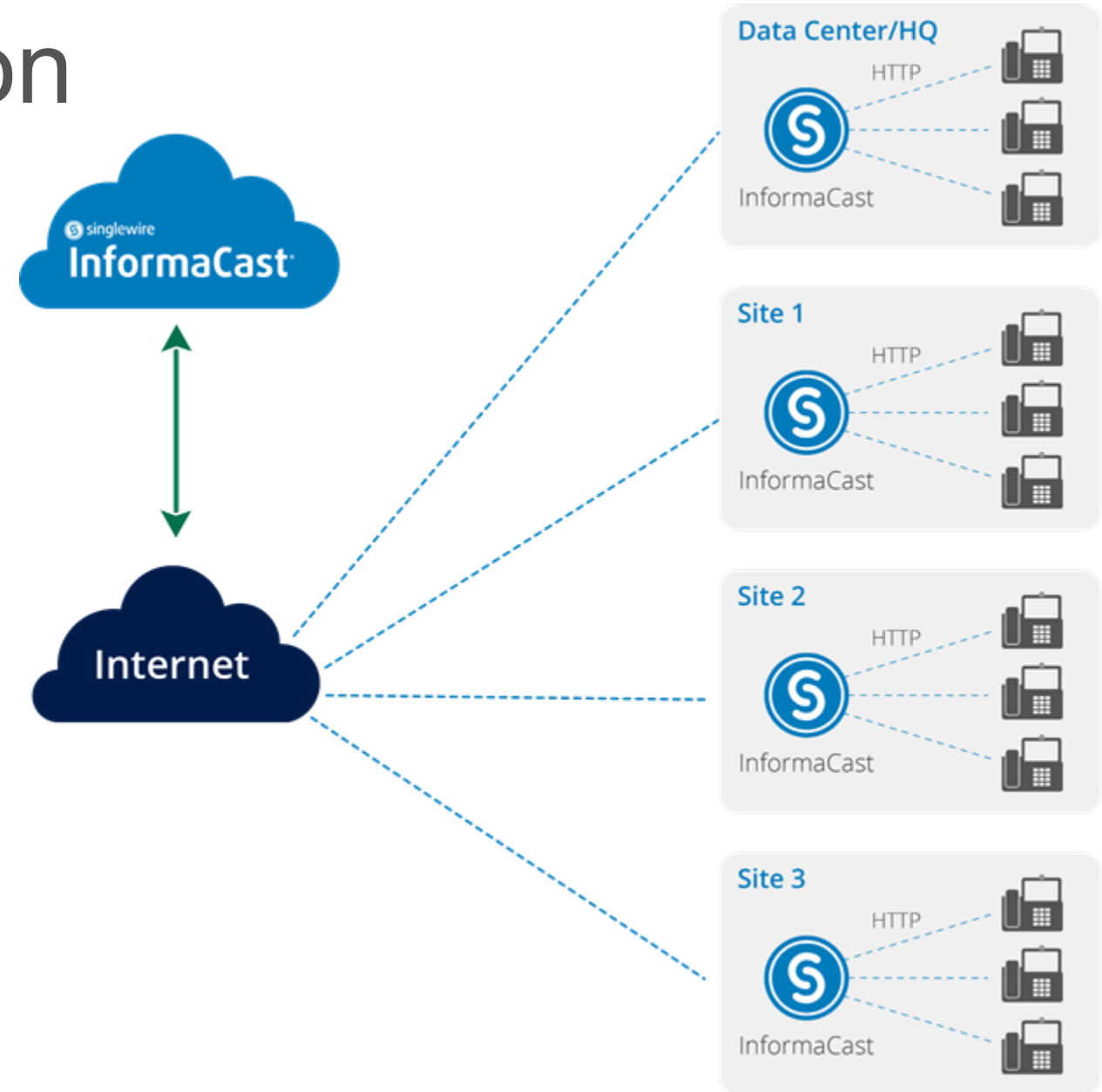
Failover Architecture

- Two Resiliency “Points of View”
 - Cloud State
 - Sever State
- Three Resiliency “Observations”
 - Up
 - Down
 - Unavailable
- Two Resiliency “States” – Secondary Server
 - Always ACTIVE - Primary Fusion Server
 - Always STANDBY - Secondary Fusion Server

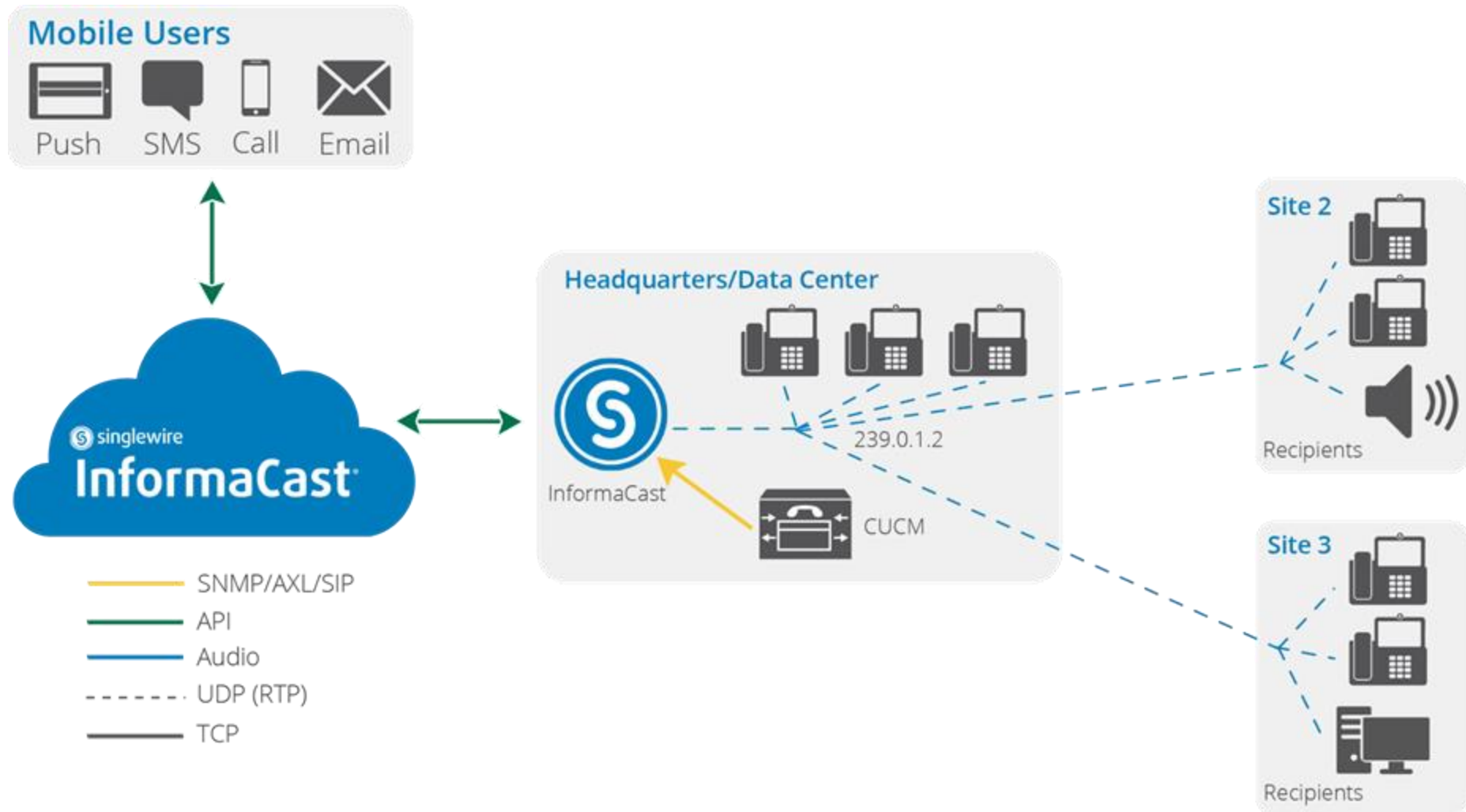


Distributed Activation

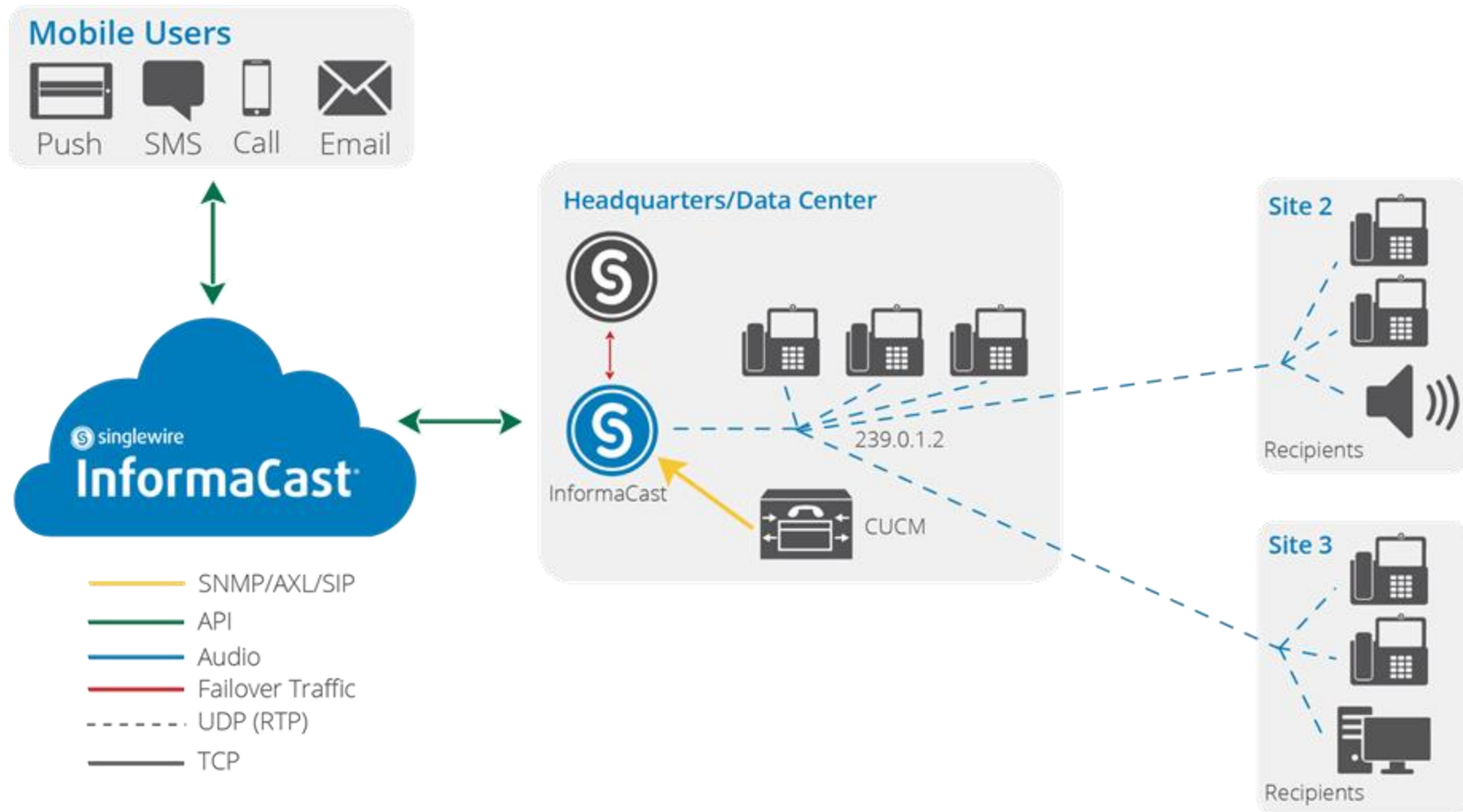
- Use Multiple Fusion Servers To Activate Phones, Speakers, And Desktops Faster
- Eliminate Wan Latency From Activation Path
- Distribute Load
- Distribute Risk



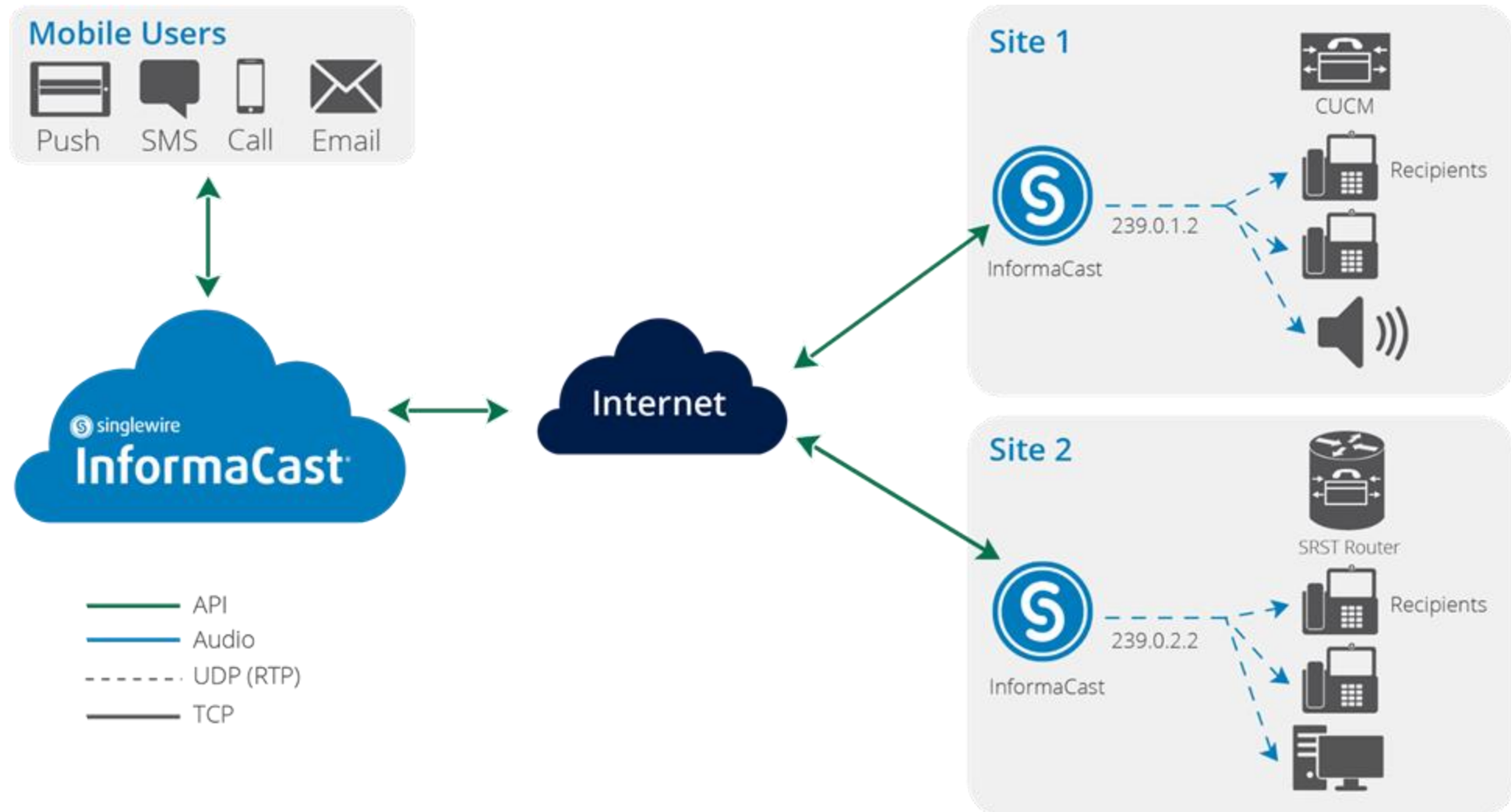
Centralized



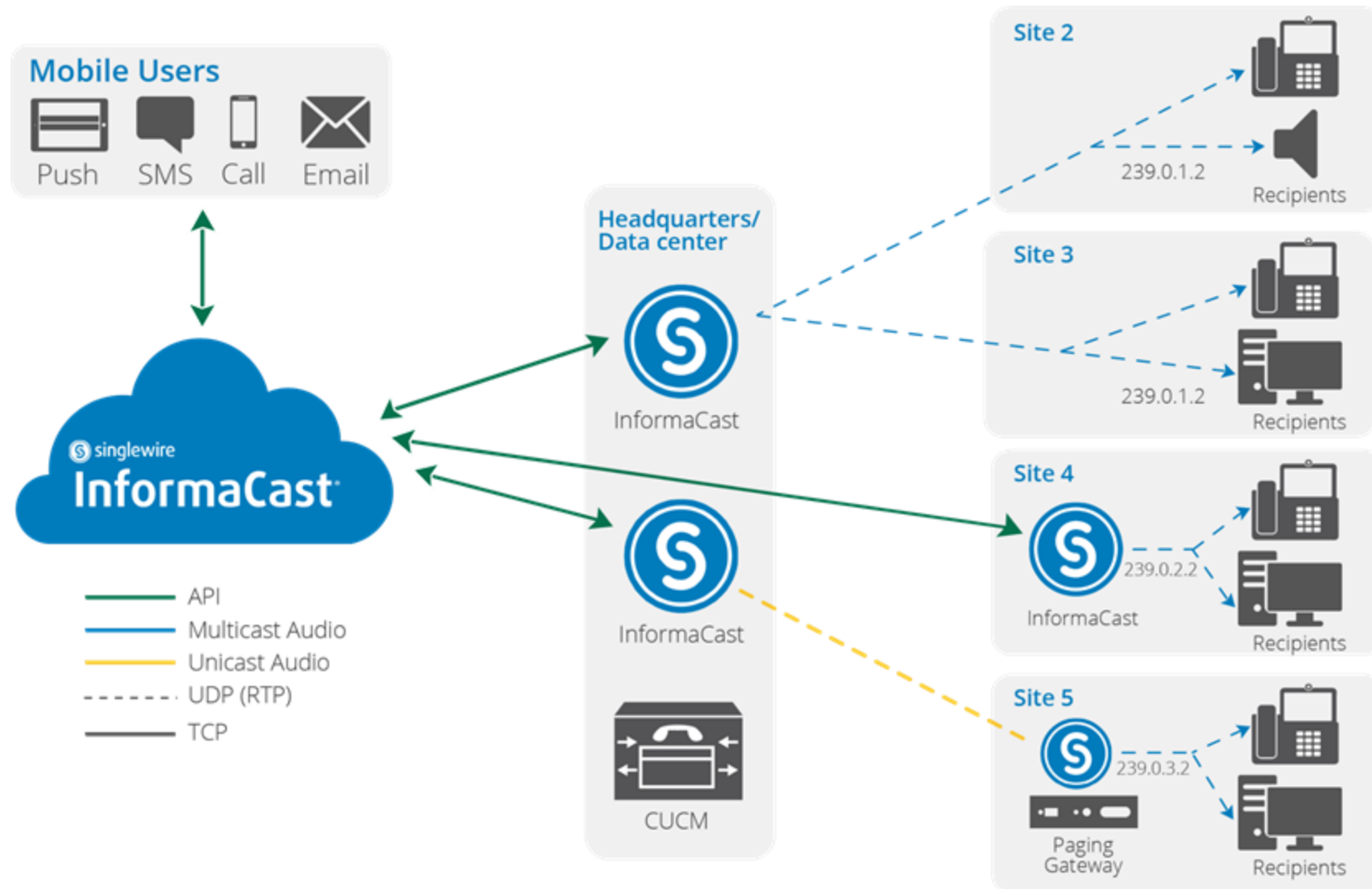
Centralized with Failover



Distributed



Hybrid



Fusion Hardware Appliance

- **Computing Specifications:**
 - Intel Celeron N3160 1.6ghz Quad-Core Processor
 - 4 Gb Ram
 - 128 Gb SSD
- **Hardware Ports:**
 - Displayport (Preferred Console Monitor) Or Hdmi
 - Gigabit Ethernet Lan Port (Non-Power Over Ethernet)
 - Usb 3.0 Or Usb-C Port (Keyboard Access)
- **Physical Dimensions:** 4.6" L X 4.4" W X 1.4" H
- **Power Supply:** Level 6 Ac-Dc Adapter
- **Operational Temperature Range:** 0 To 40 °c



Paging Gateway

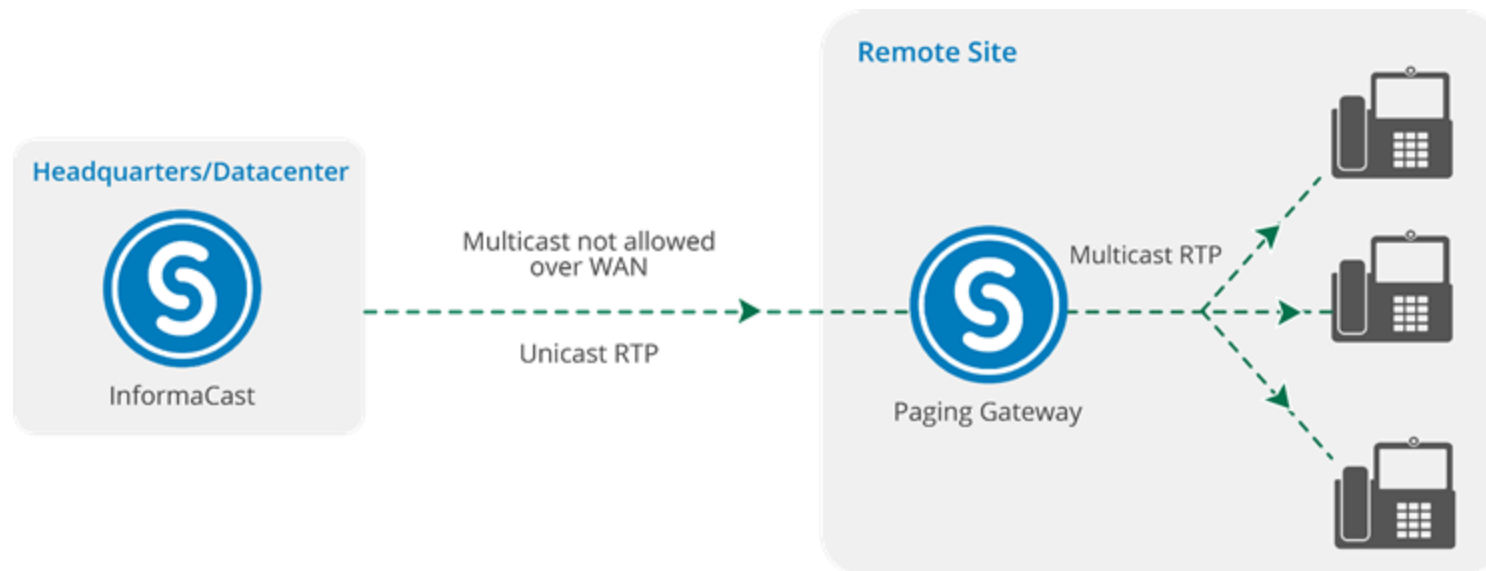
- **Physical Dimensions:**
 - 4.57" L X 3.23" W X 1.34" H
- **Power Supply Output: 1**
 - 8v / 15 W
- **Power Adapter Included:**
 - Ac/Dc 12 V, 36 W – Interchangeable Plug
- **Operational Temperature Range And Humidity: Temperature Range: 0 – 40°C, Humidity: 0% – 90%**
- **Warranty: 1 Year**



Paging Gateway

A solution for deploying InformaCast across a wide area network

- Converts audio stream from multicast to unicast for WAN traversal
- Remote Site: VMware (ESXi) or Hardware Appliance



InformaCast SIP Capabilities - Refresher

Sip Integration Options With Informacast

Informacast Integrates With Telephony Systems Via Two SIP Methods:

- **Trunk-Level** – Most Flexible - Ideal For On-Prem IP Systems (E.G., Cisco Ucm)
- **Station-Level** – Registers As A SIP Client; Best For Cloud Systems (E.G., Zoom Phone, Webex Calling, Ringcentral)

Telephony Integrations

Fully Supported

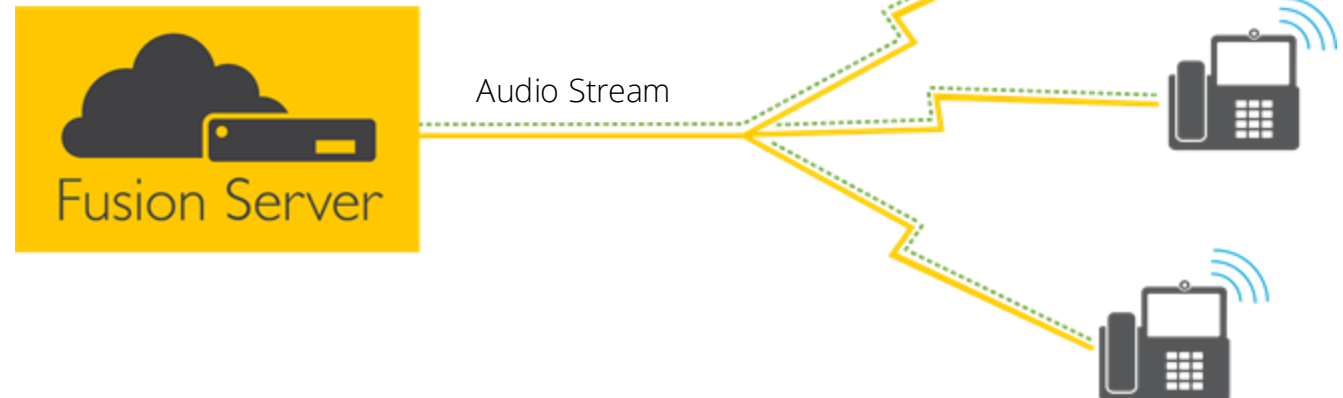
- Cisco Ucm (On-Prem And Webex Calling Dedicated)
- Cisco Webex Calling Multitenant
- Zoom Phone
- Ringcentral

Limited Support

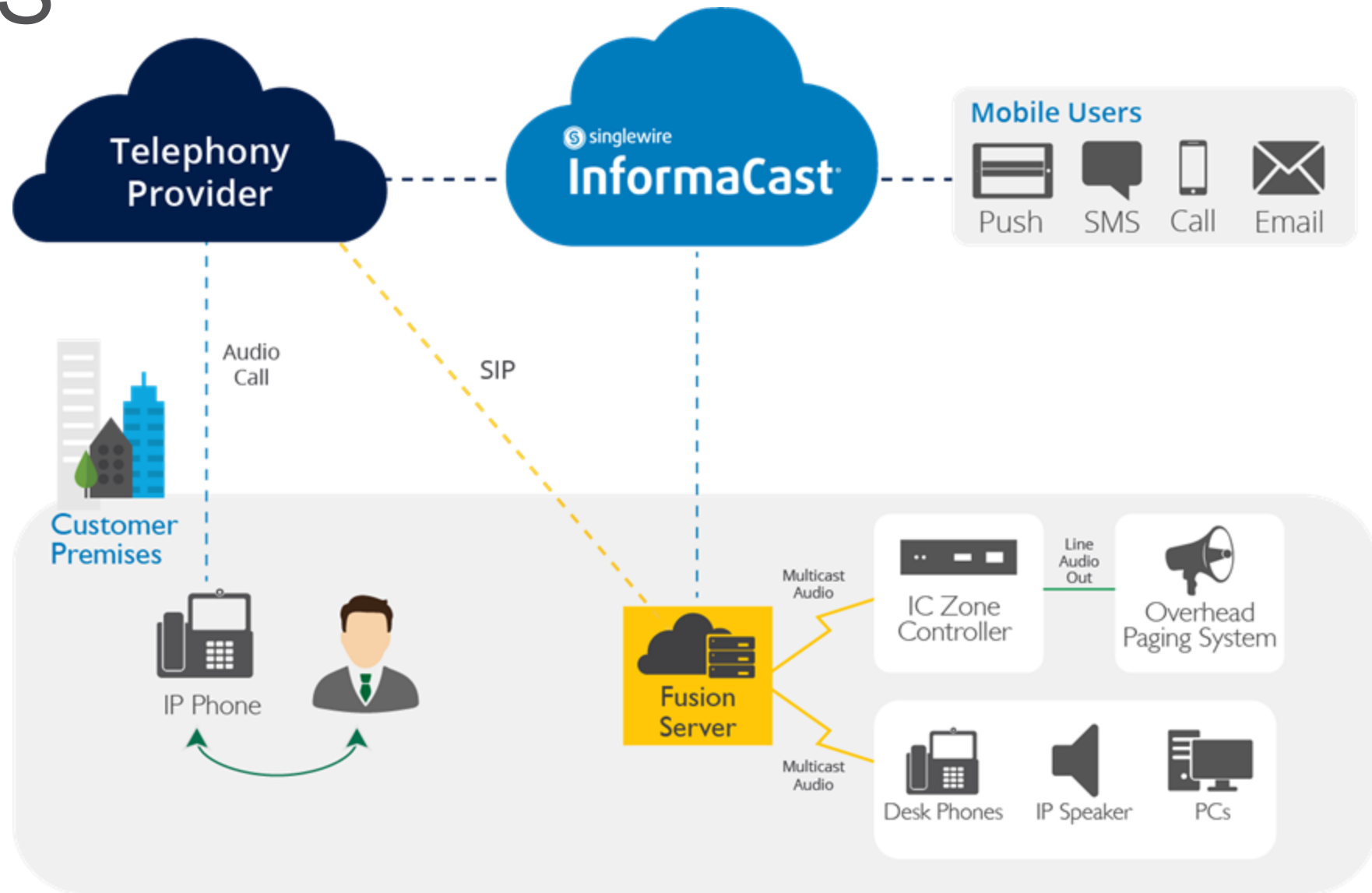
- 8x8
- Goto (Jive)
- Microsoft Teams Phone
- Fortivoice
- Mitel/Shoretel
- Vonage
- 3cx
- 101voice

Generic Multicast Streaming

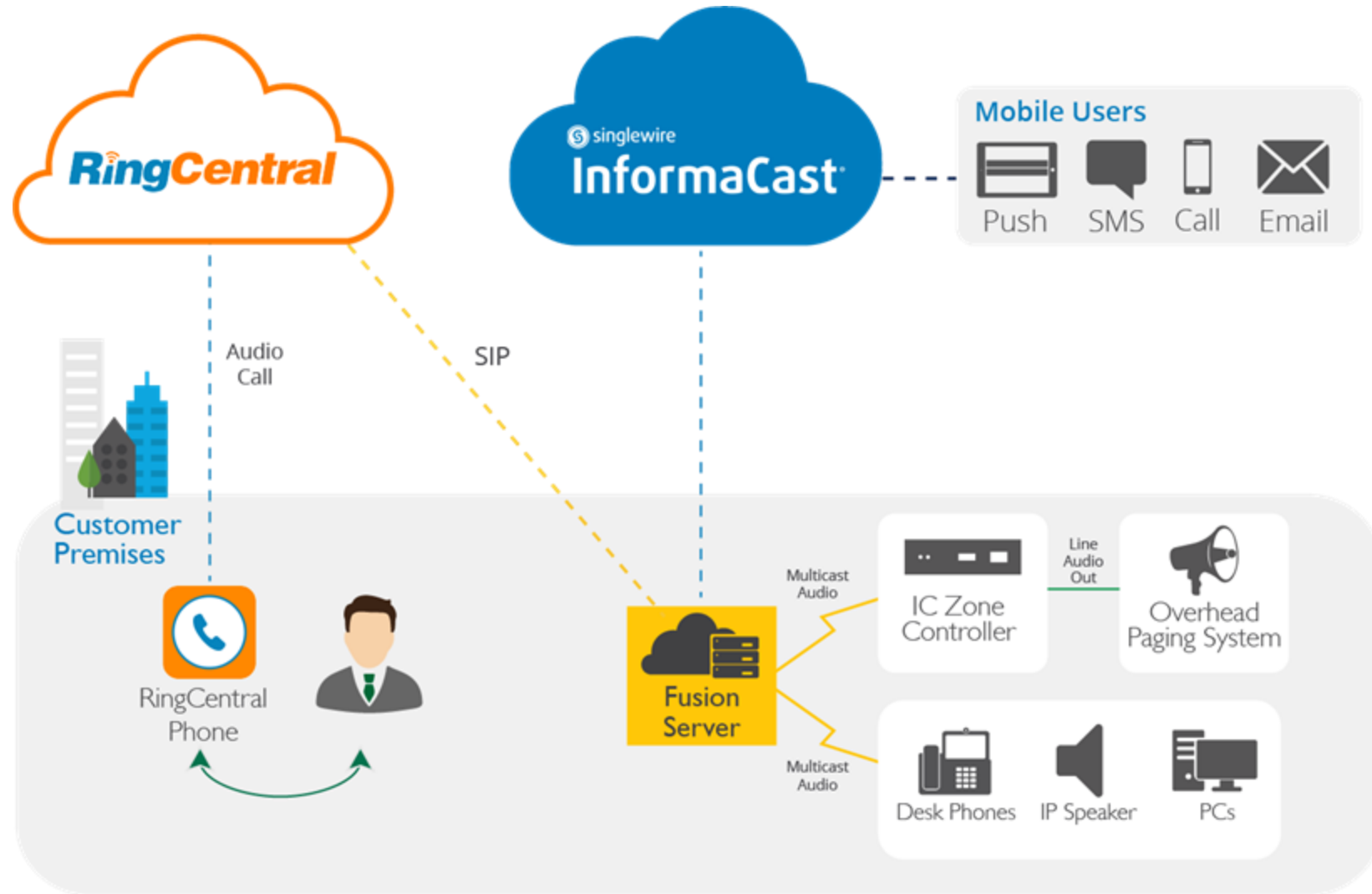
- Send Synchronized, Multicast Audio Stream To Ip Phones (Polycom, Yealink, Cisco Mpp, Etc)
- Intrusive Audio Grabs Attention
- Available Only Via Informacast Fusion
- Paging Gateway Support (Generic Only)



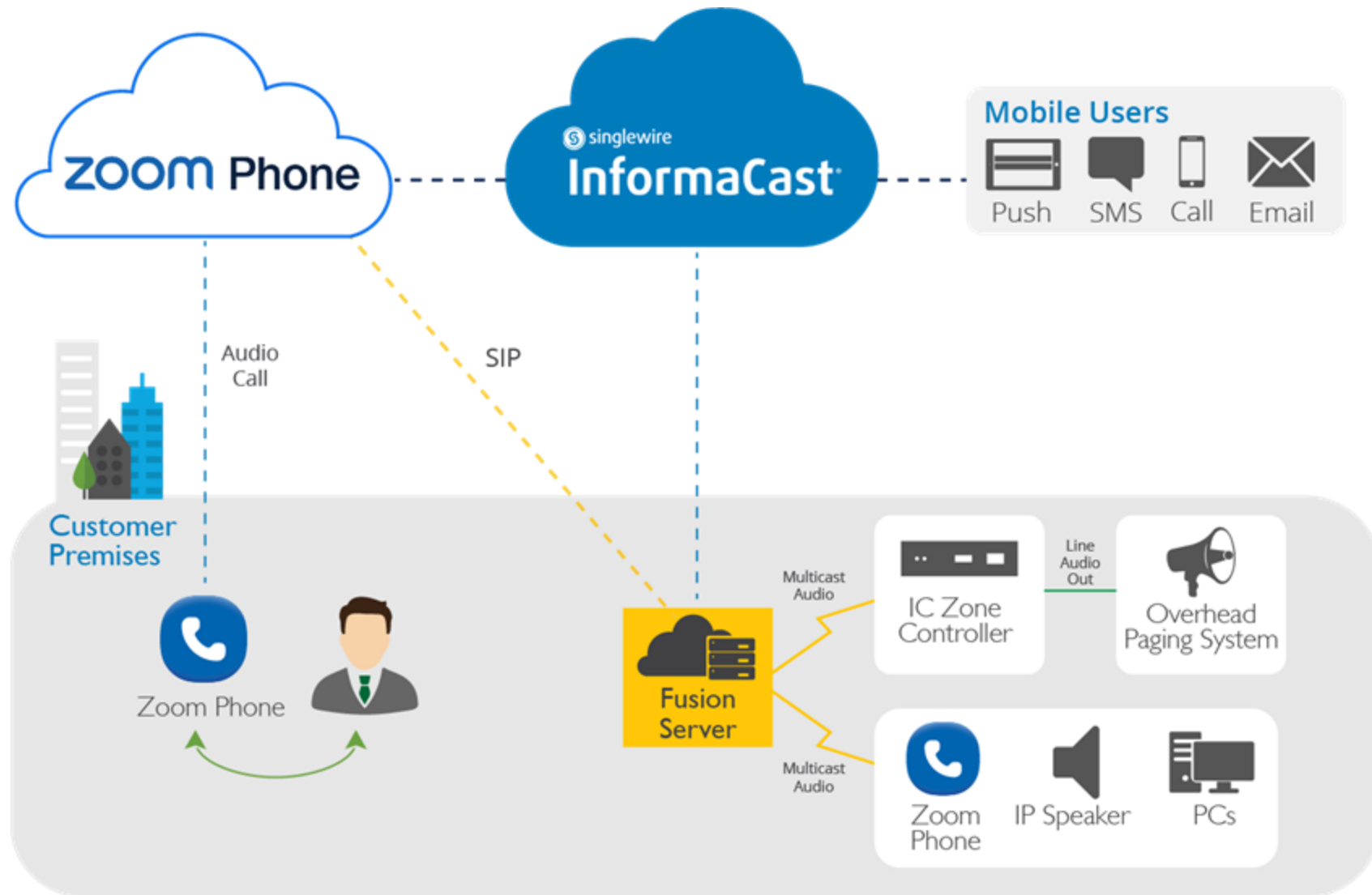
UCaaS



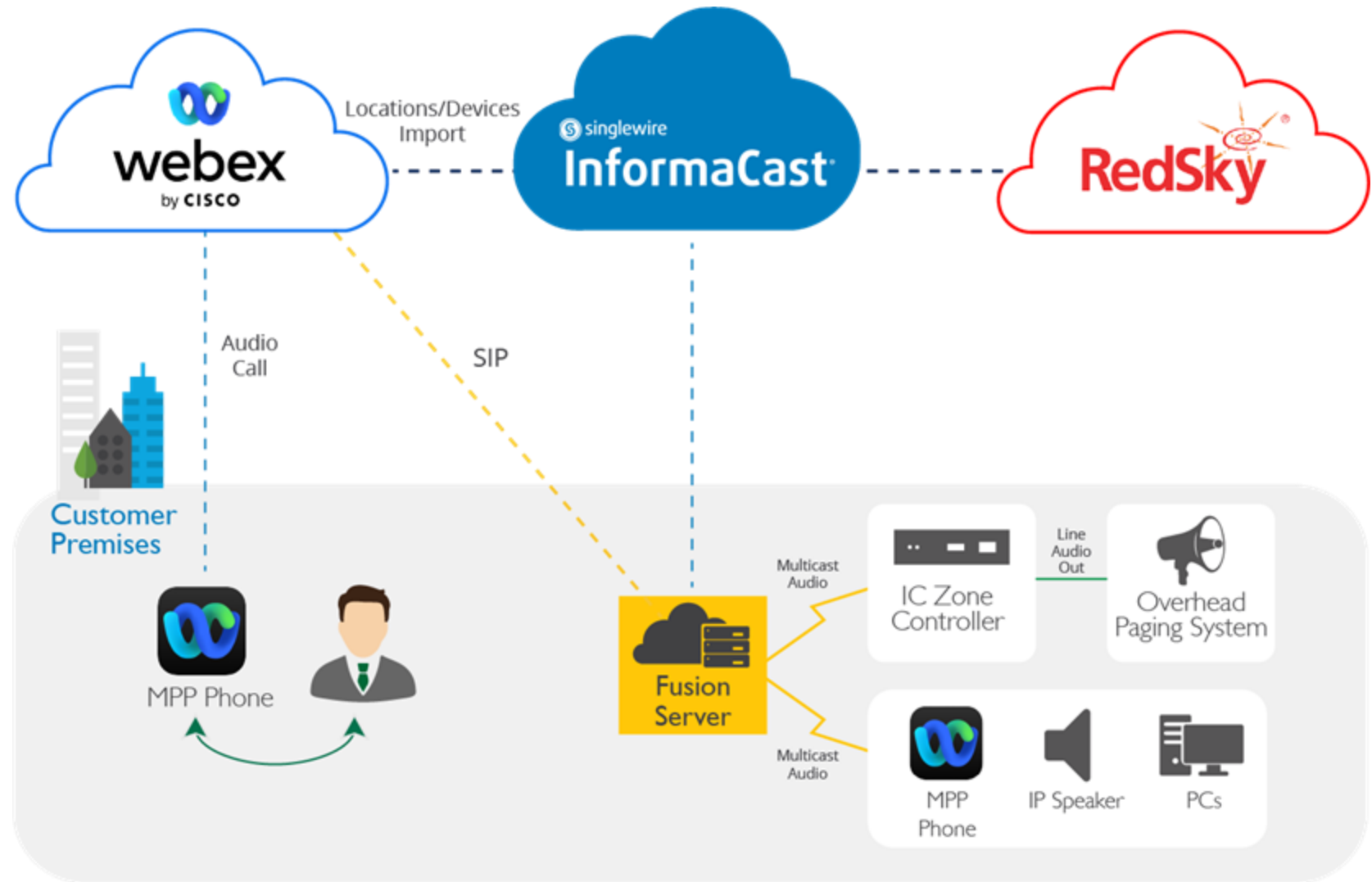
RingCentral



Zoom Phone

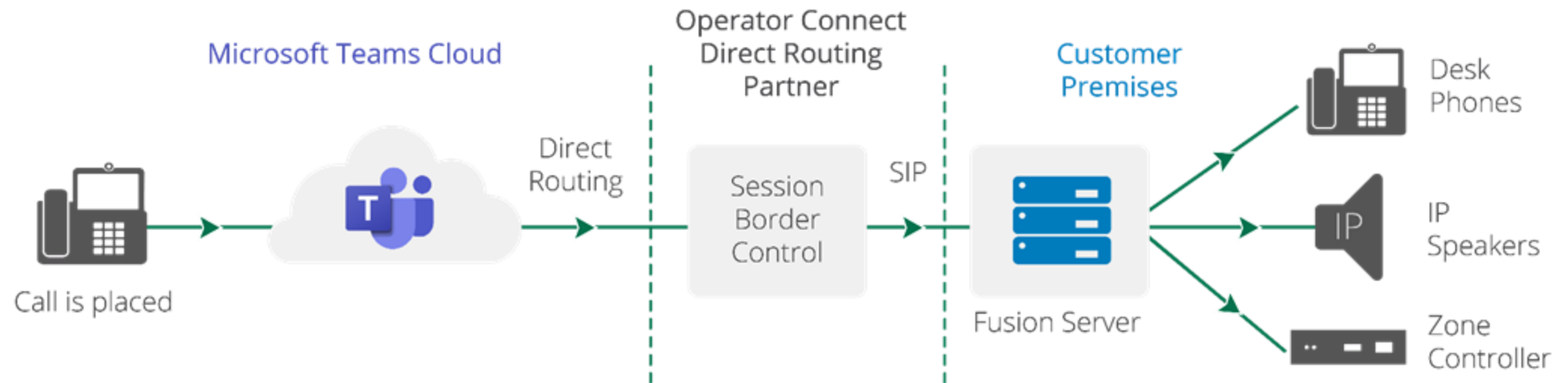


Webex Calling



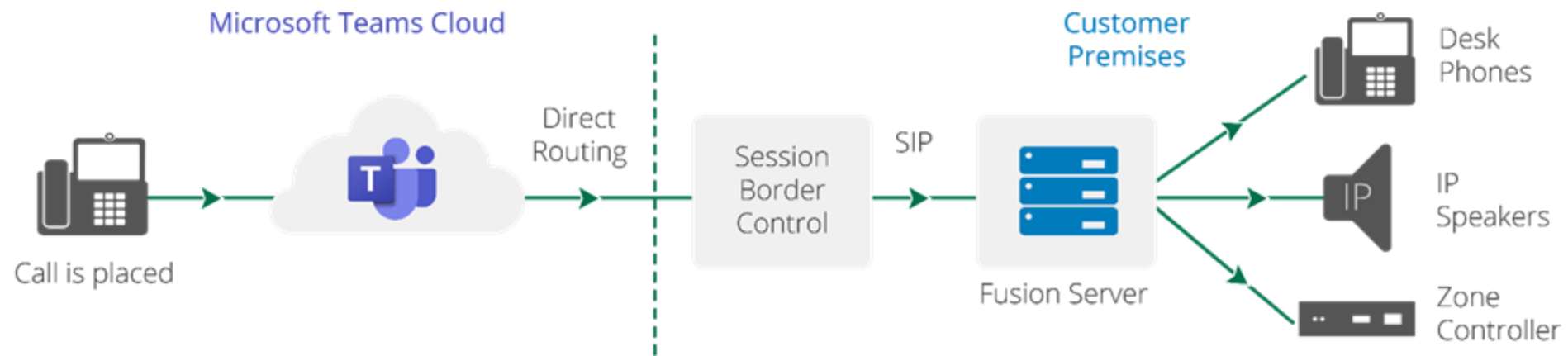
MS Teams Voice Direct Routing - Operator Connect

- Operator Connect Partner hosts and manages SBC
- Partner configures SIP trunk or SIP registration to InformaCast server



MS Teams Voice Direct Routing - Customer Managed

- Customer Procures, Deploys, Configures, And Manages An MS Teams Compatible SBC With Direct Routing
- Customer Configures SBC For SIP Integration To InformaCast Fusion



Support Resources

Singlewire Support Community

- User Community
- Knowledge Base Library
- Academy Videos
- Admin Guides
- Software Downloads
- Hire An Expert

☰ Access the INFORMACAST INTEGRATOR TRAINING



DOCUMENTATION

Access user guides, release notes and more



DOWNLOADS

Access software downloads, and engineering tools



ANSWERS

Post questions to the community and follow topics



SUPPORT CASES

Manage your open technical support cases



GROUPS

Join a group or start a new one and receive posts



MULTICAST TIPS

Design considerations and troubleshooting



MARKETING TOOLS

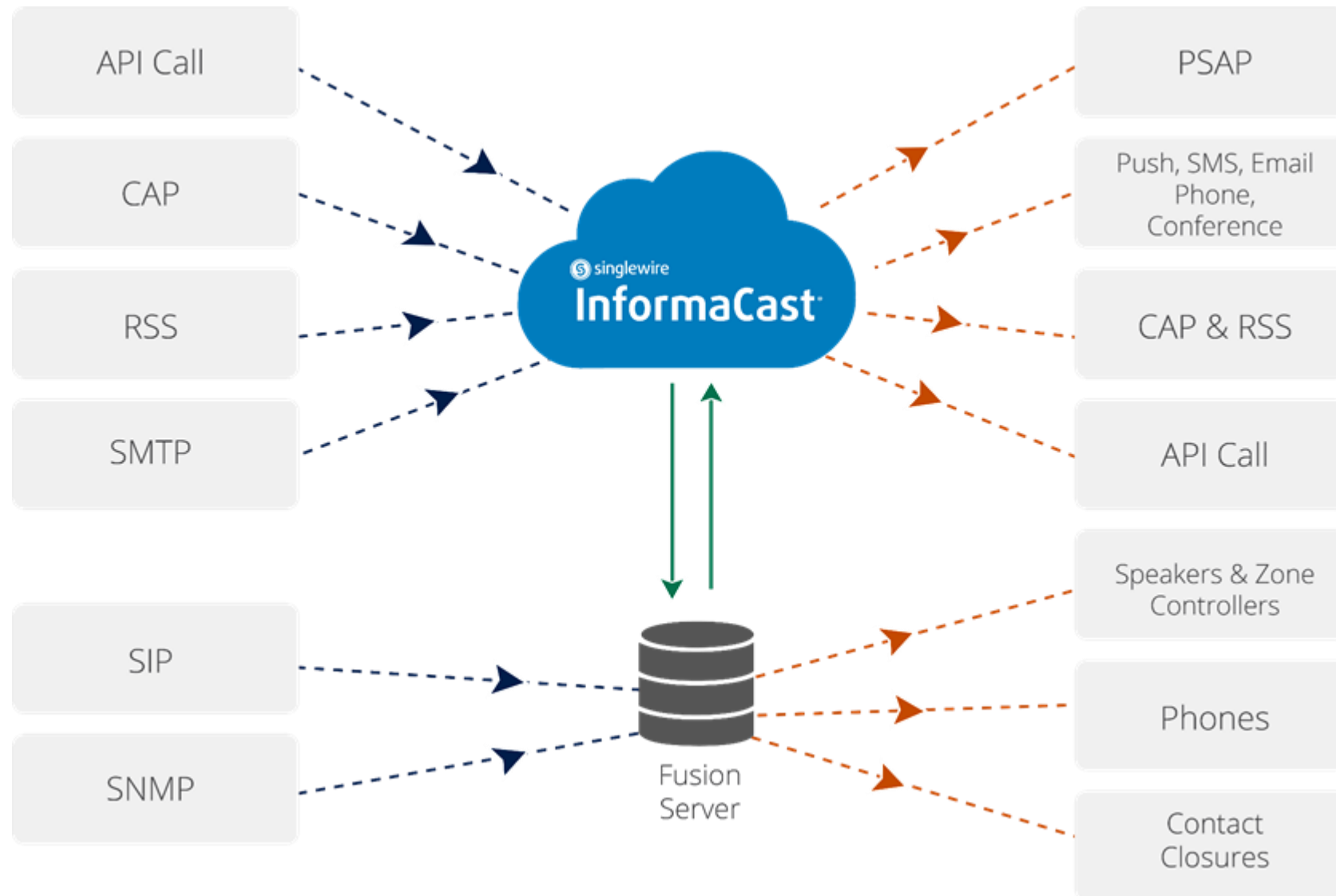
Access Data Sheets and Slide Decks!



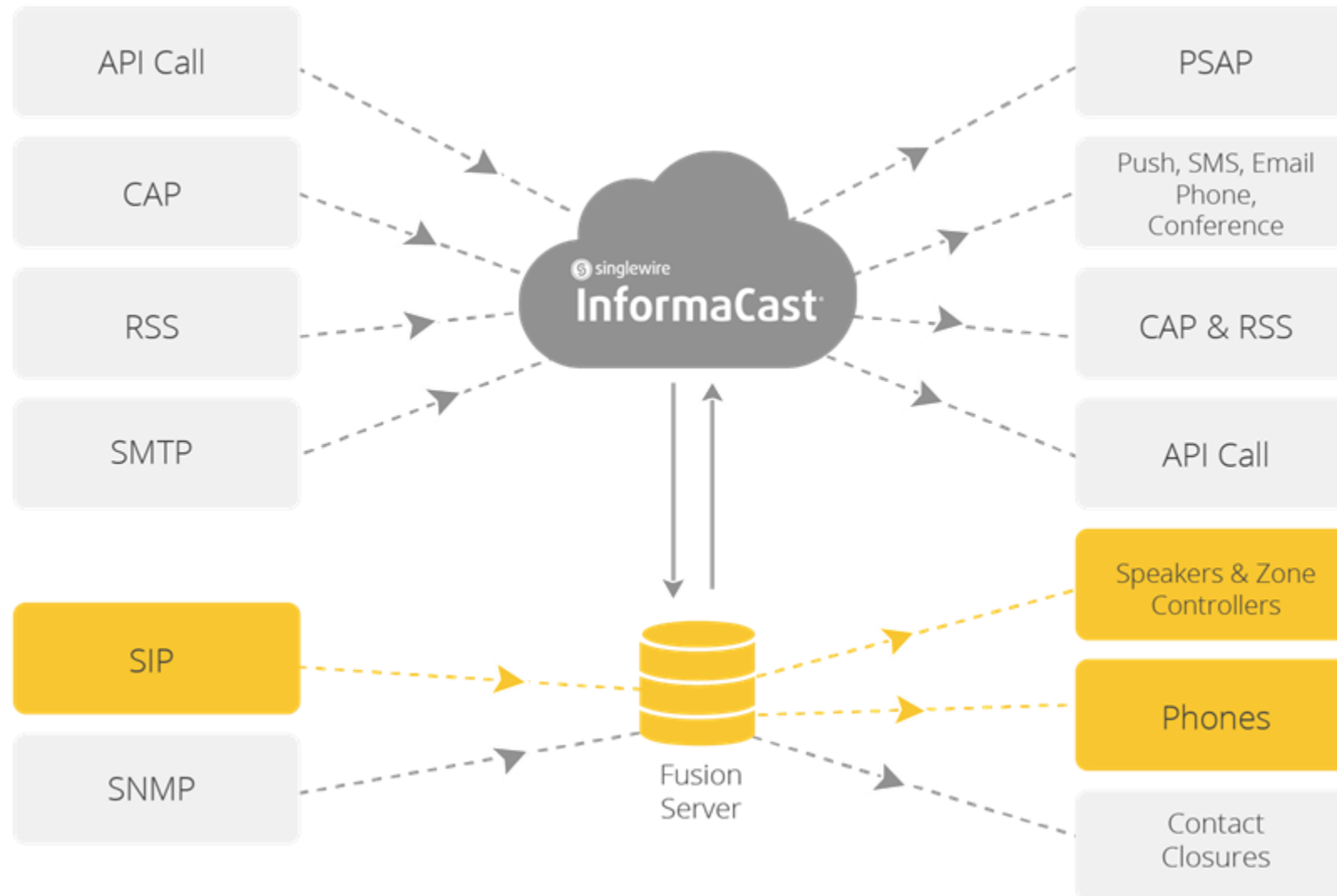
HIRE AN EXPERT

Request Singlewire Professional Services

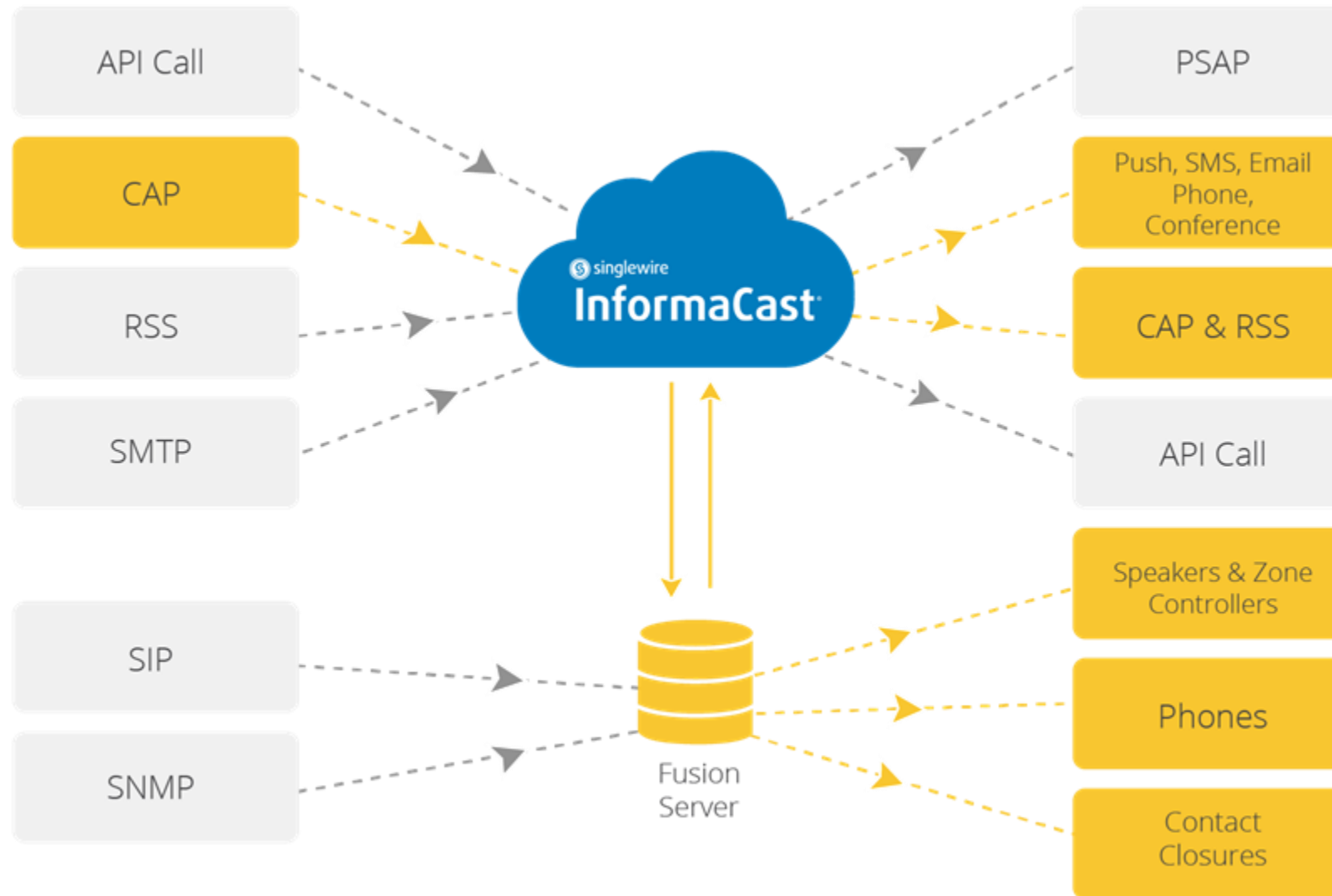
Base Template



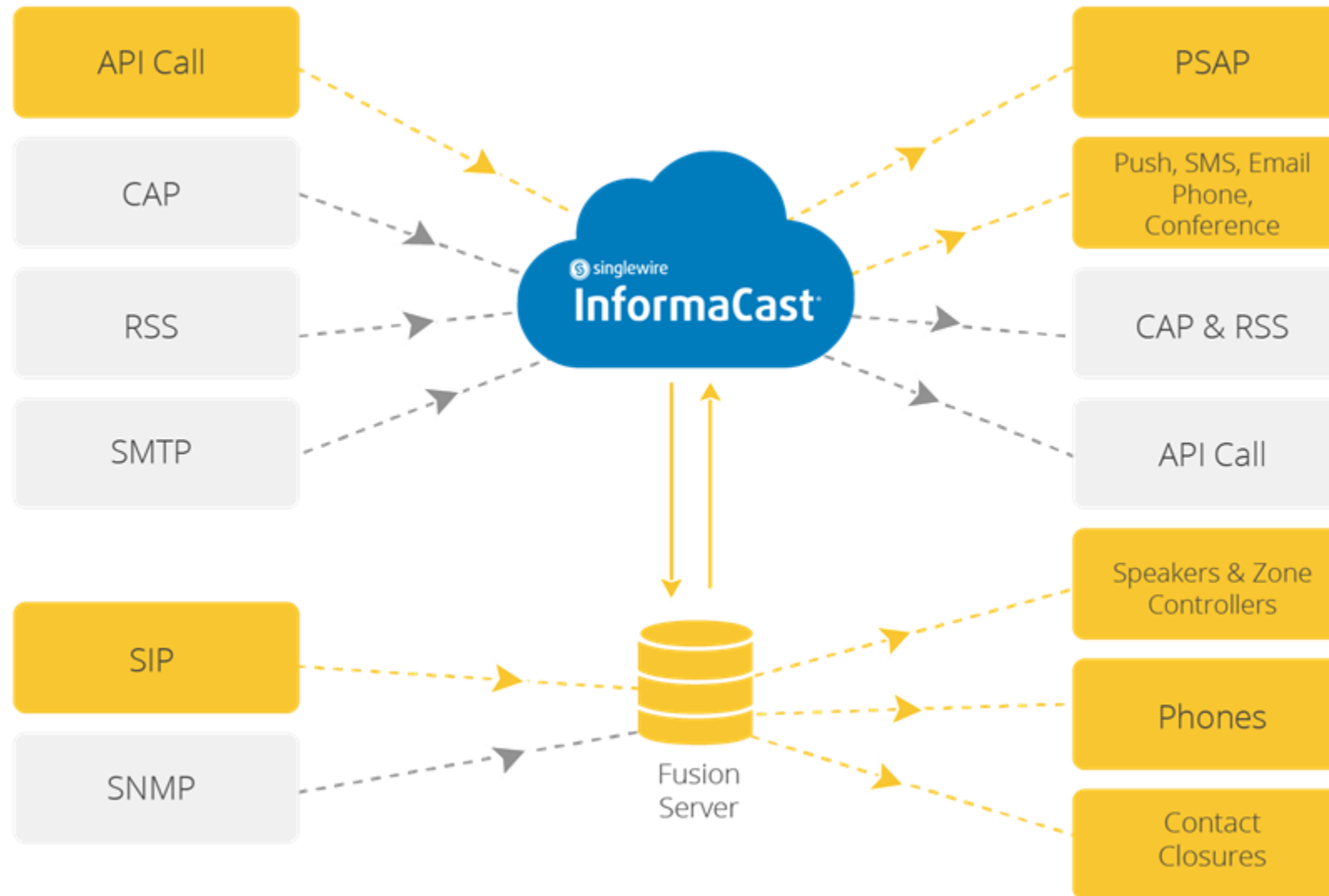
Basic Paging



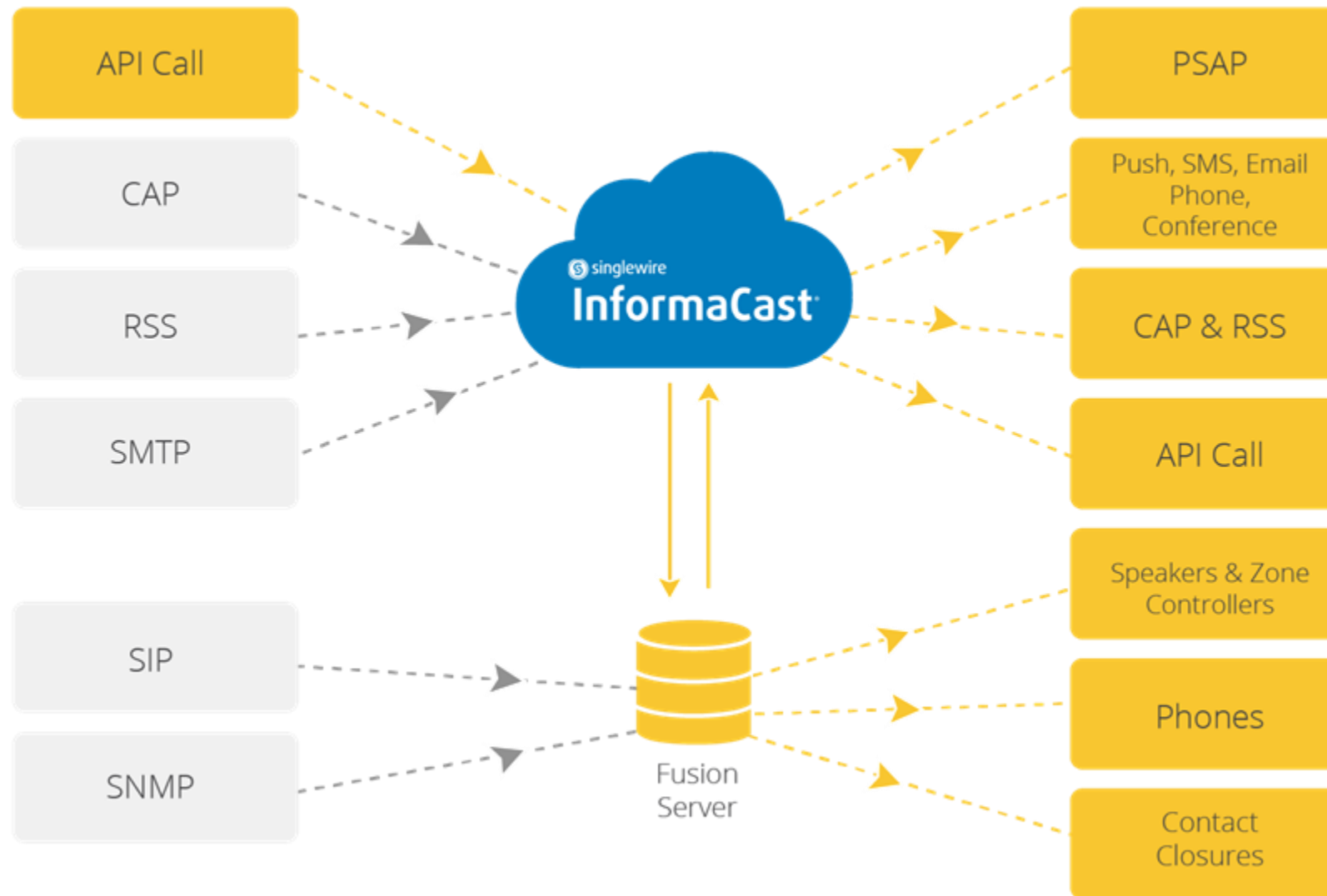
NWS Alerts



Alyssa's Law



Wearable Panic Buttons



Role Distribution

Fusion Server

- IP Speaker Registration
- Multicast
- Paging Gateway
- SIP Interoperability
 - Cisco UCM
 - UCaaS

Fusion Cloud

- Admin Web Application
- Microsoft Directory Integration
- Identity Provider & Authentication
- REST API

Notification Device Distribution

On-premises

- IP Phones
- IP Speakers
- Quick URL
- Desktop Notifier
- Machine-to-Machine

Cloud

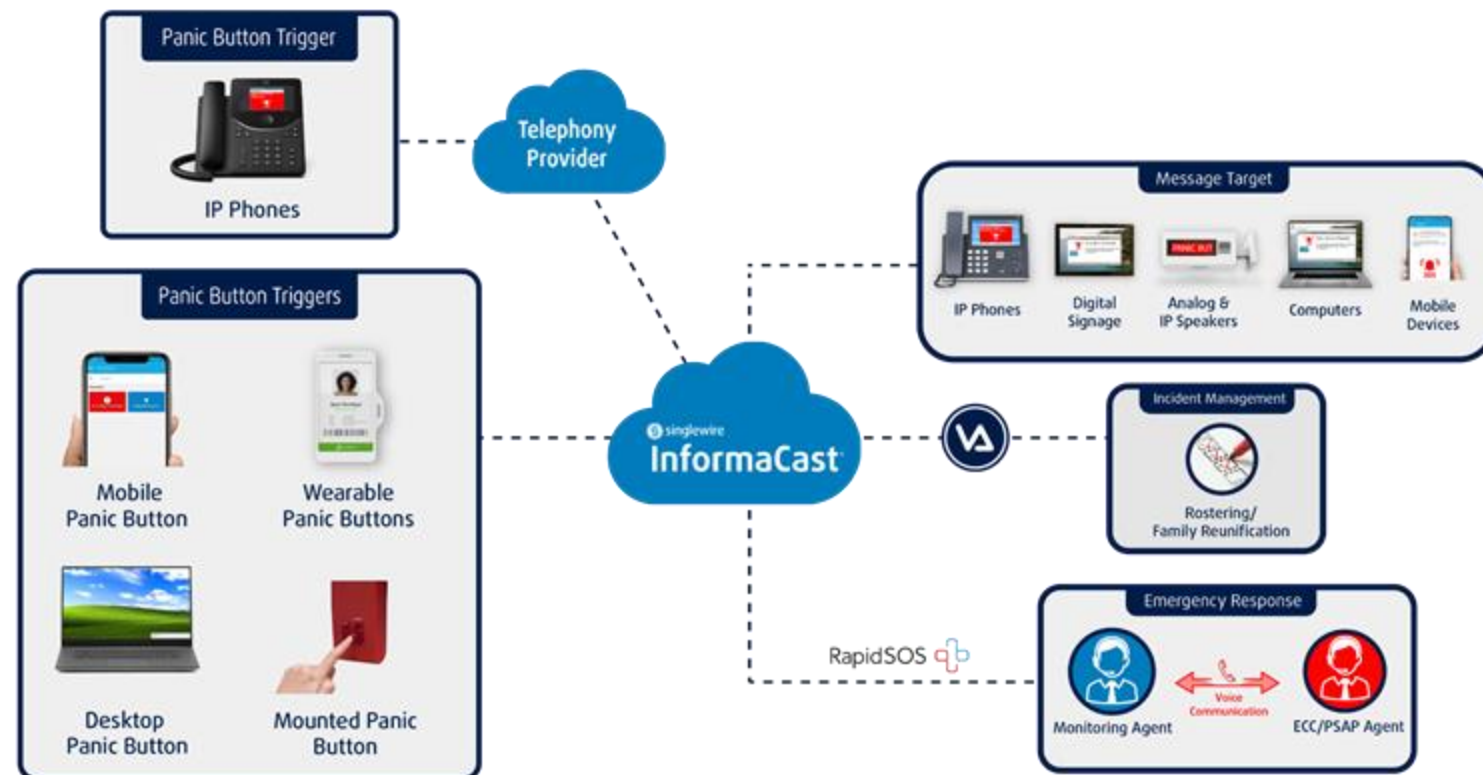
- Email
- SMS
- Phone Call
- InformaCast Apps
 - Android/iOS
 - Windows/MacOS
- Microsoft Teams bot
- Outbound CAP

On-Premises Resources

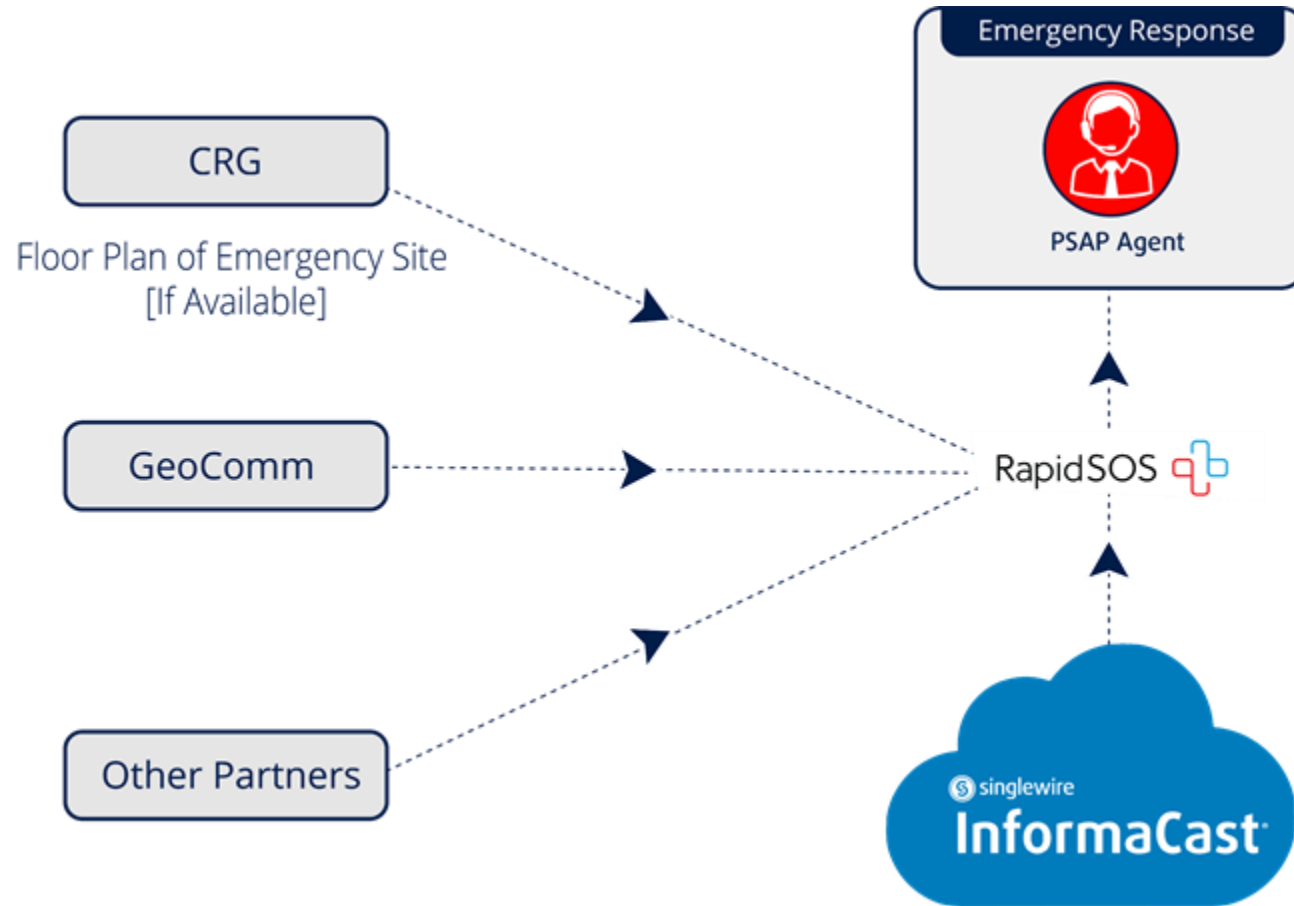
- Use Device Groups To Include:
 - IP Phones
 - Multicast Streams
 - IP Speakers
 - Desktop Notifier
 - Quick URL
 - M2M
- Create Filter Rules To Dynamically Maintain Device Group Membership

Emergency Calling

- Ability to connect with Emergency Communications Center
- Applicable for Alyssa's Law in K-12



Information InformaCast Provides



- **Location**
 - Latitude
 - Longitude
- **Site Information**
 - Site Name
 - Address Line 1
 - Address Line 2
 - City
 - State
 - Zip
- **Time of Emergency**
- **Scenario Information**
 - Scenario Name
 - Scenario Questions & Responses
- **Initiating User**
 - Name
 - Phone Number

OEM Integration Partners

Category

- All
- Phone Systems 9
- Collaboration Platforms 5
- Speakers/Clocks 13
- Strobes/Visual Indicators 6
- Zone Controllers 8
- Panic Buttons 10
- Wearables 4
- Digital Signage 24
- Sensors/Detectors 11
- Video Surveillance 7
- Access Control 3
- Contact Closures 5
- Location Mapping 7
- 911 PSAP Reach 2
- Other/Misc 7



ALLIANCE PARTNER



ALLIANCE PARTNER



ALLIANCE PARTNER



ALLIANCE PARTNER



KEY INTEGRATION PARTNER



KEY INTEGRATION PARTNER



KEY INTEGRATION PARTNER



KEY INTEGRATION PARTNER



KEY INTEGRATION PARTNER

Message Templates

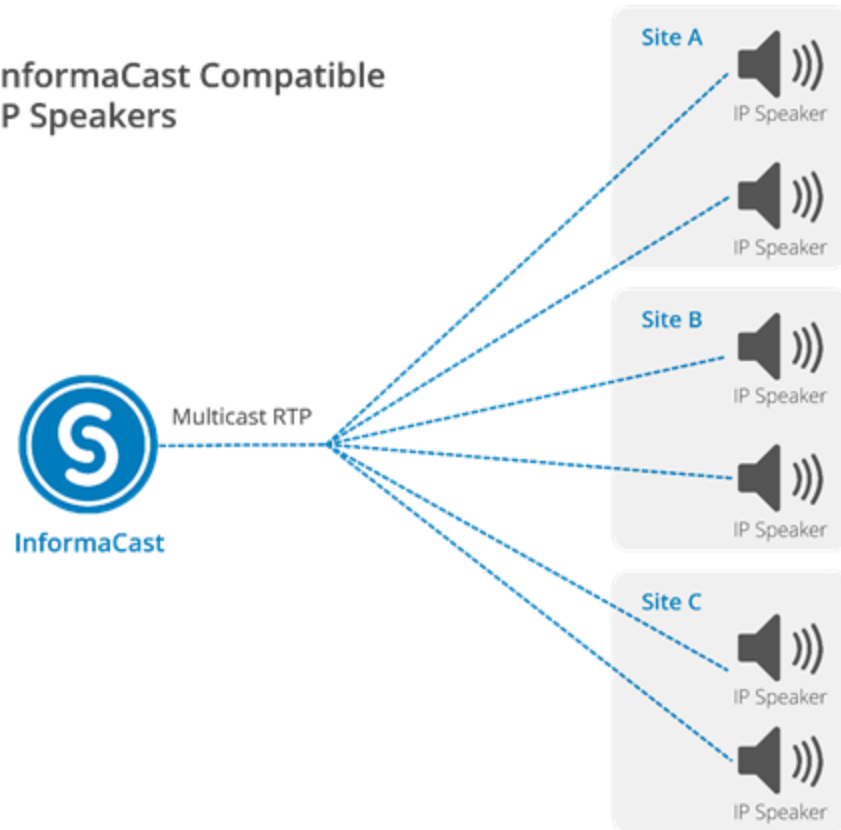
- Message Templates Supply The Content Of An Informacast Notification And Who Receives It:
 - Subject
 - Body
 - Recipients
 - Attachments
 - Confirmation Requests
 - Audio
 - Images
- Notification Profiles Attached To Message Templates Control Other Sending Characteristics

Cloud Resources

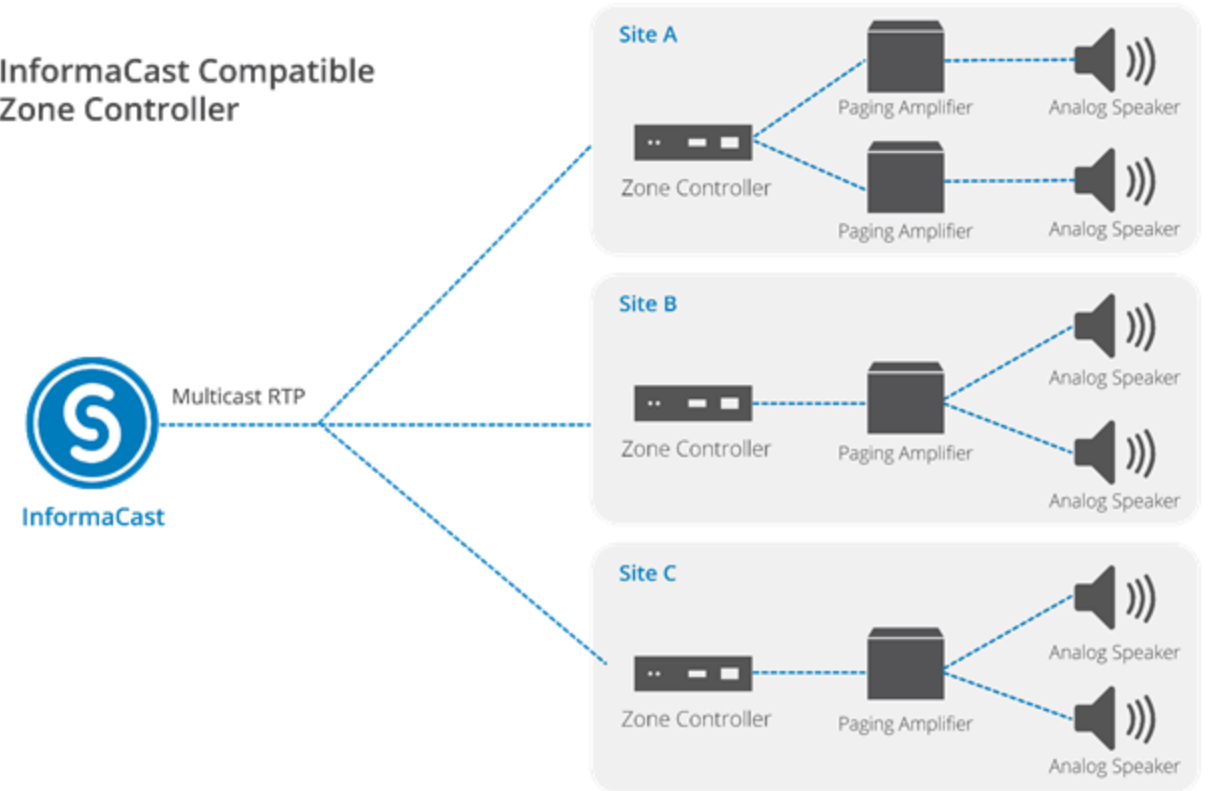
- Azure Active Directory (Microsoft Entra) User/Group Provisioning
- Self-Service Portal
- Distribution Lists To Organize Groups Of Users
 - Azure Groups Can Be Linked To Dynamically Populate And Manage List Membership

IP Speakers & Zone Controllers

InformaCast Compatible IP Speakers



InformaCast Compatible Zone Controller



IP Speakers & Zone Controllers

- InformaCast-Compatible = Manufacturers Have Implemented Proprietary Speaker Protocol
- Devices Register Directly To Informacast
- Informacast Manages Registration
- Informacast Controls Volume
- Informacast Controls Grouping And Zoning
- Informacast Generates Sip Credentials If Desired

IP Speakers & Zone Controllers

Informacast Service Discovery

- DNS -- Uses Dns Srv To Discover Informacast Server
- SLP -- Uses Service Location Protocol To Discover Informacast Server
- Static -- Static URL Populated To Individual Speaker(S) Pointing To Informacast Server

IP Speakers - SIP Speaker Service

- SIP Speakers Allow You To Make Full-Duplex Intercom Calls Between Different Types Of Informacast Fusion Devices:
 - Cisco IP Phone For Unified Cm To Sip Speaker
 - SIP Speaker To Cisco Ip Phone For Unified Cm
 - IP Phone For Cloud Calling To Sip Speaker
 - SIP Speaker To Ip Phone For Cloud Calling
 - SIP Speaker To Sip Speaker
 - SIP Speaker To Dialcast
- Full-Duplex Intercom Calls Allow Both The Calling Party And Receiving Party To Talk At The Same Time

Solutions for Multicast Delivery Across WANs

- **Paging Gateway: Converts unicast (WAN) to multicast (LAN)**
 - Available as hardware or virtual machine
- **InformaCast Fusion: Acts as multicast source using Distribution Activation**
 - Hardware or virtual deployment
- **GRE Tunnels: Statically tunnel multicast over WAN**
 - Simple for small networks, complex at scale
- **DMVPN Overlay: Dynamic GRE tunnels**
 - Scalable; ideal for large networks or existing IWAN environments
- **ECDN (e.g., vBrick DME): Leverage existing video distribution**
 - Viable if already deployed; costly to implement from scratch
- **WAN Provider Support: Request multicast enablement over WAN**

Paging Gateway Features

- Centralized Management.
- Zero Configuration Required On The Paging Gateway Appliance.
- Automated Upgrades.
- Improved Security Including A Hardened Appliance And Support For SrtP
- Uses Dns Srv Record To Discover Informacast

Initiating Message Templates

- InformaCast Apps
 - Android
 - iOS
- InformaCast Web App
- DialCast
- M2M
- CallAware for Cisco UCM
- CAP/RSS (i.e. National Weather Service)
- Email

Command Center Overview

- Command Center: Central hub for managing emergency functions
- Site: Defined location (buildings, floors, rooms)
- Site Roles: Groups of people/devices at a location
- Scenarios: Triggers that send alerts, start incidents, call APIs
- Incident Plans: Bundles of templates, links, files, and Roll Call
- Incidents: Events initiated from an Incident Plan

Simplified Notification Launch

- User-friendly interface to send alerts
- Triggers multiple message templates at once
 - Different content, recipients, and channels
- Supports advanced features:
 - Incident Plans
 - Emergency Calling (Alyssa's Law)
 - Roll Call & Reunification

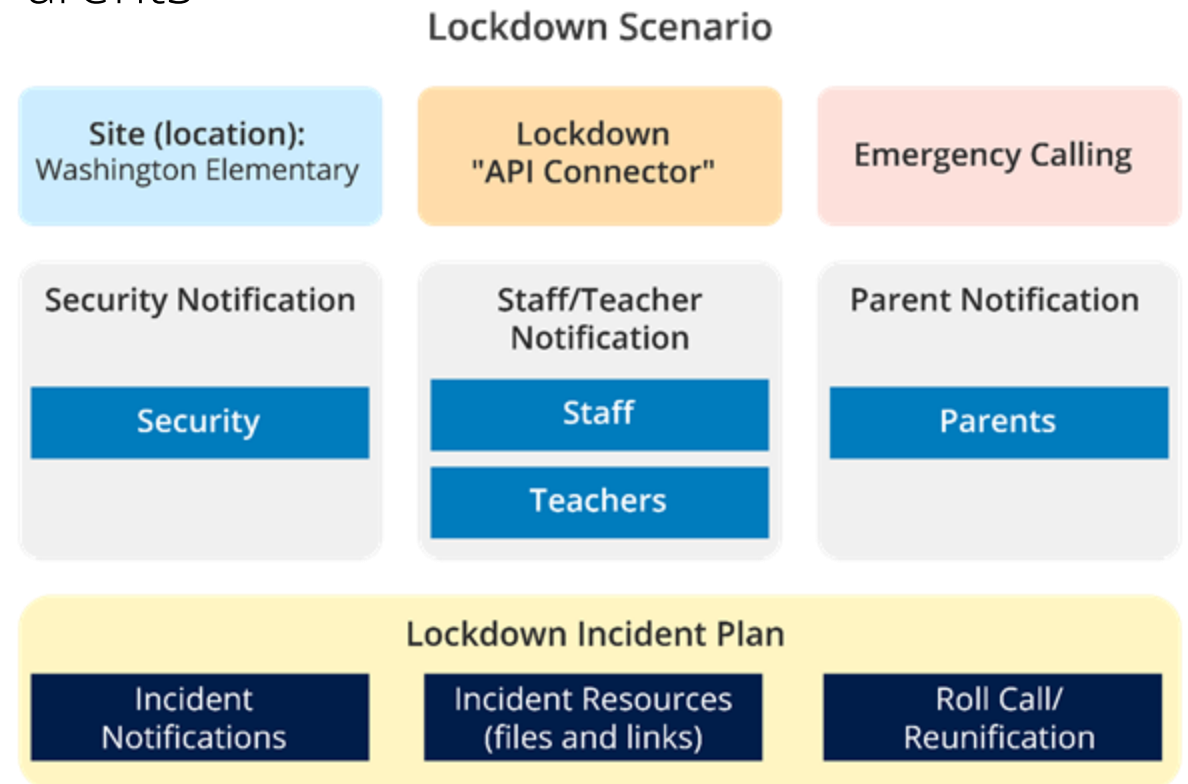
Initiating Scenarios

- InformaCast Apps - Windows, MacOS, Android, iOS
- InformaCast Web App
- Cisco IP Phones managed by Cisco UCM
- Cisco IP Phones managed by Webex Calling
- DialCast
- Microsoft Teams Bot
- Wearables
 - Kontakt.io
 - Centegix
- REST API /send-a-scenario endpoint

Command Center: K-12 Example

Site / Incident Location: Washington Elementary

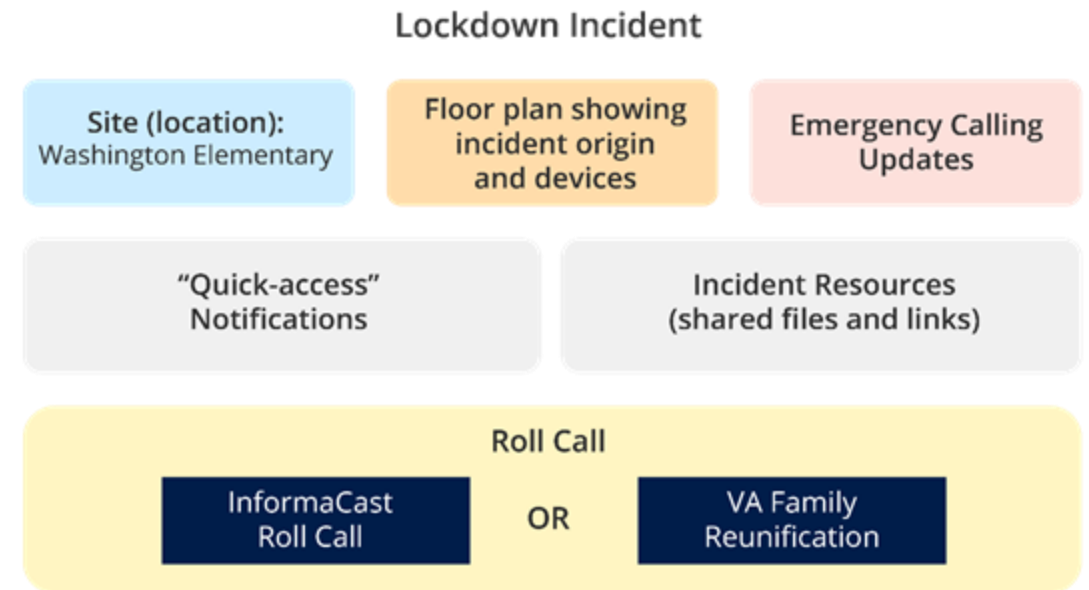
- Site Roles - Security, Staff, Teachers, Parents
- Scenario - Lockdown
 - Pick the location
 - Lock down the building
 - Notify 911 (Emergency Calling)
 - Send notifications
 - Start an Incident
- Incident Plan - Lockdown



Command Center: K-12 Example

Incident

- Floor plan showing the origin of the emergency
- "Update" and "All Clear" Quick-access notifications for Incident Managers
- Link to Incident management checklist in Google Sheets
- Roll Call



Fusion First Boot


Sets Fusion Server's initial configuration

- Hostname
- IP Address
- DNS
- Timezone
- NTP
- SSL Certificate Parameters
- OS Admin Password
- Security Passphrase


Fusion First Boot - Registration

FUSION SERVER AUTHENTICATOR

How would you like to configure machine Fusion003?



Initial Setup



Recover From Backup

BACK

SUBMIT

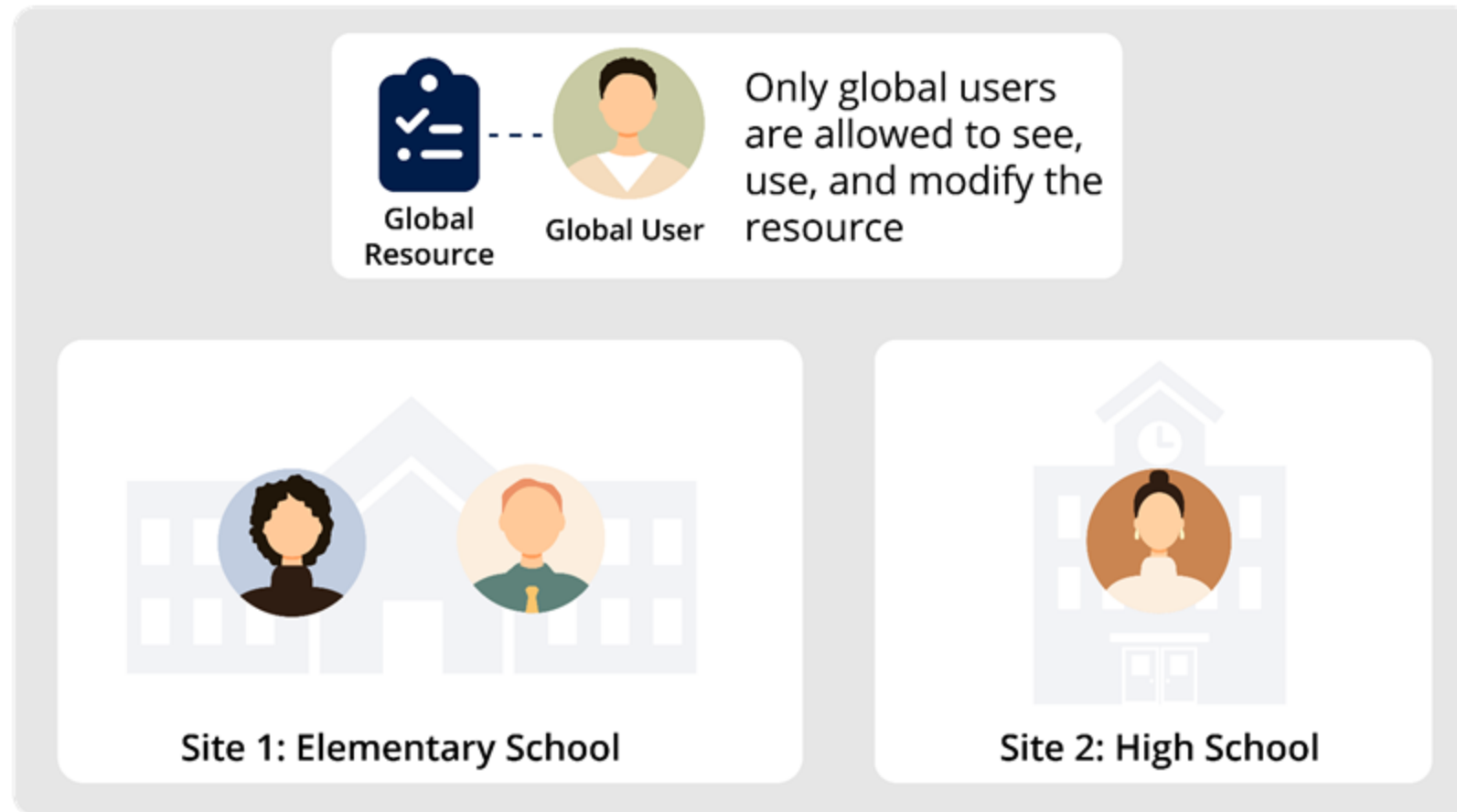
Port Requirements

Outbound connections go from Fusion server to Fusion Cloud over TCP port 443

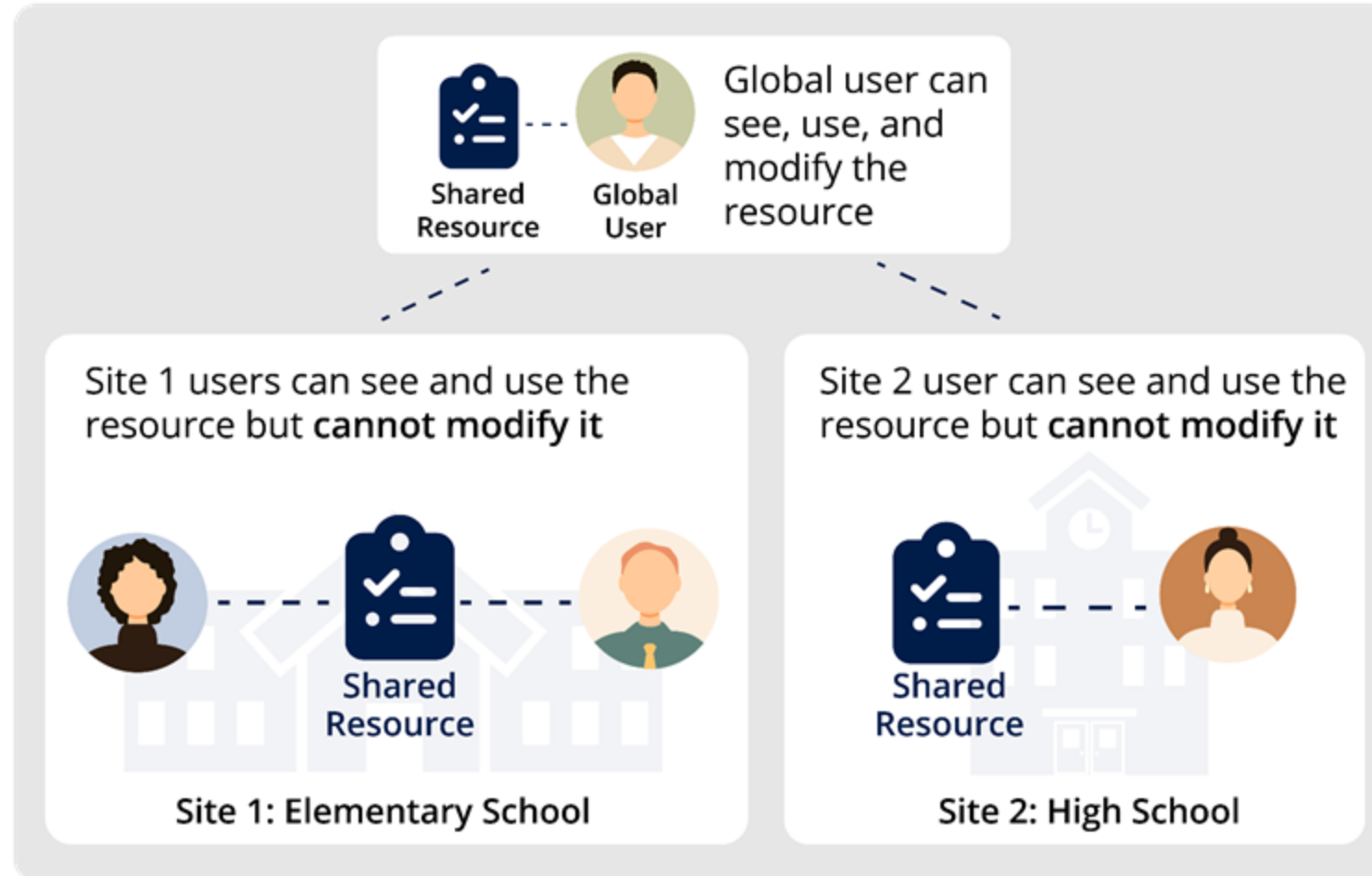
▼ Outbound Internet Traffic from the InformaCast Fusion Appliance

Port	Protocol	Application and/or Purpose	Specification
443 ^[a]	TCP	InformaCast Fusion to: <ul style="list-style-type: none">• admin.icmobile.singlewire.com• api.icmobile.singlewire.com• backups.icmobile.singlewire.com• binaries.icmobile.singlewire.com• upgrades.icmobile.singlewire.com^[b]• service.icmobile.singlewire.com• singlewiresupport.s3.amazonaws.com• singlewiretokens.s3.amazonaws.com• telemetry.icmobile.singlewire.com	RFC 2616
5060 ^[c]	TCP and UDP	Legacy Paging Interface SIP (optional)	RFC 3261
5061 ^[d]	TCP and UDP	Secure SIP signaling (optional)	RFC 3261
14602-15000	UDP	SIP speaker RTP/SRTP	RFC 3550
^[a] The Port Configuration Additional Information article details the specific IP addresses for these outbound connections. ^[b] Backups and restores will fail if port is inaccessible. ^[c] These ports could be both local or internet traffic depending on whether you're using a cloud-hosted PBX. ^[d] These ports could be both local or internet traffic depending on whether you're using a cloud-hosted PBX.			

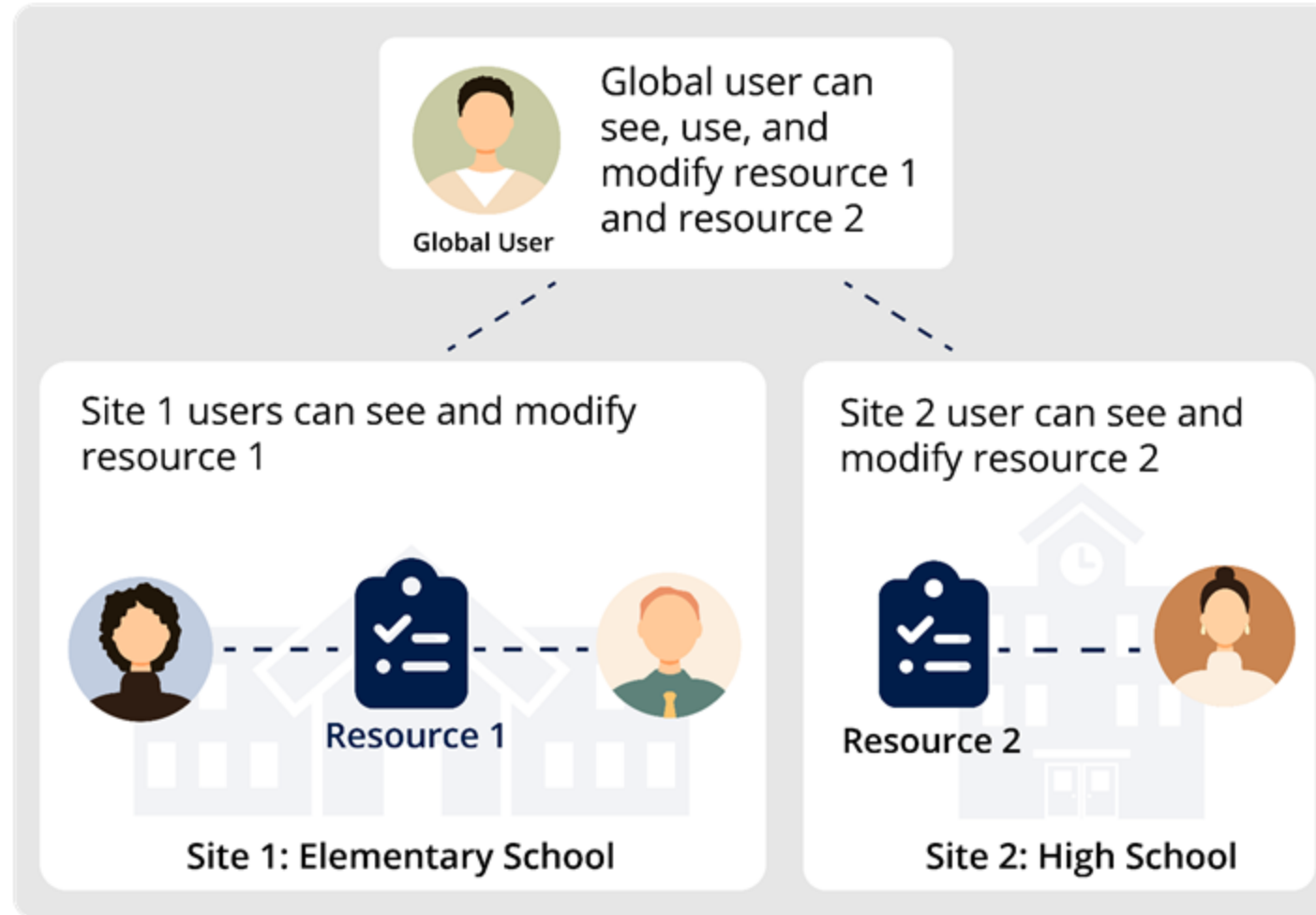
Global Access



Shared Access



Local Access



Mapping Features

Upload And Annotate Floor Plans For Enhanced Visual Context

Use Cases:

- Emergency: Identify Incident Location, View Cameras
- Operations: Page Specific Speaker Groups Via Map

Setup Example:

- Create Site, Building, Floor
- Upload Floor Plan (PNG, JPG, GeoTIFF)
- Define Rooms And Boundaries
- Place Devices On Map

Scenarios With Location Details Display Maps In Admin And Mobile Apps

Floor Plan Devices

Notification Details ⓘ
View the details of the notification, its delivery results, the confirmation responses, the number of recipients who have read your notification, and their activity in relation to the notification.


Type Scenario 1 Recipients Notified Critical Alert	Initiated By User Ben Scudder	Status Complete Updated Nov 13, 2024 at 10:15:20 AM
--	--	--

Scenario Content

Scenario
Active Threat

Type
Standard Scenario

Location
Where is this occurring?
Singlewire Admin Office (Building: Main Office, Floor: Second Floor, Room: Room 218)



The floor plan map displays a building layout with several rooms. Three specific locations are marked with circular icons: a speaker icon (top left), an API device icon (middle), and a camera icon (bottom right). The map is overlaid on a Google Maps background.

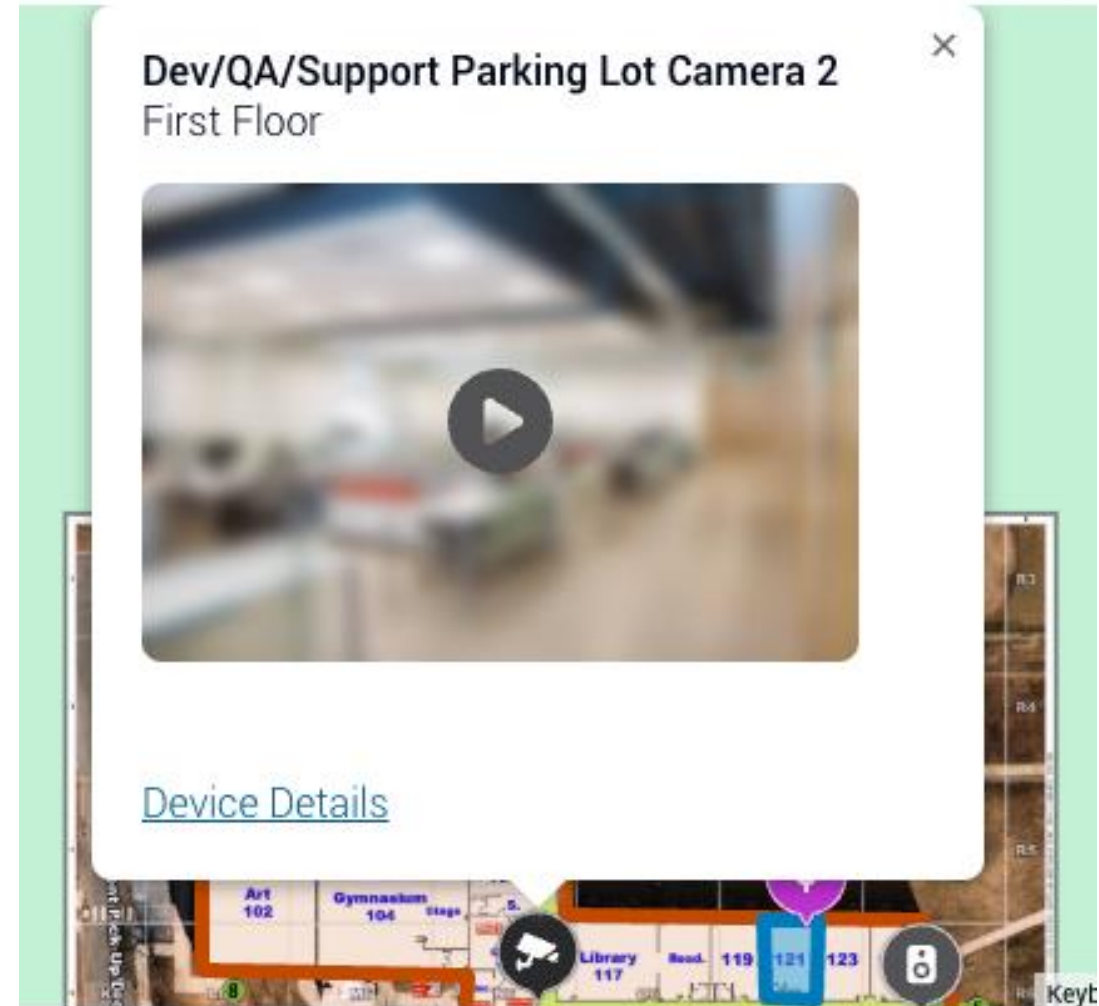
Speaker

API Device

Camera

IP Cameras

- Verkada Camera Integration Launched In November 2024.
- What It Is: Import Cameras And View Their Feeds On Demand Or During An Incident.
- What It Is Not:
 - An API-based Scenario Trigger From Verkada.
 - An API-Based Lockdown Trigger From Informacast To Verkada



















System Health

System Health Dashboard ?

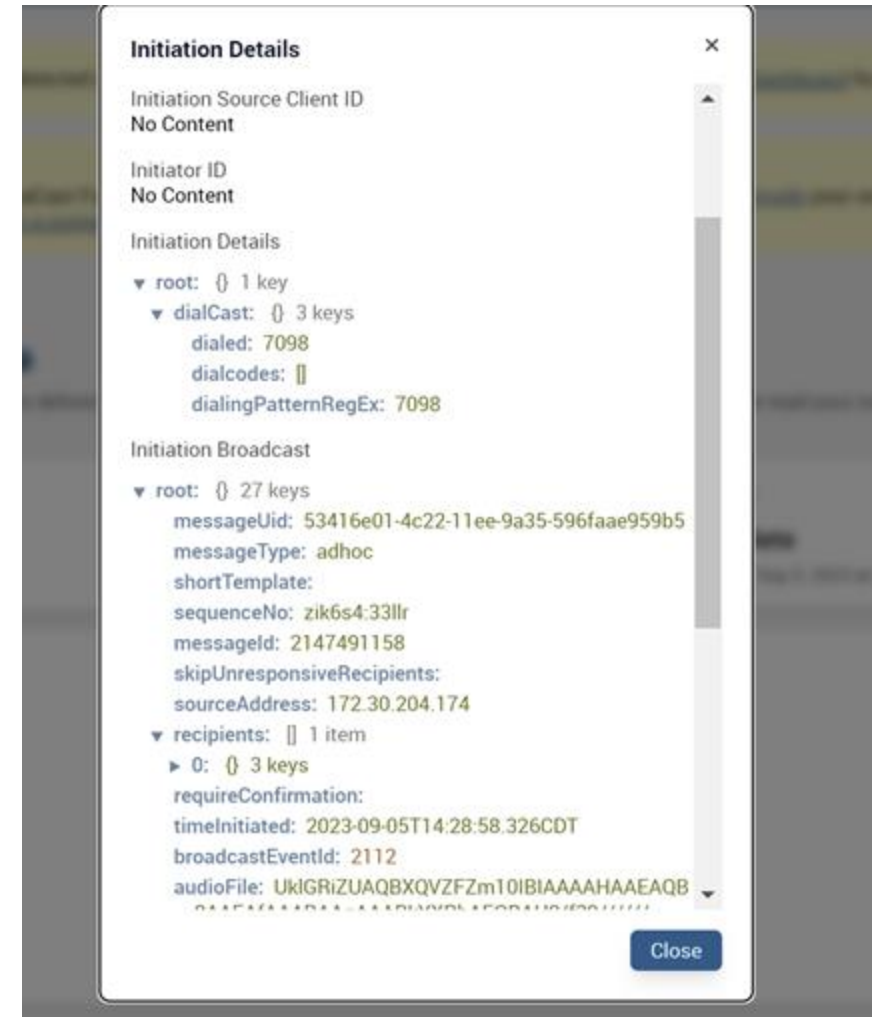
View a summary of InformaCast's system health, and set alarms based on changes in that health.

Service Alarms

Name	Status	API Connectors
InformaCast Server(s) Enter Red State i	No Issues Detected ✓	  ▼
InformaCast Server(s) Enter Yellow State i	No Issues Detected ✓	  ▼
InformaCast Server(s) Synchronization Failure i	No Issues Detected ✓	  ▼
License Count(s) Exceeded i	No Issues Detected ✓	  ▼
Registered Speakers Drop Below Threshold i	No Issues Detected ✓	  ▼
Phone Cache Update Failed i	No Issues Detected ✓	  ▼
School Information Import Failed i	Issue Detected !	  ▼
Token Expirations i How to Rotate Tokens	No Issues Detected ✓	  ▼

Notification Details

- Skip log collection and view relevant stats within web app:
 - Dialed Number: "7098"
 - DialingPatternRegex: "7098"
 - SourceType: "CallingPhone"
 - SourceAddress: "172.30.204.174" (phone's IP addr)



Change History

Select resources will include an audit trail to identify service-impacting user changes:

Ring List Details ?

View/edit a ring list, its details, and entries.

Basic Information

Name

Description

Ring List Actions

Copy

Delete

View Change History

Entries

Log Bundles

- Kick off encrypted log bundles directly from web application
- Log bundles are sent directly to Singlewire Support

<div>Q Search</div>				<div>Upgrade All</div>	
Name	Version	IP Address	Status		
mc-icFusion0002 Fusion Server 02	14.19.2	172.30.229.43	No Issues	<div>(i) ≡ ⋮ Collect Logs</div>	
mc-icFusion01 Fusion Server 01	14.19.2	172.30.229.42	No Issues	<div>⏻ ≡ ⋮</div>	
Rows per page: 50 ▾ 1–2 of 2 << < > >>					

Upgrades & Backups

- Informacast Fusion Updates Occur For Both Cloud And On-Prem Components
 - Singlewire Ops Handles Updates To Informacast Fusion Cloud Infrastructure
 - Customers Apply Updates To Informacast Fusion Servers
- Fusion Server Backups Automatically Occur On A Nightly Basis And Are Stored In Informacast Fusion Cloud
 - Backups Encrypted Via Security Passphrase Set By Customer