frontrow™
by Boxlight®

BOXLIGHT®

Symphony
Campus Communication System

# Symphony Campus Communication System
Every school moment, perfectly orchestrated.

The **Symphony Campus Communication System** by FrontRow is a reliable, IP-based platform built for today's evolving campus needs. It runs on your school's existing network, supports **SIP** and **Multicast**, and is easily managed through any web browser. From the Command Center, staff can handle paging, intercom, announcements, and emergency alerts.
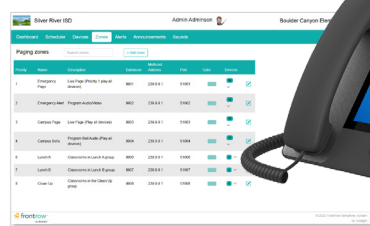
Pair Symphony with SM Series IP speakers, clocks, and horns for a fully integrated solution — no new infrastructure required. It uses industry-standard protocols and delivers consistent, dependable performance.

Adding a new **schedule**, **zone**, or **alert** is quick and easy with Symphony's user-friendly web interface.
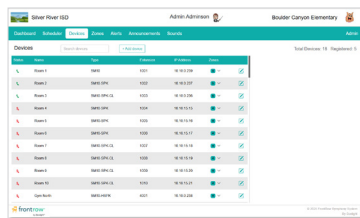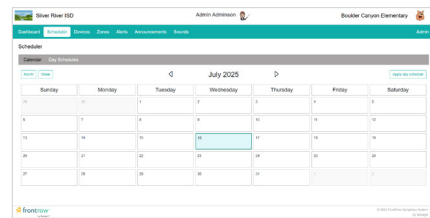
Alerts
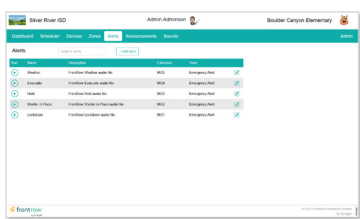
Zones

Devices

Calendar

Key Features

- Daily bell schedules and audio communications to the entire campus, zone-based bells, paging, alerts, and announcements.

- SIP integrated

- Multicast support

- Web Browser User Interface

- Pre-recorded emergency alert communications with audio instructions, visual messaging.

- Dedicated Command Center, live paging, two-way intercom, pre-recorded alerts and announcements with the press of a button.

- Locally hosted IP-based system, server to endpoint.

- Seamless integration with SM Series IP Devices

- Seamless integration with Symphony-ready FrontRow devices

- DRS-6000 (Locally installed tier one Dell server)

- SIP bridge to local SIP phone system

- Pre-recorded audio

- Upload user-created content

Campus Communication System: How It Works

The **Command Center** gives school staff a simple way to manage daily communication, whether they're making intercom calls to classrooms, paging specific areas like the gym, or sending out campus-wide alerts. All of these actions and more can be done quickly from one central location.

Specifications

DRS-6000

Operating System	Linux Ubuntu 22.04
Remote Admin	Webmin
Weight	13.6 kg / 30 lb
Processor	Intel® Xeon® E-2414 2.6 G
Memory	16 GB UDIMM, 3200 MT/s
Storage	(2) 2TB SATA Hard Drives, 6 Gbps, hot-plug
Redundancy	RAID 1 mirroring for instantaneous failover continuity
Bandwidth/stream	<1% of a typical 100 Mbps network (during audio streaming)
Mounting	1U/2U static rails for 2 post / 4 post racks

Network Requirements

Protocol Support

SIP (Session Initiation Protocol)
The network must allow and properly route SIP traffic over:
- UDP Port 5060
- TCP Port 5060
- The network must support SIP traffic between local devices and, if applicable, SIP Trunks.

RTP (Real-Time Transport Protocol)
- Audio and video payloads must be transmitted over dynamically allocated UDP ports, typically in the range 16384–32767.

Multicast Support
- The network must support IP Multicast traffic.
- The following must be enabled and configured:
  - IGMP (Internet Group Management Protocol) v2 or v3 on switches to manage multicast group membership efficiently.
  - Multicast routing or IGMP snooping on Layer 2/3 network devices to limit broadcast domain flooding.
  - Support for UDP multicast ports, typically in the range of 224.0.0.0 to 239.255.255.255, (with proper TTL and scope configuration).

Quality of Service (QoS)

The network should implement QoS policies to prioritize:
- SIP signaling traffic (high priority)
- RTP media traffic (highest priority, low jitter and latency)
- Multicast audio/video streams (medium to high priority)

Network Infrastructure

Full-duplex 100/1000 Mbps Ethernet on all endpoints and switches.

Managed switches that support:
- IGMP Snooping
- QoS tagging (802.1p, DSCP)
- VLAN segmentation, if necessary, to separate voice/multicast traffic

Minimal network latency (<150 ms round-trip time) and jitter (<30 ms) for VoIP/multicast audio.

Learn more at **boxlight.com**