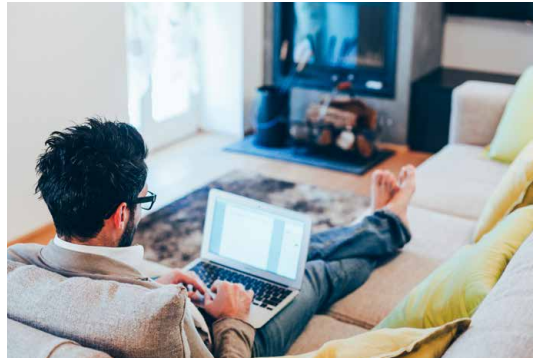


# Powering the Real-Time

VIRTUAL CLASSROOM



## The Problem

Educators are looking for new ways to teach students who for a variety of reasons cannot participate in a traditional classroom. Students want to attend institutions where they can actually participate in conversations and lectures instead of just watching them on video. International organizations know that online learning makes it possible for students from different countries and continents to work together, but they often struggle with poor network conditions.

## The Solution

Using WebSync for chat and signaling and IceLink for media transmission, educators are able to add chat and audio/video conferencing to their current online systems, upgrading them to make use of modern technology. Using a mixing server, audio and video from a number of students can be mixed into one stream. This provides a low bandwidth solution that can be used when networks are poor, or when devices such as iPads and iPhones are used which cannot handle more than three or four connections at once.

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## < How It Works

This chart is an example of how IceLink and WebSync could be used in an education application.

WebSync signaling is used to control and monitor conversations. IceLink runs as a peer on each of the clients, while each client peer also has a matching "headless peer" that runs on the server. The headless peer does the decryption and decoding and passes the result to an MCU which combines the streams into one and passes the combined stream back to the "headless peers" for re-transmission to the client peers. If desired, a recording server could be added to record all or some of the interactions.



Handles chat and session management	WebRTC-based peer to peer (P2P) and peer to server (P2S) streaming
Highly scalable to tens or hundreds of thousands	Interacts with Chrome, Firefox, Opera, ORTC, IE and Safari
Handles students anywhere in the world	Supports mixing of audio/video for a single classroom view
Supports all desktop, tablet and SmartGlasses platforms	Supports all desktop, tablet and SmartGlasses platforms